Appendix 1B: Attachments to Comment #772

WATERLEGACY

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March 12, 2021

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Re: Minnesota Wild Rice Impaired Waters – Clean Water Act Section 303(d)
2020 Impaired Waters List submitted by MPCA on Feb. 25, 2021

Dear Ms. Newton, Ms. Fong,

This letter is written on behalf of WaterLegacy, a Minnesota non-profit organization founded to protect Minnesota waters and the communities that rely on them. We write this letter to request that the U.S. Environmental Protection Agency ("EPA") disapprove Minnesota's 2020 Clean Water Act Section 303(d) impaired waters list on the grounds that, in violation of the Clean Water Act, the Minnesota Pollution Control Agency ("MPCA") failed to list wild rice waters impaired due to sulfate in excess of Minnesota's federally-approved water quality standard of 10 milligrams per liter ("mg/L").

After dithering for nearly an entire year over this issue, the MPCA finally submitted its 2020 Section 303(d) list on February 25, 2021. That impaired waters list failed to identify a single wild rice water impaired due to excessive sulfate. MPCA attempted to justify its failure to list wild rice waters on the basis of a 2015 Minnesota session law.

It is doubtful that the MPCA lacks the acumen to realize that the Clean Water Act preempts a state session law attempting to block listing of impaired navigable waters of the United States. It is far more likely that, absent EPA or court oversight, the MPCA lacks the political will to comply with federal law.

The EPA has a non-discretionary duty under the Clean Water Act and its implementing regulations to disapprove a state Section 303(d) impaired waters list that violates federal law. 33 U.S.C. § 1313(d)(2); 40 C.F.R. § 130.7(b), (d)(2). The EPA, then, also has an obligation to use all available data to identify impaired waters in the State. 33 U.S.C. § 1313(d)(2); 40 C.F.R. § 130.7(d)(2), (b)(5),(b)(6)(iii). In addition to these legal obligations, EPA now also has an important opportunity to sanction Minnesota's failure to comply with the Clean Water Act and rectify a serious and pressing environmental injustice to indigenous communities in Minnesota.

WaterLegacy has previously criticized both the MPCA's failure to list wild rice impaired waters and EPA's decision on January 28, 2019 to approve Minnesota's 2016 and 2018 Section 303(d) lists despite this failure. Our concerns and documentation of the past and current situation are contained in the following documents attached with this letter:

Attachment A	WaterLegacy Comments to EPA on 2016, 2018, and draft 2020 MPCA Section 303(d) List, Oct. 22, 2020.
Attachment B	WaterLegacy Comments to MPCA on draft 2020 Section 303(d) List, Oct. 22, 2020.
Attachment C	WaterLegacy Exhibits to both Section 303(d) Comments to EPA and Comments to MPCA, Oct. 22, 2020.
Attachment D	EPA Region 5 Response to WaterLegacy Section 303(d) Comments, Nov. 10, 2021.
Attachment E	MPCA, Notice of Submittal and Responses to the 2020 Draft Impaired Waters List Public Notice Comments, Feb. 25, 2021.

MPCA admits in its responses to comments that there are at least seven Minnesota wild rice waters impaired due to sulfate. From WaterLegacy's perspective, the time for an incremental approach on this issue has passed. The MPCA has irretrievably missed its chance to comply with federal law. We hope that, in contrast, the EPA will rise to the occasion and list *all* identifiable Minnesota wild rice waters impaired due to excessive sulfate as required by the Clean Water Act.

In conclusion, WaterLegacy respectfully requests that the EPA act promptly and decisively to disapprove Minnesota's 2020 Clean Water Act Section 303(d) impaired waters list on the grounds that the MPCA's failure to list wild rice waters impaired due to sulfate in excess of Minnesota's 10 mg/L water quality standard violates the Clean Water Act and its implementing regulations. WaterLegacy further respectfully requests that the EPA then, within the time set by the Clean Water Act, list every Minnesota wild rice water impaired due to sulfate for which there is available data, including but not limited to the waters identified in the Attachments to this letter.

We appreciate your consideration, and we look forward to hearing from you soon by phone (651-646-8890) or by email (pmaccabee@justchangelaw.com).

Sincerely yours,

Paula G. Maccabee

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cc. David Pfeifer (Pfeifer.David@epa.gov) with Attachments
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October 22, 2020

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Re: Minnesota Clean Water Act Section 303(d) List
Failure to List Wild Rice Impaired Waters 2016, 2018, and 2020

Dear Administrator Thiede, Director Fong:

WaterLegacy submits this letter on behalf of our members and supporters, whose interests we have represented since 2012 in requesting that the Minnesota Pollution Control Agency ("MPCA") and the U.S. Environmental Protection Agency ("EPA") comply with the Clean Water Act ("CWA") Section 303(d) and list wild rice waters impaired by sulfate pollution in excess of Minnesota's 10 parts per million ("mg/L") wild rice sulfate standard, Minn. R. 7050.0224. Neither MPCA nor EPA have performed their duties in accordance with the CWA. To date, not a single wild rice water has been listed as impaired due to sulfate in excess of Minnesota's lawful numeric (10 mg/L) sulfate water quality standard.

On January 22, 2018, EPA received a copy of WaterLegacy's comments on MPCA's draft 2018 Section 303(d) list. (WaterLegacy 303(d) Exhibits pages ("WL 303(d) Ex.") 1-4). These 2018 comments also attached WaterLegacy's comments and exhibits pertaining to MPCA's 2012, 2014, and 2016 draft Section 303(d) lists. (*Id*. 5-236). In addition, WaterLegacy's 2018 comments attached the Administrative Law Judge ("ALJ") Report and Chief ALJ Report disapproving MPCA's proposals to repeal the wild rice standard, adopt an equation-based rule, and limit wild rice waters to approximately 1,300 identified waters used for the production of wild rice.[1]

This letter comments on MPCA's 2020 draft Section 303(d) list and requests that EPA take the following actions based on the discussion and authorities below, along with the attached exhibits:

[1] *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, OAH 80-9003-34519, Report of the Administrative Law Judge, (Jan. 9, 2018) and the Chief Administrative Law Judge (Jan. 11, 2018) ("ALJ Report" and "Chief ALJ Report) at WL 303(d) Ex. 237-318.

1. EPA should immediately reject or withdraw any MPCA extensions that delay MPCA's submittal of its 2020 Section 303(d) list for EPA's consideration.

2. EPA should acknowledge that EPA's approval of Minnesota's 2016 and 2018 Section 303(d) lists on January 28, 2019 was arbitrary, not in accordance with law, and unsupported by substantial evidence in failing to find a single Minnesota class 4A water used for the production of wild rice impaired due to sulfate levels in excess of Minnesota's numeric (10 mg/L) water quality standard.

3. EPA should deny approval of Minnesota's draft 2020 Section 303(d) list due to MPCA's failure to list wild rice waters impaired by sulfate in excess of Minnesota's numeric (10 mg/L) water quality standard.

4. EPA should use all available data, in consultation with tribes, to list all Minnesota waters where wild rice is a CWA existing use impaired by sulfate in excess of Minnesota's numeric (10 mg/L) water quality standard.

DISCUSSION

1. EPA's apparent extension of time for MPCA to submit its Section 303(d) is not authorized under the CWA or its implementing regulations.

Neither the CWA nor its implementing regulations authorize EPA to grant a state an "extension" of time for state submittals to EPA.

The CWA and its implementing regulations are explicit about the timing both for state submittals to EPA and for EPA approvals or disapprovals of state submittals under Section 303(d) [33 U.S.C. 1313(d)]. Regulations implementing the CWA require that states' reports on water quality-impaired segments and control strategies must be submitted "regularly by the States to EPA" every two years. 40 C.F.R. § 130.10 (a), (a)(1). CWA regulations have required since 1994 that each state submit to EPA the lists providing "identification and priority setting for water quality-limited segments still requiring TMDLs" on April 1 of every even-numbered year. 40 C.F.R. § 130.7(b), (d)(1). This instruction to the states is repeated on EPA's website.[2]

EPA's Regional Administrator is then required to either approve or disapprove the state's impaired waters listing and TMDL loadings not later than 30 days after the date of submission. 33 U.S.C. § 1313(d)(2); 40 C.F.R. § 130.7(d)(2). The Regional Administrator shall approve a state impaired waters list "only if it meets the requirements" of paragraph (b) of the regulation, which specifies how impaired waters must be identified. *Id*. If the EPA Regional Administrator disapproves the state's listing of impaired waters, the EPA shall, not later than 30 days after the date of disapproval (a total of 60 days after the submittal by the state) identify impaired waters in the State. *Id*. EPA must then "promptly issue a public notice seeking comment on such listing" and consider comments before finally transmitting the impaired waters listing to the State. *Id*.

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[2] EPA, Overview of Listing Impaired Waters under CWA Section 303(d) available at https://www.epa.gov/tmdl/overview-listing-impaired-waters-under-cwa-section-303d. All online sites in these comments last visited on Oct. 21, 2020.

Nothing in the language of the CWA or its regulations provides for "extensions" to allow states to delay submittal of Section 303(d) impaired waters list. To the contrary, CWA regulations provide for a regular, consistent, and rigorous schedule to prevent either states or EPA from delay in fulfilling their obligations to identify impaired waters and set pollutant loads necessary to implement water quality standards.

Since 2010, when EPA first informed MPCA that the agency was required by law to enforce its wild rice sulfate standard, political pressure has driven MPCA to adopt multiple strategies for delay.[3] We are concerned about the passage of time without a resolution on the important issue of listing wild rice impaired waters. Even if MPCA's objectives are genuine, neither the CWA nor its regulatory framework allow EPA to disregard the timetable provided in law to ensure that progress is made in listing and providing loadings to implement water quality standards in impaired waters.

2. EPA misinterpreted Minn. R. 7050.0224 and EPA's final decisions not to disapprove MPCA's 2016 and 2018 Section 303(d) lists and to list wild rice impaired waters were arbitrary, not in accordance with law, and unsupported by substantial evidence.

The U.S. Administrative Procedure Act ("APA") states that an agency final action is unlawful if the action, findings, and conclusions are arbitrary, capricious, not in accordance with law, or unsupported by substantial evidence. 5 U.S.C. § 706(2). The APA requires that "agency action be reasonable and reasonably explained." *Dep't of Homeland Sec. v. Regents of the Univ. of Cal.*, 140 S. Ct. 1891, 1933 (2020). EPA's was neither.

EPA's Final Decision Document for the Approval of Minnesota's 2016 and 2018 Clean Water Act Section 303(d) Lists on January 28, 2019 ("EPA Decision Document") concluded that there was no reason either to disapprove MPCA's 2016 or 2018 Section 303(d) list or to list any of Minnesota's wild rice waters as impaired due to sulfate in excess of the numeric sulfate standard in Minn. R. 7050.0224. EPA's decision rested solely on its assessment of 24 waters listed in Minn. R. 7050.0470, as stated below:

> In the absence of an assessment by the State of water quality data for the 24 state-designated wild rice waters, EPA independently reviewed water quality data for these 24 waters during its review of the 2016 and 2018 303(d) lists. EPA found that none of the 24 waters had measured sulfate data above the numeric sulfate standard (10 mg/L) for the 2016 and 2018 listing cycles. For this reason and because EPA concludes that there is not a reasonable basis to apply the State's current water quality standard beyond these 24 waters, EPA does not have a reasonable basis to disapprove the 2016 or 2018 303(d) lists for failure to include waters used for the production of wild rice as impaired under Minnesota's currently applicable rules. (EPA Decision Document p. 30, WL 303(d) Ex. 382)

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[3] *See* WaterLegacy Petition for Withdrawal of Program Delegation from the State of Minnesota for NPDES Permits Related to Mining Facilities, pp. 2, 21-26, 29 (July 2, 2015), Petition Exhibits in support of Petition for Withdrawal, pp. 394-435, available at https://www.epa.gov/mn/npdes-petition-program-withdrawal-minnesota.

EPA final decision not to list any Minnesota wild rice impaired waters rested on EPA's assertion that only the 24 wild rice waters listed in Minn. R. 7050.0470 are "recognized by the State as waters used for the production of wild rice." (*Id.*). This conclusion was arbitrary, not in accordance with law, and was contrary to the evidence submitted to EPA for its consideration in the review of MPCA's 2016 and 2018 Section 303(d) lists.

A. Minnesota's numeric sulfate standard (10 mg/L) applies to all class 4A designated for which wild rice is an existing use under the CWA.

Under the CWA, Minnesota's numeric sulfate standard applies when the use of waters for wild rice is an existing use since November 28, 1975. *See* 40 C.F.R. § 131.3(e) ("*Existing uses* are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards."). EPA's novel interpretation of Minnesota's wild rice sulfate water quality standard to apply the numeric sulfate standard (10 mg/L) only to 24 waters listed in Minn. R. 7050.0224 is a clear error of law.

EPA's interpretation is contrary to the plain and unambiguous language of Minn. R. 7050.0224. Such an interpretation has also been rejected in prior EPA Region 5 comments in environmental review and permitting, rejected by Minnesota's ALJ and Chief ALJ in rulemaking, rejected by a Minnesota district court and rejected by the Minnesota Court of Appeals and MPCA in appeal from a permit failing to apply the wild rice sulfate standard to U.S. Steel Minntac Tailings Basin sulfate pollution. EPA's interpretation cannot stand.

1. Plain and unambiguous text of Minn. R. 7050.0224.

The plain text of Minn. R. 7050.0224 precludes exclusion of nearly all class 4A waters from the application of the numeric sulfate standard, as EPA proposed. The plain language of the rule applies to all class 4A waters used for the production of wild rice. The text of Minn. R. 7050.0224, subpart 1 reads as follows:

> The numeric and narrative water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for the agriculture and wildlife designated public uses and benefits . . . . In recognition of the ecological importance of this resource, and in conjunction with Minnesota Indian tribes, selected wild rice waters have been specifically identified [WR] and listed in part 7050.0470, subpart 1. . . If the standards in this part are exceeded in waters of the state that have the class 4 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to the designated uses.

The plain text of this rule states first that "selected wild rice waters" are listed in 7050.0470. The ordinary usage of the word "selected" reflects that there are also other wild rice waters not so selected. The American Heritage Dictionary, for example, defines the adjective "select" to mean "[o]f special quality or value; choice" as in the phrase "select peaches."[4] The listing of selected wild rice waters cannot reasonably be construed to mean that there are no other wild rice waters in Minnesota.

Moreover, the final sentence of subpart 1 unambiguously applies the numeric standards of part 7050.0224 to "waters of the state that have the class 4 designation." The wild rice sulfate numeric standard is contained in subpart 2, which states that it applies to "class 4A waters of the state." The "Class 4A Standard" for sulfates in subpart 2 applies to those waters designated as class 4A waters that are "used for production of wild rice." Minn. R. 7050.0224, subp. 2.

Minnesota's unambiguous regulatory language in Minn. R., 7050.0224 precludes EPA's contrived exclusion from subpart 2 of all class 4A waters of the state where wild rice is an existing use that are not also specially listed in Minn. R. 7050.0470.

2. EPA's prior consistent interpretations.

EPA's parsing Minnesota's wild rice rule to avoid disapproval of MPCA's 2016 and 2018 Section 303(d) lists in EPA's January 28, 2019 Decision Document is inconsistent with more than a decade of its own prior interpretation. EPA Region 5 comments on the draft environmental impact statement ("DEIS") for the Keetac taconite mine expansion on January 27, 2010 stated, "The Draft EIS leaves no doubt that wild rice stands are present in Swan Lake, Swan River, Hay Creek and Hay Lake . . .As a result of the information provided in the Draft EIS, we understand that the MN sulfate standard of 10 mg/L for the protection of wild rice is applicable." (WL 303(d) Ex. 540). Swan Lake, Swan River, Hay Creek and Hay Lake are not listed in Minn. R. 7050.0470.

EPA Region 5 similarly stated in comments on the DEIS for the PolyMet NorthMet copper-nickel mine on February 18, 2010 that the revised/supplemental DEIS should include the 10 mg/L sulfate number among applicable standards because the "DEIS acknowledges isolated patches of wild rice" in the Upper Partridge River. (WL 303(d) Ex. 555). The Partridge River is not listed in Minn. R. 7050.0470. (WL 303(d) Ex. 560).

EPA Region 5 explained in comments on the draft NPDES permit for the U.S. Steel Corp. Minntac Tailings Basin on December 21, 2016 that Minnesota's wild rice sulfate standard applies to waters for which wild rice production is an existing use. EPA concluded:

> Sandy and Little Sandy Lakes (a.k.a. the "Twin Lakes"), on the east side and downstream of the tailings basin, have been known to produce wild rice historically, as documented by the Minnesota Department of Natural Resources (MNDNR) and in more recent years in a diminished capacity as documented by the 1854 Treaty Authority in their 2016 report. The Sand River and Twin Lakes are downstream waters receiving discharges from the tailings basin and it appears that wild rice production is an existing use in these water bodies as defined by 40 C.F.R. § 131.3(e). Therefore, MPCA needs to include the Sand River in the draft NDPES permit including water quality based limits that will meet all applicable water

[4] Select, American Heritage Dictionary of the English Language, available at https://ahdictionary.com/word/search.html?q=selected

> quality standards [including the state's wild rice standard based on the documented wild rice stands in the Sand River and Twin Lakes, or explain why this standard does not apply]. (WL 303(d) Ex. 574)

Neither Sandy Lake nor Little Sandy Lake are listed in Minn. R. 7050.0470.

In its final Decision Document on January 28, 2019, EPA neither acknowledged its prior conclusions nor provided any rationale for deviating from over a decade of consistent interpretation of Minn. R. 7050.0224 to apply Minnesota's numeric sulfate standard to all waters where production of wild rice is a CWA existing use.

3. Minnesota ALJ Report admissions and conclusions.

In January 2018, WaterLegacy submitted and EPA received the ALJ Report from the wild rice rulemaking process. (WL 303(d) Ex. 1-5, 237-318). The ALJ Report was part of the administrative record for EPA Region 5 review of MPCA's 2018 Section 303(d) list.

In the 2017 rulemaking proceedings, MPCA admitted that there were at least 1,300 wild rice waters meeting even its impermissibly underinclusive definition of waters used for the production of wild rice. This admission was noted repeatedly in the ALJ Report. (ALJ Report, p. 5, ¶¶ 85, 88, 89, 110, 114, 134, 180, 234-35, 259; WL 303(d) Ex. 243, 262-63, 267, 269, 273, 282, 293, 300). The ALJ Report further explained that these 1,300 waters were MPCA-identified "regulated wild rice waters." (*Id.* ¶¶ 88, 180; WL 303(d) Ex. 263, 282)

The ALJ Report then found that MPCA's list was, in fact, underinclusive, stating that MPCA "acknowledges that the wild rice waters in this rulemaking may not include every water in Minnesota where the wild rice beneficial use has existed since November 28, 1975" and that MPCA agrees that "it is likely that not all wild rice waters have been identified." (*Id.* ¶¶ 281-82; WL 303(d) Ex. 305-06). Specifically, the ALJ concluded "that the MPCA's proposed list of wild rice waters . . is defective because it fails to include all waters previously identified by the MDNR and federally recognized Indian tribes as waters where wild rice is an existing use since November 28, 1975." (ALJ Report ¶ 287, WL 303(d) Ex. 306).[5] The ALJ also concluded that MPCA's proposed list of approximately 1,300 waters was underinclusive in violation of CWA implementing regulations 40 C.F.R. §§ 131.3 and .11(h)(1). (ALJ Report, p. 5, WL 303(d) Ex. 243).

The ALJ Report proposed that MPCA could cure the defect in its proposed rule by adding to its list of wild rice waters "all waters previously identified by the MDNR and federally recognized Indian tribes as waters where wild rice is an existing use since November 28, 1975." (*Id.* ¶ 288, WL 303(d) Ex. 307).

[5] The ALJ Report contains two paragraphs marked ¶287 and two marked ¶288. The WL 303(d) Ex. pages indicate which paragraph is cited.

The findings and conclusions in the ALJ Report were explicitly confirmed by the Chief ALJ in responding to MPCA's request for review.[6] The Chief ALJ explained, "States are prohibited from removing a designated use, if such a use is an "existing use," unless a use with more stringent criteria is added. An existing use is one "actually attained in the water body on or after November 28, 1975, whether or not it is included in the water quality standards." (Chief ALJ Review Order, p. 11, WL 303(d) Ex. 646 (citing 40 C.F.R. §§ 131.3(e), 131.11(h)). The Chief ALJ concluded that MPCA "cannot establish that it is the sole decider of what constitutes an existing use for purposes of federal law" and that in rejecting the MDNR's report and the 1854 Treaty Authority's list, the MPCA was removing waters that "had already been designated as having wild rice as an existing use under federal law." (*Id*.).

4. Minnesota courts and MPCA's statements.

Minnesota courts have also confirmed that EPA's January 28, 2019 interpretation of Minn. R. 7050.0224 is erroneous. The Ramsey County District Court has found that, consistent with the plain language of the water quality standard, **"**Minnesota's Class 4A water quality standards are intended to protect both naturally occurring vegetation grown in the waters themselves and cultivated crops in the area around the water." *Minn. Chamber of Commerce v. Minn. Pollution Control Agency*, No. 62-CV-10-11824, 2012 Minn. Dist. LEXIS 194 at *14-15 (Minn. Dist. Ct., Second Judicial Dist., May 10, 2012), (WL 303(d) Ex. 583). In response to mining industry plaintiffs' argument that the sulfate standard could not apply to wild rice waters not specifically listed, the District Court specifically found that even the MDNR list of waters where wild rice has been identified the list of waters is "not an exhaustive list of waters used for the production of wild rice. *Id*. at *1, 9, (WL 303(d) Ex. 580, 582).

In appeals from a U.S. Steel Minntac tailings basin NPDES permit that failed to require compliance with Minnesota's 10 mg/L numeric standard limiting sulfate in wild rice waters, the Minnesota Court of Appeals held that the wild rice rule "is a water-quality standard that is subject to enforcement under the CWA." *In re Issuance of an NPDES/SDS Permit to U.S. Steel Corp*., 937 N.W.2d 770, 788 (Minn. App. 2019). In this U.S. Steel Minntac tailings basin case, MPCA disputed whether permit conditions eliminated surface seepage, and the Court of Appeals found that MPCA lacked substantial evidence that Minntac tailings basin surface discharge had been eliminated. *Id.* at 774, 790. The Court of Appeals further explained that in MPCA's brief to the court, MPCA stated it "would enforce the wild rice water quality standard by imposing a WQBEL on U.S. Steel's surface seepage discharges, if applicable." *Id*. at 789. The Court continued, "Based on this representation, if the MPCA determines that WQBELs are required on remand, it would seem to follow that the MPCA would apply the wild rice rule in determining conditions for the NPDES portion of the permit." *Id.*

None of the downstream waters affected by Minntac tailings basin seepage are listed in Minn. R. 7050.0470. However, in an attachment to its Statement of Need and Reasonableness ("SONAR")

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[6] *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, OAH 80-9003-34519, Chief Administrative Law Judge Order on Review of Rules (April 12, 2018) ("Chief ALJ Review Order") at WL 303(d) Ex. 636-51.

for the wild rice rulemaking process,[7] MPCA identified Sandy Lake and Little Sandy Lake – both of which are affected by Minntac tailings basin discharge –as waters used for the production of wild rice. (MPCA SONAR Attach. 2, p. 16, WL 303(d) Ex. 603).

The plain and unambiguous text of Minn. R. 7050.0224, subparts 1-2, the consistent interpretations of EPA Region 5 over the past decade, the ALJ Report on the MPCA wild rice rulemaking proposal, Minnesota courts, and the MPCA itself have all found that Minnesota's sulfate standard applies to class 4A designated waters where there is an existing use for the production of wild rice as defined under the CWA.

B. No evidence supported EPA's Decision Document findings that there were only 24 wild rice waters in Minnesota or that no wild rice waters in Minnesota were impaired due to sulfate exceeding 10 mg/L.

An administrative determination must be based on substantial evidence. 5 U.S.C. § 706(2)(E). EPA's final Decision Document concluding that there was no reason either to disapprove MPCA's 2016 or 2018 Section 303(d) list or to list any of Minnesota's wild rice waters as impaired due to sulfate in excess of the numeric sulfate standard in Minn. R. 7050.0224 was based on EPA's assessment of only 24 Minnesota wild rice waters. (EPA Decision Document p. 30, WL 303(d) Ex. 382).

There is no evidence at all, let alone substantial evidence, that in 2016 or 2018 Minnesota had only 24 wild rice waters where wild rice is an existing use or even only 24 wild rice waters "recognized" by the MPCA.

The ALJ Report provided to EPA with WaterLegacy's 2018 comments clearly stated that MPCA *admitted* during the rulemaking that there are at least 1,300 – and most likely more – wild rice waters in Minnesota regulated by the sulfate water quality standard. (*See* ALJ Report ¶¶ 180, 281-82; WL 303(d) Ex. 282, 305-06). The ALJ Report noted that the Fond du Lac and Grand Portage Bands of Lake Superior Chippewa and WaterLegacy had commented that, by rejecting waters listed in MDNR's 2008 wild rice inventory and in the 1854 Treaty Authority's list of wild rice waters, the MPCA was proposing to "de-list" wild rice waters that had already been designated as waters where wild rice is an existing use. (*Id*. ¶¶269-71, *Id*. 303).

The Chief ALJ has since confirmed in her Review Order that "MPCA's approach excluded hundreds of water bodies previously on lists from the DNR and other sources, including the 1854 Treaty Authority's 2016 and 2017 lists of wild rice waters." (Chief ALJ Review Order, p. 12, WL 303(d) Ex. 647).

In addition to having undisputed evidence of Minnesota's thousands of wild rice waters, EPA had before it in 2016 and 2018 evidence that MPCA had already identified in August 2013 at least 47 wild rice waters impaired due to sulfate levels above Minnesota's numeric (10 mg/L) sulfate

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[7] MPCA SONAR, Amendment of the sulfate water quality standard applicable to wild rice and identification of wild rice waters (July 2017), Attachment 2, Proposed Waters by Basin and the Sources Used to Demonstrate the Beneficial Use (Mar. 21, 2017) at WL 303(d) Ex. 588-631.

standard. In August 2013, as a result of communications with MPCA, EPA knew of MPCA's assessment for sulfate in waters used for the production of wild rice in preparation for MPCA's 2014 Section 303(d) list. (WL 303(d) Ex. 632-33). In addition, WaterLegacy included MPCA's August 2013 chart identifying at least 47 known wild rice impaired waters in comments sent to EPA in 2014, 2016 and 2018. (WL 303(d) Ex. 11, 50-52, 62-64, 76, 128-30, 140-42, 193-95).

EPA's final Decision Document finding no basis to disapprove MPCA's draft 2016 and 2018 Section 303(d) list arbitrarily failed even to consider the evidence before it of wild rice impaired waters identified by MPCA.

EPA's listing of these Minnesota wild rice beneficial use impaired waters is long overdue. The CWA required EPA to disapprove MPCA's draft 2016 and 2018 Section 303(d) lists 30 days after receiving them. 33 U.S.C. § 1313(d)(2); 40 C.F.R. § 130.7(d)(2). Then, after EPA's disapproval, EPA was required to identify the missing wild rice impaired waters within 30 additional days and provide notice and an opportunity for public comment. *Id*. Using the last possible date for EPA action and considering only MPCA's draft 2018 Section 303(d) list submitted on April 11, 2018 (EPA Decision Document, p. 6, WL 303(d) Ex. 358) the CWA required EPA to list Minnesota wild rice impaired waters in June of 2018. From a broader perspective, since at least 2012, EPA has known of MPCA's failure to list a single wild rice impaired water and has withheld and delayed its oversight responsibility to implement the CWA.

The APA not only requires reviewing courts to determine whether agency action is unlawful; the Act also authorizes courts to "compel agency action unlawfully withheld or unreasonably delayed." 5 U.S.C. § 706(1). EPA was required by 2018, if not before, to disapprove MPCA's Section 303(d) lists for failure to list wild rice impaired waters and to list Minnesota wild rice impaired waters. To rectify its unreasonable delay, EPA now has the duty to list Minnesota wild rice waters with sulfate concentrations above 10 mg/L as impaired waters.

3. EPA must deny approval of Minnesota's draft 2020 Section 303(d) list due to MPCA's failure to list any wild rice waters impaired by sulfate in excess of Minnesota's numeric (10 mg/L) water quality standard.

The CWA was enacted to restore and maintain the integrity of the Nation's waters and to strengthen the pollution abatement system when states either failed to develop water quality standards or failed to implement and enforce them. *Cty. of Maui v. Haw. Wildlife Fund*, 140 S. Ct. 1462, 1468 (2020); *EPA v. California ex rel. State Water Res. Control Bd.*, 426 U.S. 200, 202-03 (1976).

States are required to submit their lists of water quality-limited segments and priority rankings to the EPA every two years. 40 C.F.R. § 130.7(d)(1). The EPA has the duty of approving or disapproving the lists. 33 U.S.C. § 1313(d)(2); 40 C.F.R. § 130.7(d)(2). If the EPA disapproves a state's impaired waters list or a TMDL, the EPA must issue its own list or TMDL. *Sierra Club, Inc. v. Leavitt*, 488 F.3d at 908; 33 U.S.C. §§ 1313(d)(2);40 C.F.R. § 130.7(d)(2).

Listing impaired waters when a state has failed to comply with the CWA is among EPA's non-discretionary duties. Although MPCA has advanced various rationales for its failure to list wild rice impaired waters, they are invalid.

A. MPCA's 2020 draft Section 303(d) list must be disapproved because Minnesota's numeric (10 mg/L) sulfate water quality standard is valid and enforceable for purposes of the CWA.

As explained previously, pursuant to Minn. R. 7050.0224, the CWA, and the CWA's implementing regulations, Minnesota's numeric (10 mg/L) sulfate water quality standard applies to class 4A waters that have been used for the production of wild rice at any time since November 28, 1975.

The CWA requires not only that states establish water quality standards for waterbodies within their boundaries. 33 U.S.C. § 1313(a)-(c); 40 C.F.R. §§ 130.2(d), 131.4(a). States must also identify all waterbodies within their boundaries that do not meet or are not expected to meet water quality standards. *Sierra Club, Inc. v. Leavitt*, 488 F.3d 904, 913 (11th Cir. 2019); 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. §§ 130.2(j), 130.7(b)(1).

Although MPCA resisted its application for many years, it is clearly established that Minnesota's numeric (10 mg/L) sulfate water quality standard for wild rice waters is a valid water quality standard that must be enforced by MPCA under the CWA. Under Article VI of the United States Constitution, laws of the United States "shall be the supreme Law of the Land" notwithstanding anything to the contrary in the laws of any state. A state law that conflicts with federal law is "without effect." *Maryland v. Louis*iana. 451 U.S. 725, 746 (1981). The CWA, specifically, is sufficiently comprehensive that pre-emption may be presumed. *Int'l Paper Co. v. Ouellette*. 479 U.S. 418, 491 (1987). A state law is invalid when it "actually conflicts" with the Act or "stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress." *Id*. 491-92.

The Water Division Director of EPA Region 5 advised Minnesota legislators in May 13, 2011 that Minnesota's "federally-approved water quality standard for wild rice waters" of 10 mg/L must be enforced under the CWA. (WL 303(d) Ex. 634). Any change in the wild rice sulfate standard would only be effective for CWA purposes if the change was submitted to EPA for review and approved by EPA as sufficient to protect designated uses. (*Id*. 634-35 (citing 33 U.S.C. §1313(c)(2)(A); 40 C.F.R. §§ 131.5, .6, .11, .21)). EPA has also affirmed in its January 28, 2019 Decision Document, "Minn. 7050.0224 subparts 1 and 2) remains the States federally-approved standard and EPA expects the State to assess waters against its current sulfate criterion specifically those waters that are recognized by the State as waters used for the production of wild rice." (EPA Decision Document p. 30, WL 303(d) Ex. 382).

MPCA attempted to repeal the 10 mg/L wild rice sulfate water quality standard in 2017 and replace the standard with an equation-based standard. This repeal was disapproved by the ALJ and by the Chief ALJ in January 2018 on the grounds that "the repeal conflicts with the requirements" of the CWA and its regulations at 33 U.S.C. § 1313(c), 40 C.F.R. § 131.10(b). (Chief ALJ Report, pp. 1-2 and ALJ Report, p. 5; WL 303(d) Ex. 237-38, 243). MPCA's proposed rule repeal, thus, was defective under Minn. R. 1400.2100(D), prohibiting a rule that conflicts with other applicable law. (ALJ Report ¶226, *Id.* 291). MPCA's proposed rule change was also unreasonable in proposing a repeal without a replacement standard that is equally or more protective of wild rice waters and, thus, defective under Minn. R. 1400.2100(B). (*Id.* ¶ 227, *Id.*).

Minnesota courts have also found that MPCA must enforce the wild rice sulfate standard. Minnesota's Ramsey County District Court explained, that "MPCA's application of the wild rice sulfate rule to protect waters with natural stands of wild rice" is consistent with MPCA's "duty to ensure that the State of Minnesota maintains its responsibility to administer the federal Clean Water Act in Minnesota." *Minn. Chamber of Commerce v. Minn. Pollution Control Agency*, No. 62-CV-10-11824, 2012 Minn. Dist. LEXIS 194 at *15 (WL 303(d) Ex. 583). The Minnesota Court of Appeals has recently held that the wild rice rule "is a water-quality standard that is subject to enforcement under the CWA." *In re Issuance of an NPDES/SDS Permit to U.S. Steel Corp.*, 937 N.W.2d at 788.

B. Any claim by MPCA of insufficient methodology is pretextual as well as an insufficient legal basis for failure to list Minnesota wild rice impaired waters.

The CWA requires that states identify all waterbodies within their boundaries that do not meet or are not expected to meet water quality standards. *See* 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. §§ 130.2(j), 130.7(b)(1). States "cannot shirk this responsibility simply by claiming a lack of current data." *Sierra Club, Inc. v. Leavitt*, 488 F.3d at 913. EPA has agreed, "A lack of a formalized assessment methodology by itself is not a basis for a state to avoid evaluating or using data or information when developing its 303(d) list or to fail to list any water that is appropriate for listing under currently applicable standards (EPA Decision Document Appx. 1, p. 2; WL 303(d) Ex. 384).

By now, it is clear that any claim that a "formalized assessment methodology" must be developed before wild rice waters can be listed is mere pretext for delay. Although MPCA attempted to repeal the 10 mg/L wild rice sulfate water quality standard in order to replace it with a complex equation-based standard, that effort has failed. Determining wild rice impaired waters requires no more than a conventional surface water quality sampling for average sulfate concentrations. MPCA, the 1854 Treaty Authority, and tribes have been collecting and analyzing precisely that type of data for decades.

In addition to disapproving the repeal of Minnesota's 10 mg/L wild rice sulfate water quality standard, the ALJ and Chief ALJ also disapproved MPCA's proposed equation-based sulfate standard on the grounds that it was not rationally related to the MPCA's objective in the rulemaking proceeding. (Chief ALJ Report, pp. 1-2 and ALJ Report, p. 5; *Id.* at 237-38, 243). The ALJ found that the equation-based rule proposed by MPCA "fails to provide the values necessary to insert into the proposed equation to calculate individualized standards for each wild rice water body. Therefore, if the rule is enacted as proposed, there will be no standards when the rule becomes effective." (ALJ Report ¶ 246, *Id*. 296).

Given that the ALJ found MPCA's proposed rule "unconstitutionally void for vagueness" because it "cannot be calculated" without values for iron and organic carbon (*Id*. ¶¶ 247-48, *Id*.), it is not surprising that MPCA believed that its proposed methodology was "insufficient" to identify wild rice impaired waters. But that ship sailed more than two years ago.

After the ALJ rejected its proposed rule, MPCA provided additional submissions and requested the Chief ALJ to review the ALJ Report and make 22 proposed changes, all of which were rejected in the Chief ALJ Review Order on April 12, 2018. (Chief ALJ Review Order, p. 15, WL 303(d) Ex. 650). MPCA then withdrew its proposal for new rulemaking on April 26, 2018, stating the agency would work with legislators "to determine an alternative path forward." (WL 303(d) Ex. 652). The Minnesota Legislature made two attempts to repeal the wild rice sulfate water quality standard in May 2018, both of which were vetoed by Minnesota's Governor. (WL 303(d) Ex. 654-57).

There is a single path forward. That path requires that MPCA (or EPA if MPCA fails to do so) must list all wild rice waters where surface water concentrations of sulfate exceed 10 mg/L.

4. EPA must use all available data, in consultation with tribes, to list wild rice waters impaired by sulfate above Minnesota's numeric (10 mg/L) water quality standard.

EPA is obligated by the CWA and its implementing rules to list as impaired any wild rice water where sulfate concentrations exceed 10 mg/L. In this process, EPA must consult with tribes and use all available data both to identify Minnesota waters where wild rice is an existing use. *See* 40 C.F.R. 130.7(b)(5), (6)(iii).

A copy of MPCA's SONAR Attachment 2 identifying waters that MPCA has admitted are wild rice waters is attached with these comments. (WL 303(d) Ex. 588-631). In addition, these comments attach the inventory of wild rice waters from MDNR's 2008 Report on Natural Wild Rice in Minnesota (WL 303(d) Ex. 658-89) and the current list of Wild Rice Waters in 1854 Territory prepared by the 1854 Treaty Authority (WL 303(d) Ex. 690-700). These authoritative lists of waters where wild rice is an existing use since November 28, 1975 are available data that must be used to identify Minnesota wild rice waters. Further, field research funded by MPCA, field surveys provided by permittees, and conclusions reached by EPA and other state and federal regulatory agencies in environmental review and permitting[8] also provide available data on wild rice waters that must be assessed for compliance with Minnesota's numeric (10 mg/L) sulfate standard in accordance with the CWA.

It is estimated that, when duplicates are removed, there are approximately 2,300 Minnesota waterbodies or segments of waterbodies that have an existing use for wild rice.

In addition, EPA must also review all available data and assessments identifying wild rice waters that are impaired due to sulfate levels above Minnesota's numeric (10 mg/L) water quality standard.

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[8] *See e.g.,* MDNR et al., NorthMet Mining Project and Land Exchange Final Environmental Impact Statement, pp. 4-32 to 4-37 (Nov. 2015) (WL 303(d) Ex. 701-08) concluding that Second Creek is a waterbody with wild rice where the 10 mg/L standard applies.

In August 2013 MPCA identified 47 waters used for the production of wild rice impaired due to sulfate concentrations exceeding Minnesota's 10 mg/L numeric sulfate standard[9] as listed below:

Embarrass River (Embarrass Lake to St. Louis River)
Partridge River (Headwaters to S. Louis River)
Sandy River (Headwaters - Sandy Lake to Pike River)
St. Louis River (Oliver Bridge to Pokegama River)
St. Louis River (Mission Creek to Oliver Bridge)
Bostick Creek (Headwaters to Lake of the Woods)
County Ditch 12 (Headwaters to T113 R36W S8 north line)
Rice Creek (Rice Lake to Elk River)
Long Prairie River (Fish Trap Creek to Crow Wing River)
Rice Creek (Headwaters to Maple River)
Chippewa River (Watson Sag to Minnesota River)
Chippewa River (Unnamed Creek to E. Br. Chippewa River)
Chippewa River (E. Br. Chippewa River to Shakopee Creek)
Chippewa River (Cottonwood Creek to Dry Weather Creek)
Chippewa River (Stowe Lake to Little Chippewa river)
Cannon River (Pine Creek to Belle Creek)
Cannon River (Headwaters to Cannon Lake)
Cannon River (Byllesby Dam to Little Cannon River)
Cannon River (Belle Creek to split near mouth)
Cedar Island Lake (North Portion)
Cedar Island Lake (South Portion)
Fourth Lake
Esquagama Lake
East Vermillion Lake
Trout Lake
Elizabeth Lake (Main Basin)
Swan Lake (West Bay)
Swan Lake (Main Basin)
Preston Lake
Embarrass Lake
Lady Slipper Lake
Monongalia Lake (Main Basin)
Monongalia Lake (Middle Fork Crow)
Crow River Mill Pond (East)
Hay Lake
Big Stone Lake
Lac Qui Parle (NW Bay)
Lac Qui Parle (SE Bay)
Mina Lake
Pearl Lake

[9] The chart from which this list is taken is available at WL 303(d) Ex. 50-52, 62-64, 76, 128-30, 140-42, 193-95.

Sandy Lake
Little Sandy Lake
Marsh Lake
Lillian Lake
Lobster Lake
Sturgeon Lake
Long Lake

The 2018 Tribal Wild Rice Task Force Report ("Tribal Report") (WL 303(d) Ex. 709-82) provides a summary of datasets available to analyze sulfate concentrations in wild rice waters. This summary (*Id*. 742) is copied below:

Table 1. Summary of Datasets Used to Analyze Average Water Body Sulfate Concentrations				
Agency	Area of Data Collection	Number of Sulfate Measurements	Number of Discrete Locations	Years of Collection
Minnesota Pollution Control Agency	St. Louis and Itasca Counties	7,198	906	1974-2016
1854 Treaty Authority	1854 Ceded Territories	309	43	2007 - 2017
Fond du Lac Band of Lake Superior Chippewa	Fond du Lac Reservation	741	39	1998 - 2017
Leech Lake Band of Ojibwe	Leech Lake Reservation	644	80	2012 - 2018
Mille Lacs Band of Ojibwe	Mille Lacs Reservation	55	12	2010 - 2017
Grand Portage Band of Ojibwe	Grand Portage Reservation	1,547	32	2000 - 2018
Minnesota Pollution Control Agency	Mississippi River in Minnesota	1,808	87	1973 - 2017
Prairie Island Indian Community	Lower Mississippi River and backwater pools	325	8	2014 - 2017

The Tribal Report also documents (*Id*. 755) some of the largest sulfate dischargers to wild rice waters by volume and distance as well as by the concentration of average sulfate discharge. This data, in Table 3 of the Tribal Report copied on the next page, could assist EPA in setting priorities for assessment and listing of wild rice impaired waters.

Table 3. Top 16 Dischargers by Volume from MPCA SONAR

Permit Number	Facility Name	Facility Type	Discharge MGD	Discharge CFS	Average Discharge Sulfate Concentration (mg/l)	Distance to Wild Rice (miles)	Draft Wild Rice Water Name
MN0001007	Minnesota Power – Boswell Energy Center	Industrial	161.80	250.34	**586**	0	Blackwater Lake
MN0000990	Minnesota Power – Laskin Energy Center	Industrial	125.4	194.02	**489**	6	Partridge River
MN0049760	Hibbing Taconite Co – Tails Basin Area	Industrial	4.41 - 65	6.82 - 100.57	**62.6** (Little Fork River) **35** (Mississippi River at Grand Rapids)	2	Shannon Lake
MN0069078	Mesabi Mining Area	Industrial	58.4	90.36	**176**	1	Partridge River
MN0029882	Met Council – Blue Lake WWTP	Domestic	42	64.98		0	Blue Lake
MN0055948	Keewatin Taconite Operations – Tailings	Industrial	32.4	50.13	**177**	10	Hay Lake
MN0042536	Cliffs Erie – Hoyt Lakes Mining Area	Industrial	27.45	42.47	**269**	4	Second Creek
MN0044946	United Taconite LLC - Thunderbird Mine	Industrial	27.37	42.35			St. Louis River
MN0046981	Northshore Mining Co – Peter Mitchell	Industrial	24.11	37.3	**112.3** (Rainy River) **22.7** (St. Louis River)	3	Dunka River
MN0057207	US Steel Corp – Minntac Tailings Basin Area	Industrial	17.11	26.47	**1054**	2	Little Sandy Lake
MN0022080	Grand Rapids WWTP	87% Industrial 13% Domestic	15.2	23.52		1	Mississippi River - Grand Rapids
MN0031879	US Steel Corp – Keetac	Industrial	10.17	15.74	**64.8**	9	Leighton Lake
MN0030147	Winona WWTP	Domestic	9.6	17.84		6	Blue lake
MN0001465	Hibbing Taconite Co	Industrial	1.44 - 7.92	2.28 - 12.25		8	St. Louis River Mississippi River- Brainerd
MN0059633	ArcelorMittal Minorca Mine Inc - Laurentian	Industrial	7.9	12.22	**62.8** (Vermillion River), **274** (St. Louis River)	0	St. Louis River
MN0067687	Mesabi Nugget Delaware LLC	Industrial	7.29	11.28	**437**	7	Partridge River

Finally, tribes in Minnesota identified 1854 Ceded Territory wild rice impaired waters in their comments on MPCA's draft 2020 Section 303(d) list (WL 303(d) Ex. 323, 330, 338, 349):

Table 1. Impaired Wild Rice Waters in the 1854 Ceded Territory

Waterbody	MPCA Measured Average Sulfate Concentrations (mg/l)
Birch Lake	110
Embarrass River	71.2
Little Sandy Lake	254.6
Partridge River	264.3
Pike River	110
Sand River	116.8
Sandy Lake	132.3
Second Creek	628.5

Since submitting their comments on MPCA's draft 2020 Section 303(d), some tribal scientists have identified 51 wild rice impaired waterbodies and waterbody segments extending beyond the1854 Ceded Territory based on MPCA locational and sulfate data. This additional list of wild rice impaired waters is attached with these comments. (WL 303(d) Ex. 783-84).

Needless to say, all of the inventories, data, and assessments cited above and attached as exhibits to these comments are available to MPCA and EPA to list Minnesota wild rice impaired waters.

For decades, MPCA has resisted the application of Minnesota's federally-approved wild rice sulfate water quality standard for purposes governed by the CWA, including limiting sulfate discharge affecting navigable waters of the United States and listing wild rice impaired waters. EPA has, on several occasions, advised MPCA that its permits failed to comply with the CWA or that violations of the numeric (10 mg/L) water quality standard for sulfate in wild rice waters should be enforced.

However, in each case, when push came to shove, EPA declined its oversight role and failed to object to permits, to conduct enforcement activities, or most pertinent to these comments, to disapprove draft Section 303(d) lists that failed to identify even a single wild rice impaired water. However, EPA's duties to disapprove impaired waters lists that violate the CWA are non-discretionary. EPA must disapprove MPCA's draft 2020 Section 303(d) list and must list Minnesota wild rice impaired waters in compliance with the CWA and its implementing regulations.

CONCLUSION

Based on the preceding discussion and Exhibits 1-26 (WL 303(d) Ex. 1-784) attached with these comments, WaterLegacy requests that the EPA take the following actions:

1. Reject any MPCA extensions that delay MPCA's submittal of its draft 2020 Section 303(d) list for EPA's consideration.

2. Acknowledge that EPA's approval of Minnesota's 2016 and 2018 Section 303(d) lists on January 28, 2019 was unlawful and unsupported by substantial evidence.

3. Deny approval of Minnesota's draft 2020 Section 303(d) list due to MPCA's failure to list wild rice waters impaired by sulfate in excess of Minnesota's numeric (10 mg/L) water quality standard.

4. Use all available data, in consultation with tribes, to list Minnesota wild rice impaired waters impaired by sulfate in excess of Minnesota's numeric (10 mg/L) water quality standard.

Please do not hesitate to contact me if you have any questions regarding these comments.

Sincerely yours,

Paula G Maccabee

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October 22, 2020

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Re: Minnesota Clean Water Act draft 2020 Section 303(d) List
Failure to List Wild Rice Impaired Waters

WaterLegacy submits this letter on behalf of our members and supporters who have requested for years that the Minnesota Pollution Control Agency (MPCA) and the U.S. Environmental Protection Agency (EPA) comply with the Clean Water Act (CWA) Section 303(d) and list wild rice waters impaired by sulfate pollution in excess of Minnesota's 10 parts per million (mg/L) wild rice sulfate standard.

WaterLegacy submitted comments and exhibits on MPCA's draft Section 303(d) lists in 2012, 2014, 2016 and 2018 documenting the need to list Minnesota wild rice waters impaired due to sulfate pollution. This letter provides comments and exhibits on MPCA's 2020 draft Section 303(d) list and requests the following action:

> MPCA should immediately use all available data to list all wild rice waters within Minnesota's jurisdiction that are impaired by sulfate in excess of Minnesota's numeric (10 mg/L) water quality standard in Minn. R. 7050.0224.

MPCA's non-discretionary obligation to immediately list all wild rice impaired waters within its jurisdiction can be summarized as follows:

1. MPCA is legally required under the CWA. its regulations, and governing state statutes to list waters impaired due to failure to meet water quality standards.

2. No extension of time for MPCA to submit its draft Section 303(d) list is authorized under the CWA or its implementing regulations.

3. Minnesota's numeric (10 mg/L) water quality standard for sulfate in class 4A waters used for the production of wild rice is a valid water quality standard for CWA purposes.

4. Minnesota's numeric (10 mg/L) sulfate water quality standard regulates waters where wild rice is an existing use since November 28, 1975.

5. Any claim by MPCA that a "formalized assessment methodology" must be developed to list wild rice waters is legally insufficient and pretextual.

6. MPCA must use all available data and immediately list all Minnesota waters where wild rice is a CWA existing use impaired by sulfate in excess of Minnesota's numeric (10 mg/L) water quality standard.

DISCUSSION

1. MPCA is legally required under the CWA. its regulations, and governing state statutes to list waters impaired due to failure to meet water quality standards.

The CWA was enacted to ensure to restore and maintain the integrity of the Nation's waters and to strengthen the pollution abatement system when states either failed to develop water quality standards or failed to implement and enforce them. *Cty. of Maui v. Haw. Wildlife Fund*, 140 S. Ct. 1462, 1468 (2020); *EPA v. California ex rel. State Water Res. Control Bd.*, 426 U.S. 200, 202-03 (1976).

The CWA requires not only that states establish water quality standards for waterbodies within their boundaries, including designating uses for waterbodies, such as fishing or agricultural use. 33 U.S.C. § 1313(a)-(c); 40 C.F.R. §§ 130.2(d), 131.4(a). States must also identify all waterbodies within their boundaries that do not meet or are not expected to meet water quality standards. *Sierra Club, Inc. v. Leavitt*, 488 F.3d 904, 913 (11th Cir. 2019); 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. §§ 130.2(j), 130.7(b)(1), 40 C.F.R. §§ 130.7(d)(1).

Minnesota Statutes in chapter 114D, the Clean Water Legacy Act, also impose a non-discretionary duty on MPCA to comply with federal requirements and list impaired waters. Minnesota Statutes 114D.25, subdivision 1 states that the MPCA, "in accordance with federal TMDL requirements, shall: (1) identify impaired waters and propose a list of the waters for review and approval by the United States Environmental Protection Agency."

The Minnesota Legislature has explained the reasons for requiring MPCA to comply with CWA TMDL and impaired waters requirements, stating, "The legislature finds that: (1) there is a close link between protecting, enhancing, and restoring the quality of Minnesota's groundwater and surface waters and the ability to develop the state's economy, enhance its quality of life, and protect its human and natural resources." Minn. Stat. § 114D.15, subd. 4. The goals for implementing the Clean Water Legacy Act are also set forth in the statute. They include "to identify impaired waters in accordance with federal TMDL requirements" and "to achieve compliance with federal Clean Water Act requirements in Minnesota." Minn. Stat. § 114D.10, subd. 2(1),(6).

There is no wiggle room here. The statute defines "federal TMDL requirements" to mean "the requirements of section 303(d) of the Clean Water Act, United States Code, title 33, section 1313(d), and associated regulations and guidance." Minn. Stat. § 114D.15, subd. 4. "Impaired water" means "surface water that does not meet applicable water quality standards." *Id*., subd. 5. And "water quality standards" for Minnesota surface waters are those "found in Minnesota Rules, chapters 7050 and 7052." *Id.*, subd. 12. Under Minnesota's statutory rules of construction, the word "shall" is mandatory. Minn. Stat. § 645.44, subd. 16.

The CWA and Minnesota statutes clearly and positively require[1] MPCA to identify and list all impaired waters within Minnesota's boundaries impaired due to failure to meet state water quality standards.

2. No extension of time for MPCA to submit its draft Section 303(d) list is authorized under the CWA or its implementing regulations.

Neither the CWA nor its implementing regulations authorize an "extension" of time for state submittals to EPA.

The CWA and its implementing regulations are explicit about the timing both for state submittals to EPA and for EPA approvals or disapprovals of state submittals under Section 303(d) [33 U.S.C. 1313(d)]. Regulations implementing the CWA require that states' reports on water quality-impaired segments and control strategies must be submitted "regularly by the States to EPA" every two years. 40 C.F.R. § 130.10 (a), (a)(1). CWA regulations have required since 1994 that each state submit to EPA the lists providing "identification and priority setting for water quality-limited segments still requiring TMDLs" on April 1 of every even-numbered year. 40 C.F.R. § 130.7(b), (d)(1). This instruction to the states is repeated on EPA's website.[2]

EPA's Regional Administrator is then required to either approve or disapprove the state's impaired waters listing and TMDL loadings not later than 30 days after the date of submission. 33 U.S.C. § 1313(d)(2); 40 C.F.R. § 130.7(d)(2). If the EPA Regional Administrator disapproves the state's listing of impaired waters, the EPA shall, not later than 30 days after the date of disapproval (a total of 60 days after the submittal by the state) identify impaired waters in the State. *Id*.

Nothing in the language of the CWA or its regulations provides for "extensions" to allow states to delay submittal of Section 303(d) impaired waters list. To the contrary, CWA regulations provide for a regular, consistent, and rigorous schedule to prevent either states or EPA from delay in fulfilling their obligations to identify impaired waters and set pollutant loads necessary to implement water quality standards.

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[1] *See e.g. In re Welfare of Child of S.L.J*., 772 N.W.2d 833, 838 (Minn. App. 2009) ("Mandamus will lie to compel a governmental body or board to perform a duty which the law clearly and positively requires.")

[2] EPA, Overview of Listing Impaired Waters under CWA Section 303(d) available at https://www.epa.gov/tmdl/overview-listing-impaired-waters-under-cwa-section-303d. All online sites in these comments last visited on Oct. 21, 2020.

Since 2010, when EPA first informed MPCA that the agency was required by law to enforce its wild rice sulfate standard, political pressure has driven MPCA to adopt multiple strategies for delay.[3] We are concerned about the long passage of time without a resolution on the important issue of listing wild rice impaired waters. Even if MPCA's objectives are genuine, neither the CWA nor its regulatory framework allow MPCA to disregard the timetable provided in law to ensure that progress is made in listing and providing loadings to implement water quality standards in impaired waters.

3. Minnesota's numeric (10 mg/L) water quality standard for sulfate in class 4A waters used for the production of wild rice is a valid water quality standard for CWA purposes.

It is clearly established that Minnesota's numeric (10 mg/L) sulfate water quality standard for wild rice waters is a valid water quality standard that must be enforced by MPCA under the CWA. Under Article VI of the United States Constitution, laws of the United States "shall be the supreme Law of the Land" notwithstanding anything to the contrary in the laws of any state. A state law that conflicts with federal law is "without effect." *Maryland v. Loui*siana. 451 U.S. 725, 746 (1981). The CWA, specifically, is sufficiently comprehensive that pre-emption may be presumed. *Int'l Paper Co. v. Ouellette*. 479 U.S. 418, 491 (1987). A state law is invalid when it "actually conflicts" with the Act or "stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress." *Id*. 491-92.

The Water Division Director of EPA Region 5 advised Minnesota legislators in May 13, 2011 that Minnesota's "federally-approved water quality standard for wild rice waters" of 10 mg/L must be enforced under the CWA. (WL 303(d) Ex. 634). Any change in the wild rice sulfate standard would only be effective for CWA purposes if the change was submitted to EPA for review and approved by EPA as sufficient to protect designated uses. (*Id.* 634-35) (citing 33 U.S.C. §1313(c)(2)(A); 40 C.F.R. §§ 131.5, .6, .11, .21). EPA has also affirmed in its January 28, 2019 Decision Document that "Minn. 7050.0224 subparts 1 and 2) remains the States federally-approved standard and EPA expects the State to assess waters against its current sulfate criterion specifically those waters that are recognized by the State as waters used for the production of wild rice." (EPA Decision Document p. 30, WL 303(d) Ex. 382).

Minnesota courts have concluded that MPCA must enforce the wild rice sulfate standard. Minnesota's Ramsey County District Court explained, that "MPCA's application of the wild rice sulfate rule to protect waters with natural stands of wild rice" is consistent with MPCA's "duty to ensure that the State of Minnesota maintains its responsibility to administer the federal Clean Water Act in Minnesota." *Minn. Chamber of Commerce v. Minn. Pollution Control Agency*, No. 62-CV-10-11824, 2012 Minn. Dist. LEXIS 194 at *15 (WL 303(d) Ex. 583). In appeals from a U.S. Steel Minntac tailings basin National Pollutant Discharge Elimination System, ("NPDES") permit that failed to require compliance with Minnesota's 10 mg/L numeric standard limiting

[3] *See* WaterLegacy Petition for Withdrawal of Program Delegation from the State of Minnesota for NPDES Permits Related to Mining Facilities, pp. 2, 21-26, 29 (July 2, 2015), Petition Exhibits in support of Petition for Withdrawal, pp. 394-435, available at https://www.epa.gov/mn/npdes-petition-program-withdrawal-minnesota.

sulfate in wild rice waters, the Minnesota Court of Appeals held that the wild rice rule "is a water-quality standard that is subject to enforcement under the CWA." *In re Issuance of an NPDES/SDS Permit to U.S. Steel Corp*., 937 N.W.2d 770, 788 (Minn. App. 2019).

4. Minnesota's numeric (10 mg/L) sulfate water quality standard regulates waters where wild rice is an existing use since November 28, 1975.

Minnesota's numeric (10 mg/L) water quality standard for sulfate in Minn. R. 7050.0224, subparts 1 and 2 applies to all class 4A where wild rice is an existing use since November 28, 1975.[4]

EPA's final decision on January 28, 2019 declining to disapprove MPCA's 2016 or 2018 Section 303(d) list or to list any of Minnesota's wild rice waters ("EPA Decision Document) was premised on the assumption that only the 24 wild rice waters listed in Minn. R. 7050.0470 need be assessed for sulfate. (EPA Decision Document p. 30, WL 303(d) Ex. 382). EPA's interpretation of Minn. R. 7050.0224 was clearly erroneous.

EPA's interpretation is contrary to the plain and unambiguous language of Minn. R. 7050.0224. Such an interpretation has also been rejected in prior EPA Region 5 comments in environmental review and permitting, rejected by Minnesota's ALJ and Chief ALJ in rulemaking, rejected by a Minnesota district court and rejected by the Minnesota Court of Appeals and MPCA in appeal from a permit failing to apply the wild rice sulfate standard to U.S. Steel Minntac Tailings Basin sulfate pollution. MPCA must apply Minnesota's numeric (10 mg/L) water quality standard for sulfate to waters used for the production of wild rice since November 28, 1975.

A. Plain and unambiguous text of Minn. R. 7050.0224.

The plain text of Minn. R. 7050.0224 requires application of the numeric sulfate standard to all class 4A waters used for the production of wild rice. The text of Minn. R. 7050.0224, subpart 1 reads as follows:

> The numeric and narrative water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for the agriculture and wildlife designated public uses and benefits . . . . In recognition of the ecological importance of this resource, and in conjunction with Minnesota Indian tribes, selected wild rice waters have been specifically identified [WR] and listed in part 7050.0470, subpart 1. . . If the standards in this part are exceeded in waters of the state that have the class 4 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to the designated uses.

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[4] *See* 40 C.F.R. §§ 131.3(e) ("*Existing uses* are those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards."); 131.10(h)(1) ("States may not remove designated uses if (1) they are existing uses, as defined in § 131.3, unless a use requiring more stringent criteria is added.").

The plain text of this rule states first that "selected wild rice waters" are listed in 7050.0470. The ordinary usage of the word "selected" reflects that there are also other wild rice waters not so selected. The American Heritage Dictionary, for example, defines the adjective "select" to mean "[o]f special quality or value; choice" as in the phrase "select peaches."[5] The listing of selected wild rice waters cannot reasonably be construed to mean that there are no other wild rice waters in Minnesota.

Moreover, the final sentence of subpart 1 unambiguously applies the numeric standards of part 7050.0224 to "waters of the state that have the class 4 designation." The wild rice sulfate numeric standard is contained in subpart 2, which states that it applies to "class 4A waters of the state." The "Class 4A Standard" for sulfates in subpart 2 applies to those waters that designated as class 4A waters that are "used for production of wild rice." Minn. R. 7050.0224, subp. 2.

Minnesota's unambiguous regulatory language in Minn. R., 7050.0224 precludes exclusion from subpart 2 of all class 4A waters of the state where wild rice is an existing use that are not also specially listed in Minn. R. 7050.0470.

B. EPA's longstanding and consistent interpretations.

For more than a decade, the EPA Region 5 water division has interpreted Minn. R. 7050.0224 to apply to waters which are, in fact, used for the production of wild rice as an existing use under the CWA. EPA Region 5 comments on the draft environmental impact statement ("DEIS") for the Keetac taconite mine expansion on January 27, 2010 stated, "The Draft EIS leaves no doubt that wild rice stands are present in Swan Lake, Swan River, Hay Creek and Hay Lake . . .As a result of the information provided in the Draft EIS, we understand that the MN sulfate standard of 10 mg/L for the protection of wild rice is applicable." (WL 303(d) Ex. 540). Swan Lake, Swan River, Hay Creek and Hay Lake are not listed in Minn. R. 7050.0470.

EPA Region 5 similarly stated in comments on the DEIS for the PolyMet NorthMet copper-nickel mine on February 18, 2010 that the revised/supplemental DEIS should include the 10 mg/L sulfate number among applicable standards because the "DEIS acknowledges isolated patches of wild rice" in the Upper Partridge River. (WL 303(d) Ex. 555). The Partridge River is not listed in Minn. R. 7050.0470. (WL 303(d) Ex. 560).

EPA Region 5 explained in comments on the draft NPDES permit for the U.S. Steel Corp. Minntac Tailings Basin on December 21, 2016 that Minnesota's wild rice sulfate standard applies to waters for which wild rice production is an existing use. EPA concluded:

> Sandy and Little Sandy Lakes (a.k.a. the "Twin Lakes"), on the east side and downstream of the tailings basin, have been known to produce wild rice historically, as documented by the Minnesota Department of Natural Resources (MNDNR) and in more recent years in a diminished capacity as documented by the 1854 Treaty Authority in their 2016 report. The Sand River and Twin Lakes are

[5] Select, American Heritage Dictionary of the English Language, available at https://ahdictionary.com/word/search.html?q=selected

> downstream waters receiving discharges from the tailings basin and it appears that wild rice production is an existing use in these water bodies as defined by 40 C.F.R. § 131.3(e). Therefore, MPCA needs to include the Sand River in the draft NDPES permit including water quality based limits that will meet all applicable water quality standards [including the state's wild rice standard based on the documented wild rice stands in the Sand River and Twin Lakes, or explain why this standard does not apply]. (WL 303(d) Ex. 574)

Neither Sandy Lake nor Little Sandy Lake are listed in Minn. R. 7050.0470.

C. Minnesota ALJ Report conclusions.

MPCA may have prepared its draft 2018 Section 303(d) list before the Administrative Law Judge ("ALJ") and Chief ALJ issued their reports on MPCA's proposed wild rice rulemaking in January 2018 ("ALJ Report" and "Chief ALJ Report").[6] However, by the time MPCA prepared its draft 2020 Section 303(d) list, the Agency was well aware of the conclusions reached by the ALJ and Chief ALJ regarding application of Minnesota's wild rice sulfate water quality standard to wild rice waters.

In the 2017 rulemaking proceedings, MPCA admitted that there were at least 1,300 wild rice waters meeting even its impermissibly underinclusive definition of waters used for the production of wild rice. This admission was noted repeatedly in the ALJ Report. (ALJ Report, p. 5, ¶¶ 85, 88, 89, 110, 114, 134, 180, 234-35, 259; WL 303(d) Ex. 243, 262-63, 267, 269, 273, 282, 293, 300). The ALJ Report further stated that these 1,300 waters were MPCA-identified "regulated wild rice waters." (*Id.* ¶¶ 88, 180; WL 303(d) Ex. 263, 282)

The ALJ Report then found that MPCA's list was, in fact, under-inclusive, stating that MPCA "acknowledges that the wild rice waters in this rulemaking may not include every water in Minnesota where the wild rice beneficial use has existed since November 28, 1975" and that MPCA agrees that "it is likely that not all wild rice waters have been identified." (*Id.* ¶¶ 281-82; WL 303(d) Ex. 305-06).

Specifically, the ALJ concluded that "the MPCA's proposed list of wild rice waters . . is defective because it fails to include all waters previously identified by the MDNR and federally recognized Indian tribes as waters where wild rice is an existing use since November 28, 1975." (ALJ Report ¶ 287, WL 303(d) Ex. 306).[7] The ALJ also concluded that MPCA's proposed list of approximately 1,300 waters was underinclusive in violation of CWA implementing regulations 40 C.F.R. §§ 131.3 and .11(h)(1). (ALJ Report, p. 5, WL 303(d) Ex. 243).

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[6] *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, OAH 80-9003-34519, Reports of the Administrative Law Judge, (Jan. 9, 2018) ("ALJ Report") and the Chief Administrative Law Judge (Jan. 11, 2018) ("Chief ALJ Report") at WL 303(d) Ex. 237-318.

[7] The ALJ Report contains two paragraphs marked ¶287 and two marked ¶288. The WL 303(d) Ex. pages indicate which paragraph is cited.

The ALJ Report proposed that MPCA could cure the defect in its proposed rule by adding to its list of wild rice waters "all waters previously identified by the MDNR and federally recognized Indian tribes as waters where wild rice is an existing use since November 28, 1975." (*Id.* ¶ 288, WL 303(d) Ex. 307).

The findings and conclusions in the ALJ Report were explicitly confirmed by the Chief ALJ in responding to MPCA's request for review.[8] The Chief ALJ explained, "States are prohibited from removing a designated use, if such a use is an "existing use," unless a use with more stringent criteria is added. An existing use is one "actually attained in the water body on or after November 28, 1975, whether or not it is included in the water quality standards." (Chief ALJ Review Order, p. 11, WL 303(d) Ex. 646 (citing 40 C.F.R. §§ 131.3(e), 131.11(h)).

The Chief ALJ found in her Review Order that "MPCA's approach excluded hundreds of water bodies previously on lists from the DNR and other sources, including the 1854 Treaty Authority's 2016 and 2017 lists of wild rice waters." (Chief ALJ Review Order, p. 12, WL 303(d) Ex. 647). The Chief ALJ concluded that MPCA "cannot establish that it is the sole decider of what constitutes an existing use for purposes of federal law" and that in rejecting the MDNR's report and the 1854 Treaty Authority's list, the MPCA was removing waters that "had already been designated as having wild rice as an existing use under federal law." (*Id*.).

D. Minnesota courts and MPCA's own statements.

Minnesota courts have also confirmed that Minn. R. 7050.0224 is not limited to the selected wild rice waters listed in Minn. R. 7050.0470. The Ramsey County District Court found that, consistent with the plain language of the water quality standard, "Minnesota's Class 4A water quality standards are intended to protect both naturally occurring vegetation grown in the waters themselves and cultivated crops in the area around the water." *Minn. Chamber of Commerce v. Minn. Pollution Control Agency*, No. 62-CV-10-11824, 2012 Minn. Dist. LEXIS 194 at *14-15 (Minn. Dist. Ct., Second Judicial Dist., May 10, 2012), (WL 303(d) Ex. 583). In response to mining industry plaintiffs' arguments that the sulfate standard could not apply to wild rice waters not specifically listed, the District Court found that even the MDNR list of waters where wild rice has been identified is "not an exhaustive list of waters used for the production of wild rice. *Id*. at *1, 9, (WL 303(d) Ex. 580, 582).

As stated above, the Court of Appeals held on appeal from MPCA's issuance of the U.S. Steel Minntac tailings basin NPDES permit that the wild rice standard is enforceable under the CWA. *In re Issuance of an NPDES/SDS Permit to U.S. Steel Corp*., 937 N.W.2d at 788. MPCA disputed whether permit conditions eliminated surface seepage, and the Court found that MPCA lacked substantial evidence that Minntac tailings basin surface discharge had been eliminated. *Id.* at 774, 790. The Court of Appeals then explained that in MPCA's brief to the Court, MPCA stated it "would enforce the wild rice water quality standard by imposing a WQBEL on U.S. Steel's surface seepage discharges, if applicable." *Id*. at 789. The Court continued, "Based on this representation,

[8] *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, OAH 80-9003-34519, Chief Administrative Law Judge Order on Review of Rules (April 12, 2018) ("Chief ALJ Review Order") at WL 303(d) Ex. 636-51.

if the MPCA determines that WQBELs are required on remand, it would seem to follow that the MPCA would apply the wild rice rule in determining conditions for the NPDES portion of the permit." *Id.*

None of the downstream waters affected by Minntac tailings basin seepage are listed as wild rice waters in Minn. R. 7050.0470. However, in an attachment to its Statement of Need and Reasonableness ("SONAR") for the wild rice rulemaking process,[9] MPCA identified Sandy Lake and Little Sandy Lake – both of which are affected by Minntac tailings basin discharge – as waters used for the production of wild rice. (MPCA SONAR Attach. 2, p. 16, WL 303(d) Ex. 603).

The plain and unambiguous text of Minn. R. 7050.0224, subparts 1-2, the consistent interpretations of EPA Region 5 over the past decade, the ALJ Report and Chief ALJ Review pertaining to the MPCA wild rice rulemaking proposal, Minnesota courts, and the MPCA itself have all found that Minnesota's sulfate standard applies to class 4A designated waters where there is an existing use for the production of wild rice as defined under the CWA.

5. Any claim by MPCA that a "formalized assessment methodology" must be developed to list wild rice waters is legally insufficient and pretextual.

The CWA requires that states identify all waterbodies within their boundaries that do not meet or are not expected to meet water quality standards. *See* 33 U.S.C. § 1313(d)(1)(A); 40 C.F.R. §§ 130.2(j), 130.7(b)(1). States "cannot shirk this responsibility simply by claiming a lack of current data." *Sierra Club, Inc. v. Leavitt*, 488 F.3d at 913. In its recent Decision Document reviewing MPCA's draft 2016 and 2018 Section 303(d) lists EPA stated, "A lack of a formalized assessment methodology by itself is not a basis for a state to avoid evaluating or using data or information when developing its 303(d) list or to fail to list any water that is appropriate for listing under currently applicable standards (EPA Decision Document Appx. 1, p. 2; WL 303(d) Ex. 384).

By now, it is clear that any claim that a "formalized assessment methodology" must be developed before wild rice waters can be listed would be mere pretext for delay. Although MPCA attempted to repeal the 10 mg/L wild rice sulfate water quality standard in order to replace it with a complex equation-based standard, that effort has failed. Determining wild rice impaired waters requires no more than a conventional surface water quality sampling for average sulfate concentrations. MPCA, the 1854 Treaty Authority, and tribes have been collecting and analyzing precisely that type of data for decades.

MPCA attempted to repeal the 10 mg/L wild rice sulfate water quality standard in 2017 and replace the standard with an equation-based standard. This repeal was disapproved by the ALJ and by the Chief ALJ in January 2018 on the grounds that "the repeal conflicts with the requirements" of the CWA and its regulations at 33 U.S.C. § 1313(c), 40 C.F.R. § 131.10(b). (Chief ALJ Report, pp. 1-2 and ALJ Report, p. 5; WL 303(d) Ex. 237-38, 243). Thus, repeal was defective under Minn. R. 1400.2100(D), prohibiting a rule that conflicts with other applicable law. (ALJ Report ¶226, *Id.* 291). MPCA's proposed rule change was also unreasonable in

[9] MPCA SONAR, Amendment of the sulfate water quality standard applicable to wild rice and identification of wild rice waters (July 2017), Attachment 2, Proposed Waters by Basin and the Sources Used to Demonstrate the Beneficial Use (Mar. 21, 2017) at WL 303(d) Ex. 588-631.

proposing a repeal without a replacement standard that is equally or more protective of wild rice waters and, thus, defective under Minn. R. 1400.2100(B). (*Id*. ¶ 227, *Id*.).

The ALJ and Chief ALJ also disapproved the equation-based sulfate standard on the grounds that it was not rationally related to the MPCA's objective in the rulemaking proceeding. (Chief ALJ Report, pp. 1-2 and ALJ Report, p. 5; *Id.* at 237-38, 243). The ALJ found that the equation-based rule proposed by MPCA "fails to provide the values necessary to insert into the proposed equation to calculate individualized standards for each wild rice water body. Therefore, if the rule is enacted as proposed, there will be no standards when the rule becomes effective." (ALJ Report ¶246, *Id*. 296).

Given that the ALJ found that the rule "unconstitutionally void for vagueness" because without values for iron and organic carbon it "cannot be calculated," (*Id*. ¶¶ 247-48, *Id*.) it is not surprising that MPCA believed that its proposed methodology was "insufficient" to identify wild rice impaired waters. But that ship sailed more than two years ago.

After the ALJ rejected its proposed rule, MPCA provided additional submissions and requested the Chief ALJ to review the ALJ Report and make 22 proposed changes, all of which were rejected in the Chief ALJ Review Order on April 12, 2018. (Chief ALJ Review Order, p. 15, WL 303(d) Ex. 650). MPCA then withdrew its proposal for new rulemaking on April 26, 2018, stating the agency would work with legislators "to determine an alternative path forward." (WL 303(d) Ex. 652). The Minnesota Legislature made two attempts to repeal the wild rice sulfate water quality standard in May 2018, both of which were vetoed by Minnesota's Governor. (WL 303(d) Ex. 654-57).

There is a single path forward. That path requires that MPCA list all wild rice waters where surface water concentrations of sulfate exceed 10 mg/L.

6. MPCA must use all available data and immediately list all Minnesota waters where wild rice is a CWA existing use impaired by sulfate in excess of Minnesota's numeric (10 mg/L) water quality standard

MPCA is obligated by the CWA, its implementing rules, and chapter 114D of Minnesota Statutes to list as impaired any wild rice water where sulfate concentrations exceed 10 mg/L. In this process, MPCA must use all available data both to identify Minnesota waters where wild rice is an existing use. 40 C.F.R. 130.7(b)(5), (6)(iii).

During the course of rulemaking, MPCA admitted that all waters listed in MPCA's SONAR Attachment 2 are wild rice waters. This list is attached with these comments. (WL 303(d) Ex. 588-631). However, both the ALJ and Chief ALJ found MPCA's list underinclusive in terms of listing all Minnesota waters where wild rice is a CWA existing use.

The inventory of wild rice waters from MDNR's 2008 Report on Natural Wild Rice in Minnesota (WL 303(d) Ex. 658-89) and the current list of Wild Rice Waters in 1854 Territory prepared by the 1854 Treaty Authority (WL 303(d) Ex. 690-700) are attached with these comments. These authoritative lists of waters where wild rice is an existing use since November 28, 1975 are available data that must be used to identify Minnesota wild rice waters. In addition, field research funded by MPCA, field surveys provided by permittees, and conclusions reached by EPA and other state and federal regulatory agencies in environmental review and permitting[10] also provide available data on wild rice waters that must be assessed for compliance with Minnesota's numeric (10 mg/L) sulfate standard in accordance with the CWA.

It is estimated that, when duplicates are removed, there are approximately 2,300 Minnesota waterbodies or segments of waterbodies that have an existing use for wild rice.

In addition, MPCA must also review all available data and assessments identifying wild rice waters that are impaired due to sulfate levels above Minnesota's numeric (10 mg/L) water quality standard.

In August 2013, MPCA identified 47 wild rice waters impaired due to excess sulfate concentrations. WaterLegacy's comments on MPCA's draft 2104, 2016, and 2018 Section 303(d) requested that MPCA list these waters as impaired. (WL 303(d) Ex. 11, 50-52, 62-64, 76, 128-30, 140-42, 193-95). For MPCA's convenience, the wild rice impaired waters identified by MPCA in August 2013 are listed below:

Embarrass River (Embarrass Lake to St. Louis River)
Partridge River (Headwaters to S. Louis River)
Sandy River (Headwaters - Sandy Lake to Pike River)
St. Louis River (Oliver Bridge to Pokegama River)
St. Louis River (Mission Creek to Oliver Bridge)
Bostick Creek (Headwaters to Lake of the Woods)
County Ditch 12 (Headwaters to T113 R36W S8 north line)
Rice Creek (Rice Lake to Elk River)
Long Prairie River (Fish Trap Creek to Crow Wing River)
Rice Creek (Headwaters to Maple River)
Chippewa River (Watson Sag to Minnesota River)
Chippewa River (Unnamed Creek to E. Br. Chippewa River)
Chippewa River (E. Br. Chippewa River to Shakopee Creek)
Chippewa River (Cottonwood Creek to Dry Weather Creek)
Chippewa River (Stowe Lake to Little Chippewa river)
Cannon River (Pine Creek to Belle Creek)
Cannon River (Headwaters to Cannon Lake)
Cannon River (Byllesby Dam to Little Cannon River)
Cannon River (Belle Creek to split near mouth)
Cedar Island Lake (North Portion)
Cedar Island Lake (South Portion)
Fourth Lake
Esquagama Lake
East Vermillion Lake
Trout Lake

[10] *See e.g.,* MDNR et al., NorthMet Mining Project and Land Exchange Final Environmental Impact Statement, pp. 4-32 to 4-37 (Nov. 2015) (WL 303(d) Ex. 701-08) concluding that Second Creek is a waterbody with wild rice where the 10 mg/L standard applies.

Elizabeth Lake (Main Basin)
Swan Lake (West Bay)
Swan Lake (Main Basin)
Preston Lake
Embarrass Lake
Lady Slipper Lake
Monongalia Lake (Main Basin)
Monongalia Lake (Middle Fork Crow)
Crow River Mill Pond (East)
Hay Lake
Big Stone Lake
Lac Qui Parle (NW Bay)
Lac Qui Parle (SE Bay)
Mina Lake
Pearl Lake
Sandy Lake
Little Sandy Lake
Marsh Lake
Lillian Lake
Lobster Lake
Sturgeon Lake
Long Lake

The 2018 Tribal Wild Rice Task Force Report ("Tribal Report") (WL 303(d) Ex. 709-82) provides a summary of datasets available to analyze sulfate concentrations in wild rice waters. This summary in Table 1 of the Tribal Report (*Id*. 742) is copied at the top of the next page:

Table 1. Summary of Datasets Used to Analyze Average Water Body Sulfate Concentrations

Agency	Area of Data Collection	Number of Sulfate Measurements	Number of Discrete Locations	Years of Collection
Minnesota Pollution Control Agency	St. Louis and Itasca Counties	7,198	906	1974-2016
1854 Treaty Authority	1854 Ceded Territories	309	43	2007 - 2017
Fond du Lac Band of Lake Superior Chippewa	Fond du Lac Reservation	741	39	1998 - 2017
Leech Lake Band of Ojibwe	Leech Lake Reservation	644	80	2012 - 2018
Mille Lacs Band of Ojibwe	Mille Lacs Reservation	55	12	2010 - 2017
Grand Portage Band of Ojibwe	Grand Portage Reservation	1,547	32	2000 - 2018
Minnesota Pollution Control Agency	Mississippi River in Minnesota	1,808	87	1973 - 2017
Prairie Island Indian Community	Lower Mississippi River and backwater pools	325	8	2014 - 2017

The Tribal Report also documents (*Id.* 755) some of the largest sulfate dischargers to wild rice waters by volume and distance as well as by the concentration of average sulfate discharge. This data could assist MPCA in setting priorities for listing wild rice impaired waters.

Table 3. Top 16 Dischargers by Volume from MPCA SONAR

Permit Number	Facility Name	Facility Type	Discharge MGD	Discharge CFS	Average Discharge Sulfate Concentration (mg/l)	Distance to Wild Rice (miles)	Draft Wild Rice Water Name
MN0001007	Minnesota Power – Boswell Energy Center	Industrial	161.80	250.34	**586**	0	Blackwater Lake
MN0000990	Minnesota Power – Laskin Energy Center	Industrial	125.4	194.02	**489**	6	Partridge River
MN0049760	Hibbing Taconite Co – Tails Basin Area	Industrial	4.41 - 65	6.82 - 100.57	**62.6** (Little Fork River) **35** (Mississippi River at Grand Rapids)	2	Shannon Lake
MN0069078	Mesabi Mining Area	Industrial	58.4	90.36	**176**	1	Partridge River
MN0029882	Met Council – Blue Lake WWTP	Domestic	42	64.98		0	Blue Lake
MN0055948	Keewatin Taconite Operations – Tailings	Industrial	32.4	50.13	**177**	10	Hay Lake
MN0042536	Cliffs Erie – Hoyt Lakes Mining Area	Industrial	27.45	42.47	**269**	4	Second Creek
MN0044946	United Taconite LLC - Thunderbird Mine	Industrial	27.37	42.35			St. Louis River
MN0046981	Northshore Mining Co – Peter Mitchell	Industrial	24.11	37.3	**112.3** (Rainy River) **22.7** (St. Louis River)	3	Dunka River
MN0057207	US Steel Corp – Minntac Tailings Basin Area	Industrial	17.11	26.47	**1054**	2	Little Sandy Lake
MN0022080	Grand Rapids WWTP	87% Industrial 13% Domestic	15.2	23.52		1	Mississippi River - Grand Rapids
MN0031879	US Steel Corp – Keetac	Industrial	10.17	15.74	**64.8**	9	Leighton Lake
MN0030147	Winona WWTP	Domestic	9.6	17.84		6	Blue lake
MN0001465	Hibbing Taconite Co	Industrial	1.44 - 7.92	2.28 - 12.25		8	St. Louis River Mississippi River- Brainerd
MN0059633	ArcelorMittal Minorca Mine Inc - Laurentian	Industrial	7.9	12.22	**62.8** (Vermillion River), **274** (St. Louis River)	0	St. Louis River
MN0067687	Mesabi Nugget Delaware LLC	Industrial	7.29	11.28	**437**	7	Partridge River

Finally, tribes in Minnesota identified 1854 Ceded Territory wild rice impaired waters in their comments on MPCA's draft 2020 Section 303(d) list (WL 303(d) Ex. 323, 330, 338, 349):

Table 1. Impaired Wild Rice Waters in the 1854 Ceded Territory

Waterbody	MPCA Measured Average Sulfate Concentrations (mg/l)
Birch Lake	110
Embarrass River	71.2
Little Sandy Lake	254.6
Partridge River	264.3
Pike River	110
Sand River	116.8
Sandy Lake	132.3
Second Creek	628.5

Since submitting their comments on MPCA's draft 2020 Section 303(d), some tribal scientists have identified 51 wild rice impaired waterbodies and waterbody segments extending beyond the1854 Ceded Territory based on MPCA locational and sulfate data. This additional list of wild rice impaired waters is attached with these comments. (WL 303(d) Ex. 783-84).

Tribes, MDNR, field research funded by MPCA, and field surveys supplied by permittees to MPCA have documented hundreds of additional wild rice waters beyond the 1,300 acknowledged by MPCA in rulemaking. Along with listing the high priority wild rice impaired waters previously identified by MPCA and tribes, MPCA must list all wild rice impaired waters where available data confirms that wild rice is an existing use since November 28, 1975 and sulfate concentrations exceed Minnesota's numerical (10 mg/L) water quality standard.

For decades, MPCA has resisted the application of Minnesota's federally-approved wild rice sulfate water quality standard for purposes governed by the CWA, including limiting sulfate discharge affecting navigable waters of the United States in NPDES permits, enforcing permit violations of the numeric (10 mg/L) water quality standard for sulfate in wild rice waters, or listing wild rice impaired waters. MPCA has succumbed to political pressure, and natural stands of wild rice have been decimated.

It is now time, in accordance with duties clearly and positively required of MPCA under the CWA and Minnesota Statutes, for MPCA to change course and to list, protect, and restore wild rice impaired waters.

CONCLUSION

Based on the preceding discussion and Exhibits 1-26 (WL 303(d) Ex. 1-784) attached with these comments, WaterLegacy requests that MPCA take the following action:

> MPCA should immediately use all available data to list all wild rice waters within Minnesota's jurisdiction that are impaired by sulfate in excess of Minnesota's numeric (10 mg/L) water quality standard in Minn. R. 7050.0224.

Please feel free to contact me if you have any questions regarding the issues or information presented in WaterLegacy's comments and exhibits.

Sincerely yours,

Paula G. Maccabee

Paula G. Maccabee
WaterLegacy Advocacy Director and Counsel

Minnesota Clean Water Act Section 303(d) List
Exhibits to WaterLegacy Comments (Oct. 22, 2020)

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Date: Tuesday, January 23, 2018 at 9:35:26 AM Central Standard Time
From: Wester, Barbara
To: Paula Maccabee, miranda.nichols@state.mn.us
CC: Proto, Paul

hi paula epa is acknowledging receipt of your comments as well. barbara

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From: Paula Maccabee [mailto:pmaccabee@justchangelaw.com]
Sent: Monday, January 22, 2018 9:36 PM
To: miranda.nichols@state.mn.us
Cc: Wester, Barbara <wester.barbara@epa.gov>; Proto, Paul <proto.paul@epa.gov>
Subject: WaterLegacy Comment on Minnesota's 2018 Draft Clean Water Act Section 303(d) Impaired Waters List

Dear Ms. Nichols,

Enclosed, please find WaterLegacys comments on Minnesotas 2018 Draft Clean Water Act Section 303(d) Impaired Waters List along with its attachments.

We would appreciate your email confirmation that you have received these materials.

Thank you,

Paula Maccabee, Esq.
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January 22, 2018

Miranda Nichols (Miranda.nichols@state.mn.us)
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155

RE: Minnesota 2018 Draft Clean Water Act Section 303(d) Impaired Waters List

Dear Ms. Nichols,

The following comments on Minnesota's 2018 Draft Impaired Waters Clean Water Act Section 303(d) List are submitted on behalf of WaterLegacy, a non-profit organization formed to protect Minnesota waters and the communities that rely on them.

WaterLegacy's comments focus on a singular, but important aspect of the Minnesota Pollution Control Agency's (MPCA) responsibility under the Clean Water Act Section 303(d) program. *That is the MPCA's failure to list even a single wild rice water impaired due to sulfate pollution exceeding Minnesota's existing wild rice sulfate water quality standard*.

WaterLegacy has commented to the MPCA since 2012 and has expressed our concerns to the U. S. Environmental Protection Agency (EPA) since 2014 regarding the MPCA's failure to list impaired wild rice waters, despite ample evidence that many Minnesota wild rice waters have sulfate levels in excess of the 10 milligrams per liter (mg/L) water quality standard,[1] including waters where wild rice has been significantly impaired by discharge of high levels of sulfate in wastewater. We have consistently maintained that Minnesota's failure to list impaired wild rice waters violates the Clean Water Act and that the EPA is obligated under the Act[2] to deny approval of Minnesota's draft impaired waters list to the extent that it excludes wild rice waters.

Rather than repeat WaterLegacy's legal and factual arguments yet another time, please find attached with this letter and incorporated herein the following documents:

2012-2-20	WaterLegacy Comment Letter to H. Markus, MPCA, regarding Minnesota Draft 2012 List of Impaired Waters (2 pages)
2014-2-10	WaterLegacy Comment Letter to M. Nichols, MPCA, Regarding Minnesota Draft 2014 Impaired Waters List with Exhibits (46 pages)
2014-5-28	WaterLegacy Letter to T. Hyde and P. Proto, EPA, Regarding Minnesota Draft 2014 Impaired Waters List with Exhibits (20 pages).

[1] Minn. R. 7050.0224, Subp. 2.
[2] 33 U.S.C. §1313(d)(2); 40 C.F.R. §130.7(d)(2).

2016-8-26 WaterLegacy Comment Letter to M. Nichols, MPCA, Regarding Minnesota 2016 Draft Clean Water Act Impaired Waters List with Exhibits (137 pages)

2016-8-26 WaterLegacy Letter to T. Hyde, EPA, Regarding Minnesota 2014 and 2016 Draft Clean Water Act Impaired Waters List with Attachments (27 pages).

For the Minnesota Legislature and, apparently, the MPCA as well, it is an inconvenient truth that, since 1973, Minnesota had had a water quality standard that limits sulfate in waters where wild rice is present to 10 mg/L.[3]

It seems to be equally inconvenient to regulators that a State "has a mandatory duty under the Clean Water Act to identify water quality-limited segments and set TMDLs for them. The EPA also has a nondiscretionary duty to ensure the state's compliance with these terms, or to initiate its own TMDLs process if [a State] fails to do so."[4]

Federal law requires that existing and authorized water quality standards must be applied to produce its §303(d) impaired waters list, since "waiting for revisions to the standards would result in continued delays in producing any 303(d) list."[5] That is precisely what has happened in Minnesota, where powerful interests have opposed the application of Minnesota's existing wild rice sulfate water quality standard to determine impaired waters and begin the restoration of water quality to preserve the abundance and sustainability of natural wild rice.

Recent reports of Administrative Law Judge (ALJ) LauraSue Schlatter and of the Chief ALJ[6] underscore that Minnesota's wild rice sulfate water quality standard is the existing and authorized standard that must be applied to produce Minnesota's §303(d) impaired waters list. The ALJ Report concluded that the proposed repeal of Minnesota's existing wild rice sulfate standard was unreasonable and violated the Clean Water Act:

> The Administrative Law Judge DISAPPROVES the proposed repeal of the 10 mg/L sulfate standard at Minn. R. 7050.0220, subps. 3a, 4a, 5a, 6a and Minn. R. 7050.0224, subp. 2, due to the Agency's failure to establish the reasonableness of the repeal, and because the repeal conflicts with the requirements 33 U.S.C. § 1313(c), 40 C.F.R. § 131.10(b) (2015) and Minn. R. 7050.0155 (2017).[7]

The Chief ALJ specifically concurred with "with all disapprovals contained in the Report of the Administrative Law Judge dated January 9, 2018," including the MPCA's proposals to change Minnesota rules to repeal the 10 mg/L wild rice sulfate standard.[8]

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[3] *See* Minn. R. 7050.0224, Subp. 2; Minn. R. 7050.0220, Subparts 3a (31), 4a (31), 5a (19), 6a (14).
[4] *Alaska Ctr. for the Env't v. Reilly*, 796 F. Supp. 1374, 1381 (W. D. Wa.1992), *aff'd as Alaska Ctr. for the Env't v. Browner,* 20 F 3d 981 (9th Cir. 1994).
[5] *Thomas v. Jackson*, 581 F. 3d 658, 668 (8th Cir. 2009).
[6] *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers,* OAH 80-9003-34519 Revisor R-4324, Report of the Administrative Law Judge, Jan. 9, 2018 ("ALJ Wild Rice Standard Report"), and Report of the Chief Administrative Law Judge, Jan. 11, 2018 ("Chief ALJ Wild Rice Standard Report"), is attached with these comments.
[7] *Id*., ALJ Wild Rice Standard Report, p. 5.
[8] *Id.*, Chief ALJ Wild Rice Standard Report, p. 1, citing proposed changes to Minn. R. 7050.0224, Subp. 2; Minn. R. 7050.0220, Subparts 3a, 4a, 5a, 6a.

Based on the arguments and evidence consistently presented by WaterLegacy during the past six years and based on the recent ALJ Report confirming that the 10 mg/L sulfate standard is the existing and authorized water quality standard that must be applied under the Clean Water Act, WaterLegacy once more requests that the MPCA revise its 2018 Clean Water Act Section 303(d) draft Impaired Waters List to list wild rice waters impaired due to failure to meet Minnesota's wild rice sulfate water quality standard.

Please do not hesitate to contact me if you have any questions regarding WaterLegacy's comments on Minnesota's draft 2018 Impaired Waters List or its attachments.

Sincerely yours,

Paula G. Maccabee

Paula Goodman Maccabee
Advocacy Director and Counsel for WaterLegacy

Enclosures

cc: Barbara Wester, EPA Region 5
Paul Proto, EPA Region 5

Paula Goodman Maccabee, Esq.
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February 20, 2012

Howard D. Markus, Ph.D., P.E. (howard.markus@state.mn.us)
Research Scientist 3/Aquatic Ecologist
MN Pollution Control Agency

Re: Minnesota's Draft 2012 303(d) List of Impaired Waters

Dear Dr. Markus,

These comments are submitted on behalf of WaterLegacy, a non-profit group formed to protect Minnesota's water resources and the communities that depend on them. WaterLegacy has had the opportunity to review Minnesota's Draft 2012 list of Impaired Waters designated pursuant to Section 303(d) of the Clean Water Act, 33 U.S.C. §1313(d).

Water Legacy appreciates the progress made by the Minnesota Pollution Control Agency (MPCA) in 2012 to identify additional waters that are impaired for mercury contamination and to identify waters that are impaired for inability to sustain aquatic life. We noted that in the Arrowhead Region alone, 105 new designations were made of waters impaired for aquatic life as indicated in bioassessments of fish or macroinvertebrates. Residents, anglers and tribal members have long been concerned about the impacts of mining discharge, including sulfates and toxic metals, on aquatic ecosystems. Designating waters impaired for aquatic life is an important step in determining pollutants to which the impairments can be attributed, setting limits to protect aquatic uses and restoring the viability of designated uses.

Recognizing the importance of restoring designated uses that have been impaired by mining pollution, WaterLegacy is troubled by the MPCA's failure to identify waters where Minnesota's water quality standard limiting sulfates to 10 milligrams per liter (mg/L) is exceeded and where the propagation and maintenance of natural wild rice stands has been degraded and impaired.

Under the Clean Water Act, the Impaired Waters list must identify waters not meeting designated uses, waters where calculations or predictions indicate nonattainment of water quality standards, waters for which water quality problems have been reported by the public or other agencies, and waters identified by the state as impaired or threatened in a nonpoint assessment. 40 C.F.R. § 130.7(b)(5). The purpose of identifying impaired waters under the Clean Water Act is to create a framework where states prioritize among impaired waters based on the severity of the pollution and the uses to be made of such waters and then determine the total maximum daily load (TMDL) to which pollutants must be limited to attain applicable water quality standards. 33 U.S.C. § 1313(d); 40 C.F.R. §130.7(d)(1).

Minnesota rules recognize the designated use of Class 4 waters for the propagation and maintenance of natural stands of wild rice, stating that the quality of waters and habitat "necessary to support the propagation and maintenance of wild rice plant species must not be materially impaired or degraded." Minn. R. 7050.0224, subp. 1. A water quality based standard limiting sulfates in waters used for the production of wild rice to 10 mg/L has been in effect since 1973 to protect this beneficial use. Minn. R. 7050.0224, Subp. 2.

The MPCA has several sources of information from which to make an identification of waters not meeting their designated uses for the propagation and maintenance of wild rice:

- Certain selected wild rice waters are identified in rule to call attention to the need for protection of this vital designated use. These include St. Louis River, Artichoke Lake, Bluebill Lake, Breda Lake, Cabin Lake, Caribou Lake, Christine Lake, Fourmile Lake, Hay Lake, Lieuna Lake, Long Lake, Marsh Lake, Moore Lake, Northern Light Lake, Papoose Lake, Rice Lake, Round Island Lake, Round Lake, Seven Beaver Lake, Stone Lake, Skibo Lake, Swamp River, and White Pine Lake. Minn. R 7050.0470.

- Additional wild rice waters were identified in a 2008 report by the Minnesota Department of Natural Resources to the Legislature, which found stands of natural wild rice on 1,292 lakes and segments of rivers and streams in Minnesota.

- The 1854 Treaty Authority also maintains a list of wild rice waters within the 1854 Ceded Territory that lists hundreds of rivers, streams and lakes, including the St. Louis River, Partridge River, Embarrass River, and Birch Lake.

- Surveys and investigations in connection with NPDES/SDS permits and environmental review have identified wild rice waters, including Swan Lake, Swan River, Hay Creek, Hay Lake, the Partridge River, Embarrass River, Embarrass Lake, Cedar Island Lake, Esquagama Lake, St. Louis River and Birch Lake.

The MPCA has monitoring data and reports from the public and from other State and tribal agencies confirming that many known wild rice waters are not meeting designated wild rice uses and are not attaining water quality standards limiting sulfates in wild rice waters.

Much of the impairment of wild rice uses is attributable to high levels of sulfates discharged to surface waters from mine pits, waste rock piles and tailings basins. As stated in the PolyMet NorthMet DEIS, "[i]t has long been known that sulfate concentrations in the St. Louis River are sometimes elevated due, most likely, to mining related sulfate releases." DEIS, at 4.1-194. "Sulfate concentrations in waters draining non-mining impacted watersheds ranged from 3.4 to 5.8 mg/L, whereas sulfate concentrations in tributaries from mining impacted watersheds ranged from 22 to 127 mg/L. *Id*.

WaterLegacy commends the MPCA for new listings of waters impaired for aquatic life, a critical step in determining what limits on salts and toxic metals are needed to protect fish and the aquatic ecosystem. WaterLegacy believes that the Clean Water Act requires a similar rigorous undertaking to list Minnesota waters that are impaired due to their exceedance of water quality standards that protect natural stands of wild rice. Failure of the Agency to identify these impaired waters places wild rice waters and habitats at risk.

In addition to the preceding comments, WaterLegacy joins in comments filed by Center for Biological Diversity on February 17, 2012. Please feel free to call me if you have any questions.

Sincerely,

Paula G. Maccabee

Paula Goodman Maccabee
Counsel/Advocacy Director for WaterLegacy

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February 10, 2014

Miranda Nichols (miranda.nichols@state.mn.us)
Minnesota Pollution Control Agency
520 Lafayette Rd N
St. Paul, MN 55155

RE: Minnesota Pollution Control Agency Draft 2014 Impaired Waters List

Dear Ms. Nichols:

The following comments on the Minnesota Pollution Control Agency (MPCA) 2014 Draft Impaired Waters List are submitted on behalf of WaterLegacy, a non-profit organization formed to protect Minnesota waters and the communities that rely on them.

First, WaterLegacy appreciates the MPCA's expanded listing of waters that are impaired for aquatic life as a result of fishes bioassessments and aquatic macroinvertebrates bioassessments; impaired for aquatic consumption due to mercury in fish tissue; and /or impaired for aquatic recreation as a result of e. coli or eutrophication indicators. We support the MPCA's continued efforts to identify use impairments that affect Minnesota waters.

WaterLegacy also supports the immediate listing of wild rice impaired waters on Minnesota's 2014 Clean Water Act Section 303(d) Impaired Waters List, as requested by our members and many other stakeholders after the 2012 impaired waters listing. We would make the following requests:

1. That all wild rice impaired waters preliminarily identified in the MPCA's August 2103 spreadsheet be listed without further delay on Minnesota's 2014 Section 303(d) Impaired Waters List.

2. That the additional wild rice impaired waters identified in the PolyMet NorthMet Supplemental Draft Environmental Impact Statement ("PolyMet SDEIS") be listed on Minnesota's 2014 Clean Water Act Section 303(d) Impaired Waters List.

3. That the MPCA commit to continued and ongoing investigation and listing of additional wild rice impaired waters using more comprehensive assessment criteria.

WaterLegacy would also request that the MPCA prioritize listing of waters that are impaired for aquatic consumption due to mercury in the Lake Superior Basin. This prioritization is needed to respond to the level of risk to Minnesota infants documented by the Minnesota Department of Health in its recent study showing that 1 out of 10 newborns in Minnesota's Lake Superior region had unsafe levels of mercury in their blood. In this light, WaterLegacy requests:

- That the Partridge River and Embarrass River be included on Minnesota's 2014 Impaired Waters List for aquatic consumption due to mercury in the water column.

Wild Rice Impaired Waters Listing

Federal law requires that states must submit to the EPA the list of water quality impaired waterbodies and TMDLs for these waterbodies. 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7(b)(1) (states obligated to identify all waters within its boundaries for which pollution controls are not stringent enough to implement any water quality standard applicable to such waters). Further, states must assemble and evaluate all existing and readily available water quality related data and information in order to identify all water quality limited segments. 40 C.F.R. § 130.7(b)(5).

In developing Section 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or identified as threatened; (2) waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 nonpoint assessment submitted to EPA. 40 CFR §130.7(b)(5).

In addition to these minimum categories, States are required to consider any other data and information that is existing and readily available. EPA's 1991 *Guidance for Water Quality-Based Decisions* describes screening categories that should be used to identify impaired waters. Guidance for Water Quality-Based Decisions: The TMDL Process, U.S. EPA Office of Water, 1991, Appendix C.

In addition to requiring States to assemble and evaluate all existing and readily available water quality related data and information, EPA regulations at 40 CFR § 130.7(b)(6) require States to include, as part of their submissions to EPA, documentation to support decisions to rely or not rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; (3) a rationale for the decision not to use any existing and reasonably available data; and (4) any other reasonable information requested by the Region. 40 CFR § 130.7(b)(6).

WaterLegacy agrees with the statement made in the MPCA's letter to U.S. Steel Corporation on November 8, 2103 that the MPCA is authorized to determine whether a water body is an impaired water used for the production of wild rice on the basis of information developed about the particular water. (*See* Exhibit A, MPCA Letter to USS, November 8, 2013). As the MPCA has already pointed out, the 2011 legislation pertaining to review of the wild rice sulfate standard, 2011 First Special Session, chapter 2, Article 4, does not affect the MPCA's obligation under the Clean Water Act to designate and protect impaired waters. Such a constraint would be outside the scope of the Legislature's authority.

WaterLegacy would further emphasize that there is no requirement in law that the methodology used by a state to list impaired waters be agreed to by regulated parties.

There is also no requirement that the methodology used for a state's initial listing of impaired waters remain static over the course of time. No statute, regulation or guidance would preclude MPCA from listing on Minnesota's 2014 Section 303(d) Impaired Waters List those wild rice waters preliminarily identified by the Agency as "impaired" in August 2013 based on the assessment criteria developed by the MPCA in 2013 and then continuing to develop more sophisticated criteria for additional listings.

WaterLegacy believes that the assessment criteria used by the MPCA for the initial preliminary listing in August 2013 are underinclusive. But this would not undermine the listing in 2014 of what we might consider "low-hanging fruit" in evaluating wild rice impaired waters using existing and readily available data and information. 40 C.F.R §130.7(b)(6)(III).

WaterLegacy would request that the Agency continue to develop assessment criteria in consultation with tribes, integrating oral histories, ecosystem indicators and phytolith investigations so that listing of wild rice impaired waters would become more comprehensive over time. But, we believe that delay in the 2014 listing of wild rice waters is neither protective of the resource not consistent with the MPCA's commitment to the development of wild rice/sulfate impaired waters in response reflected in communications to the EPA. (*See* EPA's Decision Document for the Approval of the 2012 Section 303(d) list, attached as Exhibit B)

Wild Rice Impaired Waters from MPCA Preliminary Listing

Based on the above discussion and the MPCA's preliminary listing of wild rice impaired waters prepared in August 2013, attached as Exhibit C, WaterLegacy requests that the wild rice waters preliminarily identified as impaired for wild rice/sulfate be included in Minnesota's 2014 Impaired Waters List, as follows:

Embarrass River (Embarrass Lake to St. Louis River)
Partridge River (Headwaters to S. Louis River)
Sandy River (Headwaters - Sandy Lake to Pike River)
St. Louis River (Oliver Bridge to Pokegama River)
St. Louis River (Mission Creek to Oliver Bridge)
Bostick Creek (Headwaters to Lake of the Woods)
County Ditch 12 (Headwaters to T113 R36W S8 north line)
Rice Creek (Rice Lake to Elk River)
Long Prairie River (Fish Trap Creek to Crow Wing River)
Rice Creek (Headwaters to Maple River)
Chippewa River (Watson Sag to Minnesota River)
Chippewa River (Unnamed Creek to E. Br. Chippewa River)
Chippewa River (E. Br. Chippewa River to Shakopee Creek)
Chippewa River (Cottonwood Creek to Dry Weather Creek)
Chippewa River (Stowe Lake to Little Chippewa river)
Cannon River (Pine Creek to Belle Creek)
Cannon River (Headwaters to Cannon Lake)
Cannon River (Byllesby Dam to Little Cannon River)

Cannon River (Belle Creek to split near mouth)
Cedar Island Lake (North Portion)
Cedar Island Lake (South Portion)
Fourth Lake
Esquagama Lake
East Vermillion Lake
Trout Lake
Elizabeth Lake (Main Basin)
Swan Lake (West Bay)
Swan Lake (Main Basin)
Preston Lake
Embarrass Lake
Lady Slipper Lake
Monongalia Lake (Main Basin)
Monongalia Lake (Middle Fork Crow)
Crow River Mill Pond (East)
Hay Lake
Big Stone Lake
Lac Qui Parle (NW Bay)
Lac Qui Parle (SE Bay)
Mina Lake
Pearl Lake
Sandy Lake
Little Sandy Lake
Marsh Lake
Lillian Lake
Lobster Lake
Sturgeon Lake
Long Lake

WaterLegacy has not had the opportunity to review the wealth of data in Minnesota Department of Natural Resources and MPCA files from which other wild rice impaired waters could be identified. However, there are several waters identified in the PolyMet SDEIS that we believe should be added to Minnesota's 2014 Impaired Waters List, based on data in Table 4.2.2-3 on page 4-37 of the SDEIS. These include:

Second Creek
Sabin Lake
Wynne Lake

Mercury Impaired Waters Listing

WaterLegacy submits that the MPCA has a particular obligation to address high concentrations of mercury in fish tissue and in the water column in the Lake Superior Basin. We request that the MPCA include its 2014 listing of waters impaired due to fish consumption waters with mercury exceeding the applicable 1.3 ng/L standard identified in the PolyMet SDEIS. (See Table 4.2.2-4 Summary of Total Mercury Concentrations in the Partridge River and Embarrass River

Watersheds near the Mine Site and Plant Site, p. 4-41). The SDEIS summarizes this data as follows:

> Based on sampling in studies done for the NorthMet Project Proposed Action, it is estimated that current total mercury concentrations average about 3.6 nanograms per liter (ng/L) in the Upper Partridge River (Barr 2011a), 3.8 ng/L at monitoring station SW-005, and between 4.8 and 6.0 ng/L in Colby Lake. Total mercury concentrations are similar in the Embarrass River, averaging 4.8 ng/L at monitoring station PM-12 and 4.0 ng/L at monitoring station PM-13 from 2004 to 2012. (SDEIS, p. 4-37)

WaterLegacy would request the following additional listing of waters impaired for consumption of fish based on mercury in the water column:

Partridge River
Embarrass River

WaterLegacy appreciates efforts made to date by the MPCA to rectify omission of wild rice impaired waters from the 2012 Impaired Waters List. We ask, however, that this process not be delayed or compromised due to objections from regulated parties. WaterLegacy requests prompt listing on the 2014 Section 303(d) list of the wild rice impaired waters identified above and requests that the MPCA use an iterative biannual process to list additional wild rice impaired waters, in collaboration with tribes, other ricers and conservation groups concerned about protection of the resource.

WaterLegacy also requests that a priority be placed on listing the mercury impaired waters identified above and on providing TMDL analysis to remove fish consumption impairments in the Lake Superior Basin related to mercury in the water column and mercury in fish tissue.

Please do not hesitate to contact me at 651-646-8890 if you have any questions regarding these comments.

Sincerely yours,

Paula G Maccabee

Paula Goodman Maccabee
Advocacy Director/Counsel for WaterLegacy

Enclosures

cc: Shannon Lotthammer, MPCA (shannon.lotthammer@state.mn.us)
Paul Proto, EPA (proto.paul@epa.gov)
Christine Wagener, EPA (wagener.christine@epa.gov)

Minnesota Pollution Control Agency

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November 8, 2013

Mr. Larry Sutherland
General Manager – Minnesota Ore Operations
United States Steel Corporation
P.O. Box 417
Mountain Iron, MN 55768

RE: United States Steel Corporation Correspondence Related to the Designation of a "Water Used for Production of Wild Rice"

Dear Mr. Sutherland:

The Minnesota Pollution Control Agency (MPCA) has received two letters from United States Steel Corporation (USS) related to the MPCA's process for designation of a "water used for production of wild rice" (WUFPOWR). The first was an August 12, 2013, letter from David Smiga responding to a MPCA document called "Draft Staff Recommendation for 'waters used for production of wild rice' downstream of the US Steel Minntac tailings basin." The second was a September 27, 2013, letter from you responding to MPCA comments on a June 27, 2013, Sulfate Reduction Plan revision required by the reissued water permits for the Keetac operation. In both letters, USS cites Minnesota Session Laws 2011, First Special Session, Chapter 2, Article 4 (2011 Law) asserting it is premature for the MPCA to determine that waters, other than those specifically listed in Minnesota rules, qualify as "waters used for the production of wild rice."

Though those two letters may raise other issues, this letter will respond to that specific assertion.

The MPCA has carefully considered USS' assertion. The MPCA believes that it is authorized to determine whether a particular water is a WUFPOWR on the basis of information developed about the particular water. The MPCA will continue to apply the current draft staff recommendations related to WUFPOWR subject to possible future modification after the criteria development process is completed.

However, because the MPCA continues to receive questions from all stakeholders about how such a determination is made, and specifically a number of requests to review the criteria the MPCA is using for such determinations, the MPCA has concluded that it is appropriate to provide opportunity for input on the criteria following the process laid out in Section 32 (b) of the 2011 Law. The MPCA plans to begin to develop criteria by meeting with the Minnesota Department of Natural Resources and Indian Tribes in late 2013 and anticipates taking public comment from other interested parties through public notice and comment sometime in early 2014.

The draft MPCA staff recommendations mentioned by USS include the following language: "This draft MPCA staff recommendation for ... is based on information currently available. MPCA staff will consider additional information that may become available in the future, whether from project proposers or from other interested/affected parties, and reserves the right to modify the draft staff recommendation accordingly." Once the MPCA has completed the criteria development process, the MPCA will consider those criteria as additional information and will reconsider the current draft MPCA staff recommendations for the waters mentioned in the two USS letters. MPCA staff will share the resulting draft staff recommendation (related to whether those waters are WUFPOWR and subject to the existing standard) with USS and the Tribes as is the current practice. The resulting draft staff recommendation will include any revisions as appropriate based on the additional information.

During the public comment period for any related permit or following issuance of such permit, USS may challenge the application of the criteria in the permitting process. As it did in the litigation initiated by the Minnesota Chamber of Commerce, the MPCA continues to reject any suggestion that WUFPOWR are limited to waters used for the irrigation of paddy rice, and not waters used for support of wildlife and other purposes. See Minn. R. 7050.0224, subp. 4.

Regarding the criteria development processes, the MPCA notes that the 2011 legislation has two distinct parts, rulemaking and criteria development. The 2011 legislation provides:

> *Sec. 32. WILD RICE RULEMAKING AND RESEARCH.*
>
> *(a) Upon completion of the research referenced in paragraph (d), the commissioner of the Pollution Control Agency shall initiate a process to amend Minnesota Rules, chapter 7050. The amended rule shall:*
>
> *(1) address water quality standards for waters containing natural beds of wild rice, as well as for irrigation waters used for the production of wild rice;*
>
> *(2) designate each body of water, or specific portion thereof, to which wild rice water quality standards apply; and*
>
> *(3) designate the specific times of year during which the standard applies.*

Nothing in this paragraph shall prevent the Pollution Control Agency from applying the narrative standard for all class 2 waters established in Minn. R. ch. 7050.0150, subp. 3.

> (b) "Waters containing natural beds of wild rice" means waters where wild rice occurs naturally. *Before designating waters containing natural beds of wild rice as waters subject to a standard, the commissioner of the Pollution Control Agency shall establish criteria for the waters after consultation with the Department of Natural Resources, Minnesota Indian tribes, and other interested parties and after public notice and comment. The criteria shall include, but not be limited to, history of wild rice harvests, minimum acreage, and wild rice density.*

2011 First Special Session, ch. 2, Art. 4 (emphasis added). The legislature has required that Minn. R. ch. 7050 be amended to designate each body of water, or specific portion thereof, to which wild rice water quality standards apply." Rulemaking has a long established formal process that the MPCA follows and will follow in designating waters. Referring to the italicized language, the legislature established a separate criteria development process for the MPCA to follow and specified that the process is to include a consultation component and a public notice and comment component separate from the public notice and comment process that will occur during the rulemaking called for by the legislation. The legislature has required the MPCA to complete the criteria development process prior to rulemaking for designating waters. While the criteria are to be used in the designation process, the legislation imposes no restrictions upon the MPCA's permitting authorities, its obligations to protect impaired waters or its use of the criteria on a case-by-case basis to identify impaired waters and when effluent limitations are necessary in permits.

Based on the foregoing, the MPCA has concluded that it is appropriate to move forward with the process to establish criteria for designating "waters containing natural beds of wild rice," prior to the rulemaking.

The MPCA will use the criteria that emerge from this process for three purposes: to inform the process of "designating" waters subject to the standard in the wild rice standards rulemaking, to apply on a case-by-case basis to identify when effluent limitations are necessary in permits, and to aid the MPCA when listing impaired waters. Attached is a proposed timeline for activities related for the wild rice sulfate standard.

Please feel free to contact me with questions at 651-757-2366.

Sincerely,

for Ann M. Foss
Director
Metallic Mining Sector
Industrial Division

AMF/SB:rm

Attachment

Last Revised: 11/8/13

Wild Rice Sulfate Standard -- Proposed Timeline of Related Activities

(Note: Green shading identifies public notice and dialogue opportunities)

		November-13	December-13	January-14	February-14	March-14	April-14	May-14 =>
Wild Rice Sulfate Standards Study[1]			Receive preliminary study results by December 31, 2013.	MPCA evaluate study data and develop wild rice sulfate standard rulemaking recommendations.		Share and discuss recommendations; begin to develop technical support details.	Begin rulemaking process to designate waters subject to standard and address any recommended changes to the standard.	
"Water Used for Production of Wild Rice" (WUFPOWR) Criteria Development[2]		MPCA meet with tribes, DNR and wild rice advisory committee to discuss WUFPOWR criteria development.		Public notice draft WUFPOWR criteria.	Review comments and revise WUFPOWR criteria as appropriate.	Use WUFPOWR criteria to inform process of "designating" waters subject to the sulfate wild rice standard; apply criteria for rulemaking, assessment, impaired waters list development and permitting.		
303 (d) Impaired Waters List[3]	**Wild rice sulfate assess-ments**	Wait to identify and assess WUFPOWR for the wild rice sulfate standard until WUFPOWR criteria are available.				Identify and assess WUFPOWR for the wild rice sulfate standard, consistent with WUFPOWR criteria. **Public notice draft sulfate-impaired WUFPOWR**. Submit WUFPOWR sulfate assessments to EPA when complete.[4]		
	All other assess-ments	Draft 2014 impaired waters list (minus WUFPOWR assessments) on MPCA website.	Hold public meetings on draft 2014 impaired waters list.	Public notice draft 2014 impaired waters list.	Review and respond to comments and revise draft 2014 impaired waters list as appropriate.		Draft 2014 impaired waters list due to EPA April 1, 2014.[4]	
NPDES Permit Development[5]		Continue to develop permits using draft staff recommendations related to identifying water used for production of wild rice.[6]				Re-evaluate draft staff recommendations using WUFPOWR criteria.		Any permit will be put on public notice prior to issuance.[6]

1. MN Session Laws 2011, First Special Session, Chapter 2, Article 4, Section 32 (d).
2. MN Session Laws 2011, First Special Session, Chapter 2, Article 4, Section 32 (b).
3. Federal Clean Water Act, 1972, Section 303 (d); MN Statutes 114D.25, subd. 1.
4. Depending on timing, the wild rice sulfate assessments may be submitted to EPA with the other assessments, or more likely as a separate package.
5. Federal Clean Water Act, 1972, Section 402; MN Statutes 115.03 , subd. 5
6. Permits will be put on public notice prior to issuance; a permit could go on notice at any point in the timeline.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUL 25 2013

REPLY TO THE ATTENTION OF:
WW-16J

John Linc Stine, Commissioner
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Dear Mr. Stine:

The U.S. Environmental Protection Agency conducted a complete review of Minnesota's 2012 Section 303(d) list and supporting documentation and information. Based on this review, EPA determined that Minnesota's 2012 list of water quality limited segments still requiring Total Maximum Daily Load calculations meets the requirements of Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations. Therefore, EPA approves Minnesota's 2012 Section 303(d) list which identifies the waters and associated pollutants along with the State's priority rankings for these waters and pollutants. The statutory and regulatory requirements, and EPA's review of Minnesota's compliance with each requirement, are described in the enclosed decision document.

EPA's approval of Minnesota's Section 303(d) list extends to all water bodies on the list with the exception of those waters that are within Indian Country, as defined in 18 U.S.C. § 1151. EPA is taking no action to approve or disapprove the State's list with respect to those waters at this time. EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under CWA Section 303(d) for those waters.

We appreciate your hard work in this area and your submittal of the list as required. If you have any questions, please contact Mr. Peter Swenson, Chief of the Watersheds and Wetlands Branch, at 312-886-0236.

Sincerely,

Tinka G. Hyde
Director, Water Division

Enclosure

cc: Katrina Kessler, MPCA
Miranda Nichols, MPCA
Jeff Risberg, MPCA

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DECISION DOCUMENT FOR THE APPROVAL OF MINNESOTA'S 2012 SECTION 303(d) LIST

The U.S. Environmental Protection Agency (EPA) has conducted a complete review of Minnesota's 2012 Section 303(d) list and supporting documentation and information. Based upon this review, EPA has determined that Minnesota's list of water quality limited segments (WQLS) still requiring total maximum daily loads (TMDLs) meets the requirements of Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations. Therefore, EPA hereby approves Minnesota's 2012 303(d) list. The statutory and regulatory requirements, and EPA's review of Minnesota's compliance with each requirement, are described in detail below.

I. Statutory and Regulatory Background

A. Identification of Water Quality Limited Segments for Inclusion on the Section 303(d) List

Section 303(d)(1) of the CWA directs States to identify those waters within their jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The Section 303(d) listing requirement applies to waters impaired by point sources and/or nonpoint sources, pursuant to EPA's long-standing interpretation of Section 303(d).

EPA regulations provide that States do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the CWA, (2) more stringent effluent limitations required by State or local authority, and (3) other pollution control requirements required by State, local, or federal authority.[1]

B. Consideration of Existing and Readily Available Water Quality-Related Data and Information

In developing Section 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or identified as threatened in the State's most recent Section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 nonpoint assessment submitted to EPA.[2] In addition to these minimum categories, States are required to consider any other data and information that is existing and readily available. EPA's 1991 *Guidance for Water Quality-Based Decisions* describes categories of water quality-related data and information that may be existing and readily available.[3] While States are required to evaluate all existing and readily available water quality-related data and information, States

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[1] 40 Code of Federal Regulations (CFR) §130.7(b)(1).
[2] 40 CFR §130.7(b)(5).
[3] Guidance for Water Quality-Based Decisions: The TMDL Process, U.S. EPA Office of Water, 1991, Appendix C (hereafter, EPA's 1991 Guidance).

may decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to requiring States to assemble and evaluate all existing and readily available water quality-related data and information, EPA regulations at 40 CFR §130.7(b)(6) require States to include, as part of their submissions to EPA, documentation to support decisions to rely or not rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) any other reasonable information requested by the Region.[4]

C. Priority Ranking

EPA regulations codify and interpret the requirement in Section 303(d)(1)(A) of the CWA that States establish a priority ranking for listed waters. The regulations at 40 CFR §130.7(b)(4) require States to prioritize waters on their Section 303(d) lists for TMDL development, and also to identify those WQLS targeted for TMDL development in the next two years.[5] In prioritizing and targeting waters, States must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters.[6] As long as these factors are taken into account, the CWA provides that States establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and State or national policies and priorities.[7]

II. Analysis of Minnesota's Submission

On October 1, 2012, Minnesota submitted to EPA the State's final draft TMDL list, plus supporting documentation. The submittal received by EPA included the following:

- Submittal letter, dated September 17, 2012
- Final Draft MPCA 2012 303(d) List cover page, dated September 17, 2012
- Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List 2012 Assessment Cycle (December 2011)
- Public participation documentation
    - 2012 TMDL List Response Summary
    - Public comments received during public comment period
    - MPCA responses to public comments
    - Documentation of public meeting announcements (newspaper articles, etc.)
    - Attendance sheets from public meetings
    - Documentation of public participants in MPCA Professional Judgment Groups (PJG)
- Contested case documentation on 2012 chlorpyrifos listing

[4] 40 CFR §130.7(b)(6).
[5] 40 CFR §130.7(b)(4).
[6] CWA Section 303(d)(1)(A).
[7] 57 FR 33040, 33045 (July 24, 1992); see also EPA's 1991 Guidance.

- Minn. Dept. of Agriculture's (MDA) response to public comments made on the 2012 chlorpyrifos listing
- Three (3) copies of the final draft TMDL list, September 17, 2012 (printed spreadsheet)
- Inventory of all impaired waters, September 17, 2012 (printed spreadsheet)
- 2012 Mercury TMDLs within Appendix A, September 17, 2012 (printed spreadsheet)
- 2012 Mercury TMDL additions to Appendix A, September 17, 2012 (printed spreadsheet)

Within this Decision Document, the State's submittals received by EPA on October 1, 2012 and other supporting information are collectively referred to as the "2012 Submittal." All of this information is compiled in EPA's record for this decision.

EPA has reviewed Minnesota's 2012 submittal, and has concluded that the State developed its Section 303(d) list in compliance with Section 303(d) of the CWA and 40 CFR §130.7. EPA's review is based on its analysis of whether the State reasonably considered existing and readily available water quality-related data and information, and reasonably identified water quality-limited segments. EPA has reviewed the State's description of data, information considered, and the Minnesota Pollution Control Agency's (MPCA) 2012 Methodology[8] for identifying waters. EPA concludes that Minnesota properly assembled and evaluated existing and readily available data and information, including data and information relating to categories of waters specified at 40 CFR §130.7(b)(5). EPA also concludes that Minnesota provided an acceptable rationale for not relying on particular existing and readily available water quality-related data and information as a basis for listing waters on the 303(d) list.

EPA has also determined that the State properly listed waters with nonpoint sources causing or expected to cause impairment, consistent with Section 303(d) of the CWA and EPA guidance. Section 303(d) lists are to include all WQLS still needing TMDLs, regardless of whether the source of the impairment is a point source and/or nonpoint source. EPA's long-standing interpretation is that Section 303(d) applies to waters impacted by point source and/or nonpoint sources. In *Pronsolino v. Marcus* [9], the 9th Circuit for the Northern District of California held that Section 303(d) of the CWA authorizes EPA to identify and establish TMDLs for waters impaired by nonpoint sources.

EPA's approval of Minnesota's 2012 303(d) list extends to water bodies as identified in Table A-1 (Attachment #1) of this Decision Document with the exception of those waters that are within Indian Country. EPA is taking no action to approve or disapprove the State's list with respect to those waters that are within Indian Country. EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under Section 303(d) for those waters.

A. Identification of Water Quality-Limited Segments for Inclusion on Section 303(d) List

1. Minnesota's 2012 303(d) list

Minnesota uses an Integrated Report to fulfill the reporting requirements of Sections 305(b) and 303(d) of the CWA. Since the 2002 listing cycle, EPA has encouraged states to integrate their 305(b) report and their 303(d) list into one submittal, the Integrated Report (IR). EPA has recommended five beneficial use attainment reporting categories where the various categories represent varying levels of use

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[8] *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List, 2012 Assessment Cycle* (December 2011) (hereafter, 2012 Methodology).
[9] EPA Impaired Waters and Total Maximum Daily Loads http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/pronsolino.cfm

attainment. Minnesota has chosen to use the recommended five categories with the addition of several subcategories. Minnesota's 2012 integrated report includes the following beneficial use attainment categories (Table 1 of this Decision Document).[10]

Table 1: MPCA's Beneficial Use Attainment Reporting Categories

Integrated Report Category	Description
1	All designated uses are fully assessed and met, and no use is threatened.
2	Some uses or parameters are met; but insufficient data to determine if remaining uses or parameters are met.
3A	No data or information to determine if any use is attained.
3B	Data are available for a review and generally indicate non-support, but insufficient data and information to determine TMDL impairment. (Example: single lake data point showing non-support)
3C	Data available that currently has no assessment tools to allow its use in assessing. (Example: data with only eco-region expectation standards)
3D	Data are available for a review and generally indicated full support, but insufficient data and information to assess for Category 1 or 2.
3E	Data are available for a review, but insufficient data and information to determine full support or TMDL impairment. (Example: lake data just below the threshold showing non-support)
4A	Impaired or threatened but all needed TMDL plans have been completed.
4B	Impaired or threatened but doesn't require a TMDL plan because it is expected to attain standards within a reasonable period of time.
4C	Impaired or threatened but doesn't require a TMDL plan because impairment not caused by a pollutant.
4D	Impaired or threatened but doesn't require a TMDL plan because the impairment is due to natural conditions with only insignificant anthropogenic influence. To be considered "insignificant", the elimination of the anthropogenic influence would not lead to the attainment of water quality standards and it would not be included in formal pollution reduction goal setting activities. A reach-specific water quality standard based on local natural conditions has yet to be determined. Upon determination, the assessment unit will be considered non-impaired for the natural conditions and re-categorized to an appropriate category.
4E	Impaired or threatened but existing data strongly suggests a TMDL plan is not required because impairment is solely a result of natural sources; a final determination of Category 4D will be made in the next assessment cycle pending confirmation from additional information (i.e. water quality or land use).
5A	Impaired or threatened by multiple pollutants and no TMDL plans approved.
5B	Impaired by multiple pollutants and either some TMDL plans are approved but not all or at least one impairment is the result of natural conditions.
5C	Impaired or threatened by one pollutant.

The general process used by Minnesota to develop the 2012 Integrated Report starts with the collection and assessment of readily available data and information. Following guidelines established in MPCA's 2012 Methodology, an assessment of use support for individual water body units is made.

The water body unit used for river system assessments is the river reach. A river reach typically extends from one significant tributary river to another or from the headwaters to the first significant tributary. River reaches are typically less than 20 miles in length. A river reach may be further divided into two or more assessment reaches when there is a change in use classification or when there is a significant morphological feature. Minnesota uses the United States Geological Survey (USGS) eight digit

[10] 2012 Methodology, page 47.

hydrologic unit code (HUC) (ex. 07020012) plus a three digit reach code (ex. 505) to name river reach segments (ex. 07020012-505). River reach segment numbers are also referred to as 'River identification numbers' (River ID#).

MPCA relies on the *Protected Waters Inventory*, which is assembled by the Minnesota Department of Natural Resources (MDNR), to provide identification codes for lakes and wetlands within the state. MDNR uses a unique eight digit identification number to identify lakes and wetlands. The eight digit number consists of a two digit prefix, which represents the county within Minnesota, followed by a four digit number, which identifies the lake or wetland, followed by a two digit suffix which represents either the whole lake (as '-00') or represents a specific bay of the lake (ex. -01, -02, etc.). The entire eight digit identifier is something similar to the following (ex. 82-0020-01).[11] Throughout the remainder of this Decision Document the term 'assessment unit' is used generally to refer to any river segment identified with a River ID# or a lake segment identified with a Lake/Wetland ID# on Minnesota's 2012 303(d) list.

Once an assessment has been completed, the water body is placed into one of the five categories described in Table 1 of this Decision Document. Waters within categories 4 and 5 represent the inventory of impaired waters in Minnesota. Category 5 waters represent impaired waters requiring TMDLs, i.e., Minnesota's 303(d) list. EPA is approving the waters identified in Table A-1 of this decision as Minnesota's 2012 303(d) list.

2. Methodology

EPA's regulations at 40 CFR §130.7(b)(6) require that states provide documentation to support their decisions to list or not list waters including a description of the methodology used to develop the list. MPCA developed its methodology for the 2002 listing cycle and has subsequently modified the methodology with each listing cycle. Minnesota's 2012 submittal included MPCA's 2012 Methodology (December 2011). MPCA's 2012 Methodology defines the data and information requirements needed to assess and determine if a water is meeting its designated beneficial use(s). The 2012 Methodology also establishes thresholds that indicate impairment for various categories of pollutants. As with prior versions of its methodology, the State made the 2012 Methodology available to the public through MPCA's website beginning on or about January 23, 2012.

Minnesota rules identify seven beneficial uses for which surface waters in Minnesota are protected. These beneficial uses are assigned the following use class numbers:

Class 1: Drinking water
Class 2: Aquatic life and recreation
- Class 2A: Cold water fisheries, trout waters
- Class 2B: Cool and warm water fisheries (not protected for drinking water use)
- Class 2Bd: Cool and warm water fisheries (protected for drinking water use)
- Class 2C: Indigenous fish and associated aquatic community
- Class 2D: Wetlands

Class 3: Industrial use and cooling
Class 4: Agricultural use
Class 5: Aesthetics and navigation
Class 6: Other uses

[11] 2012 Methodology, page 8.

Class 7: Limited resource value waters

All surface waters in Minnesota are considered either a Class 2 or Class 7 designated water.[12] Unless classified as a Class 7 water, surface waters in Minnesota are protected for aquatic life and recreation (Class 2 designated water). The State of Minnesota defines protection of aquatic life and recreation as, *"the maintenance of healthy, diverse, and successfully reproducing populations of aquatic organisms, including invertebrates as well as fish. Protection of recreation for all surface waters, except wetlands and limited resource value waters means the maintenance of conditions suitable for swimming and other forms of water recreation. Recreation in wetlands means boating and other forms of aquatic recreation for which they may be usable (this does not preclude swimming if that use is suitable)."*[13] Limited resource value waters (Class 7 designated water) are not fully protected for aquatic life. Class 7 designated waters have a very limited aquatic and fish community mostly due to lack of water, lack of habitat, or extensive physical alterations. Both Class 2 and 7 designated waters are also protected for Classes 3, 4, 5 and 6 designations.

Typically water quality standards applicable to Class 2 designated waters are the most stringent, therefore, Minnesota's assessments usually consider water quality standards applicable to Class 2 waters. Beneficial use supports assessed by Minnesota include;

- Aquatic Life (toxicity-based standards, conventional pollutants, biological indicators);
- Drinking Water and Aquatic Consumption (human health-based standards);
- Aquatic Consumption (wildlife-based standards);
- Aquatic Recreation (*Escherichia coli (E. coli)* bacteria, eutrophication);
- Limited Value Resource Waters (toxicity-based standards, bacteria, conventional pollutants).

Aquatic life use support assessments consider protection of the organisms that reside in the surface waters, while aquatic consumption use support assessments consider protection of the consumers of the aquatic life. Aquatic recreation use support is assessed for the protection of recreation in surface waters.[14]

Class 7 waters and Class 1 waters were first assessed during the 2010 listing cycle. These two beneficial uses are 'newer' beneficial use classes to be assessed by MPCA. Class 7 waters, MPCA designated limited resource value waters, are protected to allow secondary body contact use, to preserve groundwater for potable water supply, and to protect aesthetic qualities of the water.[15] Class 1 waters, MPCA designated drinking waters, are protected surface waters for water supply purposes. All groundwater in Minnesota is protected as a source of drinking water, however, only select surface waters are protected as a source of drinking water.[16] Before being assessed for the 2010 listing cycle, Class 1 surface waters and groundwater were outside the scope of MPCA's assessment methodologies. However, over more recent listing cycles, MPCA recognized a trend of increasing nitrate concentrations in Minnesota streams. Class 1 water bodies have been assessed since the 2010 listing cycle to measure potential exceedances of the nitrate-nitrogen Class 1 drinking water consumption standard.

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[12] MPCA Water Quality Standards, http://www.pca.state.mn.us/index.php/water/water-monitoring-and-reporting/water-quality-and-pollutants/water-quality-standards.html
[13] MPCA Water Quality Standards, http://www.pca.state.mn.us/index.php/water/water-monitoring-and-reporting/water-quality-and-pollutants/water-quality-standards.html
[14] 2012 Methodology, page 4.
[15] Class 7 Limited Resource Value Waters Fact Sheet, http://www.pca.state.mn.us/index.php/view-document.html?gid=7255
[16] MPCA Water Quality Standards, http://www.pca.state.mn.us/index.php/water/water-monitoring-and-reporting/water-quality-and-pollutants/water-quality-standards.html

3. Assessment Process
MPCA redesigned its data collection and assessment process between the 2010 and 2012 listing cycles. Up to and including the 2010 listing cycle, MPCA assessed the condition of the State's waters via water quality data which was collected under a biennial, statewide water quality assessment strategy. Since 2006-2007, MPCA has been moving away from collecting water quality data via a biennial, statewide monitoring approach, and is instead focusing its data collection efforts on the eight digit hydrologic unit code (HUC-8) scale. Each year, MPCA targets specific HUC-8 watersheds for water quality monitoring in an approach called the 'Intensive Watershed Monitoring Approach' (IWMA). Water quality monitoring of targeted HUC-8 watersheds under the IWMA was first employed by MPCA in 2007, in the Pomme de Terre River watershed and the North Fork of the Crow River watershed (Table 3 of this Decision Document).

The 2012 assessment cycle is the first assessment cycle in which MPCA is assessing water quality data which was collected via IWMA efforts. Prior to the 2012 listing cycle, MPCA was solely analyzing water quality data collected under the biennial, statewide assessment approach. Data collected during the IWMA strategy resulted in MPCA revising its internal assessment processes for analyzing water quality data. MPCA explained that the IWMA strategy generated an increased volume of water quality monitoring data which necessitated amendments to how MPCA conducted its internal review of water quality monitoring data for assessment decisions. MPCA believes that the IWMA generates a more robust water quality data set which MCPA can more efficiently use to assess water quality in surface waters of the State. Details of this approach can be found in the *2011-2012 Minnesota Water Quality Monitoring Strategy.*[17]

The incorporation of the IWMA for the 2012 listing cycle generated large amounts of water quality data which necessitated MPCA to redesign its water quality data review process. The redesigned review process combined computerized data analysis, expert analysis, and input from external partners. The goal of the revamped review process was to incorporate all of the available water quality data and information to best determine whether or not the water body was meeting its beneficial uses (ex. drinking water, aquatic life, aquatic recreation, aquatic consumption and limited use waters).

The data review and analysis process utilized to create the 2012 303(d) list expanded upon data analysis methods of the previous (2010 and earlier) assessment processes. Changes made to the data review and analysis process for the 2012 cycle included an additional round of MPCA staff review of water quality data at the parameter level and an additional round of internal comprehensive review of water quality data prior to the professional judgment group (PJG) meeting. These changes were incorporated in response to the increased volume and complexity of the water quality data collected during the IWMA. Details on the specific steps employed by MPCA in the 2012 303(d) water quality assessment process are:[18]

Step 1: 'Pre-assessment': Monitor and gather data information (automated data compilation)
MPCA employs an intensive watershed monitoring schedule that provides comprehensive assessments of all of the major watersheds on a 10-year cycle. This schedule provides intensive monitoring of

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[17] 2011-2021 Minnesota Water Quality Monitoring Strategy, http://www.pca.state.mn.us/index.php/water/water-monitoring-and-reporting/water-quality-and-pollutants/minnesota-s-water-quality-monitoring-strategy.html
[18] 2012 Methodology, page 6-7.

streams and lakes within each major watershed to determine overall health of the water resources, to identify impaired waters, and to identify those waters in need of additional protection to prevent future impairments.

In addition to gathering water quality information, the first step also includes an initial data review process. The 'pre-assessment' data review involves a computerized/automated screening tool which analyzes water quality monitoring results collected within the HUC-8 watershed (See Table 3 of this Decision Document for a list of watersheds targeted during the 2012 listing cycle). The automated process summarizes the number of data points that exceed the criteria, the total number of data points, and the number of years of data. This step produces a parameter-specific pre-assessment (e.g., for Dissolved Oxygen, or Fish Index of Biotic Integrity (IBI), or *E. coli*). Water quality data is assessed on an individual water body basis. The pre-assessment is the first opportunity in the water quality data review process where individual water bodies' water quality monitoring data are compared against water quality criteria.

Step 2: 'Expert Review': Assessment of the water quality data by MPCA staff
Based on results of intensive watershed monitoring in Step 1, MPCA staff review data to determine whether or not water resources meet water quality standards and designated uses. Waters that do not meet water quality standards are listed as impaired waters.

The second step involves a review by MPCA staff of automated pre-assessment summary data for quality assurance (QA). This step ensures that the computerized screening captured appropriate data and the automated process properly calculated pre-assessments data.

Step 3: Desktop assessment by resource specific MPCA staff
The desktop assessment involves a review of Steps 1 and 2 pre-assessment and expert review information by resource-specific MPCA staff. For example, chemistry data will be reviewed by MPCA water quality staff and biological specific data will be reviewed MPCA biologists. Step 3 of the water quality data review process considers other climatic and hydrochemical evidence (ex. flow conditions, precipitation, land use, habitat, etc.) to ascertain the overall quality of the dataset. The overall quality is a measure of temporal and spatial completeness and whether the chemical parameter is meeting or exceeding the criterion. During Step 3, water body candidates for delisting or natural background review are identified and work begins to determine if those assessment unit identification numbers (AUIDs) meet the criteria to be removed from the impaired waters List (i.e., 303(d) list).

Step 4: Watershed Assessment Team review of water quality data
The fourth step incorporates a joint internal meeting of MPCA staff involved in the review of water quality data in Step 1 through Step 3, the regional watershed project manager and stressor identification staff for specific HUC-8 watersheds. This grouping of people makes up the Watershed Assessment Team (WAT). The joint internal meeting allows the WAT to review comments and parameter-level evaluations from the desktop assessment and any watershed specific supplemental information to reach an overall use-support decision. Delisting and natural background candidates may also be identified at this time.

<u>Step 5:</u> Professional Judgment Group review of water quality data
The fifth step includes a joint meeting between the WAT and external parties (ex. local data collectors, local government units, etc.). This joint meeting is referred to as the Professional Judgment Group (PJG). The MPCA regional watershed project manager is responsible for inviting external parties to the PJG discussions.[19]

Prior to the PJG meeting, the results of the WAT meeting are distributed to all invitees, including parameter-level evaluations, overall use-support recommendations, and all other comments made by reviewers. Invitees are asked to identify AUIDs they wish to discuss; an agenda is developed based on these submissions. The agenda of the PJG meeting is to review the water quality data review process, to hold a general discussion of the watershed and major subwatersheds, and to review requested AUIDs, delisting and natural background candidates. The determinations made within the PJG meeting are the final use-support determinations. Additionally, the PJG may consider the magnitude, duration and frequency of exceedances, timing of exceedances, natural occurring conditions that may affect pollutant concentrations and toxicity, weather and flow conditions, and changes in the watershed that may have changed water quality.

The analyses and recommendations for each AUID are documented in a transparency database. The transparency database is archived following the completion of the assessments. Throughout the annual assessment process, care is taken to maintain consistency among the HUC-8 assessments and decisions. Consistency is maintained via internal training and quality control, and the assignment of individual staff to multiple HUC-8 data sets for the expert review. MPCA designates a team of scientists to oversee desktop assessments and to ensure consistency among watershed assessment discussions and decisions.[20] MPCA's goal is to ensure a robust decision is reached by the staff reviewers regarding the appropriate management actions to be pursued for each assessment unit (water body, or AUID). This decision will impact the planning and implementation phases of the watershed approach (i.e. restoration for impaired waters and protection for unimpaired waters).

MPCA reports the assessment decisions made by the PJG in *Watershed Monitoring and Assessment Reports* (on the HUC-8 scale) and the *Integrated Reports*. The Watershed Monitoring and Assessment Reports are a compilation of the results of the assessments following the determinations of the PJG. AUIDs are discussed by HUC-8 subwatersheds and overall water quality conditions, potential stressors, and protection areas are identified. These documents inform the restoration and protection strategies that are developed by MPCA.

The Integrated Report is composed of a narrative report and Assessment Database (ADB) and geospatial data. The Integrated Report summarizes the results of the water quality assessments conducted by MPCA. MPCA is responsible for uploading assessment decision information to the EPA via the ADB and also preparing a narrative report to the U.S. Congress as required by section 305(b) of the CWA. Each designated use is identified as "full support," "not support," "insufficient information," or "not assessed" as a result of the assessments. In addition, the use assessment data types are rated per the levels in the ADB.

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[19] *A note should be made that the assessment for aquatic consumption (fish) at this time utilizes only the first two steps in the process.*
[20] 2012 Methodology, pages 6-7.

4. Assessment of Waters Based on Narrative and Numeric Water Quality Standards

As previously stated in this decision, Minnesota assesses aquatic life, drinking water consumption, aquatic consumption (via human health-based standards), aquatic consumption (via wildlife-based standards), aquatic recreation use, and limited value resource waters. Minnesota's 2012 Methodology sets forth the specific assessment methods used by the State when determining if these uses are attained. EPA recognizes that water quality criteria have three elements: magnitude, duration, and frequency of exceedance. Minnesota's 2012 Methodology sets forth specific information about how these three elements were considered by the State in development of Minnesota's 2012 303(d) list. EPA finds that Minnesota's use of its 2012 Methodology supports the reasonable identification of WQLS.

The following discussion briefly explains the data requirements, information considered, and impairment thresholds used in Minnesota's assessments as described in Minnesota's 2012 Methodology. The 2012 Methodology sets forth methods for assessing surface waters based on the following:

- numeric and narrative standards for the protection of aquatic life;
- numeric and narrative standards for the protection of human health (aquatic consumption and drinking water);
- numeric standards for protection of aquatic consumption (wildlife);
- numeric standards for protection of aquatic recreation; and
- numeric and narrative standards for the protection of limited resource value waters.

A key component in the assessment process employed by MPCA was the determination of whether an individual parameter within a specific water body met or exceeded the applicable water quality criteria (numeric or narrative standards). MPCA water quality data evaluation also considered the quality of the dataset, whether or not there were sufficient data to make a determination, and ultimately assigned a 'dataset quality' rating. Dataset quality was graded on a scale of 'low,' 'medium,' or 'high' quality ratings. The determinations were stored in a working database and referenced during MPCA WAT reviews and PJG meetings. Additional supporting information, such as magnitude, duration and frequency of exceedances, timing of exceedances, naturally occurring conditions that may affect pollutant concentrations and toxicity, weather and flow conditions, and changes in the watershed that may have changed water quality, were considered in the final use-support determinations.

To further assist MPCA technical staff in their parameter-level evaluations, MPCA considers a 10 percent and 25 percent exceedance frequency[21] (details within Table 2 of this Decision Document) for conventional pollutants. These thresholds were appropriate for the conventional category of pollutants for several reasons, including that none were considered 'toxic' (or bioaccumulative), and all were subject to periodic 'natural exceedances' because of natural causes.[22] An example of natural exceedances from the 2012 Methodology explained that turbidity typically increases in streams after rain events, even in relatively undisturbed parts of the State. Similarly, dissolved oxygen can drop below the standard in low gradient rivers and streams for reasons other than pollution (i.e., the AUID is located downstream of or flows through extensive wetland complexes). These potential pollutants are also natural characteristics of surface waters and aquatic organisms have adapted to cope with the

[21] EPA Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates: Supplement, Office of Water, U.S. EPA. EPA-841-B-97-002B. September 1997.
[22] 2012 Methodology, pages 10-11.

fluctuations over time.[23] MPCA considered these and other 'natural exceedances' during its review of water quality data and factored these occurrences into its review during the assessment process.

Table 2: Guidelines for Parameter-Level Evaluations of Conventional Pollutants*

Assessment	Frequency of Exceedances	Magnitude of Exceedances	Duration of Exceedances	Timing of Exceedances[1]
Water Chemistry Parameter Indicating Unimpaired or Supporting Conditions	Less than 10% exceedances of chronic standard	Exceedances generally within 10% of water quality criteria	Continuous data or extensive grab sample data set indicates no or few instances of prolonged exceedance	Exceedances only occurring during extreme events such as 100-year flood (e.g., TSS) or severe drought conditions (e.g., DO)
Water Chemistry Parameter Indicating Potential Impairment	Between 10 – 25% exceedances of chronic standard	Exceedances generally greater than 10% but less than 25% of water quality criteria	Continuous data or extensive grab sample data set indicates some instances of prolonged exceedance	Exceedances only occurring during periods in which they are most likely to occur (e.g., before 9 am, 7Q10 low flow, storm events, etc.); not counting extreme events above
Water Chemistry Parameter Indicating Potential for Severe Impairment	Greater than 25% exceedances of chronic standard	Exceedances generally greater than 25% of water quality criteria	Continuous data or extensive grab sample data set indicates chronic exceedance or many instances of prolonged exceedance	Exceedances occurring during periods (seasonal or daily cycle) in which they typically <u>do not</u> occur in addition to occurring in periods in which they are most likely to occur

* Most parameters will have data sets that only allow frequency and magnitude to be evaluated. When sufficient data exist (e.g., continuous monitoring or extensive grab samples) or appropriate ancillary data (e.g., flow, precipitation) are accessible, duration or timing of exceedances may also be considered in the evaluation. The parameter-level evaluation requires best professional judgment to integrate information across all applicable columns.

[1] Based on evaluation of available flow data and/or precipitation records as well as observations made by monitoring staff.

4a. Assessment of Surface Waters Based on Numeric and Narrative Standards for Protection of Aquatic Life

Assessments based on numeric standards for protection of aquatic life are considered to safeguard the aquatic community. Toxicity-based chronic numeric standards and conventional pollutant standards are calculated to preserve the aquatic community from the harmful effects of toxic substances, and the protection of human and wildlife consumers of fish and other aquatic organisms. Minnesota's 2012 Methodology establishes data requirements and thresholds for pollutants that have toxicity-based chronic numeric standards.

Two types of data are used in these toxicity-based assessments: water chemistry and biological data. In aquatic life determinations, pre-assessments consider chemistry data, biological data, and other data quality indicators.[24] Pollutants which have toxicity-based numeric standards considered in MPCA's assessments are trace metals, un-ionized ammonia, and chloride. Sections V.A.1. and V.A.2. in Minnesota's 2012 Methodology explain the applicable Class 2 numeric water quality standards, data requirements, and impairment thresholds considered in these toxicity-based numeric standard assessments. In general, for the assessment of pollutants with toxicity-based numeric standards, five data points collected within a 3-year period within the most recent 10 year period are necessary. Two or more exceedances of the chronic standard in 3 years is considered an impairment and is included on the 303(d) list.[25]

[23] 2012 Methodology, pages 10-11.
[24] 2012 Methodology, page 13.
[25] 2012 Methodology, page 15.

The State also assesses conventional pollutants with numeric standards and water quality characteristics which typically include low dissolved oxygen, pH, turbidity, temperature, and biological indicators. Sections V.B.1. and V.B.2. of the 2012 Methodology explain the applicable Class 2 numeric water quality standards, data requirements, and impairment thresholds considered in these assessments. Sections V.B.1 and V.B.2 also describe characteristics for dissolved oxygen in the applicable Class 7 standard. In general, a minimum of 20 independent observations (i.e. data points) in the most recent 10 years are needed for an assessment. Data demonstrating greater than 10 percent exceedance are designated as impaired and included on the 303(d) list.[26]

The biological quality of any given surface water body is assessed by comparison to the biological conditions determined for a set of reference water bodies which best represent the most natural conditions for that surface water body type within a geographic region.[27] The basis for assessing the biological community for impairment is found in the narrative water quality standards and assessment factors in Minn. R. ch. 7050.0150.[28] Biological integrity is commonly defined as the ability to support and maintain a balanced, integrated, and adaptive community of organisms having a species composition, diversity and functional organization comparable to those of natural habitats within a geographic region (in Minnesota this is also referred to as 'eco-region'). The presence of a healthy, diverse, and reproducing aquatic community is a good indication that the aquatic life beneficial use is being supported by a lake, stream, or wetland. The aquatic community integrates the cumulative impacts of pollutants, habitat alteration, and hydrologic modification on a water body over time.

MPCA has developed fish and invertebrate index of biological integrity (IBI) scores to assess the aquatic life use of rivers and streams in Minnesota as well as plant and invertebrate IBI scores to assess depressional wetlands. Monitoring the aquatic community, via biological and chemical monitoring, is a direct way to assess aquatic life use support. Interpreting aquatic community data is accomplished using an IBI. Minnesota uses a regional reference site approach to develop and calibrate the IBI for specific regions of Minnesota. The IBI incorporates multiple attributes of the aquatic community, called 'metrics,' to evaluate a complex biological system. Typically, 8-12 metrics related to structural and functional aspects of the aquatic communities are considered. A score is assigned to each metric and the sum of all scores is used to characterize the biological integrity of the site being assessed. The 2012 Methodology does not include assessment protocols for measuring IBI scores for aquatic communities in lakes. These assessment protocols are still being developed by MPCA.

Interpretation of aquatic community data by the PJG is completed by comparing the IBI score against the assessment threshold or biocriteria. In general, an IBI score above the assessment threshold indicates aquatic life use support, while a score below the threshold indicates non-support. MPCA utilizes a Biological Condition Gradient (BCG) along with reference conditions to calculate its biocriteria thresholds. The BCG-derived criteria are compared to criteria derived from reference sites within Minnesota to ensure that the BCG and reference conditions are closely aligned in defining the fish and invertebrate IBI classes. Minnesota used the median of BCG level 4 to develop biocriteria that are protective of the structural and functional health of biological communities. Communities with IBI

[26] 2012 Methodology, pages 16-17.

[27] Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards (7050.0150, subp. 6), https://www.revisor.mn.gov/rules/?id=7050.0150

[28] Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards (7050.0150, subp. 6), https://www.revisor.mn.gov/rules/?id=7050.0150

scores near this median value can be expected to have biological communities which exhibit "*...overall balanced distribution of all expected major groups; ecosystem functions largely maintained through redundant attributes.*"[29]

MPCA incorporated a margin of safety into its IBI assessment process. Bracketing each IBI assessment threshold is a 90 percent confidence interval that is based on the variability of IBI scores obtained at sites sampled multiple times in the same year (i.e., duplicate samples). The confidence interval accounts for variability attributed to natural temporal changes within the community as well as method error. Section V.B.e.2 in the 2012 Methodology explains the data requirements and determination criteria for assessing whether AUIDs are meeting their biological use support (i.e. fully supporting, not supporting, or insufficient information). Overall assessment of whether an AUID adequately supports aquatic life involves the review of the parameter-level evaluations and data quality in conjunction with all available supporting information (ex. flow, habitat, precipitation, etc.). The determination of available data is an important step in this review process.

Section V.B.2 in the 2012 Methodology explains the nuances of MPCA's decision making process in determining whether biological communities are deemed as fully supporting of aquatic life or non-supporting of aquatic life. These assessment decisions are made after consulting both biological and chemical data. For a given AUID, there may be chemistry indicator data, biological indicator data, or both types of data available for assessment. The assessment of whether an AUID adequately supports aquatic life involves the review of the parameter-level evaluations and data quality in conjunction with all available supporting information (flow, habitat, precipitation, etc.) to make an overall use-support determination. The final assessment takes into consideration the strength of the various indicators, the quality of the data sets and the upstream and downstream conditions of the water body segment.[30]

In general, a stream reach is considered to be <u>fully supporting</u> of aquatic life if:

- IBI scores for all available assemblages indicate fully supporting conditions; or
- The criteria for both dissolved oxygen and turbidity/t-tube/total suspended solids are adequately met; and
- Other lines of evidence considered comprehensively, including upstream/downstream conditions, do not contradict a finding of full support.

A stream reach is considered to be <u>not supporting</u> if:

- IBI scores for at least one biological assemblage indicate impairment; or
- One or more water chemistry parameters indicates impairment; and
- Other lines of evidence considered comprehensively, including upstream/downstream conditions, do not contradict a finding of non-support.

If the above criteria are not met and the assessment is inconclusive, the result is a determination of insufficient information. A determination of biological impairment must be supported by failing IBI scores for at least one biological assemblage, or one or more water chemistry parameters indicating impairment. In cases where an assessment unit has been determined to be not supporting based on biological indicators, water chemistry parameters are added to the list of impairments only when the

[29] 2012 Methodology, page 17.
[30] 2012 Methodology, page 19.

chemical impairment is clear enough that the AUID would be considered impaired even without the biological evidence.[31]

4b. Assessment Based on Numeric and Narrative Standards for the Protection of Human Health: Aquatic Consumption and Drinking Water

Assessments based on numeric and narrative standards for protection of human health include consideration of pollutants with Class 2 health-based chronic water quality standards. Section VI.A in Minnesota's 2012 Methodology discusses the development of human health protective numeric chronic standards. Class 2 chronic standards are established after determining the water column concentration of a pollutant that will be protective for chronic exposure for aquatic organisms, human health, and fish-eating wildlife. The most protective is chosen as the chronic standard included in Minnesota rules.[32]

Pollutants that have human health based chronic standards which are most often included in the State's assessments include mercury, polychlorinated biphenyls (PCBs), dioxins and chlorinated pesticides.[33] Minnesota Rule ch. 7050.0222 identifies the pollutants which have human health-based and toxicity-based criteria which have similar values. Section VI.A.2.(a) – (c) in Minnesota's 2012 Methodology discusses these pollutants and the applicable Class 2 water quality standards used in assessments of these pollutants. In general, two exceedances of the chronic standard or a single exceedance of the maximum standard in 3 years indicates impairment. For data considerations, five data points within a 3 year period during the most recent 10 years are necessary for assessment.[34] As stated above, when the State develops water quality standards, both a toxicity-based and a human health-based chronic criterion is calculated and the most restrictive is used to establish the chronic standard. For some pollutants, the toxicity-based and the human health-based criterion are very similar. For these pollutants, Minnesota's assessments consider both criteria.

As previously stated in this Decision Document, support of aquatic life means that concentrations of toxicants in water must be low enough that fish and other aquatic organisms are safe for people and wildlife to eat. Minnesota has four wildlife-based water quality standards (dichlorodiphenyltrichloroethane (DDT), Mercury, PCBs and 2,3,7,8 tetrachlorodibenzo-dioxin (2,3,7,8 TCDD)) within Minn. R. ch. 7052, the Great Lakes Water Quality Initiative (GLI) rule. The GLI rule focuses on bioaccumulative toxics within the Great Lakes and these four wild-life based standards are only applicable to the surface waters of the Lake Superior basin. Section VII of Minnesota's 2012 Methodology provides details of the water quality standards for DDT, Mercury, PCBs, and 2,3,7,8 TCDD. Data requirements and exceedance thresholds for pollutants with wildlife-based standards are the same as those used by the State in its assessments of pollutants that have human health-based chronic standards.[35]

Human consumption of fish is considered a separate use support in Minnesota. Toxicants may be at levels sufficient to support aquatic life but because of bioaccumulation the fish are not safe for human consumption. Mercury, PCBs and perfluorochemicals (ex. perfluorooctane sulfonate (PFOS)), are contaminants found in fish that are considered in Minnesota's assessments. Other bioaccumulative

[31] 2012 Methodology, page 20.
[32] 2012 Methodology, pages 22-23.
[33] 2012 Methodology, pages 23-24.
[34] 2012 Methodology, pages 23-24.
[35] 2012 Methodology, page 31.

pollutants such as DDT, dioxins and toxaphene have been analyzed in fish tissue samples but only where potential problems were suspected.[36]

In assessment of the aquatic consumption use support, Minnesota considers the use to be supported if it is safe to consume one fish meal per week over a lifetime. Limiting consumption to less than one meal per week indicates impairment. Impairment thresholds for PCBs and PFOS are established at the fish tissue concentration considered to be the upper threshold for one meal per week fish consumption advisory level for the 'sensitive' population.[37] The impairment threshold for PCBs is based on fish tissue concentrations exceeding 0.22 ppm and impairment threshold for PFOS is based on fish tissue concentrations exceeding 0.2 ppm.[38] In 2008, MPCA adopted into Minnesota Rule chapter 7050 a mercury fish tissue criterion of 0.2 ppm. This criterion for mercury is more stringent than the upper threshold for one meal per week fish consumption advisory for the sensitive population used by Minnesota Department of Health (MDH) fish consumption advisory. Consistent with Minnesota water quality standards, 0.2 ppm is the impairment threshold for aquatic consumption due to mercury.[39]

In the 2012 Methodology, MPCA included assessments based on standards for the protection of human health Class 1 drinking consumption. All groundwater and selected surface waters are designated as Class 1 resources in Minnesota.[40] The MDH monitors municipal finished water supplies for compliance with drinking water standards. The assessment of Class 1B and 1C listed surface waters for potential impairment by nitrate-nitrogen was outlined in the 2012 Methodology. Nitrate-nitrogen concentrations in drinking water exceeding the 10 mg/L safe drinking water standard (federal standard incorporated into Minn. R. ch. 7050.0221) pose a risk to human health. The 10 mg/L standard is an acute toxicity standard. Long term, chronic exposure to nitrate in drinking water is less well understood but has been linked to the development of cancer, thyroid disease, and diabetes in humans.

To assess drinking water-protected surface water (Class 1B and 1C) MPCA calculates a 24-hour average nitrate concentration and compares this average value to the 10 mg/L drinking consumption standard. If the water body exhibits two 24-hour exceedances within 3 years, then the water body is deemed impaired and placed on the 303(d) list. Exceedances were assessed over consecutive 3 year periods and the most recent 10 years of water quality data are considered. A minimum of five data points is required for assessments, but impairment determinations may be made with fewer data points when appropriate.[41]

4c. Assessment Based on Numeric Standards for Protection of Aquatic Consumption: wildlife-based standards

Minnesota rules set forth water quality standards for the protection of aquatic life uses related to wildlife consumers of aquatic organisms. Minnesota has four wildlife-based water quality standards (Minn R. ch. 7052, the Great Lakes Water Quality Initiative (GLI) rule). These water quality standards apply to concentrations of DDT, mercury, PCBs and 2,3,7,8-TCDD (tetrachlordibenzo-p-dioxin).[42] The GLI water quality standards focus on the reduction of bioaccumulative pollutants in the surface waters

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[36] 2012 Methodology, page 24.
[37] Sensitive population is comprised of pregnant women, women who may become pregnant, and children under age 15. See Minnesota Department of Health, Minnesota Fish Consumption Advisory at http://www.health.state.mn.us/divs/eh/fish/ and 2012 Methodology, page 26.
[38] 2012 Methodology, page 27.
[39] 2012 Methodology, pages 27-28.
[40] 2012 Methodology, page 29.
[41] 2012 Methodology, pages 29-30.
[42] 2012 Methodology, page 31.

of the Lake Superior basin. It should be noted that the GLI standards within Minn R. ch. 7052 only apply to surface waters of the Lake Superior basin.[43]

4d. Assessment Based on Numeric Standards for Protection of Aquatic Recreation

Minnesota has two sets of numeric standards protecting waters for aquatic recreation. Numeric standards established for *E. coli* protect for primary and secondary body contact[44] while eutrophication standards protect for aquatic recreation in Minnesota lakes.

Minnesota has established *E. coli* standards for both Class 2 and Class 7 waters. Table 7 in Minnesota's 2012 Methodology identifies these water quality standards. The *E. coli* water quality standards include both a monthly geometric mean standard and an individual maximum standard. Minnesota considers both standards in their assessments. The monthly geometric mean *E. coli* standard is a geometric mean of not less than five samples collected in a month. However, most monitoring programs do not collect samples more often than once a month. In order to use the available data to the maximum extent, Minnesota aggregates available *E. coli* data for an individual month across the most recent 10 years of data. Minnesota's method of aggregating data for an individual month is based on a fecal coliform study conducted by the State which showed that for any given monitoring site there was less variability in fecal coliform data for a given month across years than there was for all months within one year.[45] Minnesota's prior assessment methodologies have included this same approach for fecal coliform assessments.

For assessment of the monthly geometric mean standard, the State considers the most recent 10 years of data, aggregates the data by individual month for a specific assessment unit, and if one or more months exceed the monthly geometric mean standard,[46] the assessment unit is added to Minnesota's 303(d) list. For assessment of the individual maximum standard, an assessment unit is added to Minnesota's 303(d) list if more than 10% of individual values over the most recent 10 years exceed the maximum *E. coli* standard.[47] In order to assess against the individual maximum *E. coli* threshold, Minnesota analyzes a minimum of 15 sampling points over the most recent 10 year period. Assessment decisions of data sets with less than the minimum number of samples are made by the WAT on a case by case basis.[48] Prior assessment methodologies established methods for assessment using fecal coliform data or a statistical relationship between fecal coliform and *E. coli* data. Minnesota explained that there is a considerable amount of *E. coli* and older fecal coliform data. Assessment decisions for the 2012 list used solely *E. coli* data. Exceptions to the exclusive use of *E. coli* measurements for assessment decisions (i.e., the use

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[43] 2012 Methodology, page 31.

[44] For purposes of bacteriological standards, recreation in or on the water is divided into two types: primary body contact and secondary body contact. Primary body contact is considered to be any type of water recreation during which the accidental ingestion of a small amount of water is likely such as swimming, snorkeling, SCUBA, water skiing, kayaking, tubing and wading by young children. Secondary body contact is considered to be any type of water recreation during which the accidental ingestion of a small amount of water is unlikely such as boating, canoeing, fishing and wading by older children and adults. *Statement of Need and Reasonableness, Book III of III, In the Matter of Proposed Revisions of Minnesota Rules Chapter 7050, Relating to the Classification and Standards for Waters of the State, July 2007, pg. 83,* and 2012 Methodology, page 32.

[45] 2012 Methodology, pages 32-34, and *Fecal Coliform Bacteria in Rivers,* MPCA, H.D. Markus, 1999 in EPA Region 5's 2002 administrative record to support EPA's approval of Minnesota's 2002 303(d) list.

[46] The monthly geometric mean water quality standard for Class 2 waters is 126 organisms per 100mL of water and for Class 7 waters is 630 organisms per 100mL of water. See 2012 Methodology, pages 32-34, Minn. R. ch. 7050.0222 subp. 2-5, and Minn. R. ch. 7050.0227 subp. 2.

[47] The *E. coli* maximum individual water quality standard for both Class 2 and 7 waters is 1260 organisms per 100mL of water. See 2012 Methodology pages 32-34, and Minn. R. ch. 7050.0222 subp. 2-5, and Minn. R. ch. 7050.0227 subp. 2.

[48] 2012 Methodology, page 32.

of fecal coliform data to augment the *E. coli* data set) were only employed in special cases. These exceptions utilized the ratio of 200 cfu/100 mL (fecal coliform) to 126 cfu/100 mL (*E. coli*).

Minnesota's promulgated ecoregion-based lake eutrophication numeric water quality standards for total phosphorus, chlorophyll-a (chl-a) and Secchi Disk depth (Minn. R. ch. 7050.0222 subp. 2-4.) are the parameters monitored in lake assessments. Eutrophication standards are specific to ecoregion and lake depth. Minn. R. ch. 7050.0150 defines the State-recognized depths of a lake, a shallow lake, a reservoir and a wetland. The determination between the four requires an analysis of basin depth and littoral area. Appendix A of the 2012 Methodology lists the factors used to separate lakes, shallow lakes and wetlands.[49] Table 9 of Minnesota's 2012 Methodology identifies the lake eutrophication standards used for aquatic recreation use assessments.

Assessments utilizing the eutrophication water quality standards consider data collected over the most recent 10-year period. Samples must be collected over a minimum of 2 years and sampled from June to September. Typically, a minimum of 8 individual data points for TP, corrected chl-*a* (chl-*a* corrected for pheophytin), and Secchi are required.[50] If there are multiple samples collected on the same day, the daily average of samples collected is calculated. All daily data from June to September is averaged to calculate a summer mean value. The summer mean value is the water quality measurement compared to eco-region and depth specific water quality standards. Lakes where total phosphorus and at least one of the response variables (chl-a or Secchi disk depth) exceed the applicable standard are identified on Minnesota's 303(d) list as impaired.[51]

4e. Assessment Based on Numeric Standard for Protection of Limited Resource Value Waters

Minnesota rules set forth water quality standards for Class 7 waters in chapter 7050.0227. The rules include standards for *E. coli*, dissolved oxygen, pH and toxic pollutants. Limited resource value waters include surface waters of the State that have been subject to a use attainability analysis and have been found to have limited value as a water resource. These waters are specifically listed in rule 7050.0470 and are protected so as to allow secondary body contact use, to preserve the groundwater for use as a potable water supply, and to protect aesthetic qualities of the water.[52]

Because Class 7 waters may be used by game fish for spawning and/or maintaining minnow populations during brief periods in the spring, a special protection against bioaccumulative pollutants is needed.[53] The 2012 Methodology includes a discussion on the application of toxic standards to Class 7 waters. The water quality standard states, "*toxic pollutants shall not be allowed in such quantities or concentrations that will impair specified uses*."[54] The 2012 Methodology explains that for Class 7 assessments, for most toxic pollutants, the maximum standard or 100 times the chronic standard, whichever is lower, would apply. For bioaccumulative pollutants in Class 7 designated waters, the chronic standard would apply.

[49] 2012 Methodology, pages 35-36.
[50] 2012 Methodology, pages 35-36.
[51] Minnesota Rules include narrative eutrophication standards for Class 2 lakes, shallow lakes and reservoirs which explain a polluted condition as an exceedance of total phosphorus and either the chlorophyll-a or Secchi disk standard using data that is averaged over the summer season. See Minn. R. ch. 7050.0222 subp. 2a, 3a, and 4a.
[52] 2012 Methodology, page 37.
[53] 2012 Methodology, page 37.
[54] Minnesota Administrative Rules (MN R. ch. 7050.0227), https://www.revisor.mn.gov/rules/?id=7050.0227

5. Removing a Water from the 303(d) List
Minnesota's 2012 Methodology identifies four reasons for removing a water from the 303(d) list;

- If, during subsequent monitoring or the development of the TMDL study, new and reliable water quality data or information indicates that the water body is no longer impaired and is meeting water quality standards. Such a water body would be de-listed before a TMDL plan was completed.
- If a TMDL assessment and preliminary plan for reducing the sources of pollution is completed and approved by the EPA.
- If the sources of impairment are determined to be non-anthropogenic in origin.
- If it was determined that the water body was placed on the list in error.[55]

When deciding to remove a water body from the 303(d) list based on new data and information, the State generally applies the same standards, guidelines and thresholds used to add a water to the 303(d) list. The 2012 Methodology identifies minimum data requirements and impairment thresholds that must be considered for the various categories of pollutants before removing a water body from the 303(d) list.[56] Decisions to remove a water body from the 303(d) list are subject to review by the appropriate MPCA staff and PJG.

The second basis for removing a water body from the 303(d) list is where a TMDL has been approved by EPA. In accordance with Minnesota's 2012 Methodology, if a water body is identified as being impaired, and EPA has approved all necessary TMDLs for that water body, then the water body will be placed in category 4A. It should be noted that the water body is still considered as impaired and remains on the Impaired Waters Inventory (part of MPCA Integrated Report submittal to the EPA). The water body will remain on the Impaired Waters Inventory until it is demonstrated that the water body supports all of its beneficial uses (i.e. meets water quality standards for each beneficial use designation).

The third basis for removing a water body from the 303(d) list is where a water body is found to be impaired by natural conditions, i.e., non-anthropogenic in origin. In this situation, all sources of the impairment are naturally occurring. Although Minnesota continues to identify these waters as impaired, it places these waters in category 4D (i.e. impaired but does not require a TMDL).

The fourth basis for removing waters from the 303(d) list occurs under circumstances where:

- A water was placed on the 303(d) list in error (ex. wrong AUID assigned);
- A resegmentation or reclassification of a water has occurred since the last listing cycle;
- There has been a change/update to the State's standards or methodology since the last listing cycle.

Errors can be made in the original assessment of a water body. These errors, which may be a result of either human or computer error, are usually discovered during future assessments. Occasionally there is a need for the State to change how a water body is divided into assessment units. This change may cause a water body originally listed under one specific assessment unit ID# to now be listed as two new ID#s. Although it may appear that changing the ID# results in removing waters from or adding waters to the 303(d) list, in most cases the original impaired water is still on the list, it is just identified in a different

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[55] 2012 Methodology, page 39.
[56] 2012 Methodology, pages 39-40.

manner. Another water identification change that could affect how a water is listed is when a lake is reclassified. As the State develops watershed plans and TMDLs, specific lake characteristic information could become available which would cause the State to re-evaluate how the lake is classified; e.g., deep or shallow. Since water quality standards are applicable to a lake based on lake type and lake location, a change in a lake's classification could change where the State places that lake in its integrated report.

Minnesota revises its methodology in response to changes to the State's water quality standards. For the 2012 listing cycle, the state made no significant changes to water quality standards which impacted the 2012 303(d) list.

Table A-2 of this Decision Document provides a list of the assessment unit/pollutant combinations that Minnesota has removed from its 303(d) list. EPA concludes that the State has demonstrated good cause for removing these waters from the 303(d) list. In evaluating the reasonableness of the State's decision to remove these waters, EPA considered the delisting explanations provided by the State in its 2012 submittal,[57] information made available to the public during the public notice and comment period, and MPCA lake/wetland and stream assessment transparency documents made available to the public on MPCA's website.[58]

Consideration of Existing and Readily Available Water Quality-Related Data and Information

1. State Monitoring Data and Information

Minnesota conducts a variety of surface water monitoring activities which focus on generating crucial water quality data for assessing the chemical, biological, bacteriological, and physical conditions, within Minnesota's surface waters. This information is used to assess potential and actual threats to water quality within the State and to evaluate the effectiveness of management strategies taken to address impairments and other threats to water quality. Water quality monitoring by local, state and federal partners, along with citizen monitoring efforts, and remote sensing monitoring are all utilized by MPCA in its assessment process.

Through the 2010 listing cycle, MPCA assessed the condition of the State's waters via a biennial, statewide assessment process. Over the previous few years, MPCA has moved away from a statewide monitoring approach and focused its efforts toward targeted watersheds via the intensive watershed monitoring strategy. The IWMA generates more voluminous data sets within those watersheds targeted for water quality monitoring. The 2012 listing cycle is the first assessment cycle in which MPCA is assessing water quality data from earlier IWMA efforts. For assessment decisions made for the 2012 listing cycle, MPCA assessed water quality information from watersheds listed in Table 3 of this decision document. It should be noted, that water quality sampling, under the IWMA, was conducted in the watersheds in Table 3 during 2007, 2008 and 2009.

[57] See *Inventory of all impaired waters*, *De-listings from the inventory*, *Changes initial to final draft*, and *New removals from the 2012 inventory* within submitted spreadsheets from MPCA for detailed discussion from State

[58] http://www.pca.state.mn.us/index.php/water/water-types-and-programs/minnesotas-impaired-waters-and-tmdls/assessment-and-listing/303d-list-of-impaired-waters.html

Table 3: Watersheds in which water quality data was assessed for the 2012 Listing Cycle

Watershed Name	Year in which data was collected under the Intensive Watershed Monitoring Approach (IWMA)
North Fork of the Crow River Watershed	2007
Pomme de Terre River Watershed	2007
Le Sueur River Watershed	2008
Little Fork River Watershed	2008
Mississippi (Red Wing) River Watershed	2008
Red River of the North (Headwaters) Watershed	2008
Root River Watershed	2008
Sauk River Watershed	2008
Tamarac (Red River of the North) River Watershed	2008
Buffalo River Watershed	2009
Cedar River Watershed	2009
Chippewa River Watershed	2009
Mississippi (St. Cloud) River Watershed	2009
Shell Rock River Watershed	2009
St. Croix (Stillwater) River Watershed	2009
St. Louis River Watershed	2009

Toxic parameter monitoring continues to occur on a statewide basis. Assessment of those parameters is done on a statewide basis every two years. Watershed assessments employed via the IWMA focus primarily on the aquatic life and recreation beneficial uses. Statewide assessments focus primarily on aquatic consumption and aquatic life toxicity. MPCA has set a schedule to intensively monitor each major watershed once every 10 years (Figure 1 of this Decision Document). The IWMA is designed to identify waters which are impaired and require restoration. Also, information from the IWMA is utilized to identify those waters which are not yet impaired but require further protection to prevent water quality conditions which would lead to that water body being designated as impaired.

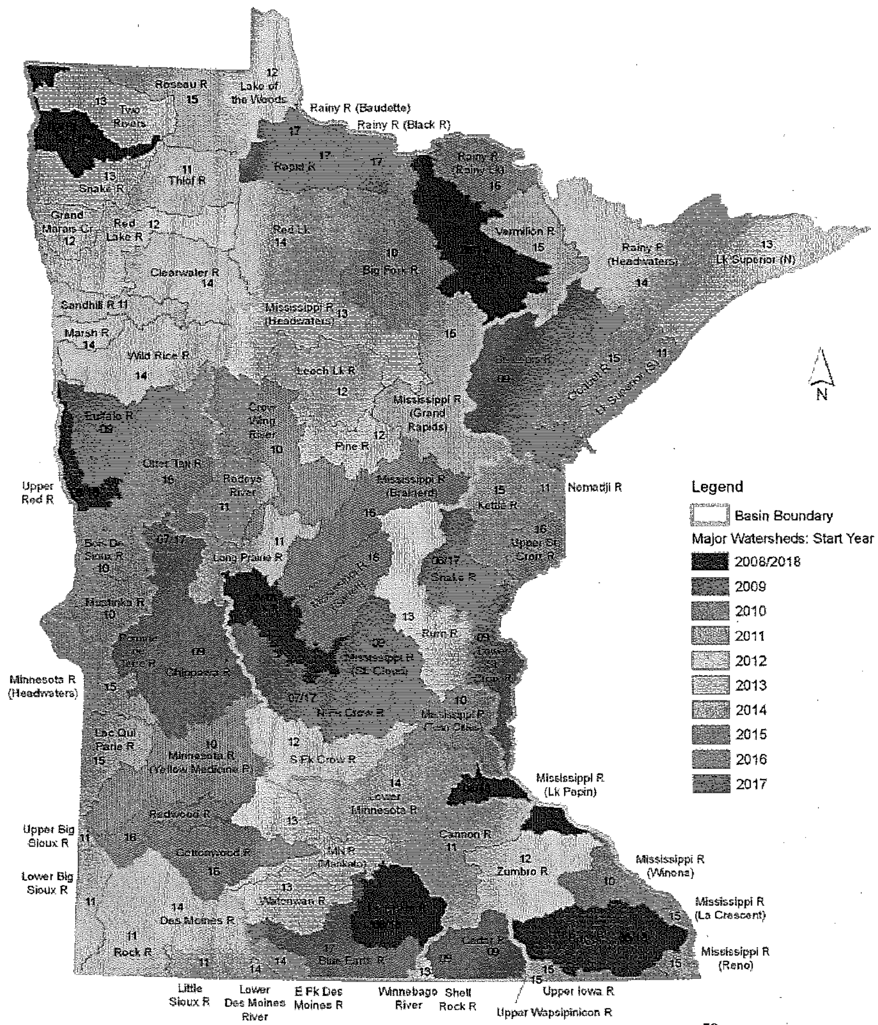

Figure 1: Intensive Watershed Monitoring Map (2008 to 2018)[59]

MPCA's review of water quality data collected during the IWMA involves a five step approach, discussed earlier in this Decision Document in Section 3. The four steps discussed immediate below are related to MPCA's approach for addressing water quality impaired segments.

<u>Step 1:</u> Monitor and gather data information

MPCA employs an intensive watershed monitoring schedule that provides for comprehensive assessments of all of the major watersheds on a 10-year cycle. This schedule provides intensive monitoring of streams and lakes within each major watershed to determine overall health of the water resources, to identify impaired waters, and to identify those waters in need of additional protection to prevent future impairments.

[59] MPCA Watershed Monitoring Approach (Intensive Watershed Monitoring Map), http://www.pca.state.mn.us/index.php/water/water-types-and-programs/surface-water/watershed-approach/watershed-approach.html

Step 2: Assess the data
Based on results of intensive watershed monitoring in step one, MPCA staff and its partners implement a rigorous process to determine whether or not water resources meet water quality standards and designated uses. Waters that do not meet water quality standards are listed as impaired waters.

Assessment of toxic parameters (eg. mercury) continues to occur on a statewide basis every two years. The statewide toxic assessment focuses on those pollutants which influence aquatic consumption and aquatic life toxicity. Also, while MPCA's IWMA focuses monitoring efforts on selected watersheds each year, the State does not discourage outside parties from submitting data and proposing waters to be considered for the 303(d) list which lie outside of the watersheds targeted by the IWMA. MPCA accepts water quality information during the public notice period of the draft 303(d) TMDL list (for the 2012 listing cycle, this was January 23, 2012 to February 27, 2012).

MPCA uses data collected over the most recent 10-year period for water quality assessments.[60] The 'year of record' is based on the USGS water year (October 1 of one year through September 30 of the following year). A full 10 years of data are not required to make an assessment. MPCA uses a 10-year period to provide reasonable assurance that data will have been collected over a range of weather and flow conditions and that all seasons will be adequately represented. MPCA also considers trends in water quality data or changes in climatic conditions (eg. drought periods) which impact water quality during the 10-year period. EPA finds the State's use of the 10-year period for water quality assessments a reasonable approach to ensure that data are collected over a range of weather and flow conditions, and that all seasons are adequately represented.

Step 3: Establish implementation strategies to meet standards
Based on the watershed assessment, a TMDL study and/or protection strategy is completed. Existing local water plans and water body studies are incorporated into the planning process.

Step 4: Implement water quality activities
Included in this step are all traditional permitting activities, in addition to programs and actions directed at nonpoint sources. Partnerships with State agencies and various local units of government, including watershed districts, municipalities, and soil and water conservation districts, will be necessary to implement these water quality activities.

2. Active Solicitation of Data from other Sources
MPCA relies on data it collects along with data from other credible sources, such as other state and federal agencies, local government partners and volunteers, to assess water bodies. In preparation for assessing waters for the 2012 listing cycle, MPCA actively solicited data and information for use in the assessment process. MPCA communicates annual 'Calls for Water Quality Data' which encourage local water organizations to share water quality information. MPCA completed a *Call for Data for the 2010 Annual Surface Water Assessments* and *Call for Data for the 2011 Annual Surface Water Assessments* prior to the 2012 assessment of water quality data by MPCA. These communications are made through the State's 'GovDelivery' electronic mail distribution system.[61] In the *Call for Water Quality Monitoring Data* communication MPCA clearly outlines date deadlines for data submittal from outside parties/organizations. Data submitted before the deadline was considered by MPCA in its staff review

[60] 2012 Methodology, pages 8-9.
[61] *2012 Call for Data email* (email dated October 5, 2011), shared by David Christopherson (MPCA) via Email on 11/9/12 at 8:04 PM.

process to determine whether or not the water body was meeting appropriate water quality standards and designated uses.

In addition to the *Call for Water Quality Monitoring Data* MPCA also conducted a series of meetings around the State with watershed partners in the 16 watersheds (Table 3 of this Decision Document) identified for Intensive Watershed Monitoring within the 2012 listing cycle. During these informal meetings, MPCA asked watershed partners to submit relevant water quality monitoring data for water bodies within each of these watersheds. The 2012 listing cycle was the first listing cycle where MPCA did not publish a solicitation for water quality monitoring data within the Minnesota State Register. MPCA explained that in addition to changes carried forward in the water quality monitoring strategy (i.e. the change to an Intensive Watershed Monitoring strategy) it elected to alter its communication strategy for petitioning for water quality information. MPCA chose to directly contact watershed partners within the 16 watersheds, and felt that this was a more efficient and effective use of resources than State Register announcements.[62]

In 2003, MPCA issued the *Volunteer Surface Water Monitoring Guide*. This guidance discusses data uses and goals of data collection, data quality issues, and includes a specific section on monitoring requirements for data that can be used in 305(b) and 303(d) assessments.[63] This guidance, along with information contained in the formal *Call for Water Quality Monitoring Data (email dated October 5, 2011)*, cited MPCA webpages where interested parties could obtain specific criteria that water quality monitoring data and other information submitted must meet in order to be considered in MPCA's staff review assessment process.

Data used by the State in its assessments are stored in MPCA's water quality data management system, Environmental Quality Information System (EQuIS). EQuIS is the central data repository for assessment information utilized by MPCA. Water quality monitoring data collected by parties other than MPCA are added to EQuIS so long as they meet acceptable MPCA quality assurance and quality control (QA/QC) protocols. Data meeting the QA/QC requirements are entered into EQuIS so that a permanent record is created and data may be merged or considered in light of any other data available for a given water body. Monitoring and data management at MPCA are in accordance with the requirements specified in the Quality Management Plan (June 2007) approved by the EPA and available for review via MPCA's website.[64]

3. Public Participation

In developing Section 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality-related data and information, including consideration of existing and readily available data, and information about waters for which water quality problems have been reported by members of the public.[65] EPA expects states to have full public participation in development of their 303(d) lists prior to submitting the final 303(d) list to EPA for review. Public participation efforts need to be consistent with Section 101(e) of the CWA. When a proposed list has been established, states should, in accordance with the requirements in 40 CFR Part 25, provide the opportunity for public notice

[62] Electronic mail communication (11/9/12 at 8:04 PM): David Christopherson (MPCA) to Paul Proto (EPA, R5).
[63] Appendix D of the *Volunteer Surface Water Monitoring Guide* provides specific requirements for MPCA integrated assessments. This Appendix was revised in September 2009.
[64] MPCA Water Quality Management Plan (June 2007), http://www.pca.state.mn.us/index.php/view-document.html?gid=5479
[65] 40 CFR §130.7.

and submission of comments from the public. States should prepare responses for the comments received.[66]

Minnesota provided the public with the opportunity to review and comment on the assessment decisions through a 35-day formal comment period, public informational meetings and availability of the 2012 Methodology and draft 303(d) list. The 35-day formal comment period was from January 23, 2012 to February 27, 2012. Normally, MPCA holds a 30-day public comment period. For the 2012 listing cycle, MPCA extended its public comment period by 5 additional days. MPCA held seven informational meetings at various locations throughout the State between December 21, 2011 and January 25, 2012. Notice of these meetings and/or the 35-day formal comment period was made available to the general public through news releases, a November 2011 mass mailing by MPCA, information on MPCA's website, and publication in the State Register.[67]

Thirty-nine (39) comment letters or electronic correspondences, were received by MPCA during the public comment period (January 23, 2012 to February 27, 2012). MPCA considered the comments from all thirty-nine comment letters and provided responses to the commenters in a response to public comments summary document. MPCA's response to public comments was shared on an MPCA 2012 303(d) webpage.[68] With the exception of responses to comments regarding Jail and Wine Lakes discussed below, EPA believes that MPCA adequately addressed the comments submitted during the public notice period. MPCA included its responses to public comments within its final 2012 303(d) submittal package to EPA on October 1, 2012.

Data received by MPCA in response to the *Call for Water Quality Monitoring Data* before November 1, 2011, were uploaded into EQuIS for review by MPCA staff. Water quality monitoring data and other information related to specific water bodies, received in public comments within the 35-day public notice period were also uploaded to EQuIS and considered by MPCA staff. Loren J. Larson of Plymouth, Minnesota, submitted summary data showing exceedances of the lake eutrophication water quality standards and a request that MPCA include Jail Lake (18-0415-00) on the 2012 303(d) list.[69] MPCA responded to the commenter within the response to public comment document. MPCA explained that it will review all available water quality data for Jail Lake, and other waters within the Pine River watershed, during the Pine River Watershed comprehensive assessment scheduled for 2014. MPCA stated that deviations from the watershed schedule will be considered by exception, and it will only consider data outside of the schedule if the local benefits of the schedule exception offset the lost assessment efficiency and effectiveness that results from an "out-of-order" assessment.[70]

On February 27, 2012 MPCA asked that the commenter provide the rationale as to why Jail Lake should be considered for listing outside of the Intensive Watershed Monitoring schedule as explained in MPCA 2012 Methodology document. The response received from the commenter by MPCA on March 11, 2012 indicated that local monitoring efforts were losing funding due to the completion of an MPCA grant, and

[66] *Supplemental Guidance on Section 303(d) Implementation,* EPA Memorandum, August 13, 1992, *Approval of 303(d) Lists, Promulgation Schedules/Procedures, Public Participation*, EPA Memorandum, October 30, 1992, and *Guidance for 1994 Section 303(d) Lists,* EPA Memorandum, November 26, 1993.
[67] State Register Vol. 36 No. 27 p. 847-849, http://www.comm.media.state.mn.us/bookstore/stateregister/36_27.pdf.
[68] MPCA Impaired Waters 2012 TMDL List, http://www.pca.state.mn.us/index.php/water/water-types-and-programs/minnesotas-impaired-waters-and-tmdls/impaired-waters-list.html.
[69] See February 27, 2012 correspondence from Loren J. Larson to Howard Markus and *Appendix B: MPCA's response to comments on the draft 2012 TMDL*, which was included in Minnesota's 2012 submittal (received by EPA on October 1, 2012).
[70] 2012 Methodology, page 3.

that a TMDL was required to improve conditions of the lake. MPCA decided that a potential Jail Lake TMDL would at the earliest be initiated by MPCA after the watershed assessment scheduled for early 2014. MPCA did not add Jail Lake to the final 2012 303(d) list.

EPA disagreed with MPCA's decision not to add Jail Lake to the final 2012 303(d) list as a Category 5 water body.[71] EPA explained that the water quality monitoring data shared by the commenter were appropriate data (i.e. within the EQuIS data management system and met the minimum data requirements for lake eutrophication described within the 2012 Methodology[72]) and that MPCA should have considered this water quality data in its assessment of Jail Lake. While EPA understands MPCA's interest in following the State's schedule for its systematic watershed approach (the Intensive Watershed Monitoring strategy) when assessing water quality monitoring data, MPCA needs to consider all readily available and accessible data for assessment decisions. In an email message sent on November 30, 2012, EPA requested that MPCA add Jail Lake (18-0415-00) to the final 2012 303(d) list as a Category 5 water body. MPCA agreed with the request in an email sent to EPA on December 10, 2012 and added Jail Lake to the final 2012 303(d) list.

Tera L. Guetter, on behalf of the Pelican River Watershed District, submitted available water quality data and a request that MPCA return St. Clair Lake (03-0382-00) to the 2012 303(d) list. MPCA removed St. Clair Lake from the 303(d) list due to 'insufficient data.' The commenter also requested that MPCA include Wine Lake (03-0398-00) as a Class 5 water body on the final 2012 303(d) list. The commenter included summary water quality data from the EQuIS data management system to demonstrate non-attainment of lake eutrophication water quality standards for both St. Clair Lake and Wine Lake in her February 15, 2012 letter to Howard Markus (MPCA).[73] Upon further consideration, MPCA concurred that St. Clair Lake should be returned to the 2012 303(d) list as a Category 5 water body.

MPCA asked the commenter to provide additional rationale as to why Wine Lake should be considered for listing outside of the Intensive Watershed Monitoring schedule as explained in MPCA 2012 Methodology document. MPCA was not persuaded that Wine Lake should be added as a Category 5 water on the final 2012 303(d) list. EPA disagreed with MPCA on this decision.[74] EPA explained that the water quality monitoring data shared by the commenter were appropriate data (i.e. within the EQuIS data management system and met the minimum data requirements for lake eutrophication described within the 2012 Methodology[75]) and MPCA should have considered this water quality data in its assessment of Wine Lake. In an email message sent on November 30, 2012, EPA requested that MPCA add Wine Lake (03-0398-00) to the final 2012 303(d) list as a Category 5 water body. MPCA agreed with the request in an email sent to EPA on December 6, 2012 and added Wine Lake to the final 2012 303(d) list.

Jean B. Sweeney, Vice President of 3M Environmental, Safety and Health Operations, on behalf of 3M, submitted data and a request that the State remove four assessment units in Pool 2 on the Mississippi

[71] See Administrative Record Document #35, telephone conversation between EPA and MPCA on November 7, 2012.
[72] 2012 Methodology, page 35.
[73] See February 15, 2012 correspondence from Tera L. Guetter to Howard Markus and *Appendix B: MPCA's response to comments on the draft 2012 TMDL*, which was included in Minnesota's 2012 submittal (received by EPA on October 1, 2012).
[74] See Administrative Record Document #35, telephone conversation between EPA and MPCA on November 7, 2012.
[75] 2012 Methodology, page 35.

River, which have been identified by MPCA as being impaired for aquatic consumption due to PFOS.[76] PFOS are manmade chemicals used to manufacture products which are heat resistant, stain resistant and repel water. Minnesota originally added these four assessment units within Pool 2 to its 2008 303(d) list based on water quality data which showed that a consumption advisory was necessary for the freshwater drum species in Pool 2. Minnesota Administrative Rules (7050.0150 subpart 7) stated that, "A waterbody will be considered impaired when the recommended consumption frequency is less than one meal per week, such as one meal per month, for any member of the population…the impaired condition must be supported with measured data on the contaminant levels in the indigenous fish."

Despite the data and information submitted by the commenter, the State believes that assessment units in Pool 2 are still not meeting the recommended consumption frequency and therefore not meeting water quality standards. MPCA declined to remove these 4 assessment units from the 2012 303(d) list, explaining that the commenter failed to provide sufficient data to support her case for delisting. In particular, MPCA found that the water quality data submitted by the commenter were not robust enough to cite downward trends in PFOS concentrations within fish tissue in Pool 2. MPCA stated in its response to public comment document, *"Given the wide range of PFOS concentrations observed in Pool 2 fish tissue and the insufficiency of available data, MPCA believes it is prudent and protective of public health and the environment to be very cautious as MPCA determines if and when to delist Pool 2 as an impaired water."*[77] MCPA indicated that fish tissue data from Pool 2 would continue to be analyzed in future assessment cycles and explained that it was working with the MDNR and the MDH to complete additional fish sampling of Pool 2 in the future. EPA agrees with MPCA that due to the variability of PFOS concentrations and the insufficiency of available data, delisting is not supported. EPA finds the continued listing of the four assessment units in Pool 2 on the Mississippi River, identified by the commenter, as being impaired for aquatic consumption due to PFOS on the State's 2012 303(d) list to be reasonable.

Although no other public comments included data, some comments highlighted data and information that were already available to the State, and requested that the State reconsider this available information. Commenter Paul Nelson, a Program Manager for Scott County's Natural Resources Program, submitted a request encouraging MPCA to reconsider the data and information used in listing two river segments.[78] The commenter proposed that MPCA remove County Ditch 10 (CD3 to Raven Str) (07020012-628) and Picha Creek/Unnamed Creek (Unnamed Creek to Unnamed Creek) (07020012-579) from the State's 2012 303(d) list due to the misidentification of designated use for County Ditch 10, and the misidentification of a sampling location and flawed water quality monitoring data which led to the listing for Picha Creek/Unnamed Creek.

Upon reconsideration of information presented by the commenter, MPCA determined that County Ditch 10 and Picha Creek/Unnamed Creek were to remain on the 2012 303(d) list. MPCA explained that for Picha Creek to be removed from the 303(d) list, MPCA would need to see evidence that low flow conditions cited by the commenter were due solely to natural factors, and that the natural factors were the only stressors causing or contributing to the impairment. The stressor identification document for

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[76] See January 31, 2012 correspondence with enclosures from Jean B. Sweeney to Howard Markus and *Appendix B: MPCA's response to comments on the draft 2012 TMDL*, which was included in Minnesota's 2012 submittal (received by EPA on October 1, 2012).
[77] See MPCA's *Responses to the draft 2012 Total Maximum Daily Load List 30-Day Public Notice Comments (September 7, 2012)* document (received by EPA on October 1, 2012).
[78] See February 2, 2012 electronic mail (E-mail) correspondence from Paul Nelson to Howard Markus and *Appendix B: MPCA's response to comments on the draft 2012 TMDL*, which was included in Minnesota's 2012 submittal (received by EPA on October 1, 2012).

Picha Creek, which was assembled by MPCA staff, indentified other potential non-natural causes (ex. habitat fragmentation, habitat alteration and sedimentation) which are likely causing and contributing to the impairment in Picha Creek. MPCA also explained that County Ditch 10 (CD3 to Raven Str) (07020012-628) was assigned the correct designated use and provided supporting data which demonstrated that the water body was impaired for bacteria. EPA agrees with MPCA's analysis and finds the continued listing of County Ditch 10 (CD3 to Raven Str) (07020012-628) and Picha Creek/Unnamed Creek (Unnamed Creek to Unnamed Creek) (07020012-579) on the State's 2012 303(d) list to be reasonable.

Commenter Greg Bartz of Sleepy Eye, Minnesota, with the support of approximately twenty-seven (27) other co-signees, submitted a request encouraging MPCA to reconsider data and information utilized in designating County Ditch 10 (John's Creek) (07020007-571) as impaired for nitrate-nitrogen exceedances. The commenter explained that county and judicial ditches cannot be designated as impaired for Class 1 or Class 2 water quality standards. Also, the commenter described how MPCA misidentified County Ditch 10 as a trout stream and the Minnesota River basin has not historically had trout species in its waters. The commenter believes that the impairment listing is incorrect if the listing is based on the protection of an introduced species. Upon reconsideration of information presented by the commenter, MPCA determined that County Ditch 10 was to remain on the 2012 303(d) list. MPCA cited Minnesota Rule 7050.0470, subpart 5 as justification for designating County Ditch 10 as a Class 1b water. Class 1b waters are protected for drinking water use (under Minnesota Rule 7050.0220, subpart 3a) and waters recognized as potential drinking water resources are protected under a nitrate-nitrogen water quality standard. Since MPCA has appropriately identified County Ditch 10 as a water where Class 1b water quality standards are applicable and data supports a finding that it has exceeded the nitrate-nitrogen water quality standard, EPA find MPCA's listing of County Ditch 10 on the State's 2012 303(d) list to be reasonable.

Commenter Tom Moe, on behalf of US Steel Minntac, submitted a request encouraging MPCA to reconsider the data and information utilized in designating the Minntac Tailings Basin (69-1351-00) as not attaining the water quality standards for mercury in fish tissue.[79] The commenter asserted that the Minntac Tailings Basin is not a water of the State. Additionally, the commenter communicated that US Steel Minntac had completed independent water quality sampling and had determined that mercury concentrations in fish tissue were below the water quality standard. The commenter did not provide water quality monitoring data to substantiate these claims. Upon reassessment, MPCA concluded that the Minntac Tailings Basin was not to remain as a Category 4A water, which would be addressed by the 2012 Revision to the Statewide Mercury TMDL. MPCA explained that the Minntac Tailings Basin is not a water of the State and is considered part of the facility's treatment system, covered under Minntac's NPDES/SDS permit. Since the Minntac Tailings Basin is not a water of the State, EPA finds it reasonable for MPCA to delist the water.

Several commenters requested that MPCA reconsider the listing of Seven Mile Creek (07020007-562) for violations of the chlorpyrifos water quality standard. Chlorpyrifos is a pesticide which is used throughout the State. Amy Linnerooth of Nicollet County, Kerry Hastings and Elisha Modisett-Kemp from Dow AgroSciences LLC, Ken Ostlie of the University of Minnesota, Kurt Kruger of the Minnesota

[79] See January 31, 2012 E-mail correspondence from Jesse Anderson (MPCA), referencing the commenter Tom Moe, to Howard Markus and *Appendix B: MPCA's response to comments on the draft 2012 TMDL*, which was included in Minnesota's 2012 submittal (received by EPA on October 1, 2012).

Soybean Growers Association, and John Mages of the Minnesota Corn Growers Association, were some of the commenters making this request. Upon consideration of the information submitted from these three commenters, MPCA determined that Seven Mile Creek should remain on the 2012 303(d) list for chlorpyrifos water quality violations.

The compound known as 'chlorpyrifos' is a pesticide which is measured via water quality studies carried out by the MDA. In its response to these commenters, the MPCA described how available pesticide data, collected by the MDA, were carefully screened to satisfy all quality assurance and quality control (QA/QC) protocols and Quality Assurance Program Plans (QAPPs). The MPCA considered the data collected within the Seven Mile Creek assessment unit to be valid and scientifically defensible.

In addition to the MPCA's defense of MDA's procedures within the response to public comments summary documentation, the MDA also drafted and included a letter (dated May 17, 2012) to public commenters. In this letter, MDA addressed individual questions from commenters and outlined other supporting scientific observations which were backed by MDA collected water quality data. MDA explained that although it did not detect exceedances of the chlorpyrifos water quality standard, it has observed upward trends in chlorpyrifos detection frequency and concentration magnitude. MDA attributed these increases to localized changes in pesticide usage and agricultural management practices.

MPCA added that MDA's water quality data observations combined with its own ambient water quality sampling data signified that Seven Mile Creek was threatened by chlorpyrifos and therefore should be listed on its 2012 303(d) list. MPCA will continue to monitor the Seven Mile Creek water body and will work with the MDA in promoting best management practices for pesticide usage throughout Minnesota. After reviewing the MDA data, EPA agrees with MPCA that the data meet the appropriate QA/QC protocols and the QAAP requirements, therefore, EPA finds MPCA's decision to list Seven Mile Creek (07020007-562) for impairments under chlorpyrifos water quality standard reasonable.

Kevin Pylka on behalf of PolyMet Mining Inc., Keith Hanson of the Minnesota Chamber of Commerce and David Skolasinski of Cliffs Natural Resources Inc., all submitted comments requesting MPCA reconsider Index of Biotic Integrity (IBI) listings in the 2012 303(d) list. The commenters stated that MPCA needs to provide the opportunity for public review and comment on the IBI development process including calibration, scoring and application of the IBI assessment methodology. Additionally, the commenters requested that MPCA provide a Statement of Need and Reasonableness (SONAR) for protocols and documentation associated with the IBI development.

MPCA's response to public comments document re-emphasized that MPCA's biological assessment process is grounded in the biological assessment framework provided in a SONAR document associated with the 2002 rulemaking for Minn. Rules 7050.0150, subp. 6. This document acknowledges the use of biological community assessments as direct ways of predictably measuring aquatic life conditions in streams, and that biological community assessments integrate the combined effects of all stressors over time and space. MPCA utilized this IBI assessment framework in its biological assessments for the 2012 303(d) list. MPCA explained that increases in the breadth and scope of sampling data, due to the Intensive Watershed Approach, have allowed MPCA to refine the calibration of its IBIs scoring system for the 2012 List. If and when the biological assessment process is further refined, MPCA indicated that future revisions will be available for review via the public notice process. Additionally, the MPCA communicated that it will keep the public updated on its progress through its webpage and other

communication outlets (ex. State Register notices, email notifications, public meetings etc.). Appropriate language outlining the changes to the biological assessment methodology will be reflected within the Methodology document (Assessment Guidance) for the listing cycle which the changes are applicable. Stakeholders may submit comments on the Assessment Guidance during the public notice period for the draft 303(d) list. EPA agrees that the IBI assessment methodology used for the 2012 303(d) list was subject to adequate public notice and comment and therefore finds MPCA's IBI listings to be reasonable.

Minnesota's final 2012 303(d) list did not include water bodies impaired due to nonattainment of the State's sulfate water quality standard (Minnesota Rule 7050.0224) (sulfate WQS). Prior 303(d) lists did not include impairment listings due to non-attainment of the sulfate WQS. In addition to the concerns expressed from tribal partners, MPCA received comments from members of the public requesting that the State reconsider listing specific water bodies for nonattainment of the sulfate WQS. Some of these commenters cited sulfate values above the sulfate WQS from draft and final Environmental Impact Statements (EIS) for mining operations in northern-central Minnesota. Other commenters referenced water bodies which they believed to be impacted by sulfate but did not provide water quality data in support of their comments.

As a result of public comments and discussions EPA held with federally recognized tribes, EPA completed an independent review of water bodies cited within the public comments submitted to MPCA in February 2012. EPA reviewed ambient water quality data related to segments discussed in the draft and final EIS, effluent discharge data from discharge monitoring reports, and NPDES permits and other sulfate and wild rice-related documentation. MPCA assisted EPA throughout this evaluation process. Based on this review, EPA did not identify any waters for which available data indicate that waters specifically identified in Minnesota Rule 7050.0224 & 7050.0470 as wild rice production waters were not attaining the sulfate water quality standard.

In its response to the public comments and EPA inquiries, MPCA explained that it does not intend to assess water bodies potentially impaired by sulfate until it has developed a wild rice/sulfate impaired waters assessment approach and this approach has gone through the necessary public review process. MPCA explained that without an approved wild rice/sulfate impaired waters assessment approach, it was inappropriate to analyze ambient sulfate data to determine compliance with the sulfate WQS for the 2012 303(d) list. MPCA committed to the development of a wild rice/sulfate impaired waters assessment approach for the 2014 listing cycle within its response to public comments received for the 2012 303(d) list and in subsequent communications with EPA. MPCA also committed to utilizing this wild rice/sulfate impaired waters assessment approach to analyze and assess water quality data for potential impairment of the sulfate water quality standard for the 2014 listing cycle.

MPCA's general method for assessing a water body for potential non-attainment of a water quality standard involves the review and analysis of ambient water quality data and the comparison of that data to the appropriate water quality standard. During the review of ambient water quality data, MPCA verifies that the data meet minimum data requirements, including the criteria defining the time period of sample collection, and determines whether they indicate the attainment or non-attainment of the relevant water quality standard. [80] If it is found that the water body does not meet the water quality standard, then the water is added to the State's 303(d) Impaired Waters list. MPCA has indicated that it cannot

[80] 2012 Methodology, pages 8-12.

undertake assessments utilizing its sulfate WQS until MPCA has developed a wild rice/sulfate impaired waters assessment approach. This assessment approach would outline the specific criteria which must be utilized in order to evaluate water bodies against the sulfate WQS.

In order for MPCA to develop its wild rice/sulfate impaired waters assessment approach, MPCA indicated that it must first clarify how it will define specific provisions within the sulfate WQS. In conversations with EPA, MPCA explained it must define the protocols it will use for determining which water bodies it considers as waters used for the production of wild rice. Additionally, MPCA must determine when the sulfate WQS applies to those waters, for the determination of the period when rice may be susceptible to damage from high sulfate levels. MPCA has committed to including the details of the wild rice/sulfate impaired waters assessment approach as part of its 2014 Integrated Report (IR) Methodology document.

MPCA is soliciting sulfate water quality data and wild rice information from tribal partners and other stakeholders in 2013, in advance of the assessment of waters for sulfate impairment for the 2014 303(d) list. MPCA has issued a *Call for Sulfate and Wild Rice Monitoring Data for the 2013 Assessment Cycle*[81] specific to sulfate and wild rice data. MPCA is accepting sulfate and wild rice related data through May 1, 2013. MPCA explains that these data will be analyzed and assessed against the wild rice/sulfate impaired waters assessment approach in 2013 and the determinations of these assessments will be reflected in the 2014 impaired waters list. MPCA stated that where sulfate water quality data meet all of the criteria for assessment and data indicate that a water body is not attaining the sulfate WQS, the State will list the water body as a Category 5 water on the 2014 303(d) list.

In the same email message to stakeholders[82] which announced the *Call for Sulfate and Wild Rice Monitoring Data For the 2013 Assessment Cycle* MPCA explained the procedures for sharing sulfate and wild rice data with MPCA by May 1, 2013. This email message clearly defined how interested parties could upload data to MPCA. Additionally, MPCA shared some of the progress which it had made in the development of the wild rice/sulfate impaired waters assessment approach. This information can be found on the MPCA's 'Minnesota's sulfate standard to protect wild rice' webpage.[83] MPCA communicated that it is still working on finalizing the wild rice/sulfate impaired waters assessment approach and plans to formally solicit input from tribes and other interested parties on the assessment approach. The solicitation and consideration of outside input will be completed prior to the MPCA's assessment of sulfate and wild rice data collected via *Call for Sulfate and Wild Rice Monitoring Data For the 2013 Assessment Cycle*. The final wild rice/sulfate impaired waters assessment approach will be included as part of MPCA's 2014 Integrated Report Guidance Manual for Assessing the Quality of Minnesota Surface Waters. EPA expects that this document will be public-noticed, along with the draft impaired waters list, sometime in the late fall of 2013 (approximately November 2013 to January 2014).

EPA encourages states to evaluate water bodies according to the provisions described in their integrated report assessment methodology. EPA believes that it is reasonable for MPCA to delay in its assessment of water bodies against the sulfate WQS until the 2014 303(d) list. EPA agrees with MPCA's decision to not add the water bodies cited by the stakeholders and tribes for impairment of the sulfate WQS on the

[81] State Register Vol. 37 No. 40 p. 1438, http://www.comm.media.state.mn.us/bookstore/stateregister/37_40.pdf
[82] Email from Katrina Kessler (MPCA) on April 1, 2013
[83] Minnesota's Sulfate Standard to Protect Wild Rice http://www.pca.state.mn.us/index.php/water/water-permits-and-rules/water-rulemaking/minnesotas-sulfate-standard-to-protect-wild-rice.html

State's 2012 303(d) list. EPA expects MPCA to provide guidance on the following requirements in the development of the wild rice/sulfate impaired waters assessment approach:

- Criteria defining the minimum number of water quality sampling points necessary to make an assessment decision;
- Criteria defining the time period for collection of water quality sampling data to make an assessment decision (ex. sample collection must occur between X date and Y date);
- Criteria for whether ambient sulfate water quality data will be averaged, and if so, how; and
- A definition of 'seasonality' applicable to sulfate waters (i.e., when the water quality standard would be applicable to surface waters).
- A description of the approach MPCA will utilize for making determinations on whether a water body is classified as a 'wild rice production water';

EPA will continue to monitor the development of the wild rice/sulfate impaired waters assessment approach by MPCA and its use in assessing water bodies for the 2014 303(d) list.

Tribal Consultation

Under its tribal consultation process, EPA consults with federally-recognized tribal partners, on a government-to-government basis in instances when EPA decisions may impact tribal interests. EPA contacted federally-recognized tribal partners within the State of Minnesota to provide these partners the opportunity to consult with EPA on the final 2012 Minnesota 303(d) list of impaired waters. The Fond du Lac Band of Lake Superior Chippewa and Grand Portage Band of Ojibwe requested tribal consultation with EPA. EPA hosted a tribal consultation conference call on November 5, 2012, during which EPA and the tribes discussed tribal concerns related to Minnesota's final 303(d) list, the 2012 Assessment Methodology Guidance document, and other concerns expressed by the tribes. EPA considered the tribal input during its deliberations related to the approval of the final 2012 Minnesota 303(d) list. EPA provided the Fond du Lac Band of Lake Superior Chippewa and Grand Portage Band of Ojibwe a written response which explained how EPA considered their input in EPA's final decision on the list. This response was sent to the most senior tribal official involved in the consultation from the Fond du Lac Band of Lake Superior Chippewa and Grand Portage Band of Ojibwe.

Priority Ranking

EPA reviewed the State's priority ranking of listed waters for TMDL development, and concluded that the State properly took into account the severity of pollution and the beneficial uses to be made of such waters, as well as other relevant factors. MPCA's TMDL priority ranking is reflected in the scheduled target start and end dates for each impairment, as indicated on Minnesota's 2012 303(d) List. Schedules are developed by MPCA's watershed staff located in each regional office. MPCA management analyzes the schedules on a statewide basis and makes final decisions. The schedules are based upon the following ranking criteria:

- Sequencing with MPCA's intensive watershed schedule, which initiates monitoring in approximately eight major watersheds (HUC-8 size) each year. The watershed monitoring schedule was established by MPCA, and was designed to distribute workload as evenly as possible across all basins (1-2 watersheds per basin per year). In addition, watersheds selected for monitoring are based on a number of factors, including local organizational readiness to do the work, amount of data about the watershed, progression of work upstream to downstream, and whether a major TMDL plan was recently completed and there is a desire to delay monitoring

until after implementation work has been well established to understand progress. The ultimate goal is to complete the first round of watershed monitoring statewide by 2018.

- TMDLs are scheduled to be completed within approximately four years after the initiation of TMDL specific water quality monitoring. TMDLs are also considered as a component of the Watershed Restoration and Protection Strategies (WRAPs).
- TMDL projects that are currently in progress (particularly those that are independent of a scheduled WRAP).
- TMDLs that are scheduled to be started outside of a WRAP due to their unique or complex nature (i.e. toxic impairments like mercury, PCBs and other legacy pollutants).
- Beneficial use, severity of the pollution, regulated dischargers, public interest in the resource, and relative cost and resource requirements of a TMDL are also taken into account in the TMDL scheduling process.[84]

The State's priorities are reflected in the target start and completion dates provided on the 303(d) list. Minnesota has begun scheduling TMDL studies by a watershed approach, i.e., all rivers, streams and lakes in a watershed will be targeted for TMDL development at the same time. Minnesota has developed a schedule for monitoring all major watersheds using the watershed approach.

Criteria considered by the State in developing the watershed approach and associated schedules include, among other things, risk to human and aquatic health; readiness of partners and collaboration opportunities with partners to implement; basin management and basin planning efforts; and programmatic needs and resources. The target start and completion dates on the 303(d) list reflect these priorities. EPA reviewed the State's identification of WQLSs targeted for TMDL development in the next two years, and concludes that the targeted waters are appropriate for TMDL development in this time frame. Minnesota also submitted a long-term schedule for TMDL development for all waters on the 303(d) list. As a policy matter, EPA has requested that States provide such schedules, however, at this time EPA is not taking any action to approve or disapprove the State's long-term schedule pursuant to Section 303(d).

Tables

Table A-1: Approved 2012 303(d) List of Impaired Waters needing TMDLs
Table A-2: Waters being removed from 303(d) list

[84] See Administrative Record Document #9, "*Electronic mail message, Subject: MPCA responses to Batch Questions #2 and #3*", pages 1-2.

AUID	NAME	DESCRIPTION	MEDIAN SULFATE CONC	PRELIM WATER QUALITY ASSESS	WATER-QUALITY ASSESSMENT COMMENTS	WILD RICE PRODUCTION WATER DECISION	WILD RICE PRODUCTIoN WATER COMMENTS	WILD RICE DATA SOURCE
04010201-577	Embarrass River	Embarrass Lk to St Louis R	27	Impaired	Recommend split below Esquagama Lake. Stations on lower and upper portions of AUID separated by multiple lakes. Median calculated based on station S005-751.	IF	Determination of a split will be made dependent upon finding wild rice between lakes along upstream portion of reach. No indication of wild rice along suggested new downstream AUID (outlet of Esquagama to St. Louis River) that would result from splitting. 1854 data indicate rice presence along northern portion of reach. Need to contact Darren Vogt for additional WR information on northern portion of reach. From mining information, northern portion includes sparse stands indicated with low density locations. Based solely on this, determined not to be wild rice production water.	Mining company surveys, 1854 Treaty Authority
04010201-552	Partridge River	Headwaters to St Louis R	48	Impaired	High variability in sample measurements within close proximity, geographic and temporal. Flows through Colby Lake (69-0249-00), which has wild rice and 2 high sulfate measurements.			Mining company surveys, 1854 Treaty Authority, UMN study
09030002-501	Sandy River	Headwaters (Sandy Lk 69-0730-00) to Pike R	85	Impaired	One discrepant data point.			Mining company surveys, 1854 Treaty Authority, UMN study
04010201-533	St Louis River	Oliver Bridge to Pokegama River	39	Impaired	Wild rice data (actual point locations) are constrained to river AUID, but are associated in database with St Louis Estuary (69-1292-00), which is broader than river AUID. (Measurements collected further downstream at Blatnik Bridge (downstream from WLSSD discharge) have lower concentrations.)			Data linked to Estuary polygon: Perleberg list, MCBS, DNR call for data submittal, Ann Geissen shapefile, 1854 Treaty Authority, mining company surveys
04010201-532	St Louis River	Mission Creek to Oliver Bridge	15	Impaired	Only 2 data points on AUID, but concentrations immediately upstream (S000-021) and downstream (S007-512, S007-515) (12 out of 15 measurements above 10) indicate impairment.			Data linked to Estuary polygon: Perleberg list, MCBS, DNR call for data submittal, Ann Geissen shapefile, 1854 Treaty Authority, mining company surveys. DNR 2008 study point alongside AUID
09030009-537	Bostick Creek	Headwaters to Lake of the Woods	33	Impaired	Data is from 4 months of 1 year, but consistently shows high sulfate concentrations.			DNR 2008 study point shapefile
07020004-551	County Ditch 12	Headwaters to T113 R36W S8, north line	113	Impaired	DNR 2008 study point indicates rice somewhere on County Ditch 12 (Rice Creek), which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.			DNR 2008 study point shapefile
07010203-512	Rice Creek	Rice Lk to Elk R	18	Impaired	DNR 2008 study point indicates rice somewhere on Rice Creek, which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.			DNR 2008 study point shapefile
07010108-501	Long Prairie River	Fish Trap Creek to Crow Wing R	13	Impaired	DNR 2008 study point indicates rice somewhere on Long Prairie River, which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.			2006 Harvester's report, DNR 2008 study point shapefile
07020011-531	Rice Creek	Headwaters to Maple R	28	Impaired	Consistently high sulfate concentrations at all 4 stations along entire AUID.			DNR 2008 study point shapefile
07020005-501	Chippewa River	Watson Sag to Minnesota R	139	Impaired	DNR 2008 study point indicates rice somewhere on Chippewa River, which is more extensive than the AUIDs with sulfate data. Wherever sampled, the Chippewa River has high sulfate concentrations. Listing individual AUIDs is dependent upon location of wild rice.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-505	Chippewa River	Unnamed cr to E Br Chippewa R	88	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-506	Chippewa River	E Br Chippewa R to Shakopee Cr	70	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-508	Chippewa River	Cottonwood Cr to Dry Weather Cr	90	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-503	Chippewa River	Stowe Lk to Little Chippewa R	39	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07040002-502	Cannon River	Pine Cr to Belle Cr	33	Impaired	DNR 2008 study point indicates rice somewhere on Cannon River, which is more extensive than the AUIDs with sulfate data. Wherever sampled, the Cannon River has high sulfate concentrations. Listing individual AUIDs is dependent upon location of wild rice.			DNR 2008 study point shapefile
07040002-542	Cannon River	Headwaters to Cannon Lk	17	Impaired	See above comment regarding Cannon River.			DNR 2008 study point shapefile
07040002-539	Cannon River	Byllesby Dam to Little Cannon R	27	Impaired	See above comment regarding Cannon River.			DNR 2008 study point shapefile
07040002-501	Cannon River	Belle Cr to split near mouth	31	Impaired	See above comment regarding Cannon River.			DNR 2008 study point shapefile

Footnotes:

1. This spreadsheet includes working notes from an August 13, 2013 meeting of MPCA staff
2. Nothing in this spreadsheet represents a final agency decision
3. The spreadsheet was updated with clarifying footnotes following a November 16, 2013 Data Practices Act Request
4. "Impaired" is staff indication that the median sulfate concentration exceeded 10 mg/L
5. Notations in the column "WILD RICE PRODUCTION WATER DECISION" do not represent an agency decision on applicability of the Class 4A 10 mg/L standard at these water bodies rather they indicate that there are data documenting some history of wild rice

NAME	MEDIAN SULFATE CONC	PRELIM WATER QUALITY ASSESS	WATER-QUALITY ASSESSMENT COMMENTS	WILD RICE PRODUCTION WATER DECISION	WILD RICE PRODUCTOIN WATER COMMENTS	WILD RICE ACRES	WILD RICE DATA SOURCE
Cedar Island (N portion)	21	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10. Evaluate together with S. Portion, Fourth, and Esquagama, all connected via Embarrass R.	Yes	Mining company survey shows low to moderate density of rice throughout perimeter of lake. DNR lake survey jul 12, 1990 noted abundant wild rice, especially along west shore. Sulfate sampling locations are near wild rice observation sites.		Mining Companies, 1854 Treaty Authority
Cedar Island (S portion)	20	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Yes	Mining company survey shows moderate density of rice throughout perimeter of lake. DNR lake survey jul 12, 1990 noted abundant wild rice, especially along west shore. Sulfate sampling locations are near wild rice observation sites.		Mining Companies, 1854 Treaty Authority
Fourth	20	Impaired	Only 1 measurement on lake itself, but concentrations on (connected) Esquagama (69-0565-00-203) and Cedar Island S. Portion (69-0568-02-204,69-0568-02-207) are also high.	IF	Need to contact Darren Vogt for additional WR information. From mining information, sparse stands indicated with single low density location. Based on this, determined not to be wild rice production water.		Mining Companies, 1854 Treaty Authority, Ann Geissen shapefile, 2008 Study shapefile
Esquagama	26	Impaired	Only 3 measurements on lake itself, but concentrations on (connected) Fourth Lake (69-0573-00-201) and downstream (S005-751) are also high.	IF	Need to contact Darren Vogt for additional WR information. From mining information, a single stand with low density. Based on this, determined not to be wild rice production water.		Mining Companies, 1854 Treaty Authority
East Vermilion	14	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Yes	Significant acreage of rice in Big Bay. Assumed to be at least 70 acres in Big bay based on estimated size of Rice Bay at 180 acres, and total wild rice area of 250 acres. Rice Bay is also indicated for wild rice, but no sulfate data have been collected there.	250	1854 Treaty Authority, Ann Geissen shapefile, 2008 Study shapefile
Trout	42	Impaired		No	insufficient information to determine that this is a production water.		DNR call for data submittal, U of MN study sites
Elizabeth (main basin)	30	Impaired		No	Insufficient information to determine that this is a production water. DNR lake survey reports dates 6/2006, 5/1997 no wild rice noted.		DNR call for data submittal
Swan (W bay)	tbd	TBD	Impaired, subject to verification of location of station 31-0067-01-204. If judged strictly on station 01-205, sulfate not significantly above 10.	Yes	Staff recommendation for the ESSAR water permit is that this is a production water. Check with Stephanie for recommendation date.	50 (00)	2006 Harvest Survey (00 polygon), Ann Geissen shapefile, Perleberg list, 2008 Study shapefile. Rice data tied to underlying lake (-00)
Swan (main basin)	tbd	Impaired	Median dependent upon station 31-0067-01-204 being included in main basin. Regardless, median is significantly above 10.	Yes	* The outlet bay upstream of the dam is a wild rice production water, based on mining company survey from 2011 has densities of 4 and 5.	50 (00)	2006 Harvest Survey (00 polygon), Ann Geissen shapefile, Perleberg list, 2008 Study shapefile. All tied to underlying lake (-00). UMN study data tied to Main Basin polygon (-02).
Preston	45	Impaired		No	insufficient information to determine that this is a production water. Lake Survey reports from 3/29/1995, 2/21/2006 noted no wild rice.		DNR call for data submittal
Embarrass	21	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Yes	Upper portion of Embarrass shows numerous low to moderate density observations around entire perimeter in mining surveys from 2009 and 2010. However, Lower Embarrass had few observations of low density. *Only Upper Embarrass is considered a wild rice production water.		1854 Treaty Authority, mining company data, Perleberg list, UMN Study
Lady Slipper	314	Impaired	Multiple sites; station 203 has single observation, still above 10, but well below other observations.	No	1997 fisheries transect from 1997 indicated small area of rice. 2011 and 2012 UMN study found no wild rice.		Perleberg list, UMN study
Monongalia (main basin)	31	Impaired		IF	Photo from 2012 exists of high density wild rice. Mark Gernes has harvested rice on the lake for several recent years. U of MN study showed 3 pct coverage at study site. Contact Ed Swain and Mark Gernes for details on location of harvestable rice. Contact Donna Perleberg for more information on inclusion in her list.		UMN study (tied to main basin -01). MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile on underlying waterbody (-00)
Monongalia - Middle Fk Crow	29	Impaired	One questionable sample with very low concentration, turned out to be pore water, sample was excluded and median recalculated.	Yes	Photo from 2012 exists of high density wild rice. Mark Gernes has harvested rice on the lake for several recent years. U of MN study showed 38.75 pct coverage at study site.		UMN study (tied to polygon -02). MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile on underlying waterbody (-00)
Crow River Mill Pond (East)	26	Impaired		IF	Contact Donna Perleberg for more information on Mill Pond observation from MCBS survey 8/6/2002. Contact Mark Gernes for local knowledge.		MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile, all on underlying waterbody (-00)

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4. "Impaired" is staff indication that the median sulfate concentration exceeded 10 mg/L
5. Notations in the column "WILD RICE PRODUCTION WATER DECISION" do not represent an agency decision on applicability of the Class 4A 10 mg/L standard at these water bodies rather they indicate that there are data documenting some history of wild rice

NAME	MEDIAN SULFATE CONC	PRELIM WATER QUALITY ASSESS	WATER-QUALITY ASSESSMENT COMMENTS	WILD RICE PRODUCTION WATER DECISION	WILD RICE PRODUCTOIN WATER COMMENTS	WILD RICE ACRES	WILD RICE DATA SOURCE
Hay	52	Impaired		Yes	Staff recommendation for Keetac permit in 2011 was that this is a wild rice production water. Check with Brandon Smith on the date of the Perry Pit dewatering permit.		Ann Geissen shapefile, UMN study, 2008 DNR study
Big Stone	404	Impaired		No	insufficient information to determine that this is a production water. DNR lake survey from 3/17/2004 noted no wild rice.		DNR call for data submittal
Lac Qui Parle (NW bay)	293	Impaired		No	3/23/2000 DNR lake survey - no wild rice noted.		DNR call for data submittal - on underlying waterbody (-00)
Lac Qui Parle (SE bay)	270	Impaired	Only 1 data point on this bay, but concentrations on upstream portion of lake (37-0046-02) and downstream river (07020004-688) are also high.	No	3/23/2000 DNR lake survey - no wild rice noted.		DNR call for data submittal - on underlying waterbody (-00)
Mina	25	Impaired		IF	DNR Lake Surveys from 8/4/1949, 1/2/1998 indicated wild rice presence. 1949 comment indicates sparse presence. 1998 survey was a fisheries transect. Contact Ann Geisen for further detail on why this waterbody was included in call for data submission.		DNR call for data submittal
Pearl	21	Impaired		IF	DNR lake survey indicates wild rice was rare August 24 - 28, 1987. Contact Ann Geisen for further detail on why this waterbody was included in call for data submission.		DNR call for data submittal
Sandy	135	Impaired		Yes	Locate draft staff recommendation for production water status. Wild rice acreage from 2008 report.	121	1854 Treaty Authority, UMN study, Ann Geissen List, 2008 study shapefile
Little Sandy	145	Impaired		Yes	Locate draft staff recommendation for production water status. Wild rice acreage from 2008 report.	89	1854 Treaty Authority, Ann Geissen List, 2008 study shapefile
Marsh	379	Impaired		No	DNR lake survey reports from 3/9/2004, 3/28/2001 noted no wild rice, 4/14/1954 waterfowl/muskrat habitat survey comment says "wild rice would not do well in this lake". 8/1962 map showed no wild rice. 7/1968 game and fish map showed no wild rice.		DNR call for data submittal
Lillian	151	Impaired		No	5/13/1997 lake survey report noted no wild rice.		DNR call for data submittal
Lobster	22	Impaired	Only 1 measurement on lake itself, but concentrations on lakes immediately adjacent (21-0108-00, 21-0180-00, 21-0150-00) are also high.	No	2/5/1997 lake survey report no rice noted. 1949 report did not note any rice and "wild rice would not do well in this lake". Follow up with 1997 fisheries report.		Perleberg list
Sturgeon	58	Impaired	All data collected on Mississippi (MissR 796.9, MissR 805.0), but direct hydrologic connection with Sturgeon.	No	insufficient information to determine that this is a production water.		Ann Geissen shapefile, DNR 2008 study
Long	33	Impaired	Only 1 measurement on lake, but concentrations (5 miles) downstream (S005-630) are also high.	No	insufficient information to determine that this is a production water. DNR Lake Survey report from 2/5/1997 did not note any wild rice.		DNR call for data submittal
Red Lake River Reservoir	tbd	Insufficient Information	Drinking water intake near dam may yield additional sulfate data. Downstream sulfate concentrations high (S002-324), but only 2 measurements recorded. Wild rice location unknown; will determine whether it is necessary to seek additional sulfate data, leading to possible judgment of impairment.	IF	Need to consult fisheries area surveys from 7/2/2009 and 8/1/1994 to determine wild rice location.		DNR call for data submittal, Perleberg list
Rice	tbd	Insufficient Information	Outflow stream has high sulfate. Main inflow is close to outlet, large distance from lake sampling locations. Wild rice location within lake unknown, but will determine whether outflow sulfate concentrations are sufficient for judgment of impairment.	No	Insufficient information to determine that this is a production water. UMN study did not observe any rice in 2012.		Ann Geissen shapefile, DNR 2008 study, UMN study

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May 28, 2014

Tinka Hyde, Water Division Director (Hyde.Tinka@EPA.gov)
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77 W. Jackson Blvd.
Chicago, Illinois 60604-3507

Paul Proto, Environmental Scientist (Proto.Paul@EPA.gov)
United States Environmental Protection Agency, Region 5
77 W Jackson Blvd
Chicago, IL 60604

Dear Ms. Hyde, Mr. Proto:

WaterLegacy is a Minnesota non-profit organization formed to protect Minnesota's water resources and the communities that rely on them. We commented on the Minnesota Pollution Control Agency (MPCA) 2014 Impaired Waters List on February 10, 2014, and our comment letter and Exhibits A and C are attached. We are writing to ask that the U.S. Environmental Protection Agency (EPA) deny approval of the MPCA's 2014 Impaired Waters List pending MPCA's consideration of additional data regarding mercury impairments. We also request that the EPA recommend a timeline for the MPCA to provide a listing of wild rice impaired waters.

WaterLegacy asks that the EPA deny approval of the 2014 Impaired Waters List pending more thorough consideration of information regarding mercury in the water column and mercury in fish in the Partridge River, Embarrass River and Colby Lake. We believe that the rationale provided by the MPCA in rejecting the listing of these waters as mercury impaired waters is insufficient and does not consider all readily available water-quality related data.

We also believe that the MPCA has more than enough information to list at least all of the waters identified in the MPCA August 2013 spreadsheet (*See* Exhibit C, MPCA August 2013 Wild Rice Impairments spreadsheet) as waters used for the production of natural wild rice impaired due to sulfate water quality standard exceedance. We ask that the EPA advise the MPCA to propose listing wild rice impaired waters by August 2014 so that the public can comment and EPA can review Minnesota's complete 2014 Impaired Waters List by the close of the year.

Mercury Impaired Waters

WaterLegacy appreciates the MPCA's addition of Wynne Lake and Sabin Lake to its draft 2014 Impaired Waters List due to mercury impairments. However, WaterLegacy believes that the MPCA's rationale for rejecting proposed listing of the Embarrass River, the Partridge River and Colby Lake as mercury impaired waters is inconsistent with applicable regulations. The MPCA was required under law to assemble and analyze all existing and readily available water quality-related data.

WaterLegacy is puzzled by the MPCA's statement in its responses to our impaired waters comments that the Barr Engineering report *2010c* did not provide assessment of mercury in the Embarrass River. Barr *2010c* included 2009 sampling data showing average total mercury concentrations of 3.7 ng/L and 3.5 ng/L at sites PM12 and PM13 in the Embarrass River. Barr *2010c*, Table 1, p. 15. This data seems more than sufficient to demonstrate that the Embarrass River fails to meet the applicable Great Lakes mercury standard of 1.3 ng/L.

WaterLegacy is also troubled by the implication in the MPCA's response to comments that, if the public has not provided sufficient mercury sampling data for Colby Lake, the Partridge River and the Embarrass River, the Agency will not consider readily available data from other sources to decide whether to list these waters as impaired. The Clean Water Act and its implementing regulations do not entitle state agencies to assume blinders to avoid listing impaired waters.

Federal regulations require that states identify water-quality limited segments requiring waste load allocations, load allocations and total maximum daily loads. 40 C.F.R. §130.7. To identify and set priorities for water-quality limited segments, states must "assemble and evaluate all existing and readily available water quality-related data and information to develop the list." 40 C.F.R. §130.7 (b)(5). At a minimum "all existing and readily available water quality-related data and information" includes waters where dilution calculations or predictive models indicate nonattainment of applicable water quality standards and waters for which water quality problems have been reported by local, state, or federal agencies; or members of the public; or academic institutions. Organizations and groups should be actively solicited for research they may be conducting or reporting. 40 C.F.R. §130.7(b)(5).

Once members of the public had identified the Embarrass River, the Partridge River, Wynne Lake, Sabin Lake and Colby Lake as mercury impaired waters, the MPCA had an obligation to review all existing and readily available data, including data from discharge monitoring reports, data from the Minnesota Department of Natural Resources Mine Water Research Advisory Panel (MWRAP) research in the St. Louis River watershed, and any data collected by the Fond du Lac Band of the Lake Superior Chippewa or other Bands, including fish tissue as well as water column concentrations. We believe that additional data about mercury impairments in these waters should have been solicited by MPCA from MDNR, from tribal researchers, and from commenters as well as sought from its own files.

WaterLegacy has reviewed only a small portion of the MWRAP data sponsored by the Minnesota Department of Natural Resources, which includes the attached spreadsheet from J. Jeremiason's data. This spreadsheet, highlighted to call attention to data for the Embarrass River and Partridge River, contains total mercury data for the Embarrass River and Second Creek/Partridge River. The MWRAP data confirms mercury concentrations far above the 1.3 ng/L standard. We calculated the mean total mercury concentration from Jeremiason's 19 samples for the Embarrass River as 3.2 ng/L and the mean total mercury concentration from his 18 samples for Second Creek/Partridge River as 8.0 ng/L. (*See* Exhibit D, 2013 (MWRAP) Jeremiason Master Sample List).

WaterLegacy requests that the EPA deny approval of the 2014 Section 303(d) Impaired Waters List until the MPCA reviews all readily available data on the mercury impairments identified by the public. We believe that this review will further support the MPCA's proposal to list Wynne

Lake and Sabin Lake and will also result in the 2014 listing of the Embarrass River, Partridge River and Colby Lake as mercury impaired waters.

Sulfate Impaired Wild Rice Waters

WaterLegacy has requested for more than two years that wild rice waters impaired due to exceedance of the 10 mg/L sulfate standard be listed without delay on Minnesota's Section 303(d) Impaired Waters List. Documents received by WaterLegacy through the Minnesota Data Practices Act suggest that this year's delay in listing wild rice impaired waters until criteria for "waters used for the production of wild rice" are resolved was a response to industry pressure.

As reflected in our comments submitted on February 10, 2014, WaterLegacy agrees with the statement made in the MPCA's letter to U.S. Steel Corporation on November 8, 2103 that the MPCA is authorized to determine whether a water body is an impaired water used for the production of wild rice on the basis of information developed about the particular water. (*See* Exhibit A, MPCA Letter to USS, November 8, 2013). The 2011 legislation pertaining to rulemaking review of the wild rice sulfate standard does not affect the MPCA's obligation under the Clean Water Act to designate and protect impaired waters.

There is also no requirement in law that regulated parties must agree to the methodology used to list impaired waters or that the desire to amend definitions through rulemaking supersedes a state's obligation to designate impaired waters. WaterLegacy is concerned that the MPCA's 2014 listing of wild rice impaired waters is being held hostage until a rulemaking definition of "waters used for the production of wild rice" has been negotiated.

WaterLegacy believes that the assessment criteria developed by the MPCA for its preliminary listing of wild rice impaired waters are under-inclusive. But, Minnesota must move forward and, for the first time in its history, demonstrate a willingness to consider sulfate-polluted waters as wild rice impaired waters. We urge the EPA to require that the MPCA proceed without further delay to list as wild rice impaired waters at least the "low-hanging fruit" identified in August 2013. These wild rice impaired waters include:

Embarrass River (Embarrass Lake to St. Louis River)
Partridge River (Headwaters to S. Louis River)
Sandy River (Headwaters - Sandy Lake to Pike River)
St. Louis River (Oliver Bridge to Pokegama River)
St. Louis River (Mission Creek to Oliver Bridge)
Bostick Creek (Headwaters to Lake of the Woods)
County Ditch 12 (Headwaters to T113 R36W S8 north line)
Rice Creek (Rice Lake to Elk River)
Long Prairie River (Fish Trap Creek to Crow Wing River)
Rice Creek (Headwaters to Maple River)
Chippewa River (Watson Sag to Minnesota River)
Chippewa River (Unnamed Creek to E. Br. Chippewa River)
Chippewa River (E. Br. Chippewa River to Shakopee Creek)
Chippewa River (Cottonwood Creek to Dry Weather Creek)
Chippewa River (Stowe Lake to Little Chippewa river)
Cannon River (Pine Creek to Belle Creek)

Cannon River (Headwaters to Cannon Lake)
Cannon River (Byllesby Dam to Little Cannon River)
Cannon River (Belle Creek to split near mouth)
Cedar Island Lake (North Portion)
Cedar Island Lake (South Portion)
Fourth Lake
Esquagama Lake
East Vermillion Lake
Trout Lake
Elizabeth Lake (Main Basin)
Swan Lake (West Bay)
Swan Lake (Main Basin)
Preston Lake
Embarrass Lake
Lady Slipper Lake
Monongalia Lake (Main Basin)
Monongalia Lake (Middle Fork Crow)
Crow River Mill Pond (East)
Hay Lake
Big Stone Lake
Lac Qui Parle (NW Bay)
Lac Qui Parle (SE Bay)
Mina Lake
Pearl Lake
Sandy Lake
Little Sandy Lake
Marsh Lake
Lillian Lake
Lobster Lake
Sturgeon Lake
Long Lake

WaterLegacy has suggested in our February 2014 comments that the MPCA also include in the 2014 Impaired Waters List several waters identified in the PolyMet SDEIS as wild rice waters with excessive sulfates. Based on data in Table 4.2.2-3 on page 4-37 of the SDEIS, these include: Second Creek, Sabin Lake, and Wynne Lake.

WaterLegacy believes this above list would reflect a very limited portion of Minnesota's wild rice impaired waters. However, the listing process is intended to be iterative, and we would support continued rigorous analysis to identify impairments, control sulfate releases and restore conditions that comply with the numeric and narrative water quality standards that were enacted in Minnesota Rules Chapter 7050.0224, subparts 1 and 2 to protect natural stands of wild rice.

Conclusion

For the reasons explained above, WaterLegacy requests that the EPA deny approval of Minnesota's partial 2014 Impaired Waters List until the MPCA has considered the full range of readily available data regarding mercury impairments in the Embarrass River, Partridge River and Colby Lake. We also request that EPA advise the MPCA to proceed without further delay to identify wild rice waters impaired due to sulfate exceedances. An August 2014 deadline for the MPCA's revised proposal on mercury impairments and the MPCA's proposal of wild rice impaired waters is suggested to ensure that Minnesota can propose, the public can comment, and the EPA can review the state's complete impaired waters list before the end of 2014.

Respectfully submitted,

Paula Goodman Maccabee
Advocacy Director/Counsel for WaterLegacy

Enclosures: February 2014 WaterLegacy Comment, Exhibit A, Exhibit C
Exhibit D 2013 MWRAP Data Spreadsheet

Minnesota Pollution Control Agency

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November 8, 2013

Mr. Larry Sutherland
General Manager – Minnesota Ore Operations
United States Steel Corporation
P.O. Box 417
Mountain Iron, MN 55768

RE: United States Steel Corporation Correspondence Related to the Designation of a "Water Used for Production of Wild Rice"

Dear Mr. Sutherland:

The Minnesota Pollution Control Agency (MPCA) has received two letters from United States Steel Corporation (USS) related to the MPCA's process for designation of a "water used for production of wild rice" (WUFPOWR). The first was an August 12, 2013, letter from David Smiga responding to a MPCA document called "Draft Staff Recommendation for 'waters used for production of wild rice' downstream of the US Steel Minntac tailings basin." The second was a September 27, 2013, letter from you responding to MPCA comments on a June 27, 2013, Sulfate Reduction Plan revision required by the reissued water permits for the Keetac operation. In both letters, USS cites Minnesota Session Laws 2011, First Special Session, Chapter 2, Article 4 (2011 Law) asserting it is premature for the MPCA to determine that waters, other than those specifically listed in Minnesota rules, qualify as "waters used for the production of wild rice."

Though those two letters may raise other issues, this letter will respond to that specific assertion.

The MPCA has carefully considered USS' assertion. The MPCA believes that it is authorized to determine whether a particular water is a WUFPOWR on the basis of information developed about the particular water. The MPCA will continue to apply the current draft staff recommendations related to WUFPOWR subject to possible future modification after the criteria development process is completed.

However, because the MPCA continues to receive questions from all stakeholders about how such a determination is made, and specifically a number of requests to review the criteria the MPCA is using for such determinations, the MPCA has concluded that it is appropriate to provide opportunity for input on the criteria following the process laid out in Section 32 (b) of the 2011 Law. The MPCA plans to begin to develop criteria by meeting with the Minnesota Department of Natural Resources and Indian Tribes in late 2013 and anticipates taking public comment from other interested parties through public notice and comment sometime in early 2014.

The draft MPCA staff recommendations mentioned by USS include the following language: "This draft MPCA staff recommendation for ... is based on information currently available. MPCA staff will consider additional information that may become available in the future, whether from project proposers or from other interested/affected parties, and reserves the right to modify the draft staff recommendation accordingly." Once the MPCA has completed the criteria development process, the MPCA will consider those criteria as additional information and will reconsider the current draft MPCA staff recommendations for the waters mentioned in the two USS letters. MPCA staff will share the resulting draft staff recommendation (related to whether those waters are WUFPOWR and subject to the existing standard) with USS and the Tribes as is the current practice. The resulting draft staff recommendation will include any revisions as appropriate based on the additional information.

During the public comment period for any related permit or following issuance of such permit, USS may challenge the application of the criteria in the permitting process. As it did in the litigation initiated by the Minnesota Chamber of Commerce, the MPCA continues to reject any suggestion that WUFPOWR are limited to waters used for the irrigation of paddy rice, and not waters used for support of wildlife and other purposes. See Minn. R. 7050.0224, subp. 4.

Regarding the criteria development processes, the MPCA notes that the 2011 legislation has two distinct parts, rulemaking and criteria development. The 2011 legislation provides:

> *Sec. 32. WILD RICE RULEMAKING AND RESEARCH.*
>
> *(a) Upon completion of the research referenced in paragraph (d), the commissioner of the Pollution Control Agency shall initiate a process to amend Minnesota Rules, chapter 7050. The amended rule shall:*
>
> *(1) address water quality standards for waters containing natural beds of wild rice, as well as for irrigation waters used for the production of wild rice;*
>
> *(2) designate each body of water, or specific portion thereof, to which wild rice water quality standards apply; and*
>
> *(3) designate the specific times of year during which the standard applies.*

Nothing in this paragraph shall prevent the Pollution Control Agency from applying the narrative standard for all class 2 waters established in Minn. R. ch. 7050.0150, subp. 3.

> (b) "Waters containing natural beds of wild rice" means waters where wild rice occurs naturally. *Before designating waters containing natural beds of wild rice as waters subject to a standard, the commissioner of the Pollution Control Agency shall establish criteria for the waters after consultation with the Department of Natural Resources, Minnesota Indian tribes, and other interested parties and after public notice and comment. The criteria shall include, but not be limited to, history of wild rice harvests, minimum acreage, and wild rice density.*

2011 First Special Session, ch. 2, Art. 4 (emphasis added). The legislature has required that Minn. R. ch. 7050 be amended to designate each body of water, or specific portion thereof, to which wild rice water quality standards apply." Rulemaking has a long established formal process that the MPCA follows and will follow in designating waters. Referring to the italicized language, the legislature established a separate criteria development process for the MPCA to follow and specified that the process is to include a consultation component and a public notice and comment component separate from the public notice and comment process that will occur during the rulemaking called for by the legislation. The legislature has required the MPCA to complete the criteria development process prior to rulemaking for designating waters. While the criteria are to be used in the designation process, the legislation imposes no restrictions upon the MPCA's permitting authorities, its obligations to protect impaired waters or its use of the criteria on a case-by-case basis to identify impaired waters and when effluent limitations are necessary in permits.

Based on the foregoing, the MPCA has concluded that it is appropriate to move forward with the process to establish criteria for designating "waters containing natural beds of wild rice," prior to the rulemaking.

The MPCA will use the criteria that emerge from this process for three purposes: to inform the process of "designating" waters subject to the standard in the wild rice standards rulemaking, to apply on a case-by-case basis to identify when effluent limitations are necessary in permits, and to aid the MPCA when listing impaired waters. Attached is a proposed timeline for activities related for the wild rice sulfate standard.

Please feel free to contact me with questions at 651-757-2366.

Sincerely,

for Ann M. Foss
Director
Metallic Mining Sector
Industrial Division

AMF/SB:rm

Attachment

Last Revised: 11/8/13

Wild Rice Sulfate Standard -- Proposed Timeline of Related Activities

(Note: Green shading identifies public notice and dialogue opportunities)

		November-13	December-13	January-14	February-14	March-14	April-14	May-14 =>
Wild Rice Sulfate Standards Study[1]			Receive preliminary study results by December 31, 2013.	MPCA evaluate study data and develop wild rice sulfate standard rulemaking recommendations.		Share and discuss recommendations; begin to develop technical support details.	Begin rulemaking process to designate waters subject to standard and address any recommended changes to the standard.	
"Water Used for Production of Wild Rice" (WUFPOWR) Criteria Development[2]		MPCA meet with tribes, DNR and wild rice advisory committee to discuss WUFPOWR criteria development.		Public notice draft WUFPOWR criteria.	Review comments and revise WUFPOWR criteria as appropriate.	Use WUFPOWR criteria to inform process of "designating" waters subject to the sulfate wild rice standard; apply criteria for rulemaking, assessment, impaired waters list development and permitting.		
303 (d) Impaired Waters List[3]	**Wild rice sulfate assess-ments**	Wait to identify and assess WUFPOWR for the wild rice sulfate standard until WUFPOWR criteria are available.				Identify and assess WUFPOWR for the wild rice sulfate standard, consistent with WUFPOWR criteria. **Public notice draft sulfate-impaired WUFPOWR**. Submit WUFPOWR sulfate assessments to EPA when complete.[4]		
	All other assess-ments	Draft 2014 impaired waters list (minus WUFPOWR assessments) on MPCA website.	Hold public meetings on draft 2014 impaired waters list.	Public notice draft 2014 impaired waters list.	Review and respond to comments and revise draft 2014 impaired waters list as appropriate.		Draft 2014 impaired waters list due to EPA April 1, 2014.[4]	
NPDES Permit Development[5]		Continue to develop permits using draft staff recommendations related to identifying water used for production of wild rice.[6]				Re-evaluate draft staff recommendations using WUFPOWR criteria.		Any permit will be put on public notice prior to issuance.[6]

1. MN Session Laws 2011, First Special Session, Chapter 2, Article 4, Section 32 (d).
2. MN Session Laws 2011, First Special Session, Chapter 2, Article 4, Section 32 (b).
3. Federal Clean Water Act, 1972, Section 303 (d); MN Statutes 114D.25, subd. 1.
4. Depending on timing, the wild rice sulfate assessments may be submitted to EPA with the other assessments, or more likely as a separate package.
5. Federal Clean Water Act, 1972, Section 402; MN Statutes 115.03 , subd. 5
6. Permits will be put on public notice prior to issuance; a permit could go on notice at any point in the timeline.

AUID	NAME	DESCRIPTION	MEDIAN SULFATE CONC	PRELIM WATER QUALITY ASSESS	WATER-QUALITY ASSESSMENT COMMENTS	WILD RICE PRODUCTION WATER DECISION	WILD RICE PRODUCTiON WATER COMMENTS	WILD RICE DATA SOURCE
04010201-577	Embarrass River	Embarrass Lk to St Louis R	27	Impaired	Recommend split below Esquagama Lake. Stations on lower and upper portions of AUID separated by multiple lakes. Median calculated based on station S005-751.	IF	Determination of a split will be made dependent upon finding wild rice between lakes along upstream portion of reach. No indication of wild rice along suggested new downstream AUID (outlet of Esquagama to St. Louis River) that would result from splitting. 1854 data indicate rice presence along northern portion of reach. Need to contact Darren Vogt for additional WR information on northern portion of reach. From mining information, northern portion includes sparse stands indicated with low density locations. Based solely on this, determined not to be wild rice production water.	Mining company surveys, 1854 Treaty Authority
04010201-552	Partridge River	Headwaters to St Louis R	48	Impaired	High variability in sample measurements within close proximity, geographic and temporal. Flows through Colby Lake (69-0249-00), which has wild rice and 2 high sulfate measurements.			Mining company surveys, 1854 Treaty Authority, UMN study
09030002-501	Sandy River	Headwaters (Sandy Lk 69-0730-00) to Pike R	85	Impaired	One discrepant data point.			Mining company surveys, 1854 Treaty Authority, UMN study
04010201-533	St Louis River	Oliver Bridge to Pokegama River	39	Impaired	Wild rice data (actual point locations) are constrained to river AUID, but are associated in database with St Louis Estuary (69-1292-00), which is broader than river AUID. (Measurements collected further downstream at Blatnik Bridge (downstream from WLSSD discharge) have lower concentrations.)			Data linked to Estuary polygon: Perleberg list, MCBS, DNR call for data submittal, Ann Geissen shapefile, 1854 Treaty Authority, mining company surveys
04010201-532	St Louis River	Mission Creek to Oliver Bridge	15	Impaired	Only 2 data points on AUID, but concentrations immediately upstream (S000-021) and downstream (S007-512, S007-515) (12 out of 15 measurements above 10) indicate impairment.			Data linked to Estuary polygon: Perleberg list, MCBS, DNR call for data submittal, Ann Geissen shapefile, 1854 Treaty Authority, mining company surveys. DNR 2008 study point alongside AUID
09030009-537	Bostick Creek	Headwaters to Lake of the Woods	33	Impaired	Data is from 4 months of 1 year, but consistently shows high sulfate concentrations.			DNR 2008 study point shapefile
07020004-551	County Ditch 12	Headwaters to T113 R36W S8, north line	113	Impaired	DNR 2008 study point indicates rice somewhere on County Ditch 12 (Rice Creek), which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.			DNR 2008 study point shapefile
07010203-512	Rice Creek	Rice Lk to Elk R	18	Impaired	DNR 2008 study point indicates rice somewhere on Rice Creek, which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.			DNR 2008 study point shapefile
07010108-501	Long Prairie River	Fish Trap Creek to Crow Wing R	13	Impaired	DNR 2008 study point indicates rice somewhere on Long Prairie River, which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.			2006 Harvester's report, DNR 2008 study point shapefile
07020011-531	Rice Creek	Headwaters to Maple R	28	Impaired	Consistently high sulfate concentrations at all 4 stations along entire AUID.			DNR 2008 study point shapefile
07020005-501	Chippewa River	Watson Sag to Minnesota R	139	Impaired	DNR 2008 study point indicates rice somewhere on Chippewa River, which is more extensive than the AUIDs with sulfate data. Wherever sampled, the Chippewa River has high sulfate concentrations. Listing individual AUIDs is dependent upon location of wild rice.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-505	Chippewa River	Unnamed cr to E Br Chippewa R	88	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-506	Chippewa River	E Br Chippewa R to Shakopee Cr	70	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-508	Chippewa River	Cottonwood Cr to Dry Weather Cr	90	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-503	Chippewa River	Stowe Lk to Little Chippewa R	39	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07040002-502	Cannon River	Pine Cr to Belle Cr	33	Impaired	DNR 2008 study point indicates rice somewhere on Cannon River, which is more extensive than the AUIDs with sulfate data. Wherever sampled, the Cannon River has high sulfate concentrations. Listing individual AUIDs is dependent upon location of wild rice.			DNR 2008 study point shapefile
07040002-542	Cannon River	Headwaters to Cannon Lk	17	Impaired	See above comment regarding Cannon River.			DNR 2008 study point shapefile
07040002-539	Cannon River	Byllesby Dam to Little Cannon R	27	Impaired	See above comment regarding Cannon River.			DNR 2008 study point shapefile
07040002-501	Cannon River	Belle Cr to split near mouth	31	Impaired	See above comment regarding Cannon River.			DNR 2008 study point shapefile

Footnotes:

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5. Notations in the column "WILD RICE PRODUCTION WATER DECISION" do not represent an agency decision on applicability of the Class 4A 10 mg/L standard at these water bodies rather they indicate that there are data documenting some history of wild rice

NAME	MEDIAN SULFATE CONC	PRELIM WATER QUALITY ASSESS	WATER-QUALITY ASSESSMENT COMMENTS	WILD RICE PRODUCTION WATER DECISION	WILD RICE PRODUCTOIN WATER COMMENTS	WILD RICE ACRES	WILD RICE DATA SOURCE
Cedar Island (N portion)	21	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10. Evaluate together with S. Portion, Fourth, and Esquagama, all connected via Embarrass R.	Yes	Mining company survey shows low to moderate density of rice throughout perimeter of lake. DNR lake survey jul 12, 1990 noted abundant wild rice, especially along west shore. Sulfate sampling locations are near wild rice observation sites.		Mining Companies, 1854 Treaty Authority
Cedar Island (S portion)	20	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Yes	Mining company survey shows moderate density of rice throughout perimeter of lake. DNR lake survey jul 12, 1990 noted abundant wild rice, especially along west shore. Sulfate sampling locations are near wild rice observation sites.		Mining Companies, 1854 Treaty Authority
Fourth	20	Impaired	Only 1 measurement on lake itself, but concentrations on (connected) Esquagama (69-0565-00-203) and Cedar Island S. Portion (69-0568-02-204,69-0568-02-207) are also high.	IF	Need to contact Darren Vogt for additional WR information. From mining information, sparse stands indicated with single low density location. Based on this, determined not to be wild rice production water.		Mining Companies, 1854 Treaty Authority, Ann Geissen shapefile, 2008 Study shapefile
Esquagama	26	Impaired	Only 3 measurements on lake itself, but concentrations on (connected) Fourth Lake (69-0573-00-201) and downstream (S005-751) are also high.	IF	Need to contact Darren Vogt for additional WR information. From mining information, a single stand with low density. Based on this, determined not to be wild rice production water.		Mining Companies, 1854 Treaty Authority
East Vermilion	14	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Yes	Significant acreage of rice in Big Bay. Assumed to be at least 70 acres in Big bay based on estimated size of Rice Bay at 180 acres, and total wild rice area of 250 acres. Rice Bay is also indicated for wild rice, but no sulfate data have been collected there.	250	1854 Treaty Authority, Ann Geissen shapefile, 2008 Study shapefile
Trout	42	Impaired		No	insufficient information to determine that this is a production water.		DNR call for data submittal, U of MN study sites
Elizabeth (main basin)	30	Impaired		No	Insufficient information to determine that this is a production water. DNR lake survey reports dates 6/2006, 5/1997 no wild rice noted.		DNR call for data submittal
Swan (W bay)	tbd	TBD	Impaired, subject to verification of location of station 31-0067-01-204. If judged strictly on station 01-205, sulfate not significantly above 10.	Yes	Staff recommendation for the ESSAR water permit is that this is a production water. Check with Stephanie for recommendation date.	50 (00)	2006 Harvest Survey (00 polygon), Ann Geissen shapefile, Perleberg list, 2008 Study shapefile. Rice data tied to underlying lake (-00)
Swan (main basin)	tbd	Impaired	Median dependent upon station 31-0067-01-204 being included in main basin. Regardless, median is significantly above 10.	Yes	* The outlet bay upstream of the dam is a wild rice production water, based on mining company survey from 2011 has densities of 4 and 5.	50 (00)	2006 Harvest Survey (00 polygon), Ann Geissen shapefile, Perleberg list, 2008 Study shapefile. All tied to underlying lake (-00). UMN study data tied to Main Basin polygon (-02).
Preston	45	Impaired		No	insufficient information to determine that this is a production water. Lake Survey reports from 3/29/1995, 2/21/2006 noted no wild rice.		DNR call for data submittal
Embarrass	21	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Yes	Upper portion of Embarrass shows numerous low to moderate density observations around entire perimeter in mining surveys from 2009 and 2010. However, Lower Embarrass had few observations of low density. *Only Upper Embarrass is considered a wild rice production water.		1854 Treaty Authority, mining company data, Perleberg list, UMN Study
Lady Slipper	314	Impaired	Multiple sites; station 203 has single observation, still above 10, but well below other observations.	No	1997 fisheries transect from 1997 indicated small area of rice. 2011 and 2012 UMN study found no wild rice.		Perleberg list, UMN study
Monongalia (main basin)	31	Impaired		IF	Photo from 2012 exists of high density wild rice. Mark Gernes has harvested rice on the lake for several recent years. U of MN study showed 3 pct coverage at study site. Contact Ed Swain and Mark Gernes for details on location of harvestable rice. Contact Donna Perleberg for more information on inclusion in her list.		UMN study (tied to main basin -01). MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile on underlying waterbody (-00)
Monongalia - Middle Fk Crow	29	Impaired	One questionable sample with very low concentration, turned out to be pore water, sample was excluded and median recalculated.	Yes	Photo from 2012 exists of high density wild rice. Mark Gernes has harvested rice on the lake for several recent years. U of MN study showed 38.75 pct coverage at study site.		UMN study (tied to polygon -02). MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile on underlying waterbody (-00)
Crow River Mill Pond (East)	26	Impaired		IF	Contact Donna Perleberg for more information on Mill Pond observation from MCBS survey 8/6/2002. Contact Mark Gernes for local knowledge.		MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile, all on underlying waterbody (-00)

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NAME	MEDIAN SULFATE CONC	PRELIM WATER QUALITY ASSESS	WATER-QUALITY ASSESSMENT COMMENTS	WILD RICE PRODUCTIO N WATER DECISION	WILD RICE PRODUCTOIN WATER COMMENTS	WILD RICE ACRES	WILD RICE DATA SOURCE
Hay	52	Impaired		Yes	Staff recommendation for Keetac permit in 2011 was that this is a wild rice production water. Check with Brandon Smith on the date of the Perry Pit dewatering permit.		Ann Geissen shapefile, UMN study, 2008 DNR study
Big Stone	404	Impaired		No	insufficient information to determine that this is a production water. DNR lake survey from 3/17/2004 noted no wild rice.		DNR call for data submittal
Lac Qui Parle (NW bay)	293	Impaired		No	3/23/2000 DNR lake survey - no wild rice noted.		DNR call for data submittal - on underlying waterbody (-00)
Lac Qui Parle (SE bay)	270	Impaired	Only 1 data point on this bay, but concentrations on upstream portion of lake (37-0046-02) and downstream river (07020004-688) are also high.	No	3/23/2000 DNR lake survey - no wild rice noted.		DNR call for data submittal - on underlying waterbody (-00)
Mina	25	Impaired		IF	DNR Lake Surveys from 8/4/1949, 1/2/1998 indicated wild rice presence. 1949 comment indicates sparse presence. 1998 survey was a fisheries transect. Contact Ann Geisen for further detail on why this waterbody was included in call for data submission.		DNR call for data submittal
Pearl	21	Impaired		IF	DNR lake survey indicates wild rice was rare August 24 - 28, 1987. Contact Ann Geisen for further detail on why this waterbody was included in call for data submission.		DNR call for data submittal
Sandy	135	Impaired		Yes	Locate draft staff recommendation for production water status. Wild rice acreage from 2008 report.	121	1854 Treaty Authority, UMN study, Ann Geissen List, 2008 study shapefile
Little Sandy	145	Impaired		Yes	Locate draft staff recommendation for production water status. Wild rice acreage from 2008 report.	89	1854 Treaty Authority, Ann Geissen List, 2008 study shapefile
Marsh	379	Impaired		No	DNR lake survey reports from 3/9/2004, 3/28/2001 noted no wild rice, 4/14/1954 waterfowl/muskrat habitat survey comment says "wild rice would not do well in this lake". 8/1962 map showed no wild rice. 7/1968 game and fish map showed no wild rice.		DNR call for data submittal
Lillian	151	Impaired		No	5/13/1997 lake survey report noted no wild rice.		DNR call for data submittal
Lobster	22	Impaired	Only 1 measurement on lake itself, but concentrations on lakes immediately adjacent (21-0108-00, 21-0180-00, 21-0150-00) are also high.	No	2/5/1997 lake survey report no rice noted. 1949 report did not note any rice and "wild rice would not do well in this lake". Follow up with 1997 fisheries report.		Perleberg list
Sturgeon	58	Impaired	All data collected on Mississippi (MissR 796.9, MissR 805.0), but direct hydrologic connection with Sturgeon.	No	insufficient information to determine that this is a production water.		Ann Geissen shapefile, DNR 2008 study
Long	33	Impaired	Only 1 measurement on lake, but concentrations (5 miles) downstream (S005-630) are also high.	No	insufficient information to determine that this is a production water. DNR Lake Survey report from 2/5/1997 did not note any wild rice.		DNR call for data submittal
Red Lake River Reservoir	tbd	Insufficient Information	Drinking water intake near dam may yield additional sulfate data. Downstream sulfate concentrations high (S002-324), but only 2 measurements recorded. Wild rice location unknown; will determine whether it is necessary to seek additional sulfate data, leading to possible judgment of impairment.	IF	Need to consult fisheries area surveys from 7/2/2009 and 8/1/1994 to determine wild rice location.		DNR call for data submittal, Perleberg list
Rice	tbd	Insufficient Information	Outflow stream has high sulfate. Main inflow is close to outlet, large distance from lake sampling locations. Wild rice location within lake unknown, but will determine whether outflow sulfate concentrations are sufficient for judgment of impairment.	No	Insufficient information to determine that this is a production water. UMN study did not observe any rice in 2012.		Ann Geissen shapefile, DNR 2008 study, UMN study

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Jeremiason ID	Field Id	Site	THg (1)	THg (2)	THg (3)
13001	351653	S2 Weir	15.45		
13002	351664	S2 Sub	17.70		
13003	351655	S2 N Lagg	10.53		
13004	351665	S2 Surf	11.69		
13005	351697	S2 Weir	16.82		
13006	351713	S2 Sub	13.36		
13007	351700	S2 N Lagg	-0.12	16.07	
13008	351712	S2 Surf	9.05		
13009	351730	S2 Weir	16.50		
13010	351732	S2 N Lagg	18.33		
13011	351734	S2 Sub	21.83		
13012	0	Filter Blank (MQ)	0.42		
13013	351741	S2 Weir	16.77		
13014	351745	S2 N Lagg	18.61		
13015	351754	S2 Sub	11.93		
13016	351761	S2 Weir	15.56		
13017	351764	S2 N Lagg	13.96		
13018	351780	S2 Weir	15.65		
13019	351782	S2 N Lagg	13.45		
13020	F-S003-973-01	SLR at Scanlon	5.63		
13021	F-S000-119-01	SLR at Forbes	5.79		
13022	F-S000-631-01	SLR at CSAH 110 near Skibo	5.96		
13023	F-S005-147-01	Cloquet River	5.72		
13024	F-S004-599-01	Floodwood River	4.43	4.50	
13025	F-S005-763-01	Whiteface River	6.14		
13026	F-S005-770-01	Swan River	4.76		
13027	F-S004-601-01	West Two Rivers	3.24		
13028	F-S005-751-01	Embarrass River	3.93		
13029	F-S005-752-01	River	6.54		
13030	F-S007-052-01	Stony Creek	6.19	7.21	
13031	F-S003-973-01 FR	SLR at Forbes	4.62		
13032	F-SB1-01	F-SB1-01	2.05		
13033	F-SB2-01	F-SB2-01	1.71		
13034	F-SB3-01	F-SB3-01	0.26		
13035	F-SB4-01	F-SB4-01	0.14		
13036	U-S003-973-01	SLR at Scanlon	4.11	4.48	
13037	U-S000-119-01	SLR at Forbes	7.32		

13038	U-S000-631-01	SLR at CSAH 110 near Skibo	8.54		
13039	U-S005-147-01	Cloquet River	4.03		
13040	U-S004-599-01	Floodwood River	4.99		
13041	U-S005-763-01	Whiteface River	7.55	7.45	
13042	U-S005-770-01	Swan River	11.41		
13043	U-S004-601-01	West Two Rivers	3.82		
13044	U-S005-751-01	Embarrass River	4.14		
13045	U-S005-752-01	River	8.07		
13046	U-S007-052-01	Stony Creek	8.42	8.32	
13047	U-S003-973-01 FR	SLR at Forbes	6.27		
13048	U-SB1-01	U-SB1-01	1.59		
13049	U-SB2-01	U-SB2-01	1.88		
13050	U-SB3-01	U-SB3-01	0.41		
13051	U-SB4-01	U-SB4-01	0.27	0.31	
13052	Trip Blank 1-1	Trip Blank 1-1	1.48		
13053	Trip Blank 1-2	Trip Blank 1-2	0.34		
13054	351793	S2 Weir	14.23		
13055	351796	S2 N Lagg	11.98		
13056	F-S000-119-02	SLR at Forbes	5.06		
13057	F-S000-631-02	SLR at CSAH 110 near Skibo	6.17		
13058	F-S003-973-02	SLR at Scanlon	4.71		
13059	F-S003-973-02 FR	SLR at Scanlon	4.70		
13060	F-S004-599-02	Floodwood River	4.27	4.18	
13061	F-S004-601-02	West Two Rivers	3.53		
13062	F-S005-147-02	Cloquet River	3.35		
13063	F-S005-751-02	Embarrass River	3.53		
13064	F-S005-752-02	Second Creek / Partridge River	5.56		
13065	F-S005-763-02	Whiteface River	5.37	5.46	
13066	F-S005-770-02	Swan River	4.17		
13067	F-S007-052-02	Stony Creek	6.32		
13068	SB1-02	F-SB1-02	0.45		
13069	SB2-02	F-SB2-02	0.28		
13070	SB3-02	F-SB3-02	0.63		
13071	SB4-02	F-SB4-02	0.30		
13072	U-S000-119-02	SLR at Forbes	5.58		
13073	U-S000-631-02	SLR at CSAH 110 near Skibo	7.46		
13074	U-S003-973-02	SLR at Scanlon	5.53		
13075	U-S003-973-02 FR	SLR at Scanlon	4.97		
13076	U-S004-599-02	Floodwood River	4.33	4.35	4.316143138
13077	U-S004-601-02	West Two Rivers	3.66	3.54	

13078	U-S005-147-02	Cloquet River		3.56	3.14	
13079	U-S005-751-02	Embarrass River		3.83	3.41	
13080	U-S005-752-02	Second Creek / Partridge River		6.07	5.74	
13081	U-S005-763-02	Whiteface River		5.93	5.96	6.030090153
13082	U-S005-770-02	Swan River		10.39		
13083	U-S007-052-02	Stony Creek		7.59		
13084	U-	U-SB1-02		0.50		
13085	U-	U-SB2-02		0.27		
13086	U-	U-SB3-02		0.46		
13087	U-	U-SB4-02		0.36		
13088	Trip Blank 2-1	Trip Blank 2-1		0.41		
13089	Trip Blank 2-2	Trip Blank 2-2		0.22		
13090	351806	S2 Weir		11.74		
13091	351808	S2 N Lagg		9.21		
13092	F-S000-119-03	SLR at Forbes		4.08	4.59	
13093	F-S000-631-03	SLR at CSAH 110 near Skibo		6.23		
13094	F-S003-973-03	SLR at Scanlon		4.57		
13095	F-S003-973-03 FR	SLR at Scanlon		4.28		
13096	F-S004-599-03	Floodwood River		3.61		
13097	F-S004-601-03	West Two Rivers		1.79	1.78	
13098	F-S005-147-03	Cloquet River		2.66		
13099	F-S005-751-03	Embarrass River		3.22		
13100	F-S005-752-03	Second Creek / Partridge River		5.15		
13101	F-S005-763-03	Whiteface River		4.78		
13102	F-S005-770-03	Swan River		3.43	3.58	
13103	F-S007-052-03	Stony Creek		6.16		
13104	F-SB1-03		0	0.50		
13105	F-SB2-03		0	0.50		
13106	F-SB3-03		0	0.44		
13107	F-SB4-03		0	0.83	0.92	
13108	U-S000-119-03	SLR at Forbes		5.13		
13109	U-S000-631-03	SLR at CSAH 110 near Skibo		7.45		
13110	U-S003-973-03	SLR at Scanlon		4.36		
13111	U-S003-973-03 FR	SLR at Scanlon		4.09		
13112	U-S004-599-03	Floodwood River		3.73	4.00	
13113	U-S004-601-03	West Two Rivers		2.19		
13114	U-S005-147-03	Cloquet River		3.08		
13115	U-S005-751-03	Embarrass River		3.79		

13116	U-S005-752-03	Second Creek / Partridge River	4.73	
13117	U-S005-763-03	Whiteface River	4.72	4.81
13118	U-S005-770-03	Swan River	5.40	
13119	U-S007-052-03	Stony Creek	4.19	
13120	U-SB1-03	0	0.29	
13121	U-SB2-03	0	0.33	
13122	U-SB3-03	0	0.35	0.36
13123	U-SB4-03	0	0.68	
13124	Trip Blank 3-1	0	0.41	
13125	Trip Blank 3-2	0	0.25	
13126	0	0		
13127	0	0	0.22	0.20
13128	0	S2 Weir	11.64	
13129	0	S2 N Lagg	10.89	
13130	F-S000-119-04	SLR at Forbes	5.54	
13131	F-S000-631-04	SLR at CSAH 110 near Skibo	7.19	
13132	F-S003-973-04	SLR at Scanlon	4.66	
13133	F-S003-973-04 FR	SLR at Scanlon	4.63	
13134	F-S004-599-04	Floodwood River	4.35	4.31
13135	F-S004-601-04	West Two Rivers	2.42	
13136	F-S005-147-04	Cloquet River	3.36	
13137	F-S005-751-04	Embarrass River	3.16	
13138	F-S005-752-04	Second Creek / Partridge River	5.24	
13139	F-S005-763-04	Whiteface River	5.26	5.59
13140	F-S005-770-04	Swan River	4.44	
13141	F-S007-052-04	Stony Creek	5.89	
13142	F-SB1-04	0	0.38	
13143	F-SB2-04	0	0.14	
13144	F-SB3-04	0	0.03	
13145	U-S000-119-04	SLR at Forbes	4.53	7.18
13146	U-S000-631-04	SLR at CSAH 110 near Skibo	6.34	
13147	U-S003-973-04	SLR at Scanlon	6.12	
13148	U-S003-973-04 FR	SLR at Scanlon	6.03	
13149	U-S004-599-04	Floodwood River	4.74	
13150	U-S004-601-04	West Two Rivers	3.15	
13151	U-S005-147-04	Cloquet River	3.20	
13152	U-S005-751-04	Embarrass River	3.55	
13153	U-S005-752-04	Second Creek / Partridge River	5.61	

13154	U-S005-763-04	Whiteface River	6.58	
13155	U-S005-770-04	Swan River	7.17	
13156	U-S007-052-04	Stony Creek	6.83	
13157	U-SB1-04	SB1-04	0.19	
13158	U-SB2-04	SB2-04	0.15	
13159	U-SB3-04	SB3-04	-0.02	
13160	Trip Blank 4-1	Trip Blank 4-1	0.30	
13161	Trip Blank 4-2	Trip Blank 4-2	0.02	
13162	Trip Blank 4-3	Trip Blank 4-3	-0.03	
13163	0	S2 Weir	11.23	
13164	0	S2 N Lagg		
13165	0	S2 N Lagg		
13166	F-S000-119-05	SLR at Forbes	7.02	
13167	F-S000-631-05	SLR at CSAH 110 near Skibo	7.94	
13168	F-S003-973-05	SLR at Scanlon	4.67	
13169	F-S003-973-05 FR	SLR at Scanlon	4.84	
13170	F-S004-599-05	Floodwood River	3.59	3.66
13171	F-S004-601-05	West Two Rivers	3.03	
13172	F-S005-147-05	Cloquet River	3.24	
13173	F-S005-751-05	Embarrass River	3.13	
13174	F-S005-752-05	Second Creek / Partridge River	20.94	5.88
13175	F-S005-763-05	Whiteface River	5.94	
13176	F-S005-770-05	Swan River	4.49	
13177	F-S007-052-05	Stony Creek	6.28	
13178	F-SB1-05	0	0.45	
13179	F-SB2-05	0	0.22	
13180	F-SB3-05	0	0.53	
13181	U-S000-119-05	SLR at Forbes	9.26	
13182	U-S000-631-05	SLR at CSAH 110 near Skibo	9.07	
13183	U-S003-973-05	SLR at Scanlon	6.26	
13184	U-S003-973-05 FR	SLR at Scanlon	6.88	
13185	U-S004-599-05	Floodwood River	4.17	
13186	U-S004-601-05	West Two Rivers	3.84	
13187	U-S005-147-05	Cloquet River	3.90	
13188	U-S005-751-05	Embarrass River	3.86	
13189	U-S005-752-05	Second Creek / Partridge River	12.76	
13190	U-S005-763-05	Whiteface River	7.50	
13191	U-S005-770-05	Swan River	8.87	
13192	U-S007-052-05	Stony Creek	6.96	6.94

13193 U-SB1-05	SB1-05	0.54		
13194 U-SB2-05	SB2-05	0.23		
13195 U-SB3-05	SB3-05	0.21		
13196 Trip Blank 5-1	Trip Blank 5-1	0.25		
13197 Trip Blank 5-2	Trip Blank 5-2	0.37		
13198 F-S000-119-06	SLR at Forbes	6.13		
13199 F-S000-631-06	SLR at CSAH 110 near Skibo	6.92		
13200 F-S003-973-06	SLR at Scanlon	4.79		
13201 F-S003-973-06 FR	SLR at Scanlon	4.79		
13202 F-S004-599-06	Floodwood River	2.75	2.70	
13203 F-S004-601-06	West Two Rivers	1.40		
13204 F-S005-147-06	Cloquet River	3.43		
13205 F-S005-751-06	Embarrass River	2.83		
13206 F-S005-752-06	Second Creek / Partridge River	8.28		
13207 F-S005-763-06	Whiteface River	5.04	10.39	6.26
13208 F-S005-770-06	Swan River	3.11		
13209 F-S007-052-06	Stony Creek	3.00		
13210 F-SB1-06	SB1-06	0.07		
13211 F-SB2-06	SB2-06	0.21		
13212 F-SB3-06	SB3-06	0.28		
13213 U-S000-119-06	SLR at Forbes	6.73		
13214 U-S000-631-06	SLR at CSAH 110 near Skibo	7.73		
13215 U-S003-973-06	SLR at Scanlon	5.03	5.13	
13216 U-S003-973-06 FR	SLR at Scanlon	5.00		
13217 U-S004-599-06	Floodwood River	3.03		
13218 U-S004-601-06	West Two Rivers	1.29		
13219 U-S005-147-06	Cloquet River	0.14	4.05	
13220 U-S005-751-06	Embarrass River	0.07	3.09	3.40
13221 U-S005-752-06	River	9.02		
13222 U-S005-763-06	Whiteface River	5.83		
13223 U-S005-770-06	Swan River	5.19		
13224 U-S007-052-06	Stony Creek	4.11		
13225 U-SB1-06	SB1-06	0.78		
13226 U-SB2-06	SB2-06	0.41		
13227 U-SB3-06	SB3-06	0.58		
13228 Trip Blank 6-1	Trip Blank 6-1	1.00		
13229 Trip Blank 6-2	Trip Blank 6-2	0.31		
13230 Trip Blank 6-3	Trip Blank 6-3	0.17		
13231 0	S2 Weir	15.28		
13232 0	S2 N Lagg	16.37		

13233	F-S000-119-06	SLR at Forbes	6.09	
13234	F-S000-631-06	SLR at CSAH 110 near Skibo	7.32	
13235	F-S003-973-06	SLR at Scanlon	4.75	
13236	F-S003-973-06 FR	SLR at Scanlon	4.61	
13237	F-S004-599-06	Floodwood River	3.52	3.57
13238	F-S004-601-06	West Two Rivers	2.85	
13239	F-S005-147-06	Cloquet River	3.63	
13240	F-S005-751-06	Embarrass River	3.15	
13241	F-S005-752-06	River	8.91	
13242	F-S005-763-06	Whiteface River	6.84	6.62
13243	F-S005-770-06	Swan River	4.95	
13244	F-S007-052-06	East Two Rivers	0.08	
13245	F-SB1-06	SB1-06	0.59	
13246	F-SB2-06	SB2-06	0.07	
13247	F-SB3-06	SB3-06	0.25	
13248	U-S000-119-06	SLR at Forbes	6.07	6.02
13249	U-S000-631-06	SLR at CSAH 110 near Skibo	9.59	
13250	U-S003-973-06	SLR at Scanlon	4.51	
13251	U-S003-973-06 FR	SLR at Scanlon	4.71	
13252	U-S004-599-06	Floodwood River	3.78	
13253	U-S004-601-06	West Two Rivers	3.16	3.54
13254	U-S005-147-06	Cloquet River	4.28	
13255	U-S005-751-06	Embarrass River	3.21	
13256	U-S005-752-06	River	9.66	
13257	U-S005-763-06	Whiteface River	7.89	
13258	U-S005-770-06	Swan River	8.73	8.83
13259	U-S007-052-06	East Two Rivers	3.92	
13260	U-SB1-06	SB1-06	0.55	
13261	U-SB2-06	SB2-06	0.50	
13262	U-SB3-06	SB3-06	0.25	
13263	Trip Blank 6-1	Trip Blank 6-1	0.64	
13264	Trip Blank 6-2	Trip Blank 6-2	0.29	
13265	Trip Blank 6-3	Trip Blank 6-3	0.40	
13266	0	S2 Weir	14.89	
13267	0	S2 N Lagg	16.07	
13268	F-S000-119-06	SLR at Forbes	5.75	
13269	F-S000-631-06	SLR at CSAH 110 near Skibo	6.89	
13270	F-S003-973-06	SLR at Scanlon	4.80	
13271	F-S003-973-06 FR	SLR at Scanlon	4.12	

13272	F-S004-599-06	Floodwood River	3.05	3.07	
13273	F-S004-601-06	West Two Rivers	1.65		
13274	F-S005-147-06	Cloquet River	3.59		
13275	F-S005-751-06	Embarrass River	2.40		
13276	F-S005-752-06	River	7.91		
13277	F-S005-763-06	Whiteface River	5.92	5.69	
13278	F-S005-770-06	Swan River	3.72		
13279	F-S007-052-06	East Two Rivers	1.63		
13280	F-SB1-08	SB1-06	0.30		
13281	F-SB2-08	SB2-06	0.19		
13282	U-S000-119-06	SLR at Forbes	5.93	5.63	
13283	U-S000-631-06	SLR at CSAH 110 near Skibo	6.92		
13284	U-S003-973-06	SLR at Scanlon	5.12		
13285	U-S003-973-06 FR	SLR at Scanlon	4.88		
13286	U-S004-599-06	Floodwood River	3.01		
13287	U-S004-601-06	West Two Rivers	1.59	1.61	
13288	U-S005-147-06	Cloquet River	3.90		3.90
13289	U-S005-751-06	Embarrass River	2.69		
13290	U-S005-752-06	River	8.26		
13291	U-S005-763-06	Whiteface River	6.43		
13292	U-S005-770-06	Swan River	5.38		
13293	U-S007-052-06	East Two Rivers	2.81	2.71	
13294	U-SB1-08	SB1-08	0.26		
13295	U-SB2-08	SB2-08	0.23		
13296	Trip Blank 8-1	Trip Blank 8-1	0.31		
13297	Trip Blank 8-2	Trip Blank 8-2	0.14		
13298	0	S2 Weir	10.49		
13299	0	S2 N Lagg	10.60		

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August 26, 2016

Miranda Nichols (Miranda.nichols@state.mn.us)
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155

RE: Minnesota 2016 Draft Clean Water Act Section 303(d) Impaired Waters List

Dear Ms. Nichols,

The following comments on the Minnesota Pollution Control Agency (MPCA) 2016 Draft Impaired Waters Clean Water Act Section 303(d) List are submitted on behalf of WaterLegacy, a non-profit organization formed to protect Minnesota waters and the communities that rely on them.

First, WaterLegacy appreciates the listing of new draft impaired waters in the Lake Superior Basin that are impaired due to mercury in fish tissue and the water column. We've noted that the MPCA has identified the Partridge River from its headwaters to the St. Louis River as impaired for mercury in fish tissue and in the water column, and that three new segments of the St. Louis River (West Two River, East Two River, and Swan River) and three new segments of the Cloquet River are newly listed for mercury in the water column and/or mercury in fish tissue.

We believe that the MPCA's identification of these additional mercury-impaired waters highlights the need to prevent additional discharge of mercury and production and transport of methylmercury in the Lake Superior Basin. The listing of these additional mercury impairments underscores the need to control mercury releases, sulfate releases and hydrological changes to wetlands throughout the St. Louis River watershed in order to protect human health and wildlife and to prevent disproportionate adverse impacts on tribal and low income communities downstream that rely on fish for subsistence.

Although WaterLegacy was pleased to note that the target start year for Total Maximum Daily Load (TMDL) studies to evaluate and set load allocations to remedy these newly-listed mercury impairments is 2016, we were dismayed at the target completion year of 2029. Mercury is a bioaccumulative toxin that affects the developing brains of fetuses, infants and children; this 2029 target date is too remote to protect human health.

WaterLegacy has previously expressed our concern about the MPCA's disruption of the St. Louis River mercury TMDL process in 2013, which resulted in the loss of dedicated federal funding. We would request that a mercury TMDL study for all segments of the St. Louis River impaired due to mercury in fish and/or mercury in the water column be resumed immediately and that the target date for completion of this TMDL study and load allocation be advanced to 2019. We believe that Agency resources must be secured and prioritized to support this mercury TMDL and prevent continuing threats to human health in the St. Louis River watershed.

In addition, despite MPCA commitments to the U.S. Environmental Protection Agency (EPA) and to persons submitting comments on Minnesota's Section 303(d) list since 2012, *the MPCA's 2016 Impaired Waters list fails to list even a single wild rice water impaired due to sulfate pollution exceeding Minnesota's existing water quality standards*.

WaterLegacy has commented on the failure of the MPCA to list wild rice impaired waters since 2012.[1] In response to many comments concerning the Agency's failure to list wild rice impaired waters in 2012, the Agency explained that listing wild rice waters had been a lower priority than listing Class 2 impairments, but that an assessment methodology would be developed for determining which waters had an ambient 10 mg/liter sulfate level, and which waters were "used for production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels" as provided in Minnesota Rules 7050.0224, Subpart 2.[2]

The MPCA explained that an assessment methodology was needed to identify wild rice sulfate impaired waters, and that this method would be developed for the 2014 Impaired Waters List:

> Given these questions/information gaps, the MPCA was not in a position to assess sulfate impairment for the 2012 303(d) List. However, the MPCA is very much aware of the concern about sulfate and wild rice, and the MPCA plans to develop a wild rice sulfate standard assessment method to use in the development of the draft 2014 303(d) List.[3]

EPA's Decision Document approving Minnesota's 2012 Section 303(d) list documented MPCA's commitment to develop and apply an assessment approach for wild rice/sulfate impaired waters in 2014:

> MPCA committed to the development of a wild rice/sulfate impaired waters assessment approach for the 2014 listing cycle within its response to public comments received for the 2012 303(d) list and in subsequent communications with EPA. MPCA also committed to utilizing this wild rice/sulfate impaired waters assessment approach to analyze and assess water quality data for potential impairment of the sulfate water quality standard for the 2014 listing cycle.[4]

In 2014, MPCA again failed to list any wild rice impaired waters, although the Agency had developed an assessment methodology and a preliminary list of priority wild rice/sulfate impaired waters in August 2013, as explained in WaterLegacy's February 10, 2014 comments on Minnesota's Draft 2014 Section 303(d) list. (Exhibit 3).

On April 25, 2014, the EPA deferred approval or disapproval of Minnesota's 2014 Section 303(d) list until an addendum listing wild rice/sulfate impaired waters had been supplied.[5] To

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[1] Exhibits 1 through 5 attached herein are WaterLegacy comments and follow-up letters pertaining to Minnesota's Section 303(d) lists of 2012 and 2014, which are dated February 20, 2012; March 3, 2013; February 10, 2014; April 25, 2014 and November 12, 2014.
[2] MPCA, *Responses to Draft 2012 303(d) List Comments*, Sept. 17, 2012, pp. 1-2, attached as Exhibit 6.
[3] *Id*., p. 1
[4] EPA, Decision Document for Approval of Minnesota's 2012 Section 303(d) List, July 25, 2013, attached as Exhibit 7, p. 29.
[5] EPA, Letter to MPCA regarding Minnesota Draft 2014 Section 303(d) List, Apr. 25, 2014, attached as Exhibit 8.

date, more than two years later, the MPCA has supplied no addendum listing wild rice/sulfate impaired waters.

By November 18, 2014, when the MPCA responded to WaterLegacy's May and November requests for an update on the 2014 Section 303(d) process,[6] the MPCA had shifted its position so that listing of wild rice/sulfate impaired waters would wait not just for an assessment methodology under the existing wild rice sulfate standard but for the Agency's determination of "what, if any, changes may be needed to the wild rice sulfate standard" after "the analysis of the standard is complete." At that time, the MPCA explained, the resulting methodology "will ultimately be used to determine whether *any* water used for the production of wild rice needs to be added to the draft 2014 Impaired Waters List."[7]

WaterLegacy's July 2, 2015 Petition to the EPA for Withdrawal of Minnesota NPDES Program Authority and our 445 pages of attached exhibits[8] has underscored the undue influence of mining companies and their political supporters on preventing implementation of Minnesota's existing wild rice sulfate standard. In the fall of 2013, mining industry representatives requested the MPCA to delay listing of wild rice/sulfate impaired waters as "premature" due to ongoing research and potential rulemaking to change the existing 10 mg/L wild rice sulfate standard.[9] MPCA had apparently accepted this position by November 18, 2014, when the Agency responded to WaterLegacy's request for an update on the 2014 Section 303(d) list.

In 2015, the Minnesota Legislature prohibited the MPCA from listing wild rice/sulfate impaired waters applying Minnesota's existing wild rice sulfate standard. Minnesota's "Wild Rice Water Quality Standards" 2015 Session Law states,

> (2) the agency [MPCA] shall not list waters containing natural beds of wild rice as impaired for sulfate under section 303(d) of the federal Clean Water Act, United States Code, title 33, section 1313 until the rulemaking described in this paragraph [to amend Minnesota's existing wild rice sulfate standard] takes effect.[10]

The position proposed by the MPCA in November 2014 and imposed by the Minnesota Legislature in 2015 conflicts with the Clean Water Act, EPA's interpretation of its own federal regulations, and legal precedent. *See Thomas v. Jackson*, 581 F. 3d 658, 668-669 (8th Cir. 2009) ("[W]aiting for revisions to the standards would result in continued delays in producing any § 303(d) list. Concerns that a particular list will be based on imperfect, though approved, standards are mitigated by the periodic nature of the list.")

On the basis of the above analysis and the exhibits attached with our comments, WaterLegacy urges the MPCA to immediately resume the St. Louis River mercury TMDL and to revise the

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6 See attached Exhibits 4 and 5.
7 MPCA Letter to WaterLegacy, Minnesota 2014 Impaired Waters List – Request for Update, Nov. 18, 2014, attached as Exhibit 10, emphasis added.
8 Petition for Withdrawal of Minnesota NPDES Program Authority and Exhibits are available at *NPDES Petition for Program Withdrawal in Minnesota*, https://www.epa.gov/mn/npdes-petition-program-withdrawal-minnesota. Selected exhibits pertinent to Section 303(d) listing are attached as Exhibit 9 to these comments.
9 Exhibits from WaterLegacy's Petition for Withdrawal of Minnesota NPDES Program Authority pertaining to the listing of wild rice/sulfate impaired waters are attached in Exhibit 9.
10 Laws of Minnesota 2015, 1st Spec. Sess. Chapter 4, Article 4, Section 136 (a)(2) included in Exhibit 9.

target dates for completion of TDML studies in the Lake Superior Basin, beginning with a priority to complete a St. Louis River mercury TMDL by 2019.

We further request that the MPCA immediately list wild rice/sulfate impaired waters based on the existing wild rice sulfate standard in Minnesota Rules 7050.0224, Subpart 2 and existing monitoring of ambient sulfate rates and the presence of wild rice in priority locations. If the MPCA perceives that, under 2015 Minnesota Session Laws, the Agency is prohibited from listing wild rice/sulfate waters unless and until the existing sulfate water quality standard is amended, the MPCA should clearly state this conclusion as the reason for this deficiency in the Minnesota 2016 Section 303(d) Impaired Waters list.

Please feel free to contact me if you have any questions regarding WaterLegacy's comment or the attached materials.

Respectfully submitted,

Paula Goodman Maccabee
Advocacy Director/Counsel for WaterLegacy

Exhibits Enclosed

cc: Tinka Hyde, EPA Region 5 Water Quality Division Director
Peter Swenson, EPA Region 5, Wetlands and Watersheds Branch Chief
Paul Proto, EPA Region 5, Watersheds Section
Barbara Wester, EPA Region 5, Regional Counsel

EXHIBITS
WaterLegacy Comment
Minnesota 2016 Draft Clean Water Act Section 303(d) Impaired Waters List
(August 26, 2016)

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February 20, 2012

Howard D. Markus, Ph.D., P.E. (howard.markus@state.mn.us)
Research Scientist 3/Aquatic Ecologist
MN Pollution Control Agency

Re: Minnesota's Draft 2012 303(d) List of Impaired Waters

Dear Dr. Markus,

These comments are submitted on behalf of WaterLegacy, a non-profit group formed to protect Minnesota's water resources and the communities that depend on them. WaterLegacy has had the opportunity to review Minnesota's Draft 2012 list of Impaired Waters designated pursuant to Section 303(d) of the Clean Water Act, 33 U.S.C. §1313(d).

Water Legacy appreciates the progress made by the Minnesota Pollution Control Agency (MPCA) in 2012 to identify additional waters that are impaired for mercury contamination and to identify waters that are impaired for inability to sustain aquatic life. We noted that in the Arrowhead Region alone, 105 new designations were made of waters impaired for aquatic life as indicated in bioassessments of fish or macroinvertebrates. Residents, anglers and tribal members have long been concerned about the impacts of mining discharge, including sulfates and toxic metals, on aquatic ecosystems. Designating waters impaired for aquatic life is an important step in determining pollutants to which the impairments can be attributed, setting limits to protect aquatic uses and restoring the viability of designated uses.

Recognizing the importance of restoring designated uses that have been impaired by mining pollution, WaterLegacy is troubled by the MPCA's failure to identify waters where Minnesota's water quality standard limiting sulfates to 10 milligrams per liter (mg/L) is exceeded and where the propagation and maintenance of natural wild rice stands has been degraded and impaired.

Under the Clean Water Act, the Impaired Waters list must identify waters not meeting designated uses, waters where calculations or predictions indicate nonattainment of water quality standards, waters for which water quality problems have been reported by the public or other agencies, and waters identified by the state as impaired or threatened in a nonpoint assessment. 40 C.F.R. § 130.7(b)(5). The purpose of identifying impaired waters under the Clean Water Act is to create a framework where states prioritize among impaired waters based on the severity of the pollution and the uses to be made of such waters and then determine the total maximum daily load (TMDL) to which pollutants must be limited to attain applicable water quality standards. 33 U.S.C. § 1313(d); 40 C.F.R. §130.7(d)(1).

Minnesota rules recognize the designated use of Class 4 waters for the propagation and maintenance of natural stands of wild rice, stating that the quality of waters and habitat "necessary to support the propagation and maintenance of wild rice plant species must not be materially impaired or degraded." Minn. R. 7050.0224, subp. 1. A water quality based standard limiting sulfates in waters used for the production of wild rice to 10 mg/L has been in effect since 1973 to protect this beneficial use. Minn. R. 7050.0224, Subp. 2.

The MPCA has several sources of information from which to make an identification of waters not meeting their designated uses for the propagation and maintenance of wild rice:

- Certain selected wild rice waters are identified in rule to call attention to the need for protection of this vital designated use. These include St. Louis River, Artichoke Lake, Bluebill Lake, Breda Lake, Cabin Lake, Caribou Lake, Christine Lake, Fourmile Lake, Hay Lake, Lieuna Lake, Long Lake, Marsh Lake, Moore Lake, Northern Light Lake, Papoose Lake, Rice Lake, Round Island Lake, Round Lake, Seven Beaver Lake, Stone Lake, Skibo Lake, Swamp River, and White Pine Lake. Minn. R 7050.0470.

- Additional wild rice waters were identified in a 2008 report by the Minnesota Department of Natural Resources to the Legislature, which found stands of natural wild rice on 1,292 lakes and segments of rivers and streams in Minnesota.

- The 1854 Treaty Authority also maintains a list of wild rice waters within the 1854 Ceded Territory that lists hundreds of rivers, streams and lakes, including the St. Louis River, Partridge River, Embarrass River, and Birch Lake.

- Surveys and investigations in connection with NPDES/SDS permits and environmental review have identified wild rice waters, including Swan Lake, Swan River, Hay Creek, Hay Lake, the Partridge River, Embarrass River, Embarrass Lake, Cedar Island Lake, Esquagama Lake, St. Louis River and Birch Lake.

The MPCA has monitoring data and reports from the public and from other State and tribal agencies confirming that many known wild rice waters are not meeting designated wild rice uses and are not attaining water quality standards limiting sulfates in wild rice waters.

Much of the impairment of wild rice uses is attributable to high levels of sulfates discharged to surface waters from mine pits, waste rock piles and tailings basins. As stated in the PolyMet NorthMet DEIS, "[i]t has long been known that sulfate concentrations in the St. Louis River are sometimes elevated due, most likely, to mining related sulfate releases." DEIS, at 4.1-194. "Sulfate concentrations in waters draining non-mining impacted watersheds ranged from 3.4 to 5.8 mg/L, whereas sulfate concentrations in tributaries from mining impacted watersheds ranged from 22 to 127 mg/L. *Id*.

WaterLegacy commends the MPCA for new listings of waters impaired for aquatic life, a critical step in determining what limits on salts and toxic metals are needed to protect fish and the aquatic ecosystem. WaterLegacy believes that the Clean Water Act requires a similar rigorous undertaking to list Minnesota waters that are impaired due to their exceedance of water quality standards that protect natural stands of wild rice. Failure of the Agency to identify these impaired waters places wild rice waters and habitats at risk.

In addition to the preceding comments, WaterLegacy joins in comments filed by Center for Biological Diversity on February 17, 2012. Please feel free to call me if you have any questions.

Sincerely,

Paula G. Maccabee

Paula Goodman Maccabee
Counsel/Advocacy Director for WaterLegacy

Paula Goodman Maccabee, Esq.
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March 13, 2013

Katrina Kessler (Katrina.Kessler@state.mn.us)
Section Manager, Environmental Analysis & Outcomes
Minnesota Pollution Control Agency
520 Lafayette Road N
St. Paul, MN 55155-4194

Shannon Lotthammer (Shannon.Lotthammer@state.mn.us)
Division Director, Environmental Analysis & Outcomes
Minnesota Pollution Control Agency
520 Lafayette Road N
St. Paul, MN 55155-4194

RE: Wild Rice Impaired Waters – Priorities for 2013-2014 Assessment

Dear Ms. Kessler, Ms. Lotthammer:

As you know, WaterLegacy was among the environmental groups and other stakeholders who objected to the failure of the Minnesota Pollution Control Agency (MPCA) to list any waters impaired for the growth and propagation of wild rice in its 2012 Clean Water Act Section 303(d) list.

At the January 2013 meeting of the Wild Rice Advisory Committee, MPCA staff informed Advisory Committee members that the MPCA would begin in spring 2013 to assess waters that are impaired for wild rice. Staff briefly discussed that they would need to prioritize which waters to evaluate in order to make progress in identifying impaired waters in time to list them in the 2014 Clean Water Act Section 303(d) list.

On behalf of WaterLegacy, we are submitting a list of priority wild rice waters for MPCA assessment and potential inclusion on Minnesota's Section 303(d) list. We would recommend that the MPCA focus its attention first on waters where some data has been collected, waters where the wild rice is presently at risk or is likely to be at risk due to proposed discharge conditions, and waters that are of particular significance to native and non-native ricers.

WaterLegacy would suggest that MPCA begin its evaluation by assessing the following waters to determine if they should be included in the 2014 wild rice impaired waters list. We would request that sediment phytolith data and oral history as well as observation be used determine if wild rice has grown in these waters. Where rivers are listed below, we would request that assessment define and focus on river reaches with habitat suitable for the growth of wild rice.

Partridge River
Embarrass River
St Louis River, from River Mile 160 to Minnesota border
Embarrass River chain of lakes to St. Louis River confluence
Longnose Creek
Second Creek

Spring Mine Creek
Unnamed Creek (north of the LTVSMC tailings basin)
Rice Farm Creek/Unnamed Creek (west of LTVSMC tailings basin)
Sabin Lake
Hay Creek (near O'Brien Diversion Channel)
Hay Lake (near O'Brien Diversion Channel)
Swan Lake
Swan River
O'Brien Creek
Welcome Creek
Sandy River
Vermillion River
Lake Vermillion
Pike River
Two West River
East Two River
Kinney Creek
Twin Lakes (Sandy and Little Sandy)
Clover Lake
Little Tony Lake
Perch Lake
Stone Lake
East Stone Lake
Anchor Lake
Birch Lake
Kawishiwi River

We understand that the MPCA has not finalized its methodology to assess waters impaired for the production of wild rice due to sulfate discharge. WaterLegacy would request as of today and on a continuing basis that you provide us with any and all documents reflecting the proposed assessment methods that the MPCA will use for determining wild rice waters impaired as a result of sulfate discharge. We would be pleased to receive electronic copies of these documents.

Please feel free to contact me if you have any questions regarding our requests or if you would like additional information to identify the bodies of water named above. Thank you.

Sincerely yours,

Paula G Maccabee

Paula Goodman Maccabee

cc: Chris Wagener, U.S. EPA Region 5 (Wagener.Christine@EPA.gov)
Paul Proto, U. S. EPA Region 5 (Proto.Paul@EPA.gov)

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February 10, 2014

Miranda Nichols (miranda.nichols@state.mn.us)
Minnesota Pollution Control Agency
520 Lafayette Rd N
St. Paul, MN 55155

RE: Minnesota Pollution Control Agency Draft 2014 Impaired Waters List

Dear Ms. Nichols:

The following comments on the Minnesota Pollution Control Agency (MPCA) 2014 Draft Impaired Waters List are submitted on behalf of WaterLegacy, a non-profit organization formed to protect Minnesota waters and the communities that rely on them.

First, WaterLegacy appreciates the MPCA's expanded listing of waters that are impaired for aquatic life as a result of fishes bioassessments and aquatic macroinvertebrates bioassessments; impaired for aquatic consumption due to mercury in fish tissue; and /or impaired for aquatic recreation as a result of e. coli or eutrophication indicators. We support the MPCA's continued efforts to identify use impairments that affect Minnesota waters.

WaterLegacy also supports the immediate listing of wild rice impaired waters on Minnesota's 2014 Clean Water Act Section 303(d) Impaired Waters List, as requested by our members and many other stakeholders after the 2012 impaired waters listing. We would make the following requests:

1. That all wild rice impaired waters preliminarily identified in the MPCA's August 2103 spreadsheet be listed without further delay on Minnesota's 2014 Section 303(d) Impaired Waters List.

2. That the additional wild rice impaired waters identified in the PolyMet NorthMet Supplemental Draft Environmental Impact Statement ("PolyMet SDEIS") be listed on Minnesota's 2014 Clean Water Act Section 303(d) Impaired Waters List.

3. That the MPCA commit to continued and ongoing investigation and listing of additional wild rice impaired waters using more comprehensive assessment criteria.

WaterLegacy would also request that the MPCA prioritize listing of waters that are impaired for aquatic consumption due to mercury in the Lake Superior Basin. This prioritization is needed to respond to the level of risk to Minnesota infants documented by the Minnesota Department of Health in its recent study showing that 1 out of 10 newborns in Minnesota's Lake Superior region had unsafe levels of mercury in their blood. In this light, WaterLegacy requests:

- That the Partridge River and Embarrass River be included on Minnesota's 2014 Impaired Waters List for aquatic consumption due to mercury in the water column.

Wild Rice Impaired Waters Listing

Federal law requires that states must submit to the EPA the list of water quality impaired waterbodies and TMDLs for these waterbodies. 33 U.S.C. § 1313(d); 40 C.F.R. § 130.7(b)(1) (states obligated to identify all waters within its boundaries for which pollution controls are not stringent enough to implement any water quality standard applicable to such waters). Further, states must assemble and evaluate all existing and readily available water quality related data and information in order to identify all water quality limited segments. 40 C.F.R. § 130.7(b)(5).

In developing Section 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or identified as threatened; (2) waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 nonpoint assessment submitted to EPA. 40 CFR §130.7(b)(5).

In addition to these minimum categories, States are required to consider any other data and information that is existing and readily available. EPA's 1991 *Guidance for Water Quality-Based Decisions* describes screening categories that should be used to identify impaired waters. Guidance for Water Quality-Based Decisions: The TMDL Process, U.S. EPA Office of Water, 1991, Appendix C.

In addition to requiring States to assemble and evaluate all existing and readily available water quality related data and information, EPA regulations at 40 CFR § 130.7(b)(6) require States to include, as part of their submissions to EPA, documentation to support decisions to rely or not rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; (3) a rationale for the decision not to use any existing and reasonably available data; and (4) any other reasonable information requested by the Region. 40 CFR § 130.7(b)(6).

WaterLegacy agrees with the statement made in the MPCA's letter to U.S. Steel Corporation on November 8, 2103 that the MPCA is authorized to determine whether a water body is an impaired water used for the production of wild rice on the basis of information developed about the particular water. (*See* Exhibit A, MPCA Letter to USS, November 8, 2013). As the MPCA has already pointed out, the 2011 legislation pertaining to review of the wild rice sulfate standard, 2011 First Special Session, chapter 2, Article 4, does not affect the MPCA's obligation under the Clean Water Act to designate and protect impaired waters. Such a constraint would be outside the scope of the Legislature's authority.

WaterLegacy would further emphasize that there is no requirement in law that the methodology used by a state to list impaired waters be agreed to by regulated parties.

There is also no requirement that the methodology used for a state's initial listing of impaired waters remain static over the course of time. No statute, regulation or guidance would preclude MPCA from listing on Minnesota's 2014 Section 303(d) Impaired Waters List those wild rice waters preliminarily identified by the Agency as "impaired" in August 2013 based on the assessment criteria developed by the MPCA in 2013 and then continuing to develop more sophisticated criteria for additional listings.

WaterLegacy believes that the assessment criteria used by the MPCA for the initial preliminary listing in August 2013 are underinclusive. But this would not undermine the listing in 2014 of what we might consider "low-hanging fruit" in evaluating wild rice impaired waters using existing and readily available data and information. 40 C.F.R §130.7(b)(6)(III).

WaterLegacy would request that the Agency continue to develop assessment criteria in consultation with tribes, integrating oral histories, ecosystem indicators and phytolith investigations so that listing of wild rice impaired waters would become more comprehensive over time. But, we believe that delay in the 2014 listing of wild rice waters is neither protective of the resource not consistent with the MPCA's commitment to the development of wild rice/sulfate impaired waters in response reflected in communications to the EPA. (*See* EPA's Decision Document for the Approval of the 2012 Section 303(d) list, attached as Exhibit B)

<u>Wild Rice Impaired Waters from MPCA Preliminary Listing</u>
Based on the above discussion and the MPCA's preliminary listing of wild rice impaired waters prepared in August 2013, attached as Exhibit C, WaterLegacy requests that the wild rice waters preliminarily identified as impaired for wild rice/sulfate be included in Minnesota's 2014 Impaired Waters List, as follows:

Embarrass River (Embarrass Lake to St. Louis River)
Partridge River (Headwaters to S. Louis River)
Sandy River (Headwaters - Sandy Lake to Pike River)
St. Louis River (Oliver Bridge to Pokegama River)
St. Louis River (Mission Creek to Oliver Bridge)
Bostick Creek (Headwaters to Lake of the Woods)
County Ditch 12 (Headwaters to T113 R36W S8 north line)
Rice Creek (Rice Lake to Elk River)
Long Prairie River (Fish Trap Creek to Crow Wing River)
Rice Creek (Headwaters to Maple River)
Chippewa River (Watson Sag to Minnesota River)
Chippewa River (Unnamed Creek to E. Br. Chippewa River)
Chippewa River (E. Br. Chippewa River to Shakopee Creek)
Chippewa River (Cottonwood Creek to Dry Weather Creek)
Chippewa River (Stowe Lake to Little Chippewa river)
Cannon River (Pine Creek to Belle Creek)
Cannon River (Headwaters to Cannon Lake)
Cannon River (Byllesby Dam to Little Cannon River)

Cannon River (Belle Creek to split near mouth)
Cedar Island Lake (North Portion)
Cedar Island Lake (South Portion)
Fourth Lake
Esquagama Lake
East Vermillion Lake
Trout Lake
Elizabeth Lake (Main Basin)
Swan Lake (West Bay)
Swan Lake (Main Basin)
Preston Lake
Embarrass Lake
Lady Slipper Lake
Monongalia Lake (Main Basin)
Monongalia Lake (Middle Fork Crow)
Crow River Mill Pond (East)
Hay Lake
Big Stone Lake
Lac Qui Parle (NW Bay)
Lac Qui Parle (SE Bay)
Mina Lake
Pearl Lake
Sandy Lake
Little Sandy Lake
Marsh Lake
Lillian Lake
Lobster Lake
Sturgeon Lake
Long Lake

WaterLegacy has not had the opportunity to review the wealth of data in Minnesota Department of Natural Resources and MPCA files from which other wild rice impaired waters could be identified. However, there are several waters identified in the PolyMet SDEIS that we believe should be added to Minnesota's 2014 Impaired Waters List, based on data in Table 4.2.2-3 on page 4-37 of the SDEIS. These include:

Second Creek
Sabin Lake
Wynne Lake

Mercury Impaired Waters Listing

WaterLegacy submits that the MPCA has a particular obligation to address high concentrations of mercury in fish tissue and in the water column in the Lake Superior Basin. We request that the MPCA include its 2014 listing of waters impaired due to fish consumption waters with mercury exceeding the applicable 1.3 ng/L standard identified in the PolyMet SDEIS. (See Table 4.2.2-4 Summary of Total Mercury Concentrations in the Partridge River and Embarrass River

Watersheds near the Mine Site and Plant Site, p. 4-41). The SDEIS summarizes this data as follows:

> Based on sampling in studies done for the NorthMet Project Proposed Action, it is estimated that current total mercury concentrations average about 3.6 nanograms per liter (ng/L) in the Upper Partridge River (Barr 2011a), 3.8 ng/L at monitoring station SW-005, and between 4.8 and 6.0 ng/L in Colby Lake. Total mercury concentrations are similar in the Embarrass River, averaging 4.8 ng/L at monitoring station PM-12 and 4.0 ng/L at monitoring station PM-13 from 2004 to 2012. (SDEIS, p. 4-37)

WaterLegacy would request the following additional listing of waters impaired for consumption of fish based on mercury in the water column:

Partridge River
Embarrass River

WaterLegacy appreciates efforts made to date by the MPCA to rectify omission of wild rice impaired waters from the 2012 Impaired Waters List. We ask, however, that this process not be delayed or compromised due to objections from regulated parties. WaterLegacy requests prompt listing on the 2014 Section 303(d) list of the wild rice impaired waters identified above and requests that the MPCA use an iterative biannual process to list additional wild rice impaired waters, in collaboration with tribes, other ricers and conservation groups concerned about protection of the resource.

WaterLegacy also requests that a priority be placed on listing the mercury impaired waters identified above and on providing TMDL analysis to remove fish consumption impairments in the Lake Superior Basin related to mercury in the water column and mercury in fish tissue.

Please do not hesitate to contact me at 651-646-8890 if you have any questions regarding these comments.

Sincerely yours,

Paula G Maccabee

Paula Goodman Maccabee
Advocacy Director/Counsel for WaterLegacy

Enclosures

cc: Shannon Lotthammer, MPCA (shannon.lotthammer@state.mn.us)
Paul Proto, EPA (proto.paul@epa.gov)
Christine Wagener, EPA (wagener.christine@epa.gov)

Minnesota Pollution Control Agency

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November 8, 2013

Mr. Larry Sutherland
General Manager – Minnesota Ore Operations
United States Steel Corporation
P.O. Box 417
Mountain Iron, MN 55768

RE: United States Steel Corporation Correspondence Related to the Designation of a "Water Used for Production of Wild Rice"

Dear Mr. Sutherland:

The Minnesota Pollution Control Agency (MPCA) has received two letters from United States Steel Corporation (USS) related to the MPCA's process for designation of a "water used for production of wild rice" (WUFPOWR). The first was an August 12, 2013, letter from David Smiga responding to a MPCA document called "Draft Staff Recommendation for 'waters used for production of wild rice' downstream of the US Steel Minntac tailings basin." The second was a September 27, 2013, letter from you responding to MPCA comments on a June 27, 2013, Sulfate Reduction Plan revision required by the reissued water permits for the Keetac operation. In both letters, USS cites Minnesota Session Laws 2011, First Special Session, Chapter 2, Article 4 (2011 Law) asserting it is premature for the MPCA to determine that waters, other than those specifically listed in Minnesota rules, qualify as "waters used for the production of wild rice."

Though those two letters may raise other issues, this letter will respond to that specific assertion.

The MPCA has carefully considered USS' assertion. The MPCA believes that it is authorized to determine whether a particular water is a WUFPOWR on the basis of information developed about the particular water. The MPCA will continue to apply the current draft staff recommendations related to WUFPOWR subject to possible future modification after the criteria development process is completed.

However, because the MPCA continues to receive questions from all stakeholders about how such a determination is made, and specifically a number of requests to review the criteria the MPCA is using for such determinations, the MPCA has concluded that it is appropriate to provide opportunity for input on the criteria following the process laid out in Section 32 (b) of the 2011 Law. The MPCA plans to begin to develop criteria by meeting with the Minnesota Department of Natural Resources and Indian Tribes in late 2013 and anticipates taking public comment from other interested parties through public notice and comment sometime in early 2014.

The draft MPCA staff recommendations mentioned by USS include the following language: "This draft MPCA staff recommendation for ... is based on information currently available. MPCA staff will consider additional information that may become available in the future, whether from project proposers or from other interested/affected parties, and reserves the right to modify the draft staff recommendation accordingly." Once the MPCA has completed the criteria development process, the MPCA will consider those criteria as additional information and will reconsider the current draft MPCA staff recommendations for the waters mentioned in the two USS letters. MPCA staff will share the resulting draft staff recommendation (related to whether those waters are WUFPOWR and subject to the existing standard) with USS and the Tribes as is the current practice. The resulting draft staff recommendation will include any revisions as appropriate based on the additional information.

During the public comment period for any related permit or following issuance of such permit, USS may challenge the application of the criteria in the permitting process. As it did in the litigation initiated by the Minnesota Chamber of Commerce, the MPCA continues to reject any suggestion that WUFPOWR are limited to waters used for the irrigation of paddy rice, and not waters used for support of wildlife and other purposes. See Minn. R. 7050.0224, subp. 4.

Regarding the criteria development processes, the MPCA notes that the 2011 legislation has two distinct parts, rulemaking and criteria development. The 2011 legislation provides:

> *Sec. 32. WILD RICE RULEMAKING AND RESEARCH.*
>
> *(a) Upon completion of the research referenced in paragraph (d), the commissioner of the Pollution Control Agency shall initiate a process to amend Minnesota Rules, chapter 7050. The amended rule shall:*
>
> *(1) address water quality standards for waters containing natural beds of wild rice, as well as for irrigation waters used for the production of wild rice;*
>
> *(2) designate each body of water, or specific portion thereof, to which wild rice water quality standards apply; and*
>
> *(3) designate the specific times of year during which the standard applies.*

Nothing in this paragraph shall prevent the Pollution Control Agency from applying the narrative standard for all class 2 waters established in Minn. R. ch. 7050.0150, subp. 3.

> (b) "Waters containing natural beds of wild rice" means waters where wild rice occurs naturally. *Before designating waters containing natural beds of wild rice as waters subject to a standard, the commissioner of the Pollution Control Agency shall establish criteria for the waters after consultation with the Department of Natural Resources, Minnesota Indian tribes, and other interested parties and after public notice and comment. The criteria shall include, but not be limited to, history of wild rice harvests, minimum acreage, and wild rice density.*

2011 First Special Session, ch. 2, Art. 4 (emphasis added). The legislature has required that Minn. R. ch. 7050 be amended to designate each body of water, or specific portion thereof, to which wild rice water quality standards apply." Rulemaking has a long established formal process that the MPCA follows and will follow in designating waters. Referring to the italicized language, the legislature established a separate criteria development process for the MPCA to follow and specified that the process is to include a consultation component and a public notice and comment component separate from the public notice and comment process that will occur during the rulemaking called for by the legislation. The legislature has required the MPCA to complete the criteria development process prior to rulemaking for designating waters. While the criteria are to be used in the designation process, the legislation imposes no restrictions upon the MPCA's permitting authorities, its obligations to protect impaired waters or its use of the criteria on a case-by-case basis to identify impaired waters and when effluent limitations are necessary in permits.

Based on the foregoing, the MPCA has concluded that it is appropriate to move forward with the process to establish criteria for designating "waters containing natural beds of wild rice," prior to the rulemaking.

The MPCA will use the criteria that emerge from this process for three purposes: to inform the process of "designating" waters subject to the standard in the wild rice standards rulemaking, to apply on a case-by-case basis to identify when effluent limitations are necessary in permits, and to aid the MPCA when listing impaired waters. Attached is a proposed timeline for activities related for the wild rice sulfate standard.

Please feel free to contact me with questions at 651-757-2366.

Sincerely,

for Ann M. Foss
Director
Metallic Mining Sector
Industrial Division

AMF/SB:rm

Attachment

Minnesota Pollution Control Agency

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November 8, 2013

Mr. Larry Sutherland
General Manager – Minnesota Ore Operations
United States Steel Corporation
P.O. Box 417
Mountain Iron, MN 55768

RE: United States Steel Corporation Correspondence Related to the Designation of a "Water Used for Production of Wild Rice"

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However, because the MPCA continues to receive questions from all stakeholders about how such a determination is made, and specifically a number of requests to review the criteria the MPCA is using for such determinations, the MPCA has concluded that it is appropriate to provide opportunity for input on the criteria following the process laid out in Section 32 (b) of the 2011 Law. The MPCA plans to begin to develop criteria by meeting with the Minnesota Department of Natural Resources and Indian Tribes in late 2013 and anticipates taking public comment from other interested parties through public notice and comment sometime in early 2014.

The draft MPCA staff recommendations mentioned by USS include the following language: "This draft MPCA staff recommendation for ... is based on information currently available. MPCA staff will consider additional information that may become available in the future, whether from project proposers or from other interested/affected parties, and reserves the right to modify the draft staff recommendation accordingly." Once the MPCA has completed the criteria development process, the MPCA will consider those criteria as additional information and will reconsider the current draft MPCA staff recommendations for the waters mentioned in the two USS letters. MPCA staff will share the resulting draft staff recommendation (related to whether those waters are WUFPOWR and subject to the existing standard) with USS and the Tribes as is the current practice. The resulting draft staff recommendation will include any revisions as appropriate based on the additional information.

During the public comment period for any related permit or following issuance of such permit, USS may challenge the application of the criteria in the permitting process. As it did in the litigation initiated by the Minnesota Chamber of Commerce, the MPCA continues to reject any suggestion that WUFPOWR are limited to waters used for the irrigation of paddy rice, and not waters used for support of wildlife and other purposes. See Minn. R. 7050.0224, subp. 4.

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> (b) "Waters containing natural beds of wild rice" means waters where wild rice occurs naturally. *Before designating waters containing natural beds of wild rice as waters subject to a standard, the commissioner of the Pollution Control Agency shall establish criteria for the waters after consultation with the Department of Natural Resources, Minnesota Indian tribes, and other interested parties and after public notice and comment. The criteria shall include, but not be limited to, history of wild rice harvests, minimum acreage, and wild rice density.*

2011 First Special Session, ch. 2, Art. 4 (emphasis added). The legislature has required that Minn. R. ch. 7050 be amended to designate each body of water, or specific portion thereof, to which wild rice water quality standards apply." Rulemaking has a long established formal process that the MPCA follows and will follow in designating waters. Referring to the italicized language, the legislature established a separate criteria development process for the MPCA to follow and specified that the process is to include a consultation component and a public notice and comment component separate from the public notice and comment process that will occur during the rulemaking called for by the legislation. The legislature has required the MPCA to complete the criteria development process prior to rulemaking for designating waters. While the criteria are to be used in the designation process, the legislation imposes no restrictions upon the MPCA's permitting authorities, its obligations to protect impaired waters or its use of the criteria on a case-by-case basis to identify impaired waters and when effluent limitations are necessary in permits.

Based on the foregoing, the MPCA has concluded that it is appropriate to move forward with the process to establish criteria for designating "waters containing natural beds of wild rice," prior to the rulemaking.

The MPCA will use the criteria that emerge from this process for three purposes: to inform the process of "designating" waters subject to the standard in the wild rice standards rulemaking, to apply on a case-by-case basis to identify when effluent limitations are necessary in permits, and to aid the MPCA when listing impaired waters. Attached is a proposed timeline for activities related for the wild rice sulfate standard.

Please feel free to contact me with questions at 651-757-2366.

Sincerely,

for Ann M. Foss
Director
Metallic Mining Sector
Industrial Division

AMF/SB:rm

Attachment

Last Revised: 11/8/13

Wild Rice Sulfate Standard -- Proposed Timeline of Related Activities

(Note: Green shading identifies public notice and dialogue opportunities)

		November-13	December-13	January-14	February-14	March-14	April-14	May-14 =>
Wild Rice Sulfate Standards Study[1]			Receive preliminary study results by December 31, 2013.	MPCA evaluate study data and develop wild rice sulfate standard rulemaking recommendations.		Share and discuss recommendations; begin to develop technical support details.	Begin rulemaking process to designate waters subject to standard and address any recommended changes to the standard.	
"Water Used for Production of Wild Rice" (WUFPOWR) Criteria Development[2]		MPCA meet with tribes, DNR and wild rice advisory committee to discuss WUFPOWR criteria development.		Public notice draft WUFPOWR criteria.	Review comments and revise WUFPOWR criteria as appropriate.	Use WUFPOWR criteria to inform process of "designating" waters subject to the sulfate wild rice standard; apply criteria for rulemaking, assessment, impaired waters list development and permitting.		
303 (d) Impaired Waters List[3]	**Wild rice sulfate assess-ments**	Wait to identify and assess WUFPOWR for the wild rice sulfate standard until WUFPOWR criteria are available.				Identify and assess WUFPOWR for the wild rice sulfate standard, consistent with WUFPOWR criteria. Public notice draft sulfate-impaired WUFPOWR. Submit WUFPOWR sulfate assessments to EPA when complete.[4]		
	All other assess-ments	Draft 2014 impaired waters list (minus WUFPOWR assessments) on MPCA website.	Hold public meetings on draft 2014 impaired waters list.	Public notice draft 2014 impaired waters list.	Review and respond to comments and revise draft 2014 impaired waters list as appropriate.		Draft 2014 impaired waters list due to EPA April 1, 2014.[4]	
NPDES Permit Development[5]		Continue to develop permits using draft staff recommendations related to identifying water used for production of wild rice.[6]				Re-evaluate draft staff recommendations using WUFPOWR criteria.		Any permit will be put on public notice prior to issuance.[6]

1. MN Session Laws 2011, First Special Session, Chapter 2, Article 4, Section 32 (d).
2. MN Session Laws 2011, First Special Session, Chapter 2, Article 4, Section 32 (b).
3. Federal Clean Water Act, 1972, Section 303 (d); MN Statutes 114D.25, subd. 1.
4. Depending on timing, the wild rice sulfate assessments may be submitted to EPA with the other assessments, or more likely as a separate package.
5. Federal Clean Water Act, 1972, Section 402; MN Statutes 115.03 , subd. 5
6. Permits will be put on public notice prior to issuance; a permit could go on notice at any point in the timeline.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUL 25 2013

REPLY TO THE ATTENTION OF:

WW-16J

John Linc Stine, Commissioner
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Dear Mr. Stine:

The U.S. Environmental Protection Agency conducted a complete review of Minnesota's 2012 Section 303(d) list and supporting documentation and information. Based on this review, EPA determined that Minnesota's 2012 list of water quality limited segments still requiring Total Maximum Daily Load calculations meets the requirements of Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations. Therefore, EPA approves Minnesota's 2012 Section 303(d) list which identifies the waters and associated pollutants along with the State's priority rankings for these waters and pollutants. The statutory and regulatory requirements, and EPA's review of Minnesota's compliance with each requirement, are described in the enclosed decision document.

EPA's approval of Minnesota's Section 303(d) list extends to all water bodies on the list with the exception of those waters that are within Indian Country, as defined in 18 U.S.C. § 1151. EPA is taking no action to approve or disapprove the State's list with respect to those waters at this time. EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under CWA Section 303(d) for those waters.

We appreciate your hard work in this area and your submittal of the list as required. If you have any questions, please contact Mr. Peter Swenson, Chief of the Watersheds and Wetlands Branch, at 312-886-0236.

Sincerely,

Tinka G. Hyde
Director, Water Division

Enclosure

cc: Katrina Kessler, MPCA
Miranda Nichols, MPCA
Jeff Risberg, MPCA

bcc: Sabrina Argentieri, EPA R5, ORC
Stephen Mendoza, EPA R5, ORC

DECISION DOCUMENT FOR THE APPROVAL OF MINNESOTA'S 2012 SECTION 303(d) LIST

The U.S. Environmental Protection Agency (EPA) has conducted a complete review of Minnesota's 2012 Section 303(d) list and supporting documentation and information. Based upon this review, EPA has determined that Minnesota's list of water quality limited segments (WQLS) still requiring total maximum daily loads (TMDLs) meets the requirements of Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations. Therefore, EPA hereby approves Minnesota's 2012 303(d) list. The statutory and regulatory requirements, and EPA's review of Minnesota's compliance with each requirement, are described in detail below.

I. Statutory and Regulatory Background

A. Identification of Water Quality Limited Segments for Inclusion on the Section 303(d) List

Section 303(d)(1) of the CWA directs States to identify those waters within their jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The Section 303(d) listing requirement applies to waters impaired by point sources and/or nonpoint sources, pursuant to EPA's long-standing interpretation of Section 303(d).

EPA regulations provide that States do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the CWA, (2) more stringent effluent limitations required by State or local authority, and (3) other pollution control requirements required by State, local, or federal authority.[1]

B. Consideration of Existing and Readily Available Water Quality-Related Data and Information

In developing Section 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or identified as threatened in the State's most recent Section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 nonpoint assessment submitted to EPA.[2] In addition to these minimum categories, States are required to consider any other data and information that is existing and readily available. EPA's 1991 *Guidance for Water Quality-Based Decisions* describes categories of water quality-related data and information that may be existing and readily available.[3] While States are required to evaluate all existing and readily available water quality-related data and information, States

[1] 40 Code of Federal Regulations (CFR) §130.7(b)(1).
[2] 40 CFR §130.7(b)(5).
[3] Guidance for Water Quality-Based Decisions: The TMDL Process, U.S. EPA Office of Water, 1991, Appendix C (hereafter, EPA's 1991 Guidance).

may decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to requiring States to assemble and evaluate all existing and readily available water quality-related data and information, EPA regulations at 40 CFR §130.7(b)(6) require States to include, as part of their submissions to EPA, documentation to support decisions to rely or not rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) any other reasonable information requested by the Region.[4]

C. Priority Ranking

EPA regulations codify and interpret the requirement in Section 303(d)(1)(A) of the CWA that States establish a priority ranking for listed waters. The regulations at 40 CFR §130.7(b)(4) require States to prioritize waters on their Section 303(d) lists for TMDL development, and also to identify those WQLS targeted for TMDL development in the next two years.[5] In prioritizing and targeting waters, States must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters.[6] As long as these factors are taken into account, the CWA provides that States establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and State or national policies and priorities.[7]

II. Analysis of Minnesota's Submission

On October 1, 2012, Minnesota submitted to EPA the State's final draft TMDL list, plus supporting documentation. The submittal received by EPA included the following:

- Submittal letter, dated September 17, 2012
- Final Draft MPCA 2012 303(d) List cover page, dated September 17, 2012
- Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List 2012 Assessment Cycle (December 2011)
- Public participation documentation
    - 2012 TMDL List Response Summary
    - Public comments received during public comment period
    - MPCA responses to public comments
    - Documentation of public meeting announcements (newspaper articles, etc.)
    - Attendance sheets from public meetings
    - Documentation of public participants in MPCA Professional Judgment Groups (PJG)
- Contested case documentation on 2012 chlorpyrifos listing

[4] 40 CFR §130.7(b)(6).
[5] 40 CFR §130.7(b)(4).
[6] CWA Section 303(d)(1)(A).
[7] 57 FR 33040, 33045 (July 24, 1992); see also EPA's 1991 Guidance.

- Minn. Dept. of Agriculture's (MDA) response to public comments made on the 2012 chlorpyrifos listing
- Three (3) copies of the final draft TMDL list, September 17, 2012 (printed spreadsheet)
- Inventory of all impaired waters, September 17, 2012 (printed spreadsheet)
- 2012 Mercury TMDLs within Appendix A, September 17, 2012 (printed spreadsheet)
- 2012 Mercury TMDL additions to Appendix A, September 17, 2012 (printed spreadsheet)

Within this Decision Document, the State's submittals received by EPA on October 1, 2012 and other supporting information are collectively referred to as the "2012 Submittal." All of this information is compiled in EPA's record for this decision.

EPA has reviewed Minnesota's 2012 submittal, and has concluded that the State developed its Section 303(d) list in compliance with Section 303(d) of the CWA and 40 CFR §130.7. EPA's review is based on its analysis of whether the State reasonably considered existing and readily available water quality-related data and information, and reasonably identified water quality-limited segments. EPA has reviewed the State's description of data, information considered, and the Minnesota Pollution Control Agency's (MPCA) 2012 Methodology[8] for identifying waters. EPA concludes that Minnesota properly assembled and evaluated existing and readily available data and information, including data and information relating to categories of waters specified at 40 CFR §130.7(b)(5). EPA also concludes that Minnesota provided an acceptable rationale for not relying on particular existing and readily available water quality-related data and information as a basis for listing waters on the 303(d) list.

EPA has also determined that the State properly listed waters with nonpoint sources causing or expected to cause impairment, consistent with Section 303(d) of the CWA and EPA guidance. Section 303(d) lists are to include all WQLS still needing TMDLs, regardless of whether the source of the impairment is a point source and/or nonpoint source. EPA's long-standing interpretation is that Section 303(d) applies to waters impacted by point source and/or nonpoint sources. In *Pronsolino v. Marcus* [9], the 9th Circuit for the Northern District of California held that Section 303(d) of the CWA authorizes EPA to identify and establish TMDLs for waters impaired by nonpoint sources.

EPA's approval of Minnesota's 2012 303(d) list extends to water bodies as identified in Table A-1 (Attachment #1) of this Decision Document with the exception of those waters that are within Indian Country. EPA is taking no action to approve or disapprove the State's list with respect to those waters that are within Indian Country. EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under Section 303(d) for those waters.

A. Identification of Water Quality-Limited Segments for Inclusion on Section 303(d) List

1. Minnesota's 2012 303(d) list

Minnesota uses an Integrated Report to fulfill the reporting requirements of Sections 305(b) and 303(d) of the CWA. Since the 2002 listing cycle, EPA has encouraged states to integrate their 305(b) report and their 303(d) list into one submittal, the Integrated Report (IR). EPA has recommended five beneficial use attainment reporting categories where the various categories represent varying levels of use

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[8] *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List, 2012 Assessment Cycle* (December 2011) (hereafter, 2012 Methodology).

[9] EPA Impaired Waters and Total Maximum Daily Loads http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/pronsolino.cfm

attainment. Minnesota has chosen to use the recommended five categories with the addition of several subcategories. Minnesota's 2012 integrated report includes the following beneficial use attainment categories (Table 1 of this Decision Document).[10]

Table 1: MPCA's Beneficial Use Attainment Reporting Categories

Integrated Report Category	Description
1	All designated uses are fully assessed and met, and no use is threatened.
2	Some uses or parameters are met; but insufficient data to determine if remaining uses or parameters are met.
3A	No data or information to determine if any use is attained.
3B	Data are available for a review and generally indicate non-support, but insufficient data and information to determine TMDL impairment. (Example: single lake data point showing non-support)
3C	Data available that currently has no assessment tools to allow its use in assessing. (Example: data with only eco-region expectation standards)
3D	Data are available for a review and generally indicated full support, but insufficient data and information to assess for Category 1 or 2.
3E	Data are available for a review, but insufficient data and information to determine full support or TMDL impairment. (Example: lake data just below the threshold showing non-support)
4A	Impaired or threatened but all needed TMDL plans have been completed.
4B	Impaired or threatened but doesn't require a TMDL plan because it is expected to attain standards within a reasonable period of time.
4C	Impaired or threatened but doesn't require a TMDL plan because impairment not caused by a pollutant.
4D	Impaired or threatened but doesn't require a TMDL plan because the impairment is due to natural conditions with only insignificant anthropogenic influence. To be considered "insignificant", the elimination of the anthropogenic influence would not lead to the attainment of water quality standards and it would not be included in formal pollution reduction goal setting activities. A reach-specific water quality standard based on local natural conditions has yet to be determined. Upon determination, the assessment unit will be considered non-impaired for the natural conditions and re-categorized to an appropriate category.
4E	Impaired or threatened but existing data strongly suggests a TMDL plan is not required because impairment is solely a result of natural sources; a final determination of Category 4D will be made in the next assessment cycle pending confirmation from additional information (i.e. water quality or land use).
5A	Impaired or threatened by multiple pollutants and no TMDL plans approved.
5B	Impaired by multiple pollutants and either some TMDL plans are approved but not all or at least one impairment is the result of natural conditions.
5C	Impaired or threatened by one pollutant.

The general process used by Minnesota to develop the 2012 Integrated Report starts with the collection and assessment of readily available data and information. Following guidelines established in MPCA's 2012 Methodology, an assessment of use support for individual water body units is made.

The water body unit used for river system assessments is the river reach. A river reach typically extends from one significant tributary river to another or from the headwaters to the first significant tributary. River reaches are typically less than 20 miles in length. A river reach may be further divided into two or more assessment reaches when there is a change in use classification or when there is a significant morphological feature. Minnesota uses the United States Geological Survey (USGS) eight digit

[10] 2012 Methodology, page 47.

hydrologic unit code (HUC) (ex. 07020012) plus a three digit reach code (ex. 505) to name river reach segments (ex. 07020012-505). River reach segment numbers are also referred to as 'River identification numbers' (River ID#).

MPCA relies on the *Protected Waters Inventory*, which is assembled by the Minnesota Department of Natural Resources (MDNR), to provide identification codes for lakes and wetlands within the state. MDNR uses a unique eight digit identification number to identify lakes and wetlands. The eight digit number consists of a two digit prefix, which represents the county within Minnesota, followed by a four digit number, which identifies the lake or wetland, followed by a two digit suffix which represents either the whole lake (as '-00') or represents a specific bay of the lake (ex. -01, -02, etc.). The entire eight digit identifier is something similar to the following (ex. 82-0020-01).[11] Throughout the remainder of this Decision Document the term 'assessment unit' is used generally to refer to any river segment identified with a River ID# or a lake segment identified with a Lake/Wetland ID# on Minnesota's 2012 303(d) list.

Once an assessment has been completed, the water body is placed into one of the five categories described in Table 1 of this Decision Document. Waters within categories 4 and 5 represent the inventory of impaired waters in Minnesota. Category 5 waters represent impaired waters requiring TMDLs, i.e., Minnesota's 303(d) list. EPA is approving the waters identified in Table A-1 of this decision as Minnesota's 2012 303(d) list.

2. Methodology

EPA's regulations at 40 CFR §130.7(b)(6) require that states provide documentation to support their decisions to list or not list waters including a description of the methodology used to develop the list. MPCA developed its methodology for the 2002 listing cycle and has subsequently modified the methodology with each listing cycle. Minnesota's 2012 submittal included MPCA's 2012 Methodology (December 2011). MPCA's 2012 Methodology defines the data and information requirements needed to assess and determine if a water is meeting its designated beneficial use(s). The 2012 Methodology also establishes thresholds that indicate impairment for various categories of pollutants. As with prior versions of its methodology, the State made the 2012 Methodology available to the public through MPCA's website beginning on or about January 23, 2012.

Minnesota rules identify seven beneficial uses for which surface waters in Minnesota are protected. These beneficial uses are assigned the following use class numbers:

Class 1: Drinking water
Class 2: Aquatic life and recreation
- Class 2A: Cold water fisheries, trout waters
- Class 2B: Cool and warm water fisheries (not protected for drinking water use)
- Class 2Bd: Cool and warm water fisheries (protected for drinking water use)
- Class 2C: Indigenous fish and associated aquatic community
- Class 2D: Wetlands

Class 3: Industrial use and cooling
Class 4: Agricultural use
Class 5: Aesthetics and navigation
Class 6: Other uses

[11] 2012 Methodology, page 8.

Class 7: Limited resource value waters

All surface waters in Minnesota are considered either a Class 2 or Class 7 designated water.[12] Unless classified as a Class 7 water, surface waters in Minnesota are protected for aquatic life and recreation (Class 2 designated water). The State of Minnesota defines protection of aquatic life and recreation as, *"the maintenance of healthy, diverse, and successfully reproducing populations of aquatic organisms, including invertebrates as well as fish. Protection of recreation for all surface waters, except wetlands and limited resource value waters means the maintenance of conditions suitable for swimming and other forms of water recreation. Recreation in wetlands means boating and other forms of aquatic recreation for which they may be usable (this does not preclude swimming if that use is suitable)."*[13] Limited resource value waters (Class 7 designated water) are not fully protected for aquatic life. Class 7 designated waters have a very limited aquatic and fish community mostly due to lack of water, lack of habitat, or extensive physical alterations. Both Class 2 and 7 designated waters are also protected for Classes 3, 4, 5 and 6 designations.

Typically water quality standards applicable to Class 2 designated waters are the most stringent, therefore, Minnesota's assessments usually consider water quality standards applicable to Class 2 waters. Beneficial use supports assessed by Minnesota include;

- Aquatic Life (toxicity-based standards, conventional pollutants, biological indicators);
- Drinking Water and Aquatic Consumption (human health-based standards);
- Aquatic Consumption (wildlife-based standards);
- Aquatic Recreation (*Escherichia coli (E. coli)* bacteria, eutrophication);
- Limited Value Resource Waters (toxicity-based standards, bacteria, conventional pollutants).

Aquatic life use support assessments consider protection of the organisms that reside in the surface waters, while aquatic consumption use support assessments consider protection of the consumers of the aquatic life. Aquatic recreation use support is assessed for the protection of recreation in surface waters.[14]

Class 7 waters and Class 1 waters were first assessed during the 2010 listing cycle. These two beneficial uses are 'newer' beneficial use classes to be assessed by MPCA. Class 7 waters, MPCA designated limited resource value waters, are protected to allow secondary body contact use, to preserve groundwater for potable water supply, and to protect aesthetic qualities of the water.[15] Class 1 waters, MPCA designated drinking waters, are protected surface waters for water supply purposes. All groundwater in Minnesota is protected as a source of drinking water, however, only select surface waters are protected as a source of drinking water.[16] Before being assessed for the 2010 listing cycle, Class 1 surface waters and groundwater were outside the scope of MPCA's assessment methodologies. However, over more recent listing cycles, MPCA recognized a trend of increasing nitrate concentrations in Minnesota streams. Class 1 water bodies have been assessed since the 2010 listing cycle to measure potential exceedances of the nitrate-nitrogen Class 1 drinking water consumption standard.

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[12] MPCA Water Quality Standards, http://www.pca.state.mn.us/index.php/water/water-monitoring-and-reporting/water-quality-and-pollutants/water-quality-standards.html
[13] MPCA Water Quality Standards, http://www.pca.state.mn.us/index.php/water/water-monitoring-and-reporting/water-quality-and-pollutants/water-quality-standards.html
[14] 2012 Methodology, page 4.
[15] Class 7 Limited Resource Value Waters Fact Sheet, http://www.pca.state.mn.us/index.php/view-document.html?gid=7255
[16] MPCA Water Quality Standards, http://www.pca.state.mn.us/index.php/water/water-monitoring-and-reporting/water-quality-and-pollutants/water-quality-standards.html

3. Assessment Process

MPCA redesigned its data collection and assessment process between the 2010 and 2012 listing cycles. Up to and including the 2010 listing cycle, MPCA assessed the condition of the State's waters via water quality data which was collected under a biennial, statewide water quality assessment strategy. Since 2006-2007, MPCA has been moving away from collecting water quality data via a biennial, statewide monitoring approach, and is instead focusing its data collection efforts on the eight digit hydrologic unit code (HUC-8) scale. Each year, MPCA targets specific HUC-8 watersheds for water quality monitoring in an approach called the 'Intensive Watershed Monitoring Approach' (IWMA). Water quality monitoring of targeted HUC-8 watersheds under the IWMA was first employed by MPCA in 2007, in the Pomme de Terre River watershed and the North Fork of the Crow River watershed (Table 3 of this Decision Document).

The 2012 assessment cycle is the first assessment cycle in which MPCA is assessing water quality data which was collected via IWMA efforts. Prior to the 2012 listing cycle, MPCA was solely analyzing water quality data collected under the biennial, statewide assessment approach. Data collected during the IWMA strategy resulted in MPCA revising its internal assessment processes for analyzing water quality data. MPCA explained that the IWMA strategy generated an increased volume of water quality monitoring data which necessitated amendments to how MPCA conducted its internal review of water quality monitoring data for assessment decisions. MPCA believes that the IWMA generates a more robust water quality data set which MCPA can more efficiently use to assess water quality in surface waters of the State. Details of this approach can be found in the *2011-2012 Minnesota Water Quality Monitoring Strategy.*[17]

The incorporation of the IWMA for the 2012 listing cycle generated large amounts of water quality data which necessitated MPCA to redesign its water quality data review process. The redesigned review process combined computerized data analysis, expert analysis, and input from external partners. The goal of the revamped review process was to incorporate all of the available water quality data and information to best determine whether or not the water body was meeting its beneficial uses (ex. drinking water, aquatic life, aquatic recreation, aquatic consumption and limited use waters).

The data review and analysis process utilized to create the 2012 303(d) list expanded upon data analysis methods of the previous (2010 and earlier) assessment processes. Changes made to the data review and analysis process for the 2012 cycle included an additional round of MPCA staff review of water quality data at the parameter level and an additional round of internal comprehensive review of water quality data prior to the professional judgment group (PJG) meeting. These changes were incorporated in response to the increased volume and complexity of the water quality data collected during the IWMA. Details on the specific steps employed by MPCA in the 2012 303(d) water quality assessment process are:[18]

<u>Step 1:</u> 'Pre-assessment': Monitor and gather data information (automated data compilation)
MPCA employs an intensive watershed monitoring schedule that provides comprehensive assessments of all of the major watersheds on a 10-year cycle. This schedule provides intensive monitoring of

[17] 2011-2021 Minnesota Water Quality Monitoring Strategy, http://www.pca.state.mn.us/index.php/water/water-monitoring-and-reporting/water-quality-and-pollutants/minnesota-s-water-quality-monitoring-strategy.html
[18] 2012 Methodology, page 6-7.

streams and lakes within each major watershed to determine overall health of the water resources, to identify impaired waters, and to identify those waters in need of additional protection to prevent future impairments.

In addition to gathering water quality information, the first step also includes an initial data review process. The 'pre-assessment' data review involves a computerized/automated screening tool which analyzes water quality monitoring results collected within the HUC-8 watershed (See Table 3 of this Decision Document for a list of watersheds targeted during the 2012 listing cycle). The automated process summarizes the number of data points that exceed the criteria, the total number of data points, and the number of years of data. This step produces a parameter-specific pre-assessment (e.g., for Dissolved Oxygen, or Fish Index of Biotic Integrity (IBI), or *E. coli*). Water quality data is assessed on an individual water body basis. The pre-assessment is the first opportunity in the water quality data review process where individual water bodies' water quality monitoring data are compared against water quality criteria.

<u>Step 2:</u> 'Expert Review': Assessment of the water quality data by MPCA staff
Based on results of intensive watershed monitoring in Step 1, MPCA staff review data to determine whether or not water resources meet water quality standards and designated uses. Waters that do not meet water quality standards are listed as impaired waters.

The second step involves a review by MPCA staff of automated pre-assessment summary data for quality assurance (QA). This step ensures that the computerized screening captured appropriate data and the automated process properly calculated pre-assessments data.

<u>Step 3:</u> Desktop assessment by resource specific MPCA staff
The desktop assessment involves a review of Steps 1 and 2 pre-assessment and expert review information by resource-specific MPCA staff. For example, chemistry data will be reviewed by MPCA water quality staff and biological specific data will be reviewed MPCA biologists. Step 3 of the water quality data review process considers other climatic and hydrochemical evidence (ex. flow conditions, precipitation, land use, habitat, etc.) to ascertain the overall quality of the dataset. The overall quality is a measure of temporal and spatial completeness and whether the chemical parameter is meeting or exceeding the criterion. During Step 3, water body candidates for delisting or natural background review are identified and work begins to determine if those assessment unit identification numbers (AUIDs) meet the criteria to be removed from the impaired waters List (i.e., 303(d) list).

<u>Step 4:</u> Watershed Assessment Team review of water quality data
The fourth step incorporates a joint internal meeting of MPCA staff involved in the review of water quality data in Step 1 through Step 3, the regional watershed project manager and stressor identification staff for specific HUC-8 watersheds. This grouping of people makes up the Watershed Assessment Team (WAT). The joint internal meeting allows the WAT to review comments and parameter-level evaluations from the desktop assessment and any watershed specific supplemental information to reach an overall use-support decision. Delisting and natural background candidates may also be identified at this time.

Step 5: Professional Judgment Group review of water quality data
The fifth step includes a joint meeting between the WAT and external parties (ex. local data collectors, local government units, etc.). This joint meeting is referred to as the Professional Judgment Group (PJG). The MPCA regional watershed project manager is responsible for inviting external parties to the PJG discussions.[19]

Prior to the PJG meeting, the results of the WAT meeting are distributed to all invitees, including parameter-level evaluations, overall use-support recommendations, and all other comments made by reviewers. Invitees are asked to identify AUIDs they wish to discuss; an agenda is developed based on these submissions. The agenda of the PJG meeting is to review the water quality data review process, to hold a general discussion of the watershed and major subwatersheds, and to review requested AUIDs, delisting and natural background candidates. The determinations made within the PJG meeting are the final use-support determinations. Additionally, the PJG may consider the magnitude, duration and frequency of exceedances, timing of exceedances, natural occurring conditions that may affect pollutant concentrations and toxicity, weather and flow conditions, and changes in the watershed that may have changed water quality.

The analyses and recommendations for each AUID are documented in a transparency database. The transparency database is archived following the completion of the assessments. Throughout the annual assessment process, care is taken to maintain consistency among the HUC-8 assessments and decisions. Consistency is maintained via internal training and quality control, and the assignment of individual staff to multiple HUC-8 data sets for the expert review. MPCA designates a team of scientists to oversee desktop assessments and to ensure consistency among watershed assessment discussions and decisions.[20] MPCA's goal is to ensure a robust decision is reached by the staff reviewers regarding the appropriate management actions to be pursued for each assessment unit (water body, or AUID). This decision will impact the planning and implementation phases of the watershed approach (i.e. restoration for impaired waters and protection for unimpaired waters).

MPCA reports the assessment decisions made by the PJG in *Watershed Monitoring and Assessment Reports* (on the HUC-8 scale) and the *Integrated Reports*. The Watershed Monitoring and Assessment Reports are a compilation of the results of the assessments following the determinations of the PJG. AUIDs are discussed by HUC-8 subwatersheds and overall water quality conditions, potential stressors, and protection areas are identified. These documents inform the restoration and protection strategies that are developed by MPCA.

The Integrated Report is composed of a narrative report and Assessment Database (ADB) and geospatial data. The Integrated Report summarizes the results of the water quality assessments conducted by MPCA. MPCA is responsible for uploading assessment decision information to the EPA via the ADB and also preparing a narrative report to the U.S. Congress as required by section 305(b) of the CWA. Each designated use is identified as "full support," "not support," "insufficient information," or "not assessed" as a result of the assessments. In addition, the use assessment data types are rated per the levels in the ADB.

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[19] *A note should be made that the assessment for aquatic consumption (fish) at this time utilizes only the first two steps in the process.*
[20] 2012 Methodology, pages 6-7.

4. Assessment of Waters Based on Narrative and Numeric Water Quality Standards
As previously stated in this decision, Minnesota assesses aquatic life, drinking water consumption, aquatic consumption (via human health-based standards), aquatic consumption (via wildlife-based standards), aquatic recreation use, and limited value resource waters. Minnesota's 2012 Methodology sets forth the specific assessment methods used by the State when determining if these uses are attained. EPA recognizes that water quality criteria have three elements: magnitude, duration, and frequency of exceedance. Minnesota's 2012 Methodology sets forth specific information about how these three elements were considered by the State in development of Minnesota's 2012 303(d) list. EPA finds that Minnesota's use of its 2012 Methodology supports the reasonable identification of WQLS.

The following discussion briefly explains the data requirements, information considered, and impairment thresholds used in Minnesota's assessments as described in Minnesota's 2012 Methodology. The 2012 Methodology sets forth methods for assessing surface waters based on the following:

- numeric and narrative standards for the protection of aquatic life;
- numeric and narrative standards for the protection of human health (aquatic consumption and drinking water);
- numeric standards for protection of aquatic consumption (wildlife);
- numeric standards for protection of aquatic recreation; and
- numeric and narrative standards for the protection of limited resource value waters.

A key component in the assessment process employed by MPCA was the determination of whether an individual parameter within a specific water body met or exceeded the applicable water quality criteria (numeric or narrative standards). MPCA water quality data evaluation also considered the quality of the dataset, whether or not there were sufficient data to make a determination, and ultimately assigned a 'dataset quality' rating. Dataset quality was graded on a scale of 'low,' 'medium,' or 'high' quality ratings. The determinations were stored in a working database and referenced during MPCA WAT reviews and PJG meetings. Additional supporting information, such as magnitude, duration and frequency of exceedances, timing of exceedances, naturally occurring conditions that may affect pollutant concentrations and toxicity, weather and flow conditions, and changes in the watershed that may have changed water quality, were considered in the final use-support determinations.

To further assist MPCA technical staff in their parameter-level evaluations, MPCA considers a 10 percent and 25 percent exceedance frequency[21] (details within Table 2 of this Decision Document) for conventional pollutants. These thresholds were appropriate for the conventional category of pollutants for several reasons, including that none were considered 'toxic' (or bioaccumulative), and all were subject to periodic 'natural exceedances' because of natural causes.[22] An example of natural exceedances from the 2012 Methodology explained that turbidity typically increases in streams after rain events, even in relatively undisturbed parts of the State. Similarly, dissolved oxygen can drop below the standard in low gradient rivers and streams for reasons other than pollution (i.e., the AUID is located downstream of or flows through extensive wetland complexes). These potential pollutants are also natural characteristics of surface waters and aquatic organisms have adapted to cope with the

[21] EPA Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates: Supplement, Office of Water, U.S. EPA. EPA-841-B-97-002B. September 1997.
[22] 2012 Methodology, pages 10-11.

fluctuations over time.[23] MPCA considered these and other 'natural exceedances' during its review of water quality data and factored these occurrences into its review during the assessment process.

Table 2: Guidelines for Parameter-Level Evaluations of Conventional Pollutants*

Assessment	Frequency of Exceedances	Magnitude of Exceedances	Duration of Exceedances	Timing of Exceedances[1]
Water Chemistry Parameter Indicating Unimpaired or Supporting Conditions	Less than 10% exceedances of chronic standard	Exceedances generally within 10% of water quality criteria	Continuous data or extensive grab sample data set indicates no or few instances of prolonged exceedance	Exceedances only occurring during extreme events such as 100-year flood (e.g., TSS) or severe drought conditions (e.g., DO)
Water Chemistry Parameter Indicating Potential Impairment	Between 10 – 25% exceedances of chronic standard	Exceedances generally greater than 10% but less than 25% of water quality criteria	Continuous data or extensive grab sample data set indicates some instances of prolonged exceedance	Exceedances only occurring during periods in which they are most likely to occur (e.g., before 9 am, 7Q10 low flow, storm events, etc.); not counting extreme events above
Water Chemistry Parameter Indicating Potential for Severe Impairment	Greater than 25% exceedances of chronic standard	Exceedances generally greater than 25% of water quality criteria	Continuous data or extensive grab sample data set indicates chronic exceedance or many instances of prolonged exceedance	Exceedances occurring during periods (seasonal or daily cycle) in which they typically do not occur in addition to occurring in periods in which they are most likely to occur

* Most parameters will have data sets that only allow frequency and magnitude to be evaluated. When sufficient data exist (e.g., continuous monitoring or extensive grab samples) or appropriate ancillary data (e.g., flow, precipitation) are accessible, duration or timing of exceedances may also be considered in the evaluation. The parameter-level evaluation requires best professional judgment to integrate information across all applicable columns.
[1] Based on evaluation of available flow data and/or precipitation records as well as observations made by monitoring staff.

4a. Assessment of Surface Waters Based on Numeric and Narrative Standards for Protection of Aquatic Life

Assessments based on numeric standards for protection of aquatic life are considered to safeguard the aquatic community. Toxicity-based chronic numeric standards and conventional pollutant standards are calculated to preserve the aquatic community from the harmful effects of toxic substances, and the protection of human and wildlife consumers of fish and other aquatic organisms. Minnesota's 2012 Methodology establishes data requirements and thresholds for pollutants that have toxicity-based chronic numeric standards.

Two types of data are used in these toxicity-based assessments: water chemistry and biological data. In aquatic life determinations, pre-assessments consider chemistry data, biological data, and other data quality indicators.[24] Pollutants which have toxicity-based numeric standards considered in MPCA's assessments are trace metals, un-ionized ammonia, and chloride. Sections V.A.1. and V.A.2. in Minnesota's 2012 Methodology explain the applicable Class 2 numeric water quality standards, data requirements, and impairment thresholds considered in these toxicity-based numeric standard assessments. In general, for the assessment of pollutants with toxicity-based numeric standards, five data points collected within a 3-year period within the most recent 10 year period are necessary. Two or more exceedances of the chronic standard in 3 years is considered an impairment and is included on the 303(d) list.[25]

[23] 2012 Methodology, pages 10-11.
[24] 2012 Methodology, page 13.
[25] 2012 Methodology, page 15.

The State also assesses conventional pollutants with numeric standards and water quality characteristics which typically include low dissolved oxygen, pH, turbidity, temperature, and biological indicators. Sections V.B.1. and V.B.2. of the 2012 Methodology explain the applicable Class 2 numeric water quality standards, data requirements, and impairment thresholds considered in these assessments. Sections V.B.1 and V.B.2 also describe characteristics for dissolved oxygen in the applicable Class 7 standard. In general, a minimum of 20 independent observations (i.e. data points) in the most recent 10 years are needed for an assessment. Data demonstrating greater than 10 percent exceedance are designated as impaired and included on the 303(d) list.[26]

The biological quality of any given surface water body is assessed by comparison to the biological conditions determined for a set of reference water bodies which best represent the most natural conditions for that surface water body type within a geographic region.[27] The basis for assessing the biological community for impairment is found in the narrative water quality standards and assessment factors in Minn. R. ch. 7050.0150.[28] Biological integrity is commonly defined as the ability to support and maintain a balanced, integrated, and adaptive community of organisms having a species composition, diversity and functional organization comparable to those of natural habitats within a geographic region (in Minnesota this is also referred to as 'eco-region'). The presence of a healthy, diverse, and reproducing aquatic community is a good indication that the aquatic life beneficial use is being supported by a lake, stream, or wetland. The aquatic community integrates the cumulative impacts of pollutants, habitat alteration, and hydrologic modification on a water body over time.

MPCA has developed fish and invertebrate index of biological integrity (IBI) scores to assess the aquatic life use of rivers and streams in Minnesota as well as plant and invertebrate IBI scores to assess depressional wetlands. Monitoring the aquatic community, via biological and chemical monitoring, is a direct way to assess aquatic life use support. Interpreting aquatic community data is accomplished using an IBI. Minnesota uses a regional reference site approach to develop and calibrate the IBI for specific regions of Minnesota. The IBI incorporates multiple attributes of the aquatic community, called 'metrics,' to evaluate a complex biological system. Typically, 8-12 metrics related to structural and functional aspects of the aquatic communities are considered. A score is assigned to each metric and the sum of all scores is used to characterize the biological integrity of the site being assessed. The 2012 Methodology does not include assessment protocols for measuring IBI scores for aquatic communities in lakes. These assessment protocols are still being developed by MPCA.

Interpretation of aquatic community data by the PJG is completed by comparing the IBI score against the assessment threshold or biocriteria. In general, an IBI score above the assessment threshold indicates aquatic life use support, while a score below the threshold indicates non-support. MPCA utilizes a Biological Condition Gradient (BCG) along with reference conditions to calculate its biocriteria thresholds. The BCG-derived criteria are compared to criteria derived from reference sites within Minnesota to ensure that the BCG and reference conditions are closely aligned in defining the fish and invertebrate IBI classes. Minnesota used the median of BCG level 4 to develop biocriteria that are protective of the structural and functional health of biological communities. Communities with IBI

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[26] 2012 Methodology, pages 16-17.

[27] Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards (7050.0150, subp. 6), https://www.revisor.mn.gov/rules/?id=7050.0150

[28] Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards (7050.0150, subp. 6), https://www.revisor.mn.gov/rules/?id=7050.0150

scores near this median value can be expected to have biological communities which exhibit "*...overall balanced distribution of all expected major groups; ecosystem functions largely maintained through redundant attributes.*"[29]

MPCA incorporated a margin of safety into its IBI assessment process. Bracketing each IBI assessment threshold is a 90 percent confidence interval that is based on the variability of IBI scores obtained at sites sampled multiple times in the same year (i.e., duplicate samples). The confidence interval accounts for variability attributed to natural temporal changes within the community as well as method error. Section V.B.e.2 in the 2012 Methodology explains the data requirements and determination criteria for assessing whether AUIDs are meeting their biological use support (i.e. fully supporting, not supporting, or insufficient information). Overall assessment of whether an AUID adequately supports aquatic life involves the review of the parameter-level evaluations and data quality in conjunction with all available supporting information (ex. flow, habitat, precipitation, etc.). The determination of available data is an important step in this review process.

Section V.B.2 in the 2012 Methodology explains the nuances of MPCA's decision making process in determining whether biological communities are deemed as fully supporting of aquatic life or non-supporting of aquatic life. These assessment decisions are made after consulting both biological and chemical data. For a given AUID, there may be chemistry indicator data, biological indicator data, or both types of data available for assessment. The assessment of whether an AUID adequately supports aquatic life involves the review of the parameter-level evaluations and data quality in conjunction with all available supporting information (flow, habitat, precipitation, etc.) to make an overall use-support determination. The final assessment takes into consideration the strength of the various indicators, the quality of the data sets and the upstream and downstream conditions of the water body segment.[30]

In general, a stream reach is considered to be <u>fully supporting</u> of aquatic life if:

- IBI scores for all available assemblages indicate fully supporting conditions; or
- The criteria for both dissolved oxygen and turbidity/t-tube/total suspended solids are adequately met; and
- Other lines of evidence considered comprehensively, including upstream/downstream conditions, do not contradict a finding of full support.

A stream reach is considered to be <u>not supporting</u> if:

- IBI scores for at least one biological assemblage indicate impairment; or
- One or more water chemistry parameters indicates impairment; and
- Other lines of evidence considered comprehensively, including upstream/downstream conditions, do not contradict a finding of non-support.

If the above criteria are not met and the assessment is inconclusive, the result is a determination of insufficient information. A determination of biological impairment must be supported by failing IBI scores for at least one biological assemblage, or one or more water chemistry parameters indicating impairment. In cases where an assessment unit has been determined to be not supporting based on biological indicators, water chemistry parameters are added to the list of impairments only when the

[29] 2012 Methodology, page 17.
[30] 2012 Methodology, page 19.

chemical impairment is clear enough that the AUID would be considered impaired even without the biological evidence.[31]

4b. Assessment Based on Numeric and Narrative Standards for the Protection of Human Health: Aquatic Consumption and Drinking Water

Assessments based on numeric and narrative standards for protection of human health include consideration of pollutants with Class 2 health-based chronic water quality standards. Section VI.A in Minnesota's 2012 Methodology discusses the development of human health protective numeric chronic standards. Class 2 chronic standards are established after determining the water column concentration of a pollutant that will be protective for chronic exposure for aquatic organisms, human health, and fish-eating wildlife. The most protective is chosen as the chronic standard included in Minnesota rules.[32]

Pollutants that have human health based chronic standards which are most often included in the State's assessments include mercury, polychlorinated biphenyls (PCBs), dioxins and chlorinated pesticides.[33] Minnesota Rule ch. 7050.0222 identifies the pollutants which have human health-based and toxicity-based criteria which have similar values. Section VI.A.2.(a) – (c) in Minnesota's 2012 Methodology discusses these pollutants and the applicable Class 2 water quality standards used in assessments of these pollutants. In general, two exceedances of the chronic standard or a single exceedance of the maximum standard in 3 years indicates impairment. For data considerations, five data points within a 3 year period during the most recent 10 years are necessary for assessment.[34] As stated above, when the State develops water quality standards, both a toxicity-based and a human health-based chronic criterion is calculated and the most restrictive is used to establish the chronic standard. For some pollutants, the toxicity-based and the human health-based criterion are very similar. For these pollutants, Minnesota's assessments consider both criteria.

As previously stated in this Decision Document, support of aquatic life means that concentrations of toxicants in water must be low enough that fish and other aquatic organisms are safe for people and wildlife to eat. Minnesota has four wildlife-based water quality standards (dichlorodiphenyltrichloroethane (DDT), Mercury, PCBs and 2,3,7,8 tetrachlorodibenzo-dioxin (2,3,7,8 TCDD)) within Minn. R. ch. 7052, the Great Lakes Water Quality Initiative (GLI) rule. The GLI rule focuses on bioaccumulative toxics within the Great Lakes and these four wild-life based standards are only applicable to the surface waters of the Lake Superior basin. Section VII of Minnesota's 2012 Methodology provides details of the water quality standards for DDT, Mercury, PCBs, and 2,3,7,8 TCDD. Data requirements and exceedance thresholds for pollutants with wildlife-based standards are the same as those used by the State in its assessments of pollutants that have human health-based chronic standards.[35]

Human consumption of fish is considered a separate use support in Minnesota. Toxicants may be at levels sufficient to support aquatic life but because of bioaccumulation the fish are not safe for human consumption. Mercury, PCBs and perfluorochemicals (ex. perfluorooctane sulfonate (PFOS)), are contaminants found in fish that are considered in Minnesota's assessments. Other bioaccumulative

[31] 2012 Methodology, page 20.
[32] 2012 Methodology, pages 22-23.
[33] 2012 Methodology, pages 23-24.
[34] 2012 Methodology, pages 23-24.
[35] 2012 Methodology, page 31.

pollutants such as DDT, dioxins and toxaphene have been analyzed in fish tissue samples but only where potential problems were suspected.[36]

In assessment of the aquatic consumption use support, Minnesota considers the use to be supported if it is safe to consume one fish meal per week over a lifetime. Limiting consumption to less than one meal per week indicates impairment. Impairment thresholds for PCBs and PFOS are established at the fish tissue concentration considered to be the upper threshold for one meal per week fish consumption advisory level for the 'sensitive' population.[37] The impairment threshold for PCBs is based on fish tissue concentrations exceeding 0.22 ppm and impairment threshold for PFOS is based on fish tissue concentrations exceeding 0.2 ppm.[38] In 2008, MPCA adopted into Minnesota Rule chapter 7050 a mercury fish tissue criterion of 0.2 ppm. This criterion for mercury is more stringent than the upper threshold for one meal per week fish consumption advisory for the sensitive population used by Minnesota Department of Health (MDH) fish consumption advisory. Consistent with Minnesota water quality standards, 0.2 ppm is the impairment threshold for aquatic consumption due to mercury.[39]

In the 2012 Methodology, MPCA included assessments based on standards for the protection of human health Class 1 drinking consumption. All groundwater and selected surface waters are designated as Class 1 resources in Minnesota.[40] The MDH monitors municipal finished water supplies for compliance with drinking water standards. The assessment of Class 1B and 1C listed surface waters for potential impairment by nitrate-nitrogen was outlined in the 2012 Methodology. Nitrate-nitrogen concentrations in drinking water exceeding the 10 mg/L safe drinking water standard (federal standard incorporated into Minn. R. ch. 7050.0221) pose a risk to human health. The 10 mg/L standard is an acute toxicity standard. Long term, chronic exposure to nitrate in drinking water is less well understood but has been linked to the development of cancer, thyroid disease, and diabetes in humans.

To assess drinking water-protected surface water (Class 1B and 1C) MPCA calculates a 24-hour average nitrate concentration and compares this average value to the 10 mg/L drinking consumption standard. If the water body exhibits two 24-hour exceedances within 3 years, then the water body is deemed impaired and placed on the 303(d) list. Exceedances were assessed over consecutive 3 year periods and the most recent 10 years of water quality data are considered. A minimum of five data points is required for assessments, but impairment determinations may be made with fewer data points when appropriate.[41]

4c. Assessment Based on Numeric Standards for Protection of Aquatic Consumption: wildlife-based standards

Minnesota rules set forth water quality standards for the protection of aquatic life uses related to wildlife consumers of aquatic organisms. Minnesota has four wildlife-based water quality standards (Minn R. ch. 7052, the Great Lakes Water Quality Initiative (GLI) rule). These water quality standards apply to concentrations of DDT, mercury, PCBs and 2,3,7,8-TCDD (tetrachlordibenzo-p-dioxin).[42] The GLI water quality standards focus on the reduction of bioaccumulative pollutants in the surface waters

[36] 2012 Methodology, page 24.
[37] Sensitive population is comprised of pregnant women, women who may become pregnant, and children under age 15. See Minnesota Department of Health, Minnesota Fish Consumption Advisory at http://www.health.state.mn.us/divs/eh/fish/ and 2012 Methodology, page 26.
[38] 2012 Methodology, page 27.
[39] 2012 Methodology, pages 27-28.
[40] 2012 Methodology, page 29.
[41] 2012 Methodology, pages 29-30.
[42] 2012 Methodology, page 31.

of the Lake Superior basin. It should be noted that the GLI standards within Minn R. ch. 7052 only apply to surface waters of the Lake Superior basin.[43]

4d. Assessment Based on Numeric Standards for Protection of Aquatic Recreation
Minnesota has two sets of numeric standards protecting waters for aquatic recreation. Numeric standards established for *E. coli* protect for primary and secondary body contact[44] while eutrophication standards protect for aquatic recreation in Minnesota lakes.

Minnesota has established *E. coli* standards for both Class 2 and Class 7 waters. Table 7 in Minnesota's 2012 Methodology identifies these water quality standards. The *E. coli* water quality standards include both a monthly geometric mean standard and an individual maximum standard. Minnesota considers both standards in their assessments. The monthly geometric mean *E. coli* standard is a geometric mean of not less than five samples collected in a month. However, most monitoring programs do not collect samples more often than once a month. In order to use the available data to the maximum extent, Minnesota aggregates available *E. coli* data for an individual month across the most recent 10 years of data. Minnesota's method of aggregating data for an individual month is based on a fecal coliform study conducted by the State which showed that for any given monitoring site there was less variability in fecal coliform data for a given month across years than there was for all months within one year.[45] Minnesota's prior assessment methodologies have included this same approach for fecal coliform assessments.

For assessment of the monthly geometric mean standard, the State considers the most recent 10 years of data, aggregates the data by individual month for a specific assessment unit, and if one or more months exceed the monthly geometric mean standard,[46] the assessment unit is added to Minnesota's 303(d) list. For assessment of the individual maximum standard, an assessment unit is added to Minnesota's 303(d) list if more than 10% of individual values over the most recent 10 years exceed the maximum *E. coli* standard.[47] In order to assess against the individual maximum *E. coli* threshold, Minnesota analyzes a minimum of 15 sampling points over the most recent 10 year period. Assessment decisions of data sets with less than the minimum number of samples are made by the WAT on a case by case basis.[48] Prior assessment methodologies established methods for assessment using fecal coliform data or a statistical relationship between fecal coliform and *E. coli* data. Minnesota explained that there is a considerable amount of *E. coli* and older fecal coliform data. Assessment decisions for the 2012 list used solely *E. coli* data. Exceptions to the exclusive use of *E. coli* measurements for assessment decisions (i.e., the use

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[43] 2012 Methodology, page 31.
[44] For purposes of bacteriological standards, recreation in or on the water is divided into two types: primary body contact and secondary body contact. Primary body contact is considered to be any type of water recreation during which the accidental ingestion of a small amount of water is likely such as swimming, snorkeling, SCUBA, water skiing, kayaking, tubing and wading by young children. Secondary body contact is considered to be any type of water recreation during which the accidental ingestion of a small amount of water is unlikely such as boating, canoeing, fishing and wading by older children and adults. *Statement of Need and Reasonableness, Book III of III, In the Matter of Proposed Revisions of Minnesota Rules Chapter 7050, Relating to the Classification and Standards for Waters of the State, July 2007, pg. 83,* and 2012 Methodology, page 32.
[45] 2012 Methodology, pages 32-34, and *Fecal Coliform Bacteria in Rivers,* MPCA, H.D. Markus, 1999 in EPA Region 5's 2002 administrative record to support EPA's approval of Minnesota's 2002 303(d) list.
[46] The monthly geometric mean water quality standard for Class 2 waters is 126 organisms per 100mL of water and for Class 7 waters is 630 organisms per 100mL of water. See 2012 Methodology, pages 32-34, Minn. R. ch. 7050.0222 subp. 2-5, and Minn. R. ch. 7050.0227 subp. 2.
[47] The *E. coli* maximum individual water quality standard for both Class 2 and 7 waters is 1260 organisms per 100mL of water. See 2012 Methodology pages 32-34, and Minn. R. ch. 7050.0222 subp. 2-5, and Minn. R. ch. 7050.0227 subp. 2.
[48] 2012 Methodology, page 32.

of fecal coliform data to augment the *E. coli* data set) were only employed in special cases. These exceptions utilized the ratio of 200 cfu/100 mL (fecal coliform) to 126 cfu/100 mL (*E. coli*).

Minnesota's promulgated ecoregion-based lake eutrophication numeric water quality standards for total phosphorus, chlorophyll-a (chl-a) and Secchi Disk depth (Minn. R. ch. 7050.0222 subp. 2-4.) are the parameters monitored in lake assessments. Eutrophication standards are specific to ecoregion and lake depth. Minn. R. ch. 7050.0150 defines the State-recognized depths of a lake, a shallow lake, a reservoir and a wetland. The determination between the four requires an analysis of basin depth and littoral area. Appendix A of the 2012 Methodology lists the factors used to separate lakes, shallow lakes and wetlands.[49] Table 9 of Minnesota's 2012 Methodology identifies the lake eutrophication standards used for aquatic recreation use assessments.

Assessments utilizing the eutrophication water quality standards consider data collected over the most recent 10-year period. Samples must be collected over a minimum of 2 years and sampled from June to September. Typically, a minimum of 8 individual data points for TP, corrected chl-*a* (chl-*a* corrected for pheophytin), and Secchi are required.[50] If there are multiple samples collected on the same day, the daily average of samples collected is calculated. All daily data from June to September is averaged to calculate a summer mean value. The summer mean value is the water quality measurement compared to eco-region and depth specific water quality standards. Lakes where total phosphorus and at least one of the response variables (chl-a or Secchi disk depth) exceed the applicable standard are identified on Minnesota's 303(d) list as impaired.[51]

4e. Assessment Based on Numeric Standard for Protection of Limited Resource Value Waters

Minnesota rules set forth water quality standards for Class 7 waters in chapter 7050.0227. The rules include standards for *E. coli*, dissolved oxygen, pH and toxic pollutants. Limited resource value waters include surface waters of the State that have been subject to a use attainability analysis and have been found to have limited value as a water resource. These waters are specifically listed in rule 7050.0470 and are protected so as to allow secondary body contact use, to preserve the groundwater for use as a potable water supply, and to protect aesthetic qualities of the water.[52]

Because Class 7 waters may be used by game fish for spawning and/or maintaining minnow populations during brief periods in the spring, a special protection against bioaccumulative pollutants is needed.[53] The 2012 Methodology includes a discussion on the application of toxic standards to Class 7 waters. The water quality standard states, "*toxic pollutants shall not be allowed in such quantities or concentrations that will impair specified uses*."[54] The 2012 Methodology explains that for Class 7 assessments, for most toxic pollutants, the maximum standard or 100 times the chronic standard, whichever is lower, would apply. For bioaccumulative pollutants in Class 7 designated waters, the chronic standard would apply.

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[49] 2012 Methodology, pages 35-36.
[50] 2012 Methodology, pages 35-36.
[51] Minnesota Rules include narrative eutrophication standards for Class 2 lakes, shallow lakes and reservoirs which explain a polluted condition as an exceedance of total phosphorus and either the chlorophyll-a or Secchi disk standard using data that is averaged over the summer season. See Minn. R. ch. 7050.0222 subp. 2a, 3a, and 4a.
[52] 2012 Methodology, page 37.
[53] 2012 Methodology, page 37.
[54] Minnesota Administrative Rules (MN R. ch. 7050.0227), https://www.revisor.mn.gov/rules/?id=7050.0227

5. Removing a Water from the 303(d) List

Minnesota's 2012 Methodology identifies four reasons for removing a water from the 303(d) list;

- If, during subsequent monitoring or the development of the TMDL study, new and reliable water quality data or information indicates that the water body is no longer impaired and is meeting water quality standards. Such a water body would be de-listed before a TMDL plan was completed.
- If a TMDL assessment and preliminary plan for reducing the sources of pollution is completed and approved by the EPA.
- If the sources of impairment are determined to be non-anthropogenic in origin.
- If it was determined that the water body was placed on the list in error.[55]

When deciding to remove a water body from the 303(d) list based on new data and information, the State generally applies the same standards, guidelines and thresholds used to add a water to the 303(d) list. The 2012 Methodology identifies minimum data requirements and impairment thresholds that must be considered for the various categories of pollutants before removing a water body from the 303(d) list.[56] Decisions to remove a water body from the 303(d) list are subject to review by the appropriate MPCA staff and PJG.

The second basis for removing a water body from the 303(d) list is where a TMDL has been approved by EPA. In accordance with Minnesota's 2012 Methodology, if a water body is identified as being impaired, and EPA has approved all necessary TMDLs for that water body, then the water body will be placed in category 4A. It should be noted that the water body is still considered as impaired and remains on the Impaired Waters Inventory (part of MPCA Integrated Report submittal to the EPA). The water body will remain on the Impaired Waters Inventory until it is demonstrated that the water body supports all of its beneficial uses (i.e. meets water quality standards for each beneficial use designation).

The third basis for removing a water body from the 303(d) list is where a water body is found to be impaired by natural conditions, i.e., non-anthropogenic in origin. In this situation, all sources of the impairment are naturally occurring. Although Minnesota continues to identify these waters as impaired, it places these waters in category 4D (i.e. impaired but does not require a TMDL).

The fourth basis for removing waters from the 303(d) list occurs under circumstances where:

- A water was placed on the 303(d) list in error (ex. wrong AUID assigned);
- A resegmentation or reclassification of a water has occurred since the last listing cycle;
- There has been a change/update to the State's standards or methodology since the last listing cycle.

Errors can be made in the original assessment of a water body. These errors, which may be a result of either human or computer error, are usually discovered during future assessments. Occasionally there is a need for the State to change how a water body is divided into assessment units. This change may cause a water body originally listed under one specific assessment unit ID# to now be listed as two new ID#s. Although it may appear that changing the ID# results in removing waters from or adding waters to the 303(d) list, in most cases the original impaired water is still on the list, it is just identified in a different

[55] 2012 Methodology, page 39.
[56] 2012 Methodology, pages 39-40.

manner. Another water identification change that could affect how a water is listed is when a lake is reclassified. As the State develops watershed plans and TMDLs, specific lake characteristic information could become available which would cause the State to re-evaluate how the lake is classified; e.g., deep or shallow. Since water quality standards are applicable to a lake based on lake type and lake location, a change in a lake's classification could change where the State places that lake in its integrated report.

Minnesota revises its methodology in response to changes to the State's water quality standards. For the 2012 listing cycle, the state made no significant changes to water quality standards which impacted the 2012 303(d) list.

Table A-2 of this Decision Document provides a list of the assessment unit/pollutant combinations that Minnesota has removed from its 303(d) list. EPA concludes that the State has demonstrated good cause for removing these waters from the 303(d) list. In evaluating the reasonableness of the State's decision to remove these waters, EPA considered the delisting explanations provided by the State in its 2012 submittal,[57] information made available to the public during the public notice and comment period, and MPCA lake/wetland and stream assessment transparency documents made available to the public on MPCA's website.[58]

Consideration of Existing and Readily Available Water Quality-Related Data and Information

1. State Monitoring Data and Information

Minnesota conducts a variety of surface water monitoring activities which focus on generating crucial water quality data for assessing the chemical, biological, bacteriological, and physical conditions, within Minnesota's surface waters. This information is used to assess potential and actual threats to water quality within the State and to evaluate the effectiveness of management strategies taken to address impairments and other threats to water quality. Water quality monitoring by local, state and federal partners, along with citizen monitoring efforts, and remote sensing monitoring are all utilized by MPCA in its assessment process.

Through the 2010 listing cycle, MPCA assessed the condition of the State's waters via a biennial, statewide assessment process. Over the previous few years, MPCA has moved away from a statewide monitoring approach and focused its efforts toward targeted watersheds via the intensive watershed monitoring strategy. The IWMA generates more voluminous data sets within those watersheds targeted for water quality monitoring. The 2012 listing cycle is the first assessment cycle in which MPCA is assessing water quality data from earlier IWMA efforts. For assessment decisions made for the 2012 listing cycle, MPCA assessed water quality information from watersheds listed in Table 3 of this decision document. It should be noted, that water quality sampling, under the IWMA, was conducted in the watersheds in Table 3 during 2007, 2008 and 2009.

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[57] See *Inventory of all impaired waters*, *De-listings from the inventory*, *Changes initial to final draft*, and *New removals from the 2012 inventory* within submitted spreadsheets from MPCA for detailed discussion from State

[58] http://www.pca.state.mn.us/index.php/water/water-types-and-programs/minnesotas-impaired-waters-and-tmdls/assessment-and-listing/303d-list-of-impaired-waters.html

Table 3: Watersheds in which water quality data was assessed for the 2012 Listing Cycle

Watershed Name	Year in which data was collected under the Intensive Watershed Monitoring Approach (IWMA)
North Fork of the Crow River Watershed	2007
Pomme de Terre River Watershed	2007
Le Sueur River Watershed	2008
Little Fork River Watershed	2008
Mississippi (Red Wing) River Watershed	2008
Red River of the North (Headwaters) Watershed	2008
Root River Watershed	2008
Sauk River Watershed	2008
Tamarac (Red River of the North) River Watershed	2008
Buffalo River Watershed	2009
Cedar River Watershed	2009
Chippewa River Watershed	2009
Mississippi (St. Cloud) River Watershed	2009
Shell Rock River Watershed	2009
St. Croix (Stillwater) River Watershed	2009
St. Louis River Watershed	2009

Toxic parameter monitoring continues to occur on a statewide basis. Assessment of those parameters is done on a statewide basis every two years. Watershed assessments employed via the IWMA focus primarily on the aquatic life and recreation beneficial uses. Statewide assessments focus primarily on aquatic consumption and aquatic life toxicity. MPCA has set a schedule to intensively monitor each major watershed once every 10 years (Figure 1 of this Decision Document). The IWMA is designed to identify waters which are impaired and require restoration. Also, information from the IWMA is utilized to identify those waters which are not yet impaired but require further protection to prevent water quality conditions which would lead to that water body being designated as impaired.

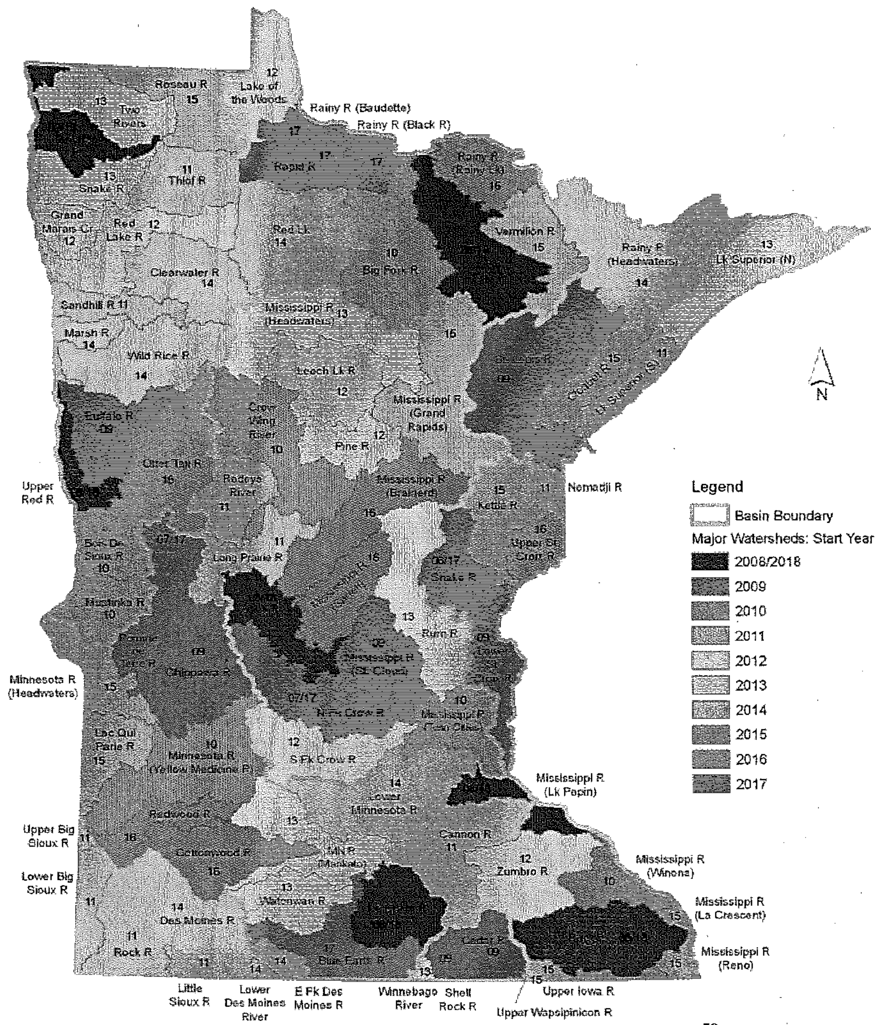

Figure 1: Intensive Watershed Monitoring Map (2008 to 2018)[59]

MPCA's review of water quality data collected during the IWMA involves a five step approach, discussed earlier in this Decision Document in Section 3. The four steps discussed immediate below are related to MPCA's approach for addressing water quality impaired segments.

<u>Step 1:</u> Monitor and gather data information

MPCA employs an intensive watershed monitoring schedule that provides for comprehensive assessments of all of the major watersheds on a 10-year cycle. This schedule provides intensive monitoring of streams and lakes within each major watershed to determine overall health of the water resources, to identify impaired waters, and to identify those waters in need of additional protection to prevent future impairments.

[59] MPCA Watershed Monitoring Approach (Intensive Watershed Monitoring Map), http://www.pca.state.mn.us/index.php/water/water-types-and-programs/surface-water/watershed-approach/watershed-approach.html

Step 2: Assess the data
Based on results of intensive watershed monitoring in step one, MPCA staff and its partners implement a rigorous process to determine whether or not water resources meet water quality standards and designated uses. Waters that do not meet water quality standards are listed as impaired waters.

Assessment of toxic parameters (eg. mercury) continues to occur on a statewide basis every two years. The statewide toxic assessment focuses on those pollutants which influence aquatic consumption and aquatic life toxicity. Also, while MPCA's IWMA focuses monitoring efforts on selected watersheds each year, the State does not discourage outside parties from submitting data and proposing waters to be considered for the 303(d) list which lie outside of the watersheds targeted by the IWMA. MPCA accepts water quality information during the public notice period of the draft 303(d) TMDL list (for the 2012 listing cycle, this was January 23, 2012 to February 27, 2012).

MPCA uses data collected over the most recent 10-year period for water quality assessments.[60] The 'year of record' is based on the USGS water year (October 1 of one year through September 30 of the following year). A full 10 years of data are not required to make an assessment. MPCA uses a 10-year period to provide reasonable assurance that data will have been collected over a range of weather and flow conditions and that all seasons will be adequately represented. MPCA also considers trends in water quality data or changes in climatic conditions (eg. drought periods) which impact water quality during the 10-year period. EPA finds the State's use of the 10-year period for water quality assessments a reasonable approach to ensure that data are collected over a range of weather and flow conditions, and that all seasons are adequately represented.

Step 3: Establish implementation strategies to meet standards
Based on the watershed assessment, a TMDL study and/or protection strategy is completed. Existing local water plans and water body studies are incorporated into the planning process.

Step 4: Implement water quality activities
Included in this step are all traditional permitting activities, in addition to programs and actions directed at nonpoint sources. Partnerships with State agencies and various local units of government, including watershed districts, municipalities, and soil and water conservation districts, will be necessary to implement these water quality activities.

2. Active Solicitation of Data from other Sources
MPCA relies on data it collects along with data from other credible sources, such as other state and federal agencies, local government partners and volunteers, to assess water bodies. In preparation for assessing waters for the 2012 listing cycle, MPCA actively solicited data and information for use in the assessment process. MPCA communicates annual 'Calls for Water Quality Data' which encourage local water organizations to share water quality information. MPCA completed a *Call for Data for the 2010 Annual Surface Water Assessments* and *Call for Data for the 2011 Annual Surface Water Assessments* prior to the 2012 assessment of water quality data by MPCA. These communications are made through the State's 'GovDelivery' electronic mail distribution system.[61] In the *Call for Water Quality Monitoring Data* communication MPCA clearly outlines date deadlines for data submittal from outside parties/organizations. Data submitted before the deadline was considered by MPCA in its staff review

[60] 2012 Methodology, pages 8-9.
[61] *2012 Call for Data email* (email dated October 5, 2011), shared by David Christopherson (MPCA) via Email on 11/9/12 at 8:04 PM.

process to determine whether or not the water body was meeting appropriate water quality standards and designated uses.

In addition to the *Call for Water Quality Monitoring Data* MPCA also conducted a series of meetings around the State with watershed partners in the 16 watersheds (Table 3 of this Decision Document) identified for Intensive Watershed Monitoring within the 2012 listing cycle. During these informal meetings, MPCA asked watershed partners to submit relevant water quality monitoring data for water bodies within each of these watersheds. The 2012 listing cycle was the first listing cycle where MPCA did not publish a solicitation for water quality monitoring data within the Minnesota State Register. MPCA explained that in addition to changes carried forward in the water quality monitoring strategy (i.e. the change to an Intensive Watershed Monitoring strategy) it elected to alter its communication strategy for petitioning for water quality information. MPCA chose to directly contact watershed partners within the 16 watersheds, and felt that this was a more efficient and effective use of resources than State Register announcements.[62]

In 2003, MPCA issued the *Volunteer Surface Water Monitoring Guide*. This guidance discusses data uses and goals of data collection, data quality issues, and includes a specific section on monitoring requirements for data that can be used in 305(b) and 303(d) assessments.[63] This guidance, along with information contained in the formal *Call for Water Quality Monitoring Data (email dated October 5, 2011)*, cited MPCA webpages where interested parties could obtain specific criteria that water quality monitoring data and other information submitted must meet in order to be considered in MPCA's staff review assessment process.

Data used by the State in its assessments are stored in MPCA's water quality data management system, Environmental Quality Information System (EQuIS). EQuIS is the central data repository for assessment information utilized by MPCA. Water quality monitoring data collected by parties other than MPCA are added to EQuIS so long as they meet acceptable MPCA quality assurance and quality control (QA/QC) protocols. Data meeting the QA/QC requirements are entered into EQuIS so that a permanent record is created and data may be merged or considered in light of any other data available for a given water body. Monitoring and data management at MPCA are in accordance with the requirements specified in the Quality Management Plan (June 2007) approved by the EPA and available for review via MPCA's website.[64]

3. Public Participation

In developing Section 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality-related data and information, including consideration of existing and readily available data, and information about waters for which water quality problems have been reported by members of the public.[65] EPA expects states to have full public participation in development of their 303(d) lists prior to submitting the final 303(d) list to EPA for review. Public participation efforts need to be consistent with Section 101(e) of the CWA. When a proposed list has been established, states should, in accordance with the requirements in 40 CFR Part 25, provide the opportunity for public notice

[62] Electronic mail communication (11/9/12 at 8:04 PM): David Christopherson (MPCA) to Paul Proto (EPA, R5).
[63] Appendix D of the *Volunteer Surface Water Monitoring Guide* provides specific requirements for MPCA integrated assessments. This Appendix was revised in September 2009.
[64] MPCA Water Quality Management Plan (June 2007), http://www.pca.state.mn.us/index.php/view-document.html?gid=5479
[65] 40 CFR §130.7.

and submission of comments from the public. States should prepare responses for the comments received.[66]

Minnesota provided the public with the opportunity to review and comment on the assessment decisions through a 35-day formal comment period, public informational meetings and availability of the 2012 Methodology and draft 303(d) list. The 35-day formal comment period was from January 23, 2012 to February 27, 2012. Normally, MPCA holds a 30-day public comment period. For the 2012 listing cycle, MPCA extended its public comment period by 5 additional days. MPCA held seven informational meetings at various locations throughout the State between December 21, 2011 and January 25, 2012. Notice of these meetings and/or the 35-day formal comment period was made available to the general public through news releases, a November 2011 mass mailing by MPCA, information on MPCA's website, and publication in the State Register.[67]

Thirty-nine (39) comment letters or electronic correspondences, were received by MPCA during the public comment period (January 23, 2012 to February 27, 2012). MPCA considered the comments from all thirty-nine comment letters and provided responses to the commenters in a response to public comments summary document. MPCA's response to public comments was shared on an MPCA 2012 303(d) webpage.[68] With the exception of responses to comments regarding Jail and Wine Lakes discussed below, EPA believes that MPCA adequately addressed the comments submitted during the public notice period. MPCA included its responses to public comments within its final 2012 303(d) submittal package to EPA on October 1, 2012.

Data received by MPCA in response to the *Call for Water Quality Monitoring Data* before November 1, 2011, were uploaded into EQuIS for review by MPCA staff. Water quality monitoring data and other information related to specific water bodies, received in public comments within the 35-day public notice period were also uploaded to EQuIS and considered by MPCA staff. Loren J. Larson of Plymouth, Minnesota, submitted summary data showing exceedances of the lake eutrophication water quality standards and a request that MPCA include Jail Lake (18-0415-00) on the 2012 303(d) list.[69] MPCA responded to the commenter within the response to public comment document. MPCA explained that it will review all available water quality data for Jail Lake, and other waters within the Pine River watershed, during the Pine River Watershed comprehensive assessment scheduled for 2014. MPCA stated that deviations from the watershed schedule will be considered by exception, and it will only consider data outside of the schedule if the local benefits of the schedule exception offset the lost assessment efficiency and effectiveness that results from an "out-of-order" assessment.[70]

On February 27, 2012 MPCA asked that the commenter provide the rationale as to why Jail Lake should be considered for listing outside of the Intensive Watershed Monitoring schedule as explained in MPCA 2012 Methodology document. The response received from the commenter by MPCA on March 11, 2012 indicated that local monitoring efforts were losing funding due to the completion of an MPCA grant, and

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[66] *Supplemental Guidance on Section 303(d) Implementation,* EPA Memorandum, August 13, 1992, *Approval of 303(d) Lists, Promulgation Schedules/Procedures, Public Participation*, EPA Memorandum, October 30, 1992, and *Guidance for 1994 Section 303(d) Lists,* EPA Memorandum, November 26, 1993.

[67] State Register Vol. 36 No. 27 p. 847-849, http://www.comm.media.state.mn.us/bookstore/stateregister/36_27.pdf.

[68] MPCA Impaired Waters 2012 TMDL List, http://www.pca.state.mn.us/index.php/water/water-types-and-programs/minnesotas-impaired-waters-and-tmdls/impaired-waters-list.html.

[69] See February 27, 2012 correspondence from Loren J. Larson to Howard Markus and *Appendix B: MPCA's response to comments on the draft 2012 TMDL*, which was included in Minnesota's 2012 submittal (received by EPA on October 1, 2012).

[70] 2012 Methodology, page 3.

that a TMDL was required to improve conditions of the lake. MPCA decided that a potential Jail Lake TMDL would at the earliest be initiated by MPCA after the watershed assessment scheduled for early 2014. MPCA did not add Jail Lake to the final 2012 303(d) list.

EPA disagreed with MPCA's decision not to add Jail Lake to the final 2012 303(d) list as a Category 5 water body.[71] EPA explained that the water quality monitoring data shared by the commenter were appropriate data (i.e. within the EQuIS data management system and met the minimum data requirements for lake eutrophication described within the 2012 Methodology[72]) and that MPCA should have considered this water quality data in its assessment of Jail Lake. While EPA understands MPCA's interest in following the State's schedule for its systematic watershed approach (the Intensive Watershed Monitoring strategy) when assessing water quality monitoring data, MPCA needs to consider all readily available and accessible data for assessment decisions. In an email message sent on November 30, 2012, EPA requested that MPCA add Jail Lake (18-0415-00) to the final 2012 303(d) list as a Category 5 water body. MPCA agreed with the request in an email sent to EPA on December 10, 2012 and added Jail Lake to the final 2012 303(d) list.

Tera L. Guetter, on behalf of the Pelican River Watershed District, submitted available water quality data and a request that MPCA return St. Clair Lake (03-0382-00) to the 2012 303(d) list. MPCA removed St. Clair Lake from the 303(d) list due to 'insufficient data.' The commenter also requested that MPCA include Wine Lake (03-0398-00) as a Class 5 water body on the final 2012 303(d) list. The commenter included summary water quality data from the EQuIS data management system to demonstrate non-attainment of lake eutrophication water quality standards for both St. Clair Lake and Wine Lake in her February 15, 2012 letter to Howard Markus (MPCA).[73] Upon further consideration, MPCA concurred that St. Clair Lake should be returned to the 2012 303(d) list as a Category 5 water body.

MPCA asked the commenter to provide additional rationale as to why Wine Lake should be considered for listing outside of the Intensive Watershed Monitoring schedule as explained in MPCA 2012 Methodology document. MPCA was not persuaded that Wine Lake should be added as a Category 5 water on the final 2012 303(d) list. EPA disagreed with MPCA on this decision.[74] EPA explained that the water quality monitoring data shared by the commenter were appropriate data (i.e. within the EQuIS data management system and met the minimum data requirements for lake eutrophication described within the 2012 Methodology[75]) and MPCA should have considered this water quality data in its assessment of Wine Lake. In an email message sent on November 30, 2012, EPA requested that MPCA add Wine Lake (03-0398-00) to the final 2012 303(d) list as a Category 5 water body. MPCA agreed with the request in an email sent to EPA on December 6, 2012 and added Wine Lake to the final 2012 303(d) list.

Jean B. Sweeney, Vice President of 3M Environmental, Safety and Health Operations, on behalf of 3M, submitted data and a request that the State remove four assessment units in Pool 2 on the Mississippi

[71] See Administrative Record Document #35, telephone conversation between EPA and MPCA on November 7, 2012.
[72] 2012 Methodology, page 35.
[73] See February 15, 2012 correspondence from Tera L. Guetter to Howard Markus and *Appendix B: MPCA's response to comments on the draft 2012 TMDL*, which was included in Minnesota's 2012 submittal (received by EPA on October 1, 2012).
[74] See Administrative Record Document #35, telephone conversation between EPA and MPCA on November 7, 2012.
[75] 2012 Methodology, page 35.

River, which have been identified by MPCA as being impaired for aquatic consumption due to PFOS.[76] PFOS are manmade chemicals used to manufacture products which are heat resistant, stain resistant and repel water. Minnesota originally added these four assessment units within Pool 2 to its 2008 303(d) list based on water quality data which showed that a consumption advisory was necessary for the freshwater drum species in Pool 2. Minnesota Administrative Rules (7050.0150 subpart 7) stated that, "A waterbody will be considered impaired when the recommended consumption frequency is less than one meal per week, such as one meal per month, for any member of the population…the impaired condition must be supported with measured data on the contaminant levels in the indigenous fish."

Despite the data and information submitted by the commenter, the State believes that assessment units in Pool 2 are still not meeting the recommended consumption frequency and therefore not meeting water quality standards. MPCA declined to remove these 4 assessment units from the 2012 303(d) list, explaining that the commenter failed to provide sufficient data to support her case for delisting. In particular, MPCA found that the water quality data submitted by the commenter were not robust enough to cite downward trends in PFOS concentrations within fish tissue in Pool 2. MPCA stated in its response to public comment document, *"Given the wide range of PFOS concentrations observed in Pool 2 fish tissue and the insufficiency of available data, MPCA believes it is prudent and protective of public health and the environment to be very cautious as MPCA determines if and when to delist Pool 2 as an impaired water."*[77] MCPA indicated that fish tissue data from Pool 2 would continue to be analyzed in future assessment cycles and explained that it was working with the MDNR and the MDH to complete additional fish sampling of Pool 2 in the future. EPA agrees with MPCA that due to the variability of PFOS concentrations and the insufficiency of available data, delisting is not supported. EPA finds the continued listing of the four assessment units in Pool 2 on the Mississippi River, identified by the commenter, as being impaired for aquatic consumption due to PFOS on the State's 2012 303(d) list to be reasonable.

Although no other public comments included data, some comments highlighted data and information that were already available to the State, and requested that the State reconsider this available information. Commenter Paul Nelson, a Program Manager for Scott County's Natural Resources Program, submitted a request encouraging MPCA to reconsider the data and information used in listing two river segments.[78] The commenter proposed that MPCA remove County Ditch 10 (CD3 to Raven Str) (07020012-628) and Picha Creek/Unnamed Creek (Unnamed Creek to Unnamed Creek) (07020012-579) from the State's 2012 303(d) list due to the misidentification of designated use for County Ditch 10, and the misidentification of a sampling location and flawed water quality monitoring data which led to the listing for Picha Creek/Unnamed Creek.

Upon reconsideration of information presented by the commenter, MPCA determined that County Ditch 10 and Picha Creek/Unnamed Creek were to remain on the 2012 303(d) list. MPCA explained that for Picha Creek to be removed from the 303(d) list, MPCA would need to see evidence that low flow conditions cited by the commenter were due solely to natural factors, and that the natural factors were the only stressors causing or contributing to the impairment. The stressor identification document for

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[76] See January 31, 2012 correspondence with enclosures from Jean B. Sweeney to Howard Markus and *Appendix B: MPCA's response to comments on the draft 2012 TMDL*, which was included in Minnesota's 2012 submittal (received by EPA on October 1, 2012).
[77] See MPCA's *Responses to the draft 2012 Total Maximum Daily Load List 30-Day Public Notice Comments (September 7, 2012)* document (received by EPA on October 1, 2012).
[78] See February 2, 2012 electronic mail (E-mail) correspondence from Paul Nelson to Howard Markus and *Appendix B: MPCA's response to comments on the draft 2012 TMDL*, which was included in Minnesota's 2012 submittal (received by EPA on October 1, 2012).

Picha Creek, which was assembled by MPCA staff, indentified other potential non-natural causes (ex. habitat fragmentation, habitat alteration and sedimentation) which are likely causing and contributing to the impairment in Picha Creek. MPCA also explained that County Ditch 10 (CD3 to Raven Str) (07020012-628) was assigned the correct designated use and provided supporting data which demonstrated that the water body was impaired for bacteria. EPA agrees with MPCA's analysis and finds the continued listing of County Ditch 10 (CD3 to Raven Str) (07020012-628) and Picha Creek/Unnamed Creek (Unnamed Creek to Unnamed Creek) (07020012-579) on the State's 2012 303(d) list to be reasonable.

Commenter Greg Bartz of Sleepy Eye, Minnesota, with the support of approximately twenty-seven (27) other co-signees, submitted a request encouraging MPCA to reconsider data and information utilized in designating County Ditch 10 (John's Creek) (07020007-571) as impaired for nitrate-nitrogen exceedances. The commenter explained that county and judicial ditches cannot be designated as impaired for Class 1 or Class 2 water quality standards. Also, the commenter described how MPCA misidentified County Ditch 10 as a trout stream and the Minnesota River basin has not historically had trout species in its waters. The commenter believes that the impairment listing is incorrect if the listing is based on the protection of an introduced species. Upon reconsideration of information presented by the commenter, MPCA determined that County Ditch 10 was to remain on the 2012 303(d) list. MPCA cited Minnesota Rule 7050.0470, subpart 5 as justification for designating County Ditch 10 as a Class 1b water. Class 1b waters are protected for drinking water use (under Minnesota Rule 7050.0220, subpart 3a) and waters recognized as potential drinking water resources are protected under a nitrate-nitrogen water quality standard. Since MPCA has appropriately identified County Ditch 10 as a water where Class 1b water quality standards are applicable and data supports a finding that it has exceeded the nitrate-nitrogen water quality standard, EPA find MPCA's listing of County Ditch 10 on the State's 2012 303(d) list to be reasonable.

Commenter Tom Moe, on behalf of US Steel Minntac, submitted a request encouraging MPCA to reconsider the data and information utilized in designating the Minntac Tailings Basin (69-1351-00) as not attaining the water quality standards for mercury in fish tissue.[79] The commenter asserted that the Minntac Tailings Basin is not a water of the State. Additionally, the commenter communicated that US Steel Minntac had completed independent water quality sampling and had determined that mercury concentrations in fish tissue were below the water quality standard. The commenter did not provide water quality monitoring data to substantiate these claims. Upon reassessment, MPCA concluded that the Minntac Tailings Basin was not to remain as a Category 4A water, which would be addressed by the 2012 Revision to the Statewide Mercury TMDL. MPCA explained that the Minntac Tailings Basin is not a water of the State and is considered part of the facility's treatment system, covered under Minntac's NPDES/SDS permit. Since the Minntac Tailings Basin is not a water of the State, EPA finds it reasonable for MPCA to delist the water.

Several commenters requested that MPCA reconsider the listing of Seven Mile Creek (07020007-562) for violations of the chlorpyrifos water quality standard. Chlorpyrifos is a pesticide which is used throughout the State. Amy Linnerooth of Nicollet County, Kerry Hastings and Elisha Modisett-Kemp from Dow AgroSciences LLC, Ken Ostlie of the University of Minnesota, Kurt Kruger of the Minnesota

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[79] See January 31, 2012 E-mail correspondence from Jesse Anderson (MPCA), referencing the commenter Tom Moe, to Howard Markus and *Appendix B: MPCA's response to comments on the draft 2012 TMDL*, which was included in Minnesota's 2012 submittal (received by EPA on October 1, 2012).

Soybean Growers Association, and John Mages of the Minnesota Corn Growers Association, were some of the commenters making this request. Upon consideration of the information submitted from these three commenters, MPCA determined that Seven Mile Creek should remain on the 2012 303(d) list for chlorpyrifos water quality violations.

The compound known as 'chlorpyrifos' is a pesticide which is measured via water quality studies carried out by the MDA. In its response to these commenters, the MPCA described how available pesticide data, collected by the MDA, were carefully screened to satisfy all quality assurance and quality control (QA/QC) protocols and Quality Assurance Program Plans (QAPPs). The MPCA considered the data collected within the Seven Mile Creek assessment unit to be valid and scientifically defensible.

In addition to the MPCA's defense of MDA's procedures within the response to public comments summary documentation, the MDA also drafted and included a letter (dated May 17, 2012) to public commenters. In this letter, MDA addressed individual questions from commenters and outlined other supporting scientific observations which were backed by MDA collected water quality data. MDA explained that although it did not detect exceedances of the chlorpyrifos water quality standard, it has observed upward trends in chlorpyrifos detection frequency and concentration magnitude. MDA attributed these increases to localized changes in pesticide usage and agricultural management practices.

MPCA added that MDA's water quality data observations combined with its own ambient water quality sampling data signified that Seven Mile Creek was threatened by chlorpyrifos and therefore should be listed on its 2012 303(d) list. MPCA will continue to monitor the Seven Mile Creek water body and will work with the MDA in promoting best management practices for pesticide usage throughout Minnesota. After reviewing the MDA data, EPA agrees with MPCA that the data meet the appropriate QA/QC protocols and the QAAP requirements, therefore, EPA finds MPCA's decision to list Seven Mile Creek (07020007-562) for impairments under chlorpyrifos water quality standard reasonable.

Kevin Pylka on behalf of PolyMet Mining Inc., Keith Hanson of the Minnesota Chamber of Commerce and David Skolasinski of Cliffs Natural Resources Inc., all submitted comments requesting MPCA reconsider Index of Biotic Integrity (IBI) listings in the 2012 303(d) list. The commenters stated that MPCA needs to provide the opportunity for public review and comment on the IBI development process including calibration, scoring and application of the IBI assessment methodology. Additionally, the commenters requested that MPCA provide a Statement of Need and Reasonableness (SONAR) for protocols and documentation associated with the IBI development.

MPCA's response to public comments document re-emphasized that MPCA's biological assessment process is grounded in the biological assessment framework provided in a SONAR document associated with the 2002 rulemaking for Minn. Rules 7050.0150, subp. 6. This document acknowledges the use of biological community assessments as direct ways of predictably measuring aquatic life conditions in streams, and that biological community assessments integrate the combined effects of all stressors over time and space. MPCA utilized this IBI assessment framework in its biological assessments for the 2012 303(d) list. MPCA explained that increases in the breadth and scope of sampling data, due to the Intensive Watershed Approach, have allowed MPCA to refine the calibration of its IBIs scoring system for the 2012 List. If and when the biological assessment process is further refined, MPCA indicated that future revisions will be available for review via the public notice process. Additionally, the MPCA communicated that it will keep the public updated on its progress through its webpage and other

communication outlets (ex. State Register notices, email notifications, public meetings etc.). Appropriate language outlining the changes to the biological assessment methodology will be reflected within the Methodology document (Assessment Guidance) for the listing cycle which the changes are applicable. Stakeholders may submit comments on the Assessment Guidance during the public notice period for the draft 303(d) list. EPA agrees that the IBI assessment methodology used for the 2012 303(d) list was subject to adequate public notice and comment and therefore finds MPCA's IBI listings to be reasonable.

Minnesota's final 2012 303(d) list did not include water bodies impaired due to nonattainment of the State's sulfate water quality standard (Minnesota Rule 7050.0224) (sulfate WQS). Prior 303(d) lists did not include impairment listings due to non-attainment of the sulfate WQS. In addition to the concerns expressed from tribal partners, MPCA received comments from members of the public requesting that the State reconsider listing specific water bodies for nonattainment of the sulfate WQS. Some of these commenters cited sulfate values above the sulfate WQS from draft and final Environmental Impact Statements (EIS) for mining operations in northern-central Minnesota. Other commenters referenced water bodies which they believed to be impacted by sulfate but did not provide water quality data in support of their comments.

As a result of public comments and discussions EPA held with federally recognized tribes, EPA completed an independent review of water bodies cited within the public comments submitted to MPCA in February 2012. EPA reviewed ambient water quality data related to segments discussed in the draft and final EIS, effluent discharge data from discharge monitoring reports, and NPDES permits and other sulfate and wild rice-related documentation. MPCA assisted EPA throughout this evaluation process. Based on this review, EPA did not identify any waters for which available data indicate that waters specifically identified in Minnesota Rule 7050.0224 & 7050.0470 as wild rice production waters were not attaining the sulfate water quality standard.

In its response to the public comments and EPA inquiries, MPCA explained that it does not intend to assess water bodies potentially impaired by sulfate until it has developed a wild rice/sulfate impaired waters assessment approach and this approach has gone through the necessary public review process. MPCA explained that without an approved wild rice/sulfate impaired waters assessment approach, it was inappropriate to analyze ambient sulfate data to determine compliance with the sulfate WQS for the 2012 303(d) list. MPCA committed to the development of a wild rice/sulfate impaired waters assessment approach for the 2014 listing cycle within its response to public comments received for the 2012 303(d) list and in subsequent communications with EPA. MPCA also committed to utilizing this wild rice/sulfate impaired waters assessment approach to analyze and assess water quality data for potential impairment of the sulfate water quality standard for the 2014 listing cycle.

MPCA's general method for assessing a water body for potential non-attainment of a water quality standard involves the review and analysis of ambient water quality data and the comparison of that data to the appropriate water quality standard. During the review of ambient water quality data, MPCA verifies that the data meet minimum data requirements, including the criteria defining the time period of sample collection, and determines whether they indicate the attainment or non-attainment of the relevant water quality standard. [80] If it is found that the water body does not meet the water quality standard, then the water is added to the State's 303(d) Impaired Waters list. MPCA has indicated that it cannot

[80] 2012 Methodology, pages 8-12.

undertake assessments utilizing its sulfate WQS until MPCA has developed a wild rice/sulfate impaired waters assessment approach. This assessment approach would outline the specific criteria which must be utilized in order to evaluate water bodies against the sulfate WQS.

In order for MPCA to develop its wild rice/sulfate impaired waters assessment approach, MPCA indicated that it must first clarify how it will define specific provisions within the sulfate WQS. In conversations with EPA, MPCA explained it must define the protocols it will use for determining which water bodies it considers as waters used for the production of wild rice. Additionally, MPCA must determine when the sulfate WQS applies to those waters, for the determination of the period when rice may be susceptible to damage from high sulfate levels. MPCA has committed to including the details of the wild rice/sulfate impaired waters assessment approach as part of its 2014 Integrated Report (IR) Methodology document.

MPCA is soliciting sulfate water quality data and wild rice information from tribal partners and other stakeholders in 2013, in advance of the assessment of waters for sulfate impairment for the 2014 303(d) list. MPCA has issued a *Call for Sulfate and Wild Rice Monitoring Data for the 2013 Assessment Cycle*[81] specific to sulfate and wild rice data. MPCA is accepting sulfate and wild rice related data through May 1, 2013. MPCA explains that these data will be analyzed and assessed against the wild rice/sulfate impaired waters assessment approach in 2013 and the determinations of these assessments will be reflected in the 2014 impaired waters list. MPCA stated that where sulfate water quality data meet all of the criteria for assessment and data indicate that a water body is not attaining the sulfate WQS, the State will list the water body as a Category 5 water on the 2014 303(d) list.

In the same email message to stakeholders[82] which announced the *Call for Sulfate and Wild Rice Monitoring Data For the 2013 Assessment Cycle* MPCA explained the procedures for sharing sulfate and wild rice data with MPCA by May 1, 2013. This email message clearly defined how interested parties could upload data to MPCA. Additionally, MPCA shared some of the progress which it had made in the development of the wild rice/sulfate impaired waters assessment approach. This information can be found on the MPCA's 'Minnesota's sulfate standard to protect wild rice' webpage.[83] MPCA communicated that it is still working on finalizing the wild rice/sulfate impaired waters assessment approach and plans to formally solicit input from tribes and other interested parties on the assessment approach. The solicitation and consideration of outside input will be completed prior to the MPCA's assessment of sulfate and wild rice data collected via *Call for Sulfate and Wild Rice Monitoring Data For the 2013 Assessment Cycle*. The final wild rice/sulfate impaired waters assessment approach will be included as part of MPCA's 2014 Integrated Report Guidance Manual for Assessing the Quality of Minnesota Surface Waters. EPA expects that this document will be public-noticed, along with the draft impaired waters list, sometime in the late fall of 2013 (approximately November 2013 to January 2014).

EPA encourages states to evaluate water bodies according to the provisions described in their integrated report assessment methodology. EPA believes that it is reasonable for MPCA to delay in its assessment of water bodies against the sulfate WQS until the 2014 303(d) list. EPA agrees with MPCA's decision to not add the water bodies cited by the stakeholders and tribes for impairment of the sulfate WQS on the

[81] State Register Vol. 37 No. 40 p. 1438, http://www.comm.media.state.mn.us/bookstore/stateregister/37_40.pdf
[82] Email from Katrina Kessler (MPCA) on April 1, 2013
[83] Minnesota's Sulfate Standard to Protect Wild Rice http://www.pca.state.mn.us/index.php/water/water-permits-and-rules/water-rulemaking/minnesotas-sulfate-standard-to-protect-wild-rice.html

State's 2012 303(d) list. EPA expects MPCA to provide guidance on the following requirements in the development of the wild rice/sulfate impaired waters assessment approach:

- Criteria defining the minimum number of water quality sampling points necessary to make an assessment decision;
- Criteria defining the time period for collection of water quality sampling data to make an assessment decision (ex. sample collection must occur between X date and Y date);
- Criteria for whether ambient sulfate water quality data will be averaged, and if so, how; and
- A definition of 'seasonality' applicable to sulfate waters (i.e., when the water quality standard would be applicable to surface waters).
- A description of the approach MPCA will utilize for making determinations on whether a water body is classified as a 'wild rice production water';

EPA will continue to monitor the development of the wild rice/sulfate impaired waters assessment approach by MPCA and its use in assessing water bodies for the 2014 303(d) list.

Tribal Consultation

Under its tribal consultation process, EPA consults with federally-recognized tribal partners, on a government-to-government basis in instances when EPA decisions may impact tribal interests. EPA contacted federally-recognized tribal partners within the State of Minnesota to provide these partners the opportunity to consult with EPA on the final 2012 Minnesota 303(d) list of impaired waters. The Fond du Lac Band of Lake Superior Chippewa and Grand Portage Band of Ojibwe requested tribal consultation with EPA. EPA hosted a tribal consultation conference call on November 5, 2012, during which EPA and the tribes discussed tribal concerns related to Minnesota's final 303(d) list, the 2012 Assessment Methodology Guidance document, and other concerns expressed by the tribes. EPA considered the tribal input during its deliberations related to the approval of the final 2012 Minnesota 303(d) list. EPA provided the Fond du Lac Band of Lake Superior Chippewa and Grand Portage Band of Ojibwe a written response which explained how EPA considered their input in EPA's final decision on the list. This response was sent to the most senior tribal official involved in the consultation from the Fond du Lac Band of Lake Superior Chippewa and Grand Portage Band of Ojibwe.

Priority Ranking

EPA reviewed the State's priority ranking of listed waters for TMDL development, and concluded that the State properly took into account the severity of pollution and the beneficial uses to be made of such waters, as well as other relevant factors. MPCA's TMDL priority ranking is reflected in the scheduled target start and end dates for each impairment, as indicated on Minnesota's 2012 303(d) List. Schedules are developed by MPCA's watershed staff located in each regional office. MPCA management analyzes the schedules on a statewide basis and makes final decisions. The schedules are based upon the following ranking criteria:

- Sequencing with MPCA's intensive watershed schedule, which initiates monitoring in approximately eight major watersheds (HUC-8 size) each year. The watershed monitoring schedule was established by MPCA, and was designed to distribute workload as evenly as possible across all basins (1-2 watersheds per basin per year). In addition, watersheds selected for monitoring are based on a number of factors, including local organizational readiness to do the work, amount of data about the watershed, progression of work upstream to downstream, and whether a major TMDL plan was recently completed and there is a desire to delay monitoring

until after implementation work has been well established to understand progress. The ultimate goal is to complete the first round of watershed monitoring statewide by 2018.

- TMDLs are scheduled to be completed within approximately four years after the initiation of TMDL specific water quality monitoring. TMDLs are also considered as a component of the Watershed Restoration and Protection Strategies (WRAPs).
- TMDL projects that are currently in progress (particularly those that are independent of a scheduled WRAP).
- TMDLs that are scheduled to be started outside of a WRAP due to their unique or complex nature (i.e. toxic impairments like mercury, PCBs and other legacy pollutants).
- Beneficial use, severity of the pollution, regulated dischargers, public interest in the resource, and relative cost and resource requirements of a TMDL are also taken into account in the TMDL scheduling process.[84]

The State's priorities are reflected in the target start and completion dates provided on the 303(d) list. Minnesota has begun scheduling TMDL studies by a watershed approach, i.e., all rivers, streams and lakes in a watershed will be targeted for TMDL development at the same time. Minnesota has developed a schedule for monitoring all major watersheds using the watershed approach.

Criteria considered by the State in developing the watershed approach and associated schedules include, among other things, risk to human and aquatic health; readiness of partners and collaboration opportunities with partners to implement; basin management and basin planning efforts; and programmatic needs and resources. The target start and completion dates on the 303(d) list reflect these priorities. EPA reviewed the State's identification of WQLSs targeted for TMDL development in the next two years, and concludes that the targeted waters are appropriate for TMDL development in this time frame. Minnesota also submitted a long-term schedule for TMDL development for all waters on the 303(d) list. As a policy matter, EPA has requested that States provide such schedules, however, at this time EPA is not taking any action to approve or disapprove the State's long-term schedule pursuant to Section 303(d).

Tables

Table A-1: Approved 2012 303(d) List of Impaired Waters needing TMDLs
Table A-2: Waters being removed from 303(d) list

[84] See Administrative Record Document #9, "*Electronic mail message, Subject: MPCA responses to Batch Questions #2 and #3*", pages 1-2.

AUID	NAME	DESCRIPTION	MEDIAN SULFATE CONC	PRELIM WATER QUALITY ASSESS	WATER-QUALITY ASSESSMENT COMMENTS	WILD RICE PRODUCTION WATER DECISION	WILD RICE PRODUCTiON WATER COMMENTS	WILD RICE DATA SOURCE
04010201-577	Embarrass River	Embarrass Lk to St Louis R	27	Impaired	Recommend split below Esquagama Lake. Stations on lower and upper portions of AUID separated by multiple lakes. Median calculated based on station S005-751.	IF	Determination of a split will be made dependent upon finding wild rice between lakes along upstream portion of reach. No indication of wild rice along suggested new downstream AUID (outlet of Esquagama to St. Louis River) that would result from splitting. 1854 data indicate rice presence along northern portion of reach. Need to contact Darren Vogt for additional WR information on northern portion of reach. From mining information, northern portion includes sparse stands indicated with low density locations. Based solely on this, determined not to be wild rice production water.	Mining company surveys, 1854 Treaty Authority
04010201-552	Partridge River	Headwaters to St Louis R	48	Impaired	High variability in sample measurements within close proximity, geographic and temporal. Flows through Colby Lake (69-0249-00), which has wild rice and 2 high sulfate measurements.			Mining company surveys, 1854 Treaty Authority, UMN study
09030002-501	Sandy River	Headwaters (Sandy Lk 69-0730-00) to Pike R	85	Impaired	One discrepant data point.			Mining company surveys, 1854 Treaty Authority, UMN study
04010201-533	St Louis River	Oliver Bridge to Pokegama River	39	Impaired	Wild rice data (actual point locations) are constrained to river AUID, but are associated in database with St Louis Estuary (69-1292-00), which is broader than river AUID. (Measurements collected further downstream at Blatnik Bridge (downstream from WLSSD discharge) have lower concentrations.)			Data linked to Estuary polygon: Perleberg list, MCBS, DNR call for data submittal, Ann Geissen shapefile, 1854 Treaty Authority, mining company surveys
04010201-532	St Louis River	Mission Creek to Oliver Bridge	15	Impaired	Only 2 data points on AUID, but concentrations immediately upstream (S000-021) and downstream (S007-512, S007-515) (12 out of 15 measurements above 10) indicate impairment.			Data linked to Estuary polygon: Perleberg list, MCBS, DNR call for data submittal, Ann Geissen shapefile, 1854 Treaty Authority, mining company surveys. DNR 2008 study point alongside AUID
09030009-537	Bostick Creek	Headwaters to Lake of the Woods	33	Impaired	Data is from 4 months of 1 year, but consistently shows high sulfate concentrations.			DNR 2008 study point shapefile
07020004-551	County Ditch 12	Headwaters to T113 R36W S8, north line	113	Impaired	DNR 2008 study point indicates rice somewhere on County Ditch 12 (Rice Creek), which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.			DNR 2008 study point shapefile
07010203-512	Rice Creek	Rice Lk to Elk R	18	Impaired	DNR 2008 study point indicates rice somewhere on Rice Creek, which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.			DNR 2008 study point shapefile
07010108-501	Long Prairie River	Fish Trap Creek to Crow Wing R	13	Impaired	DNR 2008 study point indicates rice somewhere on Long Prairie River, which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.			2006 Harvester's report, DNR 2008 study point shapefile
07020011-531	Rice Creek	Headwaters to Maple R	28	Impaired	Consistently high sulfate concentrations at all 4 stations along entire AUID.			DNR 2008 study point shapefile
07020005-501	Chippewa River	Watson Sag to Minnesota R	139	Impaired	DNR 2008 study point indicates rice somewhere on Chippewa River, which is more extensive than the AUIDs with sulfate data. Wherever sampled, the Chippewa River has high sulfate concentrations. Listing individual AUIDs is dependent upon location of wild rice.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-505	Chippewa River	Unnamed cr to E Br Chippewa R	88	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-506	Chippewa River	E Br Chippewa R to Shakopee Cr	70	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-508	Chippewa River	Cottonwood Cr to Dry Weather Cr	90	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-503	Chippewa River	Stowe Lk to Little Chippewa R	39	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07040002-502	Cannon River	Pine Cr to Belle Cr	33	Impaired	DNR 2008 study point indicates rice somewhere on Cannon River, which is more extensive than the AUIDs with sulfate data. Wherever sampled, the Cannon River has high sulfate concentrations. Listing individual AUIDs is dependent upon location of wild rice.			DNR 2008 study point shapefile
07040002-542	Cannon River	Headwaters to Cannon Lk	17	Impaired	See above comment regarding Cannon River.			DNR 2008 study point shapefile
07040002-539	Cannon River	Byllesby Dam to Little Cannon R	27	Impaired	See above comment regarding Cannon River.			DNR 2008 study point shapefile
07040002-501	Cannon River	Belle Cr to split near mouth	31	Impaired	See above comment regarding Cannon River.			DNR 2008 study point shapefile

Footnotes:

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3. The spreadsheet was updated with clarifying footnotes following a November 16, 2013 Data Practices Act Request
4. "Impaired" is staff indication that the median sulfate concentration exceeded 10 mg/L
5. Notations in the column "WILD RICE PRODUCTION WATER DECISION" do not represent an agency decision on applicability of the Class 4A 10 mg/L standard at these water bodies rather they indicate that there are data documenting some history of wild rice

NAME	MEDIAN SULFATE CONC	PRELIM WATER QUALITY ASSESS	WATER-QUALITY ASSESSMENT COMMENTS	WILD RICE PRODUCTION WATER DECISION	WILD RICE PRODUCTOIN WATER COMMENTS	WILD RICE ACRES	WILD RICE DATA SOURCE
Cedar Island (N portion)	21	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10. Evaluate together with S. Portion, Fourth, and Esquagama, all connected via Embarrass R.	Yes	Mining company survey shows low to moderate density of rice throughout perimeter of lake. DNR lake survey jul 12, 1990 noted abundant wild rice, especially along west shore. Sulfate sampling locations are near wild rice observation sites.		Mining Companies, 1854 Treaty Authority
Cedar Island (S portion)	20	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Yes	Mining company survey shows moderate density of rice throughout perimeter of lake. DNR lake survey jul 12, 1990 noted abundant wild rice, especially along west shore. Sulfate sampling locations are near wild rice observation sites.		Mining Companies, 1854 Treaty Authority
Fourth	20	Impaired	Only 1 measurement on lake itself, but concentrations on (connected) Esquagama (69-0565-00-203) and Cedar Island S. Portion (69-0568-02-204,69-0568-02-207) are also high.	IF	Need to contact Darren Vogt for additional WR information. From mining information, sparse stands indicated with single low density location. Based on this, determined not to be wild rice production water.		Mining Companies, 1854 Treaty Authority, Ann Geissen shapefile, 2008 Study shapefile
Esquagama	26	Impaired	Only 3 measurements on lake itself, but concentrations on (connected) Fourth Lake (69-0573-00-201) and downstream (S005-751) are also high.	IF	Need to contact Darren Vogt for additional WR information. From mining information, a single stand with low density. Based on this, determined not to be wild rice production water.		Mining Companies, 1854 Treaty Authority
East Vermilion	14	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Yes	Significant acreage of rice in Big Bay. Assumed to be at least 70 acres in Big bay based on estimated size of Rice Bay at 180 acres, and total wild rice area of 250 acres. Rice Bay is also indicated for wild rice, but no sulfate data have been collected there.	250	1854 Treaty Authority, Ann Geissen shapefile, 2008 Study shapefile
Trout	42	Impaired		No	insufficient information to determine that this is a production water.		DNR call for data submittal, U of MN study sites
Elizabeth (main basin)	30	Impaired		No	Insufficient information to determine that this is a production water. DNR lake survey reports dates 6/2006, 5/1997 no wild rice noted.		DNR call for data submittal
Swan (W bay)	tbd	TBD	Impaired, subject to verification of location of station 31-0067-01-204. If judged strictly on station 01-205, sulfate not significantly above 10.	Yes	Staff recommendation for the ESSAR water permit is that this is a production water. Check with Stephanie for recommendation date.	50 (00)	2006 Harvest Survey (00 polygon), Ann Geissen shapefile, Perleberg list, 2008 Study shapefile. Rice data tied to underlying lake (-00)
Swan (main basin)	tbd	Impaired	Median dependent upon station 31-0067-01-204 being included in main basin. Regardless, median is significantly above 10.	Yes	* The outlet bay upstream of the dam is a wild rice production water, based on mining company survey from 2011 has densities of 4 and 5.	50 (00)	2006 Harvest Survey (00 polygon), Ann Geissen shapefile, Perleberg list, 2008 Study shapefile. All tied to underlying lake (-00). UMN study data tied to Main Basin polygon (-02).
Preston	45	Impaired		No	insufficient information to determine that this is a production water. Lake Survey reports from 3/29/1995, 2/21/2006 noted no wild rice.		DNR call for data submittal
Embarrass	21	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Yes	Upper portion of Embarrass shows numerous low to moderate density observations around entire perimeter in mining surveys from 2009 and 2010. However, Lower Embarrass had few observations of low density. *Only Upper Embarrass is considered a wild rice production water.		1854 Treaty Authority, mining company data, Perleberg list, UMN Study
Lady Slipper	314	Impaired	Multiple sites; station 203 has single observation, still above 10, but well below other observations.	No	1997 fisheries transect from 1997 indicated small area of rice. 2011 and 2012 UMN study found no wild rice.		Perleberg list, UMN study
Monongalia (main basin)	31	Impaired		IF	Photo from 2012 exists of high density wild rice. Mark Gernes has harvested rice on the lake for several recent years. U of MN study showed 3 pct coverage at study site. Contact Ed Swain and Mark Gernes for details on location of harvestable rice. Contact Donna Perleberg for more information on inclusion in her list.		UMN study (tied to main basin -01). MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile on underlying waterbody (-00)
Monongalia - Middle Fk Crow	29	Impaired	One questionable sample with very low concentration, turned out to be pore water, sample was excluded and median recalculated.	Yes	Photo from 2012 exists of high density wild rice. Mark Gernes has harvested rice on the lake for several recent years. U of MN study showed 38.75 pct coverage at study site.		UMN study (tied to polygon -02). MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile on underlying waterbody (-00)
Crow River Mill Pond (East)	26	Impaired		IF	Contact Donna Perleberg for more information on Mill Pond observation from MCBS survey 8/6/2002. Contact Mark Gernes for local knowledge.		MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile, all on underlying waterbody (-00)

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NAME	MEDIAN SULFATE CONC	PRELIM WATER QUALITY ASSESS	WATER-QUALITY ASSESSMENT COMMENTS	WILD RICE PRODUCTION WATER DECISION	WILD RICE PRODUCTOIN WATER COMMENTS	WILD RICE ACRES	WILD RICE DATA SOURCE
Hay	52	Impaired		Yes	Staff recommendation for Keetac permit in 2011 was that this is a wild rice production water. Check with Brandon Smith on the date of the Perry Pit dewatering permit.		Ann Geissen shapefile, UMN study, 2008 DNR study
Big Stone	404	Impaired		No	insufficient information to determine that this is a production water. DNR lake survey from 3/17/2004 noted no wild rice.		DNR call for data submittal
Lac Qui Parle (NW bay)	293	Impaired		No	3/23/2000 DNR lake survey - no wild rice noted.		DNR call for data submittal - on underlying waterbody (-00)
Lac Qui Parle (SE bay)	270	Impaired	Only 1 data point on this bay, but concentrations on upstream portion of lake (37-0046-02) and downstream river (07020004-688) are also high.	No	3/23/2000 DNR lake survey - no wild rice noted.		DNR call for data submittal - on underlying waterbody (-00)
Mina	25	Impaired		IF	DNR Lake Surveys from 8/4/1949, 1/2/1998 indicated wild rice presence. 1949 comment indicates sparse presence. 1998 survey was a fisheries transect. Contact Ann Geisen for further detail on why this waterbody was included in call for data submission.		DNR call for data submittal
Pearl	21	Impaired		IF	DNR lake survey indicates wild rice was rare August 24 - 28, 1987. Contact Ann Geisen for further detail on why this waterbody was included in call for data submission.		DNR call for data submittal
Sandy	135	Impaired		Yes	Locate draft staff recommendation for production water status. Wild rice acreage from 2008 report.	121	1854 Treaty Authority, UMN study, Ann Geissen List, 2008 study shapefile
Little Sandy	145	Impaired		Yes	Locate draft staff recommendation for production water status. Wild rice acreage from 2008 report.	89	1854 Treaty Authority, Ann Geissen List, 2008 study shapefile
Marsh	379	Impaired		No	DNR lake survey reports from 3/9/2004, 3/28/2001 noted no wild rice, 4/14/1954 waterfowl/muskrat habitat survey comment says "wild rice would not do well in this lake". 8/1962 map showed no wild rice. 7/1968 game and fish map showed no wild rice.		DNR call for data submittal
Lillian	151	Impaired		No	5/13/1997 lake survey report noted no wild rice.		DNR call for data submittal
Lobster	22	Impaired	Only 1 measurement on lake itself, but concentrations on lakes immediately adjacent (21-0108-00, 21-0180-00, 21-0150-00) are also high.	No	2/5/1997 lake survey report no rice noted. 1949 report did not note any rice and "wild rice would not do well in this lake". Follow up with 1997 fisheries report.		Perleberg list
Sturgeon	58	Impaired	All data collected on Mississippi (MissR 796.9, MissR 805.0), but direct hydrologic connection with Sturgeon.	No	insufficient information to determine that this is a production water.		Ann Geissen shapefile, DNR 2008 study
Long	33	Impaired	Only 1 measurement on lake, but concentrations (5 miles) downstream (S005-630) are also high.	No	insufficient information to determine that this is a production water. DNR Lake Survey report from 2/5/1997 did not note any wild rice.		DNR call for data submittal
Red Lake River Reservoir	tbd	Insufficient Information	Drinking water intake near dam may yield additional sulfate data. Downstream sulfate concentrations high (S002-324), but only 2 measurements recorded. Wild rice location unknown; will determine whether it is necessary to seek additional sulfate data, leading to possible judgment of impairment.	IF	Need to consult fisheries area surveys from 7/2/2009 and 8/1/1994 to determine wild rice location.		DNR call for data submittal, Perleberg list
Rice	tbd	Insufficient Information	Outflow stream has high sulfate. Main inflow is close to outlet, large distance from lake sampling locations. Wild rice location within lake unknown, but will determine whether outflow sulfate concentrations are sufficient for judgment of impairment.	No	Insufficient information to determine that this is a production water. UMN study did not observe any rice in 2012.		Ann Geissen shapefile, DNR 2008 study, UMN study

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May 28, 2014

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Dear Ms. Hyde, Mr. Proto:

WaterLegacy is a Minnesota non-profit organization formed to protect Minnesota's water resources and the communities that rely on them. We commented on the Minnesota Pollution Control Agency (MPCA) 2014 Impaired Waters List on February 10, 2014, and our comment letter and Exhibits A and C are attached. We are writing to ask that the U.S. Environmental Protection Agency (EPA) deny approval of the MPCA's 2014 Impaired Waters List pending MPCA's consideration of additional data regarding mercury impairments. We also request that the EPA recommend a timeline for the MPCA to provide a listing of wild rice impaired waters.

WaterLegacy asks that the EPA deny approval of the 2014 Impaired Waters List pending more thorough consideration of information regarding mercury in the water column and mercury in fish in the Partridge River, Embarrass River and Colby Lake. We believe that the rationale provided by the MPCA in rejecting the listing of these waters as mercury impaired waters is insufficient and does not consider all readily available water-quality related data.

We also believe that the MPCA has more than enough information to list at least all of the waters identified in the MPCA August 2013 spreadsheet (*See* Exhibit C, MPCA August 2013 Wild Rice Impairments spreadsheet) as waters used for the production of natural wild rice impaired due to sulfate water quality standard exceedance. We ask that the EPA advise the MPCA to propose listing wild rice impaired waters by August 2014 so that the public can comment and EPA can review Minnesota's complete 2014 Impaired Waters List by the close of the year.

Mercury Impaired Waters

WaterLegacy appreciates the MPCA's addition of Wynne Lake and Sabin Lake to its draft 2014 Impaired Waters List due to mercury impairments. However, WaterLegacy believes that the MPCA's rationale for rejecting proposed listing of the Embarrass River, the Partridge River and Colby Lake as mercury impaired waters is inconsistent with applicable regulations. The MPCA was required under law to assemble and analyze all existing and readily available water quality-related data.

WaterLegacy is puzzled by the MPCA's statement in its responses to our impaired waters comments that the Barr Engineering report *2010c* did not provide assessment of mercury in the Embarrass River. Barr *2010c* included 2009 sampling data showing average total mercury concentrations of 3.7 ng/L and 3.5 ng/L at sites PM12 and PM13 in the Embarrass River. Barr *2010c*, Table 1, p. 15. This data seems more than sufficient to demonstrate that the Embarrass River fails to meet the applicable Great Lakes mercury standard of 1.3 ng/L.

WaterLegacy is also troubled by the implication in the MPCA's response to comments that, if the public has not provided sufficient mercury sampling data for Colby Lake, the Partridge River and the Embarrass River, the Agency will not consider readily available data from other sources to decide whether to list these waters as impaired. The Clean Water Act and its implementing regulations do not entitle state agencies to assume blinders to avoid listing impaired waters.

Federal regulations require that states identify water-quality limited segments requiring waste load allocations, load allocations and total maximum daily loads. 40 C.F.R. §130.7. To identify and set priorities for water-quality limited segments, states must "assemble and evaluate all existing and readily available water quality-related data and information to develop the list." 40 C.F.R. §130.7 (b)(5). At a minimum "all existing and readily available water quality-related data and information" includes waters where dilution calculations or predictive models indicate nonattainment of applicable water quality standards and waters for which water quality problems have been reported by local, state, or federal agencies; or members of the public; or academic institutions. Organizations and groups should be actively solicited for research they may be conducting or reporting. 40 C.F.R. §130.7(b)(5).

Once members of the public had identified the Embarrass River, the Partridge River, Wynne Lake, Sabin Lake and Colby Lake as mercury impaired waters, the MPCA had an obligation to review all existing and readily available data, including data from discharge monitoring reports, data from the Minnesota Department of Natural Resources Mine Water Research Advisory Panel (MWRAP) research in the St. Louis River watershed, and any data collected by the Fond du Lac Band of the Lake Superior Chippewa or other Bands, including fish tissue as well as water column concentrations. We believe that additional data about mercury impairments in these waters should have been solicited by MPCA from MDNR, from tribal researchers, and from commenters as well as sought from its own files.

WaterLegacy has reviewed only a small portion of the MWRAP data sponsored by the Minnesota Department of Natural Resources, which includes the attached spreadsheet from J. Jeremiason's data. This spreadsheet, highlighted to call attention to data for the Embarrass River and Partridge River, contains total mercury data for the Embarrass River and Second Creek/Partridge River. The MWRAP data confirms mercury concentrations far above the 1.3 ng/L standard. We calculated the mean total mercury concentration from Jeremiason's 19 samples for the Embarrass River as 3.2 ng/L and the mean total mercury concentration from his 18 samples for Second Creek/Partridge River as 8.0 ng/L. (*See* Exhibit D, 2013 (MWRAP) Jeremiason Master Sample List).

WaterLegacy requests that the EPA deny approval of the 2014 Section 303(d) Impaired Waters List until the MPCA reviews all readily available data on the mercury impairments identified by the public. We believe that this review will further support the MPCA's proposal to list Wynne

Lake and Sabin Lake and will also result in the 2014 listing of the Embarrass River, Partridge River and Colby Lake as mercury impaired waters.

Sulfate Impaired Wild Rice Waters

WaterLegacy has requested for more than two years that wild rice waters impaired due to exceedance of the 10 mg/L sulfate standard be listed without delay on Minnesota's Section 303(d) Impaired Waters List. Documents received by WaterLegacy through the Minnesota Data Practices Act suggest that this year's delay in listing wild rice impaired waters until criteria for "waters used for the production of wild rice" are resolved was a response to industry pressure.

As reflected in our comments submitted on February 10, 2014, WaterLegacy agrees with the statement made in the MPCA's letter to U.S. Steel Corporation on November 8, 2103 that the MPCA is authorized to determine whether a water body is an impaired water used for the production of wild rice on the basis of information developed about the particular water. (*See* Exhibit A, MPCA Letter to USS, November 8, 2013). The 2011 legislation pertaining to rulemaking review of the wild rice sulfate standard does not affect the MPCA's obligation under the Clean Water Act to designate and protect impaired waters.

There is also no requirement in law that regulated parties must agree to the methodology used to list impaired waters or that the desire to amend definitions through rulemaking supersedes a state's obligation to designate impaired waters. WaterLegacy is concerned that the MPCA's 2014 listing of wild rice impaired waters is being held hostage until a rulemaking definition of "waters used for the production of wild rice" has been negotiated.

WaterLegacy believes that the assessment criteria developed by the MPCA for its preliminary listing of wild rice impaired waters are under-inclusive. But, Minnesota must move forward and, for the first time in its history, demonstrate a willingness to consider sulfate-polluted waters as wild rice impaired waters. We urge the EPA to require that the MPCA proceed without further delay to list as wild rice impaired waters at least the "low-hanging fruit" identified in August 2013. These wild rice impaired waters include:

Embarrass River (Embarrass Lake to St. Louis River)
Partridge River (Headwaters to S. Louis River)
Sandy River (Headwaters - Sandy Lake to Pike River)
St. Louis River (Oliver Bridge to Pokegama River)
St. Louis River (Mission Creek to Oliver Bridge)
Bostick Creek (Headwaters to Lake of the Woods)
County Ditch 12 (Headwaters to T113 R36W S8 north line)
Rice Creek (Rice Lake to Elk River)
Long Prairie River (Fish Trap Creek to Crow Wing River)
Rice Creek (Headwaters to Maple River)
Chippewa River (Watson Sag to Minnesota River)
Chippewa River (Unnamed Creek to E. Br. Chippewa River)
Chippewa River (E. Br. Chippewa River to Shakopee Creek)
Chippewa River (Cottonwood Creek to Dry Weather Creek)
Chippewa River (Stowe Lake to Little Chippewa river)
Cannon River (Pine Creek to Belle Creek)

Cannon River (Headwaters to Cannon Lake)
Cannon River (Byllesby Dam to Little Cannon River)
Cannon River (Belle Creek to split near mouth)
Cedar Island Lake (North Portion)
Cedar Island Lake (South Portion)
Fourth Lake
Esquagama Lake
East Vermillion Lake
Trout Lake
Elizabeth Lake (Main Basin)
Swan Lake (West Bay)
Swan Lake (Main Basin)
Preston Lake
Embarrass Lake
Lady Slipper Lake
Monongalia Lake (Main Basin)
Monongalia Lake (Middle Fork Crow)
Crow River Mill Pond (East)
Hay Lake
Big Stone Lake
Lac Qui Parle (NW Bay)
Lac Qui Parle (SE Bay)
Mina Lake
Pearl Lake
Sandy Lake
Little Sandy Lake
Marsh Lake
Lillian Lake
Lobster Lake
Sturgeon Lake
Long Lake

WaterLegacy has suggested in our February 2014 comments that the MPCA also include in the 2014 Impaired Waters List several waters identified in the PolyMet SDEIS as wild rice waters with excessive sulfates. Based on data in Table 4.2.2-3 on page 4-37 of the SDEIS, these include: Second Creek, Sabin Lake, and Wynne Lake.

WaterLegacy believes this above list would reflect a very limited portion of Minnesota's wild rice impaired waters. However, the listing process is intended to be iterative, and we would support continued rigorous analysis to identify impairments, control sulfate releases and restore conditions that comply with the numeric and narrative water quality standards that were enacted in Minnesota Rules Chapter 7050.0224, subparts 1 and 2 to protect natural stands of wild rice.

Conclusion

For the reasons explained above, WaterLegacy requests that the EPA deny approval of Minnesota's partial 2014 Impaired Waters List until the MPCA has considered the full range of readily available data regarding mercury impairments in the Embarrass River, Partridge River and Colby Lake. We also request that EPA advise the MPCA to proceed without further delay to identify wild rice waters impaired due to sulfate exceedances. An August 2014 deadline for the MPCA's revised proposal on mercury impairments and the MPCA's proposal of wild rice impaired waters is suggested to ensure that Minnesota can propose, the public can comment, and the EPA can review the state's complete impaired waters list before the end of 2014.

Respectfully submitted,

Paula G. Maccabee

Paula Goodman Maccabee
Advocacy Director/Counsel for WaterLegacy

Enclosures: February 2014 WaterLegacy Comment, Exhibit A, Exhibit C
Exhibit D 2013 MWRAP Data Spreadsheet

Minnesota Pollution Control Agency

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November 8, 2013

Mr. Larry Sutherland
General Manager – Minnesota Ore Operations
United States Steel Corporation
P.O. Box 417
Mountain Iron, MN 55768

RE: United States Steel Corporation Correspondence Related to the Designation of a "Water Used for Production of Wild Rice"

Dear Mr. Sutherland:

The Minnesota Pollution Control Agency (MPCA) has received two letters from United States Steel Corporation (USS) related to the MPCA's process for designation of a "water used for production of wild rice" (WUFPOWR). The first was an August 12, 2013, letter from David Smiga responding to a MPCA document called "Draft Staff Recommendation for 'waters used for production of wild rice' downstream of the US Steel Minntac tailings basin." The second was a September 27, 2013, letter from you responding to MPCA comments on a June 27, 2013, Sulfate Reduction Plan revision required by the reissued water permits for the Keetac operation. In both letters, USS cites Minnesota Session Laws 2011, First Special Session, Chapter 2, Article 4 (2011 Law) asserting it is premature for the MPCA to determine that waters, other than those specifically listed in Minnesota rules, qualify as "waters used for the production of wild rice."

Though those two letters may raise other issues, this letter will respond to that specific assertion.

The MPCA has carefully considered USS' assertion. The MPCA believes that it is authorized to determine whether a particular water is a WUFPOWR on the basis of information developed about the particular water. The MPCA will continue to apply the current draft staff recommendations related to WUFPOWR subject to possible future modification after the criteria development process is completed.

However, because the MPCA continues to receive questions from all stakeholders about how such a determination is made, and specifically a number of requests to review the criteria the MPCA is using for such determinations, the MPCA has concluded that it is appropriate to provide opportunity for input on the criteria following the process laid out in Section 32 (b) of the 2011 Law. The MPCA plans to begin to develop criteria by meeting with the Minnesota Department of Natural Resources and Indian Tribes in late 2013 and anticipates taking public comment from other interested parties through public notice and comment sometime in early 2014.

The draft MPCA staff recommendations mentioned by USS include the following language: "This draft MPCA staff recommendation for ... is based on information currently available. MPCA staff will consider additional information that may become available in the future, whether from project proposers or from other interested/affected parties, and reserves the right to modify the draft staff recommendation accordingly." Once the MPCA has completed the criteria development process, the MPCA will consider those criteria as additional information and will reconsider the current draft MPCA staff recommendations for the waters mentioned in the two USS letters. MPCA staff will share the resulting draft staff recommendation (related to whether those waters are WUFPOWR and subject to the existing standard) with USS and the Tribes as is the current practice. The resulting draft staff recommendation will include any revisions as appropriate based on the additional information.

During the public comment period for any related permit or following issuance of such permit, USS may challenge the application of the criteria in the permitting process. As it did in the litigation initiated by the Minnesota Chamber of Commerce, the MPCA continues to reject any suggestion that WUFPOWR are limited to waters used for the irrigation of paddy rice, and not waters used for support of wildlife and other purposes. See Minn. R. 7050.0224, subp. 4.

Regarding the criteria development processes, the MPCA notes that the 2011 legislation has two distinct parts, rulemaking and criteria development. The 2011 legislation provides:

> *Sec. 32. WILD RICE RULEMAKING AND RESEARCH.*
>
> *(a) Upon completion of the research referenced in paragraph (d), the commissioner of the Pollution Control Agency shall initiate a process to amend Minnesota Rules, chapter 7050. The amended rule shall:*
>
> *(1) address water quality standards for waters containing natural beds of wild rice, as well as for irrigation waters used for the production of wild rice;*
>
> *(2) designate each body of water, or specific portion thereof, to which wild rice water quality standards apply; and*
>
> *(3) designate the specific times of year during which the standard applies.*

Nothing in this paragraph shall prevent the Pollution Control Agency from applying the narrative standard for all class 2 waters established in Minn. R. ch. 7050.0150, subp. 3.

> (b) "Waters containing natural beds of wild rice" means waters where wild rice occurs naturally. *Before designating waters containing natural beds of wild rice as waters subject to a standard, the commissioner of the Pollution Control Agency shall establish criteria for the waters after consultation with the Department of Natural Resources, Minnesota Indian tribes, and other interested parties and after public notice and comment. The criteria shall include, but not be limited to, history of wild rice harvests, minimum acreage, and wild rice density.*

2011 First Special Session, ch. 2, Art. 4 (emphasis added). The legislature has required that Minn. R. ch. 7050 be amended to designate each body of water, or specific portion thereof, to which wild rice water quality standards apply." Rulemaking has a long established formal process that the MPCA follows and will follow in designating waters. Referring to the italicized language, the legislature established a separate criteria development process for the MPCA to follow and specified that the process is to include a consultation component and a public notice and comment component separate from the public notice and comment process that will occur during the rulemaking called for by the legislation. The legislature has required the MPCA to complete the criteria development process prior to rulemaking for designating waters. While the criteria are to be used in the designation process, the legislation imposes no restrictions upon the MPCA's permitting authorities, its obligations to protect impaired waters or its use of the criteria on a case-by-case basis to identify impaired waters and when effluent limitations are necessary in permits.

Based on the foregoing, the MPCA has concluded that it is appropriate to move forward with the process to establish criteria for designating "waters containing natural beds of wild rice," prior to the rulemaking.

The MPCA will use the criteria that emerge from this process for three purposes: to inform the process of "designating" waters subject to the standard in the wild rice standards rulemaking, to apply on a case-by-case basis to identify when effluent limitations are necessary in permits, and to aid the MPCA when listing impaired waters. Attached is a proposed timeline for activities related for the wild rice sulfate standard.

Please feel free to contact me with questions at 651-757-2366.

Sincerely,

for Ann M. Foss
Director
Metallic Mining Sector
Industrial Division

AMF/SB:rm

Attachment

Wild Rice Sulfate Standard -- Proposed Timeline of Related Activities

(Note: Green shading identifies public notice and dialogue opportunities)

		November-13	December-13	January-14	February-14	March-14	April-14	May-14 =>
Wild Rice Sulfate Standards Study[1]			Receive preliminary study results by December 31, 2013.	MPCA evaluate study data and develop wild rice sulfate standard rulemaking recommendations.		Share and discuss recommendations; begin to develop technical support details.	Begin rulemaking process to designate waters subject to standard and address any recommended changes to the standard.	
"Water Used for Production of Wild Rice" (WUFPOWR) Criteria Development[2]		MPCA meet with tribes, DNR and wild rice advisory committee to discuss WUFPOWR criteria development.		Public notice draft WUFPOWR criteria.	Review comments and revise WUFPOWR criteria as appropriate.	Use WUFPOWR criteria to inform process of "designating" waters subject to the sulfate wild rice standard; apply criteria for rulemaking, assessment, impaired waters list development and permitting.		
303 (d) Impaired Waters List[3]	**Wild rice sulfate assess-ments**	Wait to identify and assess WUFPOWR for the wild rice sulfate standard until WUFPOWR criteria are available.				Identify and assess WUFPOWR for the wild rice sulfate standard, consistent with WUFPOWR criteria. **Public notice draft sulfate-impaired WUFPOWR.** Submit WUFPOWR sulfate assessments to EPA when complete.[4]		
	All other assess-ments	Draft 2014 impaired waters list (minus WUFPOWR assessments) on MPCA website.	Hold public meetings on draft 2014 impaired waters list.	Public notice draft 2014 impaired waters list.	Review and respond to comments and revise draft 2014 impaired waters list as appropriate.		Draft 2014 impaired waters list due to EPA April 1, 2014.[4]	
NPDES Permit Development[5]		Continue to develop permits using draft staff recommendations related to identifying water used for production of wild rice.[6]				Re-evaluate draft staff recommendations using WUFPOWR criteria.		Any permit will be put on public notice prior to issuance.[6]

1. MN Session Laws 2011, First Special Session, Chapter 2, Article 4, Section 32 (d).
2. MN Session Laws 2011, First Special Session, Chapter 2, Article 4, Section 32 (b).
3. Federal Clean Water Act, 1972, Section 303 (d); MN Statutes 114D.25, subd. 1.
4. Depending on timing, the wild rice sulfate assessments may be submitted to EPA with the other assessments, or more likely as a separate package.
5. Federal Clean Water Act, 1972, Section 402; MN Statutes 115.03 , subd. 5
6. Permits will be put on public notice prior to issuance; a permit could go on notice at any point in the timeline.

AUID	NAME	DESCRIPTION	MEDIAN SULFATE CONC	PRELIM WATER QUALITY ASSESS	WATER-QUALITY ASSESSMENT COMMENTS	WILD RICE PRODUCTION WATER DECISION	WILD RICE PRODUCTiON WATER COMMENTS	WILD RICE DATA SOURCE
04010201-577	Embarrass River	Embarrass Lk to St Louis R	27	Impaired	Recommend split below Esquagama Lake. Stations on lower and upper portions of AUID separated by multiple lakes. Median calculated based on station S005-751.	IF	Determination of a split will be made dependent upon finding wild rice between lakes along upstream portion of reach. No indication of wild rice along suggested new downstream AUID (outlet of Esquagama to St. Louis River) that would result from splitting. 1854 data indicate rice presence along northern portion of reach. Need to contact Darren Vogt for additional WR information on northern portion of reach. From mining information, northern portion includes sparse stands indicated with low density locations. Based solely on this, determined not to be wild rice production water.	Mining company surveys, 1854 Treaty Authority
04010201-552	Partridge River	Headwaters to St Louis R	48	Impaired	High variability in sample measurements within close proximity, geographic and temporal. Flows through Colby Lake (69-0249-00), which has wild rice and 2 high sulfate measurements.			Mining company surveys, 1854 Treaty Authority, UMN study
09030002-501	Sandy River	Headwaters (Sandy Lk 69-0730-00) to Pike R	85	Impaired	One discrepant data point.			Mining company surveys, 1854 Treaty Authority, UMN study
04010201-533	St Louis River	Oliver Bridge to Pokegama River	39	Impaired	Wild rice data (actual point locations) are constrained to river AUID, but are associated in database with St Louis Estuary (69-1292-00), which is broader than river AUID. (Measurements collected further downstream at Blatnik Bridge (downstream from WLSSD discharge) have lower concentrations.)			Data linked to Estuary polygon: Perleberg list, MCBS, DNR call for data submittal, Ann Geissen shapefile, 1854 Treaty Authority, mining company surveys
04010201-532	St Louis River	Mission Creek to Oliver Bridge	15	Impaired	Only 2 data points on AUID, but concentrations immediately upstream (S000-021) and downstream (S007-512, S007-515) (12 out of 15 measurements above 10) indicate impairment.			Data linked to Estuary polygon: Perleberg list, MCBS, DNR call for data submittal, Ann Geissen shapefile, 1854 Treaty Authority, mining company surveys. DNR 2008 study point alongside AUID
09030009-537	Bostick Creek	Headwaters to Lake of the Woods	33	Impaired	Data is from 4 months of 1 year, but consistently shows high sulfate concentrations.			DNR 2008 study point shapefile
07020004-551	County Ditch 12	Headwaters to T113 R36W S8, north line	113	Impaired	DNR 2008 study point indicates rice somewhere on County Ditch 12 (Rice Creek), which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.			DNR 2008 study point shapefile
07010203-512	Rice Creek	Rice Lk to Elk R	18	Impaired	DNR 2008 study point indicates rice somewhere on Rice Creek, which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.			DNR 2008 study point shapefile
07010108-501	Long Prairie River	Fish Trap Creek to Crow Wing R	13	Impaired	DNR 2008 study point indicates rice somewhere on Long Prairie River, which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.			2006 Harvester's report, DNR 2008 study point shapefile
07020011-531	Rice Creek	Headwaters to Maple R	28	Impaired	Consistently high sulfate concentrations at all 4 stations along entire AUID.			DNR 2008 study point shapefile
07020005-501	Chippewa River	Watson Sag to Minnesota R	139	Impaired	DNR 2008 study point indicates rice somewhere on Chippewa River, which is more extensive than the AUIDs with sulfate data. Wherever sampled, the Chippewa River has high sulfate concentrations. Listing individual AUIDs is dependent upon location of wild rice.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-505	Chippewa River	Unnamed cr to E Br Chippewa R	88	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-506	Chippewa River	E Br Chippewa R to Shakopee Cr	70	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-508	Chippewa River	Cottonwood Cr to Dry Weather Cr	90	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-503	Chippewa River	Stowe Lk to Little Chippewa R	39	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07040002-502	Cannon River	Pine Cr to Belle Cr	33	Impaired	DNR 2008 study point indicates rice somewhere on Cannon River, which is more extensive than the AUIDs with sulfate data. Wherever sampled, the Cannon River has high sulfate concentrations. Listing individual AUIDs is dependent upon location of wild rice.			DNR 2008 study point shapefile
07040002-542	Cannon River	Headwaters to Cannon Lk	17	Impaired	See above comment regarding Cannon River.			DNR 2008 study point shapefile
07040002-539	Cannon River	Byllesby Dam to Little Cannon R	27	Impaired	See above comment regarding Cannon River.			DNR 2008 study point shapefile
07040002-501	Cannon River	Belle Cr to split near mouth	31	Impaired	See above comment regarding Cannon River.			DNR 2008 study point shapefile

Footnotes:

1. This spreadsheet includes working notes from an August 13, 2013 meeting of MPCA staff
2. Nothing in this spreadsheet represents a final agency decision
3. The spreadsheet was updated with clarifying footnotes following a November 16, 2013 Data Practices Act Request
4. "Impaired" is staff indication that the median sulfate concentration exceeded 10 mg/L
5. Notations in the column "WILD RICE PRODUCTION WATER DECISION" do not represent an agency decision on applicability of the Class 4A 10 mg/L standard at these water bodies rather they indicate that there are data documenting some history of wild rice

NAME	MEDIAN SULFATE CONC	PRELIM WATER QUALITY ASSESS	WATER-QUALITY ASSESSMENT COMMENTS	WILD RICE PRODUCTION WATER DECISION	WILD RICE PRODUCTOIN WATER COMMENTS	WILD RICE ACRES	WILD RICE DATA SOURCE
Cedar Island (N portion)	21	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10. Evaluate together with S. Portion, Fourth, and Esquagama, all connected via Embarrass R.	Yes	Mining company survey shows low to moderate density of rice throughout perimeter of lake. DNR lake survey jul 12, 1990 noted abundant wild rice, especially along west shore. Sulfate sampling locations are near wild rice observation sites.		Mining Companies, 1854 Treaty Authority
Cedar Island (S portion)	20	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Yes	Mining company survey shows moderate density of rice throughout perimeter of lake. DNR lake survey jul 12, 1990 noted abundant wild rice, especially along west shore. Sulfate sampling locations are near wild rice observation sites.		Mining Companies, 1854 Treaty Authority
Fourth	20	Impaired	Only 1 measurement on lake itself, but concentrations on (connected) Esquagama (69-0565-00-203) and Cedar Island S. Portion (69-0568-02-204,69-0568-02-207) are also high.	IF	Need to contact Darren Vogt for additional WR information. From mining information, sparse stands indicated with single low density location. Based on this, determined not to be wild rice production water.		Mining Companies, 1854 Treaty Authority, Ann Geissen shapefile, 2008 Study shapefile
Esquagama	26	Impaired	Only 3 measurements on lake itself, but concentrations on (connected) Fourth Lake (69-0573-00-201) and downstream (S005-751) are also high.	IF	Need to contact Darren Vogt for additional WR information. From mining information, a single stand with low density. Based on this, determined not to be wild rice production water.		Mining Companies, 1854 Treaty Authority
East Vermilion	14	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Yes	Significant acreage of rice in Big Bay. Assumed to be at least 70 acres in Big bay based on estimated size of Rice Bay at 180 acres, and total wild rice area of 250 acres. Rice Bay is also indicated for wild rice, but no sulfate data have been collected there.	250	1854 Treaty Authority, Ann Geissen shapefile, 2008 Study shapefile
Trout	42	Impaired		No	insufficient information to determine that this is a production water.		DNR call for data submittal, U of MN study sites
Elizabeth (main basin)	30	Impaired		No	Insufficient information to determine that this is a production water. DNR lake survey reports dates 6/2006, 5/1997 no wild rice noted.		DNR call for data submittal
Swan (W bay)	tbd	TBD	Impaired, subject to verification of location of station 31-0067-01-204. If judged strictly on station 01-205, sulfate not significantly above 10.	Yes	Staff recommendation for the ESSAR water permit is that this is a production water. Check with Stephanie for recommendation date.	50 (00)	2006 Harvest Survey (00 polygon), Ann Geissen shapefile, Perleberg list, 2008 Study shapefile. Rice data tied to underlying lake (-00)
Swan (main basin)	tbd	Impaired	Median dependent upon station 31-0067-01-204 being included in main basin. Regardless, median is significantly above 10.	Yes	* The outlet bay upstream of the dam is a wild rice production water, based on mining company survey from 2011 has densities of 4 and 5.	50 (00)	2006 Harvest Survey (00 polygon), Ann Geissen shapefile, Perleberg list, 2008 Study shapefile. All tied to underlying lake (-00). UMN study data tied to Main Basin polygon (-02).
Preston	45	Impaired		No	insufficient information to determine that this is a production water. Lake Survey reports from 3/29/1995, 2/21/2006 noted no wild rice.		DNR call for data submittal
Embarrass	21	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Yes	Upper portion of Embarrass shows numerous low to moderate density observations around entire perimeter in mining surveys from 2009 and 2010. However, Lower Embarrass had few observations of low density. *Only Upper Embarrass is considered a wild rice production water.		1854 Treaty Authority, mining company data, Perleberg list, UMN Study
Lady Slipper	314	Impaired	Multiple sites; station 203 has single observation, still above 10, but well below other observations.	No	1997 fisheries transect from 1997 indicated small area of rice. 2011 and 2012 UMN study found no wild rice.		Perleberg list, UMN study
Monongalia (main basin)	31	Impaired		IF	Photo from 2012 exists of high density wild rice. Mark Gernes has harvested rice on the lake for several recent years. U of MN study showed 3 pct coverage at study site. Contact Ed Swain and Mark Gernes for details on location of harvestable rice. Contact Donna Perleberg for more information on inclusion in her list.		UMN study (tied to main basin -01). MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile on underlying waterbody (-00)
Monongalia - Middle Fk Crow	29	Impaired	One questionable sample with very low concentration, turned out to be pore water, sample was excluded and median recalculated.	Yes	Photo from 2012 exists of high density wild rice. Mark Gernes has harvested rice on the lake for several recent years. U of MN study showed 38.75 pct coverage at study site.		UMN study (tied to polygon -02). MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile on underlying waterbody (-00)
Crow River Mill Pond (East)	26	Impaired		IF	Contact Donna Perleberg for more information on Mill Pond observation from MCBS survey 8/6/2002. Contact Mark Gernes for local knowledge.		MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile, all on underlying waterbody (-00)

Footnotes:

1. This spreadsheet includes working notes from an August 13, 2013 meeting of MPCA staff
2. Nothing in this spreadsheet represents a final agency decision
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4. "Impaired" is staff indication that the median sulfate concentration exceeded 10 mg/L
5. Notations in the column "WILD RICE PRODUCTION WATER DECISION" do not represent an agency decision on applicability of the Class 4A 10 mg/L standard at these water bodies rather they indicate that there are data documenting some history of wild rice

NAME	MEDIAN SULFATE CONC	PRELIM WATER QUALITY ASSESS	WATER-QUALITY ASSESSMENT COMMENTS	WILD RICE PRODUCTIO N WATER DECISION	WILD RICE PRODUCTOIN WATER COMMENTS	WILD RICE ACRES	WILD RICE DATA SOURCE
Hay	52	Impaired		Yes	Staff recommendation for Keetac permit in 2011 was that this is a wild rice production water. Check with Brandon Smith on the date of the Perry Pit dewatering permit.		Ann Geissen shapefile, UMN study, 2008 DNR study
Big Stone	404	Impaired		No	insufficient information to determine that this is a production water. DNR lake survey from 3/17/2004 noted no wild rice.		DNR call for data submittal
Lac Qui Parle (NW bay)	293	Impaired		No	3/23/2000 DNR lake survey - no wild rice noted.		DNR call for data submittal - on underlying waterbody (-00)
Lac Qui Parle (SE bay)	270	Impaired	Only 1 data point on this bay, but concentrations on upstream portion of lake (37-0046-02) and downstream river (07020004-688) are also high.	No	3/23/2000 DNR lake survey - no wild rice noted.		DNR call for data submittal - on underlying waterbody (-00)
Mina	25	Impaired		IF	DNR Lake Surveys from 8/4/1949, 1/2/1998 indicated wild rice presence. 1949 comment indicates sparse presence. 1998 survey was a fisheries transect. Contact Ann Geisen for further detail on why this waterbody was included in call for data submission.		DNR call for data submittal
Pearl	21	Impaired		IF	DNR lake survey indicates wild rice was rare August 24 - 28, 1987. Contact Ann Geisen for further detail on why this waterbody was included in call for data submission.		DNR call for data submittal
Sandy	135	Impaired		Yes	Locate draft staff recommendation for production water status. Wild rice acreage from 2008 report.	121	1854 Treaty Authority, UMN study, Ann Geissen List, 2008 study shapefile
Little Sandy	145	Impaired		Yes	Locate draft staff recommendation for production water status. Wild rice acreage from 2008 report.	89	1854 Treaty Authority, Ann Geissen List, 2008 study shapefile
Marsh	379	Impaired		No	DNR lake survey reports from 3/9/2004, 3/28/2001 noted no wild rice, 4/14/1954 waterfowl/muskrat habitat survey comment says "wild rice would not do well in this lake". 8/1962 map showed no wild rice. 7/1968 game and fish map showed no wild rice.		DNR call for data submittal
Lillian	151	Impaired		No	5/13/1997 lake survey report noted no wild rice.		DNR call for data submittal
Lobster	22	Impaired	Only 1 measurement on lake itself, but concentrations on lakes immediately adjacent (21-0108-00, 21-0180-00, 21-0150-00) are also high.	No	2/5/1997 lake survey report no rice noted. 1949 report did not note any rice and "wild rice would not do well in this lake". Follow up with 1997 fisheries report.		Perleberg list
Sturgeon	58	Impaired	All data collected on Mississippi (MissR 796.9, MissR 805.0), but direct hydrologic connection with Sturgeon.	No	insufficient information to determine that this is a production water.		Ann Geissen shapefile, DNR 2008 study
Long	33	Impaired	Only 1 measurement on lake, but concentrations (5 miles) downstream (S005-630) are also high.	No	insufficient information to determine that this is a production water. DNR Lake Survey report from 2/5/1997 did not note any wild rice.		DNR call for data submittal
Red Lake River Reservoir	tbd	Insufficient Information	Drinking water intake near dam may yield additional sulfate data. Downstream sulfate concentrations high (S002-324), but only 2 measurements recorded. Wild rice location unknown; will determine whether it is necessary to seek additional sulfate data, leading to possible judgment of impairment.	IF	Need to consult fisheries area surveys from 7/2/2009 and 8/1/1994 to determine wild rice location.		DNR call for data submittal, Perleberg list
Rice	tbd	Insufficient Information	Outflow stream has high sulfate. Main inflow is close to outlet, large distance from lake sampling locations. Wild rice location within lake unknown, but will determine whether outflow sulfate concentrations are sufficient for judgment of impairment.	No	Insufficient information to determine that this is a production water. UMN study did not observe any rice in 2012.		Ann Geissen shapefile, DNR 2008 study, UMN study

Footnotes:

1. This spreadsheet includes working notes from an August 13, 2013 meeting of MPCA staff
2. Nothing in this spreadsheet represents a final agency decision
3. The spreadsheet was updated with clarifying footnotes following a November 16, 2013 Data Practices Act Request
4. “Impaired” is staff indication that the median sulfate concentration exceeded 10 mg/L
5. Notations in the column “WILD RICE PRODUCTION WATER DECISION” do not represent an agency decision on applicability of the Class 4A 10 mg/L standard at these water bodies rather they indicate that there are data documenting some history of wild rice

Jeremiason ID	Field Id	Site	THg (1)	THg (2)	THg (3)
13001	351653	S2 Weir	15.45		
13002	351664	S2 Sub	17.70		
13003	351655	S2 N Lagg	10.53		
13004	351665	S2 Surf	11.69		
13005	351697	S2 Weir	16.82		
13006	351713	S2 Sub	13.36		
13007	351700	S2 N Lagg	-0.12	16.07	
13008	351712	S2 Surf	9.05		
13009	351730	S2 Weir	16.50		
13010	351732	S2 N Lagg	18.33		
13011	351734	S2 Sub	21.83		
13012	0	Filter Blank (MQ)	0.42		
13013	351741	S2 Weir	16.77		
13014	351745	S2 N Lagg	18.61		
13015	351754	S2 Sub	11.93		
13016	351761	S2 Weir	15.56		
13017	351764	S2 N Lagg	13.96		
13018	351780	S2 Weir	15.65		
13019	351782	S2 N Lagg	13.45		
13020	F-S003-973-01	SLR at Scanlon	5.63		
13021	F-S000-119-01	SLR at Forbes	5.79		
13022	F-S000-631-01	SLR at CSAH 110 near Skibo	5.96		
13023	F-S005-147-01	Cloquet River	5.72		
13024	F-S004-599-01	Floodwood River	4.43	4.50	
13025	F-S005-763-01	Whiteface River	6.14		
13026	F-S005-770-01	Swan River	4.76		
13027	F-S004-601-01	West Two Rivers	3.24		
13028	F-S005-751-01	Embarrass River	3.93		
13029	F-S005-752-01	River	6.54		
13030	F-S007-052-01	Stony Creek	6.19	7.21	
13031	F-S003-973-01 FR	SLR at Forbes	4.62		
13032	F-SB1-01	F-SB1-01	2.05		
13033	F-SB2-01	F-SB2-01	1.71		
13034	F-SB3-01	F-SB3-01	0.26		
13035	F-SB4-01	F-SB4-01	0.14		
13036	U-S003-973-01	SLR at Scanlon	4.11	4.48	
13037	U-S000-119-01	SLR at Forbes	7.32		

13038 U-S000-631-01	SLR at CSAH 110 near Skibo	8.54		
13039 U-S005-147-01	Cloquet River	4.03		
13040 U-S004-599-01	Floodwood River	4.99		
13041 U-S005-763-01	Whiteface River	7.55	7.45	
13042 U-S005-770-01	Swan River	11.41		
13043 U-S004-601-01	West Two Rivers	3.82		
13044 U-S005-751-01	Embarrass River	4.14		
13045 U-S005-752-01	River	8.07		
13046 U-S007-052-01	Stony Creek	8.42	8.32	
13047 U-S003-973-01 FR	SLR at Forbes	6.27		
13048 U-SB1-01	U-SB1-01	1.59		
13049 U-SB2-01	U-SB2-01	1.88		
13050 U-SB3-01	U-SB3-01	0.41		
13051 U-SB4-01	U-SB4-01	0.27	0.31	
13052 Trip Blank 1-1	Trip Blank 1-1	1.48		
13053 Trip Blank 1-2	Trip Blank 1-2	0.34		
13054 351793	S2 Weir	14.23		
13055 351796	S2 N Lagg	11.98		
13056 F-S000-119-02	SLR at Forbes	5.06		
13057 F-S000-631-02	SLR at CSAH 110 near Skibo	6.17		
13058 F-S003-973-02	SLR at Scanlon	4.71		
13059 F-S003-973-02 FR	SLR at Scanlon	4.70		
13060 F-S004-599-02	Floodwood River	4.27	4.18	
13061 F-S004-601-02	West Two Rivers	3.53		
13062 F-S005-147-02	Cloquet River	3.35		
13063 F-S005-751-02	Embarrass River	3.53		
13064 F-S005-752-02	Second Creek / Partridge River	5.56		
13065 F-S005-763-02	Whiteface River	5.37	5.46	
13066 F-S005-770-02	Swan River	4.17		
13067 F-S007-052-02	Stony Creek	6.32		
13068 SB1-02	F-SB1-02	0.45		
13069 SB2-02	F-SB2-02	0.28		
13070 SB3-02	F-SB3-02	0.63		
13071 SB4-02	F-SB4-02	0.30		
13072 U-S000-119-02	SLR at Forbes	5.58		
13073 U-S000-631-02	SLR at CSAH 110 near Skibo	7.46		
13074 U-S003-973-02	SLR at Scanlon	5.53		
13075 U-S003-973-02 FR	SLR at Scanlon	4.97		
13076 U-S004-599-02	Floodwood River	4.33	4.35	4.316143138
13077 U-S004-601-02	West Two Rivers	3.66	3.54	

13078	U-S005-147-02	Cloquet River		3.56	3.14	
13079	U-S005-751-02	Embarrass River		3.83	3.41	
13080	U-S005-752-02	Second Creek / Partridge River		6.07	5.74	
13081	U-S005-763-02	Whiteface River		5.93	5.96	6.030090153
13082	U-S005-770-02	Swan River		10.39		
13083	U-S007-052-02	Stony Creek		7.59		
13084	U-	U-SB1-02		0.50		
13085	U-	U-SB2-02		0.27		
13086	U-	U-SB3-02		0.46		
13087	U-	U-SB4-02		0.36		
13088	Trip Blank 2-1	Trip Blank 2-1		0.41		
13089	Trip Blank 2-2	Trip Blank 2-2		0.22		
13090	351806	S2 Weir		11.74		
13091	351808	S2 N Lagg		9.21		
13092	F-S000-119-03	SLR at Forbes		4.08	4.59	
13093	F-S000-631-03	SLR at CSAH 110 near Skibo		6.23		
13094	F-S003-973-03	SLR at Scanlon		4.57		
13095	F-S003-973-03 FR	SLR at Scanlon		4.28		
13096	F-S004-599-03	Floodwood River		3.61		
13097	F-S004-601-03	West Two Rivers		1.79	1.78	
13098	F-S005-147-03	Cloquet River		2.66		
13099	F-S005-751-03	Embarrass River		3.22		
13100	F-S005-752-03	Second Creek / Partridge River		5.15		
13101	F-S005-763-03	Whiteface River		4.78		
13102	F-S005-770-03	Swan River		3.43	3.58	
13103	F-S007-052-03	Stony Creek		6.16		
13104	F-SB1-03		0	0.50		
13105	F-SB2-03		0	0.50		
13106	F-SB3-03		0	0.44		
13107	F-SB4-03		0	0.83	0.92	
13108	U-S000-119-03	SLR at Forbes		5.13		
13109	U-S000-631-03	SLR at CSAH 110 near Skibo		7.45		
13110	U-S003-973-03	SLR at Scanlon		4.36		
13111	U-S003-973-03 FR	SLR at Scanlon		4.09		
13112	U-S004-599-03	Floodwood River		3.73	4.00	
13113	U-S004-601-03	West Two Rivers		2.19		
13114	U-S005-147-03	Cloquet River		3.08		
13115	U-S005-751-03	Embarrass River		3.79		

13116	U-S005-752-03	Second Creek / Partridge River		4.73	
13117	U-S005-763-03	Whiteface River		4.72	4.81
13118	U-S005-770-03	Swan River		5.40	
13119	U-S007-052-03	Stony Creek		4.19	
13120	U-SB1-03		0	0.29	
13121	U-SB2-03		0	0.33	
13122	U-SB3-03		0	0.35	0.36
13123	U-SB4-03		0	0.68	
13124	Trip Blank 3-1		0	0.41	
13125	Trip Blank 3-2		0	0.25	
13126	0		0		
13127	0		0	0.22	0.20
13128	0	S2 Weir		11.64	
13129	0	S2 N Lagg		10.89	
13130	F-S000-119-04	SLR at Forbes		5.54	
13131	F-S000-631-04	SLR at CSAH 110 near Skibo		7.19	
13132	F-S003-973-04	SLR at Scanlon		4.66	
13133	F-S003-973-04 FR	SLR at Scanlon		4.63	
13134	F-S004-599-04	Floodwood River		4.35	4.31
13135	F-S004-601-04	West Two Rivers		2.42	
13136	F-S005-147-04	Cloquet River		3.36	
13137	F-S005-751-04	Embarrass River		3.16	
13138	F-S005-752-04	Second Creek / Partridge River		5.24	
13139	F-S005-763-04	Whiteface River		5.26	5.59
13140	F-S005-770-04	Swan River		4.44	
13141	F-S007-052-04	Stony Creek		5.89	
13142	F-SB1-04		0	0.38	
13143	F-SB2-04		0	0.14	
13144	F-SB3-04		0	0.03	
13145	U-S000-119-04	SLR at Forbes		4.53	7.18
13146	U-S000-631-04	SLR at CSAH 110 near Skibo		6.34	
13147	U-S003-973-04	SLR at Scanlon		6.12	
13148	U-S003-973-04 FR	SLR at Scanlon		6.03	
13149	U-S004-599-04	Floodwood River		4.74	
13150	U-S004-601-04	West Two Rivers		3.15	
13151	U-S005-147-04	Cloquet River		3.20	
13152	U-S005-751-04	Embarrass River		3.55	
13153	U-S005-752-04	Second Creek / Partridge River		5.61	

13154	U-S005-763-04	Whiteface River		6.58	
13155	U-S005-770-04	Swan River		7.17	
13156	U-S007-052-04	Stony Creek		6.83	
13157	U-SB1-04	SB1-04		0.19	
13158	U-SB2-04	SB2-04		0.15	
13159	U-SB3-04	SB3-04		-0.02	
13160	Trip Blank 4-1	Trip Blank 4-1		0.30	
13161	Trip Blank 4-2	Trip Blank 4-2		0.02	
13162	Trip Blank 4-3	Trip Blank 4-3		-0.03	
13163	0	S2 Weir		11.23	
13164	0	S2 N Lagg			
13165	0	S2 N Lagg			
13166	F-S000-119-05	SLR at Forbes		7.02	
13167	F-S000-631-05	SLR at CSAH 110 near Skibo		7.94	
13168	F-S003-973-05	SLR at Scanlon		4.67	
13169	F-S003-973-05 FR	SLR at Scanlon		4.84	
13170	F-S004-599-05	Floodwood River		3.59	3.66
13171	F-S004-601-05	West Two Rivers		3.03	
13172	F-S005-147-05	Cloquet River		3.24	
13173	F-S005-751-05	Embarrass River		3.13	
13174	F-S005-752-05	Second Creek / Partridge River		20.94	5.88
13175	F-S005-763-05	Whiteface River		5.94	
13176	F-S005-770-05	Swan River		4.49	
13177	F-S007-052-05	Stony Creek		6.28	
13178	F-SB1-05		0	0.45	
13179	F-SB2-05		0	0.22	
13180	F-SB3-05		0	0.53	
13181	U-S000-119-05	SLR at Forbes		9.26	
13182	U-S000-631-05	SLR at CSAH 110 near Skibo		9.07	
13183	U-S003-973-05	SLR at Scanlon		6.26	
13184	U-S003-973-05 FR	SLR at Scanlon		6.88	
13185	U-S004-599-05	Floodwood River		4.17	
13186	U-S004-601-05	West Two Rivers		3.84	
13187	U-S005-147-05	Cloquet River		3.90	
13188	U-S005-751-05	Embarrass River		3.86	
13189	U-S005-752-05	Second Creek / Partridge River		12.76	
13190	U-S005-763-05	Whiteface River		7.50	
13191	U-S005-770-05	Swan River		8.87	
13192	U-S007-052-05	Stony Creek		6.96	6.94

13193	U-SB1-05	SB1-05	0.54		
13194	U-SB2-05	SB2-05	0.23		
13195	U-SB3-05	SB3-05	0.21		
13196	Trip Blank 5-1	Trip Blank 5-1	0.25		
13197	Trip Blank 5-2	Trip Blank 5-2	0.37		
13198	F-S000-119-06	SLR at Forbes	6.13		
13199	F-S000-631-06	SLR at CSAH 110 near Skibo	6.92		
13200	F-S003-973-06	SLR at Scanlon	4.79		
13201	F-S003-973-06 FR	SLR at Scanlon	4.79		
13202	F-S004-599-06	Floodwood River	2.75	2.70	
13203	F-S004-601-06	West Two Rivers	1.40		
13204	F-S005-147-06	Cloquet River	3.43		
13205	F-S005-751-06	Embarrass River	2.83		
13206	F-S005-752-06	Second Creek / Partridge River	8.28		
13207	F-S005-763-06	Whiteface River	5.04	10.39	6.26
13208	F-S005-770-06	Swan River	3.11		
13209	F-S007-052-06	Stony Creek	3.00		
13210	F-SB1-06	SB1-06	0.07		
13211	F-SB2-06	SB2-06	0.21		
13212	F-SB3-06	SB3-06	0.28		
13213	U-S000-119-06	SLR at Forbes	6.73		
13214	U-S000-631-06	SLR at CSAH 110 near Skibo	7.73		
13215	U-S003-973-06	SLR at Scanlon	5.03	5.13	
13216	U-S003-973-06 FR	SLR at Scanlon	5.00		
13217	U-S004-599-06	Floodwood River	3.03		
13218	U-S004-601-06	West Two Rivers	1.29		
13219	U-S005-147-06	Cloquet River	0.14	4.05	
13220	U-S005-751-06	Embarrass River	0.07	3.09	3.40
13221	U-S005-752-06	River	9.02		
13222	U-S005-763-06	Whiteface River	5.83		
13223	U-S005-770-06	Swan River	5.19		
13224	U-S007-052-06	Stony Creek	4.11		
13225	U-SB1-06	SB1-06	0.78		
13226	U-SB2-06	SB2-06	0.41		
13227	U-SB3-06	SB3-06	0.58		
13228	Trip Blank 6-1	Trip Blank 6-1	1.00		
13229	Trip Blank 6-2	Trip Blank 6-2	0.31		
13230	Trip Blank 6-3	Trip Blank 6-3	0.17		
13231	0	S2 Weir	15.28		
13232	0	S2 N Lagg	16.37		

13233	F-S000-119-06	SLR at Forbes	6.09	
13234	F-S000-631-06	SLR at CSAH 110 near Skibo	7.32	
13235	F-S003-973-06	SLR at Scanlon	4.75	
13236	F-S003-973-06 FR	SLR at Scanlon	4.61	
13237	F-S004-599-06	Floodwood River	3.52	3.57
13238	F-S004-601-06	West Two Rivers	2.85	
13239	F-S005-147-06	Cloquet River	3.63	
13240	F-S005-751-06	Embarrass River	3.15	
13241	F-S005-752-06	River	8.91	
13242	F-S005-763-06	Whiteface River	6.84	6.62
13243	F-S005-770-06	Swan River	4.95	
13244	F-S007-052-06	East Two Rivers	0.08	
13245	F-SB1-06	SB1-06	0.59	
13246	F-SB2-06	SB2-06	0.07	
13247	F-SB3-06	SB3-06	0.25	
13248	U-S000-119-06	SLR at Forbes	6.07	6.02
13249	U-S000-631-06	SLR at CSAH 110 near Skibo	9.59	
13250	U-S003-973-06	SLR at Scanlon	4.51	
13251	U-S003-973-06 FR	SLR at Scanlon	4.71	
13252	U-S004-599-06	Floodwood River	3.78	
13253	U-S004-601-06	West Two Rivers	3.16	3.54
13254	U-S005-147-06	Cloquet River	4.28	
13255	U-S005-751-06	Embarrass River	3.21	
13256	U-S005-752-06	River	9.66	
13257	U-S005-763-06	Whiteface River	7.89	
13258	U-S005-770-06	Swan River	8.73	8.83
13259	U-S007-052-06	East Two Rivers	3.92	
13260	U-SB1-06	SB1-06	0.55	
13261	U-SB2-06	SB2-06	0.50	
13262	U-SB3-06	SB3-06	0.25	
13263	Trip Blank 6-1	Trip Blank 6-1	0.64	
13264	Trip Blank 6-2	Trip Blank 6-2	0.29	
13265	Trip Blank 6-3	Trip Blank 6-3	0.40	
13266	0	S2 Weir	14.89	
13267	0	S2 N Lagg	16.07	
13268	F-S000-119-06	SLR at Forbes	5.75	
13269	F-S000-631-06	SLR at CSAH 110 near Skibo	6.89	
13270	F-S003-973-06	SLR at Scanlon	4.80	
13271	F-S003-973-06 FR	SLR at Scanlon	4.12	

13272	F-S004-599-06	Floodwood River	3.05	3.07	
13273	F-S004-601-06	West Two Rivers	1.65		
13274	F-S005-147-06	Cloquet River	3.59		
13275	F-S005-751-06	Embarrass River	2.40		
13276	F-S005-752-06	River	7.91		
13277	F-S005-763-06	Whiteface River	5.92	5.69	
13278	F-S005-770-06	Swan River	3.72		
13279	F-S007-052-06	East Two Rivers	1.63		
13280	F-SB1-08	SB1-06	0.30		
13281	F-SB2-08	SB2-06	0.19		
13282	U-S000-119-06	SLR at Forbes	5.93	5.63	
13283	U-S000-631-06	SLR at CSAH 110 near Skibo	6.92		
13284	U-S003-973-06	SLR at Scanlon	5.12		
13285	U-S003-973-06 FR	SLR at Scanlon	4.88		
13286	U-S004-599-06	Floodwood River	3.01		
13287	U-S004-601-06	West Two Rivers	1.59	1.61	
13288	U-S005-147-06	Cloquet River	3.90		3.90
13289	U-S005-751-06	Embarrass River	2.69		
13290	U-S005-752-06	River	8.26		
13291	U-S005-763-06	Whiteface River	6.43		
13292	U-S005-770-06	Swan River	5.38		
13293	U-S007-052-06	East Two Rivers	2.81	2.71	
13294	U-SB1-08	SB1-08	0.26		
13295	U-SB2-08	SB2-08	0.23		
13296	Trip Blank 8-1	Trip Blank 8-1	0.31		
13297	Trip Blank 8-2	Trip Blank 8-2	0.14		
13298	0	S2 Weir	10.49		
13299	0	S2 N Lagg	10.60		

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November 12, 2014

Miranda Nichols, Impaired Waters List Coordinator (Miranda.Nichols@state.mn.us)
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155

Dear Ms. Nichols:

WaterLegacy has previously provided the Minnesota Pollution Control Agency (MPCA) with comments on the 2014 Draft Impaired Waters List. We also informed the United States Environmental Protection Agency (EPA) of our concerns that the 2014 Draft Impaired Waters List did not include waters impaired for wild rice due to high sulfate levels and did not include certain waters impaired due to high levels of mercury. Although we appreciate the MPCA's identification of many other impaired waters, we believe that addressing these gaps is overdue.

<u>As the end of 2014 approaches, WaterLegacy respectfully requests a written update on the MPCA's progress in listing wild rice sulfate impaired waters and completing the listing of mercury impaired waters for the 2014 Impaired Waters List</u>.

With this letter requesting an update, we've attached copies of WaterLegacy's February 10, 2014 comments to the MPCA and our May 28, 2014 letter to the EPA pertaining to Minnesota's 2014 Draft Impaired Waters List, along with all pertinent exhibits. As explained in these documents, WaterLegacy asks the MPCA to immediately list at least the water bodies identified in the MPCA's August 2013 spreadsheet (Exhibit C) as impaired for wild rice. WaterLegacy also asks that the Embarrass River, Partridge River and Colby Lake be identified as mercury impaired waters as explained in our May 28, 2014 letter and supported with spreadsheet data from the Minnesota Department of Natural Resources Mine Water Research Advisory Panel (Exhibit D).

We look forward to an update. Please let us know when the MPCA expects that the 2014 Draft Impaired Waters List for Minnesota will be completed and when the public will be able to review and comment upon this revised listing. Thank you very much for your response.

Sincerely yours,

Paula G Maccabee

Paula Goodman Maccabee
Advocacy Director/Counsel for WaterLegacy

Enclosures (WaterLegacy Comment Letters and Exhibits A through D)

cc: Tinka Hyde, EPA Region 5 Water Division Director (Hyde.Tinka@EPA.gov)
Paul Proto, EPA Region 5 Environmental Scientist (Proto.Paul@EPA.gov)

Minnesota Pollution Control Agency

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | 651-282-5332 TTY | www.pca.state.mn.us | Equal Opportunity Employer

September 17, 2012

RE: The 2012 Total Maximum Daily Load List 30-day Public Notice Period Minnesota Pollution Control Agency Response to Comments

Dear Commenters:

The Agency received 39 comments during the 30-day public notice period from January 23, 2012, to February 27, 2012. We appreciate the interest the draft 2012 Total Maximum Daily Load (TMDL) List has received. These comments have previously been added to the Minnesota Pollution Control Agency (MPCA) TMDL List webpage at the following hot link: http://www.pca.state.mn.us/enzq94b, as a PDF document.

The topics raised included wild rice, mining, sulfate concentrations in rivers and the new listing for chlorpyrifos. Two Contested Case Hearing Requests were also received. Enclosed are the Agency's responses to the comments received. This response document will be added to the MPCA TMDL List webpage at the hot link included above.

If you have any questions, please contact Howard Markus at 1-800-657-3864 or 651-757-2551. He may also be reached by e-mail at howard.markus@state.mn.us

Sincerely,

John Linc Stine
Commissioner

JLS/HM:jab

Enclosure

Minnesota Pollution Control Agency
Responses to the draft 2012 Total Maximum Daily Load List 30-Day Public Notice Comments
September 7, 2012

The draft 2012 Total Maximum Daily Load (TMDL) List 30-day public comment period began on January 23, 2012, and ended on February 27, 2012. Listed below are the comments received and Minnesota Pollution Control Agency (MPCA) responses. The set of complete comments is contained in a pdf file at the following location: http://www.pca.state.mn.us/enzq94b.

A. Commenters object to the fact that the MPCA has not listed any wild rice waters as impaired for excess sulfate. (Comments 2, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20).

Prior to assessing a waterbody for potential non-attainment of a water quality standard (indicative of the impairment of a beneficial use), the MPCA must first develop a method for analyzing available data and comparing that analysis against the standard in question to determine if the standard is being met in the waterbody. This method development must consider minimum data requirements, analysis procedures, and the threshold that demarcates attainment and non-attainment of the standard.

With a state as water-rich as Minnesota the MPCA is faced with the need to prioritize our efforts to develop assessment methods and subsequently assess waters for water quality standards. The MPCA's first priority for assessing Minnesota's waterbodies is to determine whether they meet the swimmable and fishable goals of the federal Clean Water Act (CWA) (CWA Section 101(a)(2)). Typically, when the MPCA is assessing waters to see if they meet the swimmable and fishable goals, the MPCA focuses on Class 2 water quality standards that protect the beneficial uses of aquatic life, aquatic recreation (swimming) and aquatic consumption (usually consumption of fish by humans and wildlife).

The 10 mg/liter sulfate standard that applies to "water used for production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels" is a Class 4A standard (Minn. R. 7050.0224, subp. 2), and the MPCA has not yet developed an assessment methodology for analyzing ambient sulfate data and comparing it to that standard. This method development is complicated by two key factors:

1. Where the standard applies (the MPCA is currently identifying "water used for production of wild rice" on a case-by-case basis as further described below), and
2. When the standard applies (the MPCA is currently working through the determination of "the period when the rice may be susceptible to damage from high sulfate levels" on a case-by-case basis in permitting decisions).

Given these questions/information gaps, the MPCA was not in a position to assess sulfate impairment for the 2012 303(d) List. However, the MPCA is very much aware of the concern about sulfate and wild rice, and the MPCA plans to develop a wild rice sulfate standard assessment method to use in the development of the draft 2014 303(d) List and will provide opportunities for public input into that method development.

The MPCA recognizes that 24 waters are specifically identified as "wild rice waters" in Minn. R. 7050.0470, subpart 1, and that a number of reports and information sources identify waters that support wild rice. However, those reports and information sources that identify "wild rice waters" or "wild-rice supporting waters" do not identify "wild rice *production* waters," which are the waters protected by the wild rice sulfate standard in Minn. R. 7050.0224, subp. 2. A comprehensive inventory of wild rice production waters does not exist, and therefore, the identification of such waters is currently a case-by-case determination.

To make this determination, the MPCA first consults the list of designated wild rice waters in Minn. R. 7050.0470, subp. 1 then looks at other available information about wild rice presence and extent in the water(s) in question to make the case-by-case determination. This decision-making process is currently initiated by a permitting proposal or environmental review. Where the MPCA does not have any existing information about wild rice, but the MPCA suspects it might be present, the MPCA currently requires the proposer to survey the downstream waters to identify the presence and extent of wild rice, so that the MPCA can determine if there are any wild rice production waters that may be affected by the discharge.

The MPCA has not yet determined how to apply this case-by-case decision-making process about where the standard applies to 303(d) assessment activities. As noted above, the MPCA intends to develop a wild rice sulfate standard assessment method to use in the development of the draft 2014 303(d) List. This timing will allow us to benefit from an effort currently underway to further clarify the definition of "water used for production of wild rice" in Minn. R. 7050.0224, subp. 2, and to take into account learning from the Wild Rice Standards Study currently underway (please see http://www.pca.state.mn.us/ktqhd17 for more information about the wild rice sulfate standard and Study).

In the meantime, the MPCA is taking a conservative approach to permitting with regards to sulfate and wild rice. Discharges upstream of known stands of wild rice are being evaluated for the potential to cause or contribute to an exceedance of the sulfate standard. The MPCA is evaluating all available effluent and ambient sulfate data and wild rice information prior to issuing permits and considering potential impacts to assimilative capacity when establishing limits and other permit conditions. The MPCA is also collecting and storing ambient sulfate data for lakes and streams, and beginning to compile GIS layer(s) of locations of potential waters used for production of wild rice for use in assessment once the methodology has been developed.

B. Commenters are concerned with the impacts from mining. (Comments 1, 3, 4, 5, 18)

The MPCA takes its' responsibility to implement the Clean Water Act National Pollutant Discharge Elimination System (NPDES) permit program in Minnesota very seriously. The concerns raised are all addressed during the process of issuing/denying and monitoring compliance with individual NPDES permits for mining facilities. The MPCA encourages participation in the public comment process for permit applications. Public notices of proposed permits are routinely posted on the MPCA's website at http://www.pca.state.mn.us/iryp3c9, and interested parties can sign up at this site to receive e-mail alerts of public notices and other MPCA matters.

C. Commenters object to Seven Mile Creek being listed for excess chlorpyrifos. (Comments 21, 22, 23, 24, 25, 26, 27)

The proposed listing is being made only after a great deal of careful consideration and in full accord with Minnesota rules and guidance governing impairment decisions. Numeric water quality standards for

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUL 25 2013

REPLY TO THE ATTENTION OF:

WW-16J

John Linc Stine, Commissioner
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Dear Mr. Stine:

The U.S. Environmental Protection Agency conducted a complete review of Minnesota's 2012 Section 303(d) list and supporting documentation and information. Based on this review, EPA determined that Minnesota's 2012 list of water quality limited segments still requiring Total Maximum Daily Load calculations meets the requirements of Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations. Therefore, EPA approves Minnesota's 2012 Section 303(d) list which identifies the waters and associated pollutants along with the State's priority rankings for these waters and pollutants. The statutory and regulatory requirements, and EPA's review of Minnesota's compliance with each requirement, are described in the enclosed decision document.

EPA's approval of Minnesota's Section 303(d) list extends to all water bodies on the list with the exception of those waters that are within Indian Country, as defined in 18 U.S.C. § 1151. EPA is taking no action to approve or disapprove the State's list with respect to those waters at this time. EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under CWA Section 303(d) for those waters.

We appreciate your hard work in this area and your submittal of the list as required. If you have any questions, please contact Mr. Peter Swenson, Chief of the Watersheds and Wetlands Branch, at 312-886-0236.

Sincerely,

Tinka G. Hyde

Tinka G. Hyde
Director, Water Division

Enclosure

cc: Katrina Kessler, MPCA
Miranda Nichols, MPCA
Jeff Risberg, MPCA

bcc: Sabrina Argentieri, EPA R5, ORC
Stephen Mendoza, EPA R5, ORC

DECISION DOCUMENT FOR THE APPROVAL OF MINNESOTA'S 2012 SECTION 303(d) LIST

The U.S. Environmental Protection Agency (EPA) has conducted a complete review of Minnesota's 2012 Section 303(d) list and supporting documentation and information. Based upon this review, EPA has determined that Minnesota's list of water quality limited segments (WQLS) still requiring total maximum daily loads (TMDLs) meets the requirements of Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations. Therefore, EPA hereby approves Minnesota's 2012 303(d) list. The statutory and regulatory requirements, and EPA's review of Minnesota's compliance with each requirement, are described in detail below.

I. Statutory and Regulatory Background

A. Identification of Water Quality Limited Segments for Inclusion on the Section 303(d) List

Section 303(d)(1) of the CWA directs States to identify those waters within their jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The Section 303(d) listing requirement applies to waters impaired by point sources and/or nonpoint sources, pursuant to EPA's long-standing interpretation of Section 303(d).

EPA regulations provide that States do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the CWA, (2) more stringent effluent limitations required by State or local authority, and (3) other pollution control requirements required by State, local, or federal authority.[1]

B. Consideration of Existing and Readily Available Water Quality-Related Data and Information

In developing Section 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses, or identified as threatened in the State's most recent Section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 nonpoint assessment submitted to EPA.[2] In addition to these minimum categories, States are required to consider any other data and information that is existing and readily available. EPA's 1991 *Guidance for Water Quality-Based Decisions* describes categories of water quality-related data and information that may be existing and readily available.[3] While States are required to evaluate all existing and readily available water quality-related data and information, States

[1] 40 Code of Federal Regulations (CFR) §130.7(b)(1).
[2] 40 CFR §130.7(b)(5).
[3] Guidance for Water Quality-Based Decisions: The TMDL Process, U.S. EPA Office of Water, 1991, Appendix C (hereafter, EPA's 1991 Guidance).

may decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to requiring States to assemble and evaluate all existing and readily available water quality-related data and information, EPA regulations at 40 CFR §130.7(b)(6) require States to include, as part of their submissions to EPA, documentation to support decisions to rely or not rely on particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) any other reasonable information requested by the Region.[4]

C. Priority Ranking

EPA regulations codify and interpret the requirement in Section 303(d)(1)(A) of the CWA that States establish a priority ranking for listed waters. The regulations at 40 CFR §130.7(b)(4) require States to prioritize waters on their Section 303(d) lists for TMDL development, and also to identify those WQLS targeted for TMDL development in the next two years.[5] In prioritizing and targeting waters, States must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters.[6] As long as these factors are taken into account, the CWA provides that States establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and State or national policies and priorities.[7]

II. Analysis of Minnesota's Submission

On October 1, 2012, Minnesota submitted to EPA the State's final draft TMDL list, plus supporting documentation. The submittal received by EPA included the following:

- Submittal letter, dated September 17, 2012
- Final Draft MPCA 2012 303(d) List cover page, dated September 17, 2012
- Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List 2012 Assessment Cycle (December 2011)
- Public participation documentation
    - 2012 TMDL List Response Summary
    - Public comments received during public comment period
    - MPCA responses to public comments
    - Documentation of public meeting announcements (newspaper articles, etc.)
    - Attendance sheets from public meetings
    - Documentation of public participants in MPCA Professional Judgment Groups (PJG)
- Contested case documentation on 2012 chlorpyrifos listing

[4] 40 CFR §130.7(b)(6).
[5] 40 CFR §130.7(b)(4).
[6] CWA Section 303(d)(1)(A).
[7] 57 FR 33040, 33045 (July 24, 1992); see also EPA's 1991 Guidance.

- Minn. Dept. of Agriculture's (MDA) response to public comments made on the 2012 chlorpyrifos listing
- Three (3) copies of the final draft TMDL list, September 17, 2012 (printed spreadsheet)
- Inventory of all impaired waters, September 17, 2012 (printed spreadsheet)
- 2012 Mercury TMDLs within Appendix A, September 17, 2012 (printed spreadsheet)
- 2012 Mercury TMDL additions to Appendix A, September 17, 2012 (printed spreadsheet)

Within this Decision Document, the State's submittals received by EPA on October 1, 2012 and other supporting information are collectively referred to as the "2012 Submittal." All of this information is compiled in EPA's record for this decision.

EPA has reviewed Minnesota's 2012 submittal, and has concluded that the State developed its Section 303(d) list in compliance with Section 303(d) of the CWA and 40 CFR §130.7. EPA's review is based on its analysis of whether the State reasonably considered existing and readily available water quality-related data and information, and reasonably identified water quality-limited segments. EPA has reviewed the State's description of data, information considered, and the Minnesota Pollution Control Agency's (MPCA) 2012 Methodology[8] for identifying waters. EPA concludes that Minnesota properly assembled and evaluated existing and readily available data and information, including data and information relating to categories of waters specified at 40 CFR §130.7(b)(5). EPA also concludes that Minnesota provided an acceptable rationale for not relying on particular existing and readily available water quality-related data and information as a basis for listing waters on the 303(d) list.

EPA has also determined that the State properly listed waters with nonpoint sources causing or expected to cause impairment, consistent with Section 303(d) of the CWA and EPA guidance. Section 303(d) lists are to include all WQLS still needing TMDLs, regardless of whether the source of the impairment is a point source and/or nonpoint source. EPA's long-standing interpretation is that Section 303(d) applies to waters impacted by point source and/or nonpoint sources. In *Pronsolino v. Marcus* [9], the 9th Circuit for the Northern District of California held that Section 303(d) of the CWA authorizes EPA to identify and establish TMDLs for waters impaired by nonpoint sources.

EPA's approval of Minnesota's 2012 303(d) list extends to water bodies as identified in Table A-1 (Attachment #1) of this Decision Document with the exception of those waters that are within Indian Country. EPA is taking no action to approve or disapprove the State's list with respect to those waters that are within Indian Country. EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under Section 303(d) for those waters.

A. Identification of Water Quality-Limited Segments for Inclusion on Section 303(d) List

1. Minnesota's 2012 303(d) list

Minnesota uses an Integrated Report to fulfill the reporting requirements of Sections 305(b) and 303(d) of the CWA. Since the 2002 listing cycle, EPA has encouraged states to integrate their 305(b) report and their 303(d) list into one submittal, the Integrated Report (IR). EPA has recommended five beneficial use attainment reporting categories where the various categories represent varying levels of use

[8] *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List, 2012 Assessment Cycle* (December 2011) (hereafter, 2012 Methodology).
[9] EPA Impaired Waters and Total Maximum Daily Loads http://water.epa.gov/lawsregs/lawsguidance/cwa/tmdl/pronsolino.cfm

attainment. Minnesota has chosen to use the recommended five categories with the addition of several subcategories. Minnesota's 2012 integrated report includes the following beneficial use attainment categories (Table 1 of this Decision Document).[10]

Table 1: MPCA's Beneficial Use Attainment Reporting Categories

Integrated Report Category	Description
1	All designated uses are fully assessed and met, and no use is threatened.
2	Some uses or parameters are met; but insufficient data to determine if remaining uses or parameters are met.
3A	No data or information to determine if any use is attained.
3B	Data are available for a review and generally indicate non-support, but insufficient data and information to determine TMDL impairment. (Example: single lake data point showing non-support)
3C	Data available that currently has no assessment tools to allow its use in assessing. (Example: data with only eco-region expectation standards)
3D	Data are available for a review and generally indicated full support, but insufficient data and information to assess for Category 1 or 2.
3E	Data are available for a review, but insufficient data and information to determine full support or TMDL impairment. (Example: lake data just below the threshold showing non-support)
4A	Impaired or threatened but all needed TMDL plans have been completed.
4B	Impaired or threatened but doesn't require a TMDL plan because it is expected to attain standards within a reasonable period of time.
4C	Impaired or threatened but doesn't require a TMDL plan because impairment not caused by a pollutant.
4D	Impaired or threatened but doesn't require a TMDL plan because the impairment is due to natural conditions with only insignificant anthropogenic influence. To be considered "insignificant", the elimination of the anthropogenic influence would not lead to the attainment of water quality standards and it would not be included in formal pollution reduction goal setting activities. A reach-specific water quality standard based on local natural conditions has yet to be determined. Upon determination, the assessment unit will be considered non-impaired for the natural conditions and re-categorized to an appropriate category.
4E	Impaired or threatened but existing data strongly suggests a TMDL plan is not required because impairment is solely a result of natural sources; a final determination of Category 4D will be made in the next assessment cycle pending confirmation from additional information (i.e. water quality or land use).
5A	Impaired or threatened by multiple pollutants and no TMDL plans approved.
5B	Impaired by multiple pollutants and either some TMDL plans are approved but not all or at least one impairment is the result of natural conditions.
5C	Impaired or threatened by one pollutant.

The general process used by Minnesota to develop the 2012 Integrated Report starts with the collection and assessment of readily available data and information. Following guidelines established in MPCA's 2012 Methodology, an assessment of use support for individual water body units is made.

The water body unit used for river system assessments is the river reach. A river reach typically extends from one significant tributary river to another or from the headwaters to the first significant tributary. River reaches are typically less than 20 miles in length. A river reach may be further divided into two or more assessment reaches when there is a change in use classification or when there is a significant morphological feature. Minnesota uses the United States Geological Survey (USGS) eight digit

[10] 2012 Methodology, page 47.

hydrologic unit code (HUC) (ex. 07020012) plus a three digit reach code (ex. 505) to name river reach segments (ex. 07020012-505). River reach segment numbers are also referred to as 'River identification numbers' (River ID#).

MPCA relies on the *Protected Waters Inventory*, which is assembled by the Minnesota Department of Natural Resources (MDNR), to provide identification codes for lakes and wetlands within the state. MDNR uses a unique eight digit identification number to identify lakes and wetlands. The eight digit number consists of a two digit prefix, which represents the county within Minnesota, followed by a four digit number, which identifies the lake or wetland, followed by a two digit suffix which represents either the whole lake (as '-00') or represents a specific bay of the lake (ex. -01, -02, etc.). The entire eight digit identifier is something similar to the following (ex. 82-0020-01).[11] Throughout the remainder of this Decision Document the term 'assessment unit' is used generally to refer to any river segment identified with a River ID# or a lake segment identified with a Lake/Wetland ID# on Minnesota's 2012 303(d) list.

Once an assessment has been completed, the water body is placed into one of the five categories described in Table 1 of this Decision Document. Waters within categories 4 and 5 represent the inventory of impaired waters in Minnesota. Category 5 waters represent impaired waters requiring TMDLs, i.e., Minnesota's 303(d) list. EPA is approving the waters identified in Table A-1 of this decision as Minnesota's 2012 303(d) list.

2. Methodology

EPA's regulations at 40 CFR §130.7(b)(6) require that states provide documentation to support their decisions to list or not list waters including a description of the methodology used to develop the list. MPCA developed its methodology for the 2002 listing cycle and has subsequently modified the methodology with each listing cycle. Minnesota's 2012 submittal included MPCA's 2012 Methodology (December 2011). MPCA's 2012 Methodology defines the data and information requirements needed to assess and determine if a water is meeting its designated beneficial use(s). The 2012 Methodology also establishes thresholds that indicate impairment for various categories of pollutants. As with prior versions of its methodology, the State made the 2012 Methodology available to the public through MPCA's website beginning on or about January 23, 2012.

Minnesota rules identify seven beneficial uses for which surface waters in Minnesota are protected. These beneficial uses are assigned the following use class numbers:

Class 1: Drinking water
Class 2: Aquatic life and recreation
- Class 2A: Cold water fisheries, trout waters
- Class 2B: Cool and warm water fisheries (not protected for drinking water use)
- Class 2Bd: Cool and warm water fisheries (protected for drinking water use)
- Class 2C: Indigenous fish and associated aquatic community
- Class 2D: Wetlands

Class 3: Industrial use and cooling
Class 4: Agricultural use
Class 5: Aesthetics and navigation
Class 6: Other uses

[11] 2012 Methodology, page 8.

Class 7: Limited resource value waters

All surface waters in Minnesota are considered either a Class 2 or Class 7 designated water.[12] Unless classified as a Class 7 water, surface waters in Minnesota are protected for aquatic life and recreation (Class 2 designated water). The State of Minnesota defines protection of aquatic life and recreation as, *"the maintenance of healthy, diverse, and successfully reproducing populations of aquatic organisms, including invertebrates as well as fish. Protection of recreation for all surface waters, except wetlands and limited resource value waters means the maintenance of conditions suitable for swimming and other forms of water recreation. Recreation in wetlands means boating and other forms of aquatic recreation for which they may be usable (this does not preclude swimming if that use is suitable)."*[13] Limited resource value waters (Class 7 designated water) are not fully protected for aquatic life. Class 7 designated waters have a very limited aquatic and fish community mostly due to lack of water, lack of habitat, or extensive physical alterations. Both Class 2 and 7 designated waters are also protected for Classes 3, 4, 5 and 6 designations.

Typically water quality standards applicable to Class 2 designated waters are the most stringent, therefore, Minnesota's assessments usually consider water quality standards applicable to Class 2 waters. Beneficial use supports assessed by Minnesota include;

- Aquatic Life (toxicity-based standards, conventional pollutants, biological indicators);
- Drinking Water and Aquatic Consumption (human health-based standards);
- Aquatic Consumption (wildlife-based standards);
- Aquatic Recreation (*Escherichia coli (E. coli)* bacteria, eutrophication);
- Limited Value Resource Waters (toxicity-based standards, bacteria, conventional pollutants).

Aquatic life use support assessments consider protection of the organisms that reside in the surface waters, while aquatic consumption use support assessments consider protection of the consumers of the aquatic life. Aquatic recreation use support is assessed for the protection of recreation in surface waters.[14]

Class 7 waters and Class 1 waters were first assessed during the 2010 listing cycle. These two beneficial uses are 'newer' beneficial use classes to be assessed by MPCA. Class 7 waters, MPCA designated limited resource value waters, are protected to allow secondary body contact use, to preserve groundwater for potable water supply, and to protect aesthetic qualities of the water.[15] Class 1 waters, MPCA designated drinking waters, are protected surface waters for water supply purposes. All groundwater in Minnesota is protected as a source of drinking water, however, only select surface waters are protected as a source of drinking water.[16] Before being assessed for the 2010 listing cycle, Class 1 surface waters and groundwater were outside the scope of MPCA's assessment methodologies. However, over more recent listing cycles, MPCA recognized a trend of increasing nitrate concentrations in Minnesota streams. Class 1 water bodies have been assessed since the 2010 listing cycle to measure potential exceedances of the nitrate-nitrogen Class 1 drinking water consumption standard.

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[12] MPCA Water Quality Standards, http://www.pca.state.mn.us/index.php/water/water-monitoring-and-reporting/water-quality-and-pollutants/water-quality-standards.html
[13] MPCA Water Quality Standards, http://www.pca.state.mn.us/index.php/water/water-monitoring-and-reporting/water-quality-and-pollutants/water-quality-standards.html
[14] 2012 Methodology, page 4.
[15] Class 7 Limited Resource Value Waters Fact Sheet, http://www.pca.state.mn.us/index.php/view-document.html?gid=7255
[16] MPCA Water Quality Standards, http://www.pca.state.mn.us/index.php/water/water-monitoring-and-reporting/water-quality-and-pollutants/water-quality-standards.html

3. Assessment Process

MPCA redesigned its data collection and assessment process between the 2010 and 2012 listing cycles. Up to and including the 2010 listing cycle, MPCA assessed the condition of the State's waters via water quality data which was collected under a biennial, statewide water quality assessment strategy. Since 2006-2007, MPCA has been moving away from collecting water quality data via a biennial, statewide monitoring approach, and is instead focusing its data collection efforts on the eight digit hydrologic unit code (HUC-8) scale. Each year, MPCA targets specific HUC-8 watersheds for water quality monitoring in an approach called the 'Intensive Watershed Monitoring Approach' (IWMA). Water quality monitoring of targeted HUC-8 watersheds under the IWMA was first employed by MPCA in 2007, in the Pomme de Terre River watershed and the North Fork of the Crow River watershed (Table 3 of this Decision Document).

The 2012 assessment cycle is the first assessment cycle in which MPCA is assessing water quality data which was collected via IWMA efforts. Prior to the 2012 listing cycle, MPCA was solely analyzing water quality data collected under the biennial, statewide assessment approach. Data collected during the IWMA strategy resulted in MPCA revising its internal assessment processes for analyzing water quality data. MPCA explained that the IWMA strategy generated an increased volume of water quality monitoring data which necessitated amendments to how MPCA conducted its internal review of water quality monitoring data for assessment decisions. MPCA believes that the IWMA generates a more robust water quality data set which MCPA can more efficiently use to assess water quality in surface waters of the State. Details of this approach can be found in the *2011-2012 Minnesota Water Quality Monitoring Strategy*.[17]

The incorporation of the IWMA for the 2012 listing cycle generated large amounts of water quality data which necessitated MPCA to redesign its water quality data review process. The redesigned review process combined computerized data analysis, expert analysis, and input from external partners. The goal of the revamped review process was to incorporate all of the available water quality data and information to best determine whether or not the water body was meeting its beneficial uses (ex. drinking water, aquatic life, aquatic recreation, aquatic consumption and limited use waters).

The data review and analysis process utilized to create the 2012 303(d) list expanded upon data analysis methods of the previous (2010 and earlier) assessment processes. Changes made to the data review and analysis process for the 2012 cycle included an additional round of MPCA staff review of water quality data at the parameter level and an additional round of internal comprehensive review of water quality data prior to the professional judgment group (PJG) meeting. These changes were incorporated in response to the increased volume and complexity of the water quality data collected during the IWMA. Details on the specific steps employed by MPCA in the 2012 303(d) water quality assessment process are:[18]

<u>Step 1:</u> 'Pre-assessment': Monitor and gather data information (automated data compilation)
MPCA employs an intensive watershed monitoring schedule that provides comprehensive assessments of all of the major watersheds on a 10-year cycle. This schedule provides intensive monitoring of

[17] 2011-2021 Minnesota Water Quality Monitoring Strategy, http://www.pca.state.mn.us/index.php/water/water-monitoring-and-reporting/water-quality-and-pollutants/minnesota-s-water-quality-monitoring-strategy.html
[18] 2012 Methodology, page 6-7.

streams and lakes within each major watershed to determine overall health of the water resources, to identify impaired waters, and to identify those waters in need of additional protection to prevent future impairments.

In addition to gathering water quality information, the first step also includes an initial data review process. The 'pre-assessment' data review involves a computerized/automated screening tool which analyzes water quality monitoring results collected within the HUC-8 watershed (See Table 3 of this Decision Document for a list of watersheds targeted during the 2012 listing cycle). The automated process summarizes the number of data points that exceed the criteria, the total number of data points, and the number of years of data. This step produces a parameter-specific pre-assessment (e.g., for Dissolved Oxygen, or Fish Index of Biotic Integrity (IBI), or *E. coli*). Water quality data is assessed on an individual water body basis. The pre-assessment is the first opportunity in the water quality data review process where individual water bodies' water quality monitoring data are compared against water quality criteria.

Step 2: 'Expert Review': Assessment of the water quality data by MPCA staff
Based on results of intensive watershed monitoring in Step 1, MPCA staff review data to determine whether or not water resources meet water quality standards and designated uses. Waters that do not meet water quality standards are listed as impaired waters.

The second step involves a review by MPCA staff of automated pre-assessment summary data for quality assurance (QA). This step ensures that the computerized screening captured appropriate data and the automated process properly calculated pre-assessments data.

Step 3: Desktop assessment by resource specific MPCA staff
The desktop assessment involves a review of Steps 1 and 2 pre-assessment and expert review information by resource-specific MPCA staff. For example, chemistry data will be reviewed by MPCA water quality staff and biological specific data will be reviewed MPCA biologists. Step 3 of the water quality data review process considers other climatic and hydrochemical evidence (ex. flow conditions, precipitation, land use, habitat, etc.) to ascertain the overall quality of the dataset. The overall quality is a measure of temporal and spatial completeness and whether the chemical parameter is meeting or exceeding the criterion. During Step 3, water body candidates for delisting or natural background review are identified and work begins to determine if those assessment unit identification numbers (AUIDs) meet the criteria to be removed from the impaired waters List (i.e., 303(d) list).

Step 4: Watershed Assessment Team review of water quality data
The fourth step incorporates a joint internal meeting of MPCA staff involved in the review of water quality data in Step 1 through Step 3, the regional watershed project manager and stressor identification staff for specific HUC-8 watersheds. This grouping of people makes up the Watershed Assessment Team (WAT). The joint internal meeting allows the WAT to review comments and parameter-level evaluations from the desktop assessment and any watershed specific supplemental information to reach an overall use-support decision. Delisting and natural background candidates may also be identified at this time.

Step 5: Professional Judgment Group review of water quality data
The fifth step includes a joint meeting between the WAT and external parties (ex. local data collectors, local government units, etc.). This joint meeting is referred to as the Professional Judgment Group (PJG). The MPCA regional watershed project manager is responsible for inviting external parties to the PJG discussions.[19]

Prior to the PJG meeting, the results of the WAT meeting are distributed to all invitees, including parameter-level evaluations, overall use-support recommendations, and all other comments made by reviewers. Invitees are asked to identify AUIDs they wish to discuss; an agenda is developed based on these submissions. The agenda of the PJG meeting is to review the water quality data review process, to hold a general discussion of the watershed and major subwatersheds, and to review requested AUIDs, delisting and natural background candidates. The determinations made within the PJG meeting are the final use-support determinations. Additionally, the PJG may consider the magnitude, duration and frequency of exceedances, timing of exceedances, natural occurring conditions that may affect pollutant concentrations and toxicity, weather and flow conditions, and changes in the watershed that may have changed water quality.

The analyses and recommendations for each AUID are documented in a transparency database. The transparency database is archived following the completion of the assessments. Throughout the annual assessment process, care is taken to maintain consistency among the HUC-8 assessments and decisions. Consistency is maintained via internal training and quality control, and the assignment of individual staff to multiple HUC-8 data sets for the expert review. MPCA designates a team of scientists to oversee desktop assessments and to ensure consistency among watershed assessment discussions and decisions.[20] MPCA's goal is to ensure a robust decision is reached by the staff reviewers regarding the appropriate management actions to be pursued for each assessment unit (water body, or AUID). This decision will impact the planning and implementation phases of the watershed approach (i.e. restoration for impaired waters and protection for unimpaired waters).

MPCA reports the assessment decisions made by the PJG in *Watershed Monitoring and Assessment Reports* (on the HUC-8 scale) and the *Integrated Reports*. The Watershed Monitoring and Assessment Reports are a compilation of the results of the assessments following the determinations of the PJG. AUIDs are discussed by HUC-8 subwatersheds and overall water quality conditions, potential stressors, and protection areas are identified. These documents inform the restoration and protection strategies that are developed by MPCA.

The Integrated Report is composed of a narrative report and Assessment Database (ADB) and geospatial data. The Integrated Report summarizes the results of the water quality assessments conducted by MPCA. MPCA is responsible for uploading assessment decision information to the EPA via the ADB and also preparing a narrative report to the U.S. Congress as required by section 305(b) of the CWA. Each designated use is identified as "full support," "not support," "insufficient information," or "not assessed" as a result of the assessments. In addition, the use assessment data types are rated per the levels in the ADB.

[19] *A note should be made that the assessment for aquatic consumption (fish) at this time utilizes only the first two steps in the process.*
[20] 2012 Methodology, pages 6-7.

4. Assessment of Waters Based on Narrative and Numeric Water Quality Standards

As previously stated in this decision, Minnesota assesses aquatic life, drinking water consumption, aquatic consumption (via human health-based standards), aquatic consumption (via wildlife-based standards), aquatic recreation use, and limited value resource waters. Minnesota's 2012 Methodology sets forth the specific assessment methods used by the State when determining if these uses are attained. EPA recognizes that water quality criteria have three elements: magnitude, duration, and frequency of exceedance. Minnesota's 2012 Methodology sets forth specific information about how these three elements were considered by the State in development of Minnesota's 2012 303(d) list. EPA finds that Minnesota's use of its 2012 Methodology supports the reasonable identification of WQLS.

The following discussion briefly explains the data requirements, information considered, and impairment thresholds used in Minnesota's assessments as described in Minnesota's 2012 Methodology. The 2012 Methodology sets forth methods for assessing surface waters based on the following:

- numeric and narrative standards for the protection of aquatic life;
- numeric and narrative standards for the protection of human health (aquatic consumption and drinking water);
- numeric standards for protection of aquatic consumption (wildlife);
- numeric standards for protection of aquatic recreation; and
- numeric and narrative standards for the protection of limited resource value waters.

A key component in the assessment process employed by MPCA was the determination of whether an individual parameter within a specific water body met or exceeded the applicable water quality criteria (numeric or narrative standards). MPCA water quality data evaluation also considered the quality of the dataset, whether or not there were sufficient data to make a determination, and ultimately assigned a 'dataset quality' rating. Dataset quality was graded on a scale of 'low,' 'medium,' or 'high' quality ratings. The determinations were stored in a working database and referenced during MPCA WAT reviews and PJG meetings. Additional supporting information, such as magnitude, duration and frequency of exceedances, timing of exceedances, naturally occurring conditions that may affect pollutant concentrations and toxicity, weather and flow conditions, and changes in the watershed that may have changed water quality, were considered in the final use-support determinations.

To further assist MPCA technical staff in their parameter-level evaluations, MPCA considers a 10 percent and 25 percent exceedance frequency[21] (details within Table 2 of this Decision Document) for conventional pollutants. These thresholds were appropriate for the conventional category of pollutants for several reasons, including that none were considered 'toxic' (or bioaccumulative), and all were subject to periodic 'natural exceedances' because of natural causes.[22] An example of natural exceedances from the 2012 Methodology explained that turbidity typically increases in streams after rain events, even in relatively undisturbed parts of the State. Similarly, dissolved oxygen can drop below the standard in low gradient rivers and streams for reasons other than pollution (i.e., the AUID is located downstream of or flows through extensive wetland complexes). These potential pollutants are also natural characteristics of surface waters and aquatic organisms have adapted to cope with the

[21] EPA Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates: Supplement, Office of Water, U.S. EPA. EPA-841-B-97-002B. September 1997.
[22] 2012 Methodology, pages 10-11.

fluctuations over time.[23] MPCA considered these and other 'natural exceedances' during its review of water quality data and factored these occurrences into its review during the assessment process.

Table 2: Guidelines for Parameter-Level Evaluations of Conventional Pollutants*

Assessment	Frequency of Exceedances	Magnitude of Exceedances	Duration of Exceedances	Timing of Exceedances[1]
Water Chemistry Parameter Indicating Unimpaired or Supporting Conditions	Less than 10% exceedances of chronic standard	Exceedances generally within 10% of water quality criteria	Continuous data or extensive grab sample data set indicates no or few instances of prolonged exceedance	Exceedances only occurring during extreme events such as 100-year flood (e.g., TSS) or severe drought conditions (e.g., DO)
Water Chemistry Parameter Indicating Potential Impairment	Between 10 – 25% exceedances of chronic standard	Exceedances generally greater than 10% but less than 25% of water quality criteria	Continuous data or extensive grab sample data set indicates some instances of prolonged exceedance	Exceedances only occurring during periods in which they are most likely to occur (e.g., before 9 am, 7Q10 low flow, storm events, etc.); not counting extreme events above
Water Chemistry Parameter Indicating Potential for Severe Impairment	Greater than 25% exceedances of chronic standard	Exceedances generally greater than 25% of water quality criteria	Continuous data or extensive grab sample data set indicates chronic exceedance or many instances of prolonged exceedance	Exceedances occurring during periods (seasonal or daily cycle) in which they typically do not occur in addition to occurring in periods in which they are most likely to occur

* Most parameters will have data sets that only allow frequency and magnitude to be evaluated. When sufficient data exist (e.g., continuous monitoring or extensive grab samples) or appropriate ancillary data (e.g., flow, precipitation) are accessible, duration or timing of exceedances may also be considered in the evaluation. The parameter-level evaluation requires best professional judgment to integrate information across all applicable columns.
[1] Based on evaluation of available flow data and/or precipitation records as well as observations made by monitoring staff.

4a. Assessment of Surface Waters Based on Numeric and Narrative Standards for Protection of Aquatic Life

Assessments based on numeric standards for protection of aquatic life are considered to safeguard the aquatic community. Toxicity-based chronic numeric standards and conventional pollutant standards are calculated to preserve the aquatic community from the harmful effects of toxic substances, and the protection of human and wildlife consumers of fish and other aquatic organisms. Minnesota's 2012 Methodology establishes data requirements and thresholds for pollutants that have toxicity-based chronic numeric standards.

Two types of data are used in these toxicity-based assessments: water chemistry and biological data. In aquatic life determinations, pre-assessments consider chemistry data, biological data, and other data quality indicators.[24] Pollutants which have toxicity-based numeric standards considered in MPCA's assessments are trace metals, un-ionized ammonia, and chloride. Sections V.A.1. and V.A.2. in Minnesota's 2012 Methodology explain the applicable Class 2 numeric water quality standards, data requirements, and impairment thresholds considered in these toxicity-based numeric standard assessments. In general, for the assessment of pollutants with toxicity-based numeric standards, five data points collected within a 3-year period within the most recent 10 year period are necessary. Two or more exceedances of the chronic standard in 3 years is considered an impairment and is included on the 303(d) list.[25]

[23] 2012 Methodology, pages 10-11.
[24] 2012 Methodology, page 13.
[25] 2012 Methodology, page 15.

The State also assesses conventional pollutants with numeric standards and water quality characteristics which typically include low dissolved oxygen, pH, turbidity, temperature, and biological indicators. Sections V.B.1. and V.B.2. of the 2012 Methodology explain the applicable Class 2 numeric water quality standards, data requirements, and impairment thresholds considered in these assessments. Sections V.B.1 and V.B.2 also describe characteristics for dissolved oxygen in the applicable Class 7 standard. In general, a minimum of 20 independent observations (i.e. data points) in the most recent 10 years are needed for an assessment. Data demonstrating greater than 10 percent exceedance are designated as impaired and included on the 303(d) list.[26]

The biological quality of any given surface water body is assessed by comparison to the biological conditions determined for a set of reference water bodies which best represent the most natural conditions for that surface water body type within a geographic region.[27] The basis for assessing the biological community for impairment is found in the narrative water quality standards and assessment factors in Minn. R. ch. 7050.0150.[28] Biological integrity is commonly defined as the ability to support and maintain a balanced, integrated, and adaptive community of organisms having a species composition, diversity and functional organization comparable to those of natural habitats within a geographic region (in Minnesota this is also referred to as 'eco-region'). The presence of a healthy, diverse, and reproducing aquatic community is a good indication that the aquatic life beneficial use is being supported by a lake, stream, or wetland. The aquatic community integrates the cumulative impacts of pollutants, habitat alteration, and hydrologic modification on a water body over time.

MPCA has developed fish and invertebrate index of biological integrity (IBI) scores to assess the aquatic life use of rivers and streams in Minnesota as well as plant and invertebrate IBI scores to assess depressional wetlands. Monitoring the aquatic community, via biological and chemical monitoring, is a direct way to assess aquatic life use support. Interpreting aquatic community data is accomplished using an IBI. Minnesota uses a regional reference site approach to develop and calibrate the IBI for specific regions of Minnesota. The IBI incorporates multiple attributes of the aquatic community, called 'metrics,' to evaluate a complex biological system. Typically, 8-12 metrics related to structural and functional aspects of the aquatic communities are considered. A score is assigned to each metric and the sum of all scores is used to characterize the biological integrity of the site being assessed. The 2012 Methodology does not include assessment protocols for measuring IBI scores for aquatic communities in lakes. These assessment protocols are still being developed by MPCA.

Interpretation of aquatic community data by the PJG is completed by comparing the IBI score against the assessment threshold or biocriteria. In general, an IBI score above the assessment threshold indicates aquatic life use support, while a score below the threshold indicates non-support. MPCA utilizes a Biological Condition Gradient (BCG) along with reference conditions to calculate its biocriteria thresholds. The BCG-derived criteria are compared to criteria derived from reference sites within Minnesota to ensure that the BCG and reference conditions are closely aligned in defining the fish and invertebrate IBI classes. Minnesota used the median of BCG level 4 to develop biocriteria that are protective of the structural and functional health of biological communities. Communities with IBI

[26] 2012 Methodology, pages 16-17.

[27] Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards (7050.0150, subp. 6), https://www.revisor.mn.gov/rules/?id=7050.0150

[28] Determination of Water Quality, Biological and Physical Conditions, and Compliance with Standards (7050.0150, subp. 6), https://www.revisor.mn.gov/rules/?id=7050.0150

scores near this median value can be expected to have biological communities which exhibit "*...overall balanced distribution of all expected major groups; ecosystem functions largely maintained through redundant attributes.*"[29]

MPCA incorporated a margin of safety into its IBI assessment process. Bracketing each IBI assessment threshold is a 90 percent confidence interval that is based on the variability of IBI scores obtained at sites sampled multiple times in the same year (i.e., duplicate samples). The confidence interval accounts for variability attributed to natural temporal changes within the community as well as method error. Section V.B.e.2 in the 2012 Methodology explains the data requirements and determination criteria for assessing whether AUIDs are meeting their biological use support (i.e. fully supporting, not supporting, or insufficient information). Overall assessment of whether an AUID adequately supports aquatic life involves the review of the parameter-level evaluations and data quality in conjunction with all available supporting information (ex. flow, habitat, precipitation, etc.). The determination of available data is an important step in this review process.

Section V.B.2 in the 2012 Methodology explains the nuances of MPCA's decision making process in determining whether biological communities are deemed as fully supporting of aquatic life or non-supporting of aquatic life. These assessment decisions are made after consulting both biological and chemical data. For a given AUID, there may be chemistry indicator data, biological indicator data, or both types of data available for assessment. The assessment of whether an AUID adequately supports aquatic life involves the review of the parameter-level evaluations and data quality in conjunction with all available supporting information (flow, habitat, precipitation, etc.) to make an overall use-support determination. The final assessment takes into consideration the strength of the various indicators, the quality of the data sets and the upstream and downstream conditions of the water body segment.[30]

In general, a stream reach is considered to be <u>fully supporting</u> of aquatic life if:

- IBI scores for all available assemblages indicate fully supporting conditions; or
- The criteria for both dissolved oxygen and turbidity/t-tube/total suspended solids are adequately met; and
- Other lines of evidence considered comprehensively, including upstream/downstream conditions, do not contradict a finding of full support.

A stream reach is considered to be <u>not supporting</u> if:

- IBI scores for at least one biological assemblage indicate impairment; or
- One or more water chemistry parameters indicates impairment; and
- Other lines of evidence considered comprehensively, including upstream/downstream conditions, do not contradict a finding of non-support.

If the above criteria are not met and the assessment is inconclusive, the result is a determination of insufficient information. A determination of biological impairment must be supported by failing IBI scores for at least one biological assemblage, or one or more water chemistry parameters indicating impairment. In cases where an assessment unit has been determined to be not supporting based on biological indicators, water chemistry parameters are added to the list of impairments only when the

[29] 2012 Methodology, page 17.
[30] 2012 Methodology, page 19.

chemical impairment is clear enough that the AUID would be considered impaired even without the biological evidence.[31]

4b. Assessment Based on Numeric and Narrative Standards for the Protection of Human Health: Aquatic Consumption and Drinking Water

Assessments based on numeric and narrative standards for protection of human health include consideration of pollutants with Class 2 health-based chronic water quality standards. Section VI.A in Minnesota's 2012 Methodology discusses the development of human health protective numeric chronic standards. Class 2 chronic standards are established after determining the water column concentration of a pollutant that will be protective for chronic exposure for aquatic organisms, human health, and fish-eating wildlife. The most protective is chosen as the chronic standard included in Minnesota rules.[32]

Pollutants that have human health based chronic standards which are most often included in the State's assessments include mercury, polychlorinated biphenyls (PCBs), dioxins and chlorinated pesticides.[33] Minnesota Rule ch. 7050.0222 identifies the pollutants which have human health-based and toxicity-based criteria which have similar values. Section VI.A.2.(a) – (c) in Minnesota's 2012 Methodology discusses these pollutants and the applicable Class 2 water quality standards used in assessments of these pollutants. In general, two exceedances of the chronic standard or a single exceedance of the maximum standard in 3 years indicates impairment. For data considerations, five data points within a 3 year period during the most recent 10 years are necessary for assessment.[34] As stated above, when the State develops water quality standards, both a toxicity-based and a human health-based chronic criterion is calculated and the most restrictive is used to establish the chronic standard. For some pollutants, the toxicity-based and the human health-based criterion are very similar. For these pollutants, Minnesota's assessments consider both criteria.

As previously stated in this Decision Document, support of aquatic life means that concentrations of toxicants in water must be low enough that fish and other aquatic organisms are safe for people and wildlife to eat. Minnesota has four wildlife-based water quality standards (dichlorodiphenyltrichloroethane (DDT), Mercury, PCBs and 2,3,7,8 tetrachlorodibenzo-dioxin (2,3,7,8 TCDD)) within Minn. R. ch. 7052, the Great Lakes Water Quality Initiative (GLI) rule. The GLI rule focuses on bioaccumulative toxics within the Great Lakes and these four wild-life based standards are only applicable to the surface waters of the Lake Superior basin. Section VII of Minnesota's 2012 Methodology provides details of the water quality standards for DDT, Mercury, PCBs, and 2,3,7,8 TCDD. Data requirements and exceedance thresholds for pollutants with wildlife-based standards are the same as those used by the State in its assessments of pollutants that have human health-based chronic standards.[35]

Human consumption of fish is considered a separate use support in Minnesota. Toxicants may be at levels sufficient to support aquatic life but because of bioaccumulation the fish are not safe for human consumption. Mercury, PCBs and perfluorochemicals (ex. perfluorooctane sulfonate (PFOS)), are contaminants found in fish that are considered in Minnesota's assessments. Other bioaccumulative

[31] 2012 Methodology, page 20.
[32] 2012 Methodology, pages 22-23.
[33] 2012 Methodology, pages 23-24.
[34] 2012 Methodology, pages 23-24.
[35] 2012 Methodology, page 31.

pollutants such as DDT, dioxins and toxaphene have been analyzed in fish tissue samples but only where potential problems were suspected.[36]

In assessment of the aquatic consumption use support, Minnesota considers the use to be supported if it is safe to consume one fish meal per week over a lifetime. Limiting consumption to less than one meal per week indicates impairment. Impairment thresholds for PCBs and PFOS are established at the fish tissue concentration considered to be the upper threshold for one meal per week fish consumption advisory level for the 'sensitive' population.[37] The impairment threshold for PCBs is based on fish tissue concentrations exceeding 0.22 ppm and impairment threshold for PFOS is based on fish tissue concentrations exceeding 0.2 ppm.[38] In 2008, MPCA adopted into Minnesota Rule chapter 7050 a mercury fish tissue criterion of 0.2 ppm. This criterion for mercury is more stringent than the upper threshold for one meal per week fish consumption advisory for the sensitive population used by Minnesota Department of Health (MDH) fish consumption advisory. Consistent with Minnesota water quality standards, 0.2 ppm is the impairment threshold for aquatic consumption due to mercury.[39]

In the 2012 Methodology, MPCA included assessments based on standards for the protection of human health Class 1 drinking consumption. All groundwater and selected surface waters are designated as Class 1 resources in Minnesota.[40] The MDH monitors municipal finished water supplies for compliance with drinking water standards. The assessment of Class 1B and 1C listed surface waters for potential impairment by nitrate-nitrogen was outlined in the 2012 Methodology. Nitrate-nitrogen concentrations in drinking water exceeding the 10 mg/L safe drinking water standard (federal standard incorporated into Minn. R. ch. 7050.0221) pose a risk to human health. The 10 mg/L standard is an acute toxicity standard. Long term, chronic exposure to nitrate in drinking water is less well understood but has been linked to the development of cancer, thyroid disease, and diabetes in humans.

To assess drinking water-protected surface water (Class 1B and 1C) MPCA calculates a 24-hour average nitrate concentration and compares this average value to the 10 mg/L drinking consumption standard. If the water body exhibits two 24-hour exceedances within 3 years, then the water body is deemed impaired and placed on the 303(d) list. Exceedances were assessed over consecutive 3 year periods and the most recent 10 years of water quality data are considered. A minimum of five data points is required for assessments, but impairment determinations may be made with fewer data points when appropriate.[41]

4c. Assessment Based on Numeric Standards for Protection of Aquatic Consumption: wildlife-based standards

Minnesota rules set forth water quality standards for the protection of aquatic life uses related to wildlife consumers of aquatic organisms. Minnesota has four wildlife-based water quality standards (Minn R. ch. 7052, the Great Lakes Water Quality Initiative (GLI) rule). These water quality standards apply to concentrations of DDT, mercury, PCBs and 2,3,7,8-TCDD (tetrachlordibenzo-p-dioxin).[42] The GLI water quality standards focus on the reduction of bioaccumulative pollutants in the surface waters

[36] 2012 Methodology, page 24.
[37] Sensitive population is comprised of pregnant women, women who may become pregnant, and children under age 15. See Minnesota Department of Health, Minnesota Fish Consumption Advisory at http://www.health.state.mn.us/divs/eh/fish/ and 2012 Methodology, page 26.
[38] 2012 Methodology, page 27.
[39] 2012 Methodology, pages 27-28.
[40] 2012 Methodology, page 29.
[41] 2012 Methodology, pages 29-30.
[42] 2012 Methodology, page 31.

of the Lake Superior basin. It should be noted that the GLI standards within Minn R. ch. 7052 only apply to surface waters of the Lake Superior basin.[43]

4d. Assessment Based on Numeric Standards for Protection of Aquatic Recreation

Minnesota has two sets of numeric standards protecting waters for aquatic recreation. Numeric standards established for *E. coli* protect for primary and secondary body contact[44] while eutrophication standards protect for aquatic recreation in Minnesota lakes.

Minnesota has established *E. coli* standards for both Class 2 and Class 7 waters. Table 7 in Minnesota's 2012 Methodology identifies these water quality standards. The *E. coli* water quality standards include both a monthly geometric mean standard and an individual maximum standard. Minnesota considers both standards in their assessments. The monthly geometric mean *E. coli* standard is a geometric mean of not less than five samples collected in a month. However, most monitoring programs do not collect samples more often than once a month. In order to use the available data to the maximum extent, Minnesota aggregates available *E. coli* data for an individual month across the most recent 10 years of data. Minnesota's method of aggregating data for an individual month is based on a fecal coliform study conducted by the State which showed that for any given monitoring site there was less variability in fecal coliform data for a given month across years than there was for all months within one year.[45] Minnesota's prior assessment methodologies have included this same approach for fecal coliform assessments.

For assessment of the monthly geometric mean standard, the State considers the most recent 10 years of data, aggregates the data by individual month for a specific assessment unit, and if one or more months exceed the monthly geometric mean standard,[46] the assessment unit is added to Minnesota's 303(d) list. For assessment of the individual maximum standard, an assessment unit is added to Minnesota's 303(d) list if more than 10% of individual values over the most recent 10 years exceed the maximum *E. coli* standard.[47] In order to assess against the individual maximum *E. coli* threshold, Minnesota analyzes a minimum of 15 sampling points over the most recent 10 year period. Assessment decisions of data sets with less than the minimum number of samples are made by the WAT on a case by case basis.[48] Prior assessment methodologies established methods for assessment using fecal coliform data or a statistical relationship between fecal coliform and *E. coli* data. Minnesota explained that there is a considerable amount of *E. coli* and older fecal coliform data. Assessment decisions for the 2012 list used solely *E. coli* data. Exceptions to the exclusive use of *E. coli* measurements for assessment decisions (i.e., the use

[43] 2012 Methodology, page 31.

[44] For purposes of bacteriological standards, recreation in or on the water is divided into two types: primary body contact and secondary body contact. Primary body contact is considered to be any type of water recreation during which the accidental ingestion of a small amount of water is likely such as swimming, snorkeling, SCUBA, water skiing, kayaking, tubing and wading by young children. Secondary body contact is considered to be any type of water recreation during which the accidental ingestion of a small amount of water is unlikely such as boating, canoeing, fishing and wading by older children and adults. *Statement of Need and Reasonableness, Book III of III, In the Matter of Proposed Revisions of Minnesota Rules Chapter 7050, Relating to the Classification and Standards for Waters of the State, July 2007, pg. 83,* and 2012 Methodology, page 32.

[45] 2012 Methodology, pages 32-34, and *Fecal Coliform Bacteria in Rivers,* MPCA, H.D. Markus, 1999 in EPA Region 5's 2002 administrative record to support EPA's approval of Minnesota's 2002 303(d) list.

[46] The monthly geometric mean water quality standard for Class 2 waters is 126 organisms per 100mL of water and for Class 7 waters is 630 organisms per 100mL of water. See 2012 Methodology, pages 32-34, Minn. R. ch. 7050.0222 subp. 2-5, and Minn. R. ch. 7050.0227 subp. 2.

[47] The *E. coli* maximum individual water quality standard for both Class 2 and 7 waters is 1260 organisms per 100mL of water. See 2012 Methodology pages 32-34, and Minn. R. ch. 7050.0222 subp. 2-5, and Minn. R. ch. 7050.0227 subp. 2.

[48] 2012 Methodology, page 32.

of fecal coliform data to augment the *E. coli* data set) were only employed in special cases. These exceptions utilized the ratio of 200 cfu/100 mL (fecal coliform) to 126 cfu/100 mL (*E. coli*).

Minnesota's promulgated ecoregion-based lake eutrophication numeric water quality standards for total phosphorus, chlorophyll-a (chl-a) and Secchi Disk depth (Minn. R. ch. 7050.0222 subp. 2-4.) are the parameters monitored in lake assessments. Eutrophication standards are specific to ecoregion and lake depth. Minn. R. ch. 7050.0150 defines the State-recognized depths of a lake, a shallow lake, a reservoir and a wetland. The determination between the four requires an analysis of basin depth and littoral area. Appendix A of the 2012 Methodology lists the factors used to separate lakes, shallow lakes and wetlands.[49] Table 9 of Minnesota's 2012 Methodology identifies the lake eutrophication standards used for aquatic recreation use assessments.

Assessments utilizing the eutrophication water quality standards consider data collected over the most recent 10-year period. Samples must be collected over a minimum of 2 years and sampled from June to September. Typically, a minimum of 8 individual data points for TP, corrected chl-*a* (chl-*a* corrected for pheophytin), and Secchi are required.[50] If there are multiple samples collected on the same day, the daily average of samples collected is calculated. All daily data from June to September is averaged to calculate a summer mean value. The summer mean value is the water quality measurement compared to eco-region and depth specific water quality standards. Lakes where total phosphorus and at least one of the response variables (chl-a or Secchi disk depth) exceed the applicable standard are identified on Minnesota's 303(d) list as impaired.[51]

4e. Assessment Based on Numeric Standard for Protection of Limited Resource Value Waters

Minnesota rules set forth water quality standards for Class 7 waters in chapter 7050.0227. The rules include standards for *E. coli*, dissolved oxygen, pH and toxic pollutants. Limited resource value waters include surface waters of the State that have been subject to a use attainability analysis and have been found to have limited value as a water resource. These waters are specifically listed in rule 7050.0470 and are protected so as to allow secondary body contact use, to preserve the groundwater for use as a potable water supply, and to protect aesthetic qualities of the water.[52]

Because Class 7 waters may be used by game fish for spawning and/or maintaining minnow populations during brief periods in the spring, a special protection against bioaccumulative pollutants is needed.[53] The 2012 Methodology includes a discussion on the application of toxic standards to Class 7 waters. The water quality standard states, "*toxic pollutants shall not be allowed in such quantities or concentrations that will impair specified uses*."[54] The 2012 Methodology explains that for Class 7 assessments, for most toxic pollutants, the maximum standard or 100 times the chronic standard, whichever is lower, would apply. For bioaccumulative pollutants in Class 7 designated waters, the chronic standard would apply.

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[49] 2012 Methodology, pages 35-36.
[50] 2012 Methodology, pages 35-36.
[51] Minnesota Rules include narrative eutrophication standards for Class 2 lakes, shallow lakes and reservoirs which explain a polluted condition as an exceedance of total phosphorus and either the chlorophyll-a or Secchi disk standard using data that is averaged over the summer season. See Minn. R. ch. 7050.0222 subp. 2a, 3a, and 4a.
[52] 2012 Methodology, page 37.
[53] 2012 Methodology, page 37.
[54] Minnesota Administrative Rules (MN R. ch. 7050.0227), https://www.revisor.mn.gov/rules/?id=7050.0227

5. Removing a Water from the 303(d) List
Minnesota's 2012 Methodology identifies four reasons for removing a water from the 303(d) list;

- If, during subsequent monitoring or the development of the TMDL study, new and reliable water quality data or information indicates that the water body is no longer impaired and is meeting water quality standards. Such a water body would be de-listed before a TMDL plan was completed.
- If a TMDL assessment and preliminary plan for reducing the sources of pollution is completed and approved by the EPA.
- If the sources of impairment are determined to be non-anthropogenic in origin.
- If it was determined that the water body was placed on the list in error.[55]

When deciding to remove a water body from the 303(d) list based on new data and information, the State generally applies the same standards, guidelines and thresholds used to add a water to the 303(d) list. The 2012 Methodology identifies minimum data requirements and impairment thresholds that must be considered for the various categories of pollutants before removing a water body from the 303(d) list.[56] Decisions to remove a water body from the 303(d) list are subject to review by the appropriate MPCA staff and PJG.

The second basis for removing a water body from the 303(d) list is where a TMDL has been approved by EPA. In accordance with Minnesota's 2012 Methodology, if a water body is identified as being impaired, and EPA has approved all necessary TMDLs for that water body, then the water body will be placed in category 4A. It should be noted that the water body is still considered as impaired and remains on the Impaired Waters Inventory (part of MPCA Integrated Report submittal to the EPA). The water body will remain on the Impaired Waters Inventory until it is demonstrated that the water body supports all of its beneficial uses (i.e. meets water quality standards for each beneficial use designation).

The third basis for removing a water body from the 303(d) list is where a water body is found to be impaired by natural conditions, i.e., non-anthropogenic in origin. In this situation, all sources of the impairment are naturally occurring. Although Minnesota continues to identify these waters as impaired, it places these waters in category 4D (i.e. impaired but does not require a TMDL).

The fourth basis for removing waters from the 303(d) list occurs under circumstances where:

- A water was placed on the 303(d) list in error (ex. wrong AUID assigned);
- A resegmentation or reclassification of a water has occurred since the last listing cycle;
- There has been a change/update to the State's standards or methodology since the last listing cycle.

Errors can be made in the original assessment of a water body. These errors, which may be a result of either human or computer error, are usually discovered during future assessments. Occasionally there is a need for the State to change how a water body is divided into assessment units. This change may cause a water body originally listed under one specific assessment unit ID# to now be listed as two new ID#s. Although it may appear that changing the ID# results in removing waters from or adding waters to the 303(d) list, in most cases the original impaired water is still on the list, it is just identified in a different

[55] 2012 Methodology, page 39.
[56] 2012 Methodology, pages 39-40.

manner. Another water identification change that could affect how a water is listed is when a lake is reclassified. As the State develops watershed plans and TMDLs, specific lake characteristic information could become available which would cause the State to re-evaluate how the lake is classified; e.g., deep or shallow. Since water quality standards are applicable to a lake based on lake type and lake location, a change in a lake's classification could change where the State places that lake in its integrated report.

Minnesota revises its methodology in response to changes to the State's water quality standards. For the 2012 listing cycle, the state made no significant changes to water quality standards which impacted the 2012 303(d) list.

Table A-2 of this Decision Document provides a list of the assessment unit/pollutant combinations that Minnesota has removed from its 303(d) list. EPA concludes that the State has demonstrated good cause for removing these waters from the 303(d) list. In evaluating the reasonableness of the State's decision to remove these waters, EPA considered the delisting explanations provided by the State in its 2012 submittal,[57] information made available to the public during the public notice and comment period, and MPCA lake/wetland and stream assessment transparency documents made available to the public on MPCA's website.[58]

Consideration of Existing and Readily Available Water Quality-Related Data and Information

1. State Monitoring Data and Information

Minnesota conducts a variety of surface water monitoring activities which focus on generating crucial water quality data for assessing the chemical, biological, bacteriological, and physical conditions, within Minnesota's surface waters. This information is used to assess potential and actual threats to water quality within the State and to evaluate the effectiveness of management strategies taken to address impairments and other threats to water quality. Water quality monitoring by local, state and federal partners, along with citizen monitoring efforts, and remote sensing monitoring are all utilized by MPCA in its assessment process.

Through the 2010 listing cycle, MPCA assessed the condition of the State's waters via a biennial, statewide assessment process. Over the previous few years, MPCA has moved away from a statewide monitoring approach and focused its efforts toward targeted watersheds via the intensive watershed monitoring strategy. The IWMA generates more voluminous data sets within those watersheds targeted for water quality monitoring. The 2012 listing cycle is the first assessment cycle in which MPCA is assessing water quality data from earlier IWMA efforts. For assessment decisions made for the 2012 listing cycle, MPCA assessed water quality information from watersheds listed in Table 3 of this decision document. It should be noted, that water quality sampling, under the IWMA, was conducted in the watersheds in Table 3 during 2007, 2008 and 2009.

[57] See *Inventory of all impaired waters*, *De-listings from the inventory*, *Changes initial to final draft*, and *New removals from the 2012 inventory* within submitted spreadsheets from MPCA for detailed discussion from State
[58] http://www.pca.state.mn.us/index.php/water/water-types-and-programs/minnesotas-impaired-waters-and-tmdls/assessment-and-listing/303d-list-of-impaired-waters.html

Table 3: Watersheds in which water quality data was assessed for the 2012 Listing Cycle

Watershed Name	Year in which data was collected under the Intensive Watershed Monitoring Approach (IWMA)
North Fork of the Crow River Watershed	2007
Pomme de Terre River Watershed	2007
Le Sueur River Watershed	2008
Little Fork River Watershed	2008
Mississippi (Red Wing) River Watershed	2008
Red River of the North (Headwaters) Watershed	2008
Root River Watershed	2008
Sauk River Watershed	2008
Tamarac (Red River of the North) River Watershed	2008
Buffalo River Watershed	2009
Cedar River Watershed	2009
Chippewa River Watershed	2009
Mississippi (St. Cloud) River Watershed	2009
Shell Rock River Watershed	2009
St. Croix (Stillwater) River Watershed	2009
St. Louis River Watershed	2009

Toxic parameter monitoring continues to occur on a statewide basis. Assessment of those parameters is done on a statewide basis every two years. Watershed assessments employed via the IWMA focus primarily on the aquatic life and recreation beneficial uses. Statewide assessments focus primarily on aquatic consumption and aquatic life toxicity. MPCA has set a schedule to intensively monitor each major watershed once every 10 years (Figure 1 of this Decision Document). The IWMA is designed to identify waters which are impaired and require restoration. Also, information from the IWMA is utilized to identify those waters which are not yet impaired but require further protection to prevent water quality conditions which would lead to that water body being designated as impaired.

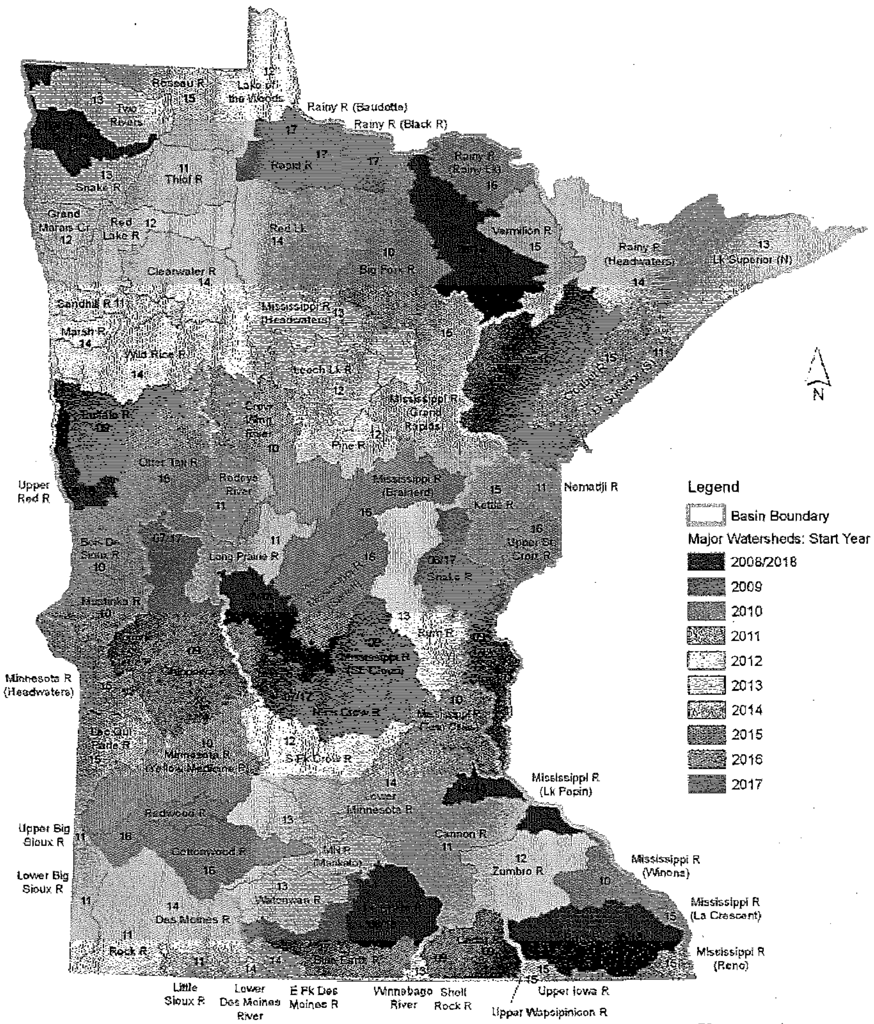

Figure 1: Intensive Watershed Monitoring Map (2008 to 2018)[59]

MPCA's review of water quality data collected during the IWMA involves a five step approach, discussed earlier in this Decision Document in Section 3. The four steps discussed immediate below are related to MPCA's approach for addressing water quality impaired segments.

Step 1: Monitor and gather data information

MPCA employs an intensive watershed monitoring schedule that provides for comprehensive assessments of all of the major watersheds on a 10-year cycle. This schedule provides intensive monitoring of streams and lakes within each major watershed to determine overall health of the water resources, to identify impaired waters, and to identify those waters in need of additional protection to prevent future impairments.

[59] MPCA Watershed Monitoring Approach (Intensive Watershed Monitoring Map), http://www.pca.state.mn.us/index.php/water/water-types-and-programs/surface-water/watershed-approach/watershed-approach.html

Step 2: Assess the data
Based on results of intensive watershed monitoring in step one, MPCA staff and its partners implement a rigorous process to determine whether or not water resources meet water quality standards and designated uses. Waters that do not meet water quality standards are listed as impaired waters.

Assessment of toxic parameters (eg. mercury) continues to occur on a statewide basis every two years. The statewide toxic assessment focuses on those pollutants which influence aquatic consumption and aquatic life toxicity. Also, while MPCA's IWMA focuses monitoring efforts on selected watersheds each year, the State does not discourage outside parties from submitting data and proposing waters to be considered for the 303(d) list which lie outside of the watersheds targeted by the IWMA. MPCA accepts water quality information during the public notice period of the draft 303(d) TMDL list (for the 2012 listing cycle, this was January 23, 2012 to February 27, 2012).

MPCA uses data collected over the most recent 10-year period for water quality assessments.[60] The 'year of record' is based on the USGS water year (October 1 of one year through September 30 of the following year). A full 10 years of data are not required to make an assessment. MPCA uses a 10-year period to provide reasonable assurance that data will have been collected over a range of weather and flow conditions and that all seasons will be adequately represented. MPCA also considers trends in water quality data or changes in climatic conditions (eg. drought periods) which impact water quality during the 10-year period. EPA finds the State's use of the 10-year period for water quality assessments a reasonable approach to ensure that data are collected over a range of weather and flow conditions, and that all seasons are adequately represented.

Step 3: Establish implementation strategies to meet standards
Based on the watershed assessment, a TMDL study and/or protection strategy is completed. Existing local water plans and water body studies are incorporated into the planning process.

Step 4: Implement water quality activities
Included in this step are all traditional permitting activities, in addition to programs and actions directed at nonpoint sources. Partnerships with State agencies and various local units of government, including watershed districts, municipalities, and soil and water conservation districts, will be necessary to implement these water quality activities.

2. Active Solicitation of Data from other Sources
MPCA relies on data it collects along with data from other credible sources, such as other state and federal agencies, local government partners and volunteers, to assess water bodies. In preparation for assessing waters for the 2012 listing cycle, MPCA actively solicited data and information for use in the assessment process. MPCA communicates annual 'Calls for Water Quality Data' which encourage local water organizations to share water quality information. MPCA completed a *Call for Data for the 2010 Annual Surface Water Assessments* and *Call for Data for the 2011 Annual Surface Water Assessments* prior to the 2012 assessment of water quality data by MPCA. These communications are made through the State's 'GovDelivery' electronic mail distribution system.[61] In the *Call for Water Quality Monitoring Data* communication MPCA clearly outlines date deadlines for data submittal from outside parties/organizations. Data submitted before the deadline was considered by MPCA in its staff review

[60] 2012 Methodology, pages 8-9.
[61] *2012 Call for Data email* (email dated October 5, 2011), shared by David Christopherson (MPCA) via Email on 11/9/12 at 8:04 PM.

process to determine whether or not the water body was meeting appropriate water quality standards and designated uses.

In addition to the *Call for Water Quality Monitoring Data* MPCA also conducted a series of meetings around the State with watershed partners in the 16 watersheds (Table 3 of this Decision Document) identified for Intensive Watershed Monitoring within the 2012 listing cycle. During these informal meetings, MPCA asked watershed partners to submit relevant water quality monitoring data for water bodies within each of these watersheds. The 2012 listing cycle was the first listing cycle where MPCA did not publish a solicitation for water quality monitoring data within the Minnesota State Register. MPCA explained that in addition to changes carried forward in the water quality monitoring strategy (i.e. the change to an Intensive Watershed Monitoring strategy) it elected to alter its communication strategy for petitioning for water quality information. MPCA chose to directly contact watershed partners within the 16 watersheds, and felt that this was a more efficient and effective use of resources than State Register announcements.[62]

In 2003, MPCA issued the *Volunteer Surface Water Monitoring Guide*. This guidance discusses data uses and goals of data collection, data quality issues, and includes a specific section on monitoring requirements for data that can be used in 305(b) and 303(d) assessments.[63] This guidance, along with information contained in the formal *Call for Water Quality Monitoring Data (email dated October 5, 2011)*, cited MPCA webpages where interested parties could obtain specific criteria that water quality monitoring data and other information submitted must meet in order to be considered in MPCA's staff review assessment process.

Data used by the State in its assessments are stored in MPCA's water quality data management system, Environmental Quality Information System (EQuIS). EQuIS is the central data repository for assessment information utilized by MPCA. Water quality monitoring data collected by parties other than MPCA are added to EQuIS so long as they meet acceptable MPCA quality assurance and quality control (QA/QC) protocols. Data meeting the QA/QC requirements are entered into EQuIS so that a permanent record is created and data may be merged or considered in light of any other data available for a given water body. Monitoring and data management at MPCA are in accordance with the requirements specified in the Quality Management Plan (June 2007) approved by the EPA and available for review via MPCA's website.[64]

3. Public Participation

In developing Section 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality-related data and information, including consideration of existing and readily available data, and information about waters for which water quality problems have been reported by members of the public.[65] EPA expects states to have full public participation in development of their 303(d) lists prior to submitting the final 303(d) list to EPA for review. Public participation efforts need to be consistent with Section 101(e) of the CWA. When a proposed list has been established, states should, in accordance with the requirements in 40 CFR Part 25, provide the opportunity for public notice

[62] Electronic mail communication (11/9/12 at 8:04 PM): David Christopherson (MPCA) to Paul Proto (EPA, R5).
[63] Appendix D of the *Volunteer Surface Water Monitoring Guide* provides specific requirements for MPCA integrated assessments. This Appendix was revised in September 2009.
[64] MPCA Water Quality Management Plan (June 2007), http://www.pca.state.mn.us/index.php/view-document.html?gid=5479
[65] 40 CFR §130.7.

and submission of comments from the public. States should prepare responses for the comments received.[66]

Minnesota provided the public with the opportunity to review and comment on the assessment decisions through a 35-day formal comment period, public informational meetings and availability of the 2012 Methodology and draft 303(d) list. The 35-day formal comment period was from January 23, 2012 to February 27, 2012. Normally, MPCA holds a 30-day public comment period. For the 2012 listing cycle, MPCA extended its public comment period by 5 additional days. MPCA held seven informational meetings at various locations throughout the State between December 21, 2011 and January 25, 2012. Notice of these meetings and/or the 35-day formal comment period was made available to the general public through news releases, a November 2011 mass mailing by MPCA, information on MPCA's website, and publication in the State Register.[67]

Thirty-nine (39) comment letters or electronic correspondences, were received by MPCA during the public comment period (January 23, 2012 to February 27, 2012). MPCA considered the comments from all thirty-nine comment letters and provided responses to the commenters in a response to public comments summary document. MPCA's response to public comments was shared on an MPCA 2012 303(d) webpage.[68] With the exception of responses to comments regarding Jail and Wine Lakes discussed below, EPA believes that MPCA adequately addressed the comments submitted during the public notice period. MPCA included its responses to public comments within its final 2012 303(d) submittal package to EPA on October 1, 2012.

Data received by MPCA in response to the *Call for Water Quality Monitoring Data* before November 1, 2011, were uploaded into EQuIS for review by MPCA staff. Water quality monitoring data and other information related to specific water bodies, received in public comments within the 35-day public notice period were also uploaded to EQuIS and considered by MPCA staff. Loren J. Larson of Plymouth, Minnesota, submitted summary data showing exceedances of the lake eutrophication water quality standards and a request that MPCA include Jail Lake (18-0415-00) on the 2012 303(d) list.[69] MPCA responded to the commenter within the response to public comment document. MPCA explained that it will review all available water quality data for Jail Lake, and other waters within the Pine River watershed, during the Pine River Watershed comprehensive assessment scheduled for 2014. MPCA stated that deviations from the watershed schedule will be considered by exception, and it will only consider data outside of the schedule if the local benefits of the schedule exception offset the lost assessment efficiency and effectiveness that results from an "out-of-order" assessment.[70]

On February 27, 2012 MPCA asked that the commenter provide the rationale as to why Jail Lake should be considered for listing outside of the Intensive Watershed Monitoring schedule as explained in MPCA 2012 Methodology document. The response received from the commenter by MPCA on March 11, 2012 indicated that local monitoring efforts were losing funding due to the completion of an MPCA grant, and

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[66] *Supplemental Guidance on Section 303(d) Implementation,* EPA Memorandum, August 13, 1992, *Approval of 303(d) Lists, Promulgation Schedules/Procedures, Public Participation*, EPA Memorandum, October 30, 1992, and *Guidance for 1994 Section 303(d) Lists,* EPA Memorandum, November 26, 1993.
[67] State Register Vol. 36 No. 27 p. 847-849, http://www.comm.media.state.mn.us/bookstore/stateregister/36_27.pdf.
[68] MPCA Impaired Waters 2012 TMDL List, http://www.pca.state.mn.us/index.php/water/water-types-and-programs/minnesotas-impaired-waters-and-tmdls/impaired-waters-list.html.
[69] See February 27, 2012 correspondence from Loren J. Larson to Howard Markus and *Appendix B: MPCA's response to comments on the draft 2012 TMDL*, which was included in Minnesota's 2012 submittal (received by EPA on October 1, 2012).
[70] 2012 Methodology, page 3.

that a TMDL was required to improve conditions of the lake. MPCA decided that a potential Jail Lake TMDL would at the earliest be initiated by MPCA after the watershed assessment scheduled for early 2014. MPCA did not add Jail Lake to the final 2012 303(d) list.

EPA disagreed with MPCA's decision not to add Jail Lake to the final 2012 303(d) list as a Category 5 water body.[71] EPA explained that the water quality monitoring data shared by the commenter were appropriate data (i.e. within the EQuIS data management system and met the minimum data requirements for lake eutrophication described within the 2012 Methodology[72]) and that MPCA should have considered this water quality data in its assessment of Jail Lake. While EPA understands MPCA's interest in following the State's schedule for its systematic watershed approach (the Intensive Watershed Monitoring strategy) when assessing water quality monitoring data, MPCA needs to consider all readily available and accessible data for assessment decisions. In an email message sent on November 30, 2012, EPA requested that MPCA add Jail Lake (18-0415-00) to the final 2012 303(d) list as a Category 5 water body. MPCA agreed with the request in an email sent to EPA on December 10, 2012 and added Jail Lake to the final 2012 303(d) list.

Tera L. Guetter, on behalf of the Pelican River Watershed District, submitted available water quality data and a request that MPCA return St. Clair Lake (03-0382-00) to the 2012 303(d) list. MPCA removed St. Clair Lake from the 303(d) list due to 'insufficient data.' The commenter also requested that MPCA include Wine Lake (03-0398-00) as a Class 5 water body on the final 2012 303(d) list. The commenter included summary water quality data from the EQuIS data management system to demonstrate non-attainment of lake eutrophication water quality standards for both St. Clair Lake and Wine Lake in her February 15, 2012 letter to Howard Markus (MPCA).[73] Upon further consideration, MPCA concurred that St. Clair Lake should be returned to the 2012 303(d) list as a Category 5 water body.

MPCA asked the commenter to provide additional rationale as to why Wine Lake should be considered for listing outside of the Intensive Watershed Monitoring schedule as explained in MPCA 2012 Methodology document. MPCA was not persuaded that Wine Lake should be added as a Category 5 water on the final 2012 303(d) list. EPA disagreed with MPCA on this decision.[74] EPA explained that the water quality monitoring data shared by the commenter were appropriate data (i.e. within the EQuIS data management system and met the minimum data requirements for lake eutrophication described within the 2012 Methodology[75]) and MPCA should have considered this water quality data in its assessment of Wine Lake. In an email message sent on November 30, 2012, EPA requested that MPCA add Wine Lake (03-0398-00) to the final 2012 303(d) list as a Category 5 water body. MPCA agreed with the request in an email sent to EPA on December 6, 2012 and added Wine Lake to the final 2012 303(d) list.

Jean B. Sweeney, Vice President of 3M Environmental, Safety and Health Operations, on behalf of 3M, submitted data and a request that the State remove four assessment units in Pool 2 on the Mississippi

[71] See Administrative Record Document #35, telephone conversation between EPA and MPCA on November 7, 2012.
[72] 2012 Methodology, page 35.
[73] See February 15, 2012 correspondence from Tera L. Guetter to Howard Markus and *Appendix B: MPCA's response to comments on the draft 2012 TMDL*, which was included in Minnesota's 2012 submittal (received by EPA on October 1, 2012).
[74] See Administrative Record Document #35, telephone conversation between EPA and MPCA on November 7, 2012.
[75] 2012 Methodology, page 35.

River, which have been identified by MPCA as being impaired for aquatic consumption due to PFOS.[76] PFOS are manmade chemicals used to manufacture products which are heat resistant, stain resistant and repel water. Minnesota originally added these four assessment units within Pool 2 to its 2008 303(d) list based on water quality data which showed that a consumption advisory was necessary for the freshwater drum species in Pool 2. Minnesota Administrative Rules (7050.0150 subpart 7) stated that, "A waterbody will be considered impaired when the recommended consumption frequency is less than one meal per week, such as one meal per month, for any member of the population…the impaired condition must be supported with measured data on the contaminant levels in the indigenous fish."

Despite the data and information submitted by the commenter, the State believes that assessment units in Pool 2 are still not meeting the recommended consumption frequency and therefore not meeting water quality standards. MPCA declined to remove these 4 assessment units from the 2012 303(d) list, explaining that the commenter failed to provide sufficient data to support her case for delisting. In particular, MPCA found that the water quality data submitted by the commenter were not robust enough to cite downward trends in PFOS concentrations within fish tissue in Pool 2. MPCA stated in its response to public comment document, *"Given the wide range of PFOS concentrations observed in Pool 2 fish tissue and the insufficiency of available data, MPCA believes it is prudent and protective of public health and the environment to be very cautious as MPCA determines if and when to delist Pool 2 as an impaired water."*[77] MCPA indicated that fish tissue data from Pool 2 would continue to be analyzed in future assessment cycles and explained that it was working with the MDNR and the MDH to complete additional fish sampling of Pool 2 in the future. EPA agrees with MPCA that due to the variability of PFOS concentrations and the insufficiency of available data, delisting is not supported. EPA finds the continued listing of the four assessment units in Pool 2 on the Mississippi River, identified by the commenter, as being impaired for aquatic consumption due to PFOS on the State's 2012 303(d) list to be reasonable.

Although no other public comments included data, some comments highlighted data and information that were already available to the State, and requested that the State reconsider this available information. Commenter Paul Nelson, a Program Manager for Scott County's Natural Resources Program, submitted a request encouraging MPCA to reconsider the data and information used in listing two river segments.[78] The commenter proposed that MPCA remove County Ditch 10 (CD3 to Raven Str) (07020012-628) and Picha Creek/Unnamed Creek (Unnamed Creek to Unnamed Creek) (07020012-579) from the State's 2012 303(d) list due to the misidentification of designated use for County Ditch 10, and the misidentification of a sampling location and flawed water quality monitoring data which led to the listing for Picha Creek/Unnamed Creek.

Upon reconsideration of information presented by the commenter, MPCA determined that County Ditch 10 and Picha Creek/Unnamed Creek were to remain on the 2012 303(d) list. MPCA explained that for Picha Creek to be removed from the 303(d) list, MPCA would need to see evidence that low flow conditions cited by the commenter were due solely to natural factors, and that the natural factors were the only stressors causing or contributing to the impairment. The stressor identification document for

[76] See January 31, 2012 correspondence with enclosures from Jean B. Sweeney to Howard Markus and *Appendix B: MPCA's response to comments on the draft 2012 TMDL*, which was included in Minnesota's 2012 submittal (received by EPA on October 1, 2012).
[77] See MPCA's *Responses to the draft 2012 Total Maximum Daily Load List 30-Day Public Notice Comments (September 7, 2012)* document (received by EPA on October 1, 2012).
[78] See February 2, 2012 electronic mail (E-mail) correspondence from Paul Nelson to Howard Markus and *Appendix B: MPCA's response to comments on the draft 2012 TMDL*, which was included in Minnesota's 2012 submittal (received by EPA on October 1, 2012).

Picha Creek, which was assembled by MPCA staff, indentified other potential non-natural causes (ex. habitat fragmentation, habitat alteration and sedimentation) which are likely causing and contributing to the impairment in Picha Creek. MPCA also explained that County Ditch 10 (CD3 to Raven Str) (07020012-628) was assigned the correct designated use and provided supporting data which demonstrated that the water body was impaired for bacteria. EPA agrees with MPCA's analysis and finds the continued listing of County Ditch 10 (CD3 to Raven Str) (07020012-628) and Picha Creek/Unnamed Creek (Unnamed Creek to Unnamed Creek) (07020012-579) on the State's 2012 303(d) list to be reasonable.

Commenter Greg Bartz of Sleepy Eye, Minnesota, with the support of approximately twenty-seven (27) other co-signees, submitted a request encouraging MPCA to reconsider data and information utilized in designating County Ditch 10 (John's Creek) (07020007-571) as impaired for nitrate-nitrogen exceedances. The commenter explained that county and judicial ditches cannot be designated as impaired for Class 1 or Class 2 water quality standards. Also, the commenter described how MPCA misidentified County Ditch 10 as a trout stream and the Minnesota River basin has not historically had trout species in its waters. The commenter believes that the impairment listing is incorrect if the listing is based on the protection of an introduced species. Upon reconsideration of information presented by the commenter, MPCA determined that County Ditch 10 was to remain on the 2012 303(d) list. MPCA cited Minnesota Rule 7050.0470, subpart 5 as justification for designating County Ditch 10 as a Class 1b water. Class 1b waters are protected for drinking water use (under Minnesota Rule 7050.0220, subpart 3a) and waters recognized as potential drinking water resources are protected under a nitrate-nitrogen water quality standard. Since MPCA has appropriately identified County Ditch 10 as a water where Class 1b water quality standards are applicable and data supports a finding that it has exceeded the nitrate-nitrogen water quality standard, EPA find MPCA's listing of County Ditch 10 on the State's 2012 303(d) list to be reasonable.

Commenter Tom Moe, on behalf of US Steel Minntac, submitted a request encouraging MPCA to reconsider the data and information utilized in designating the Minntac Tailings Basin (69-1351-00) as not attaining the water quality standards for mercury in fish tissue.[79] The commenter asserted that the Minntac Tailings Basin is not a water of the State. Additionally, the commenter communicated that US Steel Minntac had completed independent water quality sampling and had determined that mercury concentrations in fish tissue were below the water quality standard. The commenter did not provide water quality monitoring data to substantiate these claims. Upon reassessment, MPCA concluded that the Minntac Tailings Basin was not to remain as a Category 4A water, which would be addressed by the 2012 Revision to the Statewide Mercury TMDL. MPCA explained that the Minntac Tailings Basin is not a water of the State and is considered part of the facility's treatment system, covered under Minntac's NPDES/SDS permit. Since the Minntac Tailings Basin is not a water of the State, EPA finds it reasonable for MPCA to delist the water.

Several commenters requested that MPCA reconsider the listing of Seven Mile Creek (07020007-562) for violations of the chlorpyrifos water quality standard. Chlorpyrifos is a pesticide which is used throughout the State. Amy Linnerooth of Nicollet County, Kerry Hastings and Elisha Modisett-Kemp from Dow AgroSciences LLC, Ken Ostlie of the University of Minnesota, Kurt Kruger of the Minnesota

[79] See January 31, 2012 E-mail correspondence from Jesse Anderson (MPCA), referencing the commenter Tom Moe, to Howard Markus and *Appendix B: MPCA's response to comments on the draft 2012 TMDL*, which was included in Minnesota's 2012 submittal (received by EPA on October 1, 2012).

Soybean Growers Association, and John Mages of the Minnesota Corn Growers Association, were some of the commenters making this request. Upon consideration of the information submitted from these three commenters, MPCA determined that Seven Mile Creek should remain on the 2012 303(d) list for chlorpyrifos water quality violations.

The compound known as 'chlorpyrifos' is a pesticide which is measured via water quality studies carried out by the MDA. In its response to these commenters, the MPCA described how available pesticide data, collected by the MDA, were carefully screened to satisfy all quality assurance and quality control (QA/QC) protocols and Quality Assurance Program Plans (QAPPs). The MPCA considered the data collected within the Seven Mile Creek assessment unit to be valid and scientifically defensible.

In addition to the MPCA's defense of MDA's procedures within the response to public comments summary documentation, the MDA also drafted and included a letter (dated May 17, 2012) to public commenters. In this letter, MDA addressed individual questions from commenters and outlined other supporting scientific observations which were backed by MDA collected water quality data. MDA explained that although it did not detect exceedances of the chlorpyrifos water quality standard, it has observed upward trends in chlorpyrifos detection frequency and concentration magnitude. MDA attributed these increases to localized changes in pesticide usage and agricultural management practices.

MPCA added that MDA's water quality data observations combined with its own ambient water quality sampling data signified that Seven Mile Creek was threatened by chlorpyrifos and therefore should be listed on its 2012 303(d) list. MPCA will continue to monitor the Seven Mile Creek water body and will work with the MDA in promoting best management practices for pesticide usage throughout Minnesota. After reviewing the MDA data, EPA agrees with MPCA that the data meet the appropriate QA/QC protocols and the QAAP requirements, therefore, EPA finds MPCA's decision to list Seven Mile Creek (07020007-562) for impairments under chlorpyrifos water quality standard reasonable.

Kevin Pylka on behalf of PolyMet Mining Inc., Keith Hanson of the Minnesota Chamber of Commerce and David Skolasinski of Cliffs Natural Resources Inc., all submitted comments requesting MPCA reconsider Index of Biotic Integrity (IBI) listings in the 2012 303(d) list. The commenters stated that MPCA needs to provide the opportunity for public review and comment on the IBI development process including calibration, scoring and application of the IBI assessment methodology. Additionally, the commenters requested that MPCA provide a Statement of Need and Reasonableness (SONAR) for protocols and documentation associated with the IBI development.

MPCA's response to public comments document re-emphasized that MPCA's biological assessment process is grounded in the biological assessment framework provided in a SONAR document associated with the 2002 rulemaking for Minn. Rules 7050.0150, subp. 6. This document acknowledges the use of biological community assessments as direct ways of predictably measuring aquatic life conditions in streams, and that biological community assessments integrate the combined effects of all stressors over time and space. MPCA utilized this IBI assessment framework in its biological assessments for the 2012 303(d) list. MPCA explained that increases in the breadth and scope of sampling data, due to the Intensive Watershed Approach, have allowed MPCA to refine the calibration of its IBIs scoring system for the 2012 List. If and when the biological assessment process is further refined, MPCA indicated that future revisions will be available for review via the public notice process. Additionally, the MPCA communicated that it will keep the public updated on its progress through its webpage and other

communication outlets (ex. State Register notices, email notifications, public meetings etc.). Appropriate language outlining the changes to the biological assessment methodology will be reflected within the Methodology document (Assessment Guidance) for the listing cycle which the changes are applicable. Stakeholders may submit comments on the Assessment Guidance during the public notice period for the draft 303(d) list. EPA agrees that the IBI assessment methodology used for the 2012 303(d) list was subject to adequate public notice and comment and therefore finds MPCA's IBI listings to be reasonable.

Minnesota's final 2012 303(d) list did not include water bodies impaired due to nonattainment of the State's sulfate water quality standard (Minnesota Rule 7050.0224) (sulfate WQS). Prior 303(d) lists did not include impairment listings due to non-attainment of the sulfate WQS. In addition to the concerns expressed from tribal partners, MPCA received comments from members of the public requesting that the State reconsider listing specific water bodies for nonattainment of the sulfate WQS. Some of these commenters cited sulfate values above the sulfate WQS from draft and final Environmental Impact Statements (EIS) for mining operations in northern-central Minnesota. Other commenters referenced water bodies which they believed to be impacted by sulfate but did not provide water quality data in support of their comments.

As a result of public comments and discussions EPA held with federally recognized tribes, EPA completed an independent review of water bodies cited within the public comments submitted to MPCA in February 2012. EPA reviewed ambient water quality data related to segments discussed in the draft and final EIS, effluent discharge data from discharge monitoring reports, and NPDES permits and other sulfate and wild rice-related documentation. MPCA assisted EPA throughout this evaluation process. Based on this review, EPA did not identify any waters for which available data indicate that waters specifically identified in Minnesota Rule 7050.0224 & 7050.0470 as wild rice production waters were not attaining the sulfate water quality standard.

In its response to the public comments and EPA inquiries, MPCA explained that it does not intend to assess water bodies potentially impaired by sulfate until it has developed a wild rice/sulfate impaired waters assessment approach and this approach has gone through the necessary public review process. MPCA explained that without an approved wild rice/sulfate impaired waters assessment approach, it was inappropriate to analyze ambient sulfate data to determine compliance with the sulfate WQS for the 2012 303(d) list. MPCA committed to the development of a wild rice/sulfate impaired waters assessment approach for the 2014 listing cycle within its response to public comments received for the 2012 303(d) list and in subsequent communications with EPA. MPCA also committed to utilizing this wild rice/sulfate impaired waters assessment approach to analyze and assess water quality data for potential impairment of the sulfate water quality standard for the 2014 listing cycle.

MPCA's general method for assessing a water body for potential non-attainment of a water quality standard involves the review and analysis of ambient water quality data and the comparison of that data to the appropriate water quality standard. During the review of ambient water quality data, MPCA verifies that the data meet minimum data requirements, including the criteria defining the time period of sample collection, and determines whether they indicate the attainment or non-attainment of the relevant water quality standard. [80] If it is found that the water body does not meet the water quality standard, then the water is added to the State's 303(d) Impaired Waters list. MPCA has indicated that it cannot

[80] 2012 Methodology, pages 8-12.

undertake assessments utilizing its sulfate WQS until MPCA has developed a wild rice/sulfate impaired waters assessment approach. This assessment approach would outline the specific criteria which must be utilized in order to evaluate water bodies against the sulfate WQS.

In order for MPCA to develop its wild rice/sulfate impaired waters assessment approach, MPCA indicated that it must first clarify how it will define specific provisions within the sulfate WQS. In conversations with EPA, MPCA explained it must define the protocols it will use for determining which water bodies it considers as waters used for the production of wild rice. Additionally, MPCA must determine when the sulfate WQS applies to those waters, for the determination of the period when rice may be susceptible to damage from high sulfate levels. MPCA has committed to including the details of the wild rice/sulfate impaired waters assessment approach as part of its 2014 Integrated Report (IR) Methodology document.

MPCA is soliciting sulfate water quality data and wild rice information from tribal partners and other stakeholders in 2013, in advance of the assessment of waters for sulfate impairment for the 2014 303(d) list. MPCA has issued a *Call for Sulfate and Wild Rice Monitoring Data for the 2013 Assessment Cycle*[81] specific to sulfate and wild rice data. MPCA is accepting sulfate and wild rice related data through May 1, 2013. MPCA explains that these data will be analyzed and assessed against the wild rice/sulfate impaired waters assessment approach in 2013 and the determinations of these assessments will be reflected in the 2014 impaired waters list. MPCA stated that where sulfate water quality data meet all of the criteria for assessment and data indicate that a water body is not attaining the sulfate WQS, the State will list the water body as a Category 5 water on the 2014 303(d) list.

In the same email message to stakeholders[82] which announced the *Call for Sulfate and Wild Rice Monitoring Data For the 2013 Assessment Cycle* MPCA explained the procedures for sharing sulfate and wild rice data with MPCA by May 1, 2013. This email message clearly defined how interested parties could upload data to MPCA. Additionally, MPCA shared some of the progress which it had made in the development of the wild rice/sulfate impaired waters assessment approach. This information can be found on the MPCA's 'Minnesota's sulfate standard to protect wild rice' webpage.[83] MPCA communicated that it is still working on finalizing the wild rice/sulfate impaired waters assessment approach and plans to formally solicit input from tribes and other interested parties on the assessment approach. The solicitation and consideration of outside input will be completed prior to the MPCA's assessment of sulfate and wild rice data collected via *Call for Sulfate and Wild Rice Monitoring Data For the 2013 Assessment Cycle*. The final wild rice/sulfate impaired waters assessment approach will be included as part of MPCA's 2014 Integrated Report Guidance Manual for Assessing the Quality of Minnesota Surface Waters. EPA expects that this document will be public-noticed, along with the draft impaired waters list, sometime in the late fall of 2013 (approximately November 2013 to January 2014).

EPA encourages states to evaluate water bodies according to the provisions described in their integrated report assessment methodology. EPA believes that it is reasonable for MPCA to delay in its assessment of water bodies against the sulfate WQS until the 2014 303(d) list. EPA agrees with MPCA's decision to not add the water bodies cited by the stakeholders and tribes for impairment of the sulfate WQS on the

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[81] State Register Vol. 37 No. 40 p. 1438, http://www.comm.media.state.mn.us/bookstore/stateregister/37_40.pdf
[82] Email from Katrina Kessler (MPCA) on April 1, 2013
[83] Minnesota's Sulfate Standard to Protect Wild Rice http://www.pca.state.mn.us/index.php/water/water-permits-and-rules/water-rulemaking/minnesotas-sulfate-standard-to-protect-wild-rice.html

State's 2012 303(d) list. EPA expects MPCA to provide guidance on the following requirements in the development of the wild rice/sulfate impaired waters assessment approach:

- Criteria defining the minimum number of water quality sampling points necessary to make an assessment decision;
- Criteria defining the time period for collection of water quality sampling data to make an assessment decision (ex. sample collection must occur between X date and Y date);
- Criteria for whether ambient sulfate water quality data will be averaged, and if so, how; and
- A definition of 'seasonality' applicable to sulfate waters (i.e., when the water quality standard would be applicable to surface waters).
- A description of the approach MPCA will utilize for making determinations on whether a water body is classified as a 'wild rice production water';

EPA will continue to monitor the development of the wild rice/sulfate impaired waters assessment approach by MPCA and its use in assessing water bodies for the 2014 303(d) list.

Tribal Consultation

Under its tribal consultation process, EPA consults with federally-recognized tribal partners, on a government-to-government basis in instances when EPA decisions may impact tribal interests. EPA contacted federally-recognized tribal partners within the State of Minnesota to provide these partners the opportunity to consult with EPA on the final 2012 Minnesota 303(d) list of impaired waters. The Fond du Lac Band of Lake Superior Chippewa and Grand Portage Band of Ojibwe requested tribal consultation with EPA. EPA hosted a tribal consultation conference call on November 5, 2012, during which EPA and the tribes discussed tribal concerns related to Minnesota's final 303(d) list, the 2012 Assessment Methodology Guidance document, and other concerns expressed by the tribes. EPA considered the tribal input during its deliberations related to the approval of the final 2012 Minnesota 303(d) list. EPA provided the Fond du Lac Band of Lake Superior Chippewa and Grand Portage Band of Ojibwe a written response which explained how EPA considered their input in EPA's final decision on the list. This response was sent to the most senior tribal official involved in the consultation from the Fond du Lac Band of Lake Superior Chippewa and Grand Portage Band of Ojibwe.

Priority Ranking

EPA reviewed the State's priority ranking of listed waters for TMDL development, and concluded that the State properly took into account the severity of pollution and the beneficial uses to be made of such waters, as well as other relevant factors. MPCA's TMDL priority ranking is reflected in the scheduled target start and end dates for each impairment, as indicated on Minnesota's 2012 303(d) List. Schedules are developed by MPCA's watershed staff located in each regional office. MPCA management analyzes the schedules on a statewide basis and makes final decisions. The schedules are based upon the following ranking criteria:

- Sequencing with MPCA's intensive watershed schedule, which initiates monitoring in approximately eight major watersheds (HUC-8 size) each year. The watershed monitoring schedule was established by MPCA, and was designed to distribute workload as evenly as possible across all basins (1-2 watersheds per basin per year). In addition, watersheds selected for monitoring are based on a number of factors, including local organizational readiness to do the work, amount of data about the watershed, progression of work upstream to downstream, and whether a major TMDL plan was recently completed and there is a desire to delay monitoring

until after implementation work has been well established to understand progress. The ultimate goal is to complete the first round of watershed monitoring statewide by 2018.

- TMDLs are scheduled to be completed within approximately four years after the initiation of TMDL specific water quality monitoring. TMDLs are also considered as a component of the Watershed Restoration and Protection Strategies (WRAPs).
- TMDL projects that are currently in progress (particularly those that are independent of a scheduled WRAP).
- TMDLs that are scheduled to be started outside of a WRAP due to their unique or complex nature (i.e. toxic impairments like mercury, PCBs and other legacy pollutants).
- Beneficial use, severity of the pollution, regulated dischargers, public interest in the resource, and relative cost and resource requirements of a TMDL are also taken into account in the TMDL scheduling process.[84]

The State's priorities are reflected in the target start and completion dates provided on the 303(d) list. Minnesota has begun scheduling TMDL studies by a watershed approach, i.e., all rivers, streams and lakes in a watershed will be targeted for TMDL development at the same time. Minnesota has developed a schedule for monitoring all major watersheds using the watershed approach.

Criteria considered by the State in developing the watershed approach and associated schedules include, among other things, risk to human and aquatic health; readiness of partners and collaboration opportunities with partners to implement; basin management and basin planning efforts; and programmatic needs and resources. The target start and completion dates on the 303(d) list reflect these priorities. EPA reviewed the State's identification of WQLSs targeted for TMDL development in the next two years, and concludes that the targeted waters are appropriate for TMDL development in this time frame. Minnesota also submitted a long-term schedule for TMDL development for all waters on the 303(d) list. As a policy matter, EPA has requested that States provide such schedules, however, at this time EPA is not taking any action to approve or disapprove the State's long-term schedule pursuant to Section 303(d).

Tables

Table A-1: Approved 2012 303(d) List of Impaired Waters needing TMDLs
Table A-2: Waters being removed from 303(d) list

[84] See Administrative Record Document #9, "*Electronic mail message, Subject: MPCA responses to Batch Questions #2 and #3*", pages 1-2.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

APR 25 2014

REPLY TO THE ATTENTION OF:
WW-16J

Katrina Kessler, Section Manager
Environmental Analysis and Outcomes Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Dear Ms. Kessler:

The U.S. Environmental Protection Agency would like to thank the Minnesota Pollution Control Agency (MPCA) for its April 15, 2014 submittal of Minnesota's 2014 303(d)/305(b) package. EPA acknowledges MPCA's efforts toward finalizing the 2014 303(d) impaired waters list.

As discussed on MPCA's webpage (http://www.pca.state.mn.us/index.php/water/water-types-and-programs/minnesotas-impaired-waters-and-tmdls/impaired-waters-list.html), and as communicated to EPA, MPCA is committed to assessing waters with respect to its sulfate standard that protects water used for production of wild rice, and plans to provide the results of the wild rice sulfate standard assessments and any associated listings and public notice information to EPA in an addendum to the 2014 303(d) Impaired Water List. These efforts are ongoing.

EPA will initiate review of the documents provided. In light of the above, however, EPA considers the April 15, 2014 submittal to be a partial 303(d) submittal. EPA will complete its review of Minnesota's 303(d) list pursuant to 40 CFR 130.7(d)(2) upon submittal of the wild rice addendum.

If you or your staff have any questions, please contact Mr. Paul Proto, at 312-353-8657, or proto.paul@epa.gov.

Sincerely,

Peter Swenson

Peter Swenson
Chief, Watersheds and Wetlands Branch

Enclosure

cc: Katrina Kessler, MPCA
Miranda Nichols, MPCA
Celine Lyman, MPCA

bcc: Matthew Gluckman, EPA R5, WWB
Paul Proto, EPA R5, WWB
Sabrina Argentieri, EPA R5, ORC
Barbara Wester, EPA R5, ORC

TABLE OF PETITION EXHIBITS

STATE OF MINNESOTA 1st SPECIAL SESSION 2015
Chapter 4 -- S.F. No. 5

Third Reading Repassed
Presentment date 06/13/15
Governor's action Approval 06/13/15

EFFECTIVE DATE.
This section is effective the day following final enactment.

Article 4 Sec. 136. **WILD RICE WATER QUALITY STANDARDS.**

(a) Until the commissioner of the Pollution Control Agency amends rules refining the wild rice water quality standard in Minnesota Rules, part 7050.0224, subpart 2, to consider all independent research and publicly funded research and to include criteria for identifying waters and a list of waters subject to the standard, implementation of the wild rice water quality standard in Minnesota Rules, part 7050.0224, subpart 2, shall be limited to the following, unless the permittee requests additional conditions:

(1) when issuing, modifying, or renewing national pollutant discharge elimination system (NPDES) or state disposal system (SDS) permits, the agency shall endeavor to protect wild rice, and in doing so shall be limited by the following conditions:

(i) the agency shall not require permittees to expend money for design or implementation of sulfate treatment technologies or other forms of sulfate mitigation; and

(ii) the agency may require sulfate minimization plans in permits; and

(2) the agency shall not list waters containing natural beds of wild rice as impaired for sulfate under section 303(d) of the federal Clean Water Act, United States Code, title 33, section 1313, until the rulemaking described in this paragraph takes effect.

(b) Upon the rule described in paragraph (a) taking effect, the agency may reopen permits issued or reissued after the effective date of this section as needed to include numeric permit limits based on the wild rice water quality standard.

(c) The commissioner shall complete the rulemaking described in paragraph (a) by January 15, 2018.

AUID	NAME	DESCRIPTION	MEDIAN SULFATE CONC	PRELIM WATER QUALITY ASSESS	WATER-QUALITY ASSESSMENT COMMENTS	WILD RICE PRODUCTION WATER DECISION	WILD RICE PRODUCTiON WATER COMMENTS	WILD RICE DATA SOURCE
04010201-577	Embarrass River	Embarrass Lk to St Louis R	27	Impaired	Recommend split below Esquagama Lake. Stations on lower and upper portions of AUID separated by multiple lakes. Median calculated based on station S005-751.	IF	Determination of a split will be made dependent upon finding wild rice between lakes along upstream portion of reach. No indication of wild rice along suggested new downstream AUID (outlet of Esquagama to St. Louis River) that would result from splitting. 1854 data indicate rice presence along northern portion of reach. Need to contact Darren Vogt for additional WR information on northern portion of reach. From mining information, northern portion includes sparse stands indicated with low density locations. Based solely on this, determined not to be wild rice production water.	Mining company surveys, 1854 Treaty Authority
04010201-552	Partridge River	Headwaters to St Louis R	48	Impaired	High variability in sample measurements within close proximity, geographic and temporal. Flows through Colby Lake (69-0249-00), which has wild rice and 2 high sulfate measurements.			Mining company surveys, 1854 Treaty Authority, UMN study
09030002-501	Sandy River	Headwaters (Sandy Lk 69-0730-00) to Pike R	85	Impaired	One discrepant data point.			Mining company surveys, 1854 Treaty Authority, UMN study
04010201-533	St Louis River	Oliver Bridge to Pokegama River	39	Impaired	Wild rice data (actual point locations) are constrained to river AUID, but are associated in database with St Louis Estuary (69-1292-00), which is broader than river AUID. (Measurements collected further downstream at Blatnik Bridge (downstream from WLSSD discharge) have lower concentrations.)			Data linked to Estuary polygon: Perleberg list, MCBS, DNR call for data submittal, Ann Geissen shapefile, 1854 Treaty Authority, mining company surveys
04010201-532	St Louis River	Mission Creek to Oliver Bridge	15	Impaired	Only 2 data points on AUID, but concentrations immediately upstream (S000-021) and downstream (S007-512, S007-515) (12 out of 15 measurements above 10) indicate impairment.			Data linked to Estuary polygon: Perleberg list, MCBS, DNR call for data submittal, Ann Geissen shapefile, 1854 Treaty Authority, mining company surveys. DNR 2008 study point alongside AUID
09030009-537	Bostick Creek	Headwaters to Lake of the Woods	33	Impaired	Data is from 4 months of 1 year, but consistently shows high sulfate concentrations.			DNR 2008 study point shapefile
07020004-551	County Ditch 12	Headwaters to T113 R36W S8, north line	113	Impaired	DNR 2008 study point indicates rice somewhere on County Ditch 12 (Rice Creek), which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.			DNR 2008 study point shapefile
07010203-512	Rice Creek	Rice Lk to Elk R	18	Impaired	DNR 2008 study point indicates rice somewhere on Rice Creek, which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.			DNR 2008 study point shapefile
07010108-501	Long Prairie River	Fish Trap Creek to Crow Wing R	13	Impaired	DNR 2008 study point indicates rice somewhere on Long Prairie River, which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.			2006 Harvester's report, DNR 2008 study point shapefile
07020011-531	Rice Creek	Headwaters to Maple R	28	Impaired	Consistently high sulfate concentrations at all 4 stations along entire AUID.			DNR 2008 study point shapefile
07020005-501	Chippewa River	Watson Sag to Minnesota R	139	Impaired	DNR 2008 study point indicates rice somewhere on Chippewa River, which is more extensive than the AUIDs with sulfate data. Wherever sampled, the Chippewa River has high sulfate concentrations. Listing individual AUIDs is dependent upon location of wild rice.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-505	Chippewa River	Unnamed cr to E Br Chippewa R	88	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-506	Chippewa River	E Br Chippewa R to Shakopee Cr	70	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-508	Chippewa River	Cottonwood Cr to Dry Weather Cr	90	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-503	Chippewa River	Stowe Lk to Little Chippewa R	39	Impaired	See above comment regarding Chippewa River.	No	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07040002-502	Cannon River	Pine Cr to Belle Cr	33	Impaired	DNR 2008 study point indicates rice somewhere on Cannon River, which is more extensive than the AUIDs with sulfate data. Wherever sampled, the Cannon River has high sulfate concentrations. Listing individual AUIDs is dependent upon location of wild rice.			DNR 2008 study point shapefile
07040002-542	Cannon River	Headwaters to Cannon Lk	17	Impaired	See above comment regarding Cannon River.			DNR 2008 study point shapefile
07040002-539	Cannon River	Byllesby Dam to Little Cannon R	27	Impaired	See above comment regarding Cannon River.			DNR 2008 study point shapefile
07040002-501	Cannon River	Belle Cr to split near mouth	31	Impaired	See above comment regarding Cannon River.			DNR 2008 study point shapefile

Footnotes:

1. This spreadsheet includes working notes from an August 13, 2013 meeting of MPCA staff
2. Nothing in this spreadsheet represents a final agency decision
3. The spreadsheet was updated with clarifying footnotes following a November 16, 2013 Data Practices Act Request
4. "Impaired" is staff indication that the median sulfate concentration exceeded 10 mg/L
5. Notations in the column "WILD RICE PRODUCTION WATER DECISION" do not represent an agency decision on applicability of the Class 4A 10 mg/L standard at these water bodies rather they indicate that there are data documenting some history of wild rice

NAME	MEDIAN SULFATE CONC	PRELIM WATER QUALITY ASSESS	WATER-QUALITY ASSESSMENT COMMENTS	WILD RICE PRODUCTIO N WATER DECISION	WILD RICE PRODUCTOIN WATER COMMENTS	WILD RICE ACRES	WILD RICE DATA SOURCE
Cedar Island (N portion)	21	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10. Evaluate together with S. Portion, Fourth, and Esquagama, all connected via Embarrass R.	Yes	Mining company survey shows low to moderate density of rice throughout perimeter of lake. DNR lake survey jul 12, 1990 noted abundant wild rice, especially along west shore. Sulfate sampling locations are near wild rice observation sites.		Mining Companies, 1854 Treaty Authority
Cedar Island (S portion)	20	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Yes	Mining company survey shows moderate density of rice throughout perimeter of lake. DNR lake survey jul 12, 1990 noted abundant wild rice, especially along west shore. Sulfate sampling locations are near wild rice observation sites.		Mining Companies, 1854 Treaty Authority
Fourth	20	Impaired	Only 1 measurement on lake itself, but concentrations on (connected) Esquagama (69-0565-00-203) and Cedar Island S. Portion (69-0568-02-204,69-0568-02-207) are also high.	IF	Need to contact Darren Vogt for additional WR information. From mining information, sparse stands indicated with single low density location. Based on this, determined not to be wild rice production water.		Mining Companies, 1854 Treaty Authority, Ann Geissen shapefile, 2008 Study shapefile
Esquagama	26	Impaired	Only 3 measurements on lake itself, but concentrations on (connected) Fourth Lake (69-0573-00-201) and downstream (S005-751) are also high.	IF	Need to contact Darren Vogt for additional WR information. From mining information, a single stand with low density. Based on this, determined not to be wild rice production water.		Mining Companies, 1854 Treaty Authority
East Vermilion	14	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Yes	Significant acreage of rice in Big Bay. Assumed to be at least 70 acres in Big bay based on estimated size of Rice Bay at 180 acres, and total wild rice area of 250 acres. Rice Bay is also indicated for wild rice, but no sulfate data have been collected there.	250	1854 Treaty Authority, Ann Geissen shapefile, 2008 Study shapefile
Trout	42	Impaired		No	insufficient information to determine that this is a production water.		DNR call for data submittal, U of MN study sites
Elizabeth (main basin)	30	Impaired		No	Insufficient information to determine that this is a production water. DNR lake survey reports dates 6/2006, 5/1997 no wild rice noted.		DNR call for data submittal
Swan (W bay)	tbd	TBD	Impaired, subject to verification of location of station 31-0067-01-204. If judged strictly on station 01-205, sulfate not significantly above 10.	Yes	Staff recommendation for the ESSAR water permit is that this is a production water. Check with Stephanie for recommendation date.	50 (00)	2006 Harvest Survey (00 polygon), Ann Geissen shapefile, Perleberg list, 2008 Study shapefile. Rice data tied to underlying lake (-00)
Swan (main basin)	tbd	Impaired	Median dependent upon station 31-0067-01-204 being included in main basin. Regardless, median is significantly above 10.	Yes	* The outlet bay upstream of the dam is a wild rice production water, based on mining company survey from 2011 has densities of 4 and 5.	50 (00)	2006 Harvest Survey (00 polygon), Ann Geissen shapefile, Perleberg list, 2008 Study shapefile. All tied to underlying lake (-00). UMN study data tied to Main Basin polygon (-02).
Preston	45	Impaired		No	insufficient information to determine that this is a production water. Lake Survey reports from 3/29/1995, 2/21/2006 noted no wild rice.		DNR call for data submittal
Embarrass	21	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Yes	Upper portion of Embarrass shows numerous low to moderate density observations around entire perimeter in mining surveys from 2009 and 2010. However, Lower Embarrass had few observations of low density. *Only Upper Embarrass is considered a wild rice production water.		1854 Treaty Authority, mining company data, Perleberg list, UMN Study
Lady Slipper	314	Impaired	Multiple sites; station 203 has single observation, still above 10, but well below other observations.	No	1997 fisheries transect from 1997 indicated small area of rice. 2011 and 2012 UMN study found no wild rice.		Perleberg list, UMN study
Monongalia (main basin)	31	Impaired		IF	Photo from 2012 exists of high density wild rice. Mark Gernes has harvested rice on the lake for several recent years. U of MN study showed 3 pct coverage at study site. Contact Ed Swain and Mark Gernes for details on location of harvestable rice. Contact Donna Perleberg for more information on inclusion in her list.		UMN study (tied to main basin -01). MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile on underlying waterbody (-00)
Monongalia - Middle Fk Crow	29	Impaired	One questionable sample with very low concentration, turned out to be pore water, sample was excluded and median recalculated.	Yes	Photo from 2012 exists of high density wild rice. Mark Gernes has harvested rice on the lake for several recent years. U of MN study showed 38.75 pct coverage at study site.		UMN study (tied to polygon -02). MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile on underlying waterbody (-00)
Crow River Mill Pond (East)	26	Impaired		IF	Contact Donna Perleberg for more information on Mill Pond observation from MCBS survey 8/6/2002. Contact Mark Gernes for local knowledge.		MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile, all on underlying waterbody (-00)

Footnotes:

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5. Notations in the column "WILD RICE PRODUCTION WATER DECISION" do not represent an agency decision on applicability of the Class 4A 10 mg/L standard at these water bodies rather they indicate that there are data documenting some history of wild rice

NAME	MEDIAN SULFATE CONC	PRELIM WATER QUALITY ASSESS	WATER-QUALITY ASSESSMENT COMMENTS	WILD RICE PRODUCTION WATER DECISION	WILD RICE PRODUCTOIN WATER COMMENTS	WILD RICE ACRES	WILD RICE DATA SOURCE
Hay	52	Impaired		Yes	Staff recommendation for Keetac permit in 2011 was that this is a wild rice production water. Check with Brandon Smith on the date of the Perry Pit dewatering permit.		Ann Geissen shapefile, UMN study, 2008 DNR study
Big Stone	404	Impaired		No	insufficient information to determine that this is a production water. DNR lake survey from 3/17/2004 noted no wild rice.		DNR call for data submittal
Lac Qui Parle (NW bay)	293	Impaired		No	3/23/2000 DNR lake survey - no wild rice noted.		DNR call for data submittal - on underlying waterbody (-00)
Lac Qui Parle (SE bay)	270	Impaired	Only 1 data point on this bay, but concentrations on upstream portion of lake (37-0046-02) and downstream river (07020004-688) are also high.	No	3/23/2000 DNR lake survey - no wild rice noted.		DNR call for data submittal - on underlying waterbody (-00)
Mina	25	Impaired		IF	DNR Lake Surveys from 8/4/1949, 1/2/1998 indicated wild rice presence. 1949 comment indicates sparse presence. 1998 survey was a fisheries transect. Contact Ann Geisen for further detail on why this waterbody was included in call for data submission.		DNR call for data submittal
Pearl	21	Impaired		IF	DNR lake survey indicates wild rice was rare August 24 - 28, 1987. Contact Ann Geisen for further detail on why this waterbody was included in call for data submission.		DNR call for data submittal
Sandy	135	Impaired		Yes	Locate draft staff recommendation for production water status. Wild rice acreage from 2008 report.	121	1854 Treaty Authority, UMN study, Ann Geissen List, 2008 study shapefile
Little Sandy	145	Impaired		Yes	Locate draft staff recommendation for production water status. Wild rice acreage from 2008 report.	89	1854 Treaty Authority, Ann Geissen List, 2008 study shapefile
Marsh	379	Impaired		No	DNR lake survey reports from 3/9/2004, 3/28/2001 noted no wild rice, 4/14/1954 waterfowl/muskrat habitat survey comment says "wild rice would not do well in this lake". 8/1962 map showed no wild rice. 7/1968 game and fish map showed no wild rice.		DNR call for data submittal
Lillian	151	Impaired		No	5/13/1997 lake survey report noted no wild rice.		DNR call for data submittal
Lobster	22	Impaired	Only 1 measurement on lake itself, but concentrations on lakes immediately adjacent (21-0108-00, 21-0180-00, 21-0150-00) are also high.	No	2/5/1997 lake survey report no rice noted. 1949 report did not note any rice and "wild rice would not do well in this lake". Follow up with 1997 fisheries report.		Perleberg list
Sturgeon	58	Impaired	All data collected on Mississippi (MissR 796.9, MissR 805.0), but direct hydrologic connection with Sturgeon.	No	insufficient information to determine that this is a production water.		Ann Geissen shapefile, DNR 2008 study
Long	33	Impaired	Only 1 measurement on lake, but concentrations (5 miles) downstream (S005-630) are also high.	No	insufficient information to determine that this is a production water. DNR Lake Survey report from 2/5/1997 did not note any wild rice.		DNR call for data submittal
Red Lake River Reservoir	tbd	Insufficient Information	Drinking water intake near dam may yield additional sulfate data. Downstream sulfate concentrations high (S002-324), but only 2 measurements recorded. Wild rice location unknown; will determine whether it is necessary to seek additional sulfate data, leading to possible judgment of impairment.	IF	Need to consult fisheries area surveys from 7/2/2009 and 8/1/1994 to determine wild rice location.		DNR call for data submittal, Perleberg list
Rice	tbd	Insufficient Information	Outflow stream has high sulfate. Main inflow is close to outlet, large distance from lake sampling locations. Wild rice location within lake unknown, but will determine whether outflow sulfate concentrations are sufficient for judgment of impairment.	No	Insufficient information to determine that this is a production water. UMN study did not observe any rice in 2012.		Ann Geissen shapefile, DNR 2008 study, UMN study

Footnotes:

1. This spreadsheet includes working notes from an August 13, 2013 meeting of MPCA staff
2. Nothing in this spreadsheet represents a final agency decision
3. The spreadsheet was updated with clarifying footnotes following a November 16, 2013 Data Practices Act Request
4. "Impaired" is staff indication that the median sulfate concentration exceeded 10 mg/L
5. Notations in the column "WILD RICE PRODUCTION WATER DECISION" do not represent an agency decision on applicability of the Class 4A 10 mg/L standard at these water bodies rather they indicate that there are data documenting some history of wild rice

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RETURN RECEIPT REQUESTED

August 12, 2013

Ms. Stephanie Handeland
Industrial Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155

Re: Draft Staff Recommendation for 'Waters Used for Production of Wild Rice' Downstream of the U. S. Steel Minntac Tailings Basin

Dear Ms. Handeland:

This letter is transmitted as U. S. Steel's response to your request for feedback on the "Draft Staff Recommendation for 'waters used for production of wild rice' downstream of the US Steel Minntac tailings basin" ("Draft Recommendation"). U. S. Steel appreciates the opportunity to comment on the staff recommendation.

U. S. Steel has worked cooperatively with the MPCA and other regulatory agencies and interested parties for several years on matters related to reducing sulfate discharges from its operations and the protection of wild rice. That work has included installation of a seep collection and return system on the Sand River side of the basin, monitoring of the Twin Lakes since 2010, and groundwater modeling. In addition permitting has been ongoing for installation of dry controls on Agglomerator Line 6, research continues on the Line 3 scrubber blowdown system and engineering is ongoing for the #6 sump alternate make up water project. U.S. Steel recognizes the importance of this work and is committed to continuing it.

Regarding the Draft Recommendation, it is premature for the MPCA to determine that Little Sandy Lake and Sandy Lake (the "Twin Lakes") are "waters used for the production of wild rice." U. S. Steel agrees with the statement in the Draft Recommendation that to effectively apply the 10 mg/L sulfate standard contained in Minnesota Rule 7050.0224, subpart 2, the MPCA needs to determine whether a particular water is a "water used for production of wild rice." The process for making that determination was established in law in 2011. The MPCA has not yet completed the required steps contained in that law to determine which bodies of water are subject to water quality standards applicable to wild rice.

The MPCA and other interested groups worked with legislators in 2011 to establish a process to designate bodies of water to which wild rice water quality standards apply. That legislative activity arose from uncertainty regarding whether the sulfate standard in Minnesota Rule 7050.0224, subpart 2 applies to natural stands of wild rice (there is little disagreement over its applicability to cultivated wild rice). The final legislative language, which was negotiated and agreed to by the MPCA, was passed by the legislature and signed into law by the Governor. It is contained in MN Session Laws 2011, First Special Session, Chapter 2, Article 4 ("2011 Law").

The Minnesota Court of Appeals has recognized the MPCA's duty under the 2011 law to confirm in rule the applicability of the sulfate standard to natural stands of wild rice. When the Minnesota Chamber of Commerce challenged the MPCA application of the sulfate standard, the court refused to review the MPCA's application of the standard due to the 2011 law. The court said:

> We decline to review any proposed interpretation or application of the Wild Rice Rule because the Chamber's claims as to the agency's application of the rule and its scope are essentially moot. *The 2011 legislation directs the agency to amend the Wild Rice Rule to confirm that it applies to both natural and commercial stands of wild rice and to specify the bodies of water to which the rule applies and the specific time period during which it applies. 2011 Minn. Laws 1st Spec. Sess. ch. 2, art. 4, § 32, at 71–73. We decline to consider the rule's application when the legislature has already addressed the issue.*[1]

The 2011 law directs the MPCA to take several steps to determine whether any body of water, including any body of water near the Minntac facility, is subject to a water quality standard to protect wild rice. First, the MPCA is required to "adopt and implement a wild rice research plan using the money appropriated to contract with appropriate scientific experts." That research is ongoing. The law directs the MPCA to take several steps when the wild rice research is complete:

> Sec. 32. WILD RICE RULEMAKING AND RESEARCH.
>
> (a) Upon completion of the research referenced in paragraph (d), the commissioner of the Pollution Control Agency shall initiate a process to amend Minnesota Rules, chapter 7050. The amended rule shall:
>
> (1) address water quality standards for waters containing natural beds of wild rice, as well as for irrigation waters used for the production of wild rice;
>
> (2) designate each body of water, or specific portion thereof, to which wild rice water quality standards apply; and
>
> (3) designate the specific times of year during which the standard applies.

[1] Emphasis added. Minnesota Chamber of Commerce v. Minnesota Pollution Control Agency, File No. 62-CV-10-11824 (Minnesota Court of Appeals unpublished)

In addition, the law clearly describes the process the MPCA must use to establish criteria for identifying waters containing natural beds of wild rice as waters subject to a wild rice standard. According to the 2011 Law:

> (b) "Waters containing natural beds of wild rice" means waters where wild rice occurs naturally. Before designating waters containing natural beds of wild rice as waters subject to a standard, the commissioner of the Pollution Control Agency shall establish criteria for the waters after consultation with the Department of Natural Resources, Minnesota Indian tribes, and other interested parties and after public notice and comment. The criteria shall include, but not be limited to, history of wild rice harvests, minimum acreage, and wild rice density.

The MPCA has not yet completed the wild rice research plan, much less the subsequent rulemakings to address wild rice water quality standards and designate each body of water to which wild rice water quality standards apply. The Draft recommendation is therefore premature.

We understand that the MPCA has taken some preliminary steps to prepare criteria to designate waters subject to water quality standards to protect wild rice but it is not clear how those criteria might have been applied to produce the Draft Recommendation. For example, we understand that the MPCA and USEPA Region V have proposed a joint priority for 2013 regarding the state sulfate water quality standard. That joint priority statement included "a commitment from MPCA to develop methodology to assess whether surface waters meet the State's sulfate water quality standards applicable to wild rice production waters, and for designating waters as wild rice production waters." The document goes on to state that "MPCA has communicated its intention to develop a sulfate water quality assessment methodology for use in the assessment of state waters for the 2014 303(d) list. This methodology would answer questions including where and when the sulfate standard applies, and the minimum number of measurements needed for an assessment decision. Making this a joint priority would formalize that commitment."

The Draft Recommendation does not provide any detail on whether the MPCA has finalized a draft methodology. And neither the Draft Recommendation nor any other information available to U. S. Steel indicates how the processes required in the 2011 law will be followed in producing the methodology as a "joint priority" with USEPA Region V.

The MPCA has discussed criteria for designating waters used for the production of wild rice with the Wild Rice Standards Study Advisory Committee, which includes a representative of U. S. Steel. The Minnesota Chamber Wild Rice Task Force submitted comments on those criteria on January 17, 2013. The Draft Recommendation does not include any information regarding whether the MPCA's criteria have been finalized and whether those criteria include any revisions based on the Minnesota Chamber of Commerce comments.

In addition, U. S. Steel has in the past respectfully suggested that the MPCA must carefully consider the applicability of the its water quality standards regarding discharge limits for sulfates as they related to wild rice and we renew that suggestion. Minnesota has two water quality standards applicable to wild rice. The first, contained in Minnesota Rules 7050.0224 subpt. 1, provides a narrative standard that is applicable to waters that have been specifically identified

[WR] and listed in Minnesota Rules 7050.0470. The second, contained in Minnesota Rules 7050.0224 subpt. 2, provides the standard for Class 4A waters of the state, stating that the quality of those waters "shall be such as to permit their use for irrigation."

Those two standards clearly establish standards for discharges to receiving waters that meet one of two criteria: specific designation as WR in Minnesota rules or use of the receiving water for irrigation. None of downstream receiving waters of Minntac are designated as WR in the Minnesota Rules. In addition, the term "irrigation" is not clearly defined within Minnesota Rules but there is no suggestion that any waters near Minntac are used for irrigation of wild rice. The MPCA must carefully assess its authority to apply those standards to discharges to receiving waters that are neither designated as WR nor used for irrigation.

Where the standards in Minnesota Rules 7050.0224 subpt. 2 properly apply to a discharge, the MPCA must complete its work to establish clearer standards for permittees and the public regarding establishment of a discharge limit for sulfates. The MPCA must, as required in the 2011 Law, establish criteria to be used to identify when water is "used for production of wild rice" and a scientifically justified definition of the periods when wild rice may be affected by certain variables that may include elevated sulfate levels. Today permittees and the public cannot predict how those terms will be applied by the MPCA. This uncertainty is magnified by the nearly complete lack of application of the standard in water quality permits since the standard was adopted in 1973.

In conclusion, it is clear that the preparation of the Draft Recommendation is not consistent with the 2011 Law and must be withdrawn by the MPCA. U.S. Steel has committed significant staff and financial resources to working the MPCA and others on important issues regarding sulfates in the environment and wild rice protection and will continue that work. We look forward to working with the MPCA on its ongoing wild rice research plan and the subsequent rulemakings to modernize the Minnesota water quality standards to protect wild rice. Once those steps have been completed we will be prepared to discuss the applicability of those standards to waters near U.S. Steel facilities.

Sincerely,

David L. Smiga

DLS/nms
cc: Chrissy L. Bartovich
Tishie Woodwell

(456492)

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AUID	NAME	DESCRIPTION	MEDIAN SULFATE CONC	SULFATE WATER QUALITY ASSESS	SULFATE ASSESSMENT COMMENTS	WILD RICE PRODUCTION WATER DECISION	WILD RICE PRODUCTioN WATER COMMENTS	WILD RICE DATA SOURCE
04010201-577	Embarrass River	Embarrass Lk to St Louis R	27	Impaired	Recommend split below Esquagama Lake. Stations on lower and upper portions of AUID separated by multiple lakes. Median calculated based on station S005-751.	Decisions to be made once WURPOWR criteria have been developed	Determination of a split will be made dependent upon finding wild rice between lakes along upstream portion of reach. No indication of wild rice along suggested new downstream AUID (outlet of Esquagama to St. Louis River) that would result from splitting. 1854 data indicate rice presence along northern portion of reach. Need to contact Darren Vogt for additional WR information on northern portion of reach. From mining information, northern portion includes sparse stands indicated with low density locations.	Mining company surveys, 1854 Treaty Authority
04010201-552	Partridge River	Headwaters to St Louis R	48	Impaired	High variability in sample measurements within close proximity, geographic and temporal. Flows through Colby Lake (69-0249-00), which has wild rice and 2 high sulfate measurements.	Decisions to be made once WURPOWR criteria have been developed		Mining company surveys, 1854 Treaty Authority, UMN study
09030002-501	Sandy River	Headwaters (Sandy Lk 69-0730-00) to Pike R	85	Impaired	One discrepant data point.	Decisions to be made once WURPOWR criteria have been developed		Mining company surveys, 1854 Treaty Authority, UMN study
04010201-533	St Louis River	Oliver Bridge to Pokegama River	39	Impaired	Wild rice data (actual point locations) are constrained to river AUID, but are associated in database with St Louis Estuary (69-1292-00), which is broader than river AUID. (Measurements collected further downstream at Blatnik Bridge (downstream from WLSSD discharge) have lower concentrations.)	Decisions to be made once WURPOWR criteria have been developed		Data linked to Estuary polygon: Perleberg list, MCBS, DNR call for data submittal, Ann Geissen shapefile, 1854 Treaty Authority, mining company surveys
04010201-532	St Louis River	Mission Creek to Oliver Bridge	15	Impaired	Only 2 data points on AUID, but concentrations immediately upstream (S000-021) and downstream (S007-512, S007-515) (12 out of 15 measurements above 10) indicate impairment.	Decisions to be made once WURPOWR criteria have been developed		Data linked to Estuary polygon: Perleberg list, MCBS, DNR call for data submittal, Ann Geissen shapefile, 1854 Treaty Authority, mining company surveys. DNR 2008 study point alongside AUID
09030009-537	Bostick Creek	Headwaters to Lake of the Woods	33	Impaired	Data is from 4 months of 1 year, but consistently shows high sulfate concentrations.	Decisions to be made once WURPOWR criteria have been developed		DNR 2008 study point shapefile
07020004-551	County Ditch 12	Headwaters to T113 R36W S8, north line	113	Impaired	DNR 2008 study point indicates rice somewhere on County Ditch 12 (Rice Creek), which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.	Decisions to be made once WURPOWR criteria have been developed		DNR 2008 study point shapefile
07010203-512	Rice Creek	Rice Lk to Elk R	18	Impaired	DNR 2008 study point indicates rice somewhere on Rice Creek, which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.	Decisions to be made once WURPOWR criteria have been developed		DNR 2008 study point shapefile
07010108-501	Long Prairie River	Fish Trap Creek to Crow Wing R	13	Impaired	DNR 2008 study point indicates rice somewhere on Long Prairie River, which is more extensive than the AUID with sulfate data. AUID is impaired if wild rice is present in close proximity to sampling station.	Decisions to be made once WURPOWR criteria have been developed		2006 Harvester's report, DNR 2008 study point shapefile

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AUID	NAME	DESCRIPTION	MEDIAN SULFATE CONC	SULFATE WATER QUALITY ASSESS	SULFATE ASSESSMENT COMMENTS	WILD RICE PRODUCTION WATER DECISION	WILD RICE PRODUCTioN WATER COMMENTS	WILD RICE DATA SOURCE
07020011-531	Rice Creek	Headwaters to Maple R	28	Impaired	Consistently high sulfate concentrations at all 4 stations along entire AUID.	Decisions to be made once WURPOWR criteria have been developed		DNR 2008 study point shapefile
07020005-501	Chippewa River	Watson Sag to Minnesota R	139	Impaired	DNR 2008 study point indicates rice somewhere on Chippewa River, which is more extensive than the AUIDs with sulfate data. Wherever sampled, the Chippewa River has high sulfate concentrations. Listing individual AUIDs is dependent upon location of wild rice.	Decisions to be made once WURPOWR criteria have been developed	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-505	Chippewa River	Unnamed cr to E Br Chippewa R	88	Impaired	See above comment regarding Chippewa River.	Decisions to be made once WURPOWR criteria have been developed	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-506	Chippewa River	E Br Chippewa R to Shakopee Cr	70	Impaired	See above comment regarding Chippewa River.	Decisions to be made once WURPOWR criteria have been developed	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-508	Chippewa River	Cottonwood Cr to Dry Weather Cr	90	Impaired	See above comment regarding Chippewa River.	Decisions to be made once WURPOWR criteria have been developed	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07020005-503	Chippewa River	Stowe Lk to Little Chippewa R	39	Impaired	See above comment regarding Chippewa River.	Decisions to be made once WURPOWR criteria have been developed	DNR 2008 report indicates wild rice somewhere along the Chippewa River. Only documentation of wild rice was on a tributary (Danvers Ditch). There is insufficient information about rice in the ditch.	DNR 2008 study point shapefile
07040002-502	Cannon River	Pine Cr to Belle Cr	33	Impaired	DNR 2008 study point indicates rice somewhere on Cannon River, which is more extensive than the AUIDs with sulfate data. Wherever sampled, the Cannon River has high sulfate concentrations. Listing individual AUIDs is dependent upon location of wild rice.	Decisions to be made once WURPOWR criteria have been developed		DNR 2008 study point shapefile
07040002-542	Cannon River	Headwaters to Cannon Lk	17	Impaired	See above comment regarding Cannon River.	Decisions to be made once WURPOWR criteria have been developed		DNR 2008 study point shapefile
07040002-539	Cannon River	Byllesby Dam to Little Cannon R	27	Impaired	See above comment regarding Cannon River.	Decisions to be made once WURPOWR criteria have been developed		DNR 2008 study point shapefile
07040002-501	Cannon River	Belle Cr to split near mouth	31	Impaired	See above comment regarding Cannon River.	Decisions to be made once WURPOWR criteria have been developed		DNR 2008 study point shapefile

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NAME	MEDIAN SULFATE CONC	SULFATE WATER QUALITY ASSESS	SULFATE ASSESSMENT COMMENTS	WILD RICE PRODUCTION WATER DECISION	WILD RICE PRODUCTOIN WATER COMMENTS	WILD RICE ACRES	WILD RICE DATA SOURCE
Cedar Island (N portion)	21	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10. Evaluate together with S. Portion, Fourth, and Esquagama, all connected via Embarrass R.	Decisions to be made once WURPOWR criteria have been developed	Mining company survey shows low to moderate density of rice throughout perimeter of lake. DNR lake survey jul 12, 1990 noted abundant wild rice, especially along west shore. Sulfate sampling locations are near wild rice observation sites.		Mining Companies, 1854 Treaty Authority
Cedar Island (S portion)	20	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Decisions to be made once WURPOWR criteria have been developed	Mining company survey shows moderate density of rice throughout perimeter of lake. DNR lake survey jul 12, 1990 noted abundant wild rice, especially along west shore. Sulfate sampling locations are near wild rice observation sites.		Mining Companies, 1854 Treaty Authority
Fourth	20	Impaired	Only 1 measurement on lake itself, but concentrations on (connected) Esquagama (69-0565-00-203) and Cedar Island S. Portion (69-0568-02-204,69-0568-02-207) are also high.	Decisions to be made once WURPOWR criteria have been developed	Need to contact Darren Vogt for additional WR information. From mining information, sparse stands indicated with single low density location.		Mining Companies, 1854 Treaty Authority, Ann Geissen shapefile, 2008 Study shapefile
Esquagama	26	Impaired	Only 3 measurements on lake itself, but concentrations on (connected) Fourth Lake (69-0573-00-201) and downstream (S005-751) are also high.	Decisions to be made once WURPOWR criteria have been developed	Need to contact Darren Vogt for additional WR information. From mining information, a single stand with low density.		Mining Companies, 1854 Treaty Authority
East Vermilion	14	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Decisions to be made once WURPOWR criteria have been developed	Significant acreage of rice in Big Bay. Assumed to be at least 70 acres in Big bay based on estimated size of Rice Bay at 180 acres, and total wild rice area of 250 acres. Rice Bay is also indicated for wild rice, but no sulfate data have been collected there.	250	1854 Treaty Authority, Ann Geissen shapefile, 2008 Study shapefile
Trout	42	Impaired		Decisions to be made once WURPOWR criteria have been developed	insufficient information		DNR call for data submittal, U of MN study sites
Elizabeth (main basin)	30	Impaired		Decisions to be made once WURPOWR criteria have been developed	Insufficient information. DNR lake survey reports dates 6/2006, 5/1997 no wild rice noted.		DNR call for data submittal
Swan (W bay)	tbd	TBD	Impaired, subject to verification of location of station 31-0067-01-204. If judged strictly on station 01-205, sulfate not significantly above 10.	Decisions to be made once WURPOWR criteria have been developed	Draft staff recommendation for the ESSAR water permit is that this is a production water. Check with Stephanie for recommendation date.	50 (00)	2006 Harvest Survey (00 polygon), Ann Geissen shapefile, Perleberg list, 2008 Study shapefile. Rice data tied to underlying lake (-00)
Swan (main basin)	tbd	Impaired	Median dependent upon station 31-0067-01-204 being included in main basin. Regardless, median is significantly above 10.	Decisions to be made once WURPOWR criteria have been developed	* The outlet bay upstream of the dam included in mining company survey from 2011 has densities of 4 and 5.	50 (00)	2006 Harvest Survey (00 polygon), Ann Geissen shapefile, Perleberg list, 2008 Study shapefile. All tied to underlying lake (-00). UMN study data tied to Main Basin polygon (-02).
Preston	45	Impaired		Decisions to be made once WURPOWR criteria have been developed	insufficient information. Lake Survey reports from 3/29/1995, 2/21/2006 noted no wild rice.		DNR call for data submittal

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Embarrass	21	Impaired	Multiple sites with data collected same date, but concentrations consistent across sites, median still significantly above 10.	Decisions to be made once WURPOWR criteria have been developed	Upper portion of Embarrass shows numerous low to moderate density observations around entire perimeter in mining surveys from 2009 and 2010. However, Lower Embarrass had few observations of low density. *Only Upper Embarrass is considered a wild rice production water per draft staff recommendation.		1854 Treaty Authority, mining company data, Perleberg list, UMN Study
Lady Slipper	314	Impaired	Multiple sites; station 203 has single observation, still above 10, but well below other observations.	Decisions to be made once WURPOWR criteria have been developed	1997 fisheries transect from 1997 indicated small area of rice. 2011 and 2012 UMN study found no wild rice.		Perleberg list, UMN study
Monongalia (main basin)	31	Impaired		Decisions to be made once WURPOWR criteria have been developed	Photo from 2012 exists of high density wild rice. Mark Gernes has harvested rice on the lake for several recent years. U of MN study showed 3 pct coverage at study site. Contact Ed Swain and Mark Gernes for details on location of harvestable rice. Contact Donna Perleberg for more information on inclusion in her list.		UMN study (tied to main basin -01). MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile on underlying waterbody (-00)
Monongalia - Middle Fk Crow	29	Impaired	One questionable sample with very low concentration, turned out to be pore water, sample was excluded and median recalculated.	Decisions to be made once WURPOWR criteria have been developed	Photo from 2012 exists of high density wild rice. Mark Gernes has harvested rice on the lake for several recent years. U of MN study showed 38.75 pct coverage at study site.		UMN study (tied to polygon -02). MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile on underlying waterbody (-00)
Crow River Mill Pond (East)	26	Impaired		Decisions to be made once WURPOWR criteria have been developed	Contact Donna Perleberg for more information on Mill Pond observation from MCBS survey 8/6/2002. Contact Mark Gernes for local knowledge.		MCBS, Perleberg list, Ann Geissen shapefile, 2008 study shapefile, all on underlying waterbody (-00)
Hay	52	Impaired		Decisions to be made once WURPOWR criteria have been developed	Staff recommendation for Keetac permit in 2011 was that this is a wild rice production water. Check with Brandon Smith on the date of the Perry Pit dewatering permit.		Ann Geissen shapefile, UMN study, 2008 DNR study
Big Stone	404	Impaired		Decisions to be made once WURPOWR criteria have been developed	insufficient information. DNR lake survey from 3/17/2004 noted no wild rice.		DNR call for data submittal
Lac Qui Parle (NW bay)	293	Impaired		Decisions to be made once WURPOWR criteria have been developed	3/23/2000 DNR lake survey - no wild rice noted.		DNR call for data submittal - on underlying waterbody (-00)
Lac Qui Parle (SE bay)	270	Impaired	Only 1 data point on this bay, but concentrations on upstream portion of lake (37-0046-02) and downstream river (07020004-688) are also high.	Decisions to be made once WURPOWR criteria have been developed	3/23/2000 DNR lake survey - no wild rice noted.		DNR call for data submittal - on underlying waterbody (-00)
Mina	25	Impaired		Decisions to be made once WURPOWR criteria have been developed	DNR Lake Surveys from 8/4/1949, 1/2/1998 indicated wild rice presence. 1949 comment indicates sparse presence. 1998 survey was a fisheries transect. Contact Ann Geisen for further detail on why this waterbody was included in call for data submission.		DNR call for data submittal
Pearl	21	Impaired		Decisions to be made once WURPOWR criteria have been developed	DNR lake survey indicates wild rice was rare August 24 - 28, 1987. Contact Ann Geisen for further detail on why this waterbody was included in call for data submission.		DNR call for data submittal
Sandy	135	Impaired		Decisions to be made once WURPOWR criteria have been developed	Locate draft staff recommendation for production water status. Wild rice acreage from 2008 report.	121	1854 Treaty Authority, UMN study, Ann Geissen List, 2008 study shapefile

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Little Sandy	145	Impaired		Decisions to be made once WURPOWR criteria have been developed	Locate draft staff recommendation for production water status. Wild rice acreage from 2008 report.	89	1854 Treaty Authority, Ann Geissen List, 2008 study shapefile
Marsh	379	Impaired		Decisions to be made once WURPOWR criteria have been developed	DNR lake survey reports from 3/9/2004, 3/28/2001 noted no wild rice, 4/14/1954 waterfowl/muskrat habitat survey comment says "wild rice would not do well in this lake". 8/1962 map showed no wild rice. 7/1968 game and fish map showed no wild rice.		DNR call for data submittal
Lillian	151	Impaired		Decisions to be made once WURPOWR criteria have been developed	5/13/1997 lake survey report noted no wild rice.		DNR call for data submittal
Lobster	22	Impaired	Only 1 measurement on lake itself, but concentrations on lakes immediately adjacent (21-0108-00, 21-0180-00, 21-0150-00) are also high.	Decisions to be made once WURPOWR criteria have been developed	2/5/1997 lake survey report no rice noted. 1949 report did not note any rice and "wild rice would not do well in this lake". Follow up with 1997 fisheries report.		Perleberg list
Sturgeon	58	Impaired	All data collected on Mississippi (MissR 796.9, MissR 805.0), but direct hydrologic connection with Sturgeon.	Decisions to be made once WURPOWR criteria have been developed	insufficient information.		Ann Geissen shapefile, DNR 2008 study
Long	33	Impaired	Only 1 measurement on lake, but concentrations (5 miles) downstream (S005-630) are also high.	Decisions to be made once WURPOWR criteria have been developed	insufficient information. DNR Lake Survey report from 2/5/1997 did not note any wild rice.		DNR call for data submittal
Red Lake River Reservoir	tbd	Insufficient Information	Drinking water intake near dam may yield additional sulfate data. Downstream sulfate concentrations high (S002-324), but only 2 measurements recorded. Wild rice location unknown; will determine whether it is necessary to seek additional sulfate data, leading to possible judgment of impairment.	Decisions to be made once WURPOWR criteria have been developed	Need to consult fisheries area surveys from 7/2/2009 and 8/1/1994 to determine wild rice location.		DNR call for data submittal, Perleberg list
Rice	tbd	Insufficient Information	Outflow stream has high sulfate. Main inflow is close to outlet, large distance from lake sampling locations. Wild rice location within lake unknown, but will determine whether outflow sulfate concentrations are sufficient for judgment of impairment.	Decisions to be made once WURPOWR criteria have been developed	Insufficient information. UMN study did not observe any rice in 2012.		Ann Geissen shapefile, DNR 2008 study, UMN study

Footnotes:
1. This spreadsheet includes working notes from an August 13, 2013 meeting of MPCA staff and revisions made subsequent to November 16, 2013
2. Nothing in this spreadsheet represents a final agency decision
3. “Impaired” is staff indication that the median sulfate concentration exceeded 10 mg/L
4. Notations about wild rice do not represent an agency decision on the applicability of the Class 4A 10 mg/L standard rather that there are data documenting some history of wild rice

Minnesota Pollution Control Agency

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November 8, 2013

Mr. Larry Sutherland
General Manager – Minnesota Ore Operations
United States Steel Corporation
P.O. Box 417
Mountain Iron, MN 55768

RE: United States Steel Corporation Correspondence Related to the Designation of a "Water Used for Production of Wild Rice"

Dear Mr. Sutherland:

The Minnesota Pollution Control Agency (MPCA) has received two letters from United States Steel Corporation (USS) related to the MPCA's process for designation of a "water used for production of wild rice" (WUFPOWR). The first was an August 12, 2013, letter from David Smiga responding to a MPCA document called "Draft Staff Recommendation for 'waters used for production of wild rice' downstream of the US Steel Minntac tailings basin." The second was a September 27, 2013, letter from you responding to MPCA comments on a June 27, 2013, Sulfate Reduction Plan revision required by the reissued water permits for the Keetac operation. In both letters, USS cites Minnesota Session Laws 2011, First Special Session, Chapter 2, Article 4 (2011 Law) asserting it is premature for the MPCA to determine that waters, other than those specifically listed in Minnesota rules, qualify as "waters used for the production of wild rice."

Though those two letters may raise other issues, this letter will respond to that specific assertion.

The MPCA has carefully considered USS' assertion. The MPCA believes that it is authorized to determine whether a particular water is a WUFPOWR on the basis of information developed about the particular water. The MPCA will continue to apply the current draft staff recommendations related to WUFPOWR subject to possible future modification after the criteria development process is completed.

However, because the MPCA continues to receive questions from all stakeholders about how such a determination is made, and specifically a number of requests to review the criteria the MPCA is using for such determinations, the MPCA has concluded that it is appropriate to provide opportunity for input on the criteria following the process laid out in Section 32 (b) of the 2011 Law. The MPCA plans to begin to develop criteria by meeting with the Minnesota Department of Natural Resources and Indian Tribes in late 2013 and anticipates taking public comment from other interested parties through public notice and comment sometime in early 2014.

The draft MPCA staff recommendations mentioned by USS include the following language: "This draft MPCA staff recommendation for ... is based on information currently available. MPCA staff will consider additional information that may become available in the future, whether from project proposers or from other interested/affected parties, and reserves the right to modify the draft staff recommendation accordingly." Once the MPCA has completed the criteria development process, the MPCA will consider those criteria as additional information and will reconsider the current draft MPCA staff recommendations for the waters mentioned in the two USS letters. MPCA staff will share the resulting draft staff recommendation (related to whether those waters are WUFPOWR and subject to the existing standard) with USS and the Tribes as is the current practice. The resulting draft staff recommendation will include any revisions as appropriate based on the additional information.

During the public comment period for any related permit or following issuance of such permit, USS may challenge the application of the criteria in the permitting process. As it did in the litigation initiated by the Minnesota Chamber of Commerce, the MPCA continues to reject any suggestion that WUFPOWR are limited to waters used for the irrigation of paddy rice, and not waters used for support of wildlife and other purposes. See Minn. R. 7050.0224, subp. 4.

Regarding the criteria development processes, the MPCA notes that the 2011 legislation has two distinct parts, rulemaking and criteria development. The 2011 legislation provides:

> *Sec. 32. WILD RICE RULEMAKING AND RESEARCH.*
>
> *(a) Upon completion of the research referenced in paragraph (d), the commissioner of the Pollution Control Agency shall initiate a process to amend Minnesota Rules, chapter 7050. The amended rule shall:*
>
> *(1) address water quality standards for waters containing natural beds of wild rice, as well as for irrigation waters used for the production of wild rice;*
>
> *(2) designate each body of water, or specific portion thereof, to which wild rice water quality standards apply; and*
>
> *(3) designate the specific times of year during which the standard applies.*

Nothing in this paragraph shall prevent the Pollution Control Agency from applying the narrative standard for all class 2 waters established in Minn. R. ch. 7050.0150, subp. 3.

> (b) "Waters containing natural beds of wild rice" means waters where wild rice occurs naturally. *Before designating waters containing natural beds of wild rice as waters subject to a standard, the commissioner of the Pollution Control Agency shall establish criteria for the waters after consultation with the Department of Natural Resources, Minnesota Indian tribes, and other interested parties and after public notice and comment. The criteria shall include, but not be limited to, history of wild rice harvests, minimum acreage, and wild rice density.*

2011 First Special Session, ch. 2, Art. 4 (emphasis added). The legislature has required that Minn. R. ch. 7050 be amended to designate each body of water, or specific portion thereof, to which wild rice water quality standards apply." Rulemaking has a long established formal process that the MPCA follows and will follow in designating waters. Referring to the italicized language, the legislature established a separate criteria development process for the MPCA to follow and specified that the process is to include a consultation component and a public notice and comment component separate from the public notice and comment process that will occur during the rulemaking called for by the legislation. The legislature has required the MPCA to complete the criteria development process prior to rulemaking for designating waters. While the criteria are to be used in the designation process, the legislation imposes no restrictions upon the MPCA's permitting authorities, its obligations to protect impaired waters or its use of the criteria on a case-by-case basis to identify impaired waters and when effluent limitations are necessary in permits.

Based on the foregoing, the MPCA has concluded that it is appropriate to move forward with the process to establish criteria for designating "waters containing natural beds of wild rice," prior to the rulemaking.

The MPCA will use the criteria that emerge from this process for three purposes: to inform the process of "designating" waters subject to the standard in the wild rice standards rulemaking, to apply on a case-by-case basis to identify when effluent limitations are necessary in permits, and to aid the MPCA when listing impaired waters. Attached is a proposed timeline for activities related for the wild rice sulfate standard.

Please feel free to contact me with questions at 651-757-2366.

Sincerely,

for Ann M. Foss
Director
Metallic Mining Sector
Industrial Division

AMF/SB:rm

Attachment

Minnesota Pollution Control Agency

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November 18, 2014

Paula Maccabee, Esq.
Just Change Law Offices
1961 Selby Ave.
St. Paul MN 55104

RE: Minnesota 2014 Impair Waters List – Request for Update

Dear Ms. Maccabee:

Thank you for your continued interest in Minnesota's list of impaired waters. This letters provides an update of the Minnesota Pollution Control Agency's (MPCA) efforts to list certain waters as impaired for high mercury in the water and wild rice production waters as impaired for high sulfate.

Assessment of the Partridge River and the Embarrass River for high mercury in the water column:
As you noted, you previously requested that the MPCA list sections of the Partridge River and Embarrass River near the Polymet Mine site as impaired for mercury in the water column in your February 10, 2014 letter. The MPCA's response to that request is included in the April 1, 2014 Responses to the draft 2014 Impaired Waters List 30-Day Public Notice Comments on the MPCA website (See "Comment 11 and 14" of the MPCA's response to comments). There has been no change in our original response to your comment on the 2014 draft Impaired Water List. We are currently working with the DNR in order to get data identified during the list submittal by the Fond du Lac tribe. Provided that the DNR data includes mercury data for the Partridge and the Embarrass, the clean hands/dirty hands technique of sample collection was applied, and we received the data in an acceptable format, we will be able to assess these rivers for mercury in the water in 2015. Any impairments would be included in the draft 2016 Impaired Waters List.

Listing wild rice waters for high sulfate:
Your February 10, 2014 letter also requested that the MPCA list specific waters as impaired for the sulfate water quality standard applicable to water used for production of wild rice. As with your request to list specific waters as impaired for mercury, we responded to your sulfate-related request in the April 1, 2014 response to comments (See "Comments 14, 18, 27" of the MPCA's response to comments). That response remains applicable. The MPCA is committed to assessing water used for production of wild rice. The MPCA is still in the midst of identifying factors to determine where water used for production of wild rice exists. That work is taking place in parallel to ongoing analysis to determine what, if any, changes may be needed to the wild rice sulfate standard to adequately protect water used for production of wild rice. Once the factors to identify water used for production of wild rice are available and the analysis of the standard is complete, the MPCA will incorporate the learning from those efforts into a revised assessment methodology for water used for production of wild rice. The methodology will ultimately be used to determine whether any water used for production of wild rice needs to be added to the draft 2014 Impaired Waters List.

Sincerely,

Miranda Nichols

Miranda Nichols
Impaired Waters List Coordinator

Minnesota Pollution Control Agency

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cc: Paul Proto, US EPA Region 5
Tinka Hyde, US EPA Region 5

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August 26, 2016

Tinka Hyde, Region 5 Water Quality Division Director
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Mail Code: WW-16J
Chicago, IL 60604-3507

Sent Electronically

RE: Minnesota 2014 and 2016 Draft Clean Water Act Section 303(d) Impaired Waters List

Dear Ms. Hyde,

This letter and its attachments, including WaterLegacy's comment letter to the Minnesota Pollution Control Agency (MPCA) regarding Minnesota's 2016 Draft Section 303(d) Impaired Water List, and Exhibits,[1] are submitted on behalf of WaterLegacy, a Minnesota non-profit organization formed to protect Minnesota's water resources and the communities that rely on them.

As explained in detail in our enclosed WL 2016 Section 303(d) Comment, WaterLegacy has requested since 2012 that MPCA include wild rice/sulfate impaired waters in Minnesota's Section 303(d) list. We've also requested MPCA to list, analyze and study mercury-impaired waters in the Lake Superior Basin; opposed the MPCA's 2013 derailment of the St. Louis River mercury Total Maximum Daily Load (TMDL) study and urged MPCA to resume this TMDL study;[2] and requested that the U. S. Environmental Protection Agency (EPA) adopt rules that would provide Indian tribes with the authority to list impaired waters and implement the TMDL program for reservation waters.[3]

WaterLegacy understands that the EPA has yet neither approved nor disapproved Minnesota's 2014 Draft Section 303(d) Impaired Waters List. The most recent communication from EPA to the MPCA regarding the 2014 Section 303(d) list stated that EPA would complete its review of Minnesota's 303(d) list pursuant to 40 C.F.R. §130.7(d)(2) "upon submittal of the wild rice addendum."[4]

As the EPA is now well aware, in 2015 the Minnesota Legislature prohibited the MPCA from listing wild rice/sulfate impaired waters unless and until amendments to Minnesota's existing sulfate standard of 10 milligrams per liter in wild rice waters "take effect."[5] Even if such

[1] WaterLegacy's August 26, 2016 Comment on Minnesota 2016 Draft Section 303(d) Impaired Waters List and Exhibits (hereinafter "WL 2016 Section 303(d) Comment") are attached without a letter designation.
[2] See the April 5, 2013 email from WaterLegacy to EPA Region 5 Regional Counsel concerning the MPCA's withdrawal from the St. Louis River mercury TMDL process. (Attachment A)
[3] WaterLegacy's September 5, 2014 Comment on the Clean Water Act, Tribal Eligibility to Administer Regulatory Programs and Streamlining Section 518(e) Treatment as State is enclosed as Attachment B. In 2016, WaterLegacy supported citizen engagement favoring tribal Section 303(d) authority.
[4] See Exhibit 8 to WaterLegacy's attached WL 2016 Section 303(d) Comment.
[5] See 2015 Minn. Laws 1st Spec. Sess. ch. 4, art. 4, §136(a)(2) included in Exhibit 9 to WaterLegacy's attached WL 2016 Section 303(d) Comment.

amending rules were to be adopted by the MPCA, they would not take effect unless approved by the EPA and, potentially, upheld in litigation. Until that time, whenever it may occur, the MPCA is prohibited from providing the EPA with the "wild rice addendum" promised during the course of EPA's review of Minnesota's 2014 Section 303(d) list. The August 12, 2016 statement from the Minnesota Attorney General confirms that the MPCA does not have full or unrestricted authority to perform its obligations under the Clean Water Act to the extent that they require application of Minnesota's existing wild rice sulfate standard.[6]

The EPA identified Minnesota's need to list wild rice/sulfate impaired waters in its review of Minnesota's 2012 Section 303(d) list. In 2014, the EPA provided Minnesota with additional time to rectify the omission from its Section 303(d) of wild rice/sulfate impaired waters. The deficiency in Minnesota's 2014 Section 303(d) list is clear. No wild rice/sulfate impairments are listed. The MPCA, the Minnesota Legislature and the Minnesota Attorney General have all confirmed that no such list or "addendum" is forthcoming. The MPCA does not now have and will not have in the foreseeable future the authority to list wild rice/sulfate impaired waters under Minnesota's existing federally-approved wild rice sulfate standard.

The Clean Water Act, EPA's application of its own regulations and case law all confirm that existing water quality standards must be used to list a state's impaired waters. As the Eight Circuit Court of Appeals explained in *Thomas v. Jackson*, 581 F. 3d 658, 668-669 (8th Cir. 2009),

> The EPA counters that applicable water quality standards remain in effect until the new standards are approved. See 40 C.F.R. § 131.21(e) ("A State or authorized Tribe's applicable water quality standard for purposes of the Act remains the applicable standard until EPA approves a change, deletion, or addition to that water quality standard, or until EPA promulgates a more stringent water quality standard."). . . we defer to the EPA's reasonable application of its own regulations. We also note that Plaintiffs' suggestion could be counterproductive, as waiting for revisions to the standards would result in continued delays in producing any § 303(d) list. Concerns that a particular list will be based on imperfect, though approved, standards are mitigated by the periodic nature of the list.

The EPA is obligated under the Clean Water Act and implementing regulations to disapprove a State's deficient impaired waters submission within 30 days. 33 U.S.C. §1313(d)(2); 40 C.F.R. §130.7(d)(2). Even if the EPA may have once held out hope that Minnesota would submit a "wild rice addendum" to the 2014 Section 303(d) list despite MPCA's years of delay, the passage of Minnesota's "Wild Rice Water Quality Standards" Session Law in 2015 and the Minnesota Attorney General Statement sent to EPA on August 12, 2016 have now obliterated any remaining whisper of that hope. Federal action can wait no longer.

On this record, the EPA must immediately disapprove Minnesota's 2014 Draft Section 303(d) submittal. Within 30 days after that disapproval, under the Clean Water Act and implementing regulations, the EPA must promulgate its own list of Minnesota wild rice/sulfate impaired waters

[6] Minnesota Attorney General Statement Regarding MPCA's Legal Authority, August 12, 2016, available at EPA, *NPDES Petition for Program Withdrawal in Minnesota*, https://www.epa.gov/mn/npdes-petition-program-withdrawal-minnesota.

and provide notice and an opportunity for comment on that list. 33 U.S.C. §1313(d)(2); 40 C.F.R. §130.7(d)(2).

States have a mandatory duty under the Clean Water Act to identify water quality-limited segments and set TMDLs for them, and "the EPA also has a nondiscretionary duty to ensure the state's compliance with these terms, or to initiate its own TMDLs process if [a State] fails to do so." *Alaska Ctr. for the Env't v. Reilly*, 796 F. Supp. 1374, 1381 (W. D. Wa.1992), *aff'd as Alaska Ctr. for the Env't v. Browner*, 20 F 3d 981 (9th Cir. 1994).

The EPA must disapprove a state listing of water quality-limited segments that fails to meet the requirements of the Clean Water Act and implementing regulations. In response to EPA's claim that it had "no duty to reach a particular result" in reviewing a State's Section 303(d) list, the court in *American Canoe Ass'n v. U.S. EPA*, 30 F. Supp. 2d 908, 918 (E.D. Va. 1998), held,

> EPA is simply wrong. EPA's own regulations state that the "Administrator shall approve a list developed under [40 C.F.R.] § 130.7(b) that is submitted after the effective date of this rule *only if* it meets the requirements of § 130.7(b)." 40 C.F.R. § 130.7(d)(2) (emphasis added). Section 130.7(b) sets out the requirements for state identification of water-quality limited segments still requiring TMDLs--in other words, § 303(d) lists.

Minnesota's Section 303(d) list fails to meet federal requirements that all water quality-limited segments that don't meet water quality standards or that don't protect fish and wildlife[7] must be listed, and the requirement that all existing and readily available water quality-related data and information be used to develop the impaired waters list. 40 C.F.R. §130.7(b)(1)-(5). Minnesota has been required for decades to apply the existing 10 mg/L sulfate limit to list wild rice/sulfate impaired waters and implement TMDLs to remedy these impairments. EPA must now step in to ensure that Minnesota complies with Section 303(d) of the Clean Water Act and its implementing regulations.

WaterLegacy suggests that the MPCA's August 2013 preliminary list of wild rice impaired waters may serve as a starting point for the EPA to list wild rice/sulfate impaired waters in the State of Minnesota.[8] Tribal consultation and readily available data on ambient sulfate standards in wild rice waters provided to the MPCA in response to the 2013 solicitation for wild rice/sulfate assessments[9] should allow prompt listing of wild rice/sulfate impaired waters. In compliance with the law, we request that EPA promulgate its list of Minnesota wild rice/sulfate impaired waters within 30 days of disapproving Minnesota's 2014 Draft Section 303(d) list.

---

[7] Minnesota's wild rice sulfate water quality standard protects wildlife pursuant to Minnesota Rule 7050.0224, Subp. 1. *See* the attached Order of Judge Marrinan granting summary judgment to uphold the wild rice sulfate standard, "The rationale underlying the Wild Rice Rule (Minn. R. 7050.0224, subp. 2) is found in the subparagraph preceding it: since wild rice is a food source for both wildlife and humans, the quality of the waters and the aquatic habitat necessary to support its propagation and maintenance must not be materially impaired or degraded." *Minn. Chamber of Commerce v. Minn. Pollution Control Agency*, 2012 Minn. Dist. LEXIS 194 (Minn. D. C. 2nd Jud. Dist., May 12, 2010), slip op. 13, *aff'd* 2012 Minn. App. Unpub. LEXIS 1199 (Minn. Ct. App., Dec. 17, 2012), Attachment C.

[8] Provided in Exhibits 3, 4 and 9 to WaterLegacy's attached WL 2016 Section 303(d) Comment.

[9] Attachment D contains proposals and summaries prepared by the MPCA for the Wild Rice Advisory Committee soliciting data to list wild rice/sulfate impaired waters. This wild rice and sulfate data, which was posted on the MPCA website at http://www.pca.state.mn.us/ktqh1083 in 2013, is no longer available online.

WaterLegacy also requests that the EPA review Minnesota's 2016 Draft Section 303(d) list in light of EPA's disapproval of the 2014 Draft Section 303(d) list. Minnesota's 2016 list should be partially approved so that new impaired waters listings, including mercury impairments in the Lake Superior Basin, become effective immediately, but disapproved to the extent it fails to list wild rice/sulfate impaired waters. The EPA, in issuing this partial approval, should specifically state that wild rice/sulfate impaired waters promulgated by the EPA as a result of the disapproval of Minnesota's 2014 Draft Section 303(d) list will become part of Minnesota's approved 2016 Section 303(d) list as soon as EPA's review process is completed.

WaterLegacy would further request that the EPA begin an inquiry regarding MPCA's delays in application of the TMDL program to rectify mercury impairments that pose serious health risks in the Lake Superior Basin. The EPA should require that the MPCA demonstrate, by the time of Minnesota's 2018 Draft Section 303(d) impaired waters listing, that it has resumed the St. Louis River mercury TMDL, has set an accelerated target date to complete the load allocation process for the St. Louis River watershed, and has prioritized TMDL program completion to prevent further bioaccumulation of toxic methylmercury in fish throughout the Lake Superior Basin.

WaterLegacy would finally request that EPA Region 5 leadership advocate for prompt final adoption of the proposed rule on "Treatment of Indian Tribes in a Similar Manner as States for Purposes of Section 303(d) of the Clean Water Act" published in the Federal Register this past January. 81 FR 2791 (Jan. 19, 2016). Adoption of this rule would help address the downstream threats to tribal health and welfare resulting from water quality impairments, including mercury impairments in the St. Louis River watershed.

WaterLegacy appreciates the EPA's continuing oversight under the Clean Water Act and its implementing regulations to protect Minnesota fish, wildlife and human health and to prevent violations of Minnesota's federally-approved water quality standards. Applicable laws, policies and precedents require the EPA to act now to identify and restore Minnesota's impaired waters.

Respectfully submitted,

Paula G Maccabee

Paula Goodman Maccabee
Advocacy Director and Counsel for WaterLegacy

Enclosures

cc: Peter Swenson, EPA Region 5, Wetlands and Watersheds Branch Chief
Paul Proto, EPA Region 5, Watersheds Section
Barbara Wester, EPA Region 5, Regional Counsel

ATTACHMENTS
WaterLegacy Letter to U.S. Environmental Protection Agency
Minnesota 2014 and 2016 Draft Clean Water Act Section 303(d) Impaired Waters List
(August 26, 2016)

Attachment A	WaterLegacy email to EPA Regional Counsel regarding MPCA withdrawal from St. Louis River mercury TMDL. (Apr. 5, 2013) (2 pages)
Attachment B	WaterLegacy Comment on Clean Water Act Tribal Eligibility to Administer Regulatory Programs Rule Proposals (Sept. 5, 2014) (2 pages)
Attachment C	Minn. Chamber of Commerce v. MPCA, District Court Opinion (May 10. 2012) (11 pages)
Attachment D	MPCA Proposals and Summaries provided to Wild Rice Standards Study Advisory Committee regarding Wild Rice Assessment (May 1 – June 11, 2013) (7 pages)

Separately attached without lettering:

Attachment	WaterLegacy Comment Minnesota 2016 Draft Section 303(d) Impaired Waters List (August 26, 2016) (4 pages)
Attachment	Exhibits to WaterLegacy Comment Minnesota 2016 Draft Section 303(d) Impaired Waters List (August 26, 2016) (132 pages)

Subject: St. Louis River TMDL
Date: Friday, April 5, 2013 at 4:20:55 PM Central Daylight Time
From: Paula Maccabee
To: Wester.barbara@Epa.gov
CC: Muneer.alie@Epa.gov, Michael Sedlacek

Hello, Barbara:

I represent WaterLegacy, a non-profit organization dedicated to the protection of Minnesota's water resources and the communities that rely on them. We are very concerned about the Minnesota Pollution Control Agency (MPCA) withdrawal from the current mercury TMDL process for the St. Louis River. We obtained hundreds of documents in a Data Practices Request from the MPCA and have had a chance to review most of them. A couple dozen documents from this information request are attached with this email.

Our primary concerns are as follows:
1) The St. Louis River mercury TMDL is essential to protect public health. A February 10, 2012 report from Bruce Monson at the MPCA (attached with this email) showed that walleye in the lower reaches of the St. Louis River have a higher level of mercury contamination than other walleye in the region. This difference is statistically significant at a 95% confidence level. The level of mercury contamination is also higher in the lower reaches of the river than the upper reaches. We don't believe that air deposition of mercury alone can explain the observed levels in St. Louis River fish.

2) The Minnesota Department of Natural Resources (MDNR) research efforts pertaining to sulfates and mercury have been both funded and approved by the mining companies. This research has focused on sediments and pore water and has not tested methylmercury in biota. We are concerned that the research design may be biased against determining that control of sulfates is needed to reduce bioaccumulation of toxic mercury in the St. Louis River.

3) The MPCA's pull-out of the mercury TMDL for the St. Louis River may have been unduly influenced by the MDNR team. It is certainly precipitous, opaque and has taken place with no public disclosure let alone public involvement. The fact that the MPCA has placed the St. Louis River mercury TMDL in chaos on the eve of the release of the PolyMet SDEIS -- with its potential for substantial release of sulfates to the St. Louis River watershed -- raises further concern about the MPCA's actions.

4) In the MPCA's letter to the EPA, there is a suggestion that the MPCA is not ceasing activity on the mercury TMDL for the St. Louis River, but will be continuing this effort in some manner with the MDNR. This "continuation" seems inconsistent with internal communications and communication to other stakeholders, some of which are attached. If the MPCA language is read carefully, it suggests that research would continue in conjunction with the existing MDNR research. However, WaterLegacy is not confident that the research will ask the right questions. More fundamentally, we do not understand the MPCA letter to make any commitment to determine or implement TMDL limits on discharge to rectify mercury impairments of the St. Louis River. From our perspective, the MPCA is proposing monitoring and research, but no protection of the resource.

Last year, the Minnesota Department of Health last year reported that 1 out of 10 infants in Minnesota's Lake Superior Region were born with unsafe levels of mercury in their blood. The level of contamination of fish in the St. Louis River is even higher than that in the rest of the region. WaterLegacy believes that, from a public health point of view, derailing the St. Louis River mercury TMDL would be irresponsible.

WaterLegacy would respectfully request that the EPA convene not just government research partners, but citizens, anglers, and environmental health groups who are the key stakeholders for the St. Louis River TMDL. We would convene not just to discuss research completed to date or the current MPCA fiasco but to develop a path forward to get the St. Louis River mercury TMDL done in an effective and timely manner. WaterLegacy would also request that the EPA step into this fragmented and dubious process and perform a federal TMDL, which could include the reservation waters, the estuary and the lower reaches of the river that are in Wisconsin.

We further believe that, pending clarity and objective analysis of sulfates and mercury contamination of fish in the St. Louis River, any new upstream source of sulfates would be likely to result in Clean Water Act non-compliance.

Please call me when you have had a chance to review these materials and our requests. I would appreciate the opportunity to discuss potential paths forward.

Sincerely yours,

Paula Maccabee, Esq.
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Counsel/Advocacy Director for WaterLegacy

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September 5, 2014

Fred Leutner (Leutner.Fred@EPA.gov)
Office of Science and Technology
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Mail Code 4305T
Washington, DC 20460

Re: Potential Reinterpretation of a Clean Water Act Provision Regarding Tribal Eligibility to Administer Regulatory Programs and Streamlining Section 518(e) Treatment as State

Dear Mr. Leutner:

I work with WaterLegacy, a Minnesota non-profit organization formed to protect Minnesota water resources and the communities that rely on them. We've read with interest EPA's proposal under consideration: "Potential Reinterpretation of a Clean Water Act Provision Regarding Tribal Eligibility to Administer Regulatory Programs" and the webinar slides from last spring, "Rulemaking to Provide More Opportunities for Tribes to Engage in the Clean Water Act Impair ed Water Listing and Total Maximum Daily Load Program."

We applaud EPA's proposal that would remove the additional step of requiring Tribes to demonstrate regulatory jurisdiction over clean water within reservations under the second test of *Montana v. United States*, 450 U.S. 544 (1981). We understand that the EPA proposes that a new interpretive rule would state that Clean Water Act Section 518(e) provides an express delegation of authority by Congress to administer water quality standards regulatory programs within reservations.

Although we agree with the statement that Section 518(e) provides such a clear delegation, we believe that the EPA's interpretive rule should also affirm that Tribes have inherent sovereign authority recognized in the *Montana* case and subsequent precedent to regulate water quality in order to protect the political integrity, the economic security, the health, or the welfare of the Tribe. The EPA's interpretation that regulatory programs are authorized by Congressional delegation and require no additional factual demonstrations does not diminish the inherent authority of Tribes to regulate water quality.

WaterLegacy also supports EPA's proposal to facilitate Tribes in more readily exercising the authorities delegated by Congress under Section 518(e) of the Clean Water Act, including Impaired Water Listing and Total Maximum Daily Load Program under Section 303(d). However, we would respectfully suggest that the approach proposed by the EPA may be unnecessarily cumbersome.

WaterLegacy would recommend that, rather than proceed separately and incrementally with rulemaking for Section 303(d) and, eventually, for the NPDES permit program under Section

402, the EPA address these delegated authorities along with the simplification proposed to address delegated authority under Section 518(e).

We perceive no requirement under Section 518(e) for multiple layers of proof whenever a Tribe seeks to exercise Clean Water Act authority. In fact, the statute lists all of the areas where a Tribe may exercise authority under the Clean Water Act in one series, suggesting that Congress would have anticipated one demonstration of authority and capacity would suffice. The statute, thus, lists the requirements for a Tribe to demonstrate governance, the functions sought to be exercised and capacity under one paragraph stating, "The Administrator is authorized to treat an Indian tribe as a State for purposes of subchapter II of this chapter and sections 1254, 1256, 1313, 1315, 1318, 1319, 1324, 1329, 1341, 1342, 1344, and 1346 of this title to the degree necessary to carry out the objectives of this section." 33 U.S.C. §1377(e), CWA Section 518(e).

WaterLegacy would recommend the following to address treatment as a state for Tribes:

- EPA proceed with the proposed interpretive rule stating that Section 518(e) provides express delegated authority to Tribes to administer water quality programs within reservations without any additional demonstration of inherent regulatory authority.

- EPA also state in this interpretive rule that nothing in either Section 518(e) or EPA's rules or interpretation is intended to or serves in any way to diminish tribal inherent sovereign authority to regulate water quality.

- EPA further state in its interpretive rule that in recognition of Congressional delegation of authority to Tribes to exercise all of the enumerated functions in Clean Water Act Section 518(e) (33 U.S.C. §§ 1254, 1256, 1313, 1315, 1318, 1319, 1324, 1329, 1341, 1342, 1344, and 1346), EPA will also streamline the process whereby Tribes exercise these authorities. TAS for any of the enumerated functions in Section 518(e) will be approved when the Tribe designates functions and tribal waters where TAS would be exercised and demonstrates a reasonable expectation of capacity to carry out these functions.

WaterLegacy believes that interpreting Section 518(e) to provide a broad, unitary delegation of Clean Water Act authority to Tribes is consistent with the statutory text, with respect for inherent tribal sovereignty and with recent EPA Guidance recognizing tribal rights to self-determination. It would also be more efficient than a piecemeal approach. We would note that EPA would continue to have the authority to review and evaluate compliance with Clean Water Act requirements when impaired waters lists, TMDLs and NPDES permits are generated by Tribes.

We look forward to your response and invite contact by phone (651-646-8890) or email (pmaccabee@justchangelaw.com). Thank you in advance for your efforts to facilitate tribal exercise of authority under Section 518(e) of the Clean Water Act.

Sincerely yours,

Paula J. Maccabee

Paula Goodman Maccabee
Advocacy Director/Counsel for WaterLegacy

Minn. Chamber of Commerce v. Minn. Pollution Control Agency

Minnesota District Court, County of Ramsey, Second Judicial District

May 10, 2012, Decided; May 10, 2012, Entered

Court File No. 62-CV-10-11824

Reporter
2012 Minn. Dist. LEXIS 194

Minnesota Chamber of Commerce, Plaintiff, vs. Minnesota Pollution Control Agency, Defendant, and WaterLegacy, Defendant-Intervenor.

Subsequent History: Affirmed by Minn. Chamber of Commerce v. Minn. Pollution Control Agency, 2012 Minn. App. Unpub. LEXIS 1199 (Minn. Ct. App., Dec. 17, 2012)

Prior History: Minnesota Chamber of Commerce v. Minnesota Pollution Control Agency, 469 N.W.2d 100, 1991 Minn. App. LEXIS 388 (Minn. Ct. App., 1991)

Core Terms

wild rice, sulfate, waters, water quality standards, subp, applies, void for vagueness, discharges, irrigation, Pollution, stands, requirements, cultivated, narrative, plant, vague, rice, summary judgment, wildlife, Lake, unconstitutionally vague, agricultural, designated, wetlands, aquatic, levels, declaratory judgment, matter of law, propagation, susceptible

Counsel: **[*1]** For Plaintiff: Thaddeus Lightfoot, Esq.

For Minnesota Pollution Control Agency, Defendant: Robert B. Roche, Assistant Attorney General.

For WaterLegacy, Defendant-Intervenor: Paula Maccabee, Esq.

Judges: HON. MARGARET M. MARRINAN, JUDGE OF DISTRICT COURT.

Opinion by: MARGARET M. MARRINAN

Opinion

FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER FOR JUDGMENT

This matter came on for hearing on the parties' cross motions for summary judgment on March 1, 2012. Thaddeus Lightfoot, Esq., appeared on behalf of Plaintiff; Assistant Attorney General Robert B. Roche appeared on behalf of Defendant Minnesota Pollution Control Agency; Paula Maccabee, Esq., appeared on behalf of Defendant-Intervenor WaterLegacy.

Plaintiff has withdrawn its claim regarding Count I of the Amended Complaint.

Plaintiff seeks partial summary judgment on the remaining following counts:

1) Count II: in which it alleges that the "Wild Rice Rule" is unconstitutionally vague and thus a violation of due process. The basis for this allegation is that the term "when rice may be susceptible to damage from high sulfate levels" is not defined.

2) Count III: in which it alleges that Defendant's actions applying the "Wild Rice Rule" exceed Defendant's statutory authority **[*2]** and are arbitrary and capricious because:

a. Defendant would apply them to all waters in the state rather than limit them to waters used for agricultural irrigation in the production of wild rice; and

b. Defendant has created a narrative wild rice classification for Class 4A waters without specifically listing or otherwise classifying those waters; and

c. Defendant has required that Plaintiff members perform wild rice surveys to determine whether waters fall within the narrative sub-classification.

3) Count IV: in which it asks the Court to construe the Wild Rice Rule under the authority of the Minnesota Declaratory Judgments Act (Minn. Stat. Ch.555).

Defendant and Defendant-Intervenor seek summary judgment regarding all of Plaintiff's claims.

FINDINGS OF FACT

1. The Minnesota Legislature has adopted wild rice as the official grain of the State of Minnesota and has explicitly recognized the importance of protecting it. Minn. Stat. § 1.148, subd. 1 (2010).

2. In keeping with the policy set by Minn. R. 7050.0186,[1] and in order to comply with the United States Environmental Protection Agency (EPA) requirements under the Federal Water Pollution Control Act Amendments of 1972, in 1973 the Minnesota Pollution Control Agency **[*3]** (MPCA) adopted water quality standards for Class 4 waters of the state.

The rationale for protection of these waters is addressed by Minn. R. 7050.0224, subp.1:

> The *numeric* and *narrative* [emphasis supplied] water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for the agriculture and wildlife designated public uses and benefits. Wild rice is an aquatic plant resource found in certain waters within the state. The harvest and use of grains from this plant serve as a food source for wildlife and humans. In recognition of the ecological importance of this resource, and in conjunction with Minnesota Indian tribes, selected wild rice waters have been specifically identified [WR] and listed in part 7050.0470, subp.1.[2] The quality of these waters and the aquatic habitat necessary to support the propagation and maintenance of wild rice plant species must not be materially impaired or degraded. If the standards in this part are exceeded in waters of the state that have the Class 4 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with **[*4]** respect to the designated uses.

Minnesota's wild rice sulfate standard is found in Minn. R. 7050.0224, subp. 2 (2011). The rule provides in pertinent part:

> Class 4A waters. The quality of Class 4A waters of the state shall be such as to permit their use for irrigation without significant damage or adverse effects *upon any crops or vegetation usually grown in the waters or area*, [emphasis supplied] including truck garden crops. The following standards shall be used as a guide in determining the suitability of the waters for such uses ...: Sulfates (SO
>
> 4) 10 mg/L, applicable to water used for production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels.
>
> Minn. R. 7050.0224, subp. 2 (2011).

Of the subparts to the water quality standards in Minn.R. 7050.0224, subpart 2 (Class 4A waters) is

[1] "It is the policy of the state to protect wetlands and prevent significant adverse impacts on wetland beneficial uses caused by chemical, physical, biological or radiological changes. The quality of wetlands shall be maintained to permit the **[*5]** propagation and maintenance of a healthy community of aquatic and terrestrial species indigenous to wetlands, preserve wildlife habitat, and support biological diversity of the landscape. In addition these waters shall be suitable for.... irrigation... as specified in part 7050.0224, subpart 4...."

[2] This rule specifically identifies as [WR] the sub-set of wild rice waters in the Lake Superior watershed.

the only one that specifically refers to crops and vegetation. Classes 4B and C have as their focus livestock and wildlife.

3. The MPCA adopted a wild rice numeric sulfate standard of 10 milligrams per liter ("mg/L") for water used for production of wild rice based on recommendations by the Minnesota Department of Natural Resources ("MDNR") that sulfate concentrations above that level are a serious detriment to the natural and cultivated growth of wild rice.

4. In addition to the numeric standard, Minnesota Rules also adopted a narrative standard that applies only to specifically identified wild rice waters. Minn.R. 7050.0224, subp.1, *supra*.

5. Whether standing alone, or viewed in tandem with the above rules, the term "when the rice may be susceptible to damage by high sulfate levels" is straightforward and understandable: if the rice is at a point in development when sulfates can damage it, the maximum sulfate **[*6]** level is 10 mg/L.

6. Testimony from the hearing on the initial adoption of the wild rice sulfate standard clearly establishes that, from the time of its initial adoption, the MPCA intended the wild rice sulfate standard to protect both naturally growing and cultivated wild rice.[3]

7. The first time that the MPCA imposed a discharge limit based on the wild rice sulfate rule (Minn. R. 7050.0224, Subp. 2) was in a 1975 permit for the Clay Boswell Steam Electric Station ("Clay Boswell Permit").

8. The record of the administrative hearing for the Clay Boswell Permit reflects that the hearing examiner supported application of a sulfate limit in that permit in order to protect natural stands of wild rice, not agricultural irrigation of cultivated wild rice.[4]

9. The MPCA issued sulfate limits three other times: a June 17, 2010 permit modification for U.S. Steel Corporation (Keetac mining area) and two October 25, 2011 permits for U.S. Steel (Keetac mining area and tailings basin). It is notable that the areas **[*7]** in question affect *natural* stands of wild rice, not the agricultural irrigation of cultivated rice. The direct receiving waters included both listed waters (Welcome Creek and O'Brien Creek) and unlisted waters (Welcome Lake and O'Brien Reservoir). All of these waters were classified as Class 4A and 4B waters. U.S. Steel neither requested an administrative hearing nor challenged the permit at the Court of Appeals.

10. In 2010, the EPA, addressing the issue of sulfate discharge for the Keetac mine expansion and the proposed PolyMet NorthMet mining project, advised Defendant MPCA that the wild rice protection rule must be applied to limit that discharge in receiving waters. Both of those projects affected natural stands of wild rice, rather than agricultural irrigation for cultivated rice[5] The waters to which this sulfate limit applied included lakes, rivers and creeks not specifically listed as wild rice waters in Minn. R. 7050.0470, Subp. 1.[6]

11. The MPCA has approximately ten years of sulfate data for mining discharges because it has monitored wastewater discharges from **[*8]** mining operations in order to evaluate their overall toxicity and their potential to adversely affect groundwater. The agency concluded that this data could be useful in evaluating the potential impact of mining discharges on the wild rice sulfate standard.[7]

[3] Affidavit of Gerald Blaha, Ex. C, p. 27: testimony of John McGuire, Chief of the Section of Standards and Surveys, Division of Water Quality, MPCA.

[4] Affidavit of Gerald Blaha, Paragraph 9.

[5] Affidavit of Paula Maccabee, Ex. 8 and 9.

[6] Swan Lake, Swan River, Hay Creek, Hay Lake and Upper Partridge River. *Id*.

[7] The MPCA does not yet have similar data for municipal discharges, but is in the process of obtaining it as part of a broader MPCA strategy to evaluate the impact of wastewater discharges on Class 3 and Class 4 water standards. It intends to use the monitoring data to

12. To determine whether sulfate dischargers are potentially interfering with attaining the wild rice sulfate standard, the MPCA reviews permit applications on a case-by-case basis. Where the data suggests that a discharge has high levels of sulfates upstream of a water identified as one potentially used for production of wild rice, the agency may request dischargers to conduct surveys to determine if the discharge is, in fact, upstream of a water used for production of wild rice. This authority derives from M.S. 115.03, subd. 1 (e) (7) **[*9]** which gives the agency the authority to require owners and operators of such discharge systems to do so.

13. As part of the permit review process, the MPCA reviews the following information: (i) available wild rice records and databases that the MDNR maintains; (ii) consultation with aquatic plant biologists at the MDNR; (iii) information received from external stakeholders, including, but not limited to, Native American tribes and environmental groups; and (iv) information provided by the discharger.

14. The MDNR's list of waters where wild rice has been identified is not an exhaustive list of waters used for production of wild rice. Where a permit applicant discharges upstream of a water that is not on the MDNR list, but which has been identified as potentially producing wild rice, the MPCA has requested that the permit applicant conduct a survey of any wild rice stands in the receiving waters to help determine whether the receiving water is a water used for production of wild rice.

15. Any party who disagrees with the MPCA's determination of 1) whether a water qualifies as a water used for production of wild rice or 2) whether the permit needs to include a sulfate limit **[*10]** has the option of requesting a contested case hearing before an administrative law judge on the issue pursuant to Minn. R. 7000.1800. Although Plaintiff's members allege they have been affected by the wild rice sulfate standard, they failed to request such a hearing, and have sought relief under Chapter 555 of the Minnesota Statutes.

16. During the 2011 Minnesota Legislative Session, it was proposed that the application of Minnesota's wild rice sulfate standard be suspended, or that the sulfate standard be increased from 10 mg/L to 50 mg/L. In response to those proposals, on May 13, 2011 the U.S. EPA[8] wrote the sponsoring legislators warning that:

> 1) "[L]egislation changes [to] the EPA-approved water quality standards for Minnesota...must be submitted to EPA for review...and are not effective for Clean Water Act (CWA) purposes, including [National Pollutant Discharge Elimination System] permits, unless and until approved by EPA; and
>
> 2) If it "determined that a state is not administering its federally approved NPDES program in accordance with requirements of the CWA, EPA has the authority to...withdraw authorization of the program...."

17. Rather than passing either of the above bills, the 2011 Minnesota legislature passed, and the governor signed, a bill regarding the wild rice sulfate standard. Minn. Laws 2011 1 Sp. c. 2, art. 4, § 32. That law requires the MPCA to form an advisory group and conduct an extensive study of the impacts of sulfates and other substances on wild rice. *Id.* at § 32(c)&(d). Once that research is complete, the bill requires the MPCA to amend the wild rice sulfate standard to:

> (i) address water quality for both natural stands of wild rice and cultivated wild rice;
>
> (ii) specifically designate waters to which the wild rice sulfate standard applies; and
>
> (iii) designate the times of year when the

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determine whether additional discharge limits are necessary to protect Class 3 and 4 water quality standards, including the wild rice sulfate standard.

[8] The EPA has delegated the administration of the federal **[*11]** Clean Water Act in Minnesota to the MPCA.

standard applies. *Id*. at § 32(a)(1)-(3).

18. Pursuant to that legislation, the MPCA has formed an advisory group and held three meetings of that group to date (October 10, 2011, November 30, 2011 and March 27, 2012), established a study protocol, published a Request for Proposals to undertake research outlined in the study protocol, submitted a legislative report as required by December 15, 2011, and awarded a contract to the University of Minnesota to conduct the **[*12]** wild rice/sulfate studies.

CONCLUSIONS OF LAW

1. Plaintiff has withdrawn its claim that the MPCA's application of the wild rice sulfate standard has violated the Equal Protection Clause of the United States Constitution. Summary Judgment in favor of the MPCA and Defendant-Intervenor is therefore proper as to that claim.

2. Summary judgment is appropriate under the Minnesota Rules of Civil Procedure, when "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that either party is entitled to judgment as a matter of law. Minn.R.Civ.P. 56.03.

3. There are no genuine issues of material fact and the MPCA has demonstrated that it is entitled to judgment as a matter of law on each of Plaintiff's alleged claims.

A. Counts II and Count III: The Wild Rice Rule does not violate due process. It is not unconstitutionally vague, nor is the application of the rule arbitrary and capricious.

4. An agency rule is unreasonable (and therefore invalid) when it fails to comport with substantive due process because it is not rationally related to the objective sought to be achieved.[9] **[*13]** The rationale underlying the Wild Rice Rule (Minn. R. 7050.0224, subp. 2) is found in the subparagraph preceding it: since wild rice is a food source for both wildlife and humans, the quality of the waters and the aquatic habitat necessary to support its propagation and maintenance must not be materially impaired or degraded. The policy upon which this rationale is based (Minn.R.7050.0186) is the protection of the quality of wetlands so as to "permit the propagation and maintenance of a healthy community of...species indigenous to wetlands...In addition these waters shall be suitable for...irrigation...."

5. Where a rule is challenged as "invalid as applied", Minnesota law allows only limited judicial inquiry into the validity of an administrative regulation in question. The party challenging the rule bears a heavy burden and must establish that the rule is not rationally related to the legislative ends sought to be achieved or that in adopting the rule the MPCA exceeded its statutory authority.[10]

6. **[*14]** Plaintiff has not met its burden of proving that the MPCA's application of the wild rice sulfate rule conflicts with statutory authority or is otherwise not rationally related to the legislative goal of protecting the environment. MPCA's application of the wild rice sulfate rule is reasonably related to achieving the legitimate goal of protecting Minnesota's environment.

7. Minnesota's Class 4 waters, which encompass the sub-classification of Class 4A waters, are "waters of the state that are or may be used for any agricultural purposes, including stock watering and irrigation, or by waterfowl or other wildlife, and for which quality control is or may be necessary to protect terrestrial life and its habitat or the public health, safety, or welfare." Minn. R. 7050.0140, subp. 5 (2011).

8. Minnesota's Class 4A water quality standards are

[9] *Mammenga v. Dep't of Human Services*, 442 N.W. 2d 786, 789 (Minn. 1989).

[10] *Mammenga v. Dep't of Human Services*, 442 N.W. 2d 786 (Minn. 1989); *Hirsch v. Bartley-Lindsay Co.*, 537 N.W.2d 480 (Minn. 1995).

intended to protect both naturally occurring vegetation grown in the waters themselves and cultivated crops in the area around the water. The MPCA's application of the wild rice sulfate standard to protect naturally growing wild rice in ambient waters of the state is legally valid because it is consistent with the plain language of the water quality standard. **[*15]** Minn. R. 7050.0224, subp. 2.

9. Under Minnesota law, "[t]he object of all interpretation and construction of laws is to ascertain and effectuate the intention of the legislature." Minn. Stat. § 645.16 (2010). Minnesota courts apply the provisions of chapter 645 to both statutes and administrative rules. The administrative and legislative records clearly demonstrate that the MPCA has always intended the wild rice sulfate rule to protect both cultivated and natural stands of wild rice. The agency's application of the rule to waters with natural stands of wild rice is legally valid because it is consistent with the administrative history and intention of the regulation.

10. The MPCA's application of the wild rice sulfate rule to protect waters with natural stands of wild rice is also consistent with a number of established legislative policies and statutory duties, among them the duty to ensure that the State of Minnesota maintains its responsibility to administer the federal Clean Water Act in Minnesota.[11]

11. In the 2011 special session, the legislature specifically directed the MPCA to adopt an amended rule which shall "address water quality standards for waters containing natural beds of wild rice, as well as for irrigation waters used for production of wild rice . . . ." Minn. Laws 2011 1 Sp. c. 2, art. 4, § 32 (a)(1). The MPCA's application of the wild rice rule to protect natural stands of wild rice is consistent with legislative policy that explicitly recognizes the importance of wild rice to the State of Minnesota.

12. The wild rice sulfate standard is a numeric standard set forth in Minn. R. 7050.0224, subp. 2. Minn. R. 7050.0224, subp.1 also includes a narrative standard that applies only to specifically identified wild rice waters. Minn. R. 7050.0470, subp. 1 (2011), in turn, specifically identifies [WR] the sub-set of wild rice waters in the Lake Superior watershed to which this narrative applies.

To the extent Plaintiff claims that the narrative wild rice standard does **[*17]** not identify the waters to which that narrative standard applies, the claim fails as a matter of law.

13. Under Minnesota law, "[a] statute that does not implicate First Amendment freedoms is facially void for vagueness only if it is vague in all its applications. Unless the statute proscribes no comprehensible course of conduct at all, it will be upheld against a facial challenge."[12]

14. The Plaintiff has not established that the wild rice sulfate rule is vague in all of its applications or that it proscribes no comprehensible course of conduct at all. The MPCA applied this rule in the Clay Boswell Permit and an independent hearing examiner supported the application of the rule in that case. The MPCA has recently applied the rule in the reissuance of the U.S. Steel Keewatin Taconite permit. U.S. Steel neither requested an administrative hearing nor challenged the permit in the Court of Appeals.

15. Under Minnesota law, a party challenging a law on constitutional grounds, including vagueness, bears a heavy burden **[*18]** of proof.[13] The Plaintiff

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[11] Minn. Stat. § 115.03, subd. 5 (2010) ("the agency shall have the authority to . . . establish and appl[y] rules . . . and permit conditions, consistent with and, therefore not less **[*16]** stringent than the provisions of the Federal Water Pollution Control Act, as amended, applicable to the participation by the State of Minnesota in the national pollutant discharge elimination system (NPDES)")

[12] *State v. Normandale Properties, Inc.*, 420 N.W.2d 259, 262 (Minn. Ct. App. 1988) (citing *Village of Hoffman Estates v. Flipside Hoffman Estates, Inc.*, 455 U.S. 489, 102 S.Ct. 1186, 1191, 71 L. Ed. 2d 362 (1982).

[13] "In attacking a rule on due process grounds, including a vagueness

must overcome every presumption of constitutionality and show that the wild rice sulfate standard is unconstitutionally vague as applied to Plaintiff's members. Plaintiff has not met this burden.

Sulfate Standard not Void for Vagueness

16. Contrary to Plaintiff's assertion, the fact that the wild rice sulfate standard does not include an explicit definition for the term "when the rice may be susceptible to damage by high sulfate levels" does not render the rule void as applied. The void for vagueness doctrine demands **[*19]** only that laws be drafted with "sufficient definiteness that ordinary people can understand what conduct is prohibited."[14] Even if a law speaks in "broad, flexible standards that require persons subject to a statute to exercise judgment," or requires persons to "rely on common sense and intelligence to determine whether their conduct complies with the law [it] does not render the law unconstitutionally vague."[15]

17. The civil, regulatory nature of the wild rice sulfate standard is subject to a "vagueness test" that is less strict than for criminal statutes. "To find a civil statute void for vagueness, the statute must be 'so vague and indefinite as really to be no rule or standard at all.'"[16] The challenged law must "define the forbidden or required act in terms so vague that individuals must guess at its meaning . . . ."[17] Put another way: "a statute will be upheld against a facial challenge unless [it] proscribes no comprehensible course of conduct at all".[18]

18. Civil laws regulating business are less likely to be void for vagueness than criminal laws "because businesses, which face economic demands to plan behavior carefully, can be expected to consult relevant legislation in advance of action. Indeed, the regulated enterprise may have the ability to clarify the meaning of the regulation by its own inquiry, or by resort to an administrative process."[19]

19. The application of the wild rice sulfate rule to Plaintiff in this case is not unconstitutionally vague under this standard. Plaintiff's members are not left to guess as to what conduct is prohibited or required under this rule.

20. The wild rice sulfate rule is an ambient water quality standard. As such, it describes the desired condition of Minnesota's waters, but is not a discharge standard and does not proscribe or prohibit conduct.[20] The only way that the MPCA can require or prohibit action based on the wild rice sulfate standard is through a permitting action.[21]

21. Before the MPCA issues a permit for a point source such as Plaintiff's members, it is legally required to publish a draft of the permit for public review and comment. Minn. R. 7001.0100 (2011).

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challenge, the challenger bears a heavy burden [cit. om.] The standard for determining vagueness is well-settled: [it is] void for vagueness if it fails to give a person of ordinary intelligence a reasonable opportunity to know what is prohibited or fails to provide sufficient standards for enforcement...The rule should be upheld unless the terms are so uncertain and indefinite that after exhausting all rules of construction it is impossible to ascertain legislative intent." *Minnesota Chamber of Commerce v. Minnesota Pollution Control Agency*, 469 N.W.2d 100, 107 (Mn.App. 1991).

[14] *State v. Romine*, 757 N.W.2d 884, 891 (Minn. Ct. App. 2008) (quoting *Kolender v. Lawson*, 461 U.S. 352, 103 S. Ct. 1855, 1858, 75 L. Ed. 2d 903 (1983)).

[15] *State v. Enyeart*, 676 N.W.2d 311, 321 (Minn. Ct. App. 2004).

[16] *Seniors Civil Liberties Ass'n v. Kemp*, 965 F.2d 1030, 1036 (11th Cir. 1992).

[17] *Humenansky v. Minn. Bd. of Med. Examiners*, 525 N.W.2d 559, 564 **[*20]** (citing Kolender v. Lawson, 461 U.S. 352, 103 S. Ct. 1855, 1858, 75 L. Ed. 2d 903 (1983).

[18] *State v. Normandale Properties, Inc*., 420 N.W.2d 259, 262 (Minn. App 1988).

[19] *Village of Hoffman Estates*, 102 S.Ct. at 1193

[20] Minn. R. 7050.0224, subp. 2.

[21] See, for **[*21]** example., 40 C.F.R. § 122.44(d)(1) (2011) (requiring permitting authority to impose discharge limits in permits where evidence shows that discharge has reasonable potential to cause or contribute to a violation of a water quality standard in a receiving water); Minn. R. 7001.0150, subp. 2 (2011) (requiring MPCA issued permits to include terms necessary to achieve compliance with applicable state and federal law).

If Plaintiff's proposed permit includes a limit based on that rule, then Plaintiff's members have thirty days to review, comment on, and question that proposed limit. Any party who disagrees with the terms of a proposed MPCA permit has the right to request a contested case hearing before an administrative law judge to review and clarify the terms of the proposed permit. Minn. R. 7000.1800 (2011). Any party who is aggrieved by the agency's final decision in a permitting action has a right of certiorari review by the Court of Appeals. Minn. Stat. § 115.05, subd. 11 (2010). Plaintiff **[*22]** has not and cannot show that any of its members have been left guessing as to what conduct is required or prohibited. Plaintiff's void for vagueness challenge fails as a matter of law.

22. The term "when the rice may be susceptible to damage by high sulfate levels" is straightforward and can be understood using plain language. If wild rice is at a point in its life cycle when sulfates will damage the plant, then the receiving water must not exceed 10 mg/L. Because the rule can be applied based on its plain language, it is not void for vagueness. The goal of the law is to protect production of wild rice in Minnesota. In view of that goal it is reasonable to conclude that the standard applies at a point in the wild rice life cycle when sulfate is found to damage the plant. The rule is not void for vagueness.

"Bodies of Water" not Void for Vagueness

23. The fact that the MPCA does not specifically list every body of water to which the wild rice sulfate standard applies neither violates the Due Process clause of the Constitution nor does it exceed MPCA's statutory authority: neither the Constitution nor Minnesota or federal statutes require a state to list expressly every surface water to **[*23]** which a water quality standard applies. Such a requirement would be particularly absurd in a state such as Minnesota.[22]

[22] According to the Minnesota Legislative Manual (2011-2012) there are 11,842 lakes of more than 10 acres, 3 major river systems, and 6,564 (69,200 miles) rivers and streams.

24. Nor does the lack of a specific listing render the rule unconstitutionally vague. Plaintiff's members are not left guessing as to whether the wild rice sulfate standard applies to a particular water or as to what is required of them under the standard because the proposed permit details exactly what is required of Plaintiff's members.

25. The wild rice sulfate standard is likewise consistent with state and federal statutory requirements.

State Law

26. Under Minnesota law, the MPCA has the duty and the authority "to establish and alter such reasonable pollution standards for any waters of the state in relation to the public use to which they are or may be put as it shall deem necessary for the purposes of this chapter . . . ." Minn. Stat. § 115.03, subd. 1(c) (2010). Nothing in the statute suggests that the MPCA is required to list every single water to which a water quality standard applies. The **[*24]** legislature has given the MPCA broad discretion as to how to best structure Minnesota's water quality standards and has expressly recognized that it is proper for the MPCA to establish water quality standards for *groups* of waters instead of listing every single water to which a standard applies. The legislature has required the MPCA to "group the designated waters of the state into classes, and adopt classifications and standards of purity and quality therefore." Minn. Stat. § 115.44, subd. 2 (2010).

27. The MPCA's administrative rules likewise recognize the need for the agency to employ grouping in the establishment of water quality standards.[23] The assertion that Minnesota law requires a specific list of each water to which a water quality standard applies is without merit.

28. In adopting the wild rice sulfate standard, the MPCA established a group of waters to which the

[23] *See* Minn. R. 7050.0140, subp. 1 ("the waters of the state are grouped into one or more of the classes in subparts 2 to 8.")

standard applies. That group of waters consists of "waters used for production of wild rice." Minn. R. 7050.0224, subp. 2 (2011). This type of grouping is expressly authorized under Minnesota **[*25]** law.

29. As the EPA made clear in its May 13, 2011 letter to the Minnesota Legislature, the EPA has formally approved Minnesota's wild rice sulfate standard. When the EPA approves a state's water quality standard, it must determine whether the standard is "consistent with the requirements of the Clean Water Act." 40 C.F.R. § 131.5 (a)(1). In approving the wild rice sulfate standard, the EPA concluded that the standard is consistent with the federal Clean Water Act. Plaintiff's assertion that the wild rice sulfate standard is in any way inconsistent with the Clean Water Act lacks merit.

Federal Law

30. There is no requirement in federal law for the state to list expressly every single water to which a water quality standard applies in order for the standard to apply. On the contrary, the federal Clean Water Act allows for application of water quality standards to water bodies that are implicated without being expressly listed on an individual basis.

31. Minn. Laws 2011 1 Sp. c. 2, art. 4, § 32(a)(2) directs the MPCA to initiate rulemaking regarding identification of waters to which this wild rice sulfate standard applies. Plaintiff's assertion that state and federal law would require such **[*26]** a listing is inaccurate and would significantly impede the MPCA's ability to fulfill its statutory obligation to promulgate and enforce water quality standards for the State of Minnesota.

32. The Wild Rice Rule (Minn. R. 7050.0224, subp.2) is rationally related to both the stated policy and rationale of the rules and is not void for vagueness.

B. Count IV: Plaintiff's are not entitled to a Declaratory Judgment.

33. M.S. 555.02 specifies the actions a court may construe under the Declaratory Judgment Act:

> Any person...whose rights, status or other legal relations are affected by a statute, municipal ordinance, contract, or franchise may have determined any question of construction or validity arising [under the same] and obtain a declaration of rights, status or other legal relations thereunder.

34. This act is not an express independent source of jurisdiction[24]: it does not create an independent cause of action. Because Plaintiff's substantive claims all fail as a matter of law, Plaintiff's Declaratory Judgment Act claim must also be dismissed.

35. To the extent that Plaintiff's claims are **[*27]** based on permitting actions that the MPCA may take in the future, those claims are conjectural and not subject to court action at this time.[25]

36. Given the above, Plaintiff has adequate remedies at law and is not entitled to a declaratory judgment.

C. Request for Equitable Relief

37. Plaintiff has requested that the Court "preliminarily and permanently" enjoin the MPCA from imposing any of the sulfate discharge limitations discussed above. Case law addressing Minn.R.Civ. P. 65.02 (temporary injunctions) has established five factors determining whether such an injunction should be granted: a) the nature of the relationship; b) relative hardships; c) likelihood of success on the merits; d) public policy; and e) administrative burdens.[26]

38. Analyzed under those factors, Plaintiff's request

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[24] *Alliance for Metropolitan Stability v. Metropolitan Council*, 671 N.W.2d 905, 915 (Minn. App. 2003).

[25] Any such quasi-judicial action is reviewable via certiorari to the Court of Appeals under M.S. 115.05, subd. 11(2010).

[26] *Dahlberg Bros., Inc. v. Ford Motor Co.*, 272 Minn. 264, 137 N.W.2d 314 (1965).

should be denied. As with Minn. R. Civ.P.65.01, the threshold question is whether there is immediate and irreparable injury that constitutes a ground for the issuance of the injunction and whether that party **[*28]** does not have an adequate remedy at law.[27] The failure to meet this burden is, in and of itself, a sufficient basis on which to deny the relief.[28] In this case, each of Plaintiff's claims are based on actions that the MPCA allegedly *may* take in the context of permitting proceedings. Plaintiff has an adequate remedy at law for any MPCA permitting decision: the right to request a contested case hearing before an administrative law judge on any MPCA permitting matter,[29] and a statutory right of certiorari review of any final MPCA permitting decision before the Minnesota Court of Appeals.[30] Because Plaintiff clearly has adequate remedies at law in this case its request for equitable relief must be denied.

39. Analyzed under the *Dahlberg* factors, the Court reaches the same conclusion. In this case the determinative factors under *Dahlberg* are a) the likelihood of success on the merits (see discussion, *supra*;) and b) public policy[31] Balancing the relative hardships between **[*29]** the parties, the analysis also favors the Defendant. While complying with the rules may be more costly to the Plaintiff's members, the rationale for Defendant's action is clearly stated in Minn.R. 7050.0224, subp.1:

> "...The harvest and use of grains from this plant serve as a food source for wildlife and humans...the quality of these waters and aquatic habitat necessary to support the propagation and maintenance of wild rice plant species must not be materially impaired or degraded...

40. Plaintiff's argument that its members may have to take action to comply with the wild rice sulfate standard during the interim period in which the MPCA conducts the research necessary to amend the rule as directed by the Legislature is without merit. The Legislature has already addressed how the wild rice sulfate standard is to be applied during that interim period.[32]

For this Court to second-guess the Legislature's determination of how the standard should be applied while the standard is in the process of being amended is inappropriate. Plaintiff's request for injunctive relief **[*30]** should be denied.

NOW THEREFORE, IT IS HEREBY ORDERED:

1. The motion for summary judgment of Defendant MPCA and Defendant-Intervenor WaterLegacy's is granted in its entirety.

2. Plaintiff's motion for a "preliminary and permanent" injunction is denied.

2. Plaintiff's partial motion for summary judgment is denied in its entirety.

3. Plaintiff's Complaint is dismissed in its entirety with prejudice and on the merits.

10 May 2012

/s/ Margaret M. Marrinan

HON. MARGARET M. MARRINAN

JUDGE OF DISTRICT COURT

[27] *Unlimited Horizon Mktg., Inc. v. Precision Hub, Inc.*, 533 N.W. 2d 63 (Minn. App. 1995).

[28] *Morse v. City of Waterville*, 458 N.W. 2d 728 (Minn. App. 1990).

[29] Minn. R. 7000.1800 (2011).

[30] Minn. Stat. § 115.05, subd. 11(1) (2010).

[31] See discussion supra at p. 3 regarding Minn.R. 7050.0186, M.S. 1.148, subd. 1.

[32] Minn. Laws. 2011 1 Sp. c. 2, art. 4, § 32 (e).

May 1, 2013 Draft

Proposed 2013 Wild Rice/Sulfate Impaired Waters Assessment Approach

Assessment criteria for sulfate concentrations in wild-rice waters

Assessments will be based on median sulfate concentrations over the April through August critical season, taken from data sets that give unbiased representations of overall conditions during that period. Only waterbodies (as delimited by AUIDs, or assessment unit identification numbers) with at least ten sulfate measurements will be assessed. Data over the last ten years will be considered, although a known change in water quality conditions during those ten years may mean that only the more recent data is used for the assessment decision.

A waterbody will be considered to be impaired if it is determined to be a "water used for production of wild rice" and the median sulfate concentration is greater than the state water quality standard, as determined by a statistical test that is appropriate to the distribution of the data and at a 0.1 level of significance.

Waters to be evaluated during the 2013 wild rice/sulfate impaired waters assessments

The wild rice-based sulfate standard of 10 mg/L contained in Minn. R. 7050.0224, subpart 2 specifies that the standard is "applicable to water used for production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels".

For the purpose of the 2013 wild rice/sulfate impaired waters assessments, a water body will be considered as a "water used for production of wild rice" through an evaluation process that parallels the current approach undertaken by MPCA staff when issuing discharge permits to waters containing wild rice stands. These wild rice stands can be existing stands in a waterbody or they can be previously documented stands present within a waterbody in the recent past dating back to November 28, 1975.

This case-by-case evaluation will consider the following in making the determination as to whether or not a waterbody will be part of the 2013 wild rice/sulfate assessment process:

- The waterbody meets the minimum sulfate data requirements outlined above; and
- The waterbody is listed in Appendix B of the February 15, 2008 Minnesota Department of Natural Resources report to the Minnesota Legislature titled *Natural Wild Rice in Minnesota* (MDNR 2008 report); or
- The waterbody has been identified and listed as a wild rice water by the 1854 Treaty Authority, or
- The waterbody is listed in the MDNR Zizania database as having wild rice identified within the surveyed portion of the lake or river system; or
- The waterbody was surveyed and wild rice stands were documented by NPDES/SDS permittees in connection with a pending discharge permit issuance or re-issuance; or
- The waterbody is identified as being associated with a MDNR aquatic plant management permit application for either the removal of wild rice plants or the introduction (planting) of wild rice; or
- Wild rice information that was submitted for a particular waterbody in response to the recent MPCA call for wild rice and sulfate data noticed in the April 1, 2013 *State Register* (37 SR 1438).

A general screening approach of the waters identified from the resource references noted above will include an evaluation of available wild rice acreage and density data. Wild rice stand acreage and density considerations will be an important consideration in leading to the draft listing of sulfate impaired waters used for the production of wild rice.

Wild Rice Standards Study Advisory Committee Meeting Summary and Follow-Up Items
MPCA Duluth Regional Office
May 1, 2013

Advisory Committee Attendees: Ricky Lien (for Ann Geisen), Nancy Schuldt, Paula Maccabee, Kurt Anderson, Joe Mayasich, Mike Robertson, Dave Skolansinski, David Smiga, Jennifer Engstrom, Rod Ustipak, Raymie Porter, Len Anderson, Robert Shimek, Anne Nelson, Rachel Walker, Darren Vogt, on phone: David Hatchett, Sara Barsel, Robin Richards, Steve Nyhus

MPCA staff: Shannon Lotthammer, Katrina Kessler, Pat Engelking, Gerald Blaha, Ed Swain, Phil Monson, Mark Tomasek, on phone: David Christopherson

Observers: Margaret Watkins, Bill LaTady, Tom Howes, Tom Thompson, Dorie Reisenweber, Peder Larson, Mike Hansel, Bob Tammen, Pat Tammen, Bruce Johnson, Dennis Szymialis, Carol Reschke, Wayne Dupuis, Lori Andresen

Agenda Item 1: Introductions

Agenda Item 2: Advisory Committee Updates

Mike Robertson gave a brief overview of hydroponics research that the Minnesota Chamber of Commerce is funding through Fort Environmental Laboratories in Oklahoma. A brief discussion followed including questions from the advisory committee about how the results would be used and how the agency might deal with conflicting results and the relative importance of the hydoponics work relative to field and mesocosm studies. Another attendee asked how the MPCA will consider various peer-reviewed and non peer-reviewed studies. Please send any comments or questions on the Fort Environmental Laboratories methods and information to Mike Robertson.

Rod Ustipak gave a brief update on the Twin Lakes wild rice work he has been involved with in 2012, which included efforts to lower water levels in that system last year.

Shannon Lotthammer mentioned that an article about the Wild Rice Standards Study appears in the May/June issue of the *Minnesota Conservation Volunteer*, which is reaching subscribers' mailboxes this week.

Agenda Item 3: Assessment Call for Data: Katrina Kessler from the MPCA gave a presentation outlining the process for the MPCA's upcoming assessment of wild rice and sulfate data for the impaired waters list. She also gave a brief overview of the draft assessment method and schedule for the process. Assessments for sulfate impairment of waters used for production of wild rice will be done on a case-by-case basis where sulfate data and wild rice information are available. Over the next month of two, the MPCA will be reviewing the data for quality assurance purposes. Discussion and comments from the advisory committee followed. Comments included:

- Question about why the median sulfate value is used when assessing the data and also why MPCA is using 0.1 for level of significance for the assessment. The MPCA followed up with Joe Mayasich about this comment and plans to document in writing the justification for the use of the 0.1 level of significant and associated confidence interval.
- Suggestion that phytoliths be added to the list of evidence of presence of wild rice in waters
- Suggestion that MPCA consider floristic quality assessments tools that are being developed for wetlands in the assessment process for sulfate impairment
- Questions and comments about the approach MPCA plans to take for the case-by-case determination of "water used for production of wild rice" determination .
- Question about how the MPCA addresses large waterbodies that have different characteristics within the overall waterbody (such as bays of lakes, large river reaches, etc. MPCA answered that large complex systems are often divided up for assessment purposes. The bays in Lake Minnetonka were mentioned as an example.
- Several questions and comments about identified window for sulfate data (April through August). Some advisory committee members thought this might exclude useful/applicable data.

- Suggestion that MPCA consider use of less than 10 data points for sulfate assessment.
- Question about how to let MPCA know about errors in the data mapping tool on the web site. MPCA said that any corrections/questions should be send to Gerald Blaha at gerald.blaha@state.mn.us or Katrina Kessler at Katrina.kessler@state.mn.us
- Question about how individuals could let the MPCA know about wild rice waters they are concerned about but may not have data for at this time.
- Members also asked why the MPCA is moving forward with assessment of the sulfate wild rice standard now, before the completion of the study? MPCA answered that this is a priority for EPA, and that we had many comments during the last impaired waters list comment period requesting us to assess for the existing sulfate wild rice standard.

Follow-up item #1: Katrina Kessler will forward information from EPA identifying sulfate/wild rice assessments for impaired waters as an EPA priority. Please see attached e-mail/file.

Follow-up item #2 (for advisory committee members): Any errors or questions that the Advisory Committee members or others find on the mapping tool should be brought to the MPCA's attention. Please send any corrections/questions should be send to Gerald Blaha at gerald.blaha@state.mn.us or Katrina Kessler at katrina.kessler@state.mn.us

Agenda Item 4: Study Status and 2013 Work Plan: Phil Monson and Ed Swain gave updates about the hydroponics studies and the 2013 field work. Phil indicated that the hydroponics researchers have found a PIPES buffer that allows them to maintain pH in the germination and juvenile seedling sulfate experiments, and that researchers are beginning method development for sulfide hydroponic experiments.

Ed then gave a brief update on the upcoming field work and noted that Amy Myrbo will be sampling 15-20 sites one time during the summer and another seven sites monthly. He showed a GIS map indicating the potential sites for intensive field monitoring. Ed noted that the MPCA would like to obtain more data from sites with greater than 10 ppm sulfate. One advisory committee noted that the St. Louis River estuary site was not indicated on the map, and Ed said that he would get that added. The MPCA would like feedback from the advisory committee on the candidate intensive sites (and any others that people might suggest) and for sites to visit once during the year.

Ed also talked about a high sulfate stream site with wild rice in North Dakota that the MPCA is considering sampling. The MPCA would like feedback about whether to sample this site or not.

The last two study topics, sediment incubation experiments and mesocosms, were not discussed at the meeting due to lack of time. They will be discussed at the next meeting.

Next steps: Shannon Lotthammer talked about scheduling another conference call (all advisory committee members) or meeting sometime in June to discuss the remaining items on the agenda. At that time, an update on the assessment process will also be provided. She also asked the advisory committee members to let Pat know if they felt the technical calls to be useful. Note a technical advisory call focused on hydroponics will also take place on May 23 from 2:30-4 p.m. Any advisory committee member is welcome to attend.

Wild Rice Standards Study Advisory Committee
June 11, 2013, MPCA St. Paul Offices
Meeting Summary

Advisory Committee attendees: Joe Mayasich, Kurt Anderson, Sara Barsel, Paula Maccabee, Nancy Schuldt, Darren Vogt, Ann Geisen, Raymie Porter, John Dockter, Kathryn Hoffman, Anne Nelson, Robin Richards, Bethel and Len Anderson, David Hatchett, Mike Robertson, David Smiga, Peder Larson (for David Smiga), Bob Shimek, Steve Nyhus

Others: Mike Hansel, Lloyd Grooms, Lori Andresen, Bob and Pat Tammen, Adam Lozeau

MPCA staff: Patricia Engelking, Shannon Lotthammer, Mark Tomasek, Ed Swain, Gerald Blaha, Phil Monson, Eric Alms

Agenda Item 1: Introductions and Meeting Goals

Shannon Lotthammer provided a review of the advisory committee purpose and meeting goals.

Agenda Item 2: Advisory Committee Updates

Nancy Schuldt announced that the Fond du Lac Band of Lake Superior Chippewa has received a National Environmental Information Exchange Network grant from EPA to develop a regional wild rice database. The three-year effort will begin this fall.

Paula Maccabee asked about the comments Water Legacy has submitted about the draft assessment process on the web. Mark Tomasek noted that the assessment process and comments would be discussed later in the meeting.

Agenda Item 3: Study Updates

- **Sediment incubation studies—**Ed Swain described the sediment incubation experiments that Nate Johnson is working on in his laboratory at UMD. The study is designed to explore whether sulfate in the overlying water penetrates into the sediment at winter and spring temperatures and if it is converted to sulfide. Sediment samples for this project were collected from two locations—the Partridge River north of Highway 110 above the confluence with Second Creek, and North Bay in the St. Louis River just west of Boy Scout Landing. The organic content of the two sites is different with the sediment from the St. Louis site having approximately ½ the organic content of sediment from the Partridge River site. The sediment incubation experiments are being conducted in triplicate at two different temperatures, with appropriate controls.

- **Field Survey**—Ed Swain described the planned sampling for 2013, indicating that the MPCA is now planning to sample 15 sites intensively three times during 2013 in June, July and August. An additional 10-20 sites will be sampled once in late summer/early fall. Ed noted that many of the sites sampled over the past two years are waters with low sulfate concentrations that successfully grow wild rice. Sampling this year will focus on obtaining data from higher sulfate systems that may or may not grow rice. The sampling will focus primarily on two areas where elevated sulfate has been observed/measured— the western and southwestern boundaries of wild rice in Minnesota and portions of the Iron Range.

  At two sites, Sandy Lake and Second Creek, porewater equilibrators (peepers) will also be deployed at least three times during the season to supplement the field water, sediment, and porewater sampling and analysis. The peepers will provide a profile of porewater chemistry at different depths in the sediment.

  - Advisory committee members had questions about which species of wild rice, *Zizania palustris* or *Zizania aquatica*, was present at the site at the Turtle River site in North Dakota. Ed Swain noted that although the growth form looks different at the site in North Dakota, the wild rice seeds from this location were keyed out to be *Zizania palustris*.

- It was also suggested that the MPCA consider adding sites 32 (Padua Lake) and 36 (Raymond Lake) to the group of intensive sites. Raymond Lake had a successful wild rice restoration and Padua Lake did not. Another advisory committee member asked about Padua Lake, the site with unsuccessful restoration of wild rice. She suggested the MPCA try to learn why the wild rice restoration was unsuccessful as there could be many human impacts (ditching, tiling, irrigation, etc.) in this area of the state that could have affected the wild rice.
- Another committee member noted that the Geneva Lake sites had not had rice since the 1950s with the exception of one piece of one plant observed in 2002. It was noted that the land use in that area is heavily agricultural with extensive ditching and tiling.
- An advisory committee member asked if phytoliths would be measured in any of the sediment samples, and if the phytolith analysis could provide any sense of the abundance of wild rice as opposed to just indicating presence or absence. Ed Swain noted that there is budget to analyze 30 sites for *Zizania*-specific phytolith concentration in the sediment, which may be proportional to past wild rice abundance. Additional data collection may be collected during the 2013 field season to test the proportionality.
- Another advisory committee member suggested that the field crew be encouraged to take more extensive field notes. Ed noted that additional instructions about field notes has been provided to the field crew based on earlier Advisory Committee comments.

- **University of Minnesota-Duluth mesocosms (container experiments in 378 liter stock tanks)**—Ed Swain described the work that is underway at the UMD Research and Field Studies Station to determine responses of wild rice to a range of sulfate concentrations. The MPCA will be building on an experiment focusing on wild rice response to a range of sulfate concentrations that was begun in 2011. The experimental design uses a total of 30 polyethylene stock tanks (378 liter) divided into six replicate tanks per treatment with five treatment levels (control plus four sulfate levels). The four sulfate levels are 50, 100, 150 and 300 mg SO_4/Liter.

Dr. Johnson will also be deploying two porewater equilibrators, known as peepers, in each of four tanks approximately monthly during the 2013 growing season. The purpose of the deployment is twofold: 1) to assess the porewater chemistry in each sulfate treatment over the growing season, and 2) to assess the ability of wild rice to release oxygen from the roots that decreases the concentration of sulfide in the porewater. The first task is assessed by deploying a peeper adjacent to growing wild rice plants. The second task is assessed by deploying a second peeper in the same tank in one end of the tank where plants have been purposefully not allowed to grow. In 2013 a Plexiglas vertical divider has been installed near one end of each tank, isolating about 10% of the container. No plants will be allowed to grow in that 10%, so that the effect of plants can be assessed. The Plexiglas divider extends only a few cm above the sediment, so that the overlying water is the same over each part of the tank. A diagram of the mesocosm tanks (not to scale) was put on the white board in the meeting room to indicate the placement of the divider, peepers, and stand pipe that each tank has to maintain water level.

Advisory Committee members had several suggestions and requests for more information about the experiment design and mesocosm methods.

- Questions were raised about the procedure to thin the wild rice plants in each mesocosm. An advisory committee member suggested that researchers try to minimize technician variation in the thinning process.

- Advisory committee members expressed a desire for more detail on the type and frequency of analyses at the mesocosms—what will be analyzed daily, weekly, monthly?
- One member suggested these experiments would usually be termed "microcosms" vs. "mesocosms."
- Advisory committee members asked if more than 5 plants could be selected for additional analysis. An advisory committee member asked for a description of the statistics relating to choosing the number of subsamples (5 out of 30).
- A suggestion was made to harvest the entire biomass of mesocosm experiments and to consider additional analyses on the harvested biomass at the end of the season. MPCA staff noted that the current draft SOP indicates that all the biomass above the sediment is harvested and weighed, and a subsample taken for further analysis.
- Suggestion that Dr. Myrbo's team retain seeds from wild rice plants at time of last sampling.
- Consider genetic analysis to ensure that inbreeding of wild rice has not taken place over time at the mesocosm site by comparing genetics of mesocosms to genetics of lakes.
- Advisory Committee members would like to see the levels of sulfate in the tanks prior to and after dosing with sulfate this year.
- Suggestion that placement of peepers in the mesocosms should follow a randomized procedure.

- **Hydroponics experiments**—Phil Monson reported on the status of the hydroponics experiments. Researchers have completed range finders for the sulfate germination and sulfate juvenile seedlings tests and are working on method development for the sulfide experiments. Final methods for the sulfate hydroponic experiments will be shared with the advisory committee before "definitive tests" are undertaken – the same will be true for the sulfide methods.
    - An advisory committee member commented that the juvenile seedling experiments would not have enough growth to be considered "floating leaf" stage. Members also reiterated the importance of documenting the definitions of the terminology used to describe various stages of plant growth.

Agenda Item 4: Assessment Process

Mark Tomasek reported on comments received on the draft assessment method for the wild rice sulfate standard and provided an update and timeline for the assessment process. The MPCA received comments from Water Legacy, the 1854 Treaty Authority, Minnesota Audubon and the Minnesota Chamber of Commerce on the draft assessment method. The MPCA has posted these comments on the wild rice web site and has made some changes to the assessment method based on the comments received. The comments and updated method can be found on the MPCA's wild rice web page under the assessment link (method development section: http://www.pca.state.mn.us/ktqh1083). Mark noted the assessment methods will continue to be revised as the agency moves through the assessment process, so that any refinements to the method that are made as the data are analyzed are fully documented. The data are currently undergoing quality assurance and quality control procedures and the assessment process, including professional judgment meetings, will take place in the summer and early fall. The draft impaired waters list will be put on public notice in the fall of 2013. At the time of public notice, there will be a formal public comment period.

Anyone who is interested in the impaired waters list can sign up on the MPCA's GovDelivery list that focuses on this topic. Please use the link below for the GovDelivery signup. It is a general signup. Anyone interested in the impaired waters list should click the EMAIL ALERTS link in the upper right corner of the page, provide their email address, click next and select TMDL (303d) Impaired Waters List. Other GovDelivery selections can be made here, as well.

GovDelivery Signup for the Impaired Waters List - http://www.pca.state.mn.us/index.php/water/water-types-and-programs/minnesotas-impaired-waters-and-tmdls/impaired-waters-list.html

Follow-up Items: Advisory committee members requested a copy of the 2012 assessment guidance document. This guidance document will be revised for the 2014 Impaired Waters List. This guidance document will include the methods for wild rice assessment.

Link to 2012 assessment guidance: http://www.pca.state.mn.us/index.php/view-document.html?gid=16988

Agenda Item 5: Next Steps

1. MPCA will get back to the Advisory Committee on changes made to the SOPs and site selection based on their specific suggestions and questions.
2. Final methods for sulfate germination and juvenile seedling methods will be completed and circulated. Draft methods for sulfide germination and juvenile seedling methods will be shared when available.
3. Another meeting will be planned for Duluth in August (to be completed before ricing season opens.)

OAH 80-9003-34519
Revisor R-4324

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers, Minnesota Rules parts 7050.0130, 7050.0220, 7050.0224, 7050.0470, 7050.0471, 7053.0135, 7053.0205, and 7053.0406

REPORT OF THE CHIEF ADMINISTRATIVE LAW JUDGE

This matter came before the Chief Administrative Law Judge pursuant to the provisions of Minn. Stat. § 14.15, subd. 3 (2016), and Minn. R. 1400.2240, subp. 4 (2017). These authorities require that the Chief Administrative Law Judge review an Administrative Law Judge's findings that a proposed agency rule should not be approved.

Based upon a review of the record in this proceeding, the Chief Administrative Law Judge agrees with and hereby **CONCURS** with all disapprovals contained in the Report of the Administrative Law Judge dated January 9, 2018.

1. The Chief Administrative Law Judge **CONCURS** that the following proposed rules are **DISAPPROVED:**

   a. Proposed **Minn. R. 7050.0220, subps. 3a, 4a, 5a, 6a**
   b. Proposed **Minn. R. 7050.0224, subp. 2**
   c. Proposed **Minn. R. 7050.0224, subp. 5, A**
   d. Proposed **Minn. R. 7050.0224, subp. 5, B (1)**
   e. Proposed **Minn. R. 7050.0224, subp. 5, C**
   f. Proposed **Minn. R. 7050.0224, subp. 6**
   g. Proposed **Minn. R. 7050.0471, subps. 3 through 9**

2. The following changes to rules as originally proposed are **DISAPPROVED:**

   a. Proposed changes to **Minn. R. 7050.0224, subp. 5, B (1)**
   b. Proposed changed to **Minn. R. 7050.0224, subps. 5, E, F**

c. Proposed changes to **Minn. R. 7050.0224, subp. 5, B (2)**

The changes or actions necessary for approval of the disapproved rules and repeals are as identified in the Administrative Law Judge's Report.

If the Department elects not to correct the defects associated with the repeal of the existing rules and the defects associated with the proposed rules, the Department must submit the proposed rules to the Legislative Coordinating Commission and the House of Representatives and Senate policy committees with primary jurisdiction over state governmental operations, for review under Minn. Stat. § 14.15, subd. 4 (2016).

Dated: January 11, 2018

TAMMY L. PUST
Chief Administrative Law Judge

OAH 80-9003-34519
Revisor R-4324

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers, Minnesota Rules parts 7050.0130, 7050.0220, 7050.0224, 7050.0470, 7050.0471, 7053.0135, 7053.0205, and 7053.0406	**REPORT OF THE ADMINISTRATIVE LAW JUDGE**

Administrative Law Judge LauraSue Schlatter conducted several public hearings on this rulemaking proceeding at various locations throughout the state. The hearings were held on the following dates at the following locations: the Harold Stassen Building in St. Paul, Minnesota, on October 23, 2017; the Mesabi Range College in Virginia, Minnesota, on October 24, 2017; Bemidji State University in Bemidji, Minnesota, on October 25, 2017; the Fond du Lac Tribal Community College in Cloquet, Minnesota, on October 26, 2017; and Central Lakes Community College in Brainerd, Minnesota, on October 30, 2017. Judge Schlatter held an additional hearing at the offices of the Minnesota Pollution Control Agency (MPCA or Agency) in St. Paul, Minnesota, on November 2, 2017. This hearing was also broadcast via interactive video conference to the MPCA's regional offices in Detroit Lakes, Duluth, Mankato, Marshall, and Rochester. All of the hearings continued until everyone present had an opportunity to be heard concerning the proposed rules.[1]

The MPCA proposes to amend the rules governing Minnesota's water quality standard to protect wild rice from excess sulfate. The existing standard limits sulfate to 10 milligrams per liter in water used for the production of wild rice. The proposed amendments would establish an equation to determine the protective level of sulfate in each "wild rice water" based on the concentration of iron and organic carbon in the sediment. When sulfate in the water interacts with iron and organic carbon in the sediment, they can form sulfide, which the MPCA has determined is toxic to wild rice.[2] The proposed rules would limit sulfide in the sediment of a wild rice water to 120 micrograms per liter; identify approximately 1,300 lakes, rivers, and streams as wild rice waters; establish a process for the future identification of wild rice waters; and describe

[1] Throughout this Report, the terms "rule" and "rules," as well as the terms "standard" and "standards," are used interchangeably and in a manner intended to reflect typical usage while encompassing the fact that the rulemaking proceeding addresses a proposed rule made up of various identified parts.
[2] Ex. D (SONAR) at 12.

the sampling and analytical methods to characterize sediment and determine porewater sulfide.[3]

The public hearings and this Report are part of a rulemaking process governed by the Minnesota Administrative Procedure Act.[4] The Minnesota Legislature designed the rulemaking process to ensure that state agencies meet all of the requirements that Minnesota law specifies for adopting rules.[5] The rulemaking process also includes a hearing when 25 or more persons request one or when ordered by the agency.[6]

The hearings were conducted to allow the Agency representatives and the Administrative Law Judge reviewing the proposed rules to hear public comment regarding the impact of the proposed rules and what changes might be appropriate.[7] Further, the hearing process provided the general public an opportunity to review, discuss, and critique the proposed rules.

The Agency must establish that the proposed rules are within the Agency's statutory authority; necessary and reasonable; follow from compliance with the required procedures; and that any modifications that the Agency made after the proposed rules were initially published in the *State Register* are within the scope of the matter that was originally announced.[8]

Adonis Neblett, General Counsel, represented the MPCA at the hearing. The members of the MPCA's hearing panel (Agency Panel) included Carol Nankivel, Rulemaking Coordinator; Shannon Lotthammer, Division Director for the Environmental Analysis and Outcomes Division; Ed Swain, Research Scientist with the Environmental Analysis and Outcomes Division; Catherine Neuschler, Water Assessment Section Manager; Gerald Blaha, Research Scientist with the Water Quality Standards Unit; Elizabeth Kaufenberg, Research Scientist with the Effluent Limits Unit; Phillip Monso, Research Scientist with the Water Quality Standards Unit; Scott Kyser, Engineer with the Effluent Limits Unit; and Debra Klooz, a Paralegal in the Legal Services unit.

The MPCA received thousands of written comments on the proposed rules between August 21, 2017 and November 2, 2017. Approximately 57 people attended the first public hearing on October 23rd in St. Paul, Minnesota and signed the hearing register. Fourteen members of the public provided oral comments regarding the proposed rules during the October 23rd hearing and one public exhibit was received during that hearing.[9]

Approximately 88 people attended the October 24th hearing in Virginia, Minnesota and signed the hearing register. Twenty-five members of the public provided oral

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[3] Porewater is the water present in saturated sediment between the solid particles of minerals and organic matter.
[4] Minn. Stat. §§ 14.131-.20 (2016).
[5] *See* Minn. Stat. §§ 14.05-.20 (2016); Minn. R. 1400.2000-.2240 (2017).
[6] See Minn. Stat. § 14.25 (2016).
[7] *See* Minn. Stat. § 14.14; Minn. R. 1400.2210-.2230.
[8] Minn. Stat. §§ 14.05, 14.23, 14.25, 14.50 (2016).
[9] Exhibit (Ex.) 1000.

comments regarding the proposed rules during the October 24th hearing. Twelve public exhibits[10] and two Agency exhibits[11] were received during the October 24th hearing.

Approximately 44 people attended the October 25th hearing in Bemidji, Minnesota, and signed the hearing register. Fourteen members of the public provided oral comments regarding the proposed rules during the October 25th hearing and two public exhibits were received during that hearing.[12]

Approximately 89 people attended the October 26th hearing in Cloquet, Minnesota, and signed the hearing register. Twenty-seven members of the public provided oral comments regarding the proposed rules during the October 26th hearing and nine written public exhibits were received during that hearing.[13]

Approximately 53 people attended the October 30th hearing in Brainerd, Minnesota, and signed the hearing register. Twenty members of the public provided oral comments regarding the proposed rules during the October 30th hearing and nine public exhibits were received during that hearing.[14]

Approximately 26 people attended the November 2nd hearing in St. Paul, Minnesota, or watched via interactive video conference at one of the MPCA's regional offices in Detroit Lakes, Duluth, Mankato, Marshall, and Rochester. Eight members of the public provided oral comments regarding the proposed rules during the November 2nd hearing and three public exhibits were received during that hearing.[15]

In total, 38 exhibits were received during the public hearings.[16]

After the close of the last of the hearings, the Administrative Law Judge kept the rulemaking record open for an additional 20 calendar days, until November 22, 2017, to allow interested persons and the Agency to submit written comments. Thereafter, the record remained open for an additional five business days, until December 1, 2017, to allow interested persons and the Agency to file written responses to any comments received during the initial comment period.[17]

Approximately 1,500 written comments were received from members of the public after the hearings, along with two responses from the Agency.[18] To aid the public in participating in this matter, all comments were posted at the Office of Administrative

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[10] Exs. 1001-1012.
[11] Exs. 1013-1014.
[12] Exs. 1015-1016.
[13] Exs. 1017-1024A.
[14] Exs. 1025-1033.
[15] Exs. 1033-1036.
[16] Exs. 1000-1036, which includes Exs. 1024 and 1024A.
[17] *See* Minn. Stat. § 14.15, subd. 1.
[18] MPCA Response to Public Comments (Nov. 22, 2017) and MPCA Rebuttal Response to Public Comments (Dec. 1, 2017).

Hearings' Rulemaking eComments website. In total, the Administrative Law Judge received more than 4,500 written comments on the proposed rule amendments.[19]

The hearing record closed for all purposes on December 1, 2017.[20]

NOTICE

The Agency must make this Report available for review by anyone who wishes to review it for at least five working days before the Agency takes any further action to adopt final rules or to modify or withdraw the proposed rules. If the Agency makes changes in the rules other than those recommended in this report, it must submit the rules, along with the complete hearing record, to the Chief Administrative Law Judge for a review of those changes before it may adopt the rules in final form.

Because the Administrative Law Judge has determined that the proposed rules are defective in certain respects, state law requires that this Report be submitted to the Chief Administrative Law Judge for her approval. If the Chief Administrative Law Judge approves the adverse findings contained in this Report, she will advise the Agency of actions that will correct the defects, and the Agency may not adopt the rules until the Chief Administrative Law Judge determines that the defects have been corrected. However, if the Chief Administrative Law Judge identifies defects that relate to the issues of need or reasonableness, the Agency may either adopt the actions suggested by the Chief Administrative Law Judge to cure the defects or, in the alternative, submit the proposed rules to the Legislative Coordinating Commission for the Commission's advice and comment. The Agency may not adopt the rules until it has received and considered the advice of the Commission. However, the Agency is not required to wait for the Commission's advice for more than 60 days after the Commission has received the Agency's submission.

If the Agency elects to adopt the actions suggested by the Chief Administrative Law Judge and make no other changes; and the Chief Administrative Law Judge determines that the defects have been corrected, it may proceed to adopt the rules. If the Agency makes changes in the rules other than those suggested by the Administrative Law Judge and the Chief Administrative Law Judge, it must submit copies of the rules showing its changes, the rules as initially proposed, and the proposed order adopting the rules to the Chief Administrative Law Judge for a review of those changes before it may adopt the rules in final form.

After adopting the final version of the rules, the Agency must submit them to the Revisor of Statutes for a review of their form. If the Revisor of Statutes approves the form of the rules, the Revisor will submit certified copies to the Administrative Law Judge, who will then review them and file them with the Secretary of State. When they are filed with

[19] Of these comments, the vast majority were form letters, form postcards, or petitions. *See* https://minnesotaoah.granicusideas.com/discussions/minnesota-pollution-control-agency-environmental-assessment-and-outcomes-division.

[20] Pursuant to Minn. Stat. § 14.15, subd. 2, a one week extension was granted for the preparation of this Report. *See* Order Extending Deadline for Rule Report (Dec. 28, 2017).

the Secretary of State, the Administrative Law Judge will notify the Agency, and the Agency will notify those persons who requested to be informed of their filing.

SUMMARY OF CONCLUSIONS

The MPCA has established that it has the statutory authority to adopt the proposed rules and that it followed the legal requirements to promulgate the rules.

The Administrative Law Judge **DISAPPROVES** the proposed repeal of the 10 mg/L sulfate standard at **Minn. R. 7050.0220, subps. 3a, 4a, 5a, 6a** and **Minn. R. 7050.0224, subp. 2,** due to the Agency's failure to establish the reasonableness of the repeal, and because the repeal conflicts with the requirements 33 U.S.C. § 1313(c), 40 C.F.R. § 131.10(b) (2015) and Minn. R. 7050.0155 (2017).

The Administrative Law Judge **DISAPPROVES** the proposed equation-based sulfate standard at **Minn. R. 7050.0224, subp. 5, B (1)** because the proposed rule fails to meet the definition of a rule under Minn. Stat. § 14.38 (2016) and Minn. R. 1400.2100.G (2017). In addition, the proposed equation-based sulfate standard is not rationally related to the Agency's objective in this proceeding, and is unconstitutionally void for vagueness.

The Administrative Law Judge **DISAPPROVES** the proposed list of approximately 1,300 wild rice waters at **Minn. R. 7050.0471, subps. 3 through 9** because it violates 40 C.F.R. §§ 131.3 and .11(h)(1).

In addition, the Administrative Law Judge **DISAPPROVES** the following proposed rules because the Agency failed to demonstrate that the proposed rules meet the required legal standards:

a. Proposed **Minn. R. 7050.0224, subp. 5, A** – to the extent the language incorporates the standard in items B(1) and (2) the language violates Minn. Stat. § 14.38 and Minn. R. 1400.2100.B and G (2017).

b. Proposed **Minn. R. 7050.0224, subp. 5, A** – to the extent the language incorporates the standard in item C, the language violates Minn. R. 1400.2100.D (2017).

c. Proposed **Minn. R. 7050.0224, subp. 5, C** – violates Minn. R. 1400.2100D.

d. Proposed **Minn. R. 7050.0224, subp. 6** – fails to establish need or reasonableness for rule. No reason for distinguishing between [WR], which are provided additional protection of narrative standard, and other wild rice waters listed at Minn. R. 7050.0471 violates 1400.2100.B.

The Administrative Law Judge finds that the Agency failed to provide adequate regulatory analyses as required by Minn. Stat. § 14.131 (1), (5), (7), and (8). While the Agency made the cost determination required by Minn. Stat. § 14.127, the Administrative

Law Judge concludes that this determination is not adequately supported in the rulemaking record.[21]

Based upon all the testimony, exhibits, and written comments the Administrative Law Judge makes the following:

FINDINGS OF FACT

I. Background to the Proposed Rules

1. This rulemaking concerns amendments to Minnesota's water quality standard to protect wild rice from adverse impacts due to sulfate pollution. Wild rice is an important natural resource in Minnesota. In addition to providing food to people and waterfowl generally, it has spiritual, cultural, and nutritional significance to the Dakota and Ojibwe people.

2. Under the federal regulations implementing the Clean Water Act (CWA), the MPCA is responsible for establishing, reviewing, and revising water quality standards.[22]

3. Federal law defines "water quality standards" to "consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon such uses. Water quality standards are intended to protect the public health or welfare, enhance the quality of water and serve the purposes of the Act."[23]

4. Water quality standards "must be based on sound scientific rationale and must contain sufficient parameters or constituents to protect the designated use."[24]

5. Minnesota Rules, chapter 7050 (2017) establishes water quality standards for "all waters of the state, both surface and underground."[25] This chapter sets out a classification system for the beneficial uses of waters, establishes numeric and narrative water quality standards, and provides nondegradation provisions, and other provisions to protect the physical, chemical, and biological integrity of waters of the state.[26] Water use classifications, and their accompanying narrative and numeric standards and antidegradation provisions, make up the state's set of water quality standards.

6. In Minnesota, the wild rice resource is protected with a unique water quality standard. The existing wild rice standards, found at Minn. R. 7050.0224, consist of a narrative standard in subpart 1 applicable to selected wild rice waters specifically identified in rule, and a numeric standard in subpart 2 that establishes a sulfate standard

[21] *See Builders Ass'n. of Twin Cities v. Minnesota Dept. of Labor and Industry*, 872 N.W. 2d 263 (Minn. Ct. App. 2015).
[22] 40 C.F.R. § 131.4(a) (2017). Under state and federal law, the MPCA is charged with the administration and enforcement of the CWA. *See* 33 U.S.C. §§ 1251-1387 (2016); 40 C.F.R. § 123.25(a) (2017); Minn. Stat. § 115.03, subds. 1, 5 (2016).
[23] 40 C.F.R. § 131.3(i) (2017).
[24] 40 C.F.R. § 131.11(a)(1) (2017); *see also* 40 C.F.R. § 131.5(a)(2) (2017).
[25] Minn. R. 7050.0110.
[26] *Id.*

applicable to "water used for production of wild rice." The purpose of a designated use of a water body to protect wild rice is described as "the harvest and use of grains from this plant serve as a food source for wildlife and humans."[27]

7. Minnesota first adopted a sulfate standard to protect wild rice in 1973.[28] The sulfate standard was based on research conducted in the 1930s and 1940s that found that higher levels of sulfate in water correlated with reduced presence of wild rice.[29] Based on this research, the MPCA set the numeric standard at 10 mg/L of sulfate applicable to "water used for production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels."[30]

8. Over the years, the MPCA has received comments and questions about the appropriateness of the sulfate standard and the meaning of the phrase "waters used for production of wild rice."[31] In 2011, the Minnesota Legislature directed the MPCA to undertake further study of the wild rice sulfate water quality standard and to revise the standard as necessary.[32] This rulemaking proceeding is the result of that legislative directive.[33]

9. In 2011, the Minnesota Legislature provided the MPCA with a $1.5 million appropriation from the Clean Water Fund to conduct a Wild Rice Sulfate Study to gather additional information about the effects of sulfate and other substances on the growth of wild rice.[34] The Legislature also directed the MPCA to undertake rulemaking to identify wild rice waters and to make any other needed changes to the standards following completion of the study.[35] The rulemaking was to be completed by January 15, 2018.[36]

10. The Minnesota Legislature also directed the MPCA to create an advisory group comprised of tribal government representatives and a variety of other stakeholders to provide input on the research and the development of future rule amendments.[37] The legislation further directed the MPCA to establish criteria for waters containing natural beds of wild rice after consulting Minnesota tribes, the Minnesota Department of Natural Resources (DNR), and stakeholders.[38]

11. In 2017, the MPCA received $180,000 from the Legislative Citizens Commission on Minnesota Resources to analyze wastewater treatment alternatives to

[27] Minn. R. 7050.0224, subp. 1.
[28] Ex. D SONAR at 11-12, 33-34.
[29] Ex. D at 11.
[30] Minn. R. 7050.0224, subp. 2.
[31] Ex. D at 11-12.
[32] 2011 Minn. Laws 1st Spec. Sess. ch. 2, art. 4, § 32.
[33] Ex. D. at 13.
[34] Ex. D at 13; 2015 Minn. Laws 1st Spec. Sess. ch. 4, art. 4, § 136.
[35] Ex. D at 13.
[36] 2015 Minn. Laws 1st Spec. Sess. ch. 4, art. 4, § 136.
[37] 2011 Minn. Laws 1st Spec. Sess. ch. 2, art. 4, § 32.
[38] *Id.*

inform the development of the proposed rules. The analysis is expected to be completed by May of 2018.[39]

12. In 2017, the Minnesota Legislature extended the deadline for completing this rulemaking by one year to January 15, 2019.[40]

II. Rulemaking Authority

13. The MPCA relies upon its general rulemaking authority under Minn. Stat. § 115.03, subd. 1 (2016), as its statutory authority to adopt these proposed rules. This statute provides that the Agency is given and charged with the following powers and duties:

> (a) to administer and enforce all laws relating to the pollution of any of the waters of the state;
>
> (b) to investigate the extent, character, and effect of the pollution of the waters of this state and to gather data and information necessary or desirable in the administration or enforcement of pollution laws, and to make such classification of the waters of the state as it may deem necessary;
>
> (c) to establish and alter such reasonable pollution standards for any waters of the state in relation to the public use to which they are or may be put as it shall deem necessary for the purposes of this chapter and, with respect to the pollution of waters of the state, chapter 116;
>
> (d) to encourage waste treatment, including advanced waste treatment, instead of stream low-flow augmentation for dilution purposes to control and prevent pollution; and
>
> (e) to adopt, issue, reissue, modify, deny, or revoke, enter into, or enforce reasonable orders, permits, variances, standards, rules, schedules of compliance, and stipulation agreements, under such conditions as it may prescribe, in order to prevent, control, or abate water pollution, or for the installation or operation of disposal systems or parts thereof, or for other equipment and facilities.[41]

14. The MPCA also relies upon its general authority to "group the designated waters of the state into classes, and adopt classifications and standards of purity and quality" under Minn. Stat. § 115.44, subd. 2 (2016), as a source of statutory authority to adopt the proposed rules. Minn. Stat. § 115.44, subd. 2, provides in part:

[39] Ex. 1015; Letter from Iron Range Legislative Delegation (Nov. 2, 2017); Testimony (Test.) of Rep. Matt Bliss at Tr. 85 (Oct. 25, 2017); Test. of Rep. Rob Ecklund at 69-72 (Oct. 30, 2017).
[40] 2017 Minn. Laws, ch. 93, art. 2, § 149.
[41] Minn. Stat. § 115.03, subd. 1.

> In order to attain the objectives of sections 115.41 to 115.53, the agency after proper study, and after conducting public hearing upon due notice, shall, as soon as practicable, group the designated waters of the state into classes, and adopt classifications and standards of purity and quality therefor.

15. Additionally, the MPCA cites the specific legislative authorities that require it to initiate a process to amend the state water quality standards in Minn. R. ch. 7050,[42] and that extended the deadline for completing the mandated rule revisions.[43]

16. The Administrative Law Judge concludes that the Agency has the statutory authority to adopt the proposed rules.

III. Procedural Requirements of Chapter 14 (2016)

A. Publications

17. On October 26, 2015, the Agency published a Request for Comments in the *State Register* seeking comments on "its planned changes to rules governing water quality standards, Minnesota Rules chapter 7050 (Waters of the State)."[44]

18. On August 3, 2017, the Agency requested review and approval of its Notice of Hearing and Additional Notice Plan.

19. On August 8, 2017, Administrative Law Judge Eric Lipman issued an Order on behalf of Administrative Law Judge LauraSue Schlatter approving the Additional Notice Plan and Hearing Notice.

20. On August 21, 2017, the Agency published a Notice of Hearing in the State Register stating its intention to adopt rules following the receipt of input from the public.[45] In the Notice, the Agency announced a series public hearings scheduled for October 23, 24, 25, 30, and November 2, 2017.[46]

21. On August 21, 2017, the Agency sent via electronic mail the Notice of Hearing to all persons and associations who had registered their names with the Agency for the purpose of receiving such notice.[47] The Agency also provided a copy of the Notice of Hearing to all persons and associations identified in the Agency's Additional Notice Plan.[48]

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[42] 2011 Minn. Laws 1st Spec. Sess, ch. 2, art. 4, § 32.
[43] 2017 Minn. Laws ch. 93, art. 2, § 149.
[44] Ex. A; 40 *State Register* 477-78 (Oct. 26, 2015).
[45] Ex. F; 42 *State Register* 171-172 (Aug. 21, 2017).
[46] *Id*.
[47] Ex. G.
[48] Ex. H1.

22. On September 18, 2017, the Agency sent via electronic mail the Notice of Additional Hearing to all persons and associations who had registered their names with the Agency for the purpose of receiving such notice and to all persons and associations identified in the Agency's Additional Notice Plan.[49] In the Notice, the Agency announced an additional public hearing to take place in Cloquet, Minnesota, on October 26, 2017.[50]

23. The Agency published the Notice of Additional Hearing in the *State Register* on September 18, 2017.[51]

24. At the hearing on October 23, 2017, the MPCA filed copies of the following documents as required by Minn. R. 1400.2220 (2017):

a. MPCA's Request for Comments as published in the *State Register* on October 26, 2015;[52]

b. A Petition for Rulemaking submitted by the Minnesota Chamber of Commerce on December 17, 2010, and a Memorandum in Support of the Minnesota Chamber of Commerce's Petition for Rulemaking dated December 6, 2010;[53]

c. Proposed rules dated July 24, 2017, including the Revisor's approval;[54]

d. The MPCA's Statement of Need and Reasonableness (SONAR);[55]

e. The Certificate of Mailing the SONAR to the Legislative Reference Library on August 21, 2017;[56]

f. The Notice of Hearing as mailed and as published in the *State Register* on August 21, 2017; and the Notice of Additional Hearing as mailed and as published in the *State Register* on September 18, 2017;[57]

g. Certificate of Mailing the Notice of Hearing to the rulemaking mailing list and Certificate of Accuracy of the Mailing List dated August 21, 2017, and Certificate of Mailing the Notice of Additional Hearing to the rulemaking list and Certificate of Accuracy of the Mailing List dated September 18, 2017;[58]

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[49] Ex. H2.
[50] *Id*.
[51] Ex. F; 42 *State Register* 369-370 (Sept. 18, 2017).
[52] Ex. A; 40 *State Register* 477-478 (Oct. 26, 2015).
[53] Ex. B.
[54] Ex. C.
[55] Ex. D.
[56] Ex. E.
[57] Ex. F.
[58] Ex. G.

h. Certificate of Providing Additional Notice of the August 21, 2017, Notice of Hearing[59] and Certificate of Providing Additional Notice of the September 18, 2017, Notice of Additional Hearings;[60]

i. Written comments received during the prehearing comment period and a link to the Minnesota Office of Administrative Hearings' rulemaking eComments website, where written comments on the proposed rules received by the Agency prior to the hearing were posted;[61]

j. Chief Judge's authorization to omit from the notice of hearing published in the *State Register* the text of the proposed rules (not applicable);

k. Other documents or evidence to show compliance with any other law or rule which the agency is required to follow in adopting this rule:

K1 – Certificate of Sending the Notice of Hearing and SONAR to legislators and the Legislative Coordinating Commission on August 21, 2017;[62]

K2 – Notice to Department of Agriculture of Agency's intent to adopt rules as required by Minn. Stat. § 14.111, dated July 19, 2017;[63]

K3 – Notice to the Minnesota Department of Management and Budget and a September 17, 2017, memorandum from the Minnesota Department of Management and Budget;[64]

K4 – Notices sent to affected municipalities as required by Minn. Stat. § 115.44, subd. 7 (2016).[65]

l. Additional documents submitted at the hearing:

Peer-reviewed articles on sulfur processes and sulfate treatment;[66] the MPCA's rule hearing presentation; errata correcting minor errors in the SONAR; and MPCA Changes to Specific Water Identification Numbers (WID). [67]

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[59] Ex. H1.
[60] Ex. H2.
[61] Ex. I.
[62] Ex. K1.
[63] Ex. K2.
[64] Ex. K3.
[65] Ex. K4.
[66] Exs. L1–L5 and L8.
[67] Exs. L6, L7, and L9.

B. Additional Notice Requirements

25. Minn. Stat. §§ 14.131 and 14.23 require that an agency include in its SONAR a description of its efforts to provide additional notification to persons or classes of persons who may be affected by the proposed rule or, alternatively, the agency must detail why these notification efforts were not made.

26. The MPCA states that the proposed revisions have been in development for many years and that it has made extensive efforts to inform and engage specific stakeholders and the general public. In April of 2011, the MPCA created a webpage to provide background about the existing wild rice sulfate standard and its plan to evaluate the standard. Since 2011, the MPCA has also used the GovDelivery system to share information about the wild rice standard with subscribers. In addition, pursuant to a 2011 legislative directive, the MPCA established an advisory committee to provide input to the Commissioner on various topics related to the wild rice scientific study and proposed rulemaking. The MPCA also made a special effort to communicate and consult with Minnesota tribes, given their sovereign status and the great importance of wild rice to the Ojibwe and Dakota people.[68]

27. The MPCA also held numerous meetings over the course of developing the proposed revisions to engage interested persons and obtain feedback.[69] The MPCA released a draft proposal of the proposed wild rice water quality standard in March 2015, along with a draft list of waters where the standard would apply. The MPCA sent notice of the availability of the draft proposal to the MPCA's GovDelivery mailing list of people who had registered their interest in this topic and posted the draft proposal on its rulemaking webpage.[70] Before officially proposing the rules, the MPCA held a series of three open house meetings to provide an informal opportunity for the public to review the proposal and ask questions.[71]

28. Pursuant to the Additional Notice Plan approved by the Office of Administrative Hearings, on August 8, 2017, the Agency:

a. posted the Notice of Hearing, SONAR, SONAR attachments, proposed rule language, documents incorporated by reference, information about how to file comments, and the times and locations of hearings on an Agency webpage established to provide information about the proposed rule amendments;

b. Published the Notice of Hearing on the MPCA's Public Notice webpage;

c. issued a press release via the GovDelivery system to 534 news media contacts and more than 3,400 media contacts and persons

[68] Ex. D at 126-128.
[69] *Id*. at 128.
[70] *Id*. at 129.
[71] *Id*.

registered to be notified of news releases to provide information about the proposed rule amendments and how to comment;

d. provided an extended comment period to allow additional time for review of the proposed rule amendments;

e. held multiple public hearings in various locations throughout the state and provided daytime and evening opportunities for people to attend and comment;

f. provided notice to a series of nonprofit organizations that represent and serve Native American communities in Minnesota; trade associations that serve mining communities and mining companies; and municipalities that operate wastewater treatment facilities and associations that represent them;

g. provided an electronic copy of the Notice of Hearing to more than 2,600 interested parties as certified in the MPCA's Certificate of Mailing Notice;

h. provided an electronic copy of the Notice of Hearing to municipalities as required by Minn. Stat. § 115.44, subd. 7;

i. posted the Notice of Hearing with links to the SONAR and proposed rule language on the Agency's public notice website for the term of the public notice comment period; and

j. posted the Notice of Hearing, SONAR, and proposed rule language on an Agency webpage established to provide information about the proposed amendments.[72]

29. The Administrative Law Judge finds that the Agency has fulfilled its additional notice requirements.

C. Notice Practice

1. Notice to Stakeholders

30. On August 21, 2017, the Agency provided a copy of the Notice of Hearing to its official rulemaking list (maintained under Minn. Stat. § 14.14) and to stakeholders identified in its Additional Notice Plan.[73]

31. On September 18, 2017, the Agency provided a copy of the Notice of Additional Hearing to its official rulemaking list (maintained under Minn. Stat. § 14.14) and to stakeholders identified in its Additional Notice Plan.[74]

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[72] Exs. H1 and G. *See also* Ex. D at 131-132.
[73] Exs. G and H1.
[74] Exs. G and H1.

32. Hearings on the proposed rules were held on October 23, 24, 25, 26, 30, and November 2, 2017.[75]

33. There are 62 days between August 21, 2017 and October 23, 2017, the date of the first hearing in this matter. There are 37 days between September 18, 2017 and October 26, 2017, which was the date of the additional hearing.

34. The Administrative Law Judge concludes that the Agency fulfilled its responsibility to mail the Notice of Hearing and Notice of Additional Hearing "at least 33 days before the . . . start of the hearing."[76]

2. Notice to Legislators

35. On August 21, 2017, the Agency sent a copy of the Notice of Hearing and the SONAR to legislators and the Legislative Coordinating Commission as required by Minn. Stat. § 14.116.[77]

36. Minn. Stat. § 14.116(b) requires the agency to send a copy of the Notice of Hearing and the SONAR to certain legislators on the same date that it mails its Notice of Hearing to persons on its rulemaking list and pursuant to its additional notice plan.

37. The Administrative Law Judge concludes that the MPCA fulfilled the requirements of Minn. Stat. § 14.116(b).[78]

3. Notice to the Legislative Reference Library

38. On August 21, 2017, the MPCA mailed a copy of the SONAR to the Legislative Reference Library.[79]

39. Minn. Stat. § 14.23 requires the agency to send a copy of the SONAR to the Legislative Reference Library when the Notice of Intent to Adopt is mailed.

40. The Administrative Law Judge concludes that the Agency met the requirement of Minn. Stat. § 14.23 that it send a copy of the SONAR to the Legislative Reference Library when the Notice of Intent is mailed.

D. Impact on Farming Operations

41. Minn. Stat. § 14.111 imposes additional notice requirements when the proposed rules affect farming operations. The statute requires that an agency provide a copy of any such changes to the Commissioner of Agriculture at least 30 days prior to publishing the proposed rules in the *State Register*.

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[75] Ex. G.
[76] Minn. R. 1400.2080, subp. 6.
[77] Ex. K1.
[78] Minn. R. 1400.2080, subp. 6.
[79] Ex. E.

42. The MPCA provided the Commissioner of Agriculture with a copy of the proposed rules and notice of its intent to adopt the rules. This notice was provided on July 19, 2017, 32 days prior to the publication of the Notice of Hearing in the State Register.[80]

43. The Administrative Law Judge concludes that the MPCA fulfilled its responsibilities under Minn. Stat. § 14.111.

E. Statutory Requirements for the SONAR

44. The Administrative Procedure Act obliges an agency adopting rules to address certain factors in its SONAR.[81] Those factors are:

> (1) a description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule;
>
> (2) the probable costs to the agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues;
>
> (3) a determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule;
>
> (4) a description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule;
>
> (5) the probable costs of complying with the proposed rule, including the portion of the total costs that will be borne by identifiable categories of affected parties, such as separate classes of governmental units, businesses, or individuals;
>
> (6) the probable costs or consequences of not adopting the proposed rule, including those costs or consequences borne by identifiable categories of affected parties, such as separate classes of government units, businesses, or individuals;
>
> (7) an assessment of any differences between the proposed rule and existing federal regulations and a specific analysis of the need for and reasonableness of each difference; and

[80] Ex. K2.
[81] Minn. Stat. § 14.131.

(8) an assessment of the cumulative effect of the rule with other federal and state regulations related to the specific purpose of the rule.

1. The Agency's Regulatory Analysis

(1) A description of the classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule.

45. The MPCA's analysis focuses on regulated facilities that discharge wastewater to certain waters containing beds of natural wild rice, and on people interested in enjoying the beneficial uses that the water quality standards protect. The Agency states that the beneficial uses includes fishing, swimming, boating, and harvesting wild rice.

a. Classes that will bear costs.

46. The Agency points out that effluent limits imposed on regulated facilities as a result of the proposed rules will be applied through National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) permits. These permits are reviewed and re-issued every five years. Any facility that discharges sulfate directly to, or is located upstream of, a wild rice water governed by the rules has the potential to be affected by the proposed rules. These facilities are generally either industrial facilities, or municipal water or wastewater treatment plants.[82]

47. The MPCA describes the process for adopting the proposed equation-based water quality standards as follows:

> In the case of this wild rice sulfate standard, this implementation process will begin with data collection. As noted . . . , the data required will be sediment data to calculate the sulfate standard (or porewater sulfide data to establish an alternate standard), surface water sulfate data, and effluent sulfate data. The MPCA plans to collect the sediment data over time, largely in conjunction with its regular ten-year cycle of intensive watershed monitoring, focusing first on wild rice waters that are most likely to be impacted by high levels of sulfate. The exception would be that where a new or expanded discharge is proposed, the proposer may be required to collect the sediment data following the procedures proposed to be incorporated into the rule.[83]

48. The Agency notes that regulated facilities that are not already monitoring their sulfate effluent data will probably have to do so for their first five-year permit due to the fact that the permit will be reissued following adoption of the rule. Facilities will also be impacted by an effluent limit review, which involves analysis of site-specific variables

[82] Ex. D (SONAR) at 145-146.
[83] *Id.*

to determine whether the facility's permit must include a limit to ensure that the sulfate standard is not exceeded.[84]

49. The variables include specifics of the facility as well as the receiving water, including the level of the receiving water's sulfate pollutant The MPCA estimates that, for facilities that already monitor their effluent's sulfate discharge, the effluent limit review will likely occur in the first five-year permit reissuance after the rule is adopted. For facilities that do not, the effluent review will likely not occur until the second five-year permit reissuance after the rule is adopted.[85]

50. Another necessary variable for this analysis is a numeric sulfate standard for at least one wild rice water which is affected by the facility's discharge. To calculate the numeric sulfate standard in accordance with the proposed rule, certain data must be obtained, including the amount of organic carbon and extractable iron in the wild rice water sediment.[86]

51. By identifying the industrial and municipal waste water treatment plants (WWTPs) within a specified distance of a regulated wild rice water, the MPCA was able to estimate "the universe of affected dischargers."[87]

52. Based on an analysis of 2015 NPDES/SDS permit information, the Agency estimated that there are approximately 745 discharge stations upstream of at least one wild rice water to be regulated pursuant to the proposed rules, ranging in distance between one mile to 413 river miles from the nearest regulated wild rice water. About 319 of the stations are within 60 miles of a proposed regulated wild rice water, and about 135 are within 25 miles of a proposed regulated wild rice water. While noting that "25 miles is not a definite predictor for impact . . . ,"[88] the MPCA focuses on the 135 WWTPs as those most likely to be affected by the proposed rule. These facilities are most likely to require an effluent limit review and possibly to incur the treatment costs needed to meet an applicable water quality standard. But, the Agency notes, "[s]everal factors will affect a facility's potential to impact a wild rice water and those factors cannot be determined in advance of establishing the numeric sulfate standard and evaluating the specific circumstances associated with each discharge and each wild rice water."[89] The new standards could result in costs, if more treatment is needed to meet a standard that is more stringent than the current 10 mg/L standard, or in cost savings, if the standard is more relaxed than the current standard.[90]

53. The Agency states that industrial WWTPs are likely to pass along the costs of new treatment equipment or technologies to their customers and municipal WWTPs are likely to pass along similar costs to their residential, commercial, and industrial system

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[84] Ex. D at 146.
[85] *Id.*
[86] Ex. C (proposed rule 7050.0224, subp. 5, B) at li. 7.25-8.12.
[87] *Id.* at 147.
[88] *Id*.
[89] *Id.*
[90] *Id.* at 148.

users. The Agency speculates that, to the extent the market will not support increased industrial costs, such costs may have to be absorbed, and will thus reduce profits, making the industry less competitive in the marketplace, negatively impacting shareholders and employees, and possibly resulting in a company ceasing operations rather than investing in the expensive technology needed to meet a new standard. The Agency acknowledges that employment is a particularly key issue for the mining economy of Minnesota's Iron Range, but it is unable to predict whether the consequences of adopting the proposed rule will be "as minor as a small increase in the price of the product, or may be as extensive as the consequences to an entire community when a company ceases operations."[91]

54. Adopting the standards through the MPCA's water assessment cycle will, in itself, take up to ten years:

> The MPCA's current Intensive Watershed Monitoring plan includes intensive data collection across the state following a 10-year cycle. The MPCA is working with field staff to incorporate data collection needs for the proposed sulfate wild rice standard into that effort. In most cases, the MPCA will integrate the collection of sediment data in wild rice waters into our regular monitoring work around the state. The agency will prioritize data collection for wild rice waters most likely to be affected by discharges, and some work may be prioritized outside the regular monitoring schedule.[92]

55. In its Rebuttal to Comments following the rule hearings, the Agency explains:

> [E]valuating the need for and (as needed) determining a water quality based effluent limit requires data specific to the discharge being evaluated and the receiving water(s) being discharged to. Data needs unique to the proposed rule revisions are the sediment iron and carbon (or porewater sulfide) data. Collecting all the data necessary to calculate all effluent limits statewide would take at least ten to fifteen years, even if the sediment data were not needed. Necessary steps such as gathering five years of effluent data to evaluate and set effluent limits combined with the 10-year surface water monitoring schedule to gather surface water data cumulatively add up to the necessary data not being available for some permitted discharges until at least ten to fifteen years after rule promulgation. The MPCA does plan to prioritize data collection based on factors such as those mentioned in the EPA comments, Appendix 2 – the likelihood of sulfate impacts (because of type and location of dischargers) and permitting schedules. It is unreasonable to delay this rulemaking for ten to fifteen years to provide total certainty regarding future effluent limits for specific facility discharges and the exact future costs. In addition, every facility is unique and detailed engineering is needed to estimate the costs of installing any treatment

[91] Ex. D. at 148.
[92] MPCA Response to Comments, Cover Memorandum at 10 (Nov. 22, 2017) (Response Cover Memo).

system. This is why the MPCA provided general effluent limit considerations and the range of costs detailed in the SONAR. A delay such as would be necessary to gather data and estimate the cost for all potentially affected facilities is particularly unreasonable given that while the rulemaking would be delayed the existing sulfate standard would remain in place and need to be addressed as required by the Clean Water Act and federal regulations. [93]

56. The Administrative Law Judge concludes that the Agency has correctly described the various types of WWTPs that discharge sulfate directly to, or that are located upstream of, wild rice waters governed by the proposed rules as classes that will bear the cost of the proposed rules. However, the Administrative Law Judge further concludes that the Agency omitted to include, in its discussion of the WWTPs' possible costs, the Agency's SONAR-based expectation, which is not set forth in the rule, that regulated parties will bear the cost of conducting sediment sampling for a new or expanded discharge.[94]

57. The Agency's predictions about the number of dischargers likely to be affected is unreliable because "[s]everal factors will affect a facility's potential to impact a wild rice water and those factors cannot be determined in advance of establishing the numeric sulfate standard and evaluating the specific circumstances associated with each discharge and each wild rice water."[95]

58. The Agency did not identify Minnesota Indian tribes or individual Native Americans as classes of persons who would bear a burden under the proposed rules because the Agency believes that the proposed new sulfate standards will be protective of wild rice.[96]

59. Wild rice is not only a food source for Native American communities, but a source of deep spiritual importance and, for some, a life-giving being.[97] Many in the Native American communities who submitted comments, testified at the public hearings, and worked with the MPCA during the development of this rule do not believe that the rule will be protective of wild rice. Among the reasons that some of the representatives of Native American communities presented as their concerns about the rule are:

a. A higher sulfate standard will be harmful to the rice because the higher levels of iron underlying the higher sulfate standard cause plaque to form on the roots of the wild rice plants, interfering with the ability of the plant to absorb nutrients and ultimately leading to barren seeds;[98]

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[93] MPCA Rebuttal Memo at 40-41.
[94] Ex. D at 146.
[95] *Id.* at 147.
[96] *Id.*at 145.
[97] Exs. 1000 and 1020; Tr. at 142-145 (Oct. 24, 2017); Comments from Fond du Lac Band of Lake Superior Chippewa (filed Nov. 22, 2017).
[98] Comments from 1854 Treaty Authority (filed Nov. 21, 2017); Comments from Fond du Lac Band of Lake Superior Chippewa (filed Nov. 22, 2017).

b. A higher sulfate standard will lead to higher levels of methylmercury in fish, which in turn leads to serious health concerns for Native American and other populations who rely heavily on fish for food;[99]

c. The list of wild rice waters excludes a number of waters identified by the 1854 Exclusionary Act Treaty as well as the Minnesota DNR's 2008 wild rice waters list;[100] and

d. The MPCA's inclusion, in the wild rice waters listed in the proposed rule, of waters that are within the boundaries of the Fond du Lac and Grand Portage reservations despite requests that those waters be excluded.[101]

60. While the MPCA had responses to each of these concerns, the volume and nature of the comments from the Native American community demonstrated that the Agency has not succeeded in building an atmosphere of trust regarding this proposed rule, or in making the Minnesota Native American community feel that it has been heard.

61. Implementation of the rule as proposed is a burden to the Minnesota Indian tribes, and many Native American individuals, whose testimony and written comments during the rulemaking process demonstrate that they are compelled to continue to challenge the rule because they believe that the long-term survival of wild rice is in peril and do not believe that the Agency understands the importance of wild rice in Native American culture and life.[102]

62. The Administrative Law Judge concludes that the Agency failed to recognize the proposed rule's burden on the Native American community in its discussion of classes of people who will be burdened by adoption of the proposed rule.

b. Classes that will benefit from the new standard.

63. The MPCA states generally that any person who uses Minnesota waters for drinking, swimming, boating, fishing, commerce, scientific, educational, or cultural purposes, or general aesthetic enjoyment will benefit from the proposed rules. Specifically, the Agency states that any person who harvests wild rice for food or who eats wild rice will benefit. The Agency emphasizes that many Native Americans, especially members of the Ojibwe and Dakota tribes, will benefit from the proposed rule. The Agency states that tribal rights to harvest wild rice are protected in treaties and that harvesting, preparing, sharing, and selling wild rice is important culturally, spiritually, and socially to Native American Minnesotans.[103]

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[99] Tr. at 65-68 (Oct. 25, 2017).
[100] Exs. 1000 and 1020; Comments from 1854 Treaty Authority (filed Nov. 21, 2017); Comments from Fond du Lac Band of Lake Superior Chippewa (filed Nov. 22, 2017).
[101] Ex. 1020; Comments from 1854 Treaty Authority (filed Nov. 21, 2017); Comments from Fond du Lac Band of Lake Superior Chippewa (filed Nov. 22, 2017).
[102] Exs. 1000 and 1020; Comments from Fond du Lac Band of Lake Superior Chippewa (filed Nov.22, 2017); eComments Nicolette Slagle on behalf of Honor the Earth (Nov. 22, 2017); eComments from George Crocker on behalf of North American Water Office (Nov. 22, 2017).
[103] Ex. D at 149.

64. The Agency asserts that the varied benefits of wild rice include the following:

> Transactions and activities associated with the wild rice harvest benefit individuals and local economies. Some tribal members have shared stories about how money from ricing paid for each year's school supplies. Many people place a high value on wild rice as food, especially for its availability, flavor, and health benefits. For persons who have limited incomes or a cultural connection, wild rice can be an important subsistence food.[104]

65. In addition, the MPCA states that wildlife, especially the migratory waterfowl that depend on wild rice as a food source, along with the people who hunt waterfowl, engage in bird watching and other wildlife-related activities, plus businesses that support those activities, will benefit from the proposed rules. The Agency adds that businesses that benefit from tourism and people who derive a value from ecosystem services generally will also benefit from the proposed rules.[105]

66. The Agency explains that, where the proposed rule will require ambient sulfate levels to be less than 10 mg/L, the equation-based standard will be more protective of the wild rice than the current standard and thus provide a benefit to those who use and value wild rice.[106]

67. To the contrary according to the MPCA, where the proposed rule will permit ambient sulfate levels to be higher than 10 mg/L while still maintaining a protective level of sulfide to the wild rice, the equation-based standard will potentially reduce treatment costs. In addition, the proposed alternate standard, which can be used in certain cases where the equation is not appropriate, could also allow sulfate levels to be higher than that calculated by the equation-based standard.[107]

68. The proposed rules may thus allow some municipal or industrial dischargers to reduce or eliminate sulfate treatment, or the need for a variance, to operate at a lower level of sulfate treatment. This could permit dischargers to avoid paying for a higher level of wastewater treatment, or applying for, and justifying, a variance request. In addition to the monetary costs of wastewater treatment, the MPCA notes that wastewater treatment for sulfate involves energy use and the generation of by-products, both of which could be lessened or avoided through application of the proposed rules. [108]

69. The Agency does not analyze how less-protective standards of wild rice waters that neighbor wild rice waters on tribal lands will affect waters on tribal lands. Nor does the Agency explain how it will insure that increased sulfate levels will not add to mercury methylation.

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[104] *Id.* at 150.
[105] *Id.*
[106] *Id.* at 151.
[107] *Id.* In its Rebuttal, the Agency proposes to change the way in which the Alternate Standard is established from the rule as originally proposed. MPCA Rebuttal Response to Public Comments (MPCA Rebuttal) at 6-7 (Dec. 1, 2017). *See* Ex. C. (proposed rule 7050.0224, subp. 5, B (2)) at li. 8.18-8.25.
[108] Ex. D at 151.

70. The Administrative Law Judge concludes that, to the extent the proposed rule fails to maintain a level of water quality that provides for the attainment and maintenance of the water quality standards of downstream waters, including waters on tribal lands, the proposed rule will not benefit wildlife, or the Objibwe, Dakota or other people who harvest or depend on wild rice for food, spiritual or cultural nourishment, or as a means of earning money.

c. Classes that will benefit from clarity regarding how and where the standard applies.

71. The MPCA states that the proposed rule may benefit dischargers "in the form of the benefit of regulatory certainty, prompt permit renewal, and protection from litigation."[109] By "regulatory certainty," the MPCA means "the general ability of permittees to know and anticipate environmental regulations and reasonably plan for compliance. . . ."[110]

72. The MPCA identifies two areas of difficulty for dischargers of sulfate: (1) a lack of duration or averaging time in the current sulfate rule, leading to uncertainty regarding whether the standard applies at all times or is to be averaged over some period of time; and (2) a lack of clear criteria for determining whether a given water is used for production for wild rice, resulting in case-by-case decisions regarding the applicability of the sulfate standards.[111]

73. According to the MPCA, it is this lack of clarity concerning waters used for the production of wild rice that has resulted in delayed issuance of new or renewed NPDES/SDS permits. Because the proposed rule specifically identifies wild rice waters and provides more details about the standard, the proposed rule provides dischargers with more certainty regarding "whether their effluent may impact a wild rice water and whether they will need to take actions because of the standard – from monitoring their effluent to undergoing an effluent limit review to installing treatment."[112]

74. The MPCA predicts that the proposed rule will speed permitting, reduce permitting backlogs, and reduce the risk of litigation. In addition, the Agency states that the proposed rule will "allow existing facilities to implement improvements and innovations that are currently stalled."[113] According to the Agency, industries and taxpayers will benefit because dischargers will be able to obtain and update their permits more effectively under the proposed rule.[114]

75. Finally, the MPCA envisages that greater clarity about how and where the wild rice sulfate standard applies will also allow the development of a clear process of

[109] *Id.*
[110] *Id*. at 151, n.24.
[111] *Id*. at 151-152.
[112] Ex. D at 152.
[113] *Id.*
[114] *Id.*

assessing wild rice waters to determine attainment of the standard. This is important both for assessment and identifying impaired waters and for developing point source permit limits to ensure compliance with the standard. In this way, a clearer, more effective standard will also benefit those concerned about the effective protection of wild rice waters.[115]

76. The tribal representatives and the WaterLegacy and other environmental organizations disagreed strongly with the exclusion of water bodies where wild rice is an existing use under the CWA as demonstrated by their inclusion on the 1854 Treaty list and the Minnesota Department of Natural Resources' (MDNR) 2008 list of Minnesota wild rice waters.[116] While not identifying specific reasons for excluding individual water bodies, the Agency acknowledges that it excluded from the proposed rule some water bodies where wild rice has been an existing use.[117]

77. The Administrative Law Judge concludes that because the proposed rule listing wild rice waters is not in compliance with the CWA it will not improve the permitting process by providing certainty as to the water bodies which are identified. Therefore, the proposed rule will not provide the benefit of clarity regarding identification of wild rice waters to WTTP owners and operators.

78. Because the Agency has not sampled the affected waters before proposing the rules, it cannot state what the standard will be for any given discharger, or whether that discharger's effluent will exceed a new standard, and what treatment may be needed to meet the standard, once it is ascertained.[118]

79. Regulated parties predict extremely large costs for wastewater sulfate treatment and express frustration at the lack of specific information which would allow them to accurately predict and plan for water treatment requirements or variance requests.[119]

80. The Administrative Law Judge concludes that the Agency's decision to promulgate this rule without defining a standard applicable to each regulated wild rice water undermines many of the potential benefits the rule could provide to WWTP owners and operators, including improvements in their ability to plan, certainty about regulated waters, and efficiency in the regulated environment.

81. The Administrative Law Judge concludes that the proposed rule may continue to give rise to litigation regarding the identification of wild rice waters subject to the sulfate standard. In addition, the rule as proposed is more likely to give rise to litigation

[115] *Id.*
[116] Comments from 1854 Treaty Authority (filed Nov. 21, 2017); Comments from WaterLegacy (filed Nov. 22, 2017).
[117] Ex D at 58.
[118] *Id*. at 145-149, 165, 182-186.
[119] See, e.g., Exs. 1009, 1029, U.S. Steel Corporation comments (filed Nov. 22, 2017); Comments from Hibbing Chamber of Commerce (filed Nov. 2, 2017); Comments from Alexandria Lake Area Sanitary District (filed Nov. 20, 2017).

regarding the standard itself.[120] Therefore, the Administrative Law Judge concludes that the Agency incorrectly determined that the proposed rule will lead to less litigation concerning the water quality standards for wild rice waters.

82. The Administrative Law Judge finds that the Agency performed an analysis of classes of persons who probably will be affected by the proposed rule, including classes that will bear the costs of the proposed rule and classes that will benefit from the proposed rule as required by Minn. Stat. § 14.131(1). However, the Administrative Law Judge finds that the Agency's determinations as a result of that analysis are not supported by the record.

(2) The probable costs to the Agency and to any other agency of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues.

83. The MPCA implements water quality standards primarily through permitting and assessment. The Agency states that it will continue its activities related to permit applications, variance requests, assessments, impaired water identification, and compliance enforcement using the revised standard instead of the previous standard.[121]

84. The MPCA predicts that it will incur the following additional costs if the proposed rules are adopted:

a. Updating the list of wild rice waters (data gathering and rulemaking);

b. Conducting sediment and surface water sampling and analysis;

c. Processing permit applications;

d. Reviewing variance requests; and

e. Responding to possible litigation.[122]

85. In this rulemaking, the Agency is proposing to identify approximately 1,300 waters as wild rice waters. While the Agency expects that these waters make up most of the wild rice waters in Minnesota, it expects it will be need to amend the rule within three years to add newly identified wild rice waters.[123]

86. The MPCA presumes that it will be able to gather information leading to the identification of additional wild rice waters through its existing triennial standards review process and its routine water assessment activities. Therefore, the MPCA does not expect to incur additional costs to obtain wild rice information.[124]

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[120] *See* discussion in this Report at 55-58.
[121] Ex. D SONAR at 152.
[122] Ex. D at 152-153.
[123] Ex. D at 153.
[124] *Id.*

87. The MPCA estimates the cost of a rulemaking including a hearing in three years will be approximately $129,000. The Agency projects that future amendments may not be controversial and may either be adopted without the need for a hearing, making them less costly, or may be combined with other rulemaking projects at no additional cost.[125]

88. Another cost of implementing the proposed rule will be calculating the new sulfate standard pursuant to the proposed equation-based standard or the alternative standard at each of the approximately 1,300 identified regulated wild rice waters. The MPCA plans to conduct analyses of the sediment of wild rice waters as part of its permitting process for new or expanding discharge sources, and its regular 10-year cycle of intensive watershed monitoring. The MPCA plans to initially focus its efforts to calculate the sulfate standard on wild rice waters associated with existing permitted dischargers.[126]

89. According to the MPCA, between 1,050 and 1,100 of the wild rice waters identified in the proposed rule are not currently impacted by a discharge, leaving approximately 200-250 waters for the MPCA to prioritize. The MPCA's plan to collect and sample the sediment, in order to calculate the standard under the proposed rule, is spelled out in the SONAR but not in the rule:

> [D]uring the existing process of preparation for each year's lake and stream monitoring, the MPCA will review how many wild rice waters are in the watershed, and the resources to collect and sample sediment. Waters to be sampled, if there are more than resources allow, will be prioritized based on factors such as the distance from dischargers, type of discharger, and timeline for permit reissuance.[127]

90. Using procedures for collection and analysis of the sediment according to the methods prescribed in its document entitled "Sampling and Analytical Methods for Wild Rice Waters,"[128] the MPCA determined that an average cost to conduct the necessary sampling analysis of a wild rice water in order to calculate the numeric sulfate standard will be approximately $1,200 per regulated wild rice water, including laboratory services.[129]

91. The MPCA separately calculated that the costs for porewater sampling and analysis to establish an alternate sulfate standard will be approximately $1,050 per

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[125] *Id.*
[126] As stated above, the MPCA expects that, for new or expanded discharge sites, the permittee will be responsible for the cost of characterizing sediment total extractable iron and sediment total organic carbon. Ex. D at 154. This expectation is not stated in the rule.
[127] Ex. D at 154.
[128] The MPCA incorporated the Sampling and Analytical Methods for Wild Rice Waters by reference into the proposed rule. Ex. C. at lines 9.8-9.12 (part 7050.0224, subp. 5, E). However, as discussed later in this Report, the MPCA's December 1, 2017 Rebuttal comments include a proposal to allow people to use methods consistent with its methods, rather than strictly conforming to the methods as written. In addition, the MPCA mentions that it may make changes to the Sampling and Analytical Methods document. MPCA Rebuttal at 6-7.
[129] Ex. D at 154.

regulated wild rice water, including laboratory analysis of 10 porewater samples. For the alternate standard, the $1,050 is in addition to the initial $1,200 for calculating the numeric sulfate standard, resulting in a total of $2,250.[130]

92. The MPCA was unable to estimate the costs for establishing a site-specific standard, except to state that they will be highly variable:

> In addition to the cost of sediment sampling, and possibly porewater sampling, there will be other costs unique to the situation. It is likely that more extensive sampling and analysis will be needed and additional costs will be incurred to determine the factors affecting the wild rice beneficial use in that water body.[131]

93. The MPCA predicts that, while the complexity of the proposed wild rice sulfate standard will require increased staff time and costs to review permit applications, that increase will be balanced by a decrease in time required to resolve questions about whether the sulfate standard applies to a particular receiving water. Only those waters listed as wild rice waters in the proposed rule will be subject to the rule's sulfate standard. The MPCA states that the determination of "whether a water is a 'water used for production of wild rice' has been a significant obstacle to efficiently applying the existing sulfate standard, requiring time from multiple staff to make a determination."[132]

94. Because such determinations will no longer be required under the proposed rule, the MPCA anticipates that the proposed rule will not result in significant changes to the Agency's current administrative costs to review permit applications.[133]

95. Similarly, the Agency states it does not believe that it will incur significant increases in costs to process variance requests as a result of the proposed rule. The Agency acknowledges that a revised standard will likely result in requests for variances from the new standard, but states "it is difficult to predict how many, when they will be received, and the degree of complexity of those requests."[134] Nonetheless, the MPCA concludes that, as with permitting costs, it "does not expect that the costs associated with increased variance reviews will exceed the costs associated with the complicated and time consuming process required to implement the current rules."[135]

96. The MPCA recognizes that the portion of the proposed rule allowing for an exemption from the fees for municipal WWTPs seeking a variance from a wild rice standard or effluent limit will entail a cost to the MPCA.[136] The MPCA forecasts that the fee waiver will not have a significant impact on its resources because it is developing a streamlined variance application and review process specifically for the sulfate standard.

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[130] *Id*. at 154-155.
[131] *Id*. at 154.
[132] *Id*. at 155.
[133] *Id.*
[134] Ex. D at 156.
[135] *Id.*
[136] *Id.* Ex. C. at 67.20-67.21 (proposed rule 7053.0406, subp. 2, C).

The Agency expects that the streamlined process will result in a reduced level of staff effort required to review applications for variances from the proposed sulfate standards.[137]

97. The Agency stated frequently during public hearings that it expects WWTPs that are required to meet higher sulfate standards to apply for variances from those standards.[138] The cost analysis does not reflect an anticipated increase in variance requests, or a discussion of whether the Agency expects variance requests to increase as a result of expected higher standards for some dischargers under the proposed rules.

98. The MPCA anticipates litigation costs regardless of whether the proposed rules are adopted. It is not able to estimate what the costs will be, but surmises that the costs will be higher if the new standard is not adopted than if it is adopted. This is based on the MPCA's assumption that legal challenges under the existing standard will have to do with the identification of waters used for the production of wild rice, and that legal challenges under the proposed standard will be to permits issued under the revised standard.[139]

99. The MPCA does not include in its litigation estimate any possible challenges from one or more of the many groups that have vigorously opposed this rule. Those groups include Native American communities, environmental groups, mining companies, power companies, municipal WWTPs, and a variety of governmental entities. The Administrative Law Judge concludes the MPCA may have underestimated litigation costs that could follow if the rule is adopted.

100. Explaining that other state agencies incur costs if they have permitted projects or operations required to comply with water quality standards, the MPCA states that other agencies, especially the Minnesota Department of Transportation (MnDOT), and the Minnesota Department of Natural Resources (MDNR) may incur additional costs under the proposed rules. MnDOT operates highway rest areas and MDNR operates campgrounds and fish hatcheries, all of which generate wastewater. The wastewater treatment systems associated with these activities are often subsurface sewage treatment systems that do not discharge. However, the MPCA has determined that eight MnDOT or MDNR facilities operate WWTPs that discharge to proposed wild rice waters.[140]

101. Another situation that could result in costs to MnDOT will arise if MnDOT conducts road construction in an area of high sulfate rock, resulting in increased sulfate storm water runoff to nearby regulated wild rice waters. The MPCA explains that state agency costs "in these situations will vary based on the treatment facility and receiving water characteristics and may be incurred regardless of the adoption of the proposed

[137] Ex. D at 109, 156.
[138] *See* Tr. at 51-54 (Oct. 23, 2017); Tr. at 47-48 (Oct. 24, 2017); Tr. at 59-60 (Oct. 30, 2017).
[139] Ex. D at 156.
[140] Ex. D at 157.

rules."[141] The MPCA concludes that it is unable to provide a reasonable estimate of possible costs without considering the site-specific factors.[142]

102. The MPCA predicts that the proposed sulfate rule's greater protection for regulated wild rice will increase the value provided by the wild rice, including tourism dollars related to increased wild rice harvesting and related activities, and sales tax on more abundant marketed wild rice. The MPCA predicts that if the proposed rules are not adopted these benefits to state revenue will be lost.[143]

103. The MPCA theorizes that the proposed rule, if adopted, may inhibit industrial growth or expansion due to the added costs of complying with more stringent sulfate standards. This could result in lost jobs and reduced state tax revenue. Conversely, the MPCA posits that, to the extent that the new standard requires less treatment of wastewater, there could be additional investment in new and existing industrial facilities, with added jobs and financial benefits to the state. The MPCA also points out that where additional treatment is required at existing facilities, the costs of new treatment systems, and the installation and operation of those systems, could provide additional employment, increased income, and equipment purchases with resulting increases in income and sales tax revenue for the state.[144]

104. Ultimately, the Agency concludes that, while the proposed rule change will likely affect state revenues, it cannot predict the direction or magnitude of the impact on revenues.[145]

105. The Administrative Law Judge concludes that the Agency performed the analysis required regarding probable costs to itself, and to any other agency, of the implementation and enforcement of the proposed rule and any anticipated effect on state revenues to the extent that it was able to do so with incomplete information.

(3) The determination of whether there are less costly methods or less intrusive methods for achieving the purpose of the proposed rule.

106. The Agency combined its response to this statutory requirement with its response to statutory requirement (4) below.

141 *Id.*
142 *Id.*
143 *Id.*
144 Ex. D at 157-158.
145 *Id*. at 158.

(4) A description of any alternative methods for achieving the purpose of the proposed rule that were seriously considered by the agency and the reasons why they were rejected in favor of the proposed rule.

107. The MPCA notes that the determination of whether there are less costly or less intrusive methods to protect wild rice waters depends on what level of protection is desired. A less protective sulfate standard may result in lower treatment costs for some dischargers, but may be less beneficial for the groups who value wild rice. Similarly, a more narrow definition of what constitutes a wild rice water may be deemed a benefit to some, but overly restrictive to others.[146]

108. The MPCA considered a number of possible alternatives to the proposed rule including: (1) adopting a narrative standard; (2) adopting a higher protective sulfide value; (3) maintaining the existing 10 mg/L sulfate standard or adopting a different fixed numeric standard instead of the proposed equation; and (4) adopting an alternative equation standard other than the proposed equation.[147]

109. After reviewing the possible alternatives, the MPCA concluded that its proposed equation standard, which tailors the sulfate standard to the naturally variable environmental conditions, represents the best current scientific understanding of the effect of sulfate and sulfide on wild rice and provides the most precise protection of wild rice water's beneficial use.[148] The MPCA concluded that a narrative standard would not represent a significant improvement over the current fixed standard and could not be effectively implemented through permitting or assessment.[149] The MPCA also maintains that fixed numeric standards ignore current scientific information correlating wild rice viability with sulfide resulting from the interaction of sulfate with other compounds in the sediment.[150] According to the MPCA, the most accurate fixed standard is still much less accurate than the proposed equation-based standard.[151] The MPCA states that it considered other equation standards but ultimately concluded that its proposed equation standard is appreciably more accurate (misclassification rate of 16 to 19 percent) than the other modeling it analyzed.[152]

110. The MPCA also considered applying the current 10 mg/L standard or adopting an interim standard for all wild rice waters where no equation-based sulfate value has been calculated. Commenters expressed concern that it will take the MPCA many years to calculate a standard for the 1,300 wild rice waters identified in this rulemaking.[153] The MPCA acknowledges the validity of the concern about the length of time it will take to characterize 1,300 wild rice waters it proposes to list in the rule.

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[146] Ex. D at 159.
[147] *Id*. at 160-161.
[148] Ex. D at 159-163; MPCA's Response to Public Comments Attachment 1 at 3 (Nov. 22, 2017).
[149] Ex. D at 160.
[150] *Id*. at 161.
[151] *Id*.
[152] *Id*.
[153] Ex. D at 162.

However, it maintains it plans to prioritize those wild rice waters that receive or may receive a discharge from a permitted facility.[154] According to the MPCA, approximately 250-350 of the identified wild rice waters receive a discharge and it has developed an implementation plan to prioritize the sampling needed to calculate a numeric sulfate standard for those waters.[155]

111. The MPCA considered applying a "no net increase" in sulfate discharges to wild rice waters until a numeric standard is determined. But this proved to be difficult to create in rule and the Agency concluded it was unnecessary as no new discharges will be permitted without a sulfate standard being first calculated.[156]

112. The Agency also considered a number of alternatives to its criteria for identifying wild rice waters. The MPCA proposes to identify a wild rice water using the unique numeric identification it assigns to streams, rivers, and lakes.[157] This numeric identification is referred to as a water ID or WID.[158] Commenters expressed concern that identifying an entire large body of water as a wild rice water would not be reasonable if wild rice was only located in a small portion of the water body.[159] In response to these concerns, the MPCA considered identifying as a wild rice water only the specific area within a water where wild rice beds are found.[160] The MPCA concluded, however, that such an approach would be unreasonable because: (1) it would create a completely new system to identify a water, and (2) wild rice beds are known to move within a stream reach from one year to the next depending on hydrology and other factors.[161] According to the MPCA, a new form of identification would be inconsistent with the MPCA's many other data collection uses and would result in information that could not be effectively or efficiently compared and shared.[162]

113. The MPCA also received comments that its process of identifying wild rice waters was based on consideration of either too little or too much wild rice.[163] The MPCA maintains that the process it uses to identify wild rice waters reasonably characterizes them in regard to both the beneficial use of a Class 4D water (use of the grain as a food source by wildlife and humans) and the statutory mandate to consider the acreage and density of wild rice.[164] Under the proposed rules, the Commissioner is required to consider information about wild rice waters in the regular triennial water quality standards review process, which includes a public notice and comment period.[165]

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[154] *Id.*
[155] *Id.*
[156] *Id.*
[157] Ex. D at 40.
[158] *Id*. at 39.
[159] *Id*. at 162.
[160] *Id*. at 40.
[161] *Id*. at 40,162.
[162] *Id*. at 40-41.
[163] *Id*. at 162.
[164] *Id*.
[165] Ex. D at 163.

114. The MPCA considered alternatives for future identification of wild rice waters based on water bodies meeting specific stem densities or observation of wild rice over several growing seasons.[166] Ultimately, the MPCA decided that a specific threshold for determining wild rice waters was too limiting.[167] The MPCA maintains it is better to evaluate adding water bodies based on their unique factors as they relate to the beneficial use, which is the process the MPCA employed to identify the 1,300 wild rice waters being proposed.[168] The MPCA notes that, because each addition to the list of wild rice waters will be required to go through rulemaking, the specific factors demonstrating the beneficial use necessary to establish the water as a wild rice water will be considered in the SONAR and can be evaluated in that rulemaking.[169]

115. The MPCA also considered alternatives to the application of the proposed equation-based sulfate standard.[170] The MPCA contemplated applying averaging periods other than the annual average proposed. Some commenters suggested that a monthly average would be more protective of wild rice during critical growth periods.[171] Ultimately, the MPCA rejected shorter averaging periods. The MPCA maintains that its research supports the conclusion that porewater sulfide is a function of long-term (at least one year) average concentrations of sulfate, rather than short-term changes in surface water sulfate.[172]

116. The MPCA also considered alternatives for sediment sampling and analytical results in the equation-based standard.[173] The proposed rule establishes how many sediment samples must be taken and analyzed for iron and carbon and how the resulting values are used in the equation.[174] The MPCA proposes that the sediment of a wild rice water can be adequately characterized by a composite of five sediment cores from each of five different areas within the water body.[175] The MPCA proposes to designate the lowest of the five calculated sulfate concentrations as the sulfate standard for that wild rice water.[176]

117. Some commenters suggested taking the average value of the five sulfate concentrations, rather than the lowest.[177] Others suggested calculating the 10th or 20th percentile concentration from the data.[178] The MPCA considered these alternatives and concluded that taking the lower value would be the best approach. The MPCA contends that an average value would not be protective of the entire wild rice population and is susceptible to biasing high if the analysis yields one unusually high value that is

[166] *Id*.
[167] *Id*.
[168] *Id*.
[169] *Id*.
[170] Ex. D at 164.
[171] *Id*.
[172] *Id*.
[173] *Id.*
[174] *Id*.
[175] *Id*.
[176] Ex. D at 165.
[177] *Id*.
[178] *Id.*

incorporated into the average.[179] Using the lowest value is also easier to implement than calculating a percentile value. The MPCA maintains that using the lowest value from the set of calculated sulfate concentrations is a reasonable method to produce a protective sulfate concentration for a wild rice water.[180]

118. Both Representative Rob Ecklund (Minnesota House District 3A) and Representative Matt Bliss (Minnesota House District 5A) noted that the MPCA had received $180,000 from the Legislative Citizens Commission on Minnesota Resources to analyze wastewater treatment alternatives to inform the development and analysis of wild rice, sulfate, and other water quality standards.[181] That analysis will be completed in May of 2018.[182] Both Representatives Ecklund and Bliss were critical of the MPCA for proposing the new sulfate standard before the analysis of wastewater treatment alternatives was completed. Representative Bliss stated that the legislature moved the deadline for completing this rulemaking to January of 2019 specifically so the MPCA could use the results of the study to further inform its new wild rice standard.[183]

119. The Iron Range Legislative Delegation[184] commented in a joint letter pointing out that, during the 2017 Legislative Session, the legislature provided the MPCA with an additional year, until January, 2019, to adopt a new wild rice water quality standard. The letter states that "[t]he proposed rules are premature . . ." because the sulfate treatment cost analysis is not complete. The letter also expressed concerns about the relative untested nature of the science underlying the proposed standard, and supported eliminating the 10 mg/L standard.[185]

120. WaterLegacy opposes the MPCA's proposed equation standard.[186] It contends that the MPCA's assumption that iron protects wild rice from the harmful effects of sulfate loading is premature and inconsistent with both laboratory experiments and field experience.[187] According to WaterLegacy, the proposed equation standard will neither provide effective protection of wild rice nor clarify implementation.[188]

121. WaterLegacy also opposes the MPCA's proposed identification of wild rice waters.[189] According to WaterLegacy, the MPCA's proposal to restrict the water bodies in which any wild rice sulfate standard would apply is arbitrary and would remove a

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[179] *Id*.
[180] *Id*.
[181] Tr. at 87 (Oct. 25, 2017); Tr. at 69-72 (Oct. 30, 2017); Ex. 1015.
[182] Ex. 1015.
[183] *Id.*
[184] Letter from Iron Range Legislative Delegation (Senators David Tomassoni, Thomas Bakk, and Justin Eichorn, and Representatives Jason Metsa, Rob Ecklund, Julie Sandstede, Dale Lueck, and Sandy Layman) (Nov. 2, 2017).
[185] *Id.* at 1.
[186] WaterLegacy comments (filed Nov. 22, 2017).
[187] *Id*. at 18.
[188] *Id*.
[189] WaterLegacy comments (filed Nov. 22, 2017) at 30.

designated use and de-list wild rice waters identified by Minnesota state agencies, including waters downstream of existing and potential mining discharge.[190]

122. Similarly, both the Friends of the Boundary Waters and the Fond du Lac Band complained that the MPCA was removing a designated use when it failed to identify certain waters as wild rice waters.[191] The comments referred to all waters listed in Appendix B of the MDNR's 2008 *Natural Wild Rice in Minnesota* report and the 1854 Treaty Authority's 2016 and 2017 lists of wild rice waters.[192]

123. The MPCA maintains that not all surface waters in the state are class 4A waters used for the production of wild rice. The MPCA points out that the existing sulfate standard is applicable only to "water used in the production of wild rice" and that this modifying language clearly demonstrates that not all Class 4A waters are wild rice waters.[193] The MPCA also contends that the presence of a waterbody in the MDNR's 2008 inventory[194] is not sufficient to demonstrate beneficial use.[195]

124. Other commenters, like Mining Minnesota, complained that the MPCA was over-designating waters as wild rice waters.[196]

125. The Administrative Law Judge concludes that the MPCA provided the analysis required by Minn. Stat. § 14.131(4).

(5) The probable costs of complying with the proposed rules, including the portion of the total costs that will be borne by identifiable categories of affected parties, such as separate classes of governmental units, businesses, or individuals.

126. The MPCA states that, because many of the variables affecting costs cannot be determined until the standard is actually implemented at a specific location it has limited information about the probable costs of complying with the proposed rules.[197]

127. The MPCA acknowledges that if a facility needs to treat its wastewater discharge to comply with the revised water quality standard, the design, construction, installation, and operation of the treatment system will be a major cost.[198]

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190 *Id*.
191 *See* MPCA's Rebuttal Response to Public Comments Submitted during the Post-Hearing Public Comment Period at 12 (filed Dec. 1, 2017).
192 *Id*.
193 *Id*.
194 MDNR's 2008 *Natural Wild Rice in Minnesota – A Wild Rice Report Study Report to the Legislature* (2008), Appendix B.
195 *Id*.
196 *See* Comments from Mining Minnesota (filed Nov. 22, 2017) and MPCA's Rebuttal Response to Public Comments Submitted during the Post-Hearing Public Comment Period at 13 (filed Dec. 1, 2017).
197 *Id*.
198 Ex. D at 166.

128. In addition to municipal WWTPs, the MPCA permits nearly 520 industrial wastewater discharges under its NPDES/SDS permitting program.[199] The MPCA permits a variety of types of industrial wastewater discharge, including discharges from non-contact cooling water systems, ethanol producers, manufacturing facilities, food processors, paper mills, and power plants. Industrial wastewater dischargers also include sand/gravel/stone mining, peat mining, and taconite mining operations.[200]

129. The MPCA acknowledges that treatment for sulfate can be extremely expensive.[201] According to the MPCA, reverse osmosis (RO) membrane filtration is the most practical sulfate treatment technology currently available for removing sulfate from wastewater discharges.[202] However, the MPCA states that there are significant design uncertainties that make it difficult to estimate costs for RO treatment of sulfate.[203] According to the MPCA, a design engineer would need to perform extensive site-specific analysis and engineering testing in order to get the correct parameters to design and cost a full-scale plant capable of removing sulfate and meeting all potential permit limits.[204] The MPCA states that, if bench or pilot testing of operations is required to obtain design parameters, it will add well over a year to the full-scale plant design time and hundreds of thousands of dollars to the design costs.[205]

130. The MPCA states that treating municipal wastewater using RO followed by evaporation and crystallization is likely to have high capital costs associated with sulfate-polishing costs that are above the costs of conventional WWTPs.[206] There will also be high operation and maintenance costs associated with concentrate management.[207] Energy and disposal costs are the primary drivers of concentrate management operations and maintenance costs.[208] The MPCA notes that RO is an energy intensive process but evaporation with crystallization is much more so.[209] In addition, the crystalized salts must be disposed of at a landfill and the tipping and hauling fees will add cost.[210] The MPCA cites to the Barr report that found five to ten percent of operations and maintenance costs were associated with disposal fees.[211]

131. RO membrane treatment with evaporation and crystallization also has significant secondary costs such as high carbon emissions, advanced operator training requirements, and an increased need for operator labor hours.[212] According to the MPCA, when evaporators and crystalizers are operated in conjunction with a RO plant,

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199 Ex. D at 169.
200 *Id*.
201 Ex. D at 182.
202 *Id*. at 181-182.
203 *Id*. at 181.
204 *Id.*
205 *Id.*
206 Ex. D at 183.
207 *Id*.
208 *Id*.
209 *Id*.
210 Ex. D at 184.
211 *Id*. citing SONAR Ex. 42.
212 Ex. D at 184.

four to eight additional labor hours per eight-hour shift are normally required.[213] The MPCA acknowledges that the combination of these secondary considerations could prove prohibitively burdensome for affected communities.[214]

132. The MPCA notes that, with respect to municipal dischargers, there are some state programs available to mitigate the cost of activities necessary to comply with the proposed sulfate standard.[215]

133. With respect to taconite mine dischargers, the MPCA states that it is impossible to estimate the costs for treatment of taconite mine wastewater with a high degree of certainty as it will vary depending on the volume, concentration, level of treatment, and process used.[216] A mining company's 2012 estimate of costs associated with mining wastewater treatment to achieve the current wild rice sulfate standard of 10 mg/L identified total capital costs at over $20 million and annual operation and maintenance costs at nearly $3 million.[217]

134. The MPCA notes that the identification of 1,300 wild rice waters in the proposed rule will expand the number of permittees required to address sulfate treatment in their discharges.[218] This requirement will likely increase the cost of preparing a permit application for these permittees and the fees associated with the review of the application.[219]

135. In addition, the MPCA includes approximately $1,200 per body of wild rice water for taking samples to characterize the sediment and collecting and analyzing porewater for sulfide in order to develop the numeric standard.[220]

136. The record indicates that some industries and cities will incur substantial costs in complying with the proposed rules.

137. Many commenters expressed concern about the potential significant costs to municipal and industrial dischargers associated with achieving a revised sulfate standard. For example, the Duluth Area Chamber of Commerce indicated its opposition to the proposed rule revisions citing the prohibitively expensive treatment options.[221] Likewise, Nancy McReady with Conservationists with Common Sense (CWCS) predicted the proposed rules could bankrupt cities and businesses and result in large increases to residential sewer and water bills.[222]

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213 *Id.*
214 *Id.*
215 Ex. D at 188.
216 *Id*. at 184.
217 Ex. D at 185, Table 18.
218 Ex. D at 186.
219 *Id*.
220 *Id.*
221 Rulemaking eComment from David Ross (filed Nov. 6, 2017).
222 Rulemaking eComment from Nancy McReady (filed Nov. 4, 2017).

138. State Representative Mike Sundin (Minnesota House District 11A) echoed the Western Lake Superior Sanitary District's concern that implementation of RO treatment could require a $500 million investment, resulting in residential sewer bills increasing upwards of five times.[223] Gerard Bettendorf, mayor of the city of Foley, commented that the proposed rule could have a devastating economic impact on Foley and other cities throughout Minnesota.[224]

139. In its Response to Public Comments, the MPCA states that the conclusions made by some commenters regarding the extensive costs of implementing the proposed standard are premature.[225] The MPCA asserts that it intends to make use of available tools and "pursue creative strategies" to avoid impacts to municipalities and industries that would affect jobs, affordability of municipal services, and economic vitality.[226] According to the MPCA, economic and environmental health are not mutually exclusive.[227]

140. The Administrative Law Judge concludes that the MPCA has attempted to engage in the analysis required by Minn. Stat. § 14.131 but that the record does not support an adequate analysis.

(6) The probable costs or consequences of not adopting the proposed rule, including those costs borne by individual categories of affected parties, such as separate classes of governmental units, businesses, or individuals.

141. The MPCA asserts that there are two primary problems with the existing standard that would not be resolved if the proposed revisions are not adopted.[228] The first problem is the difficulty of determining how the standard applies and defining the waters to which the existing standard applies.[229] The existing standard has no clear information about duration and frequency and implementing the current standard requires a detailed case-by-case analysis to determine whether the wild rice beneficial use exists.[230]

142. According to the MPCA, failing to adopt the proposed revisions will result in continued uncertainty and the attendant need for case-by-case interpretation as to whether or not a water used for the production of wild rice is downstream of a discharge.[231] This confusion results in delays in the permitting process and increased costs of permit design and review.[232]

[223] Rulemaking eComment from Rep. Mike Sundin (filed Nov. 21, 2017).
[224] Ex. 1029.
[225] MPCA's Response to Public Comments at 11 (filed Nov. 22, 2017).
[226] *Id*.
[227] *Id*.
[228] Ex. D at 189.
[229] *Id*.
[230] *Id*.
[231] *Id*.
[232] *Id*.

143. The MPCA states that the second problem is the existing numeric sulfate standard's lack of accuracy in protecting wild rice beneficial use.[233] The MPCA maintains that current scientific understanding of sulfate toxicity means that the existing standard may be, depending on the circumstances, either over-protective or under-protective.[234] By retaining the existing standard and not adopting the proposed equation-based approach, the MPCA believes there will be higher misclassification rates and less accurate and effective protection of wild rice.[235]

144. The MPCA also contends that failing to adopt the proposed equation-based standard will result in less effective protection of wild rice, negatively impacting the economic, ecological, and cultural benefits provided by wild rice waters.[236]

145. Many commenters urged the MPCA to not adopt the proposed rule and to instead retain the existing 10 mg/L standard.[237] These commenters noted that keeping the existing 10 mg/L standard would be easier to enforce and more cost effective than trying to implement the proposed equation.[238]

146. Many commenters also agreed that the sulfate standard should be enforced year-round as proposed in the rule, rather than just during the wild rice growing season as required by the existing rule.[239]

147. The Administrative Law Judge concludes that the Agency conducted the analysis required by Minn. Stat. § 14.131(6).

(7) An assessment of any differences between the proposed rules and existing federal regulation and a specific analysis of the need for and reasonableness of each difference.

148. The MPCA states that there is no federal counterpart to the equation-based sulfate standard for wild rice waters or the process for identifying wild rice waters.[240] Therefore, it is not possible to assess any differences between the proposed rule revisions and existing federal regulations. The MPCA maintains, however, that the proposed revisions are consistent with the intent of the CWA as well as reasonable interpretations of federal guidance and the federal expectation that states develop state-specific water quality standards.[241]

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[233] Ex. D at 190.
[234] *Id.*
[235] *Id.*
[236] Ex. D at 193.
[237] *See, e.g.,* Rulemaking eComment from Kris Wegerson (filed Nov. 21, 2017).
[238] *Id.*
[239] Ex. 1020.
[240] Ex. D at 197.
[241] *Id.*

149. No other state has established a beneficial use class for wild rice or established a sulfate standard applicable to wild rice.[242]

150. The Grand Portage and Fond du Lac Bands of the Minnesota Chippewa Tribe have each established a water quality standard for wild rice.[243] The water quality standards for both tribes generally define wild rice areas as bodies of water that "presently has or historically had the potential to sustain the growth of wild rice." Both also establish a numeric sulfate standard of 10 mg/L.[244]

151. The MPCA's current wild rice sulfate standard and proposed revisions to the wild rice sulfate standard differ from the tribal standards as follows:

a. The proposed revisions clarify the existing beneficial use to "the use of the grain of wild rice as a food source for wildlife and humans."

b. The proposed rule revisions apply the standard to identified wild rice waters based on supporting the beneficial use. The tribal standards apply the standards more broadly to waters on the basis of past, present, or future potential to sustain growth of wild rice.

c. The existing state rules apply the sulfate standard "during periods when the rice may be susceptible to damage by high sulfate levels." The proposed revisions apply the sulfate standard as an annual average that can be exceeded once in ten years. The Grand Portage tribal standards do not specify when the standard applies. The Fond du Lac sulfate standard is an instantaneous maximum limit.

d. The proposed revisions to the state sulfate standard establish the protective sulfate value through an equation rather than a fixed 10 mg/L standard. Both tribal sulfate standards are fixed numeric standards of 10mg/L.[245]

152. The Administrative Law Judge finds that the Agency failed to discuss the definition of "existing use" under the CWA, and how its decision to exclude certain waters previously identified as wild rice waters corresponds with the CWA's definition of "existing use." Therefore, the Administrative Law Judge determines that the Agency has not met its obligation under Minn. Stat. § 14.131(7) to assess the differences between the proposed rule and federal regulations and the reasonableness of each difference.

153. The Administrative Law Judge notes that the Agency failed to address the potential conflict between the 10 mg/L sulfate standard on the Fond du Lac and Grand Portage Indian Reservations and the proposed equation-based sulfate standard. While this failure may not technically violate the requirements of Minn. Stat. § 116.07, subd. 2(f) (2016), the Administrative Law Judge views this as a violation of the underlying purpose of this statutory requirement.

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[242] *Id.*
[243] Id.; SONAR Exs. 45 and 46.
[244] Ex. D at 197; SONAR Exs. 45 and 46.
[245] Ex. D at 197-198; SONAR Exs. 45 and 46.

154. The Administrative Law Judge finds that the Agency has met its special obligations under Minn. Stat. § 116.07, subd. 2(f), to assess the impact of the proposed rule and the approaches taken by neighboring states.

(8) Assessment of the cumulative effect of the rule with other federal and state regulations related to the specific purpose of the rule.

155. "Cumulative effect" means the incremental impact of the proposed rule in addition to other rules, regardless of what state or federal agency has adopted the other rules. Cumulative effects can result from individually minor, but collectively significant, rules adopted over a period of time.[246]

156. As noted above, there is no federal counterpart to the wild rice sulfate standard. Therefore, there is no cumulative effect to assess with respect to other federal regulations.

157. The MPCA maintains that, because it is replacing the existing water quality standard and not proposing an additional standard, the revised standard does not create cumulative impacts.[247] According to the MPCA, an assessment of whether a regulation has a cumulative effect is "whether the proposed revisions duplicate an existing rule that achieves the same purpose."[248]

158. The Administrative Law Judge disagrees that this is the proper analysis for the question of cumulative effect. The Administrative Law Judge looks first to the plain language of the word "cumulative." The first dictionary definition of "cumulative" is "increasing by successive additions."[249] "Duplicative," in contrast, means "consisting of or existing in two corresponding or identical parts or examples."[250]

159. The legislative history of Minn. Stat. § 14.131(8) demonstrates that Minnesota legislators were not concerned with agencies promulgating rules that were duplicative. They were concerned with regulations that have an increasing effect on regulated parties. At a hearing before the Senate Committee on Finance when the "cumulative effect" language was under consideration, the MPCA's legislative director spoke to the committee:[251]

> One example [is] our agency deals with hazardous waste, medical waste. As we deal on the disposal side of it, once it gets to a landfill. However, up the chain of control of that issue that is handled by a number of additional

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[246] Minn. Stat. § 14.131.
[247] Ex. D at 199.
[248] *Id.*
[249] Merriam-Webster online dictionary, https://www.merriam-webster.com/dictionary/cumulative.
[250] Merriam-Webster online dictionary, https://www.merriam-webster.com/dictionary/duplicative.
[251] Testimony of Kirk Koudelka, legislative director, MPCA before Senate Comm. On Finance, S.F. 1922 (Mar. 29, 2012).

> agencies that could have an impact on that. Us then having to do a cumulative effect on how a hospital handles their medical waste or how MnDOT regulates how they transport medical waste before it gets to the landfill.

160. In response to the Committee Chair Robling's concern that the MPCA was not considering the cumulative effect of regulations, and that legislators were hearing from constituents that the cumulative effect was overwhelming,[252] Mr. Koudelka replied:[253]

> For instance, right now we are working on some mercury rules for facilities and their mercury emissions. We do look at what other requirements are on the federal level on that. . . . . The way this is written, all other rules that affect that waste, through its chain of command, even though we may not personally have any authority over it, would have to be looked at. There is some concern on what that does to the scope from a number of agencies . . . .

161. The Administrative Law Judge finds that the MPCA has not met its obligation to assess the cumulative effect of the rule with other federal and state regulations related to the specific purpose of the proposed rule.

2. Performance-Based Regulation

162. The Administrative Procedure Act[254] also requires an agency to describe how it has considered and implemented the legislative policy supporting performance based regulatory systems. A performance-based rule is one that emphasizes superior achievement in meeting the agency's regulatory objectives and maximum flexibility for the regulated party and the agency in meeting those goals.[255]

163. The Agency asserts that the proposed rules meet the state's objectives for flexible, performance-based standards. It maintains that the existing WQS are a performance-based regulatory system. The WQS identify, using the best-available science, the conditions that must exist in Minnesota's water bodies to support each waters' designated uses. Because the proposed rules do not dictate how a regulated party must achieve the wild rice beneficial use or prescribe how they must operate to ensure compliance with the WQS, the Agency maintains they allow regulated parties maximum flexibility in meeting the standard. The Agency concedes, however, that, in the case of sulfate treatment, there are limited alternatives and options available to meet the standard. Nonetheless, the Agency contends that, by not dictating a single course of action and by allowing for variances, the proposed rules meet the requirement of emphasizing maximum flexibility for the regulated parties.[256]

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[252] Chair Claire A. Robling, Senate Comm. On Finance, S.F. 1922 (Mar. 29, 2012).
[253] Testimony of Kirk Koudelka, legislative director, MPCA before Senate Comm. On Finance, S.F. 1922 (Mar. 29, 2012).
[254] Minn. Stat. § 14.131.
[255] Minn. Stat. § 14.002.
[256] Ex. D at 201.

164. The Administrative Law Judge finds that the Agency has met the requirements set forth in Minn. Stat. § 14.131 for consideration and implementation of the legislative policy supporting performance-based regulatory systems.

3. Consultation with the Commissioner of Minnesota Management and Budget (MMB)

165. By memorandum dated September 7, 2017, Sean Fahnhorst, an Executive Budget Officer with MMB, responded to the MPCA's request to evaluate the fiscal impact and benefit of the proposed rules on local units of government, as required by Minn. Stat. § 14.131.[257] The MPCA estimates that the 62 municipal wastewater treatment plants that discharge into or within 25 miles upstream of identified wild rice waters are most likely to incur major costs to upgrade their treatment processes to comply with these revised standards.[258] The MPCA provided a "preliminary analysis of the costs" in its SONAR and indicated that it expects to complete further analysis of the costs and alternatives of sulfate treatment by May 2018.[259]

166. MMB reviewed the proposed rules and the Agency's SONAR. MMB noted that municipal wastewater treatment plants are generally not designed to remove sulfate and that upgrades to existing facilities will be non-standard and require site-specific analysis and engineering testing. MMB noted further that few options exist for removing sulfate from wastewater, and the methods available can be very expensive. MMB concluded that cost estimates for upgrades are only possible with detailed wastewater treatment plant design information.[260]

167. MMB also noted that the MPCA expects to grant variances to some municipal wastewater treatment facilities, which would exempt them from discharge limits related to this standard if they demonstrate that economic or technological factors prevent their compliance. Local governments would incur administrative costs applying for the variance, but the MPCA proposes to reduce some of these expenses by waiving the variance application fee and assisting municipalities with the application process.[261]

168. Finally, MMB noted that, in terms of fiscal impacts, the proposed rules may benefit some local governments by identifying nearby wild rice waters, clarifying wastewater regulations and standards, and attracting tourists.[262]

169. The purpose of the consultation with MMB required by Minn. Stat. § 14.131 is "to help evaluate the fiscal impact and fiscal benefits of the proposed rule on units of local government." [263] In this case, given the scarcity of information available about the

[257] Ex. K3.
[258] *Id.*
[259] *Id.*
[260] *Id*.
[261] Ex. K3.
[262] *Id*.
[263] Minn. Stat. § 14.131.

actual costs and benefits that are likely to accrue to local governments, the MMB memorandum reaches no conclusions regarding the adequacy of the information and analysis provided by the Agency. Nor is MMB provided with enough information to engage in its own evaluation of the fiscal impacts and benefits of the proposed rule on units of local government.

170. The Administrative Law Judge finds that the Agency consulted with MMB as required under Minn. Stat. § 14.131, but failed to provide adequate information to help MMB evaluate the fiscal impacts and benefits of the proposed rule on units of local government.

4. Cost to Small Businesses and Cities under Minn. Stat. § 14.127

171. Minn. Stat. § 14.127 requires the Agency to "determine if the cost of complying with a proposed rule in the first year after the rule takes effect will exceed $25,000 for: (1) any one business that has less than 50 full-time employees; or (2) any one statutory or home rule charter city that has less than ten full-time employees." The Agency must make this determination before the close of the hearing record, and the Administrative Law Judge must review the determination and approve or disapprove it.[264]

172. The Agency concludes that a small business or city within the definition of Minn. Stat. § 14.127 may incur expenses in excess of $25,000 to comply with the proposed rule in the first year after the rule takes effect. However, the Agency believes that such a circumstance is unlikely to occur within a year after the rule takes effect.[265]

173. The Agency discusses the criteria it developed that are necessary to determine which small businesses and cities could potentially be included in an analysis pursuant to Minn. Stat. § 14.127. The criteria identified by the Agency are as follows:

a. The business or city must discharge to a surface water.

b. The surface water receiving the discharge must be a wild rice water or within a certain range of a wild rice water. For purposes of this evaluation, the MPCA selected a range of 25 miles.

c. The discharge must contain sulfate.

d. The affected business must have fewer than 50 full-time employees. Affected cities must have fewer than 10 full time employees.

e. The business or city must need to obtain a new or re-issued permit within the first year after the rules are adopted.

f. The MPCA must have sufficient information available to develop an effluent limit – including sediment data to set the numeric standard

[264] Minn. Stat. § 14.127, subds. 1 and 2.
[265] Ex. D at 202.

for the receiving wild rice water, sulfate levels in the receiving water, and data on sulfate concentrations in the business or city's effluent.

g. The application of the adopted sulfate standard must result in effluent limits that are more stringent.

h. The business or city must incur costs of more than $25,000 in the first year following adoption of the proposed revisions for planning, installation, or operation activities specifically to meet the revised standard.[266]

174. Using these criteria, the Agency calculates that, of the 135 dischargers within 25 miles of a regulated wild rice water, there are approximately 75 small businesses and cities that may be affected by the proposed revisions and currently have permits. Because the MPCA issues permits to dischargers on a five-year schedule, fewer than 75 will be required apply for a permit under the new standard in the first year. Nonetheless, assuming the rule is adopted in mid-2018,[267] the MPCA estimates that more than 60 dischargers will at least begin the process of updating their existing permits in 2018.[268]

175. According to the Agency, permit issuance or renewal involves "setting effluent limits, developing and reviewing plans and specifications, permit notice and approval, and construction activities."[269] In addition, the Agency recognizes that "dischargers may have to make a significant initial investment in planning and preliminary design work in advance of receiving the permit."[270]

176. The Agency explains that the cost driver for dischargers is the implementation of a sulfate effluent limit in a permit, which requires the discharger to take action to either limit the sulfate in its discharge or to request a variance. Before a discharger can be assigned an effluent limit, the MPCA must know the numeric sulfate standard applicable to the receiving wild rice water. In addition, the discharger's sulfate effluent concentrations must be available.[271]

177. The Agency states that a majority of dischargers do not have current effluent monitoring for sulfate. For these dischargers, the Agency estimates that sulfate limits could not be implemented before 2023.[272]

178. According to the Agency, only if a small business or city receives a more stringent effluent limit than was required under the existing standard will it have higher treatment costs than it would have had under the 10 mg/L standard, or incur the costs of applying for a variance.[273] However, a facility will not know whether its effluent limit is

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[266] Ex. D at 204.
[267] *Id*. at 202.
[268] *Id*. at 206.
[269] *Id.*
[270] *Id.*
[271] *Id*. at 207.
[272] *Id.*
[273] *Id.*

more or less than it would be under the existing standard until the new standard has been set for the receiving wild rice water.[274]

179. The Agency does not explain why it estimates that it will take dischargers five years to monitor their own sulfate discharges.

180. Furthermore, the Agency states that it expects to take up to ten years to sample the 1,300 regulated wild rice waters identified in the proposed rule for the purpose of setting new standards.[275]

181. Nonetheless, for purposes of the rulemaking evaluation, the MPCA assumes that all the identified dischargers will have to either meet more stringent sulfate discharge limits or apply for variances. The cost to treat wastewater to remove sulfate is extremely high. The MPCA recognizes that the most effective treatment option at this time to remove sulfate from wastewater is an RO membrane treatment system.[276] The cost of designing, building and operating an RO system will certainly exceed $25,000. However, the MPCA expects permittees will not incur the full cost of treatment or design/build in the first year after adoption of the proposed rules.[277]

182. The MPCA expects that WWTPs that meet the above criteria may incur costs in the first year after the rules are adopted. Costs could include retaining a contractor or designer to begin the process of evaluating discharge and treatment options, among other items. The WTTP could also begin the process of bench-scale studies and facility design, although the MPCA believes a variance application is more likely. The MPCA notes that the cost of a variance alone could exceed $25,000, especially for an industrial facility for which there is no variance fee waiver in the rule. However, the MPCA does not presume that the cost of a variance for a municipality would necessarily be less than $25,000.[278]

183. The MPCA cannot estimate the cost of these activities "because of the extent of the variables,"[279] but the Agency concludes that such costs will "be significant" and "may exceed $25,000"[280] for some small businesses and cities in the first year after adoption of the proposed revisions.[281]

184. While the MPCA's analysis pursuant to Minn. Stat. § 14.127 discusses the question of whether small businesses and cities will spend more than $25,000 to comply with the proposed rule within one year after the rule is adopted, the statutory language

[274] Ex. D at 207.
[275] Response Cover Memo at 10.
[276] Ex. D at 207.
[277] *Id.*
[278] Ex. D at 208.
[279] *Id.*
[280] *Id.*
[281] *Id.*

requires this analysis to focus on the "cost of complying with a proposed rule in the first year after the rule takes effect . . . ."[282]

185. Because MPCA predicts that it will likely take five to ten years to sample the regulated wild rice waters identified in the proposed rule for the purpose of setting new standards that will provide the basis for new effluent limits, the Administrative Law Judge finds that the rule cannot take effect for purposes of the Agency's analysis under Minn. Stat. § 14.127 until the necessary sediment and porewater sampling have been completed and new sulfate standards calculated pursuant to the equation standard in the proposed rule.

186. Any attempt to perform the analysis required by Minn. Stat. § 14.127 is based on conjecture regarding whether and to what extent any given small business or city that meets the criteria outlined by the MPCA will be subject to a more stringent effluent limit once a new standard is determined for receiving waters subject to the wild rice sulfate rules.

187. The legislature's purpose in enacting Minn. Stat. § 14.127 was to better understand the impact of its regulatory delegations. For example, in its 1993 review of Minnesota's rulemaking process, the State Commission on Reform and Efficiency observed that the legislature is often "not aware of the specific costs of preparing and adopting the rules it authorizes or requires" and "lacks cost information when considering bills authorizing rulemaking."[283] In this context, the provisions of Minn. Stat. § 14.127 operate as a check against the legislature misjudging the cost of regulatory programs when it delegates rulemaking authority.

188. The structure and text of the exemptions in Minn. Stat. § 14.127, subd. 4, confirm this conclusion. Subdivision 4 provides that there is no safe harbor from regulatory compliance for small cities and small businesses when:

a. the legislature has appropriated sufficient funds for the costs of complying with the proposed rule;

b. the proposed rule follows from "a specific federal statutory or regulatory mandate";

c. the rules were promulgated under the limited exemption of the "good cause exempt" rulemaking procedure;

d. the legislature exempted the proposed rules from compliance with Chapter 14 rulemaking procedures;

e. the rules were promulgated by the Public Utilities Commission; or

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[282] Minn. Stat. § 14.127 (emphasis added).
[283] *See* Finding 6, *Reforming Minnesota's Administrative Rulemaking System* (State Commission on Reform and Efficiency, 1993.).

f. the Governor waives the safe-harbor provisions by filing a notice with both houses of the legislature and publishing the same in the *State Register*.

189. These exemptions reflect an underlying legislative assumption that delegated rulemaking authority will not result in compliance costs of more than $25,000 for a small city or small business during the first year. If that cost assumption is not generally true for a particular agency (such as the Public Utilities Commission), or untrue with respect to a particular program (such that appropriation accompanies the rulemaking delegation), one of the listed exemptions will apply. In all other cases, the legislature offers the affected stakeholders the opportunity to revisit the question of compliance costs with the legislature and the agency.[284]

190. The Agency's application of the statute significantly narrows the protections for small businesses and small cities. Under Minn. Stat. § 14.127, a qualifying small city or small business may opt out of costly regulatory programs by filing "a written statement with the agency claiming a temporary exemption from the rules"[285] until "the rules are approved by a law enacted after the agency determination or administrative law judge disapproval."[286] Because, according to the MPCA, the small businesses and cities it has identified as potentially affected by $25,000 limitation in Minn. Stat. § 14.127 will not know for certain whether their effluent limits will be more or less stringent until the new sulfate standards are calculated, it is not technically possible for any small city or business to claim that it must spend $25,000 in order to comply with the new sulfate standards. Thus, the Agency's attempt to implement a rule without definite standards runs afoul of the statutory language of Minn. Stat. § 14.127, despite the Agency's finding that some small businesses and cities may spend $25,000 within a year after the proposed rule is adopted.

191. The Administrative Law Judge finds that the Agency has made a determination required by Minn. Stat. § 14.127, but that determination is not adequately supported in the rulemaking record. The hearing record does not establish that the compliance costs for any one qualifying small city or small business will be more than $25,000 in the first year following the adoption of the proposed rule because the hearing record does not establish that the compliance costs for any one qualifying small city or small business will be known within one year of adoption of the proposed rule.

192. The cost determination under Minn. Stat. § 14.127 is disapproved.

193. The result of this cost determination disapproval would usually be that any small business or city that must spend more than $25,000 to comply with this rule can file a statement with the Agency pursuant to Minn. Stat. § 14.127, subd. 3, claiming a temporary exemption pending further action by the legislature. Because the basis for the disapproval is that the Agency has failed to provide the information required to make a

[284] Minn. Stat. § 14.127, subd. 3.
[285] *Id.*
[286] *Id.*

finding under Minn. Stat. § 14.127, it is not possible for a small city or business to claim a temporary exemption at this time without further action by the Agency.

5. Adoption or Amendment of Local Ordinances

194. Under Minn. Stat. § 14.128 (2016) the Agency must determine if a local government will be required to adopt or amend an ordinance or other regulation to comply with a proposed agency rule. The Agency must make this determination before the close of the hearing record, and the Administrative Law Judge must review the determination and approve or disapprove it.[287]

195. The Agency states that, because state water quality standards are not implemented at the local level, no changes will be required to local ordinances or regulations in response to the proposed rule revisions. The Agency notes, however, that local units of government that own or operate a WWTP may be subject to additional conditions on discharges due to the proposed revisions. For example, a city may require pre-treatment of high sulfate wastewater or charge a higher fee for discharge of sulfate to the municipal WWTP. These conditions may be in the form of an ordinance or regulation, but they are not specifically required by the proposed rules.[288]

196. The Administrative Law Judge finds that the Agency has made the determination required by Minn. Stat. § 14.128 and approves that determination.

6. Economic Analysis and Identification of Cost-Effective Permitting

197. Pursuant to a 2015 Minnesota Session Law,[289] the MPCA is required to consider the effect the proposed revisions will have on MPCA's permit process for industrial and municipal dischargers.[290]

198. The MPCA states that it considered the effects its proposed revisions will have on the permit process and it recognizes that, for some dischargers, the proposed rules may result in substantial costs.[291]

199. The MPCA expects that, in most cases, dischargers can only meet the proposed sulfate standard by using membrane treatment. The MPCA recognizes that the current options for treating sulfate are costly and complex.[292]

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[287] Minn. Stat. § 14.128, subd. 1. Moreover, a determination that the proposed rules require adoption or amendment of an ordinance may modify the effective date of the rule, subject to some exceptions. Minn. Stat. § 14.128, subds. 2 and 3.
[288] Ex. D at 201.
[289] 2015 Minn. Laws 1st Spec. Sess. ch. 4, art. 3, § 2, subd. 2 (authorizing funds for "enhanced economic analysis in the water quality standards rulemaking process, including more specific analysis and identification of cost-effective permitting.").
[290] Ex. D at 209-213.
[291] *Id*. at 209.
[292] *Id*.

200. The MPCA states that industrial dischargers could encounter substantial treatment costs if sulfate effluent limits are included in NPDES/SDS permits. The industries most likely to be affected include ethanol producers, food processors, power plants, ferrous (taconite) mining and processing, and any potential non-ferrous mining. The taconite industry on the Mesabi Iron Range is likely to be the most affected of the industrial categories because of the prevalence of wild rice in that region, the amount of sulfate generated by mining and processing, the aggregate volume of water discharged, and the elevated sulfate concentrations from legacy mining.[293]

201. The MPCA notes that variances from water quality standards are a permitting tool that may be used to temporarily address uncertain or costly treatment alternatives.[294] The MPCA expects variances to become an increasingly necessary component of the permit process as more stringent water quality-based effluent limits are implemented.[295] In considering a variance, the MCPA must determine the point at which costs would result in substantial and widespread negative economic and social impact such that compliance with the standard is not feasible.[296] All variances from a water quality standard are subject to final approval by the United States Environmental Protection Agency (EPA).[297]

202. Because the proposed sulfate effluent limits may prompt an increase in variance requests, the MPCA is considering implementing a streamlined variance process. According to the MPCA, the streamlined process will define the information required for obtaining final approval from the EPA and allow ample time for a discharger to consider its permitting options. The MPCA maintains that the streamlined process will reduce permitting uncertainty and application review time and result in more cost-effective permitting.[298]

203. The Administrative Law Judge concludes the Agency has made the analysis required under 2015 Minn. Laws 1st Spec. Sess. ch. 4, art. 3, § 2, subd. 2, given the limited information available.

7. External Review Panel

204. The Agency is required to convene an external review panel during the promulgation or amendment of a water quality standard, or state in the SONAR why such a panel was not convened.[299]

205. The MPCA conducted an external peer review on the state-sponsored wild rice study in 2014.[300] The report of the peer review panel was released in September

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[293] *Id*. at 209-210.
[294] Ex. D at 210.
[295] *Id*.
[296] *Id*.
[297] *Id*.
[298] Ex. D at 216.
[299] *See* Minn. Stat. § 115.035 (2016).
[300] Ex. D at 217.

2014.[301] The names and affiliations of the peer reviewers are provided in Table 19 of the SONAR.[302] The MPCA states that the report of the peer review panel informed its analysis and interpretation of data regarding the effect of sulfate on wild rice and that analysis is reflected in its March 2015 draft proposal.[303]

206. The Administrative Law Judge finds that the Agency met the requirement of Minn. Stat. § 115.035 regarding external review panels.

IV. Rulemaking Legal Standards

207. The Administrative Law Judge must make the following inquiries: whether the agency has statutory authority to adopt the rule; whether the rule is unconstitutional or otherwise illegal; whether the agency has complied with the rule adoption procedures; whether the proposed rule grants undue discretion to government officials; whether the rule constitutes an undue delegation of authority to another entity; and whether the proposed language meets the definition of a rule.[304]

208. Under Minn. Stat. § 14.14, subd. 2 and Minn. R. 1400.2100 (2017), the agency must establish the need for, and reasonableness of, a proposed rule by an affirmative presentation of facts. In support of a rule, the agency may rely upon materials developed for the hearing record,[305] "legislative facts" (namely, general and well-established principles that are not related to the specifics of a particular case but which guide the development of law and policy),[306] and the agency's interpretation of related statutes.[307]

209. A proposed rule is reasonable if the agency can "explain on what evidence it is relying and how the evidence connects rationally with the agency's choice of action to be taken."[308] By contrast, a proposed rule will be deemed arbitrary and capricious where the agency's choice is based upon whim, devoid of articulated reasons or "represents its will and not its judgment."[309]

210. An important corollary to these standards is that when proposing new rules an agency is entitled to make choices between different possible regulatory approaches, so long as the alternative that is selected by the agency is a rational one.[310] Thus, while reasonable minds might differ as to whether one or another particular approach

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[301] *Id*.; SONAR Ex. 9.
[302] Ex. D at 217.
[303] *Id*; SONAR Ex. 10.
[304] *See* Minn. R. 1400.2100.
[305] *See Manufactured Housing Institute v. Pettersen*, 347 N.W.2d 238, 240 (Minn. 1984); *Minnesota Chamber of Commerce v. Minnesota Pollution Control Agency*, 469 N.W.2d 100, 103 (Minn. Ct. App. 1991).
[306] *Compare generally United States* v. *Gould,* 536 F.2d 216, 220 (8th Cir. 1976).
[307] *See Mammenga v. Agency of Human Services*, 442 N.W.2d 786, 789-92 (Minn. 1989); *Manufactured Manufactured Hous. Inst.*, 347 N.W.2d at 244.
[308] *Manufactured Hous. Inst.*, 347 N.W.2d at 244.
[309] *See Mammenga*, 442 N.W.2d at 789; *St. Paul Area Chamber of Commerce v. Minn. Pub. Serv. Comm'n,* 251 N.W.2d 350, 357-58 (Minn. 1977).
[310] *Peterson v. Minn. Dep't of Labor & Indus*., 591 N.W.2d 76, 78 (Minn. Ct. App. 1999).

represents "the best alternative," the agency's selection will be approved if it is one that a rational person could have made.[311]

211. Because both the Agency and the Administrative Law Judge suggested changes to the proposed rule language after the date it was originally published in the *State Register*, it is also necessary for the Administrative Law Judge to determine if this new language is substantially different from that which was originally proposed.

212. The standards to determine whether any changes to proposed rules create a substantially different rule are found in Minn. Stat. § 14.05, subd. 2(b). The statute specifies that a modification does not make a proposed rule substantially different if:

> (1) the differences are within the scope of the matter announced . . . in the notice of hearing and are in character with the issues raised in that notice;
>
> (2) the differences are a logical outgrowth of the contents of the . . . notice of hearing, and the comments submitted in response to the notice; and
>
> (3) the . . . notice of hearing provided fair warning that the outcome of that rulemaking proceeding could be the rule in question.

213. In reaching a determination regarding whether modifications result in a rule that is substantially different, the Administrative Law Judge must consider whether:

> (1) persons who will be affected by the rule should have understood that the rulemaking proceeding . . . could affect their interests;
>
> (2) the subject matter of the rule or issues determined by the rule are different from the subject matter or issues contained in the . . . notice of hearing; and
>
> (3) the effects of the rule differ from the effects of the proposed rule contained in the . . . notice of hearing.[312]

V. Analysis of the Proposed Rule

214. There were few sections of the proposed rule that were not opposed by any member of the public. This Report will first address the three portions of the rule that are central to its function and design: Minn. R. 7050.0224, subp. 2, which proposes to repeal the 10 mg/L sulfate standard; Minn. R. 7050.0224, subp. 5, B (1), which proposes to replace the 10 mg/L standard with the equation-based sulfate standard; and Minn. R. 7050.0471, subps. 3-9, which proposes the list of waters to be included as class 4D waters to be protected by the wild rice sulfate standard.

[311] *Minnesota Chamber of Commerce*, 469 N.W.2d at 103.
[312] *See* Minn. Stat. § 14.05, subd. 2.

A. Repeal of the 10 mg/L Sulfate Standard

215. Minn. R. 7050.0224, subp. 2, proposes to repeal the 10 mg/L sulfate standard applicable to wild rice waters, which are currently classified as Class 4A waters.[313]

216. Minn. R. 7050.0220, subps. 3a, 4a, 5a, and 6a, propose to delete references to the 10 mg/L sulfate wild rice water standard.[314]

217. A number of commenters support repeal of the 10 mg/L sulfate standard as it applies to wild rice waters, without regard to whether they are re-classified as Class 4D waters or remain classified as Class 4A waters.[315]

218. The MPCA responded that the decision to repeal the 10 mg/L standard "is not separate from moving forward with the proposed equation."[316] Because the MPCA has determined that sulfate negatively affects wild rice, albeit indirectly rather than directly, the MPCA determined that "[i]t is not scientifically defensible to conclude that simply eliminating the existing sulfate standard would protect" wild rice.[317]

219. The 1854 Treaty Authority, the Fond du Lac Band of Lake Superior Chippewa, the Grand Portage Band of Chippewa, WaterLegacy, and numerous individuals oppose repeal of the 10 mg/L sulfate standard.[318] These commenters and others express concerns that increases in sulfate could lead to increases in methyl mercury, which bio-accumulates in fish, has long-term serious health effects on humans, and is especially dangerous to developing fetuses.[319] Some commenters also question

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313 Ex. C at 7.16, proposed Minn. R. 7050.0224, subp. 5.

314 Ex. C at 3.16, 4.11, 5.7, 5.23, proposed Minn. R. 7050.0220, subps. 3a, 4a, 5a, and 6a.

315 Test. of Rob Beranek, Oct. 23 Tr. at 91; eComment from Kurt Anderson on behalf of Minnesota Power at 7 (Minnesota Power comment) (Nov. 21, 2017); eComment from Elizabeth Wefel on behalf of Coalition of Greater Minnesota Cities at 1-2 (Coalition of Greater MN Cities comment) (Nov. 22, 2017); Test. of Chrissy Bartovich, Oct. 24, 2017 Tr. at 82; Test. of Jason Metsa, Oct. 24, 2017 Tr. at 104; Letter from Iron Range Mayors (Hoyt Lakes, Ely, Virginia, Nashwauk, Aurora, Biwakbik, Grand Rapids, Hibbing, Babbitt, Mountain Iron) at 1 (Nov. 6, 2017); Letter from Iron Range Legislative Delegation (Senators David Tomassoni, Thomas Bakk, and Justin Eichorn, and Representatives Jason Metsa, Rob Ecklund, Julie Sandstede, Dale Lueck, and Sandy Layman) (Nov. 2, 2017).

316 MPCA Response, Att. 1 at 24.

317 MPCA Response at 3.

318 eComment from Paula Maccabee on behalf of WaterLegacy at 11-12, 55-56 (WaterLegacy comment), (eComment filed Nov. 22, 2017); Letter from Darren Vogt at 5 (Nov. 21, 2017); eComment from Nancy Schuldt at 25 (Nov. 22, 2017); Test. of Dennis Scymialis, Oct. 26, 2017, Tr. at 70; Test. of Tom Thompson, Oct. 26, 2017, Tr. at 75. Some commenters objected to the Agency's classification of wild rice waters as class 4 waters rather than class 2 waters. Test. of Margaret Watkins, Oct. 26, 2017, Tr. at 89-90, Hearing Ex. 1020 (Letter from Dennis Morrison on behalf of Grand Portage Tribal Reservation Council at 8 and Letter from Robert L. Larsen on behalf of Minnesota Indian Affairs Council at 2).

319 Test. of Dave Zentner, Oct. 26 Tr. at 117; Test. of Dr. Emily Onello, Oct. 26, 2017, Tr. at 68; Test. of Margaret Watkins, Oct. 26, 2017, Tr. at 89-90, Hearing Ex. 1020 (Letter from Dennis Morrison on behalf of Grand Portage Tribal Reservation Council at 8 and Letter from Robert L. Larsen on behalf of Minnesota Indian Affairs Council at 2).

whether the extraordinary nutritional value – and health benefits – of wild rice will be degraded by increased surface water sulfate levels.[320]

220. In response to the concerns raised about the effect of increased sulfate concentrations on the methylation of mercury, the MPCA acknowledges that "increased concentrations of sulfate have been shown to increase the methylation of mercury in aquatic systems where organic carbon is available and especially where background sulfate concentrations are low." The MPCA agrees that "enhanced production of methylmercury is a significant concern."[321]

221. Despite these concerns, and while acknowledging that it is "very concerned about actions that might increase the mercury content of fish," the Agency notes that "in a formal sense," the scope of this rulemaking does not encompass the effects of sulfate on the methylation of mercury.[322] The MPCA reports that it is "conducting a significant separate study concerning the factors that control mercury in fish."[323] At this time, the Agency states that it has determined

> that the relationship between sulfate and mercury methylation is significantly more complicated than the relationship between sulfate and sulfide on which the proposed wild rice rule is based. Therefore, it would be even more challenging to develop a proposed sulfate standard that addresses the role of sulfate in the potential for production of methylmercury.[324]

For these reasons, the Agency states, it is not making "any decisions as how to proceed on the question of enhanced mercury methylation until the results of the ongoing major study are available."[325]

222. Both the Fond du Lac Band and the Grand Portage Band of Lake Superior Chippewa have wild rice water quality standards that limit sulfates to 10 mg/L. Each Band has authority to set water quality standards on its reservation, and the EPA has approved the standard for each Band.[326]

223. The CWA requires that, any time a state revises or adopts a new water quality standard, the standard "shall be such as to protect the public health or welfare, enhance the quality of water and serve the purposes of" the CWA.[327] Standards "shall

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[320] Test. of Dr. Emily Onello, Oct. 26, 2017, Tr. at 68-69; Test. of Dr. Debby Allert, Oct. 26, 2017, Tr. at 107-112, Hearing Ex. 1024 (Materials submitted by Dr. Allert on behalf of Minnesota Academy of Family Physicians).
[321] MPCA Response Att. 1 at 21 (Nov. 22, 2017).
[322] *Id.*
[323] *Id.*
[324] *Id.*
[325] *Id.*
[326] Hearing Ex. 1020 (Letter from Dennis Morrison on behalf of Grand Portage Tribal Reservation Council at 11; Test. of Nancy Schuldt at 96 (Oct. 26, 2017); eComment from Paula Maccabee on behalf of WaterLegacy at 15 (eComment filed Nov. 22, 2017).
[327] 33 U.S.C. § 1313 (c).

be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes . . . ."[328] The federal regulations also require the state to "take into consideration the water quality standards of downstream waters and . . . ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters."[329]

224. Minn. R. 7050.0155 requires that "[a]ll waters must maintain a level of water quality that provides for the attainment and maintenance of the water quality standards of downstream waters, including the waters of another state."

225. The MPCA has proposed that the maximum value of sulfate which could result in application of the proposed equation-based standard would be 838 mg/L,[330] a standard more than 80 times the current standard of 10 mg/L.

226. In the face of challenges raised by the public concerning increased mercury methylation, further harm to wild rice, and degradation of waters due to algae blooms as a result of elevated sulfate standards, the MPCA has failed to make an affirmative presentation of facts which demonstrate that, in establishing standards which would allow increased levels of sulfate in wild rice waters, it is protecting the public health or welfare, enhancing the quality of water, and ensuring that the proposed water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters, as required by federal and state law.[331] Therefore, the Administrative Law Judge concludes that the proposed repeal of the 10 mg/L wild rice sulfate standard violates Minn. R. 1400.2100.D, prohibiting a rule that conflicts with other applicable law.

227. For the reasons set forth in the following section regarding the equation-based standard, the Administrative Law Judge further concludes that the MPCA has not presented facts adequate to support the reasonableness of the proposed repeal of the 10 mg/L sulfate standard without a replacement standard that is equally or more protective of wild rice waters. Therefore, the proposed rule repealing the 10 mg/L sulfate standard is defective because it violates Minn. R. 1400.2100.B.

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[328] 33 U.S.C. § 1313 (c)

[329] 40 C.F.R. § 131.10(b) (2015).

[330] MPCA Rebuttal at 4.

[331] The Fond du Lac Band of the Minnesota Chippewa Tribe asserts that the Chippewa retain usufructuary rights to gather wild rice under the Treaties of 1837 and 1854. *Minnesota v. Mille Lacs Band of Chippewa Indians*, 526 U.S. 172, 196 (1999). The Fond du Lac Band, along with the entire Minnesota Indian Affairs Council, believes that equation-based sulfate standard is not proven to be protective of wild rice waters. Hearing Ex. 1020 (Letter from Dennis Morrison on behalf of Grand Portage Tribal Reservation Council at 8 and Letter from Robert L. Larsen on behalf of Minnesota Indian Affairs Council at 2). Therefore, the Fond du Lac Band argues, the State has an obligation under the 1837 and 1854 Treaties to insure that wild rice is not degraded or contaminated. The Fond du Lac Band contends that the proposed equation-based standard will not adequately protect wild rice or, by extension, the Band's Tribal treaty rights. eComment from Nancy Schuldt at 1,4-5 (Nov. 22, 2017). Because the Administrative Law Judge finds that repeal of the 10 mg/L violates federal and state law, this Report need not reach the treaty-rights arguments.

228. Should the Agency proceed with this rulemaking, it may cure the defect by retaining the 10 mg/L wild rice sulfate standard either by returning to the current wild rice classification as 4A waters, or by applying the 10 mg/L wild rice sulfate standard to wild rice in the 4D classification.

229. The Administrative Law Judge finds that the suggested changes would be needed and reasonable and would not constitute a substantially different rule under Minn. Stat. § 14.05, subd. 2(b).

B. Equation-based Sulfate Standard

230. **Part 7050.0224, subp. 5, B (1).** As stated above, the MPCA proposed the equation-based sulfate standard to replace the 10 mg/L sulfate standard.

231. Because the Administrative Law Judge has determined that the proposed repeal of the 10 mg/L sulfate standard is not needed or reasonable, the equation-based standard cannot be implemented as part of this rulemaking. Nonetheless, for purposes of the Agency's consideration in future rulemaking procedures, the Administrative Law Judge provides a review of the equation-based standard.

232. **Part 7050.0224, subp. 5, B (1)** contains the equation for the calculated sulfate standard as proposed by the Department. The standard is expressed as milligrams of sulfate ion per liter, as follows:[332]

$$\text{Calculated sulfated standard} = 0.0000121 \times \frac{\text{Iron}^{1.923}}{\text{Organic carbon}^{1.197}}$$

Where:

(a) organic carbon is the amount of organic matter in dry sediment. The concentration is expressed as percentage of carbon, as determined ~~using~~ <u>consistent with</u> the method for organic carbon analysis in Sampling and Analytical Methods for Wild Rice Waters, which is incorporated by reference in item E;

(b) iron is the amount of extractable iron in dry sediment. The concentration is expressed as micrograms of iron per gram of dry sediment, as determined ~~using~~ <u>consistent with</u> the method for extractable iron in Sampling and Analytical Methods for Wild Rice Waters, which is incorporated by reference in item E;

(c) sediment samples are collected ~~using~~ <u>consistent with</u> the procedures established in Sampling and Analytical Methods for Wild Rice Waters; and

[332] Ex. C at lines 7.25-7.26 and 8.1-8.17.

(d) the calculated sulfate standard is the lowest sulfate value resulting from the application of the equation to each pair of organic carbon and iron values collected and analyzed in accordance with units (a) to (c).[333]

233. Many of the commenters rejected the proposed equation-based standard. Concerns about the equation-based standard focused on the implementation of the standard and on the science underlying the equation.

1. Implementation of the Equation-based Standard

234. The equation will require measurements of iron and carbon to be taken from the sediment in each of the 1,300 or more identified wild rice waters. The data will then be inserted into the equation to calculate the equation-based sulfate standard for that particular water.[334] As stated above, the Agency estimates that it will take approximately ten years for agency staff to calculate the standards for the approximately 1,300 waters identified in the proposed rule.[335]

235. A number of commenters express concerns that it will take approximately ten years for the Agency to establish the standards under the proposed rule. Some of the concerns are that the Agency's delayed ability to implement the new standards will create confusion, and will defer enforcement of the water quality standards for wild rice waters.[336] Regulated parties assert that they lack the information they need to properly plan for compliance with the standards once they are implemented.[337] Others observe that the Agency has not enforced the 10 mg/L standard for most of the years the existing standard has been in place, and that the Agency, with its limited resources, has not shown that it will have the means to develop the 1,300 individual standards which must be calculated before they can be enforced.[338]

236. Cleveland Cliffs, which owns and operates United Taconite and Northshore Mining Company and partially owns and operates Hibbing Taconite, is a major employer on Minnesota's Iron Range. Cleveland Cliffs employs over 1,700 individuals and claims it has a total economic impact to the region of nearly $900 million.[339] In its post-hearing comments, Cleveland Cliffs asserts that the MPCA's implementation plan for the equation-based standard is unreasonable. Cleveland Cliffs contends that it is unreasonable that the MPCA cannot notify any potentially affected WWTP what revised standard will apply to it because the MPCA has not calculated sulfate standards in

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[333] Ex. C at 8.5-8.17; MPCA Rebuttal Response to Public Comments at 5.
[334] MPCA Rebuttal at 44.
[335] Ex. D at 153-154; MPCA's Response to Public Comments at 10-11 (Nov. 22, 2017).
[336] Comments of Lea Foushee, Oct. 23 Hearing Tr. at 93; (MCEA eComment) at 6-8 (Nov. 22, 2017).
[337] Comments of Chrissy Bartovich, Oct. 24 Hearing Tr. at 82.
[338] Comments of Matt Tuchel, Oct. 24 Hearing Tr. at 151-152; Paula Maccabee letter at 7-11 (Nov. 22, 2017); Dorie Reisenweber, Oct. 26 Hearing Tr. at 106; Dave Zentner, Oct 26 Hearing Tr. at 114; Allen Richardson, Oct. 26 Hearing Tr. at 129; Barbara Cournyea, Oct. 30 Hearing Tr. at 88; Sydney Evans (eComment) (Oct. 23, 2017); Jeff Williams (eComment) (Nov. 2, 2017).
[339] Letter from Rob Beranek at 1 (Nov. 22, 2017) (Beranek Letter).

individual wild rice waters under the proposed rule.[340] To demonstrate the inadequacy of the MPCA's regulatory cost analysis,[341] Cleveland Cliffs cites the MPCA's statements in the SONAR that "sulfate treatment is prohibitively expensive for many dischargers"[342] and that "companies might choose to stop operations rather than invest in the treatment needed to meet a revised standard."[343]

237. The Agency's response to comments regarding implementation of the equation-based standard is that this water quality rule is not unique:

> With any standard, resources are required to collect a sufficient amount of data for implementation. In fact, the MPCA is not convinced that the resources needed to implement the proposed standard revision exceed those needed to implement the existing 10 mg/L sulfate standard if this rulemaking were not to proceed.[344]

238. In response to commenters' concerns regarding the time needed to develop the individual sulfate limits, the Agency states: "[i]t is not uncommon for data gathering to be necessary before a standard can be fully implemented in permits."[345]

239. The Agency explains that implementing the current 10 mg/L standard takes time, both because wild rice waters have to be identified and because surface waters have to be analyzed to see whether the 10 mg/L standard is being met.[346]

240. The Agency plans to make efficient use of its resources by collecting sediment iron and carbon data to develop the new sulfate standards using its existing 10-year intensive watershed monitoring program.[347]

241. The MPCA acknowledges that, because it does not have the data available to calculate the proposed equation-based standard, it does not know "how many dischargers will be required to install additional treatment"[348] or "how many wild rice waters need a standard more stringent than the existing 10 mg/L."[349] Similarly, the Agency states in the SONAR, "[b]ecause the number of dischargers who must meet a different limit (either more or less stringent) is not known, it is difficult to quantify the change in environmental costs or benefits based on this rule revision."[350]

242. In its rebuttal comments, the MPCA states:

[340] Beranek Letter at 25-26.
[341] Beranek Letter at 23.
[342] Ex. D at 107.
[343] Ex. D at 148.
[344] MPCA Response at 10 (Nov. 22, 2017).
[345] MPCA Response, Att. 2 at 39.
[346] MPCA Response at 10-11 (Nov. 22, 2017).
[347] MPCA Response at 10 (Nov. 22, 2017).
[348] Ex. D at 144.
[349] Ex. D at 143.
[350] *Id.*

> [T]he MPCA understands that dischargers want clarity about how the standard will affect them, and we are sensitive to comments that the MPCA should strive to fully understand and articulate the implementation details of a rule prior to adopting the rule. In the case of water quality standards, the impact on permitted facilities comes through development of an effluent limit specific to a facility that ensures the permitted facility will not cause or contribute to a violation of the water quality standard. Effluent limit setting requires evaluating multiple factors as described beginning on page 96 of the SONAR.
>
> There are approximately 1000 facilities in Minnesota that hold water discharge permits. Site-specific data is required to evaluate the need for an effluent limit at each facility, and these issues are addressed in an individualized permitting process. This data is not immediately available for all facilities and it takes time to gather this data.
>
> This time and data need is inherent to the difference between water quality standards and effluent limits, and is not unique to the proposed revisions to the wild rice sulfate standard. As explained in Part 6G, pp. 96-99 of the SONAR, evaluating the need for and (as needed) determining a water quality based effluent limit requires data specific to the discharge being evaluated and the receiving water(s) being discharged to. Data needs unique to the proposed rule revisions are the sediment iron and carbon (or porewater sulfide) data.
>
> Collecting all the data necessary to calculate all effluent limits statewide would take at least ten to fifteen years, even if the sediment data were not needed. Necessary steps such as gathering five years of effluent data to evaluate and set effluent limits combined with the 10-year surface water monitoring schedule to gather surface water data cumulatively add up to the necessary data not being available for some permitted discharges until at least ten to fifteen years after rule promulgation. The MPCA does plan to prioritize data collection based on factors such as those mentioned in the EPA comments, Appendix 2 – the likelihood of sulfate impacts (because of type and location of dischargers) and permitting schedules.[351]

243. The rule, as proposed, gives regulated parties no notice of the numeric sulfate standard they will be expected to comply with, because it repeals the existing 10mg/L standard and replaces it with an equation based on variables that lack values. WWTPs will not know, until there is a final decision regarding the new water quality standards applicable to their discharge facilities, whether and to what extent they will have to treat their wastewater discharge for sulfate.

244. During the public hearings, MPCA staff distinguished between the process of setting standards and the permitting process. In her introductory remarks, Shannon Lotthammer, Division Director for the MPCA's Environmental Analysis and Outcomes

[351] MPCA Rebuttal Memo at 40.

Division, stated, "So one thing I want to point out is that the permitting process is not the same thing as establishing a water quality standard."[352] Ms. Lotthammer made similar comments during her introductory remarks at each public hearing.[353]

245. To the extent that the Agency claims that the delay in setting standards does not disadvantage the WWTPs because the permitting process can also take years, that claim is undermined by the Agency's own statements that setting water quality standards and permitting are two completely separate processes. The additional step of establishing a water quality standard before effluent limits can be established will prevent the WWTPs from planning, with any certainty, how to approach what will, at that point, be unknown compliance obligations.

246. The Administrative Law Judge finds that Part 7040.0224, subp. 5, B (1) violates Minn. R. 1400.2100.B. The equation-based sulfate standard is not rationally related to the Agency's objective. The Agency states that its objective in this proceeding is "[t]o amend the state water quality standards and the rules implementing those standards to protect wild rice from the impact of sulfate, so that wild rice can continue to be used as a food source by humans and wildlife."[354] The equation-based sulfate standard does not update the standards because, while the rule repeals the existing sulfate standard of 10 mg/L,[355] it fails to provide the values necessary to insert into the proposed equation to calculate individualized standards for each wild rice water body. Therefore, if the rule is enacted as proposed, there will be no standards when the rule becomes effective. Regulated parties will not know what standards will apply to them, or even whether any sulfate standard applies to them. Therefore, the rule as proposed will not protect wild rice from the impact of sulfate, and is not rationally related to the Agency's objective.

247. The Administrative Law Judge finds that Part 7040.0224, subp. 5, B (1) violates Minn. R. 1400.2100.E because it is unconstitutionally void for vagueness. "A rule, like a statute, is void for vagueness, if it fails to give a person of ordinary intelligence a reasonable opportunity to know what is prohibited or fails to provide sufficient standards for enforcement."[356]

248. The Administrative Law Judge finds that Part 7040.0224, subp. 5, B (1) violates 1400.2100.G. By its own terms, the equation-based sulfate standard cannot have the force and effect of law. The equation lacks values to insert in the place of the iron and organic carbon variables, and thus cannot be calculated. Therefore, the proposed equation-based sulfate standard will not have the force and effect of law within five working days after notice of its adoption and violates the requirements of Minn. Stat. § 14.38.

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[352] Comments of Shannon Lotthammer, Tr.at 49 (Oct. 23, 2017).
[353] Comments of Shannon Lotthammer, Tr.at 44-45 (Oct. 24, 2017); Tr. at 44 (Oct. 25, 2017); Tr. at 58 (Oct. 26, 2017); Tr. at 57 (Oct. 30, 2017); Tr. at 47-48 (Nov. 2, 2017).
[354] Ex. D at 1.
[355] Ex. C. at lines 7.8-7.10 (proposed Minn. R. 7050.0224, subp. 2).
[356] *In re N.P.*, 361 N.W. 2d 386, 394 (Minn. 1985), *citing Grayned v. City of Rockford*, 408 U.S. 104, 108-09, 92 S. Ct. 2294, 2298-99 (1972).

249. The Agency could cure the defects identified in this section only by conducting the sampling process necessary to provide the values for the equation proposed in the rule for each water identified in the rule, before proposing the rule. However, because the Agency cannot repeal the 10 mg/L sulfate standard for the reasons explained in section V. A., above, the Agency cannot implement the equation-based sulfate standard.

2. Science-based Objections to the Equation

250. The basis for many of the objections were disagreements with the scientific underpinnings of the equation. The science-based objections fall primarily into the following categories:

a. Disagreement with the MPCA's conclusion that sulfate harms wild rice.[357]

b. Disagreement with the MPCA's conclusion that the proposed sulfide standard will be protective of wild rice.[358]

c. Concerns that permitting higher sulfate levels will result in increased methyl mercury in fish.[359]

d. Criticisms of MPCA's research based on its decision to exclude from consideration stressors on wild rice growth other than sulfate or sulfide.[360]

e. Disagreement with the MPCA's conclusion that a level as low as 120 micrograms per liter of sulfide is the maximum level that is protective of wild rice. [361]

f. Criticisms of the MPCA's research on porewater sulfide.[362]

g. Criticisms of the MPCA's use of field data.[363]

h. Criticisms of the MPCA's choice of data sets.[364]

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[357] eComment from Tom Scott (Nov. 22, 2017); Kurt Anderson, Tr. at 116 (Oct. 23, 2017); Sen. David Tomassoni Tr. at 53-55 (Oct. 24, 2017); Larry Sutherland, Tr. at 73 (Oct. 24, 2017).

[358] eComment from John Coleman on behalf of Great Lakes Indian Fish and Wildlife Commission at 3-7 (Nov. 22, 2017); eComment from Nancy Schuldt on behalf of Fond du Lac Band of Chippewa at 26-88 (Nov. 22, 2017).

[359] Jennifer Lang, Tr. at 61 (Oct. 23, 2017); Ex. 1000, Letter from Lea Foushee on behalf of North American Water Office at 1; eComment from Nancy Schuldt on behalf of Fond du Lac Band of Chippewa at 33 (Nov. 22, 2017); Test. of Dave Zentner on behalf of Izaak Walton League, Tr. at 116-117 (Oct. 26, 2017); E- comment from Kristin Blann on behalf of The Nature Conservancy (Nov. 22, 2017).

[360] Test. of O'Neill Tedrow, Tr. at 89-95 (Oct. 24, 2017) and Ex. 1008; Test. of Chrissy Bartovich, Tr. at 80 (Oct. 24, 2017).

[361] Test. of Kurt Anderson, Tr. at 113-116 (Oct. 23, 2017); Test. of Mike Bock, Tr. at 76-80 (Oct. 23, 2017); Test. of Mike Hansel, Tr. at 82 (Oct. 23, 2017); Test. of Rob Beranek, Tr. at 90 (Oct. 23, 2017); Tom Rukavina, Tr. at 134-148 (Oct. 24, 2017); Sen. Justin Eichorn, Tr. at 59-60 (Oct. 24, 2017).

[362] Test. of Mike Hansel, Tr. at 83 (Oct. 23, 2017).

[363] Test. of Mike Bock, Tr. at 79 (Oct. 23, 2017); eComment from John Coleman on behalf of Great Lakes Indian Fish and Wildlife Commission at 3-7 (Nov. 22, 2017).

[364] Test. of Rob Beranek, Tr. at 90 (Oct. 23, 2017); eComment from John Coleman on behalf of Great Lakes Indian Fish and Wildlife Commission at 4-5 (Nov. 22, 2017).

i. Concerns that the equation assumes steady state in a water body.[365]

j. Questions about upwelling of ground water.[366]

k. Questions about the long-term effectiveness of the calculated sulfide levels.[367]

l. Concerns about error rates in the equation.[368]

m. Disagreement about the use of EC_{10} concentration standard.[369]

n. Effect of sulfate on different parts of the wild rice plant.[370]

o. Challenges to the MPCA's analysis of its research and data.[371]

p. Concerns about response to peer review criticisms.[372]

q. Issues with the structural equation model (SEM).

251. The Administrative Law Judge finds that the MPCA presented sufficient evidence to demonstrate that there is an adequate scientific basis to conclude that the proposed equation-based sulfate standard is supported by peer-reviewed science and is needed and reasonable.

252. With one notable exception, the MPCA responded to each of the arguments raised by the commenters with arguments that were supported by peer-reviewed research.[373]

253. The exception, for which the MPCA did not offer a convincing response, was raised by several parties, most notably Dr. John Pastor, one of the scientists on whose foundational research the MPCA relied for its conclusions that sulfide, rather than sulfate, is the direct cause of damage to naturally-occurring wild rice.[374] Dr. Pastor's continuing mecocosm research has indicated that, while increased iron may counter the toxicity of sulfide to wild rice seedlings in the springtime, iron sulfide plaques form and

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[365] John Pastor, PhD., Technical Review Comments on MPCA's Proposed Flexible Standard for Sulfate in Wild Rice Beds (Nov. 2017), submitted as attachment to WaterLegacy eComments (Nov. 22, 2017); eComment from Nancy Schuldt on behalf of Fond du Lac Band of Chippewa (Nov. 22, 2017); eComment from Miya Evans on behalf of Mesabi Nugget (Nov. 22, 2017).
[366] Test. of Meaghan Blair, Tr. at 117-119 (Oct. 24, 2017).
[367] John Pastor, PhD., Technical Review Comments on MPCA's Proposed Flexible Standard for Sulfate in Wild Rice Beds (Nov. 2017), submitted as attachment to WaterLegacy eComments (Nov. 22, 2017);
[368] Test. of Rob Beranek, Tr. at 91 (Oct. 23, 2017); Test. of Sen. David Tomassoni, Tr. at 55 (Oct. 24, 2017); Test. of Jack Croswell, Tr. at 99 (Oct. 24, 2017); Test. of Rep. Jason Metsa, Tr. at 102 (Oct. 24, 2017); Test. of Sen. Justin Eichorn, Tr. at 54, 61 (Oct. 25, 2017).
[369] eComment from Nancy Schuldt on behalf of Fond du Lac Band of Chippewa at 28-31 (Nov. 22, 2017); eComment from Rob Beranek at 12-13 (Nov. 22, 2017); eComment from John Coleman on behalf of Great Lakes Indian Fish and Wildlife Commission at 4-5 (Nov. 22, 2017).
[370] eComment from Rob Beranek at 6-8 (Nov. 22, 2017); Test. of Kurt Anderson, Tr. at 69-70 (Oct. 23, 2017).
[371] Test. of Mike Bock, Tr. at 78-79 (Oct. 23, 2017); Test. of Kurt Anderson, Tr. at 114 (Oct. 23, 2017).
[372] Test. of Kelsey Johnson, Tr. at 69 (Oct. 24, 2017).
[373] *See* MPCA Response Memorandum (Nov. 22, 2017) and Rebuttal Memorandum (Dec. 1, 2017).
[374] Ex. D at Ex. S-19.

precipitate on the plants' roots during the flowering and seed production phases of the wild rice life cycle. These plaques result in fewer and smaller seeds, with reduced nitrogen content, leading to extinction of the wild rice plant within 4 or 5 years at about 300 mg/L of sulfate, and greatly reducing wild rice plant population viability at lower concentrations of sulfate. Dr. Pastor hypothesizes that this occurs because the increased plaque appears to block uptake by the plant of nitrogen during the critical flowering and seed production portion of its life cycle.[375]

254. The MPCA's response to Dr. Pastor's reports about the plaque formation is, first, that "the only information the MPCA has on this issue is a four-page non-peer reviewed progress report . . . ." The MPCA also states that Dr. Pastor only presents evidence of nutrient uptake inhibition at 300 mg/L, asserting that this is "much higher than would be allowed using the MPCA's proposed equation."[376]

255. The Administrative Law Judge notes that the MPCA failed to mention the discussion of plaque formation in the peer-reviewed article which Dr. Pastor co-authored with MPCA staff, among others. The MPCA relies on this article, among others, to support the theory that increased iron in the porewater is protective against sulfide, permitting increased sulfate in the surface water.[377] This theory underlies, and is essential to, its equation-based sulfate standard. Furthermore, as discussed above, Dr. Pastor considered the effect of lower amounts of sulfate, as reported in his June 2017 article, concluding that, even at lower levels, sulfate greatly reduced plant viability when combined with increased iron.[378]

256. Nonetheless, Dr. Pastor's continued research regarding the harmful effects of increased sulfate with increased iron are not yet the subject of peer-reviewed publication. Therefore, the Administrative Law Judge finds that the MPCA demonstrated by an affirmative presentation of facts that it could rationally choose to proceed with the equation-based sulfate standard from a scientific standpoint.

257. The Administrative Law Judge finds that the MPCA's demonstration that the science underlying the equation-based standard is reasonable in that it describes a manner of calculating a sulfate level resulting in a level of sulfide in porewater protective of wild rice.

258. Nonetheless, because the MPCA failed to make an affirmative presentation of facts that implementation of the equation-based standard, or the alternate standard, would provide "for the attainment and maintenance of the water quality standards of downstream waters," the new proposed sulfate standards, even if based on science that a rational decision-maker could conclude is protective of wild rice, must be disapproved.

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[375] MPCA Response, Att. 5, N-34 at 3 (Pastor, Progress Report on Experiments on Effects of Sulfate and Sulfide on Wild Rice. June 28, 2017); eComment from John Coleman on behalf of Great Lakes Indian Fish and Wildlife Commission at 6 (Nov. 22, 2017).
[376] MPCA Rebuttal at 25.
[377] Ex. D at Ex. S-19.
[378] MPCA Response, Att. 5, N-34 at 3 (Pastor, Progress Report on Experiments on Effects of Sulfate and Sulfide on Wild Rice. June 28, 2017).

C. List at Minn. R. 7050.0471 of Proposed 4D (Naturally Occurring) Wild Rice Waters

259. **Part 7050.0471, subparts 3-9,** proposes to list the waters that will be protected as Class 4D wild rice waters. There are approximately 1,300 Minnesota water bodies in the list as proposed by the MPCA.[379]

260. In the SONAR, the MPCA explains that the current rules "apply the wild rice beneficial use to 'water used for production of wild rice,'" without identifying the waters to which the use applies.[380] The MPCA states that the case-by-case process of evaluating potential wild rice waters has posed a significant challenge to the implementation of the existing standard.[381]

261. The proposed rule is a response to a legislative mandate first passed in 2011:[382]

> (a) Upon completion of the research referenced in paragraph (d), the commissioner of the Pollution Control Agency shall initiate a process to amend Minnesota Rules, chapter 7050. The amended rule shall:
>
> > (1) address water quality standards for waters containing natural beds of wild rice, as well as for irrigation waters used for the production of wild rice;
> >
> > (2) designate each body of water, or specific portion thereof, to which wild rice water quality standards apply; and
> >
> > (3) designate the specific times of year during which the standard applies.
>
> Nothing in this paragraph shall prevent the Pollution Control Agency from applying the narrative standard for all class 2 waters established in Minnesota Rules, part 7050.0150, subpart 3.
>
> (b) "Waters containing natural beds of wild rice" means waters where wild rice occurs naturally. Before designating waters containing natural beds of wild rice as waters subject to a standard, the commissioner of the Pollution Control Agency shall establish criteria for the waters after consultation with the Department of Natural Resources, Minnesota Indian tribes, and other interested parties and after public notice and comment.

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[379] Ex. C at 11.16-11.17 and 12.7-66.8 (proposed Minn. R. 7050.0471, subps. 1 and 3-9). The original proposed list is slightly longer than the list as finally proposed by the MPCA, because the MPCA initially included waters within the boundaries of the Grand Portage and Fond du Lac reservations. The two tribes objected to inclusion of the waters within their reservations' boundaries, and the MPCA proposed to remove those waters from the proposed list. MPCA Response at 13.
[380] Ex. D at 38.
[381] *Id.*
[382] 2011 Minn. Laws, 1st Sp. Sess. ch. 2, art. 4, § 32(a)-(d).

The criteria shall include, but not be limited to, history of wild rice harvests, minimum acreage, and wild rice density.

(c) Within 30 days of the effective date of this section, the commissioner of the Pollution Control Agency must create an advisory group to provide input to the commissioner on a protocol for scientific research to assess the impacts of sulfates and other substances on the growth of wild rice, review research results, and provide other advice on the development of future rule amendments to protect wild rice. The group must include representatives of tribal governments, municipal wastewater treatment facilities, industrial dischargers, wild rice harvesters, wild rice research experts, and citizen organizations.

(d) After receiving the advice of the advisory group under paragraph (c), consultation with the commissioner of natural resources, and review of all reasonably available and applicable scientific research on water quality and other environmental impacts on the growth of wild rice, the commissioner of the Pollution Control Agency shall adopt and implement a wild rice research plan using the money appropriated to contract with appropriate scientific experts. The commissioner shall periodically review the results of the research with the commissioner of natural resources and the advisory group.

262. The proposed rule applies the sulfate standard only to waters specifically identified as Class 4D wild rice waters, which are listed in proposed Minn. R. 7050.0471.[383] Waters which are not listed in the rule are not subject to the sulfate standard.[384]

263. In determining which waters to include in the proposed rule, the MPCA relied on a number of sources, including:[385]

a. *Natural Wild Rice in Minnesota*) – A Wild Rice Study Report to the Legislature (2008) (Minnesota DNR) – MDNR Wild Rice Harvester Survey Report (2007);

b. Minnesota Wild Rice Management Workgroup List of 350 Important Wild Rice Waters (2010);

c. 1854 Treaty Authority List of wild rice waters (through March 2016 plus three additional waters since March 2016);

d. MDNR Aquatic Plant Management Database;

e. MPCA Biomonitoring Field Sites;

f. University of Minnesota/MPCA Wild Rice Study Field Survey Sites;

[383] Ex. C at li. 12.7-66.8 (proposed Minn. R. 7050.0471, subps. 3-9); Ex. D at 38.
[384] Test. of S. Lotthammer, Nov. 2, 2017 Tr. at 92.
[385] Ex. D at 42.

g. Minnesota Biological Survey Database;

h. MPCA Call for Data;

i. Permittee Monitoring Reports;

j. WR Waters (7050.0470);

k. Waters identified by MDNR in 2015 as wild rice waters; and

l. Waters Identified through MPCA Review of Various Water Surveys.

264. The MPCA found that it could not determine that certain waters were Class 4D wild rice waters based solely on the information it received from these sources. In some cases, the MPCA could not identify the location of the water from the information provided. In other cases, the MPCA could not correlate the location of a river or stream with a specific WID.[386]

265. The MPCA acknowledges that the MDNR's 2008 report "is widely considered the most comprehensive source of information regarding where rice may be found in Minnesota, and [the DNR report] was extensively reviewed."[387] The MDNR report represents the work of experts in the field from state, tribal, and federal governments, along with academia and the private sector.[388] However, the MPCA found the MDNR list insufficient on its face because it consolidated certain information on the location of natural wild rice stands, making it difficult for the MPCA to define the density or acreage of some rice stands. In addition, according to the MPCA, the MDNR report contains limited information about streams with wild rice.[389]

266. As part of this rulemaking, at proposed Minn. R. 7050.0471, subp. 2, the MPCA is proposing "[a]cceptable types of evidence"[390] that can be used in future rulemakings to add wild rice water bodies. The evidence must

> support a demonstration that the wild rice beneficial use exists or has existed on or after November 28, 1975, in the water body, such as by showing a history of human harvest or use of the grain as food for wildlife or by showing that a cumulative total of at least two acres of wild rice are present.[391]

267. The evidence the MPCA lists as acceptable evidence in its proposed Minn. R. 7050.0471, subp. 2, includes:

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[386] Ex. D at 45.
[387] *Id.*
[388] *Id.*
[389] Ex. D at 46.
[390] Ex. C at line11.24 (proposed Minn. R. 7050.0471, subp. 2).
[391] Ex. C at lines11.21-11.24 (proposed Minn. R. 7050.0471, subp. 2) and MPCA Rebuttal at 8. The reference to the Rebuttal reflects some fairly minor proposed changes to the language in subpart 2 which the MPCA set forth in its December 1, 2017 Rebuttal Memorandum.

A. written or oral histories that meet the criteria of validity, reliability, and consistency;

B. written records, such as harvest records;

C. photographs, aerial surveys, or field surveys; or

D. other quantitative or qualitative information that provides a reasonable basis to conclude that the wild rice beneficial use exists.[392]

268. The MPCA found the MDNR report sufficiently reliable to presume that water bodies included in the report "with wild rice acreage estimates of two acres or more meet the beneficial use."[393] For waters in the MDNR report with fewer than two acre estimates, the MPCA looked to other sources to identify "high quality, harvestable wild rice waters."[394]

269. Several commenters maintained that, in rejecting waters listed in MNDR's 2008 report and in the 1854 Treaty Authority's list, the MPCA is removing a designated use from waters that already had wild rice as an "existing use" under federal law.[395] Under federal law, states are delegated authority to establish "designated uses" of waters and to set water quality standards to protect the designated uses.[396] According to these commenters, this action by the MPCA violates the CWA's prohibition against removing a designated use if the designated use is an "existing use[], as defined in [40 C.F.R.] § 131.3, unless a use requiring more stringent criteria is added . . . ."[397]

270. A number of commenters object to the MPCA's proposed list of Class 4D wild rice waters.[398] WaterLegacy and others assert that the MPCA's use of the term "beneficial use" with regard to the classification of wild rice waters is an imprecise and confusing use of a term that is not defined in either existing or proposed rules.[399]

271. WaterLegacy argues that the MPCA's proposed list of Class 4D waters is "arbitrary and exclusive" and will "de-list wild rice waters identified by Minnesota state agencies, including waters downstream of existing and potential mining discharge."[400]

272. WaterLegacy points out that the existing rules, at Minn. R. 7050.0220, subps. 3a, 4a, 5a, and 6a, apply the current 10 mg/L sulfate standard where wild rice is

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[392] Ex. C at lines 12.1-12.6 (proposed Minn. R. 7050.0471, subp. 2).
[393] Ex. D at 46.
[394] Ex. D at 46.
[395] WaterLegacy eComment at 30. Hearing Ex. 1020, Written Comments of Dennis Morrison on behalf of Grand Portage Band of Chippewa (Grand Portage Comments) at 8 (Oct. 24, 2017). *See* eComment from Nancy Schuldt on behalf of Fond du Lac Band at 21-23 (Nov. 22, 2017).
[396] WaterLegacy eComment at 31. 40 C.F.R. § 131.3.
[397] 40 C.F.R. § 131.11(h)(1).
[398] eComment of Nancy Schuldt on behalf of Fond du Lac Band at 8-25 (Nov. 22, 2017), WaterLegacy eComment at 30-40; Hearing Ex. 1020, Grand Portage Comments at 4-8 (Oct. 24, 2017). eComment of Minnesota Center for Environmental Advocacy (MCEA eComment) at 2-5 (Nov. 22, 2017).
[399] WaterLegacy eComment at 30. Fond du Lac eComment at 20-21.
[400] WaterLegacy eComment at 30.

"present." Minn. R. 7050.0224, subp. 1, protects wild rice as a Class 4 water, "for wildlife designated public uses and benefits," recognizing it as a "food source for wildlife and humans." In addition, WaterLegacy cites Minn. R. 7050.0224, subp. 2, which limits sulfate to 10 mg/L in "water used for production of wild rice . . . ."[401]

273. WaterLegacy maintains that, while rescinding existing Minnesota rules that protect waters used for the production of wild rice and where wild rice is present, the proposed rules create a list of protected waters that excludes "many known and previously designated wild rice waters."[402]

274. WaterLegacy claims that the MPCA proposes to delist designated wild rice waters previously identified in consultation with the MDNR and Minnesota tribes. WaterLegacy contends that this delisting violates the CWA's prohibition on removing existing uses that have been attained at any time since November 28, 1975. In addition, according to WaterLegacy, the MPCA's proposed list fails to protect wild rice waters generally, and particularly fails to protect wild rice waters downstream of existing and proposed WWTPs.[403]

275. Other commenters disagree with the MPCA's proposed list of Class 4D waters for distinctly different reasons. Cleveland Cliffs focuses on the 2011 legislative requirement that the MPCA must consult "with the Department of Natural Resources, the Minnesota Indian tribes, and other interested parties and after public notice and comment"[404] to establish criteria for wild rice waters before the Agency designates such waters.[405] Cleveland Cliffs argues that this legislative language required the MPCA to engage in rulemaking to establish criteria for designating wild rice waters before it could designate such waters.[406]

276. In addition, Cleveland Cliffs contends that MPCA violated the language in the 2011 law requiring that "[t]he criteria shall include, but not be limited to, history of wild rice harvests, minimum acreage, and wild rice density" when it included waters in the Class 4D wild rice waters list, without regard to their failure to meet the MPCA's stated minimum acreage requirement or a known density of wild rice.[407]

277. U.S. Steel Corporation asserts the MPCA's listing of waters violates the 2011 legislation because the list does not contain information about wild rice density.[408]

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[401] WaterLegacy eComment at 31.
[402] WaterLegacy eComment at 31. eComment of Nancy Schuldt on behalf of Fond du Lac Band at 8-25 (Nov. 22, 2017), Hearing Ex. 1020, Grand Portage Comments at 4-8 (Oct. 24, 2017).
[403] WaterLegacy eComment at 31.
[404] 2011 Minn. Laws, First Sp. Sess., Ch. 2, Art. 4(b).
[405] eComment from Rob Beranek on behalf of Cleveland Cliffs (Cleveland Cliffs eComment) at 16 (Nov. 22, 2017).
[406] Cleveland Cliffs eComment at 16.
[407] Cleveland Cliffs eComment at 17.
[408] Letter from Lawrence Sutherland on behalf of U.S. Steel (U.S. Steel letter) at 37-38 (Nov. 22, 2017).

278. The MPCA maintains that, for this rulemaking, it used a "weight-of-evidence approach as it reviewed the corroborating evidence from sources to determine if the wild rice beneficial use exists or has existed in a water." Further, the MPCA states:[409]

> Many of the supporting documents used in the MPCA's review do not contain complete information about the density or acreage of wild rice. Therefore, MPCA scientists used their best professional judgement to determine if the available information provided reasonable evidence that the water demonstrated the wild rice beneficial use (or had done so since November 28, 1975).
>
> For example, where a corroborating source qualitatively identified a water as having "lush" stands of wild rice, the MPCA considered that it met the beneficial use as a wild rice water. Because no single source provided comprehensive or consistent data about the presence of wild rice, the MPCA was not able to apply a strict criterion for what information did or did not reasonably characterize a wild rice water. The MPCA reasonably made the best use of the information from all sources as a basis for professional judgement.

279. In considering possible wild rice waters for inclusion in the list at 7050.0442, subp. 2, the MPCA did not explicitly apply the evidentiary expectations it proposes in Minn. R. 7050.0471, subp. 2. Nor did the MPCA explain why it rejected each proposed specific water that the MPCA excluded from the list in the proposed rule.

280. The MPCA acknowledges that it may not have included all of the waters where the wild rice use has existed since November 28, 1975 in the list proposed at Minn. R. 7050.0471.[410]

281. In the SONAR, the MPCA addresses the questions of whether it has included all wild rice waters with an existing use, stating that the Agency

> acknowledges that the wild rice waters in this rulemaking may not include every water in Minnesota where the wild rice beneficial use has existed since November 28, 1975. Although the MPCA has made reasonable use of the information available to develop and justify the proposed list of Class 4D wild rice waters, there are additional waters that may be wild rice waters but for which there is not yet sufficient information to determine that the beneficial use is demonstrated.[411]

282. In response to the commenters who believe that the list of wild rice waters is under-inclusive, the MPCA responds that "it is likely that not all wild rice waters have

[409] Ex. D at 47.
[410] Ex. D at 58.
[411] *Id.*

been identified and is proposing a specific process for future identification of wild rice waters" at proposed Minn. R. 7050.0471, subp. 2.[412]

283. In its December 1, 2017 Rebuttal memorandum, the MPCA states that it "does not agree that the presence (or evidence of past presence) of any amount of wild rice is indicative that the Class 4D wild rice beneficial use is an existing use in that water body."[413] In the same document, the MPCA states, with no affirmative presentation of facts to support the statement, that it "has identified those waters where wild rice is an existing use as wild rice waters. Some of those waters may not have wild rice today, but under the CWA must be protected if the use has existed since November 28, 1975."[414]

284. The 2011 legislature required the MPCA to engage in rulemaking only after completing significant research on "water quality and other environmental impacts on the growth of wild rice . . . ."[415] The amended rule was required to:

> (1) address water quality standards for waters containing natural beds of wild rice, as well as for irrigation waters used for the production of wild rice;
>
> (2) designate each body of water, or specific portion thereof, to which wild rice water quality standards apply; and
>
> (3) designate the specific times of year during which the standard applies.[416]

285. The MPCA was not authorized to engage in separate preliminary rulemaking to establish criteria for designating wild rice water bodies.[417]

286. The Administrative Law Judge concludes that the plain language in 2011 Minn. Laws 1st Spec. Sess. ch. 2, art. 4, § 32(b), requires the MPCA to consider the criteria listed in the 2011 Session Law, but does not require that any one of the criteria be determinative. Therefore, the Administrative Law Judge concludes that there is no minimum wild rice acreage or density required for the MPCA to determine that a water body is included in the listing of wild rice water bodies.

287. The Administrative Law Judge concludes that the MPCA's proposed list of wild rice waters at Minn. R. 7050.0471, subps. 3 through 9 is defective because it fails to include all waters previously identified by the MDNR and federally recognized Indian tribes as waters where wild rice was an existing use since November 28, 1975. The MPCA's approach, in using a "weight-of-evidence" standard to identify waters such as those with "lush stands of wild rice" that would meet its criteria for "the beneficial use as a wild rice water" violates federal law, which prohibits removing an existing use for wildlife

412 MPCA Response Memo at 13.
413 MPCA Rebuttal Memo at 12.
414 MPCA Rebuttal Memo at 13.
415 2011 Minn. Laws 1st Spec. Sess. ch. 2, art. 4(d).
416 2011 Minn. Laws 1st Spec. Sess. ch. 2, art. 4(a).
417 2011 Minn. Laws 1st Spec. Sess. ch. 2, art. 4.

unless more stringent criteria are applied.[418] Because Minn. R. 7050.0471 violates federal law, it fails to meet the requirements of Minn. R. 1400.2100.D and is defective.

288. The MPCA could cure the defect at Minn. R. 7050.0471 by amending the listed waters to include all waters previously identified by the MDNR and federally recognized Indian tribes as waters where wild rice was an existing use since November 28, 1975. The Administrative Law Judge concludes that adding the wild rice waters as described in this paragraph would not constitute modification that makes the rule substantially different than the rule as originally proposed based on the standards set forth at Minn. Stat. § 14.05, subd. 2.

D. Other Rule Parts Not Approved

287. In addition to the disapproved proposed rules and proposed changes to the proposed rules discussed above, there are several other rule parts which the Administrative Law Judge finds do not meet the legal requirements for rulemaking. Because of the significant underlying problems with these proposed rules overall, the following rules, and the standards they violate, are listed without additional discussion for the purpose of putting the Agency on notice should it reconsider this rulemaking in the future:

a. Minn. R. 7050.0224, 5, C. Site-specific sulfate standard. The proposed rule is disapproved based on a violation of Minn. R. 1400.2100.D. No process is provided for the commissioner to determine that "the beneficial use is not harmed." The criteria included in the rule, "reliable and representative data characterizing the health and viability of the wild rice . . . ," are vague and grant the commissioner discretion in excess of statutory authority to determine whether to substitute the existing standard.

b. Minn. R. 7050.0224, subp. 6. This proposed rule concerns the existing narrative standard for Class 4D [WR] waters currently at Minn. R. 7050.0224, subp. 1. The narrative standard applied to the only other wild rice waters previously identified in rule. The proposed rule moves the narrative standard to Minn. R. 7050.0224, subp. 6, and explicitly restricts application of the narrative standard to the wild rice waters originally identified in the rule, at Minn. R. 7050.0470, excluding the wild rice waters listed at 7050.0471 from the scope of its protections.[419] The Administrative Law Judge disapproves Minn. R. 7050.0224, subp. 6, to the extent that it does not apply to all wild rice waters. The MPCA provided no basis to distinguish between protections needed for the waters listed at Minn. R. 7050.0470 and those listed at Minn. R. 7050.0471. Therefore, to apply the narrative standard only to those listed at 7050.0470 violates Minn.

[418] 40 C.F.R. § 131.11(h)(1).
[419] Test. of Nancy Schuldt, Oct. 26, 2017 Tr. at 95-96.

R. 1400.2100.B because the record does not demonstrate the reasonableness of the rule.

E. Technical Errors

288. The language included in the following proposed rules appears to amend version of subparts which are no longer in effect. These are technical errors rather than legal defects. The Agency may cure the errors by amending the proposed language to propose changes to the current versions of the rule:

a. Minn. R. 7050.0220, subp. 5a

b. Minn. R. 7050.0470, subps. 1 through 9

F. Changes to the Proposed Rule

289. Following the public hearings, in its Response and Rebuttal Comments, the MPCA makes a number of proposed changes to the proposed rule. Because the Agency suggested changes to the proposed rule language after the date it was originally published in the *State Register*, it is necessary for the Administrative Law Judge to determine if this new language is substantially different from that which was originally proposed.

290. The standards to determine whether any changes to proposed rules create a substantially different rule are found in Minn. Stat. § 14.05, subd. 2(b). The statute specifies that a modification does not make a proposed rule substantially different if:

> (1) the differences are within the scope of the matter announced . . . in the notice of hearing and are in character with the issues raised in that notice;
>
> (2) the differences are a logical outgrowth of the contents of the . . . notice of hearing, and the comments submitted in response to the notice; and
>
> (3) the notice of hearing provided fair warning that the outcome of that rulemaking proceeding could be the rule in question.

291. In reaching a determination regarding whether modifications result in a rule that is substantially different, the Administrative Law Judge is to consider whether:

> (1) persons who will be affected by the rule should have understood that the rulemaking proceeding . . . could affect their interests;
>
> (2) the subject matter of the rule or issues determined by the rule are different from the subject matter or issues contained in the . . . notice of hearing; and

> (3) the effects of the rule differ from the effects of the proposed rule contained in the . . . notice of hearing.[420]

292. To the extent that they are not approved, the MPCA's suggested language changes are described in the following paragraphs.

1. Changes That Are Not Approved

(1) Minn. R. 7050.0224, subp. 5, B (1)

293. The EPA comments that "it is not possible to say with certainty," regarding the equation-based sulfate standard set forth at Minn. R. 7050.0224, subp. 5, B (1), "that the relationships between sediment pore water sulfide and total organic carbon and total extractable iron used to calculate protective water column sulfate concentrations remain valid outside the range of the data used to develop the criterion."[421]

294. Commenter Nathan Johnson similarly observes:

> It is possible that a limitation on the model predictions could be imposed . . . which would not allow high sulfate concentrations to be calculated by the model if the statistical strength of the model's predictive abilities towards the edge of the domains is limited. Using the proposed equation to extrapolate to very high surface water sulfate concentrations (higher than those observed commonly in the observational dataset) represents a potential instance of applying the model beyond an appropriate domain of applicability. The same could be said for sediment carbon and iron.[422]

295. In response to these concerns, the Agency proposes to amend the equation for the numeric sulfate standard, "by setting constraints on the implementation of the equation that would ensure that the equation is protective."[423] The MPCA proposes to set these constraints so "that input values of carbon cannot be lower than the minimum value in the range of data used to develop the equation, because carbon enhances sulfide production." Similarly, under the MPCA's proposal the "input values of iron cannot be higher than the maximum value in the range of data used to develop the equation because iron removes sulfide from porewater."[424] The MPCA provides no specific values for its minimum carbon or maximum iron values.

296. As part of its response to the concerns raised by Mr. Johnson and the EPA about setting constraints consistent with the models, the MPCA proposes "that output

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[420] *See* Minn. Stat. § 14.05, subd. 2.
[421] EPA Comments at 6.
[422] Nathan Johnson Comment at 1-2 (eComment Nov. 22, 2017).
[423] MPCA Rebuttal Memo at 3.
[424] *Id.*

values of sulfate cannot be higher than the maximum value in the range of data used to develop the equation, 838 mg/L."[425]

297. The MPCA asserts that the constraint on sulfate is appropriate "because observed sulfate levels were an input to the development of the equation, and the equation is of unknown validity outside the range used to develop it."[426] The Agency believes that this approach "will help assuage commenter concerns about exceedingly high sulfate levels that may result from the equation." However, the Agency realizes that imposing these limits may also raise concerns for other commenters.[427]

298. The Administrative Law Judge finds that, to the extent the equation-based standard remains a viable part of this rule, the sulfate cap is needed and reasonable and would not constitute a modification that makes the rule substantially different than the rule as originally proposed based on the standards set forth at Minn. Stat. § 14.05, subd. 2.

299. The Administrative Law Judge finds that, to the extent the equation-based standard remains a viable part of this rule, unspecified minimum carbon or maximum iron input values for the equation-based standard are not reasonable. They are unconstitutionally vague and violate the standards of Minn. R. 1400.2100.E.

(2) Minn. R. 7050.0224, subps. 5.E and F

300. In Minn. R. 7050.0224, subp. 5, E, the MPCA proposes to incorporate Sampling and Analytical Methods for Wild Rice Methods. As the name indicates, this document sets out methods for collecting and analyzing wild rice water sediment samples.

301. The MPCA explains that a "primary goal of incorporating the sampling methodology into the rule was to provide clarity so that others can conduct sampling and to ensure that the sampling, which is foundational to the developing of a numeric sulfate standard, is completed consistently and accurately." Because this goal is important to the MPCA, it plans to incorporate any changes to the methods incorporated by reference through rulemaking.[428]

302. Commenter Norman Miranda notes:

> The dilemma I see for utility managers regardless of whatever protective limit is adopted is to convince their respective City Council and rate payers that a very limited number of samples and sample locations yielded adequate and conclusive data to justify a significant capital investment. … I believe MPCA is on the right track offering a consistent sampling regime of a fixed number of samples at a prescribed location array. … I believe at least two sampling events conducted in appropriate but separate locations

[425] MPCA Rebuttal Memo at 4.
[426] *Id.*
[427] *Id.*
[428] MPCA Rebuttal at 5.

need to be conducted by the MPCA. I realize the MPCA has limited financial resources to conduct extensive sampling and analysis in multiple locations for every discharger. However, to offer some flexibility, I think the Rule should include a provision that municipalities/permitted facilities be given the opportunity to conduct additional sampling/testing beyond two events that would be required under the Rule. The ground rules for this additional sampling could include:

- Regulated party must submit a plan for MPCA approval showing proposed alternative sample locations.
- Sampling must follow MPCA "Sampling and Analytical Methods" and be conducted by approved lab/consultant.
- Sampling/testing to be done before or concurrent with MPCA sampling as not to delay MPCA's schedule.
- Cost of additional sampling events to be the responsibility of the Regulated Party.

In return I believe there should be language where the MPCA will give the Regulated Party's data set the same weight if all conditions are followed.[429]

303. The MPCA agrees that some flexibility may be needed as more sampling occurs, and appreciates that many permittees want to do more sampling, and perhaps sooner, than the MPCA plans to undertake. While the MPCA plans to do most sampling with its own resources, it plans to allow the use of data submitted by other parties (whether regulated parties or others) if the data was collected in accordance with the MPCA's requirements.[430]

304. The MPCA is proposing to amend Minn. R. 7050.0224, subp. 5, B (1) (a) - (c) at lines 8.6, 8.11, and 8.13, to require that analysis and sampling happen consistent with the methods that are incorporated by reference, rather than requiring exact adherence to the methods. This will allow some flexibility if, for example, an analytical method is slightly updated. The MPCA is also proposing to add language that the sediment samples are collected in areas where wild rice is growing or may grow within the wild rice water. The proposed rule language would read:[431]

Where:

(a) organic carbon is the amount of organic matter in dry sediment. The concentration is expressed as percentage of carbon, as determined ~~using~~ consistent with the method for organic carbon analysis in Sampling and Analytical Methods for Wild Rice Waters, which is incorporated by reference in item E;

[429] eComment of Norman Miranda (Nov. 15, 2017).
[430] MPCA Rebuttal at 4-5.
[431] MPCA Rebuttal at 5.

(b) iron is the amount of extractable iron in dry sediment. The 8.10 concentration is expressed as micrograms of iron per gram of dry sediment, as determined ~~using~~ consistent with the method for extractable iron in Sampling and Analytical Methods for Wild Rice Waters;

(c) sediment samples are collected ~~using~~ consistent with the procedures established in 8.14 Sampling and Analytical Methods for Wild Rice Waters;

305. The MPCA is proposing additional related changes, likely to be codified as rule part 7050.0224, subp. 5, E, which would read as follows:[432]

For each wild rice water identified in 7050.0471, the methods for selecting sediment sampling sites and for collecting, processing and analyzing sediment samples must be documented, including all QA/QC. Where methods are used that are consistent with but different from those specified in Sampling and Analytical Methods for Wild Rice Waters, the intended methods and how they will be used to calculate the numeric sulfate standard must be submitted to and approved by the Commissioner prior to sample collection.

306. The MPCA believes these changes will allow parties wishing to undertake sampling of wild rice waters needed to calculate a protective sulfate value the flexibility to do so, while ensuring necessary consistency. The MPCA intends that sampling by non-Agency personnel could occur at any time, even if MPCA sampling has already occurred. In those cases, the MPCA states, "the intended methods should describe how both the MPCA gathered data and any additional data will be used in concert." The MPCA intends that, in all cases, all sampling be documented.[433]

307. The Administrative Law Judge disapproves the MPCA's proposed language requiring prior approval of data collection methods to plan for allowing non-Agency personnel to engage in sampling and data collection of wild rice waters because the MPCA provides no criteria for approving alternate sampling plans. This delegates discretion to the Agency beyond what is allowed by law, in violation of Minn. R. 1400.2100.D.[434]

308. The MPCA states in its Rebuttal memorandum, but nowhere in the rule, that the MPCA will make the final determination about the numeric sulfate standard for any given water body.[435]

309. The MPCA includes no process and no criteria in the proposed rule language for the Agency to determine which of possible competing numeric sulfate

[432] MPCA Rebuttal at 5. The incorporation by reference would then be renumbered as Subp. 5, F. MPCA Rebuttal at 5.
[433] MPCA Rebuttal at 5.
[434] *See Lee v. Delmont*, 228 Minn. 101, 113, 36 N.W.2d 530, 538 (1949); *accord Anderson v. Commissioner of Highways*, 126 N.W.2d 778, 780 (Minn. 1964).
[435] MPCA Rebuttal at 5.

standards will apply in a given wild rice water. While the Administrative Law Judge does not disapprove incorporating by reference into the rule the Sampling and Analytical Methods for Wild Rice Waters, the Agency's larger scheme of permitting multiple players to propose standards with no written, transparent process or criteria for choosing among those standards exceeds the Agency's authority.

310. The Administrative Law Judge disapproves the MPCA's proposed language because, by granting the Agency authority to choose which standard to apply with no criteria in rule, the rule grants the Agency discretion beyond what is allowed by law in violation of Minn. R. 1400.2100.D.[436]

(3) Minn. R. 7050.0224, subp. 5, B (2)

311. The MPCA received several comments about the Alternate Standard set forth at Minn. R. 7050.0224, subp. 5, B (2). This alternate standard procedure develops a replicable approach to developing an alternate standard for areas where the equation does not fit – where there is high sulfate but low porewater sulfide. A number of commenters objected to the standard for a variety of reasons. [437]

312. In its Rebuttal, the MPCA proposes to revise Minn. R. 7050.0224, subp. 5, B (2), as follows:[438]

> The commissioner may establish an alternate sulfate standard for a wild rice water when the ~~ambient~~ <u>surface water</u> sulfate concentration is above the calculated sulfate standard and data demonstrates that sulfide concentrations in pore water are 120 micrograms per liter or less. Data must be gathered ~~using~~ <u>consistent with</u> the procedures specified in Sampling and Analytical Methods for Wild Rice Waters, which is incorporated by reference in item E. The alternate sulfate standard ~~established must be either the annual average sulfate concentration in the ambient water or a level of sulfate the commissioner has determined will maintain the sulfide concentrations in pore water at or below 120 micrograms per liter.~~ <u>is determined by calculating the ratio of measured sulfide, in micrograms per liter, to 120 micrograms per liter and applying that ratio to the surface water sulfate as follows</u> $\underline{\frac{120}{porewater\ sulfate} * \textit{surface water sulfate}}$.

313. The Administrative Law Judge disapproves of Minn. R. 7050.0224, subp. 5, B (2), because, as with the repeal of the 10 mg/L sulfate standard, the MPCA has failed to make an affirmative presentation of facts demonstrating that, in establishing an Alternative Standard which would allow increased levels of sulfate in wild rice waters, it

[436] *See Lee v. Delmont*, 228 Minn. 101, 113, 36 N.W.2d 530, 538 (1949); *accord Anderson v. Commissioner of Highways*, 126 N.W.2d 778, 780 (Minn. 1964).
[437] Test. of P. Maccabee, Oct. 23, 2017 Tr. at 104; eComment of Kurt Anderson on behalf of Minnesota Power (Minnesota Power eComment) at 18-19 (Nov. 21, 2017); eComment of Chrissy Bartovich and Lawrence Sutherland on behalf of U.S. Steel (U.S. Steel eComment) at 34 (Nov. 22, 2017).
[438] MPCA Rebuttal at 7.

is protecting the public health or welfare, enhancing the quality of water, and ensuring the proposed water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters, as required by federal and state law. Therefore, the Administrative Law Judge concludes that the proposed Alternative Standard violates Minn. R. 1400.2100.D, because it conflicts with other applicable law.

(4) Part 7050.0130, subp. 6a

314. **Part 7050.0130, subp. 6a** defines a "water identification number" or "WID" as a unique identifier used by the agency to identify a surface water.[439] Mining Minnesota objects to the MPCA's use of WIDs to describe the identified wild rice waters at proposed Minn. R. 7050.0471.[440] The basis for Mining Minnesota's objection is that the WIDs fail to describe the areas where wild rice beds are located with sufficient specificity, resulting in a list that designates waters with no wild rice, or no history of wild rice presence, as wild rice waters.[441] The result of the MPCA's use of what is essentially an administrative convenience, according to Mining Minnesota, is an overbroad regulation that "will inflict significant hardship on industry, companies, and private citizens across the state in a manner that is contrary to legislative intent."[442]

315. The MPCA disagrees with this criticism, stating that "WIDs are an important component of the MPCA's water programs."[443] The MPCA notes that the EPA agrees with the MPCA's assessment that rulemaking is required to make changes to a WID number that would entirely remove the WID from a particular water, or from a subpart of the water already identified as a wild rice water.[444] The MPCA contends that it is logical to apply the standard to the entire WID for lakes, wetlands, and reservoirs, because in these situations, the water generally "moves and mixes throughout the waterbody."[445] The MPCA notes that, in those cases where part of a lake or reservoir, such as a bay, is hydrologically isolated, the MPCA has a mechanism for assigning a separate WID to the hydrologically separate part of the waterbody.[446]

316. While the MPCA recognizes "that there may [be] cases where the presence of wild rice within a large or very diverse WID does not justify the application of the standard to the entire WID" the MPCA suggests that, in those cases, it "can split the WID and conduct a use and value determination . . . to remove the wild rice beneficial use from the WID that does not support the beneficial use."

317. The Administrative Law Judge concludes that the MPCA's proposal to "split the WID and conduct a use and value determination . . . to remove the wild rice beneficial

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[439] Ex. C at lines 1.16-1.22.
[440] Letter from Frank Ongaro on behalf of Mining Minnesota (Mining Minnesota letter) at 3 (Nov. 22, 2017).
[441] Mining Minnesota letter at 3-4.
[442] Mining Minnesota letter at 7.
[443] MPCA Rebuttal at 14.
[444] *Id.*
[445] *Id.*
[446] *Id.*

use from the WID that does not support the beneficial use" at some time in the future would violate the federal prohibition on removing an existing use.[447] This proposal is not currently in the proposed rule and the Administrative Law Judge does not approve including it.

2. Changes That Are Approved

318. The MPCA proposes changes to a number of proposed rules in its Response and Rebuttal memoranda. Should the MPCA proceed with revisions to the overall rule, the Administrative Law Judge concludes that the MPCA's proposed changes to the rule parts listed below would be needed and reasonable and would not constitute modifications that make the rule substantially different than the rule as originally proposed based on the standards set forth at Minn. Stat. § 14.05, subd. 2:

a. Minn. R. 7050.0130, subp. 2b[448]

b. Minn. R. 7050.0130, subp. 6c[449]

c. Minn. R. 7050.0220, subps. 1, B (1-4), 3a, 4a, 5a and 6a[450]

d. Minn. R. 7050.0220, subp. 3a[451]

e. Minn. R. 7050.0224, subp. 5, B[452]

f. Minn. R. 7050.0471, subp. 3[453]

g. Minn. R. 7050.0471, subps. 6 and 8[454]

h. Minn. R. 7050.0471, subp. 8[455]

i. Minn. R. 7053.0406, subp. 1[456]

j. Minn. R. 7053.0406, subp. 2[457]

k. Minn. R. 7053.0406, subp. 2, B[458]

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[447] 40 C.F.R. § 131.3 (e).
[448] MPCA Rebuttal at 2.
[449] MPCA Rebuttal at 3. The MPCA Rebuttal mistakenly refers to the rule part in question as part 7050.0220, subp. 6c.
[450] MPCA Rebuttal at 2.
[451] MPCA Rebuttal at 2-3.
[452] Rebuttal at 7. EPA Comments at 5.
[453] MPCA Response to Comments at 13.
[454] MPCA Response to Comments at 14.
[455] This WID location tool is intended to be supplementary to the Tableau interactive mapping tool presently available on the MPCA wild rice web page http://www.pca.state.mn.us/water/protectingwild-rice-waters. MPCA Response to Comments at 14.
[456] MPCA Response to Comments at 14-15.
[457] MPCA Response at 15. Minn. R. 7050.0190 contains provides that a variances from a water quality standard includes a variances for its related WQBEL. Environmental Protection Agency Comments (EPA Comments) at 15 (Nov. 22, 2017).
[458] MPCA Response at 15.

G. Additional Findings

319. The Administrative Law Judge finds that the Agency has demonstrated by an affirmative presentation of facts the need for and reasonableness of all rule provisions that are not specifically addressed in this Report.

320. Further, the Administrative Law Judge finds that all provisions that are not specifically addressed in this Report are authorized by statute, and that, to the extent they are severable from the defective rules, there are no other defects that would bar the adoption of those rules.

321. Because some of the defects in the rule are defects in foundational portions of the proposed rules, the Administrative Law Judge advises the Agency against resubmitting the rule for approval of changes unless it addresses the defects in the wild rice water sulfate standard and the list of wild rice waters. However, the list of wild rice waters proposed at Minn. R. 7050.0471 is severable from the wild rice water sulfate standard. Therefore, the Administrative Law Judge finds that the Agency could choose to resubmit the proposed list of wild rice waters separately from the wild rice water sulfate standard.

Based upon the Findings of Fact and the contents of the rulemaking record, the Administrative Law Judge makes the following:

CONCLUSIONS OF LAW

1. The Agency gave proper notice of the hearing in this matter, pursuant to Minn. Stat. §14.14, subd. 1(a).

2. The Agency has failed to fulfill the procedural requirements of Minn. Stat. §§ 14.127 and 14.131, paragraphs 1, 5, 7, and 8. All other procedural requirements of rule and law have been satisfied for both the proposed repeal of the 10 mg/L sulfate standard and the adoption of the proposed rules.

3. The following proposed rules are **DISAPPROVED:**

   a. Proposed **Minn. R. 7050.0220, subps. 3a, 4a, 5a, 6a**: deleting reference to 10mg/L sulfate wild rice water standard violates Minn. R. 1400.2100 B and D.

   b. Proposed **Minn. R. 7050.0224, subp. 2**: repealing 10mg/L sulfate wild rice water standard violates Minn. R. 1400.2100.B and D.

   c. Proposed **Minn. R. 7050.0224, subp. 5, A**: to the extent the language incorporates the standard in items B (1) and (2) the language violates Minn. Stat. § 14.38 and Minn. R. 1400.2100.B and G.

d. Proposed **Minn. R. 7050.0224, subp. 5, A**: to the extent the language incorporates the standard in item C, the language violates Minn. R. 1400.2100.D.

e. Proposed **Minn. R. 7050.0224, subp. 5, B (1)**: violates Minn. R. 14.38 and Minn. R. 1400.2100.B, G, and E.

f. Proposed **Minn. R. 7050.0224, subp. 5, C**: violates Minn. R. 1400.2100.D.

g. Proposed **Minn. R. 7050.0224, subp. 6**: need or reasonableness for rule not established. Failure to distinguish between [WR], which are provided the additional protection of the narrative standard, and other wild rice waters listed at Minn. R. 7050.0471 violates 1400.2100.B.

h. Proposed **Minn. R. 7050.0471, subps. 3 through 9**: violates Minn. R. 1400.2100.D and E.

4. The following changes to rules as originally proposed are **DISAPPROVED:**

a. Proposed changes to **Minn. R. 7050.0224, subp. 5, B (1):** violates Minn. R. 1400.2100.E.

b. Proposed changed to **Minn. R. 7050.0224, subps. 5, E and F:** violate Minn. R. 1400.2100.D.

c. Proposed changes to **Minn. R. 7050.0224, subp. 5, B (2):** violates Minn. R. 1400.2100.D.

5. The Administrative Law Judge has suggested actions to correct some of the defects cited herein and to improve the clarity of the proposed rules should they be resubmitted for approval in the future.

6. Due to the disapproval of the proposed rules and the repeal of the existing rules, this Report has been submitted to the Chief Administrative Law Judge for her approval pursuant to Minn. Stat. § 14.15, subd. 3.

7. Any Findings that might properly be termed Conclusions, and any Conclusions that might properly be termed Findings, are hereby adopted as such.

8. A Finding or Conclusion of need and reasonableness with regard to any particular rule subsection does not preclude and should not discourage the Agency from further modification of the proposed rules based upon this Report and an examination of the public comments, provided that the rule finally adopted is based on facts appearing in this rule hearing record and is not substantially different from the proposed rule.

Based upon the foregoing Conclusions, the Administrative Law Judge makes the following:

RECOMMENDATION

IT IS HEREBY RECOMMENDED that the proposed rules be **DISAPPROVED.**

Dated: January 9, 2018

LAURASUE SCHLATTER
Administrative Law Judge

Reported:

Marcia L. Menth, Kirby Kennedy & Associates, St. Paul – 10/23
Calvin J. Everson, Danielson Court Reporting, Virginia – 10/24
Lorna D. Jacobson, Jacobson Reporting & Video Services, Bemidji – 10/25
Nathan D. Engen, Cloquet – 10/26
Nathan D. Engen, Brainerd – 10/30
Kelly L. Brede, Kirby Kennedy & Associates, St. Paul – 11/2

GRAND PORTAGE RESERVATION TRIBAL COUNCIL

Miranda Nichols (miranda.nichols@state.mn.us)
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155

January 14, 2020

Re: Minnesota's 2020 Draft Clean Water Act § 303(d) Impaired Waters List

Dear Ms. Nichols:

The Grand Portage Band of Chippewa (the "Band") hereby submits these comments in connection with Minnesota's Draft 2020 303(d) Impaired Waters List ("Draft List"). Grand Portage is a federally recognized Indian tribe, and in 1996 assumed Treatment-in-the-same-manner-As-a-State ("TAS") status under the Clean Water Act for purposes of administering Water Quality Standards. We have adopted and received federal approval for our water quality standards, and issue 401 certifications.

The Draft List categorically and improperly excludes all Minnesota waters used for the production of wild rice, despite the fact that they are protected by a water quality standard that has been in place since 1973. The Draft List includes an explicit "Disclaimer" that states:

> The Minnesota Pollution Control Agency (MPCA) has not finalized methods for identifying waters used for production of wild rice or for assessing impairment of waters based on the existing wild rice-related standard. Consequently, the 2020 303(d) Impaired Waters List does not include any waters assessed as impaired for the sulfate wild rice standard. The MPCA continues to consider next steps for the sulfate standard to protect wild rice. Go to https://www.pca.state.mn.us/water/protecting-wild-rice-waters for more information.[1]

The cited webpage is to MPCA's Notice of Withdrawal of its failed Wild Rice Rule (dated April 26, 2018). There is no new, pending rulemaking or other "next steps" listed. MPCA has not even attempted to provide a genuine factual or legal justification for excluding these waters from

[1] *See* https://www.pca.state.mn.us/water/minnesotas-impaired-waters-list.

P.O. Box 428 Grand Portage, Minnesota 55605 (218) 475-2277 or 475-2239 Fax: (218) 475-2284

the Draft List.[2] As discussed below, methods for identifying wild rice waters are well-established, as are means of assessing impairments. This is a political decision that ignores the requirements of the Clean Water Act ("Act"), and it is a continuation of this agency's ongoing refusal to protect an irreplaceable resource.

1. Grand Portage Background.

Grand Portage is one of the six tribal governments of the Minnesota Chippewa Tribe. In northeastern Minnesota, throughout the entire Arrowhead Region, the Bois Forte, Fond du Lac, and Grand Portage Bands retain usufructuary rights in the lands and waters that were ceded to the United States under the 1854 Treaty of LaPointe.[3] These rights were retained to ensure hunting, fishing, and gathering for subsistence, economic, cultural, medicinal, and spiritual needs could continue into perpetuity. In order to fully exercise these rights, abundant and unpolluted natural resources must be available, including water that meets tribal and state water quality standards.

The state has a unique government-to-government relationship with all Minnesota tribes, and state agencies in Minnesota co-manage treaty resources with the Bands.[4] Federal agencies have a legal responsibility to maintain all tribal, treaty-reserved natural resources.[5]

2. CWA Impaired Waters List Requirements.

The purpose of identifying impaired waters under the Act is to prioritize impaired waters based on the severity of the pollution and then calculate a Water Quality Based Effluent Limit ("WQBEL") or Total Maximum Daily Load ("TMDL") to limit pollutants causing the impairments so that applicable water quality standards can be attained.[6] To achieve this requirement, calculations or predictions that indicate water quality standards ("WQS") designated and existing uses are not being achieved, waters for which water quality problems

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2 *See* 40 CFR 130.7(b)(6)(iii).

3 10 Stat. 1109 (Sept. 30, 1854); *see also* Minnesota Department of Natural Resources ("MN DNR"), Laws and Treaties, at https://www.dnr.state.mn.us/aboutdnr/laws_treaties/index.html.

4 *See, e.g.*, Exec. Order 19-24, "Affirming the Government to Government Relationship between the State of Minnesota and Minnesota Tribal Nations: Providing for Consultation, Coordination, and Cooperation" (Apr. 4, 2019).

5 *See, e.g.*, Exec. Order 13175—Consultation and Coordination With Indian Tribal Governments (Nov. 6, 2000) (stating "the United States has recognized Indian tribes as domestic dependent nations under its protection . . . ," there is a "trust relationship with Indian tribes," and "[a]gencies shall respect Indian tribal self-government and sovereignty, honor tribal treaty and other rights, and strive to meet the responsibilities that arise from the unique legal relationship between the Federal Government and Indian tribal governments.").

6 33 U.S.C. § 1313(d); 40 C.F.R. §130.7(d)(1).

have been reported by the public or other agencies, and waters identified by the state as impaired or threatened in a nonpoint assessment must be identified on the Impaired Waters List.[7]

3. Minnesota's Wild Rice Sulfate Standard.

Since 1973, Minnesota Water Quality Standards ("MN WQS") have included a 10 milligrams per liter ("mg/l") limit on sulfate in waters used for the production of wild rice.[8] MN WQS designated use of Class 4 waters for the propagation and maintenance of natural stands of wild rice states "[t]he quality of these waters and the aquatic habitat necessary to support the propagation and maintenance of wild rice plant species must not be materially impaired or degraded. *If the standards in this part are exceeded in waters of the state that have the class 4 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to the designated uses.*"[9]

The Band has made comments to the MPCA and US Environmental Protection Agency ("US EPA") regarding the exclusion of wild rice waters from the 2012, 2014, 2016, and 2018 impaired waters lists, but WQBELs or TMDLs for these waters have not been initiated. This is despite the fact that MPCA is required to consider the input gathered from tribal consultation in their decision-making processes, with the goal of achieving mutually beneficial solutions.[10] This exclusion is the result of sustained political pressure rather than reasoned decision making, and it violates the Act.

In 2011, the US EPA provided written comments to the MPCA stating that the wild rice sulfate standard must be enforced under the Act. The mining industry at the same time lobbied for legislation to repeal or substantially diminish the State's limit on sulfate pollution in wild rice waters. In contravention of the Act, the Minnesota Legislature passed a 2011 Session Law allocating money for research and setting up an advisory committee overseen by the MPCA in an attempt to create a basis to weaken or repeal Minnesota's wild rice sulfate standard.

Then, in 2012, US EPA approved MPCA's 2012 list of impaired waters because of MPCA assurances that the 2014 list *would* include impaired wild rice waters. But in 2014, MPCA staff stated that they did not know how to assess whether wild rice waters were impaired and would soon develop assessment methodologies. Until those methods were developed, wild rice waters would not be included in the 303(d) list.

---

[7] 40 C.F.R. § 130.7(b)(5).
[8] Minn. R. 7050.0224, subp. 2.
[9] Minn. R. 7050.0224, subp. 1 (emphasis added).
[10] *See, e.g.*, Exec. Order 19-24.

In 2015, the Minnesota Legislature passed a Session Law forbidding MPCA to include wild rice waters in the 303(d) list, which the Legislature updated again in 2016 and 2017.[11] The rule provided that:

> (a) Until the commissioner of the Pollution Control Agency amends rules refining the wild rice water quality standard in Minnesota Rules, part 7050.0224, subpart 2, to consider all independent research and publicly funded research and to include criteria for identifying waters and a list of waters subject to the standard, implementation of the wild rice water quality standard in Minnesota Rules, part 7050.0224, subpart 2, shall be limited to the following, unless the permittee requests additional conditions:
>
> > (2) the agency shall not list waters containing natural beds of wild rice as impaired for sulfate under section 303(d) of the federal Clean Water Act, United States Code, title 33, section 1313, until the rulemaking described in this paragraph takes effect.[12]

Thereafter, MPCA engaged in rulemaking to repeal the 10 mg/L sulfate standard for the protection for wild rice and replace it with equation-based criteria.[13] On January 9, 2018, an Administrative Law Judge ("ALJ"), with later concurrence from the Chief ALJ, disapproved the proposal because it:

- failed to meet the definition of a rule;
- failed to consider the proposed rule's burden on Native American communities;
- failed to address the potential conflict between the 10 milligrams per liter standard that both Grand Portage and Fond du Lac have adopted;
- failed to protect public health and welfare by not considering effects related to increased mercury methylation;
- failed to protect downstream waters from degradation;
- failed to demonstrate the proposed rule would protect wild rice; and
- *failed to identify all waters previously identified as wild rice waters by the Minnesota Department of Natural Resources ("MN DNR") and Minnesota Indian Tribes.*[14]

Instead of revising the proposed rule, MPCA withdrew it and has made no new proposal. Therefore, the 10 mg/l sulfate standard for waters used for the production of wild rice is still the law.

---

[11] 2015 Minn. Laws 1st Spec. Sess. ch. 4, Art. 4, § 136; 2017 Minn. Laws ch. 93, Art. 2, § 149.
[12] *Id.*
[13] Available at https://www.pca.state.mn.us/sites/default/files/wq-rule4-15mm.pdf.
[14] *Id.* at 68-69.

4. Identification of Specific, Impaired Wild Rice Waters.

As reflected in the ALJ's decision, MPCA is very familiar with the lists of wild rice waters in Minnesota, including those that are impaired, given the extensive records of the DNR, the Bands, and its own files. US EPA Region 5 is also acutely aware of impaired wild rice waters in Minnesota for the same reasons. US EPA is obligated to ensure that MPCA complies with the Act's impaired waters provisions, or commence its own TMDL process.[15]

Methods for identifying wild rice waters are well-established, as are means of assessing impairments—in fact, it is possible to evaluate many such waters based upon public data. Therefore, MPCA's claim that it cannot assemble such information because it "has not finalized methods for identifying waters used for production of wild rice or for assessing impairment of waters based on the existing wild rice-related standard" is simply false. Wild rice waters can be identified using the MN DNR's public GIS website, and the sulfate data collected and mapped by the MPCA itself can be overlaid to determine impairments.

By simply cross-referencing these records, out of more than 515 wild rice waters that have been identified just in the 1854 Ceded Territory, Tribal staff have identified three lakes and five stream segments that are impaired due to high concentrations of sulfate. These lakes and streams are listed below in Table 1.

Table 1. Impaired Wild Rice Waters in the 1854 Ceded Territory

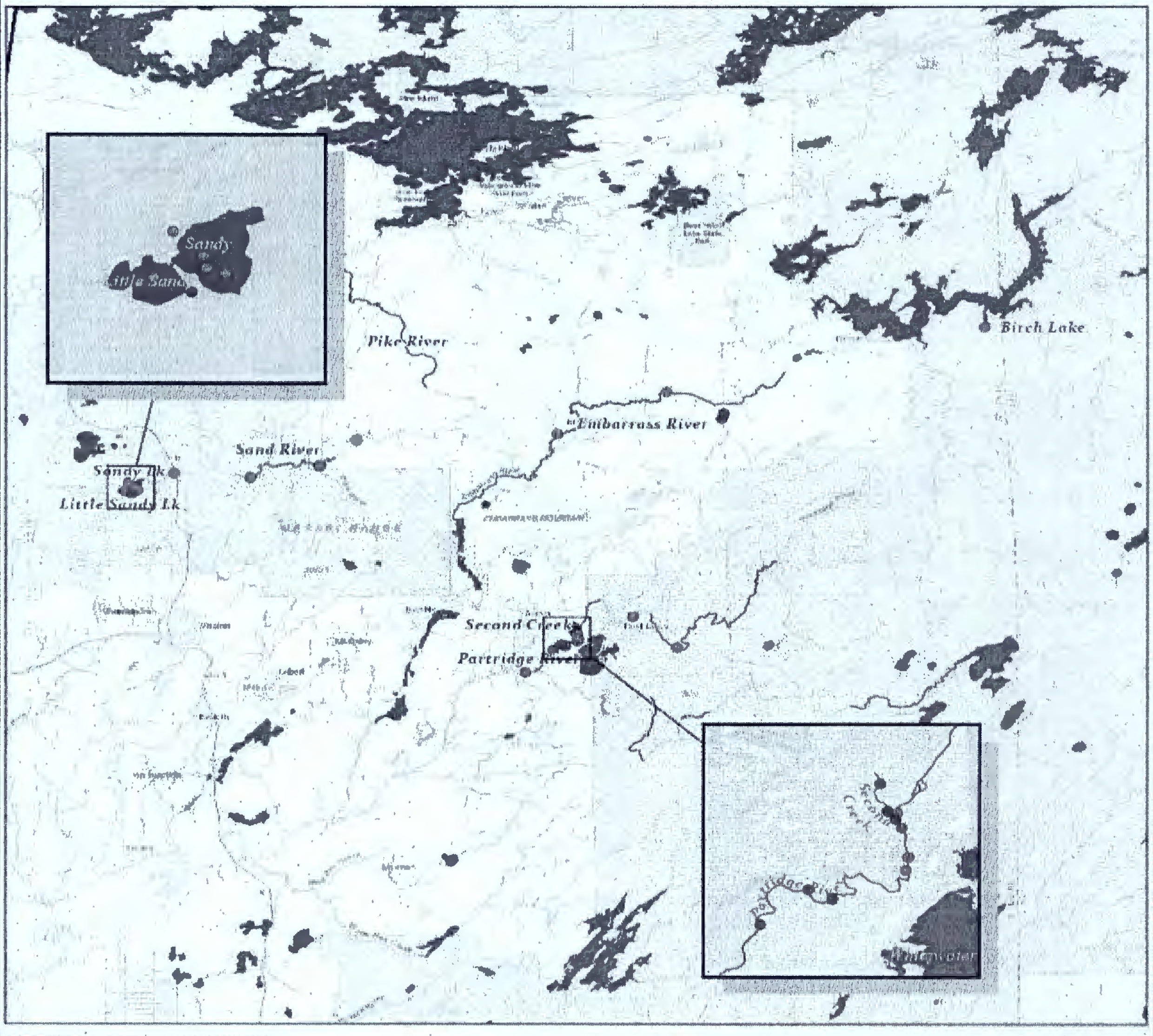
Waterbody	MPCA Measured Average Sulfate Concentrations (mg/l)
Birch Lake	110
Embarrass River	71.2
Little Sandy Lake	254.6
Partridge River	264.3
Pike River	110
Sand River	116.8
Sandy Lake	132.3
Second Creek	628.5

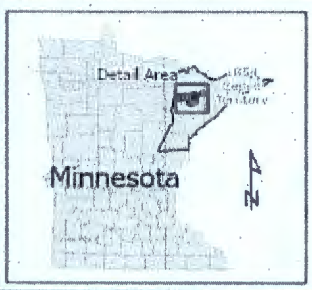
Sulfate data was provided by MPCA, and overlaid on wild rice lakes and stream segments identified by the MN DNR Wildlife feature class downloaded from the MN Geospatial Commons https://gisdata.mn.gov/dataset/biota-wild-rice-lakes-dnr-wld , and wild rice survey data from the 1854 Treaty Authority. The data points on the map only depict those monitoring points that have median sulfate concentrations that range from seven to sixty-three times more than the 10 mg/L sulfate standard. Therefore, the map and table presented in these comments

[15] *Alaska Ctr. for the Env't v. Reilly*, 796 F. Supp. 1374, 1381 (W. D. Wa.1992), *aff'd as Alaska Ctr. for the Env't v. Browner*, 20 F.3d 981 (9th Cir. 1994).

should not be considered an exhaustive list of impaired wild rice waters within the 1854 Ceded Territory, or the state.

Impaired Wild Rice Waters in the 1854 Ceded Territory





WATERBODY	MEDIAN SULFATE PPM (MPCA)
Birch Lake	110
Embarrass River (Avg.)	71.2
Little Sandy Lake (Avg.)	254.8
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Pike River	110
Sand River (Avg.)	116.8
Sandy Lake (Avg.)	132.3
Second Creek (Avg.)	628.5

Wild Rice Waters

MPCA Sulfate Summary Station

MEDIAN PPM

- 50 - 100
- 101 - 300
- 301 - 600
- 600+

0 2.5 5 10
Miles

Data Sources: 1854 Treaty Authority, MN DNR, MPCA
Date: 12/16/2019 Author: H. Fox

GRAND PORTAGE R. T. C.

Additionally, the MN DNR and Bands' lists demonstrate where wild rice is an existing use,[16] and MPCA itself has maintained sulfate concentration data on many such waters. If the sulfate standard is exceeded, the MPCA, according to its own WQS, must include those waters on the 303(d) list and develop a TMDL or WQBEL as required by the Act.

State and federal regulatory agencies plainly have the ability to identify water quality impairments in wild rice waters throughout the state. The impaired waters identified here must be included on the Draft List before it is sent to US EPA for approval, along with all impaired wild rice waters. Thank you for the opportunity to provide comments.

Sincerely,

Beth Drost
Grand Portage Chairwoman

c: Barbara Wester, US EPA Region 5, Office of Regional Counsel
Tom Short, US EPA Region 5, Water Division Acting Director
Alan Walts, US EPA Region 5, Office of International and Tribal Affairs

[16] Minnesota Department of Natural Resources, Natural Wild Rice in Minnesota: A wild rice study document submitted to the Minnesota Legislature by the Minnesota Department of Natural Resources" (Feb. 15, 2008), available at http://files.dnr.state.mn.us/fish_wildlife/wildlife/shallowlakes/natural-wild-rice-in-minnesota.pdf

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The Minnesota Chippewa Tribe

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January 8, 2020

Miranda Nichols (miranda.nichols@state.mn.us)
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155

Re: Comments on Minnesota's 2020 Draft Clean Water Act § 303(d) Impaired Waters List.

Dear Ms. Nichols:

The Minnesota Chippewa Tribe ("MCT") hereby submits these comments in connection with Minnesota's Draft 2020 303(d) Impaired Waters List ("Draft List"). Of major concern is the fact that the Draft List categorically and improperly excludes all Minnesota waters used for the production of wild rice, despite the fact that they are protected by a water quality standard that has been in place since 1973. The Draft List includes an explicit "Disclaimer" that states:

> The Minnesota Pollution Control Agency (MPCA) has not finalized methods for identifying waters used for production of wild rice or for assessing impairment of waters based on the existing wild rice-related standard. Consequently, the 2020 303(d) Impaired Waters List does not include any waters assessed as impaired for the sulfate wild rice standard. The MPCA continues to consider next steps for the sulfate standard to protect wild rice. Go to https://www.pca.state.mn.us/water/protecting-wild-rice-waters for more information.[1]

The cited webpage is to MPCA's Notice of Withdrawal of its failed Wild Rice Rule (dated April 26, 2018). There is no new, pending rulemaking or other "next steps" listed. MPCA has not even attempted to provide a genuine factual or legal justification for excluding these waters from the Draft List.[2] As discussed below, methods for identifying wild rice waters are well-established, as are means of assessing impairments. This is a political decision that ignores the requirements of the Clean Water Act ("Act"), and it is a continuation of this agency's ongoing refusal to protect an irreplaceable resource.

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[1] *See* https://www.pca.state.mn.us/water/minnesotas-impaired-waters-list.
[2] *See* 40 CFR 130.7(b)(6)(iii).

1. MCT Background.

The MCT is a federally recognized tribal government comprised of the Bois Forte, Fond du Lac, Grand Portage, Leech Lake, Mille Lacs, and White Earth Reservations, which have reserved off-reservation hunting, fishing, and other harvesting, or usufructuary, rights. In northeastern Minnesota, throughout the entire Arrowhead Region, the Bois Forte, Fond du Lac, and Grand Portage Bands retain usufructuary rights in the lands and waters that were ceded to the United States under the 1854 Treaty of LaPointe.[3] These rights were retained to ensure hunting, fishing, and gathering for subsistence, economic, cultural, medicinal, and spiritual needs could continue into perpetuity. In order to fully exercise these rights, abundant and unpolluted natural resources must be available, including water that meets tribal and state water quality standards. MCT Ordinance 8, Section 300, states that "water is the primary resource of the natural resource system. Thus protecting the quality and quantity of the water resource is the primary objective of these laws and, further, the interrelationships of water and other natural resources is such that the management of soil, timber, air and mineral resources has both direct and indirect effects upon the quality and quantity of water, fish, wild rice, and wildlife resources."

The state has a unique government-to-government relationship with all Minnesota tribes, and state agencies in Minnesota co-manage treaty resources with the Bands.[4] Federal agencies have a legal responsibility to maintain all tribal, treaty-reserved natural resources.[5]

2. CWA Impaired Waters List Requirements.

The purpose of identifying impaired waters under the Act is to prioritize impaired waters based on the severity of the pollution and then calculate a Water Quality Based Effluent Limit ("WQBEL") or Total Maximum Daily Load ("TMDL") to limit pollutants causing the impairments so that applicable water quality standards can be attained.[6] To achieve this requirement, calculations or predictions that indicate water quality standards ("WQS") designated and existing uses are not being achieved, waters for which water quality problems

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[3] 10 Stat. 1109 (Sept. 30, 1854); *see also* Minnesota Department of Natural Resources ("MN DNR"), Laws and Treaties, at https://www.dnr.state.mn.us/aboutdnr/laws_treaties/index.html.

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[6] 33 U.S.C. § 1313(d); 40 C.F.R. §130.7(d)(1).

have been reported by the public or other agencies, and waters identified by the state as impaired or threatened in a nonpoint assessment must be identified on the Impaired Waters List.[7]

3. Minnesota's Wild Rice Sulfate Standard.

Since 1973, Minnesota Water Quality Standards ("MN WQS") have included a 10 milligram per liter ("mg/l") limit on sulfate in waters used for the production of wild rice.[8] MN WQS designated use of Class 4 waters for the propagation and maintenance of natural stands of wild rice states "the quality of these waters and the aquatic habitat necessary to support the propagation and maintenance of wild rice plant species must not be materially impaired or degraded. *If the standards in this part are exceeded in waters of the state that have the class 4 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to the designated uses.*"[9]

MCT Bands have made comments to the MPCA and US Environmental Protection Agency ("US EPA") regarding the exclusion of wild rice waters from the 2012, 2014, 2016, and 2018 impaired waters lists, but WQBELs or TMDLs for these waters have not been initiated. This is despite the fact that MPCA is required to consider the input gathered from tribal consultation in their decision-making processes, with the goal of achieving mutually beneficial solutions.[10] This exclusion is the result of sustained political pressure rather than reasoned decision making, and it violates the Act.

In 2011, the US EPA provided written comments to the MPCA stating that the wild rice sulfate standard must be enforced under the Act. The mining industry at the same time lobbied for legislation to repeal or substantially diminish the State's limit on sulfate pollution in wild rice waters. In contravention of the Act, the Minnesota Legislature passed a 2011 Session Law allocating money for research and setting up an advisory committee overseen by the MPCA in an attempt to create a basis to weaken or repeal Minnesota's wild rice sulfate standard.

Then, in 2012, US EPA approved MPCA's 2012 list of impaired waters because of MPCA assurances that the 2014 list *would* include impaired wild rice waters. But in 2014, MPCA staff stated that they did not know how to assess whether wild rice waters were impaired and would soon develop assessment methodologies. Until those methods were developed, wild rice waters would not be included in the 303(d) list.

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Instead of revising the proposed rule, MPCA withdrew it and has made no new proposal. Therefore, the 10 mg/L sulfate standard for waters used for the production of wild rice is still the law.

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[12] *Id.*
[13] Available at https://www.pca.state.mn.us/sites/default/files/wq-rule4-15mm.pdf.
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Minnesota for the same reasons. US EPA is obligated to ensure that MPCA complies with the Act's impaired waters provisions, or commence its own TMDL process.[15]

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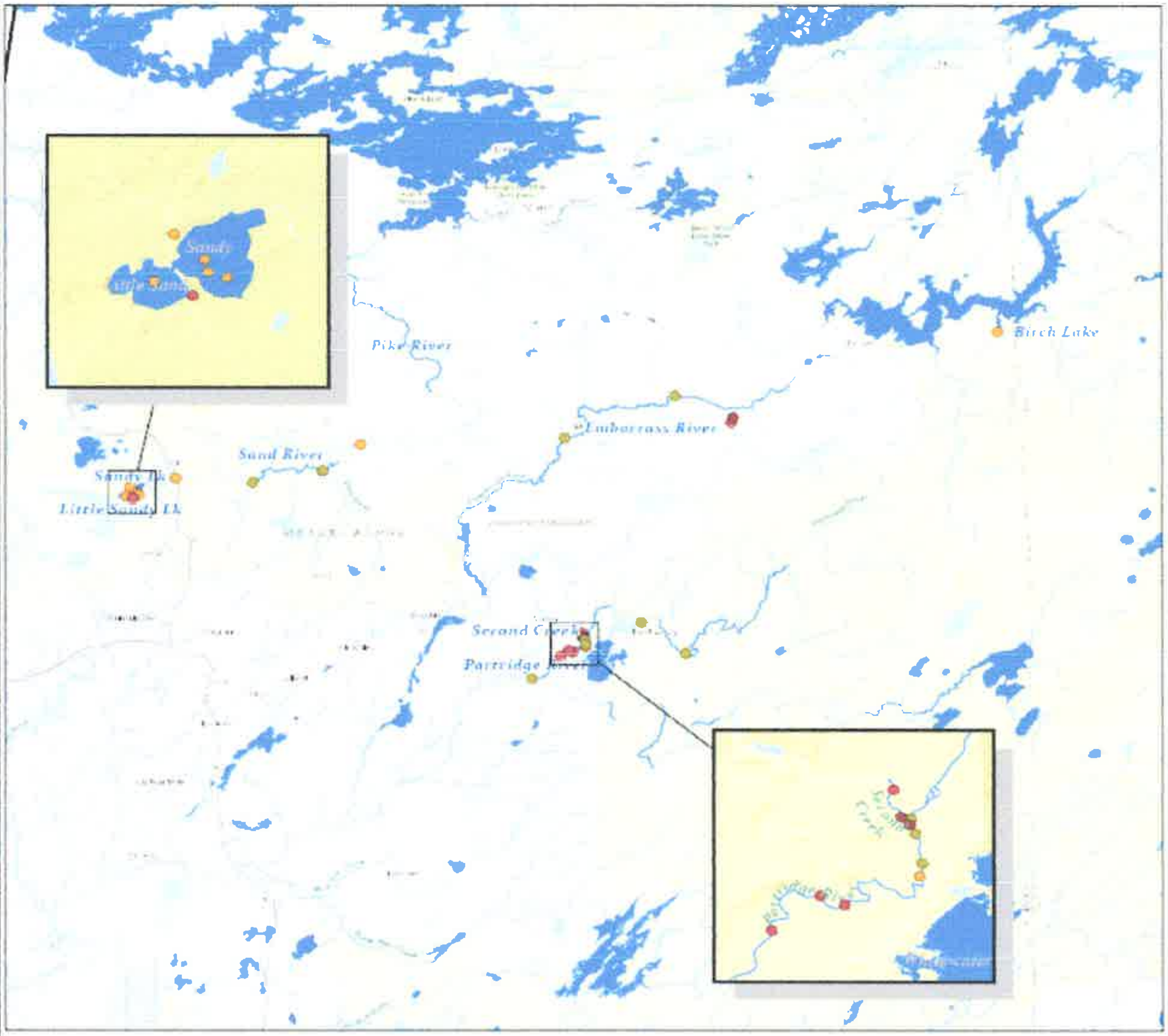
[15] *Alaska Ctr. for the Env't v. Reilly*, 796 F. Supp. 1374, 1381 (W. D. Wa.1992), *aff'd as Alaska Ctr. for the Env't v. Browner*, 20 F 3d 981 (9th Cir. 1994).

Impaired Wild Rice Waters in the 1854 Ceded Territory



WATERBODY	MEDIAN SULFATE PPM (MPCA)
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State and federal regulatory agencies plainly have the ability to identify water quality impairments in wild rice waters throughout the state. The impaired waters identified here must be included on the Draft List before it is sent to US EPA for approval, along with all impaired wild rice waters. Thank you for the opportunity to provide comments.

Sincerely,

Catherine J. Chavers

Catherine J. Chavers
President

Cc: Barbara Wester, US EPA Region 5, Office of Regional Counsel
Tom Short, US EPA Region 5, Water Division Acting Director
Alan Walts, US EPA Region 5, Office of International and Tribal Affairs
Bois Forte Band of Lake Superior Chippewa
Fond du Lac Band of Lake Superior Chippewa
Grand Portage Band of Lake Superior Chippewa
Leech Lake Band of Ojibwe
Mille Lacs Band of Ojibwe
White Earth Nation

[16] Minnesota Department of Natural Resources, Natural Wild Rice in Minnesota: A wild rice study document submitted to the Minnesota Legislature by the Minnesota Department of Natural Resources" (Feb. 15, 2008), available at http://files.dnr.state.mn.us/fish_wildlife/wildlife/shallowlakes/natural-wild-rice-in-minnesota.pdf

Shakopee Mdewakanton Sioux Community

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January 14, 2020

Miranda Nichols, MPCA Coordinator
Minnesota Pollution Control Agency
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miranda.nichols@state.mn.us

VIA U.S. MAIL & EMAIL

Re: Shakopee Mdewakanton Sioux Community: Written Commentary on the Draft 2020 Impaired Waters List

On behalf of the Shakopee Mdewakanton Sioux Community (the "SMSC"), I submit the following written commentary related to the draft 2020 Impaired Waters List. The SMSC is a federally recognized Indian tribe located in Prior Lake, Minnesota. These comments address the government-to-government relationship between the State of Minnesota and the eleven federally-recognized Indian tribes located within the state. The comments also address the unacceptable omission of waters used for the production of wild rice from the draft list of impaired waters.

I. Need for Improved Government-to-Government Relations

Providing Indian tribes with an opportunity to participate in regular and meaningful consultation is an essential component of maintaining productive tribal-state relations. Tribal consultation is a product of the unique legal and political relationships that exist between Indian tribes and the federal and state governments. These unique relationships have been affirmed by the Constitution of the United States, treaties, statutes, and case law. Effective tribal consultation is premised on clear and concise consultation policies that focus on effective communication, definite responsibilities, and established expectations. Tribal consultation must be timely. It must provide adequate opportunities for Indian tribes to raise their concerns prior to and outside of the traditional notice and comment periods made available to the general citizenry of the state.

In Executive Order 19-24, Governor Tim Walz affirmed the importance of tribal consultation and directed state agencies, including the Minnesota Pollution Control Agency ("MPCA"), to develop, maintain, and implement ongoing consultation policies to gather input from Tribal Nations on issues of mutual interest.[1] Executive Order 19-24 provides that "[a]s

[1] Exec. Order 19-24, *Affirming the Government to Government Relationship between the State of Minnesota and Minnesota Tribal Nations: Providing for Consultation, Coordination, and Cooperation*, (Apr. 4, 2019).

appropriate, and at the earliest opportunity, each agency will develop and maintain ongoing consultation with the Minnesota Tribal Nations related to each area where the agency's work intersects with Minnesota Tribal Nations."[2] As the original inhabitants and first stewards of this land, it is critically important for the state to engage in consultation with the Indian tribes in Minnesota on important issues affecting land and natural resources. This is particularly true when speaking of natural resources of cultural significance, such as wild rice.

To the best of my knowledge, the MPCA has not engaged in tribal consultation with the eleven federally-recognized Indian tribes within the State of Minnesota on this matter.[3] The lack of consultation is particularly troubling when considering the repeated instances where Indian tribes have expressed concern regarding the omission of wild rice waters from the list of impaired waters. Tribal nations expressed the exact same concerns regarding the omission of wild rice waters from the list of impaired waters in 2012, 2014, 2016, 2018, and now in 2020. The failure of the MPCA to engage in meaningful consultation with Indian tribes on this topic is contrary to Executive Order 19-24 and disrespectful to us as the original inhabitants and first stewards of the land and waters of the state.

II. The Specific Concerns of Individual Indian Tribes Must Be Considered

The eleven federally-recognized Indian tribes in Minnesota are separate and unique sovereign governments. While organizations such as the Minnesota Indian Affairs Council ("MIAC") are well suited to encourage collaboration between us, such organizations do not speak on behalf of individual tribes on specific issues. Nor should engaging or consulting with MIAC be seen as the functional equivalent of engaging or consulting with the eleven federally-recognized Indian tribes in Minnesota. We utilize our resources in different ways to benefit our specific memberships. We acknowledge the important role that MIAC has with the State of Minnesota and the MPCA must consider MIAC's comments on this issue. However, it is important for the individual concerns raised by any of the eleven federally-recognized Indian tribes in Minnesota to be considered separately and on a government to government basis.

III. Omission of Wild Rice Waters from the Impaired Waters List

§ 303 of the Clean Water Act ("CWA") requires states to apply existing and authorized water quality standards to produce a list of impaired waters.[4] Since 1973, the State of Minnesota has had a water quality standard that limits sulfate in waters where wild rice is present to 10 mg/L.[5] Widespread efforts to change the aforementioned water quality standard have failed and it remains in place. I am informed that many of the bodies of water that produce wild rice in Minnesota do not meet the 10 mg/L sulfate standard; these waters are already at risk of

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[2] *Id.* at page 2.

[3] Consultation at the federal level by the EPA should not absolve the MPCA from conducting consultation pursuant to Exec. Order 19-24.

[4] 33 U.S.C. § 1313.

[5] Minn. R. 7050.0224, Subp. 2; Minn. R. 7050.0220, Subparts 3a(31), 41(31), 5a(19), 6a(14).

negatively impacting wild rice growth. More specific and immediate action to protect these waters is essential.

Inexplicably, the Draft 2020 Impaired Waters List categorically excludes all Minnesota waters used for the production of wild rice from being listed on the impaired waters list. The Draft List states:

> The Minnesota Pollution Control Agency (MPCA) has not finalized methods for identifying waters used for production of wild rice or for assessing impairment of waters based on the existing wild rice-related standards. Consequently, the 2020 303(d) Impaired Waters List does not include any waters assessed as impaired for the sulfate wild rice standard…[6]

The methods for identifying wild rice waters and assessing impairments are well-known, have been discussed at length by other parties, and can be established using public data. The MPCA's repeated refusal to include wild rice waters on the impaired waters list based upon the aforementioned reason is unacceptable.

The SMSC supports the efforts of the tribes in Minnesota to include wild rice waters in the list of impaired waters created by the state pursuant to the CWA. The SMSC repeats the request that impaired waters that have been identified by Minnesota tribes as impacting the growth of wild rice be included on the Draft Impaired Waters List before it is sent to the US EPA. Furthermore, the SMSC requests that the MPCA use publicly available data to develop a revised Impaired Waters List that includes wild rice waters. Wild rice is an invaluable resource and gift that deserves specific and broad protections. Wild rice waters must be afforded all of the basic protections that are required under state and federal law.

Thank you for this opportunity to comment.

Sincerely,

Charles R. Vig, Chairman
Shakopee Mdewakanton Sioux Community

[6] *See* https://www.pca.state.mn.us/water/minneesota-impaired-waters-list.

1854 Treaty Authority

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218.722.8907 • 800.775.8799 • FAX 218.722.7003
www.1854treatyauthority.org

January 14, 2020

Miranda Nichols (miranda.nichols@state.mn.us)
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155

RE: Minnesota's 2020 Draft Clean Water Act § 303(d) Impaired Waters List

Dear Ms. Nichols:

The 1854 Treaty Authority respectfully submits these comments regarding Minnesota's Draft 2020 303(d) Impaired Waters List ("Draft List").

The 1854 Treaty Authority is an inter-tribal natural resource management agency governed by the Bois Forte Band of Chippewa and Grand Portage Band of Lake Superior Chippewa, both federally recognized tribes. The organization is charged to preserve and protect treaty rights and related resources within the 1854 Ceded Territory. Present day northeastern Minnesota is located within the 1854 Ceded Territory including all of Lake and Cook counties, most of St. Louis and Carlton counties, and portions of Aitkin and Pine counties. Bands continue to exercise treaty rights to hunt, fish and gather in the 1854 Ceded Territory. It is vital that resources are available and healthy for the meaningful use of treaty rights. The 1854 Treaty Authority would like to highlight concerns regarding the exclusion of wild rice waters from the Draft List. Please note that these comments are submitted by 1854 Treaty Authority staff with the understanding that member reservations may submit comments from their own perspective.

To the Ojibwe, natural resources are cultural resources. There is no separation between how the bands manage and interact with a resource and how their culture endures: one is dependent on the other. The Bois Forte and Grand Portage bands (as well as the Fond du Lac Band) have retained usufructary rights to these resources within the 1854 Ceded Territory guaranteed by treaty and upheld by supreme law. Wild rice is one of many resources in the 1854 Ceded Territory band members utilize for subsistence and is an integral part of their culture. Wild rice is a declining resource not only within the 1854 Ceded Territory, but throughout Minnesota and the Great Lakes region. Given the importance of wild rice and its decline throughout the state/region, protecting wild rice cannot be overstated. The exclusion of wild rice waters with evidence of impairment from Minnesota's Impaired Waters List(s) by the Minnesota Pollution Control Agency (MPCA) has been an ongoing concern allowing for further degradation/loss of this resource and is not justified. Please find below rational supporting the inclusion of impaired wild rice waters on the Draft List and specific waters that should be included.

Minnesota's Wild Rice Sulfate Standard

Current Standard in Place
Since 1973, Minnesota Water Quality Standards ("MN WQS") have included a 10 milligrams per liter ("mg/L") limit on sulfate in waters used for the production of wild rice.[1] MN WQS designated use of Class 4 waters for the propagation and maintenance of natural stands of wild rice states "[t]he quality of these waters and the aquatic habitat necessary to support the propagation and maintenance of wild rice plant species must not be materially impaired or degraded. *If the standards in this part are exceeded in waters of the state that have the class 4 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with respect to the designated uses.*"[2]

Proposed Standard
In 2011, after the mining industry lobbied for legislation to repeal/diminish the State's limit on sulfate pollution in wild rice waters, the Minnesota Legislature passed a 2011 Session Law allocating money for research and setting up an advisory committee overseen by the MPCA in an attempt to revisit the 10 mg/L sulfate standard, set a new standard if justified and identify which waters the standard would apply. Years after the study was completed, MPCA engaged in rulemaking to repeal the 10 mg/L sulfate standard for the protection of wild rice and replace it with equation-based criteria.[3] On January 9, 2018, an Administrative Law Judge ("ALJ"), with later concurrence from the Chief ALJ, disapproved the proposal for the following reasons:

- failed to meet the definition of a rule;
- failed to consider the proposed rule's burden on Native American communities;
- failed to address the potential conflict between the 10 milligrams per liter standard that both Grand Portage and Fond du Lac have adopted;
- failed to protect public health and welfare by not considering effects related to increased mercury methylation;
- failed to protect downstream waters from degradation;
- failed to demonstrate the proposed rule would protect wild rice; and
- *failed to identify all waters previously identified as wild rice waters by the Minnesota Department of Natural Resources ("MN DNR") and Minnesota Indian Tribes.*[4]

Instead of revising this proposed rule, MPCA withdrew it and has made no new proposal. Given that there has been this proposed rule was disapproved by the ALJ and that there is not a new rule being proposed, the existing 10 mg/L sulfate standard for waters used for the production of wild rice (wild rice waters) is still the law and the water quality standard that should be used to determine whether a wild rice water has been impaired.

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[1] Minn. R. 7050.0224, subp. 2.
[2] Minn. R. 7050.0224, subp. 1 (emphasis added).
[3] Available at https://www.pca.state.mn.us/sites/default/files/wq-rule4-15mm.pdf.
[4] *Id.* at 68-69.

Clean Water Act Requirements

According to the Clean Water Act (CWA), the MPCA is required to identify impaired waters through monitoring, prioritize them based on the severity of pollution and then calculate a Water Quality Based Effluent Limit (WQBEL) or Total Maximum Daily Load (TMDL) to limit pollutants causing the impairments so that applicable water quality standards can be attained. This list must be submitted to and approved by the US Environmental Protection Agency (EPA) every even-numbered year. Waters that must be identified on the Impaired Waters list include: areas where calculations or predictions indicate water quality standards are not being met, existing uses are not being achieved, water quality problems have been reported by the public or other agencies, or the state has identified waters as impaired or threatened in a nonpoint assessment. Since the 10 mg/L sulfate water quality standard exists, any wild rice water with a sulfate concentration exceeding 10 mg/L should be included on the Draft List so that a proper WQBEL or TMDL can be calculated/applied for the protection of those waters from further impairment.

Identification of Impaired Wild Rice Waters within the 1854 Ceded Territory

Lists of identified wild rice waters in Minnesota are available on the Minnesota Department Natural Resources public GIS website and 1854 Treaty Authority website (1854 Ceded Territory Wild Rice Waters List). Within the 1854 Ceded Territory, over 515 waters have been identified as having wild rice. Tribal staff cross-referenced sulfate data provided by the MPCA with the lists mentioned above to identify waters within the 1854 Ceded Territory with sulfate concentration exceeding 10 mg/L (impaired waters) and identified three lakes and five stream segments that are impaired due to high concentrations of sulfate. These lakes and streams are listed below in Table 1 and therefore should/must be included on the Draft List. This list should not be considered exhaustive, but indicative that the appropriate methods and data exist to identify where wild rice is an existing use and which waters are impaired and need to be included on the Draft List.

Table 1. Impaired Wild Rice Waters in the 1854 Ceded Territory

Waterbody	MPCA Measured Average Sulfate Concentrations (mg/l)
Birch Lake	110
Embarrass River	71.2
Little Sandy Lake	254.6
Partridge River	264.3
Pike River	110
Sand River	116.8
Sandy Lake	132.3
Second Creek	628.5

Conclusion

Wild rice is an important cultural and treaty protected resource utilized by bands within the 1854 Ceded Territory for subsistence and is integral to their culture. It is a declining resource throughout Minnesota and the Great Lakes region. Minnesota's Draft 2020 303(d) Impaired Waters List (as well as previous lists) have not included impaired wild rice waters (sulfate concentrations exceeding 10 mg/L), which is not justified and does not meet the State's requirement under the CWA. As mentioned above, there is an existing water quality standard for wild rice waters of 10 mg/L sulfate. Methods and data exist to identify where wild rice is an existing use and which waters are impaired. Tribal staff utilized this data to identify impaired wild rice waters within the 1854 Ceded Territory (Table 1). These and all other impaired wild rice waters must be included on the Draft List before it is sent to US EPA for approval.

Thank you for the consideration of our comments.

Sincerely,

Millard Myers
Executive Director

Joseph Wildcat, Sr.
PRESIDENT

January 14, 2020

Ms. Miranda Nichols
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155

Dear Ms. Nichols:

The Lac du Flambeau Tribe and the Lac du Flambeau Wild Rice Department is aware that the Minnesota Pollution Control Agency (PCA) is accepting comments on its draft 2020 Impaired Waters List (also known as the 303(d) list). These comments are submitted by Lac du Flambeau Tribe and the Lac du Flambeau Wild Rice Department policy staff, and should be construed as comments by this individual member Tribe.). However, our Tribe also supports comments made by GLIFWC (in which we are a part of) and the comments provided by the Minnesota Tribe.

As you may know, the Lac du Flambeau Band of Lake Superior Chippewa Indians is a signatory member of the 1854 Treaty tribes of Michigan, Minnesota, and Wisconsin. These tribes retain reserved hunting, fishing, and gathering rights in territories ceded to the United States in various treaties, rights that have been reaffirmed by federal courts, including the US Supreme Court. The ceded territories extend over portions of Minnesota, Wisconsin, and Michigan.

The primary concern with the State's draft list is that it explicitly excludes wild rice waters that do not meet the current sulfate water quality standard for wild rice waters. Despite the fact that new methods of identifying wild rice waters have not been finalized, a set of wild rice waters have long been identified by the DNR and the 1854 Treaty Authority. The lack of a revised Wild Rice Rule is not an excuse to exclude identified rice waters that are well known to be important areas of wild rice production and to be impaired due to sulfate contamination.

An exhaustive analysis of this issue is contained in a comment letter from the Minnesota Chippewa Tribe. That letter recounts the history of this issue and identifies a small number of waters that are very clearly impaired. As that letter suggests, the waters identified are likely a small subset of the full list of impaired waters, but it demonstrates that there are ways to identify at least some of the waters that should not be ignored simply because a new rule is not yet in place.

Lac du Flambeau Band
of Lake Superior Chippewa Indians

P.O. Box 67 - Lac du Flambeau, Wisconsin 54538 • (715) 588-3303 • FAX (715) 588-7930

The PCA cannot hide behind its failed new wild rice rule and thereby compound its failure to protect wild rice by excluding it from the 303(d) list. Wild rice waters impaired by sulfate must be included.

Sincerely,

Joseph Wildcat, Sr.
Tribal President, Lac du Flambeau Band of
Lake Superior Chippewa Indians

Joe Graveen
Program Manager
Lac du Flambeau Wild Rice
Cultural Enhancement Department

GREAT LAKES INDIAN FISH & WILDLIFE COMMISSION
P. O. Box 9 • Odanah, WI 54861 • 715/682-6619 • FAX 715/682-9294

• MEMBER TRIBES •

MICHIGAN
Bay Mills Community
Keweenaw Bay Community
Lac Vieux Desert Band

WISCONSIN
Bad River Band
Lac Courte Oreilles Band
Lac du Flambeau Band
Red Cliff Band
St. Croix Chippewa
Sokaogon Chippewa

MINNESOTA
Fond du Lac Band
Mille Lacs Band

January 14, 2020

Ms. Miranda Nichols
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155

Dear Ms. Nichols:

The Great Lakes Indian Fish and Wildlife Commission (GLIFWC) is aware that the Minnesota Pollution Control Agency (PCA) is accepting comments on its draft 2020 Impaired Waters List (also known as the 303(d) list). These comments are submitted by GLIFWC's policy staff, and should not be construed as precluding comments by its member Tribes individually.

As you may know, GLIFWC is an intertribal natural resource agency exercising delegated authority from 11 federally recognized Indian tribes in Michigan, Minnesota, and Wisconsin. These tribes retain reserved hunting, fishing, and gathering rights in territories ceded to the United States in various treaties, rights that have been reaffirmed by federal courts, including the US Supreme Court. The ceded territories extend over portions of Minnesota, Wisconsin, and Michigan.

The primary concern with the State's draft list is that it explicitly excludes wild rice waters that do not meet the current sulfate water quality standard for wild rice waters. Despite the fact that new methods of identifying wild rice waters have not been finalized, a set of wild rice waters have long been identified by the DNR and the 1854 Treaty Authority. The lack of a revised Wild Rice Rule is not an excuse to exclude identified rice waters that are well known to be important areas of wild rice production and to be impaired due to sulfate contamination.

An exhaustive analysis of this issue is contained in a comment letter from the Minnesota Chippewa Tribe. That letter recounts the history of this issue and identifies a small number of waters that are very clearly impaired. As that letter suggests, the waters identified are likely a small subset of the full list of impaired waters, but it demonstrates that there are ways to identify at least some of the waters that should not be ignored simply because a new rule is not yet in place.

The PCA cannot hide behind its failed new wild rice rule and thereby compound its failure to protect wild rice by excluding it from the 303(d) list. Wild rice waters impaired by sulfate must be included.

Sincerely,

Michael J. Isham, Jr.
Executive Administrator

From: Thiel, Casey - NRCS-CD, North Branch, MN <casey.thiel@mn.nacdnet.net>
Sent: Tuesday, January 14, 2020 3:24 PM
To: Nichols, Miranda (MPCA) <miranda.nichols@state.mn.us>
Cc: Anderson, Pam (MPCA) <pam.anderson@state.mn.us>; Engel, Lee (MPCA) <lee.engel@state.mn.us>; Alms, Eric (MPCA) <eric.alms@state.mn.us>
Subject: Delisting Review for 2020 Impaired Waters List

Miranda - May I request a delisting review as part of draft 2020 Impaired Waters List comment period? I am interested in South Center and North Center Lakes.

Data collected in 2016 (1 of the 2 sites on North Center), 2017, 2018, and 2019 and submitted to MPCA indicate these lakes are meeting eutrophication standards.

2019 Data appears to meet all 3 parameters at all 3 monitoring locations.

Please let me know if further information is needed to complete this request.

Thank you,
Casey Thiel

Casey Thiel
Water Resource Specialist | Chisago SWCD
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Fond du Lac Band of Lake Superior Chippewa

Resource Management Division

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Administration
Conservation
Enforcement
Environmental
Forestry
Fisheries
Natural Resources
Wildlife

Miranda Nichols
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Minnesota Pollution Control Agency
520 Lafayette Rd N
St. Paul, MN 55155

January 14, 2020

Re: Minnesota's Draft 2020 303(d) List of Impaired Waters

Ms. Nichols:

The Fond du Lac Band of Lake Superior Chippewa (the Band) appreciates this opportunity to review and comment on the Minnesota Pollution Control Agency's (MPCA) 2020 draft Impaired Waters List. As we have consistently commented in past biennial assessments since 2012, the Band is very interested in not only the identification of impairments through monitoring and assessment, but also the full restoration of all applicable Clean Water Act and Minnesota Rules beneficial uses. Given our status as a federally recognized Indian tribe, with delegated authorities under the Clean Water Act (CWA) for waters of the Reservation, and the off-reservation retained hunting, fishing and gathering rights secured through the 1854 Treaty of LaPointe[1], we reiterate our longstanding concerns for the number of waters in the state with unaddressed impairments for mercury in water and fish, and the continuing failure of the MPCA to fulfill its obligations under the CWA to list impairments for wild rice waters and undertake the necessary restorative actions.

Significant progress has been made by most mercury-emitting sectors under the 2007 statewide mercury TMDL and the 2008 TMDL Implementation Plan, towards meeting the mercury emissions reductions goals that are to be achieved by 2025. However, many waterbodies that the Band relies upon for fish as part of a traditional subsistence diet, including the St. Louis River and its tributaries, will still not meet safe unrestricted fish consumption levels under the statewide TMDL. Waterbodies and river reaches in this watershed that have already been listed as impaired for mercury were scheduled for TMDLs to be completed by 2019, but clearly MPCA did not met that deadline after having withdrawn from a multi-agency toxics TMDL study in 2013. Other watershed reaches first identified in the 2016 Impaired Waters List (Partridge River, Cloquet River, West Two River, East Two River, Swan River) are not scheduled for TMDL completion until 2029. The proposed timeline for addressing these mercury impairments is unacceptably prolonged, as human health and wildlife effects are clearly at imminent risk. More specifically, the MPCA doesn't appear to have a plan for addressing these mercury impairments.

[1]Treaty with the Chippewa, 1854, 10 Stat. 1109, in Charles J. Kappler, *ed., Indian Affairs: Laws and Treaties,* Vol. II (Washington: Government Printing Office, 1904), available on-line at: http:ljdigital.librarv.okstate.edu/kappler/Vol2/treaties/chi0648.htm

Although the Embarrass River and Whiteface River, listed in the 2016 Appendix A, will apparently meet mercury standards under the approved statewide TMDL, the Band remains highly skeptical of this prediction until actual mercury emission reductions from regional sources are documented. And by far the largest regional mercury sources in northeastern Minnesota are the taconite facilities.

Through our active participation in the Mercury TMDL Implementation Work Group, the Band is well aware of the sector-specific mercury reduction requirements that must occur in order to achieve the overall statewide mercury emissions goal of 793 lbs/year. The taconite sector was required to submit their facility-specific mercury emissions reduction plans at the end of 2018, and MPCA has had their reduction plans in-house for review for over a year. The Band has also been reviewing those plans, and while not surprised, we are disappointed to see that most of the facilities informed the agency that they would not be able to meet their reduction targets because of the complexity and expense of mercury capture technology – despite more than ten years of research and pilot testing of technologies that were largely funded through state and federal dollars. Once again, this industry appears to be telling the MPCA which environmental regulations and controls it is willing (or not) to abide by. There should be no "social license to operate" associated with any company or industry that is not taking care of the environment and is in fact working specifically to weaken the regulations that apply to their operations.

Mercury in fish tissue and mercury in water column continue to be far and away the greatest proportion of impairments in the state's inventory of impaired waters. MPCA needs to provide the public with their clear strategy for ensuring that both the statewide mercury TMDL reduction goals are met, and the remaining mercury-impaired waters (waters with concentrations greater than 0.572 mg/kg are added to the TMDL List and not Appendix A) have expedited TMDL studies and implementation plans. At this point, the Band is discouraged to hear, time and again, from MPCA staff who are coordinating the state's Watershed Restoration and Protection Strategies (WRAPS) program that mercury impairments are not being prioritized. This is fundamentally unacceptable.

Once again, the Band specifically urges the MPCA to resume, with the state, federal and tribal partners, a comprehensive St. Louis River watershed-wide mercury TMDL study that will lead to restoration of all the mercury-impaired reaches and tributaries through whatever regulatory and non-regulatory means necessary to reduce mercury methylation and bioaccumulation in fish. The Band is, as always, a willing partner in this effort. The agency's response to this same recommendation in our comments on the draft 2018 Impaired Waters List is not adequate or responsive to the full picture:

"The MPCA is concerned about the levels of mercury in the St. Louis River. Although significant mercury emission and discharge reductions that benefit all waters are being made under the existing statewide TMDL and water quality standard, the St. Louis River is one of the 10% of state waters where the mercury problem will not be fully solved by the

statewide TMDL. In these waters, mercury is more available to the food chain, resulting in higher levels of mercury in fish tissue. In 2013, the MPCA identified the need for further research into mercury loading, mercury methylation, and bioaccumulation of mercury in fish tissue. This information is needed to fully understand the situation in the St. Louis River, and therefore to complete and implement a scientifically sound mercury TMDL for the River. Data collection and funding for MPCA's mercury-in-rivers research project ended June 30, 2017; however, analysis and interpretation of the chemical and biological data are continuing among MPCA staff and the academic collaborators on the project. A specific completion date has not been established. The MPCA plans to resume the St Louis River mercury TMDL process once this additional research is completed. MPCA continues to work with the partners in the St. Louis River TMDL effort to gather and share information in preparation for a future TMDL. We appreciate your willingness to re-engage with us at that time."

The agency cannot simply dismiss the urgent need to address this fundamental deficiency by referring to an endless and non-systematic series of data collection efforts. It is somewhat disingenuous to refer to the mercury-in-rivers project, under which data collection concluded in 2017 but "analysis and interpretation" is still ongoing, as the trigger for resuming the St. Louis River TMDL process. The MPCA withdrew from the multi-agency cooperative TMDL process *seven years ago*, claiming that there was insufficient data or appropriate modeling methodology available and "committing" to filling those gaps. The Band and other cooperative agencies, along with a number of respected mercury researchers, recognize that there is substantially more mercury data and knowledge of the St. Louis River watershed than virtually anywhere else in the state, and it is time to systematically focus our efforts on restoring this mercury impaired watershed.

The second major issue that the Band highlights in our comments on the draft 2020 Impaired Waters List is the continued failure of MPCA to list wild rice waters that are known to be impaired (i.e., not meeting the state's federally approved sulfate criterion). This omission is not inadvertent, it is a chronic deficiency in the state's listing process. The Band first identified this deficiency in our comments on the 2012 draft 303(d) list, and has continued to do so in each of our biennial comment letters on the state's draft impaired waters lists. For example, our comments submitted on the draft 2016 list included:

"The Disclaimer published in the 2016 Impaired Waters List regarding MPCA's failure to establish an assessment methodology for wild rice waters does not in any way absolve the agency of its obligations under the CWA. The state made a commitment after the 2012 Impaired Waters List to expedite an assessment methodology for wild rice waters in time for drafting the 2014 Impaired Waters List, in response to numerous comments on this missing element. EPA supported that commitment in their decision document on the 2012 Impaired Waters List."

But the draft 2014 impaired waters list also failed to list any impairments for wild rice waters, despite the agency's initial development of an assessment methodology and preliminary list of wild rice impairments in August 2013. EPA initially deferred approval of the agency's 2014 Impaired Waters List until the MPCA submitted an addendum of wild rice impaired waterbodies. Although the Band is fully aware of legislation passed by the Minnesota Legislature in 2015 prohibiting the agency from listing wild rice impaired waters under CWA Section 303(d), that legislation, unfortunately, is in direct conflict with the Clean Water Act.

In the MPCA responses to comments on the 2018 Impaired Waters List, the agency responded to our call for listing impaired wild rice waters as follows:

"The MPCA is continuing to evaluate all available options following the January 9, 2018 Administrative Law Judge report pertaining to the proposed revisions to the wild rice sulfate standard. MPCA intends to proceed with the rule revision process, as prescribed by Minnesota state law, for updating the wild rice-related standard. Once the standard revision rulemaking is complete, MPCA staff will work on methods for assessment of waters for the wild rice sulfate standard. MPCA is committed to assessing wild rice waters once this process is complete."

This response signals to the Band and to the public that MPCA does not intend to implement the existing water quality standards, in contravention of the agency's delegated authorities under the CWA. The 2020 draft list not only maintains but also underscores this deficiency, and categorically excludes assessment of all Minnesota waters used for the production of wild rice, despite the fact that they are protected by a water quality standard that has been in place since it was approved in 1973. The 2020 Draft List includes an explicit "Disclaimer" that states:

"The Minnesota Pollution Control Agency (MPCA) has not finalized methods for identifying waters used for production of wild rice or for assessing impairment of waters based on the existing wild rice-related standard. Consequently, the 2020 303(d) Impaired Waters List does not include any waters assessed as impaired for the sulfate wild rice standard. The MPCA continues to consider next steps for the sulfate standard to protect wild rice. Go to https://www.pca.state.mn.us/water/protecting-wild-rice-waters for more information.[2]"

The cited webpage links to MPCA's Notice of Withdrawal of its failed Wild Rice Rule (dated April 26, 2018), but no proposed or pending rulemaking or other "next steps" are identified. The agency does not even attempt to provide a factual or legal justification for excluding these waters from the Draft List.[3] The Band and other Minnesota tribes and tribal agencies have repeatedly shared our approach for identifying wild rice waters and standardized methodology for assessing impairments. This exclusion of impaired wild rice waters is plainly a political decision that ignores the requirements of the Clean Water Act

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[2] *See* https://www.pca.state.mn.us/water/minnesotas-impaired-waters-list.

[3] *See* 40 CFR 130.7(b)(6)(iii).

and Minnesota Rules, and it is a continuation of this agency's ongoing failure to protect an irreplaceable resource.

The Minnesota Department of Natural Resources and Minnesota tribal/tribal agency staff have developed and updated lists of state waters where wild rice is an existing use.[4,5] The MPCA has collected quality-assured sulfate data across the state through routine monitoring. By simply cross-referencing these records, tribal staff were able to identify three lakes and five stream segments within the 1854 Ceded Territory that are impaired for sulfate. Those waterbodies are listed below in Table 1.

Table 1. Impaired Wild Rice Waters in the 1854 Ceded Territory

Waterbody	MPCA Measured Average Sulfate Concentrations (mg/l)
Birch Lake	110
Embarrass River	71.2
Little Sandy Lake	254.6
Partridge River	264.3
Pike River	110
Sand River	116.8
Sandy Lake	132.3
Second Creek	628.5

This simple desktop assessment exercise (provided by Grand Portage Band staff) only identifies those known wild rice waterbodies where median sulfate concentrations range from seven to sixty-three times greater than the applicable 10 mg/L sulfate criterion. Consequently, while this proposed list of impaired wild rice waters is not exhaustive for either the state or the 1854 Ceded Territory, it does represent a set of waters where wild rice is clearly an existing use, and the state's federally approved sulfate standard is clearly and consistently exceeded. The MPCA is required to consider information provided through tribal consultation in their decision-making process, with the goal of achieving mutually

[4] Minnesota Department of Natural Resources, Natural Wild Rice in Minnesota: A wild rice study document submitted to the Minnesota Legislature by the Minnesota Department of Natural Resources" (Feb. 15, 2008), available at http://files.dnr.state.mn.us/fish_wildlife/wildlife/shallowlakes/natural-wild-rice-in-minnesota.pdf

[5] http://www.1854treatyauthority.org/wild-rice/wild-rice-survey.html

beneficial solutions.[6] The Band maintains that these waters must be included on the state's Impaired Waters List, and the MPCA must develop a TMDL or establish water quality based effluent limits where necessary. Until any revised wild rice rules are approved by USEPA, the existing approved rules must be implemented. Further, the USEPA is obligated to ensure that MPCA complies with the Clean Water Act's impaired waters provisions, or commence its own TMDL process[7].

The Fond du Lac Band, along with other Minnesota tribes and intertribal agencies, has persistently elevated our concerns for the protection and restoration of wild rice across our reservations, ceded territories and traditionally harvested waters directly to the agency for decades. Further, since at least 2005, we have called attention to the MPCA's failure to implement and enforce their existing, federally-approved wild rice sulfate criterion in water quality permits. We have urged the agency to work with the Minnesota DNR to collect the data necessary to verify wild rice waters, and to develop metrics for reporting and assessing the condition of wild rice waters. We have provided water quality data and documentation of wild rice waters across our ceded territories, supported the development of and implemented a standardized method for surveying wild rice stand density and estimating annual biomass, and actively engaged in consultation with both state agencies on how best to manage, protect and restore wild rice. And yet, in 2020, the MPCA still has not invested the time, effort and resources necessary to adequately monitor, assess, and protect wild rice through its various CWA authorities: permitting, enforcement of water quality standards, identification and restoration of impairments. It is long past time for the agency to address these deficiencies, and an appropriate first step would be to recognize impaired wild rice waters through the CWA 303(d) listing process and take the necessary actions to restore this beneficial use.

Sincerely,

Nancy Schuldt

Nancy Schuldt, Water Projects Coordinator
Fond du Lac Environmental Program

Cc: Tom Short, USEPA Region 5
Alan Walts, USEPA Region 5
Paul Proto, USEPA Region 5
David Pfeifer, USEPA Region 5
Barbara Wester, USEPA Region 5

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[6] *See*, *e.g.*, Exec. Order 19-24.
[7] *Alaska Ctr. for the Env't v. Reilly*, 796 F. Supp. 1374, 1381 (W. D. Wa.1992), *aff'd as Alaska Ctr. for the Env't v. Browner*, 20 F 3d 981 (9th Cir. 1994).

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JAN 28 2019

REPLY TO THE ATTENTION OF:
WW-16J

Shannon Lotthammer, Assistant Commissioner
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Dear Ms. Lotthammer:

The U.S. Environmental Protection Agency has completed its review of Minnesota's 2016 and 2018 303(d) lists and supporting documentation and information. Based on this review, EPA determined that Minnesota's 2016 and 2018 303(d) lists of water quality limited segments still requiring Total Maximum Daily Load calculations meet the requirements of Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations. Therefore, EPA approves Minnesota's 2016 and 2018 303(d) lists which identify individual waterbody segments with associated pollutants and the State's priority rankings for these segments and pollutants. The statutory and regulatory requirements, and EPA's review of Minnesota's compliance with each requirement, are described in the enclosed decision document.

EPA's approval of Minnesota's 2016 and 2018 303(d) lists extends to all waterbody segments on the list (Appendices 2 and 3 of the Decision Document) with the exception of those waters that are within Indian Country, as defined in 18 U.S.C. § 1151. EPA is taking no action to approve or disapprove the State's list with respect to those waters at this time. EPA, or eligible Indian Tribes, as appropriate, will retain responsibilities under CWA Section 303(d) for those waters.

We appreciate your hard work on Minnesota's 2016 and 2018 303(d) submittals. If you have any questions, please contact Mr. Peter Swenson, Chief of the Watersheds and Wetlands Branch, at 312-886-0236.

Sincerely,

Linda Holst

Linda Holst
Acting Division Director
Water Division

Enclosure

cc: Catherine Neuschler, MPCA
Miranda Nichols, MPCA
Celine Lyman, MPCA

DECISION DOCUMENT FOR THE APPROVAL OF MINNESOTA'S 2016 and 2018 CLEAN WATER ACT SECTION 303(d) LISTS

The U.S. Environmental Protection Agency has conducted a complete review of Minnesota's 2016 Clean Water Act (CWA), 33 U.S.C. § 1251 *et seq.*, Section 303(d) list (Minnesota 2016 303(d) list), Minnesota's 2018 CWA Section 303(d) list (Minnesota 2018 303(d) list), and supporting documentation and information (303(d) list). Based upon this review, EPA concludes that Minnesota's list of water quality limited segments (WQLS) still requiring total maximum daily loads (TMDLs) meets the requirements of Section 303(d) of the CWA and EPA's implementing regulations at 40 Code of Federal Regulations (C.F.R.) § 130.7. Therefore, EPA hereby approves Minnesota's 2016 and 2018 303(d) lists.

EPA concludes that, with the exceptions discussed in Section II.F.1[1] of this Decision Document: Minnesota properly assembled and evaluated existing and readily available data and information, including data and information relating to categories of waters specified at 40 C.F.R. § 130.7(b)(5); Minnesota submitted a methodology in 2016 and 2018 that outlines how it uses readily available data and information to make assessment and impairment decisions; Minnesota provided a rationale for not relying on particular existing and readily available water quality related data and information in appropriate instances; and Minnesota demonstrated good cause in choosing to not include certain WQLS on its 2016 and 2018 303(d) lists.

EPA's approval of Minnesota's 2016 and 2018 303(d) lists extends to those water bodies identified in Appendix 2 and Appendix 3 of this Decision Document, with the exception of those waters that are within Indian Country as defined in 18 U.S.C. § 1151. EPA is taking no action to approve or disapprove the State's list with respect to those waters that are within Indian Country. EPA or eligible Indian Tribes, as appropriate, will retain responsibilities under Section 303(d) for those waters.

The statutory and regulatory requirements and EPA's review of Minnesota's compliance with each requirement are described in this Decision Document.

[1] The State of Minnesota has a federally-approved sulfate water quality standard (Minn. R. 7050.0224 subparts 1 and 2) and EPA expects the State to develop and apply a sulfate methodology to assess the attainment status of waters against its current sulfate criterion, specifically those waters that are recognized by the State as waters used for the production of wild rice (i.e., the 24 state-designated wild rice waters of Minn. R. 7050.0470, subpart 1). A lack of a formalized assessment methodology by itself is not a basis for a state to avoid evaluating data or information when developing its Section 303(d) list or to fail to list any water that is appropriate for listing under currently applicable standards.

Table of Contents

I. Statutory and Regulatory Background

A. Identification of Water Quality Limited Segments for Inclusion on the Minnesota 2016 and 2018 303(d) Lists

Section 303(d)(1) of the CWA directs states to identify those waters within their jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard (WQS) and to establish a priority ranking for such waters, considering the severity of the pollution and the intended uses of such waters. The Section 303(d) listing requirement applies to waters impaired by point sources and/or nonpoint sources, pursuant to EPA's long-standing interpretation of Section 303(d).[2]

EPA regulations provide that states do not need to list waters for which the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the CWA, (2) more stringent effluent limitations required by state or local authority, and (3) other pollution control requirements required by state, local, or federal authority.[3]

The 2016 and 2018 303(d) submittals included water body segments where MPCA identified certain water body segments as "partial" tribal waters. MPCA defined a partial tribal water in the context of the 303(d) list as,

> This body of water is partially within a federally recognized Indian reservation. The state and tribe have worked cooperatively on this water quality assessment and agree that the water should be included on the State's impaired waters list. For the purposes of the 303(d) list, the assessment of the portion of the water body within the reservation is advisory to EPA only because EPA has stated that it does not approve the State's impaired waters listings for waters within the boundaries of an Indian reservation.[4]

EPA acknowledges MPCA's effort to communicate water quality information for certain multijurisdictional water bodies (i.e., waters which are partially on state lands and partially on tribal reservation lands) in order to comply with Minnesota state laws which govern MPCA's responsibly to measure and communicate water quality information as part of its 303(d) program.[5] EPA is taking no action on those portions of any water body segment located in Indian country as that term is defined in 18 U.S.C. 1151.[6] EPA's approval of any water body segment which has been designated by the State as

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[2] U.S. EPA, Office of Water, Guidance for Water Quality-Based Decisions: The TMDL Process, EPA 44014-91-001, April 1991 (hereafter, EPA's 1991 Guidance); U.S. EPA, Office of Water, EPA Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates: Supplement, EPA-841-B-97-002B, September 1997.

[3] 40 C.F.R. § 130.7(b)(1).

[4] 2016 303(d) submittal spreadsheet, Tribal Designation Notation tab, 2016 Proposed Impaired Waters List (wq-iw1-55) and 2018 303(d) submittal spreadsheet, Tribal Designation Notation tab, 2018 Proposed Impaired Waters List (wq-iw1-58) at https://www.pca.state.mn.us/water/minnesotas-impaired-waters-list, (last visited 12/21/18).

[5] MPCA, *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List, 2018 Assessment and Listing Cycle* (hereafter "2018 Methodology"), wq-iw1-04j, Appendix E, pp. 60-61.

[6] EPA continues to encourage MPCA to resegment transboundary water segments at the borders of Indian reservations to facilitate informal coordination with tribes who may wish to implement complementary and/or voluntary TMDLs for the reservation portion of affected water bodies and to encourage formal coordination with those tribes who may implement TMDLs under approved CWA 303(d) programs in the future.

a partial tribal water applies only to those portions of the water body segment located on state lands. EPA's approval does not apply to the portion of such water body segments that are in Indian country.

B. Consideration of Existing and Readily Available Water Quality-Related Data and Information

In developing CWA 303(d) lists, states are required to assemble and evaluate all existing and readily available water quality-related data and information including, at a minimum, data and information regarding the following categories of waters: (1) waters identified as partially meeting or not meeting designated uses or identified as threatened in the states' most recent Section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 nonpoint assessment submitted to EPA.[7] In addition to these minimum categories, states are required to consider any other data and information that are existing and readily available. EPA's 1991 *Guidance for Water Quality-Based Decisions* describes such data and information.[8] While states are required to evaluate all such data, states may decide whether to rely on particular data or information in determining whether to list (i.e., include the specified water body and pollutant parameter on 303(d) list) particular waters.[9]

EPA regulations at 40 C.F.R. § 130.7(b)(6) also require states to submit to EPA documentation to support the states' decisions whether to rely on particular data and information and whether to list waters. Such documentation must include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) any other reasonable information requested by EPA.[10]

C. Priority Ranking

EPA regulations codify and interpret the requirement in Section 303(d)(1)(A) of the CWA that states establish a priority ranking for listed waters. The regulations at 40 C.F.R. § 130.7(b)(4) require states to prioritize waters on their Section 303(d) lists for TMDL development, and also to identify those WQLS targeted for TMDL development in the next two years. In prioritizing and targeting waters, states must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters.[11] As long as these factors are taken into account, the CWA provides that it is up to the states to establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs; vulnerability of particular waters as aquatic habitats; recreational, economic, and aesthetic importance of particular waters; degree of public interest and support; and state or national policies and priorities.[12]

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[7] 40 C.F.R. § 130.7(b)(5).
[8] EPA's 1991 Guidance.
[9] EPA's 1991 Guidance.
[10] 40 C.F.R. § 130.7(b)(6).
[11] CWA Section 303(d)(1)(A).
[12] Surface Water Toxics Control Program and Water Quality Planning and Management Program, 57 Fed. Reg. 33040, 33045 (July 24, 1992); *see also* EPA's 1991 Guidance.

II. Analysis of Minnesota's Submission

A. Minnesota's 2016 and 2018 303(d) List Submittals

1. MPCA's 2016 List Submittal

MPCA submitted the final draft of its 2016 303(d) Impaired Waters list and attachments to EPA on January 20, 2017. The January 20, 2017 303(d)/305(b) submittal included the following:

- A January 4th, 2017, letter from Rebecca Flood, Assistant Commissioner, MPCA, to Chris Korleski, Water Division Director, EPA, with the enclosed attachments:
- 1 - 2016 Impaired Waters List, January 4, 2017;
- 2 - Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List 2016 Assessment Cycle (wq-iw1-04i) (December 2016);
- 3 - 2016 Integrated Report (305(d));
- 4 - Public Participation Package;
  - Internal and external calls for data (September – October, 2013 and September – October, 2014);
  - Public notice information (i.e., public meeting announcements, MPCA press releases, attendance sheets from public meetings, etc.);
  - Public comments received during public comment period (August 1, 2016 to September 30, 2016) and MPCA responses to these comments;
- 5 - Documentation on recategorization decision making (e.g., Category 4C and 4D waters);
- 6 - MPCA response to EPA comments on the draft 2016 303(d) List and Guidance Manual; and
- 7 - Appendix B of the Statewide Mercury TMDL (January 4, 2016).

2. MPCA's 2018 List Submittal

MPCA submitted the final draft of its 2018 303(d) Impaired Waters list and attachments to EPA on April 11, 2018. The April 11, 2018 303(d)/305(b) submittal included the following:

- An April 4th, 2018, letter from Shannon Lotthammer, Assistant Commissioner, MPCA, to Chris Korleski, Water Division Director, EPA, with the enclosed attachments:
- 1 - 2018 Impaired Waters List, April 11, 2018;
- 2 - Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List 2018 Assessment Cycle (wq-iw1-04j) (March 2018);
- 3 - 2018 Integrated Report (305(d));
- 4 - Public Participation Package;
  - Internal and external calls for data (September – October, 2015 and September – October, 2016);
  - Public notice information (i.e., public meeting announcements, MPCA press releases, attendance sheets from public meetings, etc.);
  - Public comments received during public comment period (November 27, 2017 to January 26, 2018) and MPCA responses to these comments;
- 5 - Documentation on recategorization decision making (e.g., Category 4C and 4D waters);

- 6 - MPCA response to EPA comments on the draft 2018 303(d) List and Guidance Manual; and
- 7 - Appendix B of the Statewide Mercury TMDL (April 11, 2018).

In its decision document approving Minnesota's 2012 303(d) and 2014 303(d) lists, EPA explained that MPCA had committed to develop a wild rice/sulfate impaired waters assessment approach to analyze and assess water quality data for potential impairment of its sulfate criterion for the 2014 listing cycle.[13] MPCA's 2016 and 2018 303(d) submittals did not include this assessment. While the State did not provide an assessment of those waters designated for the production of wild rice, EPA completed its own assessment of the current sulfate criterion for the 24-state designated waters of Minn. R. 7050.0470.[14]

EPA's review of Minnesota's 2016 and 2018 submittals involved reviewing those factors set forth at 40 C.F.R. § 130.7(b)(6), including a methodology, a description of the data and information used to identify waters pursuant to the factors set out in 40 C.F.R. § 130.7(b)(5), a rationale for relying on particular readily available data, and the additional information requested and reviewed by EPA.[15] On the basis of our review, EPA approves Minnesota's 2016 and 2018 303(d) lists.

EPA's approval of the Minnesota 2016 303(d) list includes those water bodies identified in Appendix 2 of this Decision Document, with the exception of those waters that are within Indian Country. EPA's approval of the Minnesota 2018 303(d) list includes those water bodies identified in Appendix 3 of this Decision Document, with the exception of those waters that are within Indian Country. EPA is taking no action to approve or disapprove the State's list with respect to those waters that are within Indian Country. EPA or eligible Indian Tribes, as appropriate, will retain responsibilities under Section 303(d) for those waters.

3. Integrating the CWA 305(b) Report and CWA 303(d) List

Since the 2002 assessment cycle, EPA has encouraged states to integrate their 303(d) lists and their 305(b) reports into one submittal, called the Integrated Report.[16] Minnesota follows this practice. EPA has recommended five beneficial use attainment reporting categories to represent levels of use attainment.[17] Minnesota uses these five categories with additional subcategories. These are described in Table 1, of this Decision Document.[18]

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[13] MPCA Response to the draft 2012 Total Maximum Daily Load List 30-Day Public Notice Comments, September 7, 2012.
[14] EPA's discussion of assessing waters for impairment based on the State's sulfate criterion for waters "used for the production of wild rice" is found in Section II.F.1 of this Decision Document.
[15] Section 303(d) lists must include all WQLS still needing TMDLs, regardless whether the source of the impairment is a point source, nonpoint source, or both. EPA's long-standing interpretation is that Section 303(d) applies to waters impacted by point sources and/or nonpoint sources. In *Pronsolino v. Nastri*, the Ninth Circuit Court of Appeals held that Section 303(d) of the CWA authorizes EPA to identify and establish TMDLs for waters impaired by nonpoint sources, 291 F.3d 1123 (9th Cir. 2002). *See also* EPA's 1991 Guidance.
[16] U.S. EPA, Office of Water, Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act, July 29, 2005 (hereafter, EPA's 2006 Guidance).
[17] EPA's 2006 Guidance, pp. 6-7.
[18] MPCA, *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List, 2016 Assessment and Listing Cycle*, wq-iw1-04i (hereafter "2016 Methodology"), p. 52, and 2018 Methodology, p. 55.

Table 1: MPCA's Beneficial Use Attainment Reporting Categories

Integrated Report Category	Description
1	All designated uses are fully assessed and met, and no use is threatened.
2	Some uses or parameters are met; but insufficient data to determine if remaining uses or parameters are met.
3A	No data or information to determine if any use is attained.
3B	Data are available for a review and generally indicate non-support, but insufficient data and information to determine TMDL impairment. (Example: single lake data point showing non-support.)
3C	Data available that currently has no assessment tools to allow its use in assessing. (Example: data with only eco-region expectation standards.)
3D	Data are available for a review and generally indicated full support, but insufficient data and information to assess for Category 1 or 2.
3E	Data are available for a review, but insufficient data and information to determine full support or TMDL impairment. (Example: lake data just below the threshold showing non-support.)
4A	Impaired or threatened but all needed TMDL plans have been completed.
4B	Impaired or threatened but doesn't require a TMDL plan because it is expected to attain standards within a reasonable period of time.
4C	Impaired or threatened but doesn't require a TMDL plan because impairment is not caused by a pollutant.
4D	Impaired or threatened but doesn't require a TMDL plan because the impairment is due to natural conditions with only insignificant anthropogenic influence. To be considered "insignificant", the elimination of the anthropogenic influence would not lead to the attainment of water quality standards and it would not be included in formal pollution reduction goal setting activities. A reach-specific water quality standard based on local natural conditions has yet to be determined. Upon determination, the assessment unit will be considered non-impaired for the natural conditions and re-categorized to an appropriate category.
4E	Impaired or threatened but existing data strongly suggests a TMDL plan is not required because impairment is solely a result of natural sources; a final determination of Category 4D will be made in the next assessment cycle pending confirmation from additional information (i.e., water quality or land use).
5A	Impaired or threatened by multiple pollutants and no TMDL plans approved.
5B	Impaired by multiple pollutants and either some TMDL plans are approved but not all or at least one impairment is the result of natural conditions.
5C	Impaired or threatened by one pollutant.

Minnesota's 2016 and 2018 Methodologies explain the State's process for development of its Integrated Report (MPCA refers to its Methodology as its "Guidance Manual"[19]). For assessing rivers and streams, MPCA uses a river assessment unit defined as the length of the river or stream assessment unit from an upstream significant tributary's confluence to the next downstream significant tributary's confluence or from the headwaters to the first significant tributary.[20] River assessment units are generally shorter than 20 miles in length and may be further divided into two or more assessment reaches when there is a change in use classification or where there is a significant morphological feature.[21] Minnesota uses the United States Geological Survey (USGS) eight-digit hydrologic unit code (HUC) (e.g., 07020012) plus a three-digit reach code (e.g., 505) to name river assessment units (e.g., 07020012-505).

MPCA relies on the *Protected Waters Inventory*, which is assembled by the Minnesota Department of Natural Resources (MDNR), to provide identification codes for lakes and wetlands. MDNR uses a unique eight-digit identification number to identify lakes and wetlands (Lake/Wetland ID#). The eight-

[19] MPCA, 2016 Methodology and 2018 Methodology.
[20] 2016 Methodology, p. 9 and 2018 Methodology, p. 9.
[21] 2016 Methodology, p. 9 and 2018 Methodology, p. 9.

digit number consists of a two-digit prefix, which represents the county, followed by a four-digit number, which identifies the lake or wetland, followed by a two-digit suffix which represents either the whole lake (as "-00") or represents a specific bay of the lake (e.g., -01, -02, etc.).[22] Throughout the remainder of this Decision Document the term "assessment unit" refers to any river segment identified with a river assessment unit identification number (ID#) or a lake segment identified with a Lake/Wetland ID#.

Once an assessment has been completed, MPCA places the water body into one of the five categories described in Table 1 above. Waters within categories 4 and 5 represent the inventory of impaired waters. Category 5 waters represent those waters requiring TMDLs, i.e., Minnesota's 303(d) list. EPA is approving the waters identified in Appendix 2 of this Decision Document as Minnesota's 2016 303(d) list and the waters identified in Appendix 3 of this Decision Document as Minnesota's 2018 303(d) list.

B. Review of Minnesota's Consideration of Existing and Readily Available Water Quality-Related Data and Information

1. State Monitoring Data and Information

Minnesota annually conducts surface water monitoring to determine the chemical, biological, bacteriological, and physical conditions of surface waters. The data are used to assess potential and actual threats to water quality and to evaluate the effectiveness of management strategies to address such threats and impairments. MPCA also considers water quality data collected by local, state, and federal partners, along with citizen and remote sensing monitoring.

MPCA's data collection and assessment process targets specific HUC-8 watersheds on a biennial basis via the State's "Intensive Watershed Monitoring Approach" (IWMA). The IWMA cycle begins with a two-year intensive watershed monitoring program in which the MPCA collects data on water conditions throughout each targeted HUC-8 for that particular listing cycle (Tables 2 and 3 of this Decision Document).[23] Through the IWMA, MPCA collects water chemistry and biological data, and takes note of general physical characteristics of the HUC-8 landscape (e.g., land use, topography, soil composition, and potential pollution sources). This information, in addition to data provided by the public and other entities, is compiled in a Stressor Identification Report that MPCA uses to assess water quality in each HUC-8 watershed.

Additionally, MPCA annually collects toxic parameter (e.g., mercury) ambient water quality data on a statewide basis. MPCA assessed annual toxic ambient water quality data collected in 2014-2015 for its 2016 listing cycle and water quality data collected in 2016-17 for its 2018 listing cycle. The 2016 and 2018 listing cycles were also the first 303(d) cycles for which MPCA solicited water quality data on large river segments from the general public. MPCA defines large rivers as large mainstem rivers that flow through multiple major watersheds and that may not be satisfactorily represented, in terms of water quality sample collection, in MPCA's IWMA.[24]

[22] 2016 Methodology, p. 9 and 2018 Methodology, p. 9.
[23] MPCA Watershed Monitoring Approach (Intensive Watershed Monitoring Map), https://www.pca.state.mn.us/water/watershed-approach-restoring-and-protecting-water-quality (last visited 12/21/18).
[24] 2016 Methodology, pp. 3-4 and 2018 Methodology, p. 3.

Table 2: Watersheds in which water quality data were assessed for the 2016 listing cycle

Watershed Name	Year in which data were collected under the Intensive Watershed Monitoring Approach (IWMA)
Lake of the Woods	2014
Red River - Grand Marais Creek	2014
Red Lake River	2014
Leech Lake River	2014
Pine River	2014
South Fork Crow River	2014
Zumbro River	2014
Two Rivers	2015
Snake River	2015
Mississippi River - Headwaters	2015
Lake Superior - North	2015
Rum River	2015
Minnesota River - Mankato	2015
Watonwan River	2015
Additional large river monitoring completed during the 2016 listing cycle	
Mississippi River - headwaters to St. Anthony Falls	2015
E. coli data for Minnesota River, Rainy River, Red River, St. Croix River and Mississippi River	2015
E. coli data for Lake Superior public beaches	2015
Toxics data - nitrates, pesticides, trace metals and mercury for streams throughout Minnesota	2015

Table 3: Watersheds in which water quality data were assessed for the 2018 listing cycle

Watershed Name	Year in which data were collected under the Intensive Watershed Monitoring Approach (IWMA)
Clearwater River	2016
Des Moines River - Headwaters	2016
East Fork Des Moines River	2016
Lower Des Moines River	2016
Lower Minnesota River	2016
Rainy River - Headwaters	2016
Red River of the North - Marsh River	2016
Upper/Lower Red Lake	2016
Wild Rice River	2016
Additional large river monitoring completed during the 2018 listing cycle	
Minnesota River - Headwaters to Mississippi River	2016
Cloquet River	2017
Lac Qui Parle River	2017
Minnesota River - Headwaters	2017
Mississippi River - Grand Rapids	2017
Mississippi River - La Crescent	2017
Mississippi River - Reno	2017
Roseau River	2017

Upper Iowa River	2017
Upper Wapsipinicon River	2017
Vermilion River	2017
Winnebago River	2017
Additional large river monitoring completed during the 2018 listing cycle	
Red River of the North - Headwaters to the Canadian Border	2017

2. Active Solicitation of Data from Other Sources

In order to assess water bodies for the 303(d) list, MPCA relies on data it collects via its IWMA and data from other credible outside sources. MPCA publishes annual "Calls for Water Quality Data" through the State's "*GovDelivery*" electronic mail distribution system and through its website. In the *Call for Water Quality Monitoring Data* email communications, MPCA outlines expectations for meeting data quality and submittal deadlines.

In 2003, MPCA issued the *Volunteer Surface Water Monitoring Guide*. This guidance discusses data uses and goals of data collection, data quality issues, and includes a specific section on monitoring requirements for data that can be used in 305(b) and 303(d) assessments.[25] This guidance and other MPCA notifications contain the necessary parameters for MPCA's acceptance of outside data. In its review of all existing and readily available water quality data, MPCA staff considered data submitted within the timeframes described in MPCA's Calls for Water Quality Monitoring Data and which meet its data quality assurance and quality control (QA/QC) protocols. Monitoring and data management at MPCA are in accordance with the requirements specified in the Quality Management Plan (December 2017) approved by the EPA and available for review via MPCA's website.[26]

2016 listing cycle:
MPCA sent emails to members of the public who are signed up on the Agency's listservs on September 5, 2013[27], September 16, 2013[28], September 15, 2014[29], and September 18, 2014[30] requesting the public to share all available water quality data for the watersheds and large river segments in Table 2 of this Decision Document. These email solicitations were part of MPCA's effort to gather all readily available water quality data and information to assess water quality for the 2016 listing cycle.

2018 listing cycle:
MPCA sent emails to members of the public who are signed up on the Agency's listservs on September 14, 2015[31], October 22, 2015[32], and September 14, 2016[33] requesting the public to share all available water quality data for the watersheds and large river segments in Table 3 of this Decision Document.

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[25] Appendix D of the *Volunteer Surface Water Monitoring Guide* provides specific requirements for MPCA integrated assessments (revised September 2009), https://www.pca.state.mn.us/sites/default/files/wq-s1-15n.pdf (last visited 12/21/18).
[26] MPCA Water Quality Management Plan (December 2017), https://www.pca.state.mn.us/sites/default/files/p-eao2-15.pdf (last visited 12/21/18).
[27] MPCA email, 9/5/13, Subject: *Waterfront Bulletin for September 2013*, p. 7.
[28] MPCA email, 9/16/13, Subject: *MPCA seeking Water Quality Data*, pp. 1-3.
[29] MPCA email, 9/15/14, Subject: *Do you have water quality data to share?*, pp. 1-2.
[30] MPCA email, 9/18/14, Subject: *Watershed Network News – Sept. 18, 2014*, pp. 5.
[31] MPCA email, 9/14/15, Subject: *Waterfront Bulletin for September 2015*, p. 3.
[32] MPCA email, 10/22/15, Subject: *Do you have water quality data to share?*, pp. 1-2.
[33] MPCA email, 9/14/16, Subject: *Waterfront Bulletin for September 2016*, p. 2-3, and MPCA email, 9/14/16, Subject: *Do you have water quality data to share?*, pp. 1-2.

These email solicitations were part of MPCA's effort to gather all readily available water quality data and information to assess water quality for the 2018 listing cycle.

MPCA stores all data used for its assessment in its central depository for water quality data known as the *Environmental Quality Information System* (EQuIS). Data collected by parties other than MPCA are added to EQuIS for individual water bodies if the data meet the State's QA/QC guidelines.[34]

C. Review of Minnesota's Rationale to List or Not List WQLS on the 2016 and 2018 303(d) Lists

1. Methodology Used to Assess Waters and Develop the 303(d) List

EPA's regulations at 40 C.F.R. § 130.7(b)(6) require that states provide documentation to support their decisions whether to list waters including a description of the methodology used to develop the list. Beginning in 2002, MPCA developed an assessment methodology and has modified it with each listing cycle. Minnesota's January 20, 2017, submittal to EPA included MPCA's 2016 Methodology and its April 11, 2018, submittal to EPA included MPCA's 2018 Methodology.

MPCA's 2016 and 2018 Methodologies define the data and information requirements for assessing and determining whether a water is meeting its designated beneficial use(s). The 2016 and 2018 Methodologies also establish thresholds for various categories of pollutants. Detection of pollutants over these thresholds suggests impaired conditions. As with prior versions of its methodology, the State made the 2016 and 2018 Methodologies available to the public through MPCA's website prior to the start of the public notice period for both the 2016 and 2018 listing cycles.

Minnesota rules identify seven beneficial uses for which surface waters in Minnesota are protected (Table 4 of this Decision Document).

Table 4: Minnesota Beneficial Use Classifications

Class of Water	*Designation*
Class 1	Drinking water
Class 2	Aquatic life and recreation
Class 2A	*Cold water fisheries, trout waters*
Class 2B	*Cool and warm water fisheries (not protected for drinking water use)*
Class 2Bd	*Cool and warm water fisheries (protected for drinking water use)*
Class 2C	*Indigenous fish and associated aquatic community*
Class 2D	*Wetlands*
Class 3	Industrial use and cooling
Class 4	Agricultural use
Class 5	Aesthetics and navigation
Class 6	Other uses
Class 7	Limited resource value waters

[34] MPCA webpage, http://www.pca.state.mn.us/index.php/water/water-monitoring-and-reporting/surface-water-data/environmental-quality-information-system-equis.html (last visited 12/21/18).

MPCA Class 1 waters (designated drinking waters) are protected surface waters for water supply purposes. All groundwater in Minnesota is protected as a source of drinking water, but only select surface waters are protected as sources of drinking water.[35] MPCA has acknowledged the trend of increasing nitrate concentrations in Minnesota stream and groundwater samples.[36] Class 1 water bodies have been assessed since the 2010 listing cycle to measure potential exceedances of the nitrate-nitrogen Class 1 drinking water consumption standard.[37]

All surface waters in Minnesota are considered either Class 2 or Class 7 designated waters.[38] Unless classified as Class 7 waters, surface waters in Minnesota are protected for aquatic life and recreation (Class 2 designated water). The State of Minnesota defines protection of aquatic life and recreation as:

> . . . the maintenance of healthy, diverse, and successfully reproducing populations of aquatic organisms, including invertebrates as well as fish. Protection of recreation for all surface waters, except wetlands and limited resource value waters means the maintenance of conditions suitable for swimming and other forms of water recreation. Recreation in wetlands means boating and other forms of aquatic recreation for which they may be usable (this does not preclude swimming if that use is suitable).[39]

Typically, water quality standards applicable to Class 2 designated waters are the most stringent. Therefore, Minnesota's assessments usually consider water quality standards applicable to Class 2 waters. Beneficial use supports assessed by Minnesota include:

- Aquatic Life (toxicity-based standards, conventional pollutants, biological indicators);
- Drinking Water and Aquatic Consumption (human health-based standards);
- Aquatic Consumption (wildlife-based standards);
- Aquatic Recreation (*Escherichia coli (E. coli)* bacteria, eutrophication); and
- Limited Value Resource Waters (toxicity-based standards, bacteria, conventional pollutants).

Aquatic life use support assessments consider protection of the organisms that reside in the surface waters, while aquatic consumption use support assessments consider protection of the consumers of the aquatic life. Aquatic recreation use support is assessed for the protection of recreation in surface waters.[40]

MPCA Class 7 waters (designated limited resource value waters) are protected to allow secondary body contact use, to preserve groundwater for potable water supply, and to protect aesthetic qualities of the water.[41] Class 7 designated waters are not fully protected for aquatic life. Such waters have a very limited aquatic and fish community populations mostly due to lack of water, lack of habitat, or extensive physical alterations. Both Class 2 and 7 designated waters are also protected for Classes 3, 4, 5, and 6 designations.

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[35] MPCA Water Quality Standards, https://www.pca.state.mn.us/water/water-quality-standards (last visited 12/21/18).
[36] 2016 Methodology, p. 35 and 2018 Methodology, p. 38.
[37] Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List, 2010 Assessment Cycle (October 2009), pp. 29 and 48.
[38] MPCA Water Quality Standards, https://www.pca.state.mn.us/water/water-quality-standards (last visited 12/21/18).
[39] MPCA Water Quality Standards, https://www.pca.state.mn.us/water/water-quality-standards (last visited 12/21/18).
[40] 2016 Methodology, p. 5 and 2018 Methodology, p. 5.
[41] Class 7 Limited Resource Value Waters Fact Sheet, http://www.pca.state.mn.us/index.php/view-document.html?gid=7255 (last visited 12/21/18).

2. The Assessment Process

MPCA's data collection and assessment process focuses on water quality monitoring efforts within selected HUC-8 watersheds (see Tables 2 and 3 of this Decision Document). The IWMA strategy generates large amounts of data that are initially screened via computer analyses (i.e., Step 1 below) and further analyzed during expert and external partner reviews (i.e., Steps 2 through 5 below). Through this process, MPCA reviews all available water quality monitoring data and information to determine whether the water body meets its beneficial uses (e.g., drinking water, aquatic life, aquatic recreation, aquatic consumption, and limited use waters). MPCA's key steps are described below:[42]

<u>Step 1:</u> "Pre-assessment" - Monitor and gather data information
MPCA assesses all major watersheds on a 10-year cycle that includes a parameter-specific analysis (e.g., for Dissolved Oxygen) for individual water bodies and involves reviewing the number of data points that exceed the criteria, the total number of data points, and the number of years of data.

<u>Step 2:</u> "Expert Review" - Assessment of the water quality data by MPCA staff
MPCA conducts a quality assurance review of the pre-assessment screening. MPCA next determines whether water resources meet water quality standards and designated uses. Waters that do not meet water quality standards are considered for listing as impaired waters.

<u>Step 3:</u> Desktop assessment by resource specific MPCA staff
MPCA reviews ambient water quality and biological data to ascertain the overall quality of the dataset for each water body, identified by assessment unit identification numbers (AUIDs, which are the river assessment unit ID# or the lake/wetland ID#).[43] In this step, MPCA also considers other climatic and hydrochemical evidence (e.g., flow conditions). Based on this review, MPCA determines whether a water body meets the criteria to be added to the 303(d) list.

<u>Step 4:</u> Watershed Assessment Team review of water quality data
MPCA convenes an internal Watershed Assessment Team (WAT) to review the results of the use-support determinations resulting from the first three steps for each HUC-8 watershed under review. This team also considers delistings and natural background candidate water bodies (i.e., those water bodies for which natural conditions cause impairment).

<u>Step 5:</u> Professional Judgment Group review of water quality data
MPCA convenes a Professional Judgment Group (PJG) comprised of the WAT and external parties (e.g., local data collectors, local government units, tribal partners).[44] The PJG reviews water quality data and potential AUIDs for listing or delisting and makes the final use-support determinations.[45] MPCA reports the assessment decisions made by the PJG in *Watershed Monitoring and Assessment Reports* (on the HUC-8 scale) and the *Integrated Report*.[46]

[42] 2016 Methodology, pp. 7-8 and 2018 Methodology, pp. 7-8.
[43] 2016 Methodology, pp. 7-8 and 2018 Methodology, pp. 7-8.
[44] 2016 Methodology, pp. 7-8 and 2018 Methodology, pp. 7-8.
[45] 2016 Methodology, pp. 7-8 and 2018 Methodology, pp. 7-8.
[46] MPCA Surface Water Data – Search for lake and stream information webpage, http://cf.pca.state.mn.us/water/watershedweb/wdip/search_more.cfm (last visited 12/21/18).

2A. Assessment Based on Narrative and Numeric Water Quality Standards

EPA recognizes that water quality criteria have three elements: magnitude, duration, and frequency of exceedance.[47] Minnesota's 2016 and 2018 Methodologies set forth specific information about how MPCA considered these three elements in developing its 303(d) lists. EPA finds that Minnesota's 2016 and 2018 Methodologies support the reasonable identification of WQLS with the exceptions discussed in Section II.F.1.[48]

In MPCA's review of ambient water quality data for the 2016 and 2018 listing cycles, MPCA determined whether individual parameters within a specific water body met or exceeded the applicable water quality criteria (numeric or narrative standards). In its final use-support determinations, MPCA also considered additional supporting information, such as timing of exceedances, naturally occurring conditions that may affect pollutant concentrations and toxicity, weather and flow conditions, and changes in the watershed that may have changed water quality.

2B. Assessment Based on Numeric and Narrative Standards for Protection of Aquatic Life

The 2016 and 2018 Methodologies outline the minimum requirements for ambient water quality data and impairment thresholds for pollutants that have toxicity-based chronic numeric standards. Sections V.A.1 and V.A.2 of the Methodology explain the applicable Class 2 numeric water quality standards, data requirements, and impairment thresholds considered in these toxicity-based numeric standard assessments. In general, for the assessment of pollutants with toxicity-based numeric standards, five data points collected within a 3-year period, within the most recent 10-year period are necessary. MPCA considers two or more exceedances of the chronic standard in 3 years to be an impairment and lists these waters.[49]

Minnesota also assesses conventional pollutants that have numeric standards and water quality characteristics, which typically include low dissolved oxygen, pH, total suspended solids, temperature, biological indicators and river eutrophication. Sections V.B.1 and V.B.2 of the Methodologies explain the applicable Class 2 numeric water quality standards, data requirements, and impairment thresholds considered in these assessments and also describe characteristics for dissolved oxygen in the applicable Class 7 standard. The State generally requires a minimum of 20 data points collected in the most recent 10-year period from two separate years and will list as impaired those waters where 10 percent of the data points exceed the applicable standard.[50]

<u>Total suspended solid assessment for 303(d) list development</u>

The 2016 listing cycle was the first listing cycle in which MPCA assessed water quality data against its total suspended solids (TSS) criteria, which were approved in January 2015.[51] The TSS criteria apply to water quality data collected in rivers and streams. TSS consists of soil particles, algae, and other materials that are suspended in the water column and reduce clarity which can harm aquatic species, degrade aesthetic and recreational qualities and require greater treatment efforts prior to being suitable

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[47] EPA's 2006 Guidance, p. 30.
[48] MPCA has not developed a methodology for determining impairment of the 24 state-designated wild rice waters of Minn. R. 7050.0470, subpart 1. See Section II.F.1 of this Decision Document.
[49] 2016 Methodology, p. 16 and 2018 Methodology, p. 18.
[50] 2016 Methodology, pp. 17-26 and 2018 Methodology, pp. 18-28.
[51] EPA 303(c) approval document, *Basis for EPA Approval of Minnesota's New or Revised Eutrophication and Total Suspended Solids Criteria in Accordance with Section 303(c) of the Clean Water Act*, January 23, 2015.

for human consumption. Table 4 of the 2016 Methodology[52] and 2018 Methodology[53] presents Minnesota's TSS (mg/L) and Secchi tube (S-tube) criteria and site-specific criteria. S-tube measurement data were considered by MPCA in certain instances as surrogate water quality data to complete the assessment of whether a water body segment is attaining or not-attaining its TSS criteria.

MPCA explains that a stream and/or river is considered to exceed the TSS criteria if;

- The criteria are exceeded more than 10% of the days of the assessment season (April through September) as determined from a dataset that gives an unbiased representation of conditions over the assessment season; and
- There are at least three such measurements exceeding the criteria.[54]

Biological integrity assessment for 303(d) list development

MPCA continues to use its fish and invertebrate index of biological integrity (IBI) scores to assess the aquatic life use of rivers and streams as well as plant and invertebrate IBI scores to assess depressional wetlands.[55] In general, an IBI score above the assessment threshold indicates aquatic life use support, while a score below the threshold indicates non-support.[56] As explained in MPCA's 2016 and 2018 Methodologies:

> In general, a stream reach is considered to be fully supporting of aquatic life if:
> - IBI scores for all available assemblages indicate fully supporting conditions; or
> - The criteria for both dissolved oxygen and turbidity/t-tube/total suspended solids are adequately met; and
> - Other lines of evidence considered comprehensively, including upstream/downstream conditions, do not contradict a finding of full support.
>
> A stream reach is considered to be not supporting if:
> - IBI scores for at least one biological assemblage indicate impairment; or
> - One or more water chemistry parameters indicates impairment; and
> - Other lines of evidence considered comprehensively, including upstream/downstream conditions, do not contradict a finding of non-support.[57]

If the aquatic life criteria above are not met and MPCA deems the assessment to be inconclusive, MPCA will consider the assessment to have insufficient information (i.e., a Category 3 water, Table 1 of this Decision Document).[58]

To make a determination of biological impairment, MPCA requires failing IBI scores for at least one biological assemblage or one or more water chemistry parameters indicating impairment. When MPCA determines that a designated use is not supported on the basis of biological indicator evidence, MPCA may add water chemistry parameters in some cases.[59]

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[52] 2016 Methodology, p. 19.
[53] 2018 Methodology, p. 20.
[54] 2016 Methodology, p. 19 and 2018 Methodology, p. 21.
[55] The State's rules for assessing impairment of biological community and aquatic habitat are found at Minn. R. 7050.0150(6).
[56] 2016 Methodology, pp. 20-21 and 2018 Methodology, pp. 21-23.
[57] 2016 Methodology, pp. 23-26 and 2018 Methodology, pp. 25-28.
[58] 2016 Methodology, pp. 24-25 and 2018 Methodology, pp. 26-27.
[59] For example, where the water chemistry data is sufficient to establish impairment irrespective of the biological data, 2016 Methodology, p. 24 and 2018 Methodology pp. 26-27.

River eutrophication assessment for 303(d) list development

The 2016 listing cycle was the first listing cycle in which MPCA assessed water quality data against its river eutrophication criteria, which were approved in January 2015.[60] MPCA's river eutrophication standards (RES) apply to water quality data collected in rivers and streams. Eutrophication is the presence of undesirable levels of sestonic or suspended algae, benthic or attached algae, and/or excessive rooted vegetation.[61] While total phosphorus (TP) is an essential nutrient for aquatic life, elevated concentrations of TP can lead to nuisance algal blooms that negatively impact aquatic life and recreation (e.g., swimming, boating, fishing, etc.). Algal mat growth linked to excessive concentrations of algae in surface waters can shade the water column which limits the distribution of aquatic vegetation and diminishes the vitality of benthic habitat areas used by young and juvenile fish and macroinvertebrate species. Additionally, algal decomposition depletes dissolved oxygen levels in the water column and can stress benthic macroinvertebrates and fish. Depletion in dissolved oxygen levels can also lead to conditions where phosphorus is released from bottom sediments (i.e., internal loading).

MPCA has previously existing lake eutrophication criteria based on ecoregion boundaries. Similar to these lake eutrophication criteria, the river eutrophication criteria are location dependent and are determined based on River Nutrient Region (RNR) boundaries set by MPCA.[62] Minnesota is divided into north, central and south river nutrient regions which have corresponding river eutrophication criteria described in Table 5 of the 2016 Methodology[63] and 2018 Methodology[64] documents.

MPCA's river eutrophication criteria are two-part standards, which include the causative variable (total phosphorus), and response variables (sestonic chlorophyll-a (chl-*a*), dissolved oxygen flux (DO_{FLUX}), five-day biochemical oxygen demand (BOD_5) and/or pH). A water body segment is deemed to be impaired if water quality data demonstrate that the TP portion of the river eutrophication criteria and one of the response variables (i.e., chl-a, DO_{FLUX}, BOD_5 and/or pH) are exceeded.[65]

MPCA summarized its assessment process for river eutrophication in Section V.B.1.f of its Methodology document and included additional discussion regarding the application of the river eutrophication criteria related to minimum data requirements, specific data requirements for certain response variables (e.g., DO_{FLUX}), decision trees/flow charts to aid in the analysis of unique water quality datasets, response variable exceedances caused by other factors, scenarios where there is insufficient information, etc., in Appendix G of the 2016 Methodology and the 2018 Methodology documents.

Minnesota river eutrophication assessment for Class 2B waters in the Southern River Nutrient Region for the 2016 and 2018 303(d) lists

EPA approved MPCA's river eutrophication criteria in January 2015. During MPCA's process of transcribing the EPA-approved river eutrophication criteria into Minnesota Rules, MPCA made a transcription error in the response variable concentration values for Class 2B waters (cool and warm

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[60] EPA 303(c) approval document, *Basis for EPA Approval of Minnesota's New or Revised Eutrophication and Total Suspended Solids Criteria in Accordance with Section 303(c) of the Clean Water Act*, January 23, 2015.
[61] 2016 Methodology, p. 21 and 2018 Methodology, p. 23.
[62] MPCA, *Minnesota Nutrient Criteria Development for Rivers*, wq-s6-08, January 2013, Section IV, A.
[63] 2016 Methodology, p. 22.
[64] 2018 Methodology, p. 24.
[65] 2016 Methodology, p. 23 and 2018 Methodology, p. 25.

water fisheries) for the Southern River Nutrient Region (SRNR). MPCA populated the incorrect response variable concentration values[66] into Minnesota Rules, and this error was compounded via promulgating the incorrect values into Minn. R. 7050.0222.[67]

MPCA acknowledged this mistake as a drafting error in its 2016 and 2018 response to public comments submitted during the public notice period summary documents.[68] MPCA explained that the response variable values in Minnesota's Rule will be corrected in a future revision to Minnesota Rule 7050.0222. MPCA did not provide a timeframe of when that correction would occur, but EPA understands, based on communication with MPCA, that revisions to the river eutrophication criteria are unlikely to be corrected soon.[69]

Because of this error, MPCA's response variable concentration values for chl-*a*, DO_{FLUX} and BOD_5 presented in Table 5 of the 2016 Methodology[70] and 2018 Methodology[71] are incorrect. These incorrect values are summarized in Table 5 of this Decision Document in the yellow shaded row. The values in Table 5 of the Methodology documents and in the yellow highlighted row of Table 5 of this Decision Document below are the response variable concentration values promulgated in Minn. R. 7050.0222. The response variable concentration values in the green highlighted row of Table 5 of this Decision Document are the correct EPA approved response variable concentration values for chl-*a*, DO_{FLUX} and BOD_5.

Table 5: Corrected RES chl-*a*, DO_{FLUX} and BOD_5 response variable concentrations for Class 2B waters

Notes	*Class and MN Nutrient Region*	**TP**	**chl-*a***	**DO_{FLUX}**	**BOD_5**	**pH**
		µg/L	µg/L	mg/L	mg/L	pH units
Minn. R. 7050.0222	*Class 2B - SRNR*	*150*	*40*	*5.0*	*3.5*	*6.5 ≤ [ ] ≤ 9.0*
EPA approved WQS	Class 2B - SRNR	150	35	4.5	3.0	6.5 ≤ [ ] ≤ 9.0

MPCA used the incorrect response variables (chl-*a* = less than or equal to 40 µg/L, DO_{FLUX} = less than or equal to 5.0 mg/L, BOD_5 = less than or equal to 3.5 mg/L, presented in the yellow highlighted row of Table 5 of this Decision Document) during its assessment of the river eutrophication criteria for the 2016 and 2018 listing cycles.[72] EPA communicated to MPCA[73] that it should have used the EPA approved Class 2B SRNR response variable concentrations (i.e., the green highlighted row of this Decision Document) during its assessment of applicable Class 2B waters in the SRNR for the 2016 and 2018 lists. EPA requested that MPCA review its Class 2B assessment efforts for waters in the SRNR and, where appropriate, correct its 303(d) assessment and list according to the correct response variables. MPCA provided the requested river eutrophication SRNR water quality data to EPA, re-assessed all Class 2B designated waters in the SRNR, and made the necessary changes to the 2016 and 2018 303(d) lists.

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[66] MPCA, Response to the 2016 Draft Impaired Waters List Public Notice Comments, December 1, 2016, p. 19 and Response to 2018 Draft Impaired Waters List Public Notice Comments, April 4, 2018, pp. 11-12.
[67] Minnesota Rule 7050.0222, https://www.revisor.mn.gov/rules/7050.0222/ (last visited 12/21/18).
[68] MPCA, Response to the 2016 Draft Impaired Waters List Public Notice Comments, December 1, 2016, p. 19 and Response to 2018 Draft Impaired Waters List Public Notice Comments, April 4, 2018, pp. 11-12.
[69] EPA and MPCA discussion, 2/13/18.
[70] 2016 Methodology, p. 22.
[71] 2018 Methodology, p. 24.
[72] MPCA confirmed this during EPA and MPCA discussion, 2/13/18
[73] EPA email to MPCA, EPA comments on draft 2018 3039d) list – Batch 4, February 21, 2018.

EPA reviewed MPCA's changes and its rationale for making changes to certain river eutrophication impacted water body segments and found that the state used the EPA approved response variable concentration values to update its 2016 and 2018 303(d) lists. EPA's final approval of Minnesota's 2016 303(d) list (Appendix 2) and its 2018 303(d) list (Appendix 3) reflect the changes/updates to certain Class 2B SRNR water body segments made by MPCA.

EPA has requested that MPCA use the EPA approved Class 2B SRNR response variable concentrations when completing its RES WQS assessments for its 2020 listing cycle, and that it include discussion of its efforts to use the EPA approved Class 2B SRNR response variable concentrations within the 2020 Assessment Methodology.

2C. Assessment Based on Numeric and Narrative Standards for the Protection of Human Health: Aquatic Consumption and Drinking Water

Assessments based on numeric and narrative standards for protection of human health include consideration of pollutants with Class 2 health-based chronic water quality standards. Minnesota's 2016 and 2018 Methodologies discuss the development of protective numeric chronic standards for human health that are based on water column concentrations of a pollutant that will still be protective for chronic exposure for aquatic organisms, human health, and fish-eating wildlife. If there are multiple parameters that apply to a water body, MPCA chooses the most protective standard to be the applicable chronic standard.[74]

The State's Methodology explains that pollutants with human health based chronic standards that are most often included in its assessments include mercury, polychlorinated biphenyls (PCBs), dioxins, and chlorinated pesticides.[75] Section VI.A.2.(a) – (c) in Minnesota's 2016 and 2018 Methodologies discuss these pollutants and the applicable Class 2 water quality standards used in MPCA's assessments. In general, MPCA requires two exceedances of the chronic standard or a single exceedance of the maximum standard in 3 years to indicate impairment. To make an assessment, MPCA generally requires five data points within a 3-year period during the most recent 10 years.[76] For some pollutants, toxicity-based and human health-based criteria are very similar (see Minnesota R. 7050.0222). For these pollutants, Minnesota considers both criteria.

Minnesota considers human fish consumption as a separate use. In some instances, toxicants may be at levels that are low enough to support aquatic life, but because of bioaccumulation the fish may not be safe for human consumption. MPCA assesses for mercury, PCBs, and perfluorochemicals (e.g., perfluorooctane sulfonate (PFOS)). MPCA assesses fish tissue samples for other bioaccumulative pollutants such as DDT, dioxins, and toxaphene where it deems these pollutants to be present.[77]

MPCA considers the aquatic consumption use to be supported if it is deemed safe to consume one meal of a specific species of fish per week over a lifetime.[78] Where a water body cannot support fish consumption at this level, MPCA will deem the water to be impaired. Impairment thresholds for PCBs and PFOS are established at the fish tissue concentrations that are considered to be the upper threshold

[74] 2016 Methodology, pp. 27-29 and 2018 Methodology, pp. 29-31.
[75] 2016 Methodology, pp. 28-29 and 2018 Methodology, pp. 30-31.
[76] 2016 Methodology, pp. 28-29 and 2018 Methodology, pp. 30-31.
[77] 2016 Methodology, pp. 27-29 and 2018 Methodology, pp. 29-31.
[78] 2016 Methodology, pp. 30-31 and 2018 Methodology, pp. 32-33.

for one meal per week fish consumption advisory level for the "sensitive" population.[79] The impairment threshold for PCBs is based on fish tissue concentrations exceeding 0.22 parts per million (ppm) and impairment threshold for PFOS is based on fish tissue concentrations exceeding 0.2 ppm.[80] In 2008, MPCA adopted a mercury fish tissue criterion of 0.2 ppm, which is also the impairment threshold.[81]

In its 2016 and 2018 assessments for the 303(d) lists, MPCA assessed certain waters for Class 1 (i.e., Class 1B and 1C surface waters) drinking water consumption standard of 10 mg/L for nitrate-nitrogen.[82] MPCA's assessment process for drinking water-protected surface water (Class 1B and 1C), is to calculate a 24-hour average nitrate concentration and compare that average value to the 10 mg/L drinking consumption standard.[83] If the water body exhibited two 24-hour exceedances within 3 years, then MPCA deemed the water body to be impaired. Exceedances were assessed over consecutive 3-year periods and the most recent 10 years of water quality data were considered. A minimum of five data points were generally required for assessments, however MPCA may use its discretion to make determinations on the basis of fewer data points.[84]

2D. Assessment Based on Numeric Standards for Protection of Aquatic Consumption: Wildlife-Based Standards

Minnesota has four wildlife-based water quality standards (dichlorodiphenyltrichloroethane (DDT), Mercury, PCBs, and 2,3,7,8 tetrachlorodibenzo-p-dioxin (2,3,7,8 TCDD)) within its Great Lakes Water Quality Initiative (GLI) rule,[85] which apply only to surface waters of the Lake Superior Basin. These wildlife-based water quality standards protect wildlife consumers of aquatic organisms. Data requirements and exceedance thresholds for pollutants with wildlife-based water quality standards are the same as those used by the State in its assessments of pollutants that have human health-based chronic standards.[86]

2E. Assessment Based on Numeric Standards for Protection of Aquatic Recreation

Minnesota has two sets of numeric standards protecting waters for aquatic recreation. Numeric standards established for *E. coli* protect for primary and secondary body contact,[87] while eutrophication standards protect for aquatic recreation in Minnesota lakes.

[79] Sensitive population is comprised of pregnant women, women who may become pregnant, and children under age 15. *See* Minnesota Department of Health, Minnesota Fish Consumption Advisory at http://www.health.state.mn.us/divs/eh/fish/ (last visited 12/21/18) and 2016 Methodology, p. 31 and 2018 Methodology, p. 33.
[80] 2016 Methodology, p. 31 and 2018 Methodology, p. 33.
[81] 2016 Methodology, p. 31-32 and 2018 Methodology, p. 33-34.
[82] Minnesota incorporated the federal acute toxicity standard into Minn. R. 7050.022; *see also* 2016 Methodology, pp. 34-35 and 2018 Methodology, p. 38.
[83] 2016 Methodology, pp. 34-35 and 2018 Methodology, p. 38.
[84] 2016 Methodology, pp. 34-35 and 2018 Methodology, p. 38.
[85] Minn. R. 7052.0110, https://www.revisor.mn.gov/rules/?id=7052.0100 (last visited 12/21/18).
[86] 2016 Methodology, p. 36 and 2018 Methodology, p. 39.
[87] For purposes of bacteriological standards, recreation in or on the water is divided into two types: primary body contact and secondary body contact. Primary body contact is considered to be any type of water recreation during which the accidental ingestion of a small amount of water is likely such as swimming, snorkeling, self-contained underwater breathing apparatus (SCUBA) diving, water skiing, kayaking, tubing, and wading by young children. Secondary body contact is considered to be any type of water recreation during which the accidental ingestion of a small amount of water is unlikely such as boating, canoeing, fishing, and wading by older children and adults. *Statement of Need and Reasonableness, Book III of III, In the Matter of Proposed Revisions of Minnesota Administrative Rules Chapter 7050, Relating to the Classification and Standards for Waters of the State, July 2007, pg. 83*, and 2016 Methodology, p. 37 and 2018 Methodology, p. 40.

Minnesota has *E. coli* standards for both Class 2 and Class 7 waters, which are identified in its 2016 Methodology at Table 9[88] and in its 2018 Methodology at Table 9[89]. The standards for *E. coli* include both a monthly geometric mean and an individual maximum. Minnesota considers both standards in its assessments. The geometric mean is based on no fewer than five samples collected in a month. Most monitoring programs, however, do not collect samples more often than once a month. Thus, MPCA aggregates available *E. coli* data for an individual month across the most recent 10 years of data.[90]

For assessment of the monthly geometric mean standard, MPCA considers the most recent 10 years of data, aggregates the data by individual month for a specific assessment unit, and, if one or more months exceed the monthly geometric mean standard,[91] the assessment unit is added to Minnesota's 303(d) list. For assessment of the individual maximum standard, MPCA reviews whether more than 10% of individual values over the most recent 10 years exceed the standard, using a minimum of 15 samples over the most recent 10-year period.[92] Where MPCA lacks sufficient samples, it has discretion to assess on a case-by-case basis.[93]

In the 2016 and 2018 listing cycles MPCA continued to assess bacteria (*E. coli*) water quality in the waters of Lake Superior.[94] MPCA analyzed water quality data at select locations along Lake Superior's shoreline, tributaries that contribute to Lake Superior, locations in Duluth-Superior Harbor, and portions of the St. Louis River as recreational waters subject to bacteria water quality standard under the Beaches Environmental Assessment and Coastal Health (BEACH) Act and Water Quality Standards for Coastal and Great Lakes Recreation Waters Rule.[95]

Minnesota's promulgated ecoregion-based lake eutrophication numeric water quality standards for total phosphorus, chlorophyll-a (chl-*a*) and Secchi Disk depth (Minnesota R. 7050.0222 subp. 2-4) are the parameters monitored in lake assessments. Eutrophication standards are specific to ecoregion and lake depth. Minnesota establishes regulatory depths of a lake, a shallow lake, a reservoir, and a wetland. In categorizing water bodies, MPCA analyzes basin depth and littoral area.[96] Appendix D of the 2016 and 2018 Methodologies explain the State's approach.[97] Table 12 of Minnesota's 2016 Methodology and Table 12 of Minnesota's 2018 Methodology identify the lake eutrophication standards used for aquatic recreation use assessments.[98]

MPCA considers data collected over the most recent 10-year period in making assessments utilizing the eutrophication water quality standard. MPCA requires that samples be collected over a minimum of 2

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[88] 2016 Methodology, p. 37.
[89] 2018 Methodology, p. 40.
[90] 2016 Methodology, pp. 37-38 and 2018 Methodology, pp. 40-42, *see also Fecal Coliform Bacteria in Rivers*, MPCA, H.D. Markus, 1999. (The Fecal Coliform document can be found in EPA Region 5's 2002 Administrative Record.)
[91] The monthly geometric mean water quality standard for Class 2 waters is 126 organisms per 100 mL of water and for Class 7 waters is 630 organisms per 100 mL of water. *See* 2016 Methodology, pp. 37-38 and 2018 Methodology, pp. 40-42, Minn. R. 7050.0222 subp. 2-5, and Minn. R. 7050.0227 subp. 2.
[92] The *E. coli* maximum individual water quality standard for both Class 2 and 7 waters is 1260 organisms per 100 mL of water. *See* 2016 Methodology pp. 37-39 and 2018 Methodology pp. 40-42, Minn. R. 7050.0222 subp. 2-5, https://www.revisor.mn.gov/rules/7050/?, and Minn. R. 7050.0227 subp. 2, https://www.revisor.mn.gov/rules/7050/? (last visited 12/21/18).
[93] 2016 Methodology, pp. 37-38 and 2018 Methodology, pp. 40-42.
[94] 2016 Methodology, pp. 37-38 and 2018 Methodology, pp. 40-42.
[95] 33 U.S.C. §§ 1313(c), (i); November 2004 *Water Quality Standards for Coastal and Great Lakes Recreation Waters* Rule, 69 Fed. Reg. 67217, November 16, 2004.
[96] 2016 Methodology, pp. 40-41 and 2018 Methodology, 43-45.
[97] 2016 Methodology, p. 55 and 2018 Methodology, p. 59.
[98] 2016 Methodology, p. 41 and 2018 Methodology, p. 45.

years and sampled from June to September. MPCA generally requires at least 8 individual data points for TP, corrected chl-*a* (chl-*a* corrected for pheophytin), and Secchi disk depth.[99] If there are multiple samples collected on the same day, MPCA calculates a daily average. MPCA averages all daily data from June to September to calculate a summer mean value, which is the water quality measurement compared to eco-region and depth-specific water quality standards. MPCA lists as impaired those lakes where total phosphorus and at least one of the response variables (chl-*a* or Secchi disk depth) exceeds the applicable standard.[100]

2F. Assessment Based on Numeric Standard for Protection of Limited Resource Value Waters

MPCA's Methodology provides that "limited resource value waters (i.e., Class 7 waters) include surface waters of the State that have been subject to a use attainability analysis and have been found to have limited value as a water resource."[101] Minnesota designates these waters for secondary body contact use, to preserve the groundwater for use as a potable water supply, and to protect aesthetic qualities of the segment.[102] MPCA also designates Class 7 waters for game fish spawning and certain other uses and for which the State assesses these waters against criteria for most toxic pollutants.[103]

3. Removing a Water from the 303(d) List

MPCA explained that when it considers whether to remove a water body from the 303(d) list it generally applies the same standards, guidelines, and thresholds used to add a water body segment. Minnesota's 2016 and 2018 Methodologies identified the following reasons for removing a water from the 303(d) list:

- The water body was placed on the list in error (e.g., wrong AUID assigned).[104]
- The water body has an approved TMDL for a specific pollutant (e.g., EPA has approved a TMDL for Rice Lake that addresses Rice Lake's nutrient impairment. In such an instance, the Rice Lake nutrient listing will be removed from the 303(d), as a Category 5 water, and re-categorized as a Category 4A water. The State notes that a water may still appear on the 303(d) list because of other identified impairments.)
- The water body is found to be impaired by natural conditions (i.e., conditions that are non-anthropogenic in origin). In this situation, all sources of the impairment must be naturally occurring. Although Minnesota continues to identify these waters as impaired, it places these waters in Category 4D (i.e., impaired but not requiring a TMDL).
- The water body was re-segmented or reclassified since the last assessment cycle and the updated re-segmentation or reclassification results in the water body being removed from the 303(d) list.
- The standards applicable to the water body or the methodology used to determine impairment were changed or updated since the last assessment cycle.

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[99] 2016 Methodology, pp. 40-41 and 2018 Methodology, pp. 43-45.
[100] Minnesota rules include narrative eutrophication standards for Class 2 lakes, shallow lakes, and reservoirs, which describe a polluted condition as an exceedance of total phosphorus and either the chlorophyll-a or Secchi disk standard using data that are averaged over the summer season. *See* Minn. R. 7050.0222 subp. 2a, 3a, and 4a, https://www.revisor.mn.gov/rules/7050/? (last visited 12/21/18).
[101] 2016 Methodology, p. 42 and 2018 Methodology, p. 46; *see also* Minn. R. 7050.0227 that sets forth water quality standards for Class 7 waters for *E. coli*, dissolved oxygen, pH, and toxic pollutants.
[102] 2016 Methodology, p. 42 and 2018 Methodology, p. 46; *see also* Minn. R. 7050.0470.
[103] 2016 Methodology, p. 42 and 2018 Methodology, p. 46.
[104] 2016 Methodology, pp. 43-46 and 2018 Methodology, pp. 47-50.

- Subsequent monitoring or the development of the TMDL study leads to new and reliable water quality data or information that indicates that the water body is found to meet water quality standards.

Appendix 4 of this Decision Document provides a list of the assessment unit/pollutant combinations that Minnesota has removed from its 303(d) list during the 2016 assessment cycle. Appendix 5 of this Decision Document provides a list of the assessment unit/pollutant combinations that Minnesota has removed from its 303(d) list during the 2018 assessment cycle. In evaluating the reasonableness of the State's decision to remove these waters, EPA has considered the State's delisting rationale,[105] information made available to the public during the public notice and comment period, and MPCA lake/wetland and stream assessment documentation,[106] and EPA concludes that the State has demonstrated good cause for removing these waters.

D. Review of Minnesota's Priority Ranking

EPA reviewed the State's priority ranking of listed waters for TMDL development for the 2016 303(d) list and the 2018 303(d) list and concludes that the State took into account the severity of pollution and the beneficial uses of individual water bodies, as well as other relevant factors. MPCA's TMDL prioritization is reflected in two columns, the *TMDL Target Start Year* column and *TMDL Target Completion Year* column, which are included for each individual water body segment on Minnesota's 303(d) list spreadsheet. [107] Included in the TMDL Target Completion Year column are water body segments which MPCA anticipates will have completed TMDLs in the next two years.

Minnesota also submitted a long-term schedule for TMDL development for all waters on the 303(d) list, consistent with EPA's Long-Term Vision for Assessment, Restoration and Protection under the CWA Section 303(d) Program.[108] As a policy matter, EPA has requested that states provide such schedules. However, EPA is not taking any action to approve or disapprove the State's long-term schedule.

EPA agrees that, as to the WQLSs included on the 2016 and 2018 303(d) lists, MPCA has satisfied the requirement to submit a priority ranking consistent with EPA's regulations.

E. Public Participation

In developing CWA 303(d) lists, states are required to assemble and evaluate all existing and readily available water quality-related data and information, including consideration of existing and readily available data and information about waters for which water quality problems have been reported by members of the public.[109] EPA expects that states will engage the public during the development of the 303(d) lists prior to submitting the final list to EPA for review. Public participation efforts need to be consistent with CWA Section 101(e). When a proposed list has been established, states should, in

[105] See the following tabs within submitted spreadsheets from MPCA for further detailed discussion from the State; *Inventory Impaired Waters*, *Delisted*, and *Changes and Corrections to List*.
[106] MPCA Impaired Water's List webpage, https://www.pca.state.mn.us/water/minnesotas-impaired-waters-list (last visited 12/21/18).
[107] 2016 Methodology, p. 53 and 2018 Methodology, p. 56.
[108] MPCA, Prioritization Plan for Minnesota 303(d) Listings to Total Maximum Daily Loads, September 2015, https://www.pca.state.mn.us/sites/default/files/wq-iw1-54.pdf (last visited 12/21/18).
[109] 40 C.F.R. § 130.7.

accordance with the requirements in 40 C.F.R. Part 25, provide the opportunity for public notice and comment. States should prepare responses that address the comments received.[110]

1. Public Comment Period for the 2016 303(d) list (August 1, 2016 to September 30, 2016)

Minnesota provided the public with the opportunity to review and comment on the assessment decisions of the 2016 Methodology and draft 2016 303(d) list during a formal comment period from August 1, 2016 to September 30, 2016. MPCA also encouraged public comments during public informational meetings held at various locations throughout the State in the late summer of 2016. Notice of these meetings and communication related to the formal comment period was made to the general public through news releases and electronic mail communications in the summer of 2016, as well as through information on MPCA's website.

2. Public Comments on Specific Water Bodies for the 2016 303(d) list

MPCA received forty-four (44) comments during the comment period. MPCA responded to these comments and posted its responses to commenters on its 303(d) webpage. MPCA included all public comments and its responses to those comments in its January 2017 submittal. In some cases, MPCA added or removed waters; in other instances, MPCA declined to add or remove waters, based on the available information. Waters that MPCA added or removed based on public comments received are summarized in Table 6 of this Decision Document.

[110] *Supplemental Guidance on Section 303(d) Implementation*, EPA Memorandum, August 13, 1992, *Approval of 303(d) Lists, Promulgation Schedules/Procedures, Public Participation*, EPA Memorandum, October 30, 1992, and *Guidance for 1994 Section 303(d) Lists,* EPA Memorandum, November 26, 1993. [The 1994 Guidance also discusses this.]

Table 6: Waters added and/or removed from the final 2016 303(d) list after public comment

Public Commenter[1]	MPCA Action	Water Body Name	AUID	Pollutant
Commenter #7	Removed segment from final 2016 303(d) List	Rogers Lake	02-0104-00	nutrients
Commenter #20	Removed segment from final 2016 303(d) List	Buffalo Creek	07010205-638	nutrients
Commenter #23	Added segment to final 2016 303(d) List	Silver Lake	27-0136-00	nutrients
Commenter #40	Added segment to final 2016 303(d) List	Le Sueur River	07020011-501	nutrients
	Added segment to final 2016 303(d) List	Unnamed Creek	07010204-667	nutrients
	Added segment to final 2016 303(d) List	Crow River South Fork	07010205-658	nutrients
	Updated description of segment on final 2016 303(d) List	Red Lake River	09020303-504	mercury and turbidity
	Updated description of segment on final 2016 303(d) List	Pennington County Ditch 96 (76)	09020303-505	*E. coli*
	09020303-516 was reassigned to 09020303-551	Burnham Creek	09020303-551	fish bioassessments and aquatic macro invertebrate bioassessments
	Updated description of segment on final 2016 303(d) List	Branch 5 of Pennington County Ditch 96	09020303-545	fish bioassessments
	Added segment to final 2016 303(d) List	County Ditch 43	09020303-547	fish bioassessments

1 = Commenter numbers were assigned to individual commenters by MPCA

MPCA received comments which referenced mercury related topics and mercury TMDLs. One commenter requested that MPCA consider Lake Addie (43-0061-00) for a potential mercury impairment but that commenter did not provide water quality data for MPCA to consider in its review of water quality information for that water. MPCA explained that Lake Addie did not have a sufficient mercury water quality data set to complete an assessment for mercury impairment but recommended that the commenter engage in local water quality monitoring efforts via Minnesota's Citizen Lake Monitoring Programming to develop a water quality data set for Lake Addie.

Several commenters expressed encouragement that additional waters in the St. Louis River watershed (HUC-8 04010202) were added to the 2016 303(d) list due to elevated mercury concentrations in fish tissue and in the water column and urged MPCA to expediently develop TMDLs for these newly listed segments. Water body segments cited by commenters have measured mercury concentrations greater than the maximum mercury concentration value (0.572 mg/kg) of the mercury concentration range which is covered by the Statewide TMDL.[111] Water body segments with measured mercury concentrations greater than 0.572 mg/kg necessitate the development of individual mercury TMDLs and are not expected to be restored solely via implementation efforts of the Statewide TMDL.[112] Also, these

[111] MPCA, *Minnesota Statewide Mercury Total Maximum Daily Load*, March 27, 2007, and 2016 and 2018 Revisions to the Minnesota Statewide Mercury TMDL, October 23, 2018.
[112] MPCA webpage, https://www.pca.state.mn.us/quick-links/plan-reduce-mercury-releases-2025. (last visited 12/21/18).

commenters expressed concern regarding previous uncompleted efforts to establish a mercury TMDL for the St. Louis River Watershed (SLRW).

MPCA responded to these concerns by explaining that MPCA is committed to resuming the SLRW mercury TMDL project upon the completion of analyses of chemical and biological data by state scientists and academic partners. MPCA indicated that efforts to complete additional chemical and biological analyses were motivated by the State and its project partners' need to better understand mercury loading, mercury methylation and bioaccumulation of mercury into fish tissue. MPCA indicated that it aims to restart its SLRW mercury TMDL efforts following completion of these analyses.

MPCA received multiple comments regarding the continued absence of a sulfate/wild rice assessment methodology and lack of assessment effort toward investigating potential sulfate-impaired surface water body segments. MPCA responded that it did not include an assessment of wild rice productions waters because it was in midst of revising its current sulfate criterion and once promulgated, would use the revised sulfate criterion to develop a methodology to assess wild rice waters against the newly promulgated sulfate criterion.[113]

MPCA received multiple comments related to its assessment of individual water body segments using its RES WQS. Commenters requested that MPCA reevaluate water bodies which were not included on the 2016 303(d) list and to reassess water bodies which were included on the 2016 303(d) which the commenters felt were incorrectly included on the 303(d) list. In some cases, the commenters referenced existing water quality data in their comments; in other cases the commenters provided water quality data in their comments or asked specific questions regarding how MPCA interpreted water quality data of response variables (e.g., chl-*a*, DO_{FLUX}, BOD_5 and pH) in its assessment of specific water body segments. Other commenters requested clarification on how MPCA considers response variable water quality data and how those considerations impact the assessment of RES waters. MPCA answered all comments related to its RES assessments and provided an explanation of all its assessment considerations for each segment cited by commenters.

Multiple commenters raised concerns that the draft 2016 303(d) list did not include water body segments which exceeded narrative WQS standards for nitrate which are written to protect the aquatic life designated use. Minnesota has promulgated numeric nitrate WQS to protect drinking water designated uses (e.g., 10 mg/L) but Minnesota does not currently have promulgated WQS addressing aquatic life and aquatic toxicity due to excessive nitrate/nitrogen for coldwater and warmwater stream environments. Therefore, until an aquatic life toxicity standard for nitrate/nitrogen is promulgated by the State, and approved by EPA, MPCA indicated it cannot include potentially impaired coldwater and/or warmwater segments on its 303(d) list. MPCA is in the process of developing a nitrate/nitrogen WQS to address aquatic toxicity and has communicated that this standard will be included in a future triennial standard review (TSR) document.

EPA reviewed information MPCA made available to the public for review and comment, and MPCA's announcement of the public comment period. EPA finds that the State of Minnesota's public participation process for the 2016 303(d) list provided the public with an adequate opportunity to review

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[113] MPCA, *Response to the 2016 Draft Impaired Waters List Public Notice Comments, December 1, 2016*, p. 19 and Response to 2018 Draft Impaired Waters List Public Notice Comments, April 4, 2018, p. 5.

and provide comments. With the exception of comments submitted regarding MPCA's efforts to assess wild rice production waters against its current sulfate criterion, EPA concludes that MPCA adequately addressed the public comments regarding the 2016 303(d) list. In the absence of an assessment by the State of water quality data for the 24 state-designated wild rice waters, EPA independently reviewed water quality data for these waters during its review of the 2016 list.

3. Public Comment Period for the 2018 303(d) list (November 27, 2017 to January 26, 2018)

Minnesota provided the public with the opportunity to review and comment on the assessment decisions of the 2018 Methodology and draft 2018 303(d) list during a formal comment period from November 27, 2017 to January 26, 2018.

4. Public Comments on Specific Water Bodies for the 2018 303(d) list

MPCA received twenty (20) comments during the comment period. MPCA responded to these comments and posted its responses to commenters on its 303(d) webpage. MPCA included all public comments and its responses to those comments in its April 2018 submittal. In some cases, MPCA added or removed waters, as requested; in other instances, MPCA declined to add or remove waters based on available information. Waters that MPCA added or removed based on public comments received are summarized in Table 7 of this Decision Document.

Table 7: Waters added and/or removed from the final 2018 303(d) list after public comment

Public Commenter[1]	MPCA Action	Water Body Name	AUID	Pollutant
Commenter #1	Added segment to final 2018 303(d) List	Powderhorn Lake	27-0014-00	nutrients
Commenter #5 & #8	Removed segment from final 2018 303(d) List	Rebecca	27-0192-00	nutrients
Commenter #17	Recategorized segment from Category 5 to Category 4C	Poplar River Diversion	09020305-543	dissolved oxygen
Commenter #17	Added segment to final 2018 303(d) List	Stony Lake	15-0156-00	nutrients
Commenter #18	Added segment to final 2018 303(d) List	County Ditch 10	07020012-628	nutrients
Commenter #18	Added segment to final 2018 303(d) List	Raven Stream, West Branch	07020012-842	nutrients
Commenter #20	Removed segment from final 2018 303(d) List	Unnamed Ditch	07020012-788	fish bioassessments

1 = Commenter numbers were assigned to individual commenters by MPCA

Some commenters during the 2018 public notice period continued to highlight that MPCA had not developed a sulfate/wild rice assessment methodology or assessed waters for impairment of the wild rice use in its 303(d) list. Commenter #12 posed a question regarding the identification of wild rice as an existing use based on water bodies identified in the Minnesota Department of Natural Resources' *Natural Wild Rice in Minnesota – A Wild Rice Study document submitted to the Minnesota Legislature by the Minnesota Department of Natural Resources February 15, 2008* report (2008 DNR Report). MPCA explained that its approach to designating wild rice designated use is based on case-by-case determinations made by the state.[114] EPA understands that the state is continuing to explore options in its efforts aimed at revising its sulfate criterion. EPA has addressed this topic in tribal concern #2 of Appendix 1 of this Decision Document.

Commenter #14 requested that MPCA include an additional Appendix to the 303(d) list which delineates water body segments which are in treaty areas (e.g., the 1854 Treaty area). MPCA explained that it includes impaired waters in the ceded territories on its 303(d) list and the final 2018 303(d) list submittal will not include a separate Appendix to highlight impaired waters in ceded territories. MPCA reaffirmed its approach to working with tribal partners during MPCA's water quality data collection efforts and during the assessment of water quality data (e.g., PJG review of water quality data, see Section C.2, Step #5 of this Decision Document). MPCA reiterated that it will continue to look for opportunities to engage with all Minnesota Tribes and especially the 1854 Treaty tribes when it undertakes monitoring and assessment activities near tribal reservation lands and in recognized treaty areas.[115]

Commenter #18 requested that MPCA use EPA approved RES WQS to assess Class 2B waters in the SRNR. MPCA acknowledged that its promulgated RES WQS for the Class 2B SRNR were different from its proposed Class 2B SRNR RES WQS communicated in its Statement of Need and Reasonableness (SONAR) document and from EPA's approved RES WQS.[116] Additionally, MPCA acknowledged in its response to public comments for the 2016 and 2018 303(d) lists that it had made a mistake in the RES WQS values which it had promulgated into Minnesota Rule .[117] MPCA explained that it is required to assess the state's waters on the basis of adopted Minnesota State rules.[118] MPCA provided the explanation immediately below in response to EPA comments on this topic.

> *MPCA is required to assess the state's waters on the basis of the adopted Minnesota State rules. To assess waters on the basis of intended but not adopted rules would eschew the required administrative process. The MPCA is committed to initiating rulemaking on the RES correction. The current timetable is uncertain due to staff capacity and several current controversial rulemaking proceedings, such as the proposed wild rice water quality standards.*[119]

EPA requested that MPCA review its Class 2B assessment efforts for waters in the SRNR and, where appropriate, correct the 303(d) and list according to the correct response variables. MPCA provided the requested river eutrophication SRNR water quality data to EPA, re-assessed all Class 2B designated waters in the SRNR, and made the necessary changes to the 2016 and 2018 303(d) lists.

EPA will request that MPCA share specific assessment data for all Class 2B SRNR RES water bodies for future 303(d) lists until the RES WQS have been corrected to include the MPCA proposed (in its SONAR document) Class 2B SRNR RES WQS and EPA approved WQS.

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[114] MPCA Response to 2018 Draft Impaired Waters List Public Notice Comments, April 4, 2018, p. 5.
[115] MPCA, *Response to the 2018 Draft Impaired Waters List Public Notice Comments, April 4, 2018*, p. 8.
[116] EPA 303(c) approval document, *Basis for EPA Approval of Minnesota's New or Revised Eutrophication and Total Suspended Solids Criteria in Accordance with Section 303(c) of the Clean Water Act*, January 23, 2015.
[117] MPCA, *Response to the 2016 Draft Impaired Waters List Public Notice Comments, December 1, 2016*, p. 19 and Response to 2018 Draft Impaired Waters List Public Notice Comments, April 4, 2018, pp. 11-12.
[118] MPCA, *Response to the 2018 Draft Impaired Waters List Public Notice Comments, April 4, 2018*, p. 11.
[119] MPCA responses to EPA Comments & Questions on MPCA's draft 2018 303(d) list and Guidance Manual – Batch #4 (3/30/18).

MPCA received several comments related to MPCA plans to develop TMDLs for mercury listings which have been on the 303(d) list for a period of time, metals and mercury monitoring efforts, sulfate and mercury/methylmercury impacts on aquatic species, and TMDL development efforts in northeastern Minnesota.

Commenter #19 requested that MPCA restart mercury TMDL efforts in the St. Louis River watershed and resume its earlier project efforts to address mercury impaired waters in northeastern Minnesota. MPCA has explained that it is currently studying the causes of exceptionally high mercury concentrations in fish and other aquatic species within certain watersheds in northern Minnesota.[120] These studies include the process of mercury loading, mercury methylation, bioaccumulation of mercury in fish tissue and mercury transmission pathways to aquatic species. Ideally, knowledge gained from these studies will inform MPCA and all stakeholders in their efforts to reduce mercury throughout these waters. MPCA also is specifically studying these processes in the St. Louis River basin.[121] MPCA indicated that it aims to restart its SLRW mercury TMDL efforts following completion of these analyses. EPA will monitor the progress of mercury TMDL development by MPCA in the subwatersheds of northeastern Minnesota and the State's efforts to better understand mercury transmission pathways to fish and other aquatic species.

Commenter #3 requested that MPCA provide clarification related to state efforts to monitor metals concentrations in surface water and groundwater. MPCA explained its assessment protocols for measuring and assessing metals in lakes and streams and referenced other agencies and entities which it consults to gather metals data for water quality assessment purposes.

Commenter #14 asked that MPCA share its understanding of the biological impact of sulfate and mercury/methylmercury inputs on aquatic species. MPCA communicated its current understanding of sulfate's impact on the conversion of mercury to methylmercury. The ease of this conversion is thought to be dependent on dissolved organic carbon concentrations in the water column, the presence of certain bacteria species which respire sulfate and methylate mercury, and other environmental variables which may increase or decrease the chances of mercury bioaccumulation in fish species.

EPA finds that the State of Minnesota's public participation process for the 2018 303(d) list provided the public with an adequate opportunity to review and provide comments. With the exception of comments submitted regarding MPCA's efforts to assess wild rice production waters against its current sulfate criterion, EPA concludes that MPCA adequately addressed the public comments regarding the 2018 303(d) list. In the absence of an assessment by the State of water quality data for the 24 state-designated wild rice waters, EPA independently reviewed water quality data for these waters during its review of the 2018 list.

5. EPA Tribal Consultation for the 2016 and 2018 303(d) lists

Pursuant to Executive Order 13175, *Consultation and Coordination with Indian Tribal Governments* and with the *EPA Policy on Consultation and Coordination with Indian Tribes (May 2011)*,[122] EPA invited tribal consultation on its review of the 2016 and 2018 Minnesota 303(d) lists.[123] The Minnesota

[120] MPCA, Identifying Causes of Exceptionally High Mercury in Fish, https://www.lccmr.leg.mn/projects/2014/finals/2014_03j.pdf.
[121] MPCA, Responses to the 2018 Draft Impaired Waters List Public Notice Comments, April 4, 2018, pp.17-18.
[122] EPA Policy on Consultation and Coordination with Indian Tribes, May 4, 2011. https://www.epa.gov/sites/production/files/2013-08/documents/cons-and-coord-with-indian-tribes-policy.pdf
[123] EPA letter to tribal leaders, June 14, 2018.

Chippewa Tribe - Grand Portage Band (Grand Portage) requested consultation with EPA. EPA hosted a tribal consultation conference call on July 30, 2018.

EPA considered the Tribe's comments during its deliberations related to the approval of the final 2016 and 2018 Minnesota 303(d) lists.[124] EPA provided the Tribe with a written response that explained how EPA considered the tribe's input in EPA's final decision on the list (Appendix 1 – EPA Response to Tribal Issues Raised during Tribal Consultation on the final 2016 and 2018 Minnesota Clean Water Act 303(d) lists).

EPA's longstanding position is that absent a specific authorization, states do not have the authority to implement federal environmental programs in Indian country and EPA's review of state 303(d) lists excludes waters that are located in Indian country. EPA, or an eligible Indian Tribe, as appropriate, has authority under Section 303(d) with regard to such waters. EPA's approval of Minnesota's 2016 and 2018 303(d) lists do not extend to any waters in Indian country. EPA takes no position regarding whether the State can carry out activities in Indian country under its own state authorities.

F. Additional EPA Analyses of Water Quality Data

1. Wild Rice Production Waters for the 2016 and 2018 listing cycles

EPA acknowledges that, as in its previous lists, MPCA has not assessed wild rice production waters against its current sulfate criterion in its 2016 and 2018 list submittals. EPA affirms that the current sulfate criterion (Minn. R. 7050.0224 subparts 1 and 2) remains the State's federally-approved standard, and EPA expects the State to assess waters against its current sulfate criterion, specifically those waters that are recognized by the State as waters used for the production of wild rice, i.e., the 24 state-designated wild rice waters of Minn. R. 7050.0470, subpart 1. A lack of a formalized assessment methodology is not a basis for a state to avoid evaluating data or information when developing its 303(d) list or to listing waters that are not attaining applicable standards.

In the absence of an assessment by the State of water quality data for the 24 state-designated wild rice waters, EPA independently reviewed water quality data for these 24 waters during its review of the 2016 and 2018 303(d) lists. EPA found that none of the 24 waters had measured sulfate data above the numeric sulfate standard (10 mg/L) for the 2016 and 2018 listing cycles.[125] For this reason and because EPA concludes that there is not a reasonable basis to apply the State's current water quality standard beyond these 24 waters, EPA does not have a reasonable basis to disapprove the 2016 or 2018 303(d) lists for failure to include waters used for the production of wild rice as impaired under Minnesota's currently applicable rules.

[124] EPA letter to Minnesota Chippewa Tribe - Grand Portage Band, January 28, 2019.
[125] EPA review of ambient sulfate water quality data for state-designated wild rice waters identified in Minn. R. 7050.0470 (July 2018).

Appendices

Appendix 1: EPA Response to Tribal Issues Raised during Tribal Consultation on the final 2016 and 2018 Minnesota Clean Water Act 303(d) lists
Appendix 2: Approved 2016 303(d) list of Impaired Waters needing TMDLs
Appendix 3: Approved 2018 303(d) list of Impaired Waters needing TMDLs
Appendix 4: Waters being removed from the 2016 303(d) list
Appendix 5: Waters being removed from the 2018 303(d) list

Appendix 1: EPA Response to Tribal Issues Raised during Tribal Consultation on the final 2016 and 2018 Minnesota Clean Water Act 303(d) lists

Tribal Representatives:

- ***Grand Portage:*** Margaret Watkins

Tribal Concern #1: The tribal representative on behalf of Grand Portage (Grand Portage) expressed concern that the Minnesota Pollution Control Agency (MPCA) has continued not to assess or list wild rice (WR) waters in the context of its 2016 and 2018 303(d) lists. Grand Portage believes that the 2016 and 2018 303(d) lists should include an assessment of WR waters.

EPA Response: EPA recognizes Grand Portage's concern regarding the lack of progress made by the State of Minnesota to identify and assess surface waters potentially impaired due to excessive sulfate concentrations on Minnesota's 2016 and 2018 303(d) lists. EPA acknowledges that MPCA did not complete any assessment of potential sulfate impaired water body segments as part of the final 2016 and 2018 303(d) list submittals to EPA.

In EPA's 2014 Decision Document approving the State's 303(d) list, EPA explained that the State's federally approved sulfate criterion (Minn. R. 7050.0224 subparts 1 and 2) applies only to the 24 waters listed in Minn. R. 7050.0470, subpart 1.[1] EPA understands that the State continues to examine the possible revision of the criterion, but EPA also expects the State to develop a sulfate methodology to assess waters against its current sulfate criterion, specifically those 24 state-designated wild rice waters. A lack of a formalized assessment methodology by itself is not a basis for a state to avoid evaluating or using data or information when developing its 303(d) list or to fail to list any water that is appropriate for listing under currently applicable standards.

In the absence of an assessment by the State, EPA independently evaluated water quality data for these 24 waters during its review of the 2016 and 2018 303(d) lists. EPA found that none of the 24 waters had measured sulfate data above the numeric sulfate standard (10 mg/L) for the 2016 and 2018 listing cycles.[2]

Tribal Concern #2: Grand Portage expressed its view that the opinion of the Minnesota Chief Administrative Law Judge[3], regarding the state's recent proposed amendments to the sulfate/WR water quality standard, establishes a basis for assessing potential sulfate impaired waters and for identifying additional waters as *waters used for the production of wild rice* based on evidence

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[1] EPA Decision Document Approving Minnesota 2014 CWA 303(d) List, Appendix 1, Wild Rice Addendum.

[2] EPA review of ambient sulfate water quality data for state-designated wild rice waters identified in Minn. R. 7050.0470 (July 2018).

[3] State of Minnesota Office of Administrative Hearings, *In the In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers, Minnesota Rules parts 7050.0130, 7050.0220, 7050.0224, 7050.0470, 7050.0471, 7053.0135, 7053.0205, and 7053.0406*, OAH 80-9003-34519, Revisor R-4324, January 9, 2018.
And
State of Minnesota Office of Administrative Hearings, *In the In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers, Minnesota Rules parts 7050.0130, 7050.0220, 7050.0224, 7050.0470, 7050.0471, 7053.0135, 7053.0205, and 7053.0406*, OAH 80-9003-34519, Revisor R-4324, April 12, 2018.

that an existing use is not being met, using the Minnesota Department of Natural Resources 2008 Report, *Natural Wild Rice In Minnesota – A Wild Rice Study document submitted to the Minnesota Legislature by the Minnesota Department of Natural Resource February 15, 2008* report (MDNR 2008 Report), as evidence of existing uses.

EPA Response: As explained in its 2014 Decision Document, EPA does not believe that the MDNR 2008 Report was intended to designate those water bodies that may be subject to an existing use pursuant to the sulfate criterion at Minn. R. 7050.0224 subparts 1 and 2. There we noted:

> EPA considered the inventory of wild rice waters in the Minnesota Department of Natural Resources 2008 Report, *Natural Wild Rice In Minnesota – A Wild Rice Study document submitted to the Minnesota Legislature by the Minnesota Department of Natural Resource February 15, 2008*. By its own terms, this inventory was intended to "[c]onsolidate various data/information on the location … of natural wild rice stands." *Id.* at 52. The report states that it was developed at the request of the state legislature to assess the location and acreage of natural stands of wild rice, identify threats to wild rice, and to make "recommendations to the house and senate committees with jurisdiction over natural resources on protecting and increasing natural wild rice stands in the state." *Id.* at 6. MPCA does not appear to have been involved in the multi-stakeholder effort to develop the inventory. *Id.* at 6:
>
> > In fulfilling these requirements, the Minnesota Department of Natural Resources (MDNR) established a Technical Team of wild rice experts from State, Tribal, and Federal governments; the Minnesota cultivated wild rice industry; Ducks Unlimited; Save Our Rice Alliance (SORA), an organization of interested citizens who hand harvest natural wild rice; White Earth Land Recovery Project; the University of Minnesota; and the University of Wisconsin (Appendix A). The MDNR also established a Partnership Team representing the Minnesota wild rice industry, the state commissioner of agriculture, the Association of Minnesota Counties, tribal leaders within affected federally recognized tribes, the United States Fish and Wildlife Service, Ducks Unlimited, Minnesota Waterfowl Association, and SORA (Appendix A).
>
> The report made recommendations to the legislature aimed at clarifying inconsistencies in and updating state harvest statutes and rules, urging legislative recognition of the importance of wild rice and its management, publicizing a list of "important natural wild rice areas," convening a standing committee on wild rice management and harvest, and increasing the State's focus on restoration of wild rice stands within historic ranges. *Id.* at 36-38. EPA is unable to conclude that the 2008 MDNR Report was meant to define the application of the State's existing sulfate criterion to protect waters used for the production of wild rice, nor does EPA consider this report to include a list of wild rice waters established for CWA regulatory purposes.[4]

[4] EPA Decision Document Approving Minnesota 2014 CWA 303(d) List, Appendix 1, Wild Rice Addendum, at 10, n. 44.

While the ALJ Report and Chief ALJ Report provide a discussion of how MPCA did and might make existing use designations, and found that MPCA may have inappropriately excluded waters with existing uses from a list of waters for which a new sulfate criterion might apply, EPA does not find that these reports formally designated any particular list of waters where the production of wild rice is an existing use for purposes of the state's existing sulfate criterion at Minn. R. 7050.0224 subparts 1 and 2.[5]

Thus, EPA does not have a reasonable basis on which to conclude that the MDNR 2008 Report constitutes an inventory of those waters where the production of wild rice has been established as an existing use for purposes of the state's existing sulfate criterion at Minn. R. 7050.0224 subparts 1 and 2.

[5] Chief Administrative Law Judge's Order on Review of Rules, *In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers*, April 12, 2018, pp. 11-12, and *In the Matter of the Amendment of the Sulfate Water Quality Standard Application to Wild Rice and Identification of Wild Rice Waters*, January 10, 2018, pp. 63–69.

WL 303(d) Exhibit 10

Appendix 2: Approved 2016 303(d) List of Impaired Waters Needing TMDLs

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Cedar River	2012	Cedar River	07080201-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cedar River	2012	Cedar River	07080201-501		Aquatic Life	Fishes bioassessments	5
Cedar River	2002	Cedar River	07080201-501		Aquatic Life	Turbidity	5
Cedar River	2002	Cedar River	07080201-502		Aquatic Consumption	PCB in fish tissue	5
Cedar River	2002	Cedar River	07080201-502		Aquatic Life	Turbidity	5
Cedar River	2012	Cedar River	07080201-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cedar River	2006	Cedar River	07080201-503		Aquatic Recreation	Fecal Coliform	5
Cedar River	2002	Cedar River	07080201-503		Aquatic Consumption	PCB in fish tissue	5
Roberts Creek	2012	Cedar River	07080201-504		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Roberts Creek	2006	Cedar River	07080201-504		Aquatic Recreation	Fecal Coliform	5
Roberts Creek	2012	Cedar River	07080201-506		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Roberts Creek	2012	Cedar River	07080201-506		Aquatic Life	Fishes bioassessments	5
Wolf Creek	2006	Cedar River	07080201-510		Aquatic Recreation	Fecal Coliform	5
Cedar River	2002	Cedar River	07080201-511		Aquatic Consumption	PCB in fish tissue	5
Cedar River	2006	Cedar River	07080201-512		Aquatic Consumption	PCB in fish tissue	5
Cedar River	2012	Cedar River	07080201-514		Aquatic Recreation	Escherichia coli	5
Cedar River	2012	Cedar River	07080201-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cedar River	2012	Cedar River	07080201-515		Aquatic Life	Turbidity	5
Cedar River	2012	Cedar River	07080201-516		Aquatic Recreation	Escherichia coli	5
Cedar River	2012	Cedar River	07080201-516		Aquatic Life	Turbidity	5
Otter Creek	2006	Cedar River	07080201-517		Aquatic Recreation	Fecal Coliform	5
Little Cedar River	2012	Cedar River	07080201-518		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2012	Cedar River	07080201-519		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Cedar River	07080201-520		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rose Creek	2006	Cedar River	07080201-522		Aquatic Recreation	Fecal Coliform	5
Rose Creek	2012	Cedar River	07080201-522		Aquatic Life	Turbidity	5
Schwerin Creek	2012	Cedar River	07080201-523		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Woodbury Creek	2006	Cedar River	07080201-526		Aquatic Recreation	Fecal Coliform	5
Little Cedar River (Cedar River, Middle Fork)	2012	Cedar River	07080201-530		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Cedar River	07080201-533		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2006	Cedar River	07080201-533		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2012	Cedar River	07080201-534		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Cedar River	07080201-534		Aquatic Life	Fishes bioassessments	5
Dobbins Creek	2006	Cedar River	07080201-535		Aquatic Recreation	Fecal Coliform	5
Dobbins Creek	2012	Cedar River	07080201-535		Aquatic Life	Turbidity	5
Dobbins Creek	2006	Cedar River	07080201-537		Aquatic Recreation	Fecal Coliform	5
Dobbins Creek	2006	Cedar River	07080201-537		Aquatic Life	Turbidity	5
Orchard Creek	2006	Cedar River	07080201-539		Aquatic Recreation	Fecal Coliform	5
Turtle Creek	2012	Cedar River	07080201-540		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Turtle Creek	2006	Cedar River	07080201-540		Aquatic Recreation	Fecal Coliform	5
Turtle Creek	2012	Cedar River	07080201-540		Aquatic Life	Fishes bioassessments	5
Turtle Creek	2006	Cedar River	07080201-540		Aquatic Life	Turbidity	5
Unnamed creek	2012	Cedar River	07080201-547		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Cedar River, Middle Fork	2012	Cedar River	07080201-549		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Unnamed creek (Woodson Creek)	2012	Cedar River	07080201-554		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Woodson Creek)	2012	Cedar River	07080201-554		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Cedar River	07080201-577		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Cedar River	07080201-583		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Cedar River, West Fork)	2012	Cedar River	07080201-591		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Cedar River	07080201-593		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Shell Rock River	2012	Cedar River	07080202-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Shell Rock River	2012	Cedar River	07080202-501		Aquatic Life	Dissolved oxygen	5
Shell Rock River	2012	Cedar River	07080202-501		Aquatic Life	Fishes bioassessments	5
Shell Rock River	2016	Cedar River	07080202-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Shell Rock River	2008	Cedar River	07080202-501		Aquatic Life	pH	5
Shell Rock River	2002	Cedar River	07080202-501		Aquatic Life	Turbidity	5
Bancroft Creek (County Ditch 63)	2012	Cedar River	07080202-507		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2016	Cedar River	07080202-516		Aquatic Life	Nutrient/eutrophication biological indicators	5
Unnamed creek	2010	Cedar River	07080202-516		Aquatic Life	Turbidity	5
Unnamed creek	2012	Cedar River	07080202-531		Aquatic Recreation	Escherichia coli	5
Albert Lea	2008	Cedar River	24-0014-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Geneva	2012	Cedar River	24-0015-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fountain (East Bay)	2008	Cedar River	24-0018-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fountain (West Bay)	2008	Cedar River	24-0018-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
White	2012	Cedar River	24-0024-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pickeral	2008	Cedar River	24-0025-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Des Moines River	1994	Des Moines River	07100001-501		Aquatic Life	Ammonia, unionized	5
Des Moines River	1994	Des Moines River	07100001-501		Aquatic Life	Dissolved oxygen	5
Des Moines River	2016	Des Moines River	07100001-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Okabena Creek	2010	Des Moines River	07100001-512		Limited Resource Value	Escherichia coli	5
Heron Lake Outlet	2016	Des Moines River	07100001-527		Aquatic Life	Nutrient/eutrophication biological indicators	5
Unnamed creek	2008	Des Moines River	07100001-551		Aquatic Life	Turbidity	5
Judicial Ditch 56	2008	Des Moines River	07100002-505		Aquatic Life	Turbidity	5
Des Moines River, East Branch	2006	Des Moines River	07100003-501		Aquatic Life	Dissolved oxygen	5
Des Moines River, East Branch	2002	Des Moines River	07100003-501		Aquatic Life	Turbidity	5
Talcot	2010	Des Moines River	17-0060-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Flahtery	2010	Des Moines River	32-0045-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Heron (Duck)	2002	Des Moines River	32-0057-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Yankton	2010	Des Moines River	42-0047-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
First Fulda	2008	Des Moines River	51-0021-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lime	2010	Des Moines River	51-0024-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bloody	2010	Des Moines River	51-0040-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Shetek	2006	Des Moines River	51-0046-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Sarah	2006	Des Moines River	51-0063-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Currant	2008	Des Moines River	51-0082-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
East Graham	2008	Des Moines River	53-0020-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
West Graham	2008	Des Moines River	53-0021-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Brule River	1998	Lake Superior	04010101-502		Aquatic Consumption	Mercury in water column	5
Baptism River	2016	Lake Superior	04010101-508		Aquatic Consumption	Mercury in water column	5
Poplar River	1998	Lake Superior	04010101-613		Aquatic Consumption	Mercury in water column	5
Flute Reed River	2016	Lake Superior	04010101-D31		Aquatic Life	Total suspended solids	5
Flute Reed River	2010	Lake Superior	04010101-D32		Aquatic Life	Turbidity	5
Beaver River	2014	Lake Superior	04010102-501		Aquatic Life	Fishes bioassessments	5
Beaver River	1998	Lake Superior	04010102-501		Aquatic Consumption	Mercury in water column	5
Beaver River	2002	Lake Superior	04010102-501		Aquatic Life	pH	5
Beaver River	1996	Lake Superior	04010102-501		Aquatic Life	Turbidity	5
Knife River	1998	Lake Superior	04010102-504		Aquatic Consumption	Mercury in water column	5
Talmadge River (Talmadge Creek)	1996	Lake Superior	04010102-508		Aquatic Life	Dissolved oxygen	5
Talmadge River (Talmadge Creek)	2014	Lake Superior	04010102-508		Aquatic Life	Fishes bioassessments	5
Talmadge River (Talmadge Creek)	2004	Lake Superior	04010102-508		Aquatic Life	Turbidity	5
Amity Creek	2004	Lake Superior	04010102-511		Aquatic Life	Turbidity	5
Skunk Creek	2014	Lake Superior	04010102-528		Aquatic Recreation	Escherichia coli	5
Skunk Creek	2010	Lake Superior	04010102-528		Aquatic Life	Turbidity	5
Amity Creek, East Branch	2014	Lake Superior	04010102-540		Aquatic Life	Turbidity	5
Tischer Creek	2014	Lake Superior	04010102-544		Aquatic Recreation	Escherichia coli	5
Chester Creek	2014	Lake Superior	04010102-545		Aquatic Recreation	Escherichia coli	5
Lester River	1996	Lake Superior	04010102-549		Aquatic Life	Turbidity	5
Big Sucker Creek (Sucker River)	2006	Lake Superior	04010102-555		Aquatic Life	Turbidity	5
Beaver River, West Branch	2014	Lake Superior	04010102-577		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Beaver River, West Branch	2014	Lake Superior	04010102-577		Aquatic Life	Fishes bioassessments	5
French River	2004	Lake Superior	04010102-698		Aquatic Life	Turbidity	5
Little Knife River (East Branch Little Knife River)	2008	Lake Superior	04010102-840		Aquatic Life	Dissolved oxygen	5
Little Knife River (East Branch Little Knife River)	2008	Lake Superior	04010102-840		Aquatic Life	Turbidity	5
Leif Erikson Park Beach	2014	Lake Superior	04010102-C21		Aquatic Recreation	Escherichia coli	5
Burlington Bay Beach	2014	Lake Superior	04010102-C30		Aquatic Recreation	Escherichia coli	5
Agate Bay Beach	2016	Lake Superior	04010102-C31		Aquatic Recreation	Escherichia coli	5
St Louis River (St Louis Bay)	2002	Lake Superior	04010201-501		Aquatic Consumption	DDT	5
St Louis River (St Louis Bay)	2002	Lake Superior	04010201-501		Aquatic Consumption	Dieldrin	5
St Louis River (St Louis Bay)	2002	Lake Superior	04010201-501		Aquatic Consumption	Dioxin (including 2,3,7,8-TCDD)	5
St Louis River (St Louis Bay)	1998	Lake Superior	04010201-501		Aquatic Consumption	Mercury in fish tissue	5
St Louis River (St Louis Bay)	1998	Lake Superior	04010201-501		Aquatic Consumption	Mercury in water column	5
St Louis River (St Louis Bay)	1998	Lake Superior	04010201-501		Aquatic Consumption	PCB in fish tissue	5
St Louis River (St Louis Bay)	1998	Lake Superior	04010201-501		Aquatic Consumption	PCB in water column	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
St Louis River (St Louis Bay)	2002	Lake Superior	04010201-501		Aquatic Consumption	Toxaphene	5
St Louis River	1998	Lake Superior	04010201-503		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-503		Aquatic Consumption	Mercury in water column	5
St Louis River	1998	Lake Superior	04010201-504		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-505		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-506		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-507		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2012	Lake Superior	04010201-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
St Louis River	1998	Lake Superior	04010201-508		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-510		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-511		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2016	Lake Superior	04010201-511		Aquatic Consumption	Mercury in water column	5
Miller Creek	2012	Lake Superior	04010201-512		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Miller Creek	2010	Lake Superior	04010201-512		Aquatic Life	Chloride	5
Miller Creek	2012	Lake Superior	04010201-512		Aquatic Recreation	Escherichia coli	5
Miller Creek	2002	Lake Superior	04010201-512		Aquatic Life	Lack of cold water assemblage	5
Miller Creek	2002	Lake Superior	04010201-512		Aquatic Life	Temperature, water	5
St Louis River	2002	Lake Superior	04010201-513		Aquatic Consumption	DDT	5
St Louis River	2002	Lake Superior	04010201-513		Aquatic Consumption	Dieldrin	5
St Louis River	1998	Lake Superior	04010201-513		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-513		Aquatic Consumption	Mercury in water column	5
St Louis River	1998	Lake Superior	04010201-513		Aquatic Consumption	PCB in fish tissue	5
St Louis River	1998	Lake Superior	04010201-513		Aquatic Consumption	PCB in water column	5
St Louis River	1998	Lake Superior	04010201-515		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2006	Lake Superior	04010201-515		Aquatic Consumption	PCB in fish tissue	5
St Louis River	1998	Lake Superior	04010201-516		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2006	Lake Superior	04010201-516		Aquatic Consumption	PCB in fish tissue	5
St Louis River	1998	Lake Superior	04010201-517		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2016	Lake Superior	04010201-517		Aquatic Consumption	Mercury in water column	5
Elbow Creek	2012	Lake Superior	04010201-518		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Elbow Creek	2012	Lake Superior	04010201-518		Aquatic Life	Fishes bioassessments	5
St Louis River	1998	Lake Superior	04010201-523		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2006	Lake Superior	04010201-523		Aquatic Consumption	PCB in fish tissue	5
St Louis River	1998	Lake Superior	04010201-524		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2006	Lake Superior	04010201-524		Aquatic Consumption	PCB in fish tissue	5
St Louis River	1998	Lake Superior	04010201-525		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-526		Aquatic Consumption	Mercury in fish tissue	5
Superior Bay	2002	Lake Superior	04010201-530		Aquatic Consumption	DDT	5
Superior Bay	2002	Lake Superior	04010201-530		Aquatic Consumption	Dieldrin	5
Superior Bay	2002	Lake Superior	04010201-530		Aquatic Consumption	Dioxin (including 2,3,7,8-TCDD)	5
Superior Bay	1998	Lake Superior	04010201-530		Aquatic Consumption	Mercury in fish tissue	5
Superior Bay	1998	Lake Superior	04010201-530		Aquatic Consumption	Mercury in water column	5
Superior Bay	1998	Lake Superior	04010201-530		Aquatic Consumption	PCB in fish tissue	5
Superior Bay	1998	Lake Superior	04010201-530		Aquatic Consumption	PCB in water column	5
Superior Bay	2002	Lake Superior	04010201-530		Aquatic Consumption	Toxaphene	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Superior Bay	2002	Lake Superior	04010201-531		Aquatic Consumption	DDT	5
Superior Bay	2002	Lake Superior	04010201-531		Aquatic Consumption	Dieldrin	5
Superior Bay	2002	Lake Superior	04010201-531		Aquatic Consumption	Dioxin (including 2,3,7,8-TCDD)	5
Superior Bay	1998	Lake Superior	04010201-531		Aquatic Consumption	Mercury in fish tissue	5
Superior Bay	1998	Lake Superior	04010201-531		Aquatic Consumption	Mercury in water column	5
Superior Bay	1998	Lake Superior	04010201-531		Aquatic Consumption	PCB in fish tissue	5
Superior Bay	1998	Lake Superior	04010201-531		Aquatic Consumption	PCB in water column	5
Superior Bay	2002	Lake Superior	04010201-531		Aquatic Consumption	Toxaphene	5
St Louis River	2002	Lake Superior	04010201-532		Aquatic Consumption	DDT	5
St Louis River	2002	Lake Superior	04010201-532		Aquatic Consumption	Dieldrin	5
St Louis River	2002	Lake Superior	04010201-532		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2002	Lake Superior	04010201-532		Aquatic Consumption	Mercury in water column	5
St Louis River	2006	Lake Superior	04010201-532		Aquatic Consumption	PCB in fish tissue	5
St Louis River	2002	Lake Superior	04010201-532		Aquatic Consumption	PCB in water column	5
St Louis River	2004	Lake Superior	04010201-533		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2004	Lake Superior	04010201-533		Aquatic Consumption	PCB in fish tissue	5
West Two River	2016	Lake Superior	04010201-534		Aquatic Consumption	Mercury in water column	5
West Two River	2012	Lake Superior	04010201-535		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Lake Superior	04010201-542		Aquatic Recreation	Escherichia coli	5
Pine River (White Pine River)	2012	Lake Superior	04010201-543		Aquatic Recreation	Escherichia coli	5
Unnamed branch	2012	Lake Superior	04010201-548		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed branch	2012	Lake Superior	04010201-548		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Lake Superior	04010201-551		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Partridge River	2016	Lake Superior	04010201-552		Aquatic Consumption	Mercury in fish tissue	5
Partridge River	2016	Lake Superior	04010201-552		Aquatic Consumption	Mercury in water column	5
St Louis River	2004	Lake Superior	04010201-554		Aquatic Consumption	Mercury in fish tissue	5
East Two River	2016	Lake Superior	04010201-555		Aquatic Consumption	Mercury in water column	5
Swan River	2016	Lake Superior	04010201-557		Aquatic Consumption	Mercury in water column	5
East Swan River	2012	Lake Superior	04010201-558		Aquatic Life	Turbidity	5
Floodwood River	2016	Lake Superior	04010201-560		Aquatic Consumption	Mercury in water column	5
Barber Creek (East Swan River)	2012	Lake Superior	04010201-569		Aquatic Recreation	Escherichia coli	5
Elbow Creek	2012	Lake Superior	04010201-570		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Embarrass River	2012	Lake Superior	04010201-579		Aquatic Life	Fishes bioassessments	5
Buhl Creek	2012	Lake Superior	04010201-580		Aquatic Recreation	Escherichia coli	5
Dempsey Creek	2012	Lake Superior	04010201-582		Aquatic Recreation	Escherichia coli	5
Sand Creek	2012	Lake Superior	04010201-607		Aquatic Life	Fishes bioassessments	5
Vaara Creek	2012	Lake Superior	04010201-623		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Vaara Creek	2012	Lake Superior	04010201-623		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Lake Superior	04010201-625		Aquatic Recreation	Escherichia coli	5
Kingsbury Creek	2012	Lake Superior	04010201-626		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Kingsbury Creek	2012	Lake Superior	04010201-626		Aquatic Life	Fishes bioassessments	5
Keene Creek	2012	Lake Superior	04010201-627		Aquatic Recreation	Escherichia coli	5
Otter Creek	2012	Lake Superior	04010201-629		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
St Louis River	1998	Lake Superior	04010201-631		Aquatic Consumption	Mercury in fish tissue	5

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Barber Creek (East Swan River)	2012	Lake Superior	04010201-641		Aquatic Recreation	Escherichia coli	5
St Louis River	1998	Lake Superior	04010201-644		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2016	Lake Superior	04010201-644		Aquatic Consumption	Mercury in water column	5
Hay Creek	2012	Lake Superior	04010201-751		Aquatic Recreation	Escherichia coli	5
Sargent Creek	2012	Lake Superior	04010201-848		Aquatic Recreation	Escherichia coli	5
Stewart Creek	2012	Lake Superior	04010201-884		Aquatic Recreation	Escherichia coli	5
Unnamed creek (East Swan Creek)	2012	Lake Superior	04010201-888		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (East Swan Creek)	2012	Lake Superior	04010201-888		Aquatic Recreation	Escherichia coli	5
Unnamed creek (Little Swan Creek)	2012	Lake Superior	04010201-891		Aquatic Life	Fishes bioassessments	5
Penobscot Creek	2012	Lake Superior	04010201-936		Aquatic Recreation	Escherichia coli	5
Wyman Creek	2012	Lake Superior	04010201-942		Aquatic Life	Fishes bioassessments	5
Stony Creek	2012	Lake Superior	04010201-963		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Stony Creek	2012	Lake Superior	04010201-963		Aquatic Life	Fishes bioassessments	5
Stony Creek	2016	Lake Superior	04010201-963		Aquatic Consumption	Mercury in water column	5
Unnamed creek (Merritt Creek)	2012	Lake Superior	04010201-987		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2012	Lake Superior	04010201-A17		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Skunk Creek	2012	Lake Superior	04010201-A18		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Skunk Creek	2012	Lake Superior	04010201-A18		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Lake Superior	04010201-A22		Aquatic Recreation	Escherichia coli	5
Paleface Creek	2012	Lake Superior	04010201-A24		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Paleface Creek	2012	Lake Superior	04010201-A24		Aquatic Life	Fishes bioassessments	5
Ely Creek	2012	Lake Superior	04010201-A26		Aquatic Life	Fishes bioassessments	5
Water Hen Creek	2012	Lake Superior	04010201-A31		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Water Hen Creek	2012	Lake Superior	04010201-A35		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Mine Creek	2012	Lake Superior	04010201-A42		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Mine Creek	2012	Lake Superior	04010201-A42		Aquatic Life	Fishes bioassessments	5
Park Point Sky Harbor Parking Lot Beach	2016	Lake Superior	04010201-A87		Aquatic Recreation	Escherichia coli	5
Park Point 20th St / Hearding Island Canal Beach	2014	Lake Superior	04010201-A89		Aquatic Recreation	Escherichia coli	5
Minnesota Point 15th Street Harbor Side Beach	2014	Lake Superior	04010201-A90		Aquatic Recreation	Escherichia coli	5
Clyde Avenue Boat Landing Beach	2014	Lake Superior	04010201-A91		Aquatic Recreation	Escherichia coli	5
Cloquet River	2016	Lake Superior	04010202-501		Aquatic Consumption	Mercury in fish tissue	5
Cloquet River	2016	Lake Superior	04010202-501		Aquatic Consumption	Mercury in water column	5
Cloquet River	2016	Lake Superior	04010202-502		Aquatic Consumption	Mercury in fish tissue	5
Cloquet River	2016	Lake Superior	04010202-504		Aquatic Consumption	Mercury in fish tissue	5
Unnamed creek (Elim Creek)	2014	Lake Superior	04010301-501		Aquatic Life	Fishes bioassessments	5
Skunk Creek	2014	Lake Superior	04010301-502		Aquatic Life	Turbidity	5
Rock Creek	2014	Lake Superior	04010301-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rock Creek	2014	Lake Superior	04010301-508		Aquatic Life	Fishes bioassessments	5

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Clear Creek	2014	Lake Superior	04010301-527		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Clear Creek	2014	Lake Superior	04010301-527		Aquatic Life	Fishes bioassessments	5
Clear Creek	2014	Lake Superior	04010301-527		Aquatic Life	Turbidity	5
Deer Creek	2014	Lake Superior	04010301-531		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Lake Superior	04010301-532		Aquatic Life	Turbidity	5
Mud Creek	2014	Lake Superior	04010301-537		Aquatic Life	Fishes bioassessments	5
Mud Creek	2014	Lake Superior	04010301-537		Aquatic Life	Turbidity	5
Nemadji River, South Fork	2014	Lake Superior	04010301-558		Aquatic Recreation	Escherichia coli	5
Nemadji River, South Fork	2014	Lake Superior	04010301-558		Aquatic Life	Turbidity	5
Rock Creek	2008	Lake Superior	04010301-573		Aquatic Life	Turbidity	5
Nemadji River	2004	Lake Superior	04010301-757		Aquatic Life	Turbidity	5
Nemadji River	2014	Lake Superior	04010301-758		Aquatic Recreation	Escherichia coli	5
Nemadji River	2004	Lake Superior	04010301-758		Aquatic Life	Turbidity	5
Thomson Reservoir	1998	Lake Superior	09-0001-00		Aquatic Consumption	Mercury in fish tissue	5
Lac La Belle	2014	Lake Superior	09-0011-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Sand	1998	Lake Superior	09-0016-00		Aquatic Consumption	Mercury in fish tissue	5
Superior	1998	Lake Superior	16-0001-00		Aquatic Consumption	Mercury in fish tissue	5
Superior	1998	Lake Superior	16-0001-00		Aquatic Consumption	PCB in fish tissue	5
Otter	1998	Lake Superior	16-0032-00		Aquatic Consumption	Mercury in fish tissue	5
Mountain	1998	Lake Superior	16-0093-00		Aquatic Consumption	Mercury in fish tissue	5
Musquash	1998	Lake Superior	16-0104-00		Aquatic Consumption	Mercury in water column	5
Ball Club	1998	Lake Superior	16-0182-00		Aquatic Consumption	Mercury in fish tissue	5
Ball Club	1998	Lake Superior	16-0182-00		Aquatic Consumption	Mercury in water column	5
Vista	1998	Lake Superior	16-0224-00		Aquatic Consumption	Mercury in fish tissue	5
Hand	2004	Lake Superior	16-0238-00		Aquatic Consumption	Mercury in fish tissue	5
Little Cascade	1998	Lake Superior	16-0347-00		Aquatic Consumption	Mercury in fish tissue	5
Winchell	2002	Lake Superior	16-0354-00		Aquatic Consumption	PCB in fish tissue	5
Holly	1998	Lake Superior	16-0366-00		Aquatic Consumption	Mercury in fish tissue	5
Juno	2002	Lake Superior	16-0402-00		Aquatic Consumption	Mercury in fish tissue	5
Star	2002	Lake Superior	16-0405-00		Aquatic Consumption	Mercury in fish tissue	5
East Fox	2010	Lake Superior	16-0636-00		Aquatic Consumption	Mercury in fish tissue	5
Frear	1998	Lake Superior	16-0806-00		Aquatic Consumption	Mercury in fish tissue	5
Cross River	1998	Lake Superior	38-0002-00		Aquatic Consumption	Mercury in fish tissue	5
Lost	2012	Lake Superior	38-0003-00		Aquatic Consumption	Mercury in fish tissue	5
Kowalski	2010	Lake Superior	38-0016-00		Aquatic Consumption	Mercury in fish tissue	5
Bone	2010	Lake Superior	38-0065-00		Aquatic Consumption	Mercury in fish tissue	5
Cloquet	1998	Lake Superior	38-0539-00		Aquatic Consumption	Mercury in fish tissue	5
Net	2014	Lake Superior	58-0038-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Big Bear	2004	Lake Superior	69-0113-00		Aquatic Consumption	Mercury in fish tissue	5
Alden	2004	Lake Superior	69-0131-00		Aquatic Consumption	Mercury in fish tissue	5
Wolf	1998	Lake Superior	69-0143-00		Aquatic Consumption	Mercury in fish tissue	5
Otto	1998	Lake Superior	69-0144-00		Aquatic Consumption	Mercury in fish tissue	5
Colby	1998	Lake Superior	69-0249-00		Aquatic Consumption	Mercury in fish tissue	5
Island Lake Rsvr(W.Basin)	1998	Lake Superior	69-0372-01		Aquatic Consumption	Mercury in fish tissue	5
Island Lake Rsvr(E.Basin)	1998	Lake Superior	69-0372-02		Aquatic Consumption	Mercury in fish tissue	5
Whiteface Reservoir	1998	Lake Superior	69-0375-00		Aquatic Consumption	Mercury in fish tissue	5

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Upper Comstock	2002	Lake Superior	69-0412-01		Aquatic Consumption	Mercury in fish tissue	5
Lower Comstock	2002	Lake Superior	69-0412-02		Aquatic Consumption	Mercury in fish tissue	5
South Twin	2006	Lake Superior	69-0420-00		Aquatic Consumption	Mercury in fish tissue	5
Loon	1998	Lake Superior	69-0426-00		Aquatic Consumption	Mercury in fish tissue	5
Sabin	1998	Lake Superior	69-0434-01		Aquatic Consumption	Mercury in fish tissue	5
Sabin	2014	Lake Superior	69-0434-01		Aquatic Consumption	Mercury in water column	5
Wynne	1998	Lake Superior	69-0434-02		Aquatic Consumption	Mercury in fish tissue	5
Wynne	2014	Lake Superior	69-0434-02		Aquatic Consumption	Mercury in water column	5
Mud Hen	2012	Lake Superior	69-0494-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Long	2012	Lake Superior	69-0495-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Embarrass	2002	Lake Superior	69-0496-00		Aquatic Consumption	Mercury in fish tissue	5
Grand	2012	Lake Superior	69-0511-00		Aquatic Consumption	Mercury in fish tissue	5
Strand	2002	Lake Superior	69-0529-00		Aquatic Consumption	Mercury in fish tissue	5
Strand	2012	Lake Superior	69-0529-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Dinham	2012	Lake Superior	69-0544-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Esquagama	1998	Lake Superior	69-0565-00		Aquatic Consumption	Mercury in fish tissue	5
Ely	1998	Lake Superior	69-0660-00		Aquatic Consumption	Mercury in fish tissue	5
Elbow	1998	Lake Superior	69-0717-00		Aquatic Consumption	Mercury in fish tissue	5
Manganika	2008	Lake Superior	69-0726-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
McQuade	2012	Lake Superior	69-0775-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
West Two Rivers Reservoir	2012	Lake Superior	69-0994-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Golf Course Pond	2002	Lake Superior	69-1345-00		Aquatic Consumption	PCB in fish tissue	5
George	2002	Minnesota River	07-0047-00		Aquatic Consumption	Mercury in fish tissue	5
George	2016	Minnesota River	07-0047-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Duck	2008	Minnesota River	07-0053-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Wita	2016	Minnesota River	07-0077-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Loon	2010	Minnesota River	07-0096-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mills	2016	Minnesota River	07-0097-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Crystal	2016	Minnesota River	07-0098-00		Aquatic Life	Fishes bioassessments	5
Crystal	2006	Minnesota River	07-0098-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Minnesota River (Lac Qui Parle Lake)	1992	Minnesota River	07020001-517		Aquatic Life	Ammonia, unionized	5
Stony Run Creek	2004	Minnesota River	07020001-531		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2004	Minnesota River	07020001-548		Aquatic Life	Fishes bioassessments	5
Pomme de Terre River	2012	Minnesota River	07020002-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pomme de Terre River	2012	Minnesota River	07020002-501		Aquatic Life	Fishes bioassessments	5
Pelican Creek	2012	Minnesota River	07020002-506		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Minnesota River	07020002-551		Aquatic Life	Fishes bioassessments	5
Pomme de Terre River	2012	Minnesota River	07020002-562		Aquatic Life	Fishes bioassessments	5
Lac qui Parle River	2006	Minnesota River	07020003-505		Aquatic Life	Fishes bioassessments	5
Lazarus Creek	2006	Minnesota River	07020003-509		Aquatic Life	Fishes bioassessments	5
Tenmile Creek	2004	Minnesota River	07020003-511		Aquatic Life	Fishes bioassessments	5
Florida Creek	2006	Minnesota River	07020003-521		Aquatic Life	Fishes bioassessments	5
Minnesota River	1994	Minnesota River	07020004-501		Aquatic Recreation	Fecal Coliform	5
Minnesota River	2002	Minnesota River	07020004-501		Aquatic Life	Turbidity	5
Yellow Medicine River	2016	Minnesota River	07020004-502		Aquatic Life	Nutrient/eutrophication biological indicators	5

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Yellow Medicine River	2002	Minnesota River	07020004-502		Aquatic Life	Turbidity	5
Yellow Medicine River, South Branch (County Ditch 35)	2002	Minnesota River	07020004-503		Aquatic Life	Turbidity	5
Minnesota River	1998	Minnesota River	07020004-504		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1998	Minnesota River	07020004-506		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1998	Minnesota River	07020004-507		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2016	Minnesota River	07020004-509		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020004-509		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2004	Minnesota River	07020004-509		Aquatic Life	Turbidity	5
Minnesota River	1998	Minnesota River	07020004-511		Aquatic Consumption	PCB in fish tissue	5
Yellow Medicine River	2014	Minnesota River	07020004-513		Aquatic Recreation	Escherichia coli	5
Yellow Medicine River	2008	Minnesota River	07020004-513		Aquatic Life	Turbidity	5
Minnesota River	1998	Minnesota River	07020004-515		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2008	Minnesota River	07020004-515		Aquatic Life	Turbidity	5
Minnesota River	1998	Minnesota River	07020004-516		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1998	Minnesota River	07020004-517		Aquatic Consumption	PCB in fish tissue	5
Timms Creek	2010	Minnesota River	07020004-525		Aquatic Recreation	Escherichia coli	5
Sacred Heart Creek	2010	Minnesota River	07020004-526		Aquatic Recreation	Escherichia coli	5
Beaver Creek	2006	Minnesota River	07020004-528		Aquatic Recreation	Fecal Coliform	5
Beaver Creek	2006	Minnesota River	07020004-528		Aquatic Life	Turbidity	5
Beaver Creek, West Fork	2006	Minnesota River	07020004-530		Aquatic Recreation	Fecal Coliform	5
Beaver Creek, West Fork	2006	Minnesota River	07020004-530		Aquatic Life	Turbidity	5
Palmer Creek (County Ditch 68)	2014	Minnesota River	07020004-534		Aquatic Recreation	Escherichia coli	5
Stony Run Creek	2014	Minnesota River	07020004-535		Aquatic Recreation	Escherichia coli	5
Hazel Creek	2014	Minnesota River	07020004-536	Upper Sioux	Aquatic Recreation	Escherichia coli	5
Spring Creek	2014	Minnesota River	07020004-538		Aquatic Recreation	Escherichia coli	5
Spring Creek	2004	Minnesota River	07020004-538		Aquatic Life	Fishes bioassessments	5
Yellow Medicine River, North Branch	2014	Minnesota River	07020004-542		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Yellow Medicine River, North Branch	2010	Minnesota River	07020004-542		Aquatic Life	Turbidity	5
Mud Creek	2014	Minnesota River	07020004-543		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mud Creek	2014	Minnesota River	07020004-543		Aquatic Recreation	Escherichia coli	5
Mud Creek	2010	Minnesota River	07020004-543		Aquatic Life	Turbidity	5
Unnamed creek	2014	Minnesota River	07020004-545		Aquatic Recreation	Escherichia coli	5
Judicial Ditch 10 (Wood Lake Creek)	2006	Minnesota River	07020004-546		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 10 (Wood Lake Creek)	2014	Minnesota River	07020004-547		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 10 (Wood Lake Creek)	2014	Minnesota River	07020004-547		Aquatic Recreation	Escherichia coli	5
Judicial Ditch 10 (Wood Lake Creek)	2014	Minnesota River	07020004-547		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 29	2006	Minnesota River	07020004-550		Aquatic Recreation	Fecal Coliform	5
Boiling Spring Creek	2014	Minnesota River	07020004-555		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2014	Minnesota River	07020004-564		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Unnamed creek	2014	Minnesota River	07020004-566		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2004	Minnesota River	07020004-566		Aquatic Life	Fishes bioassessments	5
Hawk Creek	2006	Minnesota River	07020004-568		Aquatic Recreation	Fecal Coliform	5
Hawk Creek	2006	Minnesota River	07020004-568		Aquatic Life	Turbidity	5
Chetomba Creek	2004	Minnesota River	07020004-577		Aquatic Life	Fishes bioassessments	5
Yellow Medicine River	2014	Minnesota River	07020004-584		Aquatic Recreation	Escherichia coli	5
Yellow Medicine River	2010	Minnesota River	07020004-584		Aquatic Life	Turbidity	5
Beaver Creek, East Fork	2014	Minnesota River	07020004-586		Aquatic Recreation	Escherichia coli	5
Hawk Creek	2010	Minnesota River	07020004-587		Aquatic Recreation	Escherichia coli	5
Hawk Creek	2004	Minnesota River	07020004-587		Aquatic Life	Turbidity	5
Unnamed ditch	2010	Minnesota River	07020004-589		Aquatic Recreation	Escherichia coli	5
Unnamed ditch	2006	Minnesota River	07020004-589		Aquatic Life	Turbidity	5
Unnamed creek	2014	Minnesota River	07020004-595		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2014	Minnesota River	07020004-595		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2006	Minnesota River	07020004-597		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2006	Minnesota River	07020004-599		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2006	Minnesota River	07020004-600		Aquatic Recreation	Fecal Coliform	5
Middle Creek	2014	Minnesota River	07020004-615		Aquatic Recreation	Escherichia coli	5
Smith Creek (County Ditch 125A)	2014	Minnesota River	07020004-617		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Smith Creek (County Ditch 125A)	2014	Minnesota River	07020004-617		Aquatic Recreation	Escherichia coli	5
Judicial Ditch 17	2014	Minnesota River	07020004-622		Aquatic Recreation	Escherichia coli	5
Unnamed creek (County Ditch 119)	2014	Minnesota River	07020004-648		Aquatic Recreation	Escherichia coli	5
County Ditch 119	2014	Minnesota River	07020004-687		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 119	2014	Minnesota River	07020004-687		Aquatic Life	Fishes bioassessments	5
County Ditch 11	2014	Minnesota River	07020004-689		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2014	Minnesota River	07020004-694		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Minnesota River	07020004-694		Aquatic Life	Fishes bioassessments	5
County Ditch 39	2014	Minnesota River	07020004-713		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 39	2014	Minnesota River	07020004-713		Aquatic Life	Fishes bioassessments	5
County Ditch 36	2014	Minnesota River	07020004-716		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 36	2014	Minnesota River	07020004-716		Aquatic Life	Fishes bioassessments	5
County Ditch 2	2014	Minnesota River	07020004-717		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Minnesota River	07020004-718		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Minnesota River	07020004-718		Aquatic Life	Fishes bioassessments	5
Chippewa River	2002	Minnesota River	07020005-501		Aquatic Life	Turbidity	5
Chippewa River	2012	Minnesota River	07020005-502		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Chippewa River	2012	Minnesota River	07020005-502		Aquatic Life	Fishes bioassessments	5
Chippewa River	2012	Minnesota River	07020005-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Chippewa River	2006	Minnesota River	07020005-505		Aquatic Life	Fishes bioassessments	5
Chippewa River	2012	Minnesota River	07020005-506		Aquatic Recreation	Escherichia coli	5
Chippewa River	2012	Minnesota River	07020005-507		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Chippewa River	2012	Minnesota River	07020005-507		Aquatic Life	Turbidity	5
Chippewa River	2012	Minnesota River	07020005-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Dry Weather Creek	2016	Minnesota River	07020005-509		Aquatic Life	Chlorpyrifos	5

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Cottonwood Creek	2014	Minnesota River	07020005-511		Aquatic Recreation	Escherichia coli	5
Chippewa River, East Branch	2012	Minnesota River	07020005-515		Aquatic Recreation	Escherichia coli	5
Mud Creek	2014	Minnesota River	07020005-518		Aquatic Recreation	Escherichia coli	5
Outlet Creek	2012	Minnesota River	07020005-523		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Outlet Creek	2012	Minnesota River	07020005-523		Aquatic Recreation	Escherichia coli	5
Outlet Creek	2012	Minnesota River	07020005-523		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 8	2004	Minnesota River	07020005-546		Aquatic Life	Fishes bioassessments	5
Mud Creek	2012	Minnesota River	07020005-551		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mud Creek	2012	Minnesota River	07020005-554		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mud Creek	2012	Minnesota River	07020005-554		Aquatic Life	Dissolved oxygen	5
Mud Creek	2014	Minnesota River	07020005-554		Aquatic Recreation	Escherichia coli	5
Mud Creek	2012	Minnesota River	07020005-554		Aquatic Life	Fishes bioassessments	5
Shakopee Creek	2012	Minnesota River	07020005-557		Aquatic Recreation	Escherichia coli	5
Shakopee Creek	2006	Minnesota River	07020005-559		Aquatic Life	Fishes bioassessments	5
County Ditch 3	2014	Minnesota River	07020005-579		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2012	Minnesota River	07020005-584		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Minnesota River	07020005-584		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2014	Minnesota River	07020005-584		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2012	Minnesota River	07020005-623		Aquatic Life	Fishes bioassessments	5
Trapper Run Creek	2012	Minnesota River	07020005-628		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Trapper Run Creek	2014	Minnesota River	07020005-628		Aquatic Recreation	Escherichia coli	5
Trapper Run Creek	2012	Minnesota River	07020005-628		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Minnesota River	07020005-638		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Minnesota River	07020005-638		Aquatic Life	Fishes bioassessments	5
County Ditch 15	2012	Minnesota River	07020005-690		Aquatic Life	Fishes bioassessments	5
Little Chippewa River	2010	Minnesota River	07020005-713		Aquatic Recreation	Escherichia coli	5
Little Chippewa River	2012	Minnesota River	07020005-713		Aquatic Life	Fishes bioassessments	5
Little Chippewa River	2012	Minnesota River	07020005-714		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Chippewa River	2006	Minnesota River	07020005-714		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Huse Creek)	2010	Minnesota River	07020005-917		Aquatic Recreation	Escherichia coli	5
Redwood River	2016	Minnesota River	07020006-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Redwood River	2004	Minnesota River	07020006-501		Aquatic Life	Turbidity	5
Redwood River	2008	Minnesota River	07020006-502		Aquatic Life	Chloride	5
Redwood River	2002	Minnesota River	07020006-502		Aquatic Life	Fishes bioassessments	5
Redwood River	2002	Minnesota River	07020006-502		Aquatic Life	Turbidity	5
Redwood River	2002	Minnesota River	07020006-503		Aquatic Life	Fishes bioassessments	5
Redwood River	2010	Minnesota River	07020006-503		Aquatic Life	Turbidity	5
Threemile Creek	2004	Minnesota River	07020006-504		Aquatic Life	Turbidity	5
Redwood River	2002	Minnesota River	07020006-505		Aquatic Life	Fishes bioassessments	5
Redwood River	2002	Minnesota River	07020006-509		Aquatic Life	Turbidity	5
Redwood River	2008	Minnesota River	07020006-510		Aquatic Recreation	Fecal Coliform	5
Coon Creek	2004	Minnesota River	07020006-511		Aquatic Life	Fishes bioassessments	5
Minnesota River	1994	Minnesota River	07020007-501		Aquatic Recreation	Fecal Coliform	5
Minnesota River	2016	Minnesota River	07020007-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020007-501		Aquatic Consumption	PCB in fish tissue	5

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Minnesota River	2002	Minnesota River	07020007-501		Aquatic Consumption	PCB in water column	5
Minnesota River	2002	Minnesota River	07020007-501		Aquatic Life	Turbidity	5
Minnesota River	1998	Minnesota River	07020007-502		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2002	Minnesota River	07020007-502		Aquatic Life	Turbidity	5
Minnesota River	1998	Minnesota River	07020007-503		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2002	Minnesota River	07020007-503		Aquatic Life	Turbidity	5
Minnesota River	1998	Minnesota River	07020007-504		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2010	Minnesota River	07020007-504		Aquatic Life	Turbidity	5
Minnesota River	2016	Minnesota River	07020007-505		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020007-505		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1998	Minnesota River	07020007-505		Aquatic Consumption	PCB in water column	5
Minnesota River	2002	Minnesota River	07020007-505		Aquatic Life	Turbidity	5
Minnesota River	1998	Minnesota River	07020007-506		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1998	Minnesota River	07020007-507		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1998	Minnesota River	07020007-508		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1998	Minnesota River	07020007-509		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1998	Minnesota River	07020007-510		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1998	Minnesota River	07020007-511		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1998	Minnesota River	07020007-512		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1998	Minnesota River	07020007-514		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2002	Minnesota River	07020007-514		Aquatic Life	Turbidity	5
Altermatts Creek	2016	Minnesota River	07020007-518		Limited Resource Value	Escherichia coli	5
Wabasha Creek	2016	Minnesota River	07020007-527		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Wabasha Creek	2016	Minnesota River	07020007-527		Aquatic Recreation	Escherichia coli	5
Wabasha Creek	2016	Minnesota River	07020007-527		Aquatic Life	Fishes bioassessments	5
Minneopa Creek	2016	Minnesota River	07020007-531		Aquatic Life	Fishes bioassessments	5
Minneopa Creek	2016	Minnesota River	07020007-534		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Minneopa Creek	2016	Minnesota River	07020007-534		Aquatic Recreation	Escherichia coli	5
Minneopa Creek	2016	Minnesota River	07020007-534		Aquatic Life	Fishes bioassessments	5
Minneopa Creek	2006	Minnesota River	07020007-534		Aquatic Life	Turbidity	5
County Ditch 27	2016	Minnesota River	07020007-535		Aquatic Life	Fishes bioassessments	5
Cherry Creek	2016	Minnesota River	07020007-541		Aquatic Life	Fishes bioassessments	5
Cherry Creek	2016	Minnesota River	07020007-543		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 4/County Ditch 39	2016	Minnesota River	07020007-545		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rogers Creek	2016	Minnesota River	07020007-547		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rogers Creek	2004	Minnesota River	07020007-547		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020007-550		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2006	Minnesota River	07020007-550		Aquatic Life	Fishes bioassessments	5
County Ditch 56 (Lake Crystal Inlet)	2010	Minnesota River	07020007-557		Aquatic Recreation	Escherichia coli	5
County Ditch 56 (Lake Crystal Inlet)	2016	Minnesota River	07020007-557		Aquatic Life	Fishes bioassessments	5
Minnesota River	1998	Minnesota River	07020007-559		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1998	Minnesota River	07020007-560		Aquatic Consumption	PCB in fish tissue	5
Sevenmile Creek	2016	Minnesota River	07020007-562		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sevenmile Creek	2012	Minnesota River	07020007-562		Aquatic Life	Chlorpyrifos	5

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Sevenmile Creek	2006	Minnesota River	07020007-562		Aquatic Recreation	Fecal Coliform	5
Sevenmile Creek	2016	Minnesota River	07020007-562		Aquatic Life	Fishes bioassessments	5
Sevenmile Creek	2010	Minnesota River	07020007-562		Drinking Water	Nitrates	5
Sevenmile Creek	2006	Minnesota River	07020007-562		Aquatic Life	Turbidity	5
Crow Creek	2016	Minnesota River	07020007-569		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow Creek	2016	Minnesota River	07020007-569		Aquatic Recreation	Escherichia coli	5
Crow Creek	2016	Minnesota River	07020007-569		Aquatic Life	Fishes bioassessments	5
County Ditch 10 (John's Creek)	2016	Minnesota River	07020007-571		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 10 (John's Creek)	2016	Minnesota River	07020007-571		Aquatic Recreation	Escherichia coli	5
County Ditch 10 (John's Creek)	2016	Minnesota River	07020007-571		Aquatic Life	Fishes bioassessments	5
County Ditch 10 (John's Creek)	2012	Minnesota River	07020007-571		Drinking Water	Nitrates	5
Spring Creek	2016	Minnesota River	07020007-573		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Creek	2016	Minnesota River	07020007-573		Aquatic Recreation	Escherichia coli	5
Spring Creek	2016	Minnesota River	07020007-573		Aquatic Life	Fishes bioassessments	5
Spring Creek (Hindeman Creek)	2016	Minnesota River	07020007-574		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Creek (Hindeman Creek)	2016	Minnesota River	07020007-574		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020007-577		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Minnesota River	07020007-577		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020007-577		Drinking Water	Nitrates	5
Birch Coulee Creek	2016	Minnesota River	07020007-587		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Birch Coulee Creek	2016	Minnesota River	07020007-587		Aquatic Recreation	Escherichia coli	5
Birch Coulee Creek	2016	Minnesota River	07020007-587		Aquatic Life	Fishes bioassessments	5
Birch Coulee Creek	2016	Minnesota River	07020007-588		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Birch Coulee Creek	2016	Minnesota River	07020007-588		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 48	2016	Minnesota River	07020007-593		Aquatic Life	Fishes bioassessments	5
Unnamed ditch	2008	Minnesota River	07020007-598		Aquatic Recreation	Fecal Coliform	5
Minnesota River	1998	Minnesota River	07020007-599		Aquatic Consumption	PCB in fish tissue	5
Unnamed creek	2008	Minnesota River	07020007-600		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2008	Minnesota River	07020007-602		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2008	Minnesota River	07020007-603		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2008	Minnesota River	07020007-604		Aquatic Recreation	Fecal Coliform	5
Rogers Creek (County Ditch 78)	2016	Minnesota River	07020007-613		Aquatic Recreation	Escherichia coli	5
Spring Creek (Judicial Ditch 29)	2016	Minnesota River	07020007-622		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Creek (Judicial Ditch 29)	2016	Minnesota River	07020007-622		Aquatic Recreation	Escherichia coli	5
Spring Creek (Judicial Ditch 29)	2016	Minnesota River	07020007-622		Aquatic Life	Fishes bioassessments	5
County Ditch 52	2016	Minnesota River	07020007-636		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Sevenmile Creek Tributary)	2010	Minnesota River	07020007-637		Aquatic Recreation	Escherichia coli	5
Heyman's Creek	2016	Minnesota River	07020007-640		Aquatic Recreation	Escherichia coli	5

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Huelskamp Creek	2016	Minnesota River	07020007-641		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2016	Minnesota River	07020007-644		Aquatic Recreation	Escherichia coli	5
Purgatory Creek	2016	Minnesota River	07020007-645		Aquatic Recreation	Escherichia coli	5
County Ditch 11	2016	Minnesota River	07020007-657		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 67	2016	Minnesota River	07020007-658		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 67	2016	Minnesota River	07020007-658		Aquatic Life	Fishes bioassessments	5
County Ditch 3	2016	Minnesota River	07020007-660		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 11	2016	Minnesota River	07020007-661		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 8	2016	Minnesota River	07020007-666		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 8	2016	Minnesota River	07020007-666		Aquatic Life	Fishes bioassessments	5
County Ditch 124	2016	Minnesota River	07020007-670		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 115	2016	Minnesota River	07020007-673		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Heyman's Creek	2016	Minnesota River	07020007-675		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Cottonwood River	2016	Minnesota River	07020007-676		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Cottonwood River	2006	Minnesota River	07020007-676		Aquatic Recreation	Fecal Coliform	5
Little Cottonwood River	2016	Minnesota River	07020007-676		Aquatic Life	Fishes bioassessments	5
Little Cottonwood River	2006	Minnesota River	07020007-676		Aquatic Life	Turbidity	5
Little Cottonwood River	2016	Minnesota River	07020007-677		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Cottonwood River	2006	Minnesota River	07020007-677		Aquatic Recreation	Fecal Coliform	5
Little Cottonwood River	2006	Minnesota River	07020007-677		Aquatic Life	Turbidity	5
County Ditch 46A	2016	Minnesota River	07020007-678		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 46A	2016	Minnesota River	07020007-678		Aquatic Life	Fishes bioassessments	5
County Ditch 46A	2016	Minnesota River	07020007-679		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 46A	2006	Minnesota River	07020007-679		Aquatic Recreation	Fecal Coliform	5
County Ditch 46A	2006	Minnesota River	07020007-679		Aquatic Life	Turbidity	5
Swan Lake Outlet (Nicollet Creek)	2016	Minnesota River	07020007-683		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Swan Lake Outlet (Nicollet Creek)	2016	Minnesota River	07020007-683		Aquatic Recreation	Escherichia coli	5
Eightmile Creek	2016	Minnesota River	07020007-684		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Eightmile Creek	2016	Minnesota River	07020007-684		Aquatic Recreation	Escherichia coli	5
Eightmile Creek	2016	Minnesota River	07020007-684		Aquatic Life	Fishes bioassessments	5
Little Rock Creek (Judicial Ditch 31)	2016	Minnesota River	07020007-686		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Rock Creek (Judicial Ditch 31)	2016	Minnesota River	07020007-686		Aquatic Life	Fishes bioassessments	5
Little Rock Creek (Judicial Ditch 31)	2016	Minnesota River	07020007-687		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Rock Creek (Judicial Ditch 31)	2016	Minnesota River	07020007-687		Aquatic Recreation	Escherichia coli	5
Little Rock Creek (Judicial Ditch 31)	2016	Minnesota River	07020007-687		Aquatic Life	Fishes bioassessments	5
County Ditch 106A (Fort Ridgley Creek)	2016	Minnesota River	07020007-688		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Fort Ridgley Creek	2016	Minnesota River	07020007-689		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Fort Ridgley Creek	2016	Minnesota River	07020007-689		Aquatic Recreation	Escherichia coli	5
Fort Ridgley Creek	2016	Minnesota River	07020007-689		Aquatic Life	Fishes bioassessments	5
Morgan Creek	2016	Minnesota River	07020007-691		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Morgan Creek	2016	Minnesota River	07020007-691		Aquatic Recreation	Escherichia coli	5
Morgan Creek	2016	Minnesota River	07020007-691		Aquatic Life	Fishes bioassessments	5
Shanaska Creek	2016	Minnesota River	07020007-693		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Shanaska Creek	2016	Minnesota River	07020007-693		Aquatic Recreation	Escherichia coli	5
Shanaska Creek	2016	Minnesota River	07020007-693		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020007-696		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Minnesota River	07020007-696		Aquatic Life	Fishes bioassessments	5
Wabasha Creek	2016	Minnesota River	07020007-699		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 10	2016	Minnesota River	07020007-701		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sevenmile Creek	2016	Minnesota River	07020007-703		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sevenmile Creek	2006	Minnesota River	07020007-703		Aquatic Recreation	Fecal Coliform	5
Sevenmile Creek	2006	Minnesota River	07020007-703		Aquatic Life	Turbidity	5
Threemile Creek	2016	Minnesota River	07020007-704		Aquatic Recreation	Escherichia coli	5
Threemile Creek	2016	Minnesota River	07020007-704		Aquatic Life	Fishes bioassessments	5
Fritsche Creek (County Ditch 77)	2016	Minnesota River	07020007-709		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Fritsche Creek (County Ditch 77)	2016	Minnesota River	07020007-709		Aquatic Recreation	Escherichia coli	5
County Ditch 124	2016	Minnesota River	07020007-711		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 13	2016	Minnesota River	07020007-712		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 13	2016	Minnesota River	07020007-712		Aquatic Recreation	Escherichia coli	5
County Ditch 13	2016	Minnesota River	07020007-712		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020007-715		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 13	2016	Minnesota River	07020007-716		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 13	2016	Minnesota River	07020007-717		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 13	2016	Minnesota River	07020007-717		Aquatic Life	Fishes bioassessments	5
Cottonwood River	2002	Minnesota River	07020008-501		Aquatic Life	Turbidity	5
Cottonwood River	2006	Minnesota River	07020008-504		Aquatic Life	Turbidity	5
Cottonwood River	2006	Minnesota River	07020008-508		Aquatic Life	Turbidity	5
Sleepy Eye Creek	2004	Minnesota River	07020008-512		Aquatic Life	Fishes bioassessments	5
Sleepy Eye Creek	2006	Minnesota River	07020008-512		Aquatic Life	Turbidity	5
Plum Creek (Judicial Ditch 20A)	2006	Minnesota River	07020008-516		Aquatic Life	Turbidity	5
Dutch Charley Creek	2006	Minnesota River	07020008-517		Aquatic Life	Fishes bioassessments	5
Dutch Charley Creek	2006	Minnesota River	07020008-517		Aquatic Life	Turbidity	5
Dutch Charley Creek	2006	Minnesota River	07020008-518		Aquatic Life	Fishes bioassessments	5
Dutch Charley Creek	2006	Minnesota River	07020008-518		Aquatic Life	Turbidity	5
Pell Creek	2010	Minnesota River	07020008-535		Aquatic Life	Turbidity	5
Blue Earth River	2002	Minnesota River	07020009-501		Aquatic Life	Turbidity	5
Elm Creek	2006	Minnesota River	07020009-502		Aquatic Life	Fishes bioassessments	5
Elm Creek	1996	Minnesota River	07020009-502		Aquatic Life	Turbidity	5
Center Creek	1996	Minnesota River	07020009-503		Aquatic Life	Ammonia, unionized	5
Center Creek	2002	Minnesota River	07020009-503		Aquatic Life	Fishes bioassessments	5
Center Creek	2002	Minnesota River	07020009-503		Aquatic Life	Turbidity	5
Blue Earth River	2004	Minnesota River	07020009-504		Aquatic Life	Fishes bioassessments	5
Blue Earth River	2002	Minnesota River	07020009-504		Aquatic Life	Turbidity	5
Judicial Ditch 3	1996	Minnesota River	07020009-505		Aquatic Life	Dissolved oxygen	5

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Blue Earth River	2008	Minnesota River	07020009-507		Aquatic Life	Turbidity	5
Blue Earth River	2002	Minnesota River	07020009-508		Aquatic Life	Fishes bioassessments	5
Blue Earth River	2002	Minnesota River	07020009-508		Aquatic Life	Turbidity	5
Blue Earth River	2016	Minnesota River	07020009-509		Aquatic Life	Nutrient/eutrophication biological indicators	5
Blue Earth River	2004	Minnesota River	07020009-509		Aquatic Life	Turbidity	5
Blue Earth River	2010	Minnesota River	07020009-514		Aquatic Life	Turbidity	5
Blue Earth River	2002	Minnesota River	07020009-515		Aquatic Life	Fishes bioassessments	5
Blue Earth River	2002	Minnesota River	07020009-515		Aquatic Life	Turbidity	5
Blue Earth River	2004	Minnesota River	07020009-516		Aquatic Life	Fishes bioassessments	5
Blue Earth River	2008	Minnesota River	07020009-518		Aquatic Life	Turbidity	5
Cedar Creek (Cedar Run Creek)	2006	Minnesota River	07020009-521		Aquatic Life	Turbidity	5
Elm Creek	2006	Minnesota River	07020009-522		Aquatic Life	Turbidity	5
Elm Creek	2010	Minnesota River	07020009-523		Aquatic Life	Turbidity	5
Elm Creek, South Fork	2010	Minnesota River	07020009-524		Aquatic Life	Turbidity	5
Lily Creek	2006	Minnesota River	07020009-525		Aquatic Life	Turbidity	5
Dutch Creek	2006	Minnesota River	07020009-527		Aquatic Life	Turbidity	5
Blue Earth River, East Branch	2004	Minnesota River	07020009-553		Aquatic Life	Fishes bioassessments	5
Blue Earth River, East Branch	2008	Minnesota River	07020009-553		Aquatic Life	Turbidity	5
Blue Earth River, East Branch	2004	Minnesota River	07020009-554		Aquatic Life	Fishes bioassessments	5
Blue Earth River, East Branch	2008	Minnesota River	07020009-554		Aquatic Life	Turbidity	5
Brush Creek	2004	Minnesota River	07020009-555		Aquatic Life	Fishes bioassessments	5
Cedar Creek (Cedar Run Creek)	1994	Minnesota River	07020009-560		Aquatic Life	Dissolved oxygen	5
Blue Earth River	2008	Minnesota River	07020009-565		Aquatic Life	Turbidity	5
Watonwan River	2016	Minnesota River	07020010-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River	2016	Minnesota River	07020010-501		Aquatic Life	Fishes bioassessments	5
Watonwan River	2002	Minnesota River	07020010-501		Aquatic Life	Turbidity	5
St James Creek	2016	Minnesota River	07020010-502		Limited Resource Value	Escherichia coli	5
Unnamed creek (Mountain Lake Inlet)	2016	Minnesota River	07020010-505		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River	2016	Minnesota River	07020010-510		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River	2016	Minnesota River	07020010-510		Aquatic Recreation	Escherichia coli	5
Watonwan River	2016	Minnesota River	07020010-510		Aquatic Life	Fishes bioassessments	5
Watonwan River	2008	Minnesota River	07020010-510		Aquatic Life	Turbidity	5
Watonwan River	2016	Minnesota River	07020010-511		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River	2004	Minnesota River	07020010-511		Aquatic Life	Fishes bioassessments	5
Watonwan River	2006	Minnesota River	07020010-511		Aquatic Life	Turbidity	5
St James Creek	2016	Minnesota River	07020010-515		Limited Resource Value	Escherichia coli	5
Butterfield Creek	2016	Minnesota River	07020010-516		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Butterfield Creek	2016	Minnesota River	07020010-516		Aquatic Recreation	Escherichia coli	5
Butterfield Creek	2016	Minnesota River	07020010-516		Aquatic Life	Fishes bioassessments	5
Butterfield Creek	2008	Minnesota River	07020010-516		Aquatic Life	Turbidity	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Watonwan River, South Fork	2016	Minnesota River	07020010-517		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River, South Fork	2016	Minnesota River	07020010-517		Aquatic Life	Fishes bioassessments	5
Watonwan River, South Fork	2006	Minnesota River	07020010-517		Aquatic Life	Turbidity	5
Perch Creek	2016	Minnesota River	07020010-523		Aquatic Recreation	Escherichia coli	5
Perch Creek	2016	Minnesota River	07020010-523		Aquatic Life	Fishes bioassessments	5
Perch Creek	2016	Minnesota River	07020010-524		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Perch Creek	2016	Minnesota River	07020010-524		Aquatic Life	Fishes bioassessments	5
Perch Creek	2006	Minnesota River	07020010-524		Aquatic Life	Turbidity	5
Unnamed creek	2016	Minnesota River	07020010-526		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-526		Aquatic Life	Fishes bioassessments	5
St James Creek (Kansas Lake Inlet)	2002	Minnesota River	07020010-528		Aquatic Life	Turbidity	5
Spring Brook	2016	Minnesota River	07020010-540		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Brook	2016	Minnesota River	07020010-540		Aquatic Life	Fishes bioassessments	5
Watonwan River, South Fork	2016	Minnesota River	07020010-547		Aquatic Life	Fishes bioassessments	5
Watonwan River, South Fork	2006	Minnesota River	07020010-547		Aquatic Life	Turbidity	5
Unnamed creek	2016	Minnesota River	07020010-549		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-549		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-552		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-552		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-557		Aquatic Life	Fishes bioassessments	5
County Ditch 78	2016	Minnesota River	07020010-559		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 78	2016	Minnesota River	07020010-559		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-561		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-561		Aquatic Life	Fishes bioassessments	5
Watonwan River	2006	Minnesota River	07020010-562		Aquatic Life	Turbidity	5
Watonwan River	2016	Minnesota River	07020010-563		Aquatic Life	Fishes bioassessments	5
Watonwan River	2006	Minnesota River	07020010-563		Aquatic Life	Turbidity	5
Watonwan River, North Fork	2016	Minnesota River	07020010-564		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River, North Fork	2016	Minnesota River	07020010-564		Aquatic Recreation	Escherichia coli	5
Watonwan River, North Fork	2016	Minnesota River	07020010-564		Aquatic Life	Fishes bioassessments	5
Watonwan River, North Fork	2006	Minnesota River	07020010-564		Aquatic Life	Turbidity	5
Watonwan River, North Fork	2016	Minnesota River	07020010-565		Aquatic Life	Fishes bioassessments	5
Watonwan River	2016	Minnesota River	07020010-566		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River	2004	Minnesota River	07020010-566		Aquatic Life	Fishes bioassessments	5
Watonwan River	2006	Minnesota River	07020010-566		Aquatic Life	Turbidity	5
Watonwan River	2004	Minnesota River	07020010-567		Aquatic Life	Fishes bioassessments	5
Watonwan River	2006	Minnesota River	07020010-567		Aquatic Life	Turbidity	5

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Watonwan River, South Fork	2016	Minnesota River	07020010-568		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River, South Fork	2016	Minnesota River	07020010-568		Aquatic Recreation	Escherichia coli	5
Watonwan River, South Fork	2016	Minnesota River	07020010-568		Aquatic Life	Fishes bioassessments	5
Watonwan River, South Fork	2016	Minnesota River	07020010-569		Aquatic Life	Fishes bioassessments	5
Willow Creek	2016	Minnesota River	07020010-571		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Willow Creek	2006	Minnesota River	07020010-571		Aquatic Life	Fishes bioassessments	5
Spring Branch Creek	2016	Minnesota River	07020010-574		Aquatic Recreation	Escherichia coli	5
Spring Branch Creek	2016	Minnesota River	07020010-574		Aquatic Life	Fishes bioassessments	5
St James Creek	2016	Minnesota River	07020010-576		Aquatic Recreation	Escherichia coli	5
Mink Creek	2016	Minnesota River	07020010-577		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mink Creek	2016	Minnesota River	07020010-577		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 1	2016	Minnesota River	07020010-579		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 1	2016	Minnesota River	07020010-579		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 1	2006	Minnesota River	07020010-580		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 1	2016	Minnesota River	07020010-581		Aquatic Recreation	Escherichia coli	5
Judicial Ditch 1	2016	Minnesota River	07020010-581		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-583		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-583		Aquatic Life	Fishes bioassessments	5
Le Sueur River	2012	Minnesota River	07020011-501		Aquatic Life	Fishes bioassessments	5
Le Sueur River	2002	Minnesota River	07020011-501		Aquatic Consumption	Mercury in water column	5
Le Sueur River	2016	Minnesota River	07020011-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Le Sueur River	2012	Minnesota River	07020011-501		Aquatic Consumption	PCB in fish tissue	5
Le Sueur River	2002	Minnesota River	07020011-501		Aquatic Consumption	PCB in water column	5
Le Sueur River	2002	Minnesota River	07020011-501		Aquatic Life	Turbidity	5
Unnamed creek (Little Beauford Ditch)	2002	Minnesota River	07020011-503		Aquatic Consumption	Mercury in water column	5
Unnamed creek (Little Beauford Ditch)	2002	Minnesota River	07020011-503		Aquatic Consumption	PCB in water column	5
Unnamed creek (Little Beauford Ditch)	2002	Minnesota River	07020011-503		Aquatic Life	Turbidity	5
Little Cobb River	2002	Minnesota River	07020011-504		Aquatic Life	Fishes bioassessments	5
Little Cobb River	2002	Minnesota River	07020011-504		Aquatic Consumption	Mercury in water column	5
Little Cobb River	2016	Minnesota River	07020011-504		Aquatic Life	Nutrient/eutrophication biological indicators	5
Little Cobb River	2002	Minnesota River	07020011-504		Aquatic Life	Turbidity	5
Le Sueur River	2012	Minnesota River	07020011-506		Aquatic Consumption	PCB in fish tissue	5
Le Sueur River	2010	Minnesota River	07020011-506		Aquatic Life	Turbidity	5
Le Sueur River	2012	Minnesota River	07020011-507		Aquatic Life	Fishes bioassessments	5
Le Sueur River	2012	Minnesota River	07020011-507		Aquatic Consumption	PCB in fish tissue	5
Le Sueur River	2008	Minnesota River	07020011-507		Aquatic Life	Turbidity	5
Unnamed creek	2012	Minnesota River	07020011-510		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 6	2012	Minnesota River	07020011-522		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rice Creek	2012	Minnesota River	07020011-531		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rice Creek	2006	Minnesota River	07020011-531		Aquatic Life	Fishes bioassessments	5
Rice Creek	2010	Minnesota River	07020011-531		Aquatic Life	Turbidity	5

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Maple River	2012	Minnesota River	07020011-534		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Maple River	2008	Minnesota River	07020011-534		Aquatic Life	Turbidity	5
Maple River	2012	Minnesota River	07020011-535		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Maple River	2012	Minnesota River	07020011-535		Aquatic Life	Fishes bioassessments	5
Maple River	2010	Minnesota River	07020011-535		Aquatic Life	Turbidity	5
County Ditch 3 (Judicial Ditch 9)	2010	Minnesota River	07020011-552		Aquatic Life	Turbidity	5
Cobb River	2012	Minnesota River	07020011-556		Aquatic Life	Fishes bioassessments	5
Cobb River	2016	Minnesota River	07020011-556		Aquatic Life	Nutrient/eutrophication biological indicators	5
Cobb River	2008	Minnesota River	07020011-556		Aquatic Life	Turbidity	5
County Ditch 12	2012	Minnesota River	07020011-558		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 12	2012	Minnesota River	07020011-558		Aquatic Life	Fishes bioassessments	5
Cobb River	2012	Minnesota River	07020011-568		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cobb River	2004	Minnesota River	07020011-568		Aquatic Life	Fishes bioassessments	5
Cobb River	2010	Minnesota River	07020011-568		Aquatic Life	Turbidity	5
Little Le Sueur River	2012	Minnesota River	07020011-573		Aquatic Life	Fishes bioassessments	5
Iosco Creek	2012	Minnesota River	07020011-576		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Iosco Creek	2012	Minnesota River	07020011-576		Aquatic Life	Fishes bioassessments	5
County Ditch 19	2012	Minnesota River	07020011-608		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 19	2012	Minnesota River	07020011-608		Aquatic Life	Fishes bioassessments	5
County Ditch 15-2	2012	Minnesota River	07020011-609		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 15-2	2012	Minnesota River	07020011-609		Aquatic Life	Fishes bioassessments	5
Le Sueur River	2012	Minnesota River	07020011-619		Aquatic Life	Fishes bioassessments	5
Le Sueur River	2012	Minnesota River	07020011-619		Aquatic Consumption	PCB in fish tissue	5
Le Sueur River	2010	Minnesota River	07020011-619		Aquatic Life	Turbidity	5
Le Sueur River	2012	Minnesota River	07020011-620		Aquatic Consumption	PCB in fish tissue	5
Le Sueur River	2010	Minnesota River	07020011-620		Aquatic Life	Turbidity	5
Minnesota River	2002	Minnesota River	07020012-501		Aquatic Recreation	Fecal Coliform	5
Minnesota River	2016	Minnesota River	07020012-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020012-501		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1996	Minnesota River	07020012-501		Aquatic Life	Turbidity	5
Minnesota River	2002	Minnesota River	07020012-502		Aquatic Recreation	Fecal Coliform	5
Minnesota River	1998	Minnesota River	07020012-502		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1994	Minnesota River	07020012-503		Aquatic Recreation	Fecal Coliform	5
Minnesota River	2016	Minnesota River	07020012-503		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020012-503		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2002	Minnesota River	07020012-503		Aquatic Life	Turbidity	5
Minnesota River	1998	Minnesota River	07020012-504		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2016	Minnesota River	07020012-505		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020012-505		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1996	Minnesota River	07020012-505		Aquatic Life	Turbidity	5
Minnesota River	2016	Minnesota River	07020012-506		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020012-506		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1996	Minnesota River	07020012-506		Aquatic Life	Turbidity	5
Minnesota River	2002	Minnesota River	07020012-507		Aquatic Recreation	Fecal Coliform	5
Minnesota River	1998	Minnesota River	07020012-507		Aquatic Consumption	PCB in fish tissue	5

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Minnesota River	2010	Minnesota River	07020012-507		Aquatic Life	Turbidity	5
Judicial Ditch 1A	2010	Minnesota River	07020012-509		Limited Resource Value	Escherichia coli	5
Riley Creek	2002	Minnesota River	07020012-511		Aquatic Life	Turbidity	5
Chaska Creek	2006	Minnesota River	07020012-512		Aquatic Recreation	Fecal Coliform	5
Sand Creek	2004	Minnesota River	07020012-513		Aquatic Life	Fishes bioassessments	5
Sand Creek	2016	Minnesota River	07020012-513		Aquatic Life	Nutrient/eutrophication biological indicators	5
Sand Creek	2002	Minnesota River	07020012-513		Aquatic Life	Turbidity	5
Carver Creek	2016	Minnesota River	07020012-516		Aquatic Life	Nutrient/eutrophication biological indicators	5
Ninemile Creek	2004	Minnesota River	07020012-518		Aquatic Life	Fishes bioassessments	5
Rush River	2008	Minnesota River	07020012-521		Aquatic Life	Turbidity	5
Silver Creek	2016	Minnesota River	07020012-523		Aquatic Life	Acetochlor	5
Unnamed creek	2006	Minnesota River	07020012-526		Aquatic Recreation	Fecal Coliform	5
Unnamed ditch	2006	Minnesota River	07020012-527		Aquatic Life	Dissolved oxygen	5
Unnamed ditch	2006	Minnesota River	07020012-527		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2006	Minnesota River	07020012-528		Aquatic Recreation	Fecal Coliform	5
Minnesota River	1998	Minnesota River	07020012-532		Aquatic Consumption	PCB in fish tissue	5
Sand Creek	2010	Minnesota River	07020012-538		Aquatic Life	Turbidity	5
Porter Creek	2016	Minnesota River	07020012-540		Aquatic Life	Nutrient/eutrophication biological indicators	5
Porter Creek	2010	Minnesota River	07020012-540		Aquatic Life	Turbidity	5
Rush River	2010	Minnesota River	07020012-548		Aquatic Life	Turbidity	5
Rush River, Middle Branch (County Ditch 23 and 24)	2010	Minnesota River	07020012-550		Limited Resource Value	Escherichia coli	5
Rush River, North Branch (County Ditch 55)	2010	Minnesota River	07020012-558		Limited Resource Value	Escherichia coli	5
Buffalo Creek	2004	Minnesota River	07020012-578		Aquatic Life	Fishes bioassessments	5
Buffalo Creek	2008	Minnesota River	07020012-578		Aquatic Life	Turbidity	5
Unnamed creek	2004	Minnesota River	07020012-579		Aquatic Life	Fishes bioassessments	5
Unnamed creek (East Creek)	2006	Minnesota River	07020012-581		Aquatic Recreation	Fecal Coliform	5
Unnamed creek (East Creek)	2004	Minnesota River	07020012-581		Aquatic Life	Fishes bioassessments	5
Unnamed creek (East Creek)	2008	Minnesota River	07020012-581		Aquatic Life	Turbidity	5
High Island Ditch 2	2006	Minnesota River	07020012-588		Aquatic Life	Turbidity	5
High Island Creek	2004	Minnesota River	07020012-589		Aquatic Life	Fishes bioassessments	5
High Island Creek	2006	Minnesota River	07020012-589		Aquatic Life	Turbidity	5
Unnamed creek	2008	Minnesota River	07020012-618		Aquatic Recreation	Fecal Coliform	5
Unnamed creek (Lake Waconia Inlet)	2008	Minnesota River	07020012-619		Aquatic Recreation	Fecal Coliform	5
County Ditch 10	2008	Minnesota River	07020012-628		Aquatic Recreation	Fecal Coliform	5
Judicial Ditch 22	2006	Minnesota River	07020012-629		Aquatic Recreation	Fecal Coliform	5
High Island Creek	2006	Minnesota River	07020012-653		Aquatic Life	Turbidity	5
High Island Creek	2006	Minnesota River	07020012-654		Aquatic Life	Turbidity	5
Sand Creek	2016	Minnesota River	07020012-662		Aquatic Life	Nutrient/eutrophication biological indicators	5
Sand Creek	2010	Minnesota River	07020012-662		Aquatic Life	Turbidity	5
Raven Stream, West Branch	2008	Minnesota River	07020012-715		Aquatic Recreation	Fecal Coliform	5
Bevens Creek	2016	Minnesota River	07020012-717		Aquatic Life	Nutrient/eutrophication biological indicators	5

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Bevens Creek	2016	Minnesota River	07020012-718		Aquatic Life	Nutrient/eutrophication biological indicators	5
Hanska	2016	Minnesota River	08-0026-00		Aquatic Life	Fishes bioassessments	5
Sleepy Eye	2002	Minnesota River	08-0045-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Riley	2002	Minnesota River	10-0002-00		Aquatic Consumption	Mercury in fish tissue	5
Riley	2002	Minnesota River	10-0002-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lotus	2002	Minnesota River	10-0006-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Susan	2010	Minnesota River	10-0013-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Hazeltine	2004	Minnesota River	10-0014-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Long	2006	Minnesota River	10-0016-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bavaria	2006	Minnesota River	10-0019-00		Aquatic Consumption	Mercury in fish tissue	5
Miller	2012	Minnesota River	10-0029-00		Aquatic Consumption	Mercury in fish tissue	5
Gaystock	2004	Minnesota River	10-0031-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Maria	2004	Minnesota River	10-0058-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Rutz	2006	Minnesota River	10-0080-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
McKnight	2014	Minnesota River	10-0216-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Jonathan	2014	Minnesota River	10-0217-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2006	Minnesota River	10-0218-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2010	Minnesota River	12-0013-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	12-0013-00		Aquatic Life	Aquatic plant bioassessments	5
Mountain	2016	Minnesota River	17-0003-00		Aquatic Life	Fishes bioassessments	5
Bingham	2016	Minnesota River	17-0007-00		Aquatic Life	Fishes bioassessments	5
Bingham	2010	Minnesota River	17-0007-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Eagle	2010	Minnesota River	17-0020-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bean	2010	Minnesota River	17-0054-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Double (North Portion)	2010	Minnesota River	17-0056-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Crystal	1998	Minnesota River	19-0027-00		Aquatic Consumption	Mercury in fish tissue	5
Fish	2002	Minnesota River	19-0057-00		Aquatic Consumption	Mercury in fish tissue	5
Gilbert	2012	Minnesota River	21-0189-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Moses	2012	Minnesota River	21-0245-00		Aquatic Consumption	Mercury in fish tissue	5
Red Rock	2008	Minnesota River	21-0291-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Jennie	2008	Minnesota River	21-0323-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Long	2012	Minnesota River	21-0343-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed PCA site #382	2010	Minnesota River	21-0692-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed PCA site #382	2010	Minnesota River	21-0692-00		Aquatic Life	Aquatic plant bioassessments	5
Thompson	2012	Minnesota River	26-0020-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cornelia (North)	2008	Minnesota River	27-0028-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Edina	2008	Minnesota River	27-0029-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Hyland	2008	Minnesota River	27-0048-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bryant	2008	Minnesota River	27-0067-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mitchell	2002	Minnesota River	27-0070-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Staring	1998	Minnesota River	27-0078-00		Aquatic Consumption	Mercury in fish tissue	5
Staring	2002	Minnesota River	27-0078-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Wing	2010	Minnesota River	27-0091-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Rose	2010	Minnesota River	27-0092-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Silver	2016	Minnesota River	27-0136-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fish (Main Lake)	2016	Minnesota River	32-0018-03		Aquatic Life	Fishes bioassessments	5

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Henderson	2002	Minnesota River	34-0116-00		Aquatic Consumption	Mercury in fish tissue	5
Swan	2014	Minnesota River	34-0186-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Middle	2012	Minnesota River	34-0208-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
West Solomon	2014	Minnesota River	34-0245-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Norway (Northwest Basin)	2012	Minnesota River	34-0251-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Norway (Southern Basin)	2012	Minnesota River	34-0251-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Olson	2014	Minnesota River	34-0266-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Saint Johns	2014	Minnesota River	34-0283-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Marietta Kids Fishing Pond	2016	Minnesota River	37-0355-00		Aquatic Consumption	Mercury in fish tissue	5
Henry	2016	Minnesota River	40-0104-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Scotch	2016	Minnesota River	40-0109-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Washington	2016	Minnesota River	40-0117-00		Aquatic Life	Fishes bioassessments	5
Washington	2008	Minnesota River	40-0117-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Dead Coon (Main Lake)	2010	Minnesota River	41-0021-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Stay	2014	Minnesota River	41-0034-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Benton	2006	Minnesota River	41-0043-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Perch	2014	Minnesota River	41-0067-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Steep Bank	2014	Minnesota River	41-0082-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2010	Minnesota River	41-0128-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	41-0128-00		Aquatic Life	Aquatic plant bioassessments	5
School Grove	2010	Minnesota River	42-0002-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cottonwood	2010	Minnesota River	42-0014-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lady Slipper	2014	Minnesota River	42-0020-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Rock	2010	Minnesota River	42-0052-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pochardt Slough	2010	Minnesota River	42-0080-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Weltz Slough	2010	Minnesota River	42-0092-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Weltz Slough	2010	Minnesota River	42-0092-00		Aquatic Life	Aquatic plant bioassessments	5
Goose	2010	Minnesota River	42-0093-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
George	2006	Minnesota River	46-0024-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Sisseton	2006	Minnesota River	46-0025-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Budd	2006	Minnesota River	46-0030-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Budd	1998	Minnesota River	46-0030-00		Aquatic Consumption	PCB in fish tissue	5
Hall	2006	Minnesota River	46-0031-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Amber	2006	Minnesota River	46-0034-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fox	2010	Minnesota River	46-0109-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Big Twin	2010	Minnesota River	46-0133-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2010	Minnesota River	51-0124-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	51-0124-00		Aquatic Life	Aquatic plant bioassessments	5
Unnamed	2010	Minnesota River	51-0128-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	51-0128-00		Aquatic Life	Aquatic plant bioassessments	5
Block	2012	Minnesota River	56-0079-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Eagle	2012	Minnesota River	56-0253-00		Aquatic Consumption	Mercury in fish tissue	5
South Turtle	2014	Minnesota River	56-0377-00		Aquatic Consumption	Mercury in fish tissue	5
Unnamed	2010	Minnesota River	59-0008-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	59-0008-00		Aquatic Life	Aquatic plant bioassessments	5
Johanna	2010	Minnesota River	61-0006-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5

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Simon	2012	Minnesota River	61-0034-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Swenoda	2012	Minnesota River	61-0051-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Leven	2002	Minnesota River	61-0066-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Gilchrist	2002	Minnesota River	61-0072-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Reno	2002	Minnesota River	61-0078-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Hanson	2012	Minnesota River	61-0080-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Rasmuson	2012	Minnesota River	61-0086-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Steenerson	2012	Minnesota River	61-0095-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mary	2012	Minnesota River	61-0099-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Edwards	2012	Minnesota River	61-0106-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pelican	2002	Minnesota River	61-0111-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Ann	2006	Minnesota River	61-0122-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
John	2012	Minnesota River	61-0123-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Strandness	2006	Minnesota River	61-0128-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Malmedal	2002	Minnesota River	61-0162-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Jorgenson	2012	Minnesota River	61-0164-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Emily	2002	Minnesota River	61-0180-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Danielson Slough	2012	Minnesota River	61-0194-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
McIver	2012	Minnesota River	61-0199-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Wicklund	2012	Minnesota River	61-0204-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Irgens	2012	Minnesota River	61-0211-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2008	Minnesota River	61-0522-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cleary	2008	Minnesota River	70-0022-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fish	2006	Minnesota River	70-0069-00		Aquatic Consumption	Mercury in fish tissue	5
Fish	2002	Minnesota River	70-0069-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pike	2002	Minnesota River	70-0076-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Thole	2002	Minnesota River	70-0120-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Titlow	2010	Minnesota River	72-0042-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Long	2012	Minnesota River	75-0024-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2010	Minnesota River	75-0175-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	75-0175-00		Aquatic Life	Aquatic plant bioassessments	5
Unnamed	2010	Minnesota River	75-0375-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	75-0375-00		Aquatic Life	Aquatic plant bioassessments	5
Monson	2012	Minnesota River	76-0033-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Hollerberg	2010	Minnesota River	76-0057-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Hassel	2012	Minnesota River	76-0086-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Kansas	2016	Minnesota River	83-0036-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Long	2016	Minnesota River	83-0040-00		Aquatic Life	Fishes bioassessments	5
Butterfield	2016	Minnesota River	83-0056-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Curtis	2010	Minnesota River	87-0016-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Wood	2010	Minnesota River	87-0030-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2010	Minnesota River	87-0121-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	87-0121-00		Aquatic Life	Aquatic plant bioassessments	5
Medary Creek	2014	Missouri River	10170202-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pipestone Creek	2014	Missouri River	10170203-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pipestone Creek	2014	Missouri River	10170203-501		Aquatic Life	Fishes bioassessments	5

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Flandreau Creek	2014	Missouri River	10170203-502		Aquatic Recreation	Escherichia coli	5
Flandreau Creek	2014	Missouri River	10170203-502		Aquatic Life	Fishes bioassessments	5
Pipestone Creek	2014	Missouri River	10170203-505		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pipestone Creek	2014	Missouri River	10170203-505		Aquatic Recreation	Escherichia coli	5
Pipestone Creek	2014	Missouri River	10170203-505		Aquatic Life	Fishes bioassessments	5
Pipestone Creek	2014	Missouri River	10170203-506		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pipestone Creek	2014	Missouri River	10170203-506		Aquatic Life	Fishes bioassessments	5
Split Rock Creek	2014	Missouri River	10170203-507		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Split Rock Creek	1994	Missouri River	10170203-507		Aquatic Life	Dissolved oxygen	5
Split Rock Creek	2014	Missouri River	10170203-507		Aquatic Life	Fishes bioassessments	5
Split Rock Creek	2014	Missouri River	10170203-509		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Split Rock Creek	2014	Missouri River	10170203-509		Aquatic Life	Fishes bioassessments	5
Split Rock Creek	2014	Missouri River	10170203-512		Aquatic Recreation	Escherichia coli	5
Split Rock Creek	2014	Missouri River	10170203-512		Aquatic Life	Fishes bioassessments	5
Split Rock Creek	2016	Missouri River	10170203-512		Aquatic Life	Nutrient/eutrophication biological indicators	5
Split Rock Creek	2010	Missouri River	10170203-512		Aquatic Life	Turbidity	5
Pipestone Creek, North Branch	2014	Missouri River	10170203-514		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pipestone Creek, North Branch	2014	Missouri River	10170203-514		Aquatic Life	Fishes bioassessments	5
Willow Creek	2014	Missouri River	10170203-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Willow Creek	2014	Missouri River	10170203-515		Aquatic Life	Fishes bioassessments	5
Flandreau Creek	2014	Missouri River	10170203-517		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Flandreau Creek	2014	Missouri River	10170203-517		Aquatic Life	Fishes bioassessments	5
Spring Creek	2014	Missouri River	10170203-518		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Beaver Creek	2014	Missouri River	10170203-521		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Beaver Creek	2014	Missouri River	10170203-522		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Beaver Creek	2010	Missouri River	10170203-522		Aquatic Recreation	Escherichia coli	5
Beaver Creek	2014	Missouri River	10170203-522		Aquatic Life	Fishes bioassessments	5
Beaver Creek	2010	Missouri River	10170203-522		Aquatic Life	Turbidity	5
Unnamed creek	2014	Missouri River	10170203-531		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170203-538		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170203-549		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170203-549		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Missouri River	10170203-553		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170203-553		Aquatic Life	Fishes bioassessments	5
Blood Run	2014	Missouri River	10170203-555		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rock River	2014	Missouri River	10170204-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rock River	2014	Missouri River	10170204-501		Aquatic Life	Fishes bioassessments	5
Rock River	2014	Missouri River	10170204-504		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rock River	2014	Missouri River	10170204-504		Aquatic Recreation	Escherichia coli	5
Rock River	2014	Missouri River	10170204-504		Aquatic Life	Fishes bioassessments	5
Rock River	2014	Missouri River	10170204-504		Aquatic Life	Turbidity	5
Rock River	2014	Missouri River	10170204-506		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rock River	2014	Missouri River	10170204-506		Aquatic Recreation	Escherichia coli	5
Rock River	2014	Missouri River	10170204-506		Aquatic Life	Fishes bioassessments	5
Rock River	2014	Missouri River	10170204-506		Aquatic Life	Turbidity	5

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Rock River	2014	Missouri River	10170204-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rock River	2014	Missouri River	10170204-508		Aquatic Recreation	Escherichia coli	5
Rock River	2014	Missouri River	10170204-508		Aquatic Life	Fishes bioassessments	5
Rock River	2014	Missouri River	10170204-508		Aquatic Life	Turbidity	5
Rock River	2014	Missouri River	10170204-509		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rock River	2014	Missouri River	10170204-509		Aquatic Life	Fishes bioassessments	5
Little Rock Creek	2014	Missouri River	10170204-511		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Rock Creek	2014	Missouri River	10170204-511		Aquatic Recreation	Escherichia coli	5
Little Rock Creek	2014	Missouri River	10170204-511		Aquatic Life	Turbidity	5
Little Rock River	2014	Missouri River	10170204-512		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Rock River	2014	Missouri River	10170204-512		Aquatic Recreation	Escherichia coli	5
Little Rock River	2014	Missouri River	10170204-512		Aquatic Life	Fishes bioassessments	5
Little Rock River	2014	Missouri River	10170204-512		Aquatic Life	Turbidity	5
Little Rock River	2014	Missouri River	10170204-513		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Rock River	2010	Missouri River	10170204-513		Aquatic Recreation	Escherichia coli	5
Little Rock River	2014	Missouri River	10170204-513		Aquatic Life	Fishes bioassessments	5
Little Rock River	2008	Missouri River	10170204-513		Aquatic Life	Turbidity	5
Kanaranzi Creek, East Branch	2014	Missouri River	10170204-514		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Kanaranzi Creek, East Branch	2010	Missouri River	10170204-514		Aquatic Recreation	Escherichia coli	5
Kanaranzi Creek, East Branch	2014	Missouri River	10170204-514		Aquatic Life	Fishes bioassessments	5
Kanaranzi Creek, East Branch	2014	Missouri River	10170204-514		Aquatic Life	Turbidity	5
Kanaranzi Creek	2014	Missouri River	10170204-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Kanaranzi Creek	2014	Missouri River	10170204-515		Aquatic Recreation	Escherichia coli	5
Kanaranzi Creek	2014	Missouri River	10170204-515		Aquatic Life	Fishes bioassessments	5
Kanaranzi Creek	2014	Missouri River	10170204-516		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Kanaranzi Creek	2014	Missouri River	10170204-516		Aquatic Life	Fishes bioassessments	5
Kanaranzi Creek	2014	Missouri River	10170204-517		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Kanaranzi Creek	2010	Missouri River	10170204-517		Aquatic Recreation	Escherichia coli	5
Kanaranzi Creek	2014	Missouri River	10170204-517		Aquatic Life	Fishes bioassessments	5
Kanaranzi Creek	2010	Missouri River	10170204-517		Aquatic Life	Turbidity	5
Norwegian Creek	2010	Missouri River	10170204-518		Aquatic Recreation	Escherichia coli	5
Elk Creek	2014	Missouri River	10170204-519		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Elk Creek	2014	Missouri River	10170204-519		Aquatic Recreation	Escherichia coli	5
Elk Creek	2014	Missouri River	10170204-519		Aquatic Life	Fishes bioassessments	5
Champepadan Creek	2014	Missouri River	10170204-520		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Champepadan Creek	2014	Missouri River	10170204-520		Aquatic Recreation	Escherichia coli	5
Champepadan Creek	2014	Missouri River	10170204-520		Aquatic Life	Fishes bioassessments	5
Champepadan Creek	2014	Missouri River	10170204-520		Aquatic Life	Turbidity	5
Unnamed creek	2014	Missouri River	10170204-521		Aquatic Recreation	Escherichia coli	5
Chanarambie Creek	2014	Missouri River	10170204-522		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Chanarambie Creek	2014	Missouri River	10170204-522		Aquatic Recreation	Escherichia coli	5
Chanarambie Creek	2014	Missouri River	10170204-522		Aquatic Life	Fishes bioassessments	5
Chanarambie Creek	2014	Missouri River	10170204-522		Aquatic Life	Turbidity	5

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Poplar Creek	2014	Missouri River	10170204-523		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Poplar Creek	2014	Missouri River	10170204-523		Aquatic Recreation	Escherichia coli	5
Poplar Creek	2014	Missouri River	10170204-523		Aquatic Life	Fishes bioassessments	5
Poplar Creek	2014	Missouri River	10170204-523		Aquatic Life	Turbidity	5
Mud Creek	2014	Missouri River	10170204-525		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mud Creek	2014	Missouri River	10170204-525		Aquatic Recreation	Escherichia coli	5
Mud Creek	2014	Missouri River	10170204-525		Aquatic Life	Fishes bioassessments	5
Mud Creek	2008	Missouri River	10170204-525		Aquatic Life	Turbidity	5
Rock River, East Branch	2014	Missouri River	10170204-530		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Ash Creek	2014	Missouri River	10170204-539		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Ash Creek	2014	Missouri River	10170204-539		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Missouri River	10170204-545		Aquatic Recreation	Escherichia coli	5
Mound Creek	2014	Missouri River	10170204-551		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2014	Missouri River	10170204-559		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Chanarambie Creek, North Branch	2014	Missouri River	10170204-560		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170204-571		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170204-572		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170204-579		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170204-583		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170204-588		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170204-588		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Missouri River	10170204-589		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170204-593		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170204-593		Aquatic Life	Fishes bioassessments	5
Ocheyedan River	2014	Missouri River	10230003-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Ocheyedan River	2014	Missouri River	10230003-501		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 6 (Lake Okabena Outflow)	2002	Missouri River	10230003-502		Aquatic Life	Turbidity	5
Little Sioux River, West Fork	2014	Missouri River	10230003-508		Aquatic Recreation	Escherichia coli	5
Little Sioux River, West Fork	2014	Missouri River	10230003-509		Aquatic Recreation	Escherichia coli	5
Judicial Ditch 13 (Skunk Creek)	2010	Missouri River	10230003-511		Aquatic Recreation	Escherichia coli	5
Judicial Ditch 13 (Skunk Creek)	2010	Missouri River	10230003-511		Aquatic Life	Turbidity	5
Little Sioux River	2014	Missouri River	10230003-514		Aquatic Recreation	Escherichia coli	5
Little Sioux River	2014	Missouri River	10230003-515		Aquatic Recreation	Escherichia coli	5
Little Sioux River	2014	Missouri River	10230003-515		Aquatic Life	Fishes bioassessments	5
Little Sioux River	2014	Missouri River	10230003-515		Aquatic Life	Turbidity	5
Unnamed creek	2014	Missouri River	10230003-516		Aquatic Recreation	Escherichia coli	5
Loon	2008	Missouri River	32-0020-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Clear	2008	Missouri River	32-0022-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Round	2014	Missouri River	32-0069-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Iowa	2014	Missouri River	32-0084-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Indian	2014	Missouri River	53-0007-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
OCHEDA (WEST BASIN)	2010	Missouri River	53-0024-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5

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Okabena	2010	Missouri River	53-0028-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bella	2014	Missouri River	53-0045-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Vermilion River	2004	Rainy River	09030002-527		Aquatic Consumption	Mercury in fish tissue	5
Vermilion River	2004	Rainy River	09030002-529		Aquatic Consumption	Mercury in fish tissue	5
Vermilion River	2004	Rainy River	09030002-531		Aquatic Consumption	Mercury in fish tissue	5
Little Fork River	2006	Rainy River	09030005-501		Aquatic Life	Turbidity	5
Little Fork River	2010	Rainy River	09030005-502		Aquatic Life	Turbidity	5
Little Fork River	2010	Rainy River	09030005-506		Aquatic Life	Turbidity	5
Little Fork River	2010	Rainy River	09030005-508	Bois Forte	Aquatic Life	Turbidity	5
Little Fork River	2008	Rainy River	09030005-510		Aquatic Life	Turbidity	5
Rice River	2012	Rainy River	09030005-517		Aquatic Life	Fishes bioassessments	5
Popple River	2014	Rainy River	09030006-512		Aquatic Life	Dissolved oxygen	5
Baudette River	1994	Rainy River	09030008-536		Aquatic Life	Dissolved oxygen	5
Black River	1998	Rainy River	09030008-547		Aquatic Consumption	Mercury in water column	5
Williams Creek	2016	Rainy River	09030009-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Williams Creek	2016	Rainy River	09030009-501		Aquatic Life	Dissolved oxygen	5
Williams Creek	2016	Rainy River	09030009-501		Aquatic Life	Fishes bioassessments	5
Williams Creek	2016	Rainy River	09030009-501		Aquatic Life	Total suspended solids	5
Warroad River, West Branch	2016	Rainy River	09030009-503		Aquatic Recreation	Escherichia coli	5
Warroad River, East Branch	2016	Rainy River	09030009-504		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Willow Creek	2010	Rainy River	09030009-505		Aquatic Life	Dissolved oxygen	5
Willow Creek	2016	Rainy River	09030009-505		Aquatic Life	Fishes bioassessments	5
Zippel Creek, West Branch (County Ditch 1)	2016	Rainy River	09030009-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zippel Creek, West Branch (County Ditch 1)	2016	Rainy River	09030009-515		Aquatic Life	Dissolved oxygen	5
Zippel Creek, West Branch (County Ditch 1)	2016	Rainy River	09030009-515		Aquatic Life	Fishes bioassessments	5
Zippel Creek, West Branch (County Ditch 1)	2016	Rainy River	09030009-515		Aquatic Life	Total suspended solids	5
Unnamed ditch	2016	Rainy River	09030009-523		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch	2016	Rainy River	09030009-523		Aquatic Life	Fishes bioassessments	5
County Ditch 20	2016	Rainy River	09030009-560		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
East Pope	2010	Rainy River	16-0342-00		Aquatic Consumption	Mercury in fish tissue	5
Gunflint	1998	Rainy River	16-0356-00		Aquatic Consumption	Mercury in fish tissue	5
Loon	1998	Rainy River	16-0448-00		Aquatic Consumption	Mercury in fish tissue	5
Sea Gull	1998	Rainy River	16-0629-00		Aquatic Consumption	Mercury in fish tissue	5
GULL (MAIN BASIN)	2002	Rainy River	16-0632-01		Aquatic Consumption	Mercury in fish tissue	5
Hog	1998	Rainy River	16-0653-00		Aquatic Consumption	Mercury in fish tissue	5
Mesaba	1998	Rainy River	16-0673-00		Aquatic Consumption	Mercury in fish tissue	5
Wine	1998	Rainy River	16-0686-00		Aquatic Consumption	Mercury in fish tissue	5
Alpine	1998	Rainy River	16-0759-00		Aquatic Consumption	Mercury in fish tissue	5
Phoebe	2002	Rainy River	16-0808-00		Aquatic Consumption	Mercury in fish tissue	5
Ruby	2012	Rainy River	31-0422-00		Aquatic Consumption	Mercury in fish tissue	5
Coon	2016	Rainy River	31-0524-01		Aquatic Consumption	Mercury in fish tissue	5
Clubhouse	2016	Rainy River	31-0540-00		Aquatic Consumption	Mercury in fish tissue	5

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North Star	2012	Rainy River	31-0653-00		Aquatic Consumption	Mercury in fish tissue	5
Little Spring	2014	Rainy River	31-0797-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Shallow Pond	2014	Rainy River	31-0910-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Island	2010	Rainy River	31-0913-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Moose	1998	Rainy River	36-0008-00		Aquatic Consumption	Mercury in fish tissue	5
Wanless	1998	Rainy River	38-0049-00		Aquatic Consumption	Mercury in fish tissue	5
Organ	2002	Rainy River	38-0067-00		Aquatic Consumption	Mercury in fish tissue	5
Windy	1998	Rainy River	38-0068-00		Aquatic Consumption	Mercury in fish tissue	5
Watonwan	1998	Rainy River	38-0079-00		Aquatic Consumption	Mercury in fish tissue	5
Polly	2006	Rainy River	38-0104-00		Aquatic Consumption	Mercury in fish tissue	5
Ottertrack	2002	Rainy River	38-0211-00		Aquatic Consumption	Mercury in fish tissue	5
Bunny	2002	Rainy River	38-0293-00		Aquatic Consumption	Mercury in fish tissue	5
Sylvania	2002	Rainy River	38-0395-00		Aquatic Consumption	Mercury in fish tissue	5
Insula	2004	Rainy River	38-0397-00		Aquatic Consumption	Mercury in fish tissue	5
Ensign	2006	Rainy River	38-0498-00		Aquatic Consumption	Mercury in fish tissue	5
Sucker	1998	Rainy River	38-0530-00		Aquatic Consumption	Mercury in fish tissue	5
Gander	1998	Rainy River	38-0554-00		Aquatic Consumption	Mercury in fish tissue	5
Grouse	1998	Rainy River	38-0557-00		Aquatic Consumption	Mercury in fish tissue	5
Gegoka	1998	Rainy River	38-0573-00		Aquatic Consumption	Mercury in fish tissue	5
Three	1998	Rainy River	38-0600-00		Aquatic Consumption	Mercury in fish tissue	5
Ojibway	1998	Rainy River	38-0640-00		Aquatic Consumption	Mercury in fish tissue	5
Ojibway	1998	Rainy River	38-0640-00		Aquatic Consumption	PCB in fish tissue	5
Greenwood	1998	Rainy River	38-0656-00		Aquatic Consumption	Mercury in fish tissue	5
South McDougal	2002	Rainy River	38-0659-00		Aquatic Consumption	Mercury in fish tissue	5
Dunnigan	1998	Rainy River	38-0664-00		Aquatic Consumption	Mercury in fish tissue	5
Slate	1998	Rainy River	38-0666-00		Aquatic Consumption	Mercury in fish tissue	5
Deep	1998	Rainy River	38-0668-00		Aquatic Consumption	Mercury in fish tissue	5
North McDougal	2002	Rainy River	38-0686-00		Aquatic Consumption	Mercury in fish tissue	5
August	1998	Rainy River	38-0691-00		Aquatic Consumption	Mercury in fish tissue	5
Nickel	2002	Rainy River	38-0705-00		Aquatic Consumption	Mercury in fish tissue	5
Sand	1998	Rainy River	38-0735-00		Aquatic Consumption	Mercury in fish tissue	5
Harris	1998	Rainy River	38-0736-00		Aquatic Consumption	Mercury in fish tissue	5
Beaver Hut	1998	Rainy River	38-0737-00		Aquatic Consumption	Mercury in fish tissue	5
North Branch Kawishiwi	2008	Rainy River	38-0738-00		Aquatic Consumption	Mercury in fish tissue	5
South Farm	2008	Rainy River	38-0778-00		Aquatic Consumption	Mercury in fish tissue	5
Farm	2008	Rainy River	38-0779-00		Aquatic Consumption	Mercury in fish tissue	5
Garden	1998	Rainy River	38-0782-00		Aquatic Consumption	Mercury in fish tissue	5
Sandpit	1998	Rainy River	38-0786-00		Aquatic Consumption	Mercury in fish tissue	5
Horse	1998	Rainy River	38-0792-00		Aquatic Consumption	Mercury in fish tissue	5
Fall	1998	Rainy River	38-0811-00		Aquatic Consumption	Mercury in fish tissue	5
Fourtown	1998	Rainy River	38-0813-00		Aquatic Consumption	Mercury in fish tissue	5
Crooked	1998	Rainy River	38-0817-00		Aquatic Consumption	Mercury in fish tissue	5
Lake of the Woods (Main)	2008	Rainy River	39-0002-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
LAKE OF THE WOODS(4 MI BAY)	2008	Rainy River	39-0002-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Birch	1998	Rainy River	69-0003-00		Aquatic Consumption	Mercury in fish tissue	5

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White Iron	1998	Rainy River	69-0004-00		Aquatic Consumption	Mercury in fish tissue	5
Little	1998	Rainy River	69-0056-00		Aquatic Consumption	Mercury in fish tissue	5
Perch	1998	Rainy River	69-0058-00		Aquatic Consumption	Mercury in fish tissue	5
One Pine	1998	Rainy River	69-0061-00		Aquatic Consumption	Mercury in fish tissue	5
Minister	1998	Rainy River	69-0065-00		Aquatic Consumption	Mercury in fish tissue	5
Mudro	2016	Rainy River	69-0078-00		Aquatic Consumption	Mercury in fish tissue	5
Picket	2002	Rainy River	69-0079-00		Aquatic Consumption	Mercury in fish tissue	5
Nels	1998	Rainy River	69-0080-00		Aquatic Consumption	Mercury in fish tissue	5
Grassy	2002	Rainy River	69-0082-00		Aquatic Consumption	Mercury in fish tissue	5
Fenske	2002	Rainy River	69-0085-00		Aquatic Consumption	Mercury in fish tissue	5
Bear Island	1998	Rainy River	69-0115-00		Aquatic Consumption	Mercury in fish tissue	5
Burntside	1998	Rainy River	69-0118-00		Aquatic Consumption	Mercury in fish tissue	5
Everett	1998	Rainy River	69-0120-00		Aquatic Consumption	Mercury in fish tissue	5
Wolf	1998	Rainy River	69-0161-00		Aquatic Consumption	Mercury in fish tissue	5
East Twin	2002	Rainy River	69-0174-00		Aquatic Consumption	Mercury in fish tissue	5
Ole	2004	Rainy River	69-0175-00		Aquatic Consumption	Mercury in fish tissue	5
Slim	1998	Rainy River	69-0181-00		Aquatic Consumption	Mercury in fish tissue	5
Ed Shave	1998	Rainy River	69-0199-00		Aquatic Consumption	Mercury in fish tissue	5
Stuart	1998	Rainy River	69-0205-00		Aquatic Consumption	Mercury in fish tissue	5
Crab	2004	Rainy River	69-0220-00		Aquatic Consumption	Mercury in fish tissue	5
Lac la Croix	1998	Rainy River	69-0224-00		Aquatic Consumption	Mercury in fish tissue	5
Big Moose	1998	Rainy River	69-0316-00		Aquatic Consumption	Mercury in fish tissue	5
Oyster	1998	Rainy River	69-0330-00		Aquatic Consumption	Mercury in fish tissue	5
Hustler	1998	Rainy River	69-0343-00		Aquatic Consumption	Mercury in fish tissue	5
Hustler	1998	Rainy River	69-0343-00		Aquatic Consumption	Mercury in water column	5
Ge-Be-On-Equat	1998	Rainy River	69-0350-00		Aquatic Consumption	Mercury in fish tissue	5
Lynx	2006	Rainy River	69-0383-00		Aquatic Consumption	Mercury in fish tissue	5
Nigh	2002	Rainy River	69-0457-00		Aquatic Consumption	Mercury in fish tissue	5
Crellin	1998	Rainy River	69-0459-00		Aquatic Consumption	Mercury in fish tissue	5
Upper Pauness	2008	Rainy River	69-0465-00		Aquatic Consumption	Mercury in fish tissue	5
Heritage	2006	Rainy River	69-0469-00		Aquatic Consumption	Mercury in fish tissue	5
Loon	1998	Rainy River	69-0470-00		Aquatic Consumption	Mercury in fish tissue	5
Eugene	2004	Rainy River	69-0473-00		Aquatic Consumption	Mercury in fish tissue	5
Little Loon	2012	Rainy River	69-0484-00		Aquatic Consumption	Mercury in fish tissue	5
Gun	1998	Rainy River	69-0487-00		Aquatic Consumption	Mercury in fish tissue	5
Pike River Flowage	1998	Rainy River	69-0580-00		Aquatic Consumption	Mercury in fish tissue	5
Pauline	1998	Rainy River	69-0588-00		Aquatic Consumption	Mercury in fish tissue	5
Astrid	1998	Rainy River	69-0589-00		Aquatic Consumption	Mercury in fish tissue	5
Maude	1998	Rainy River	69-0590-00		Aquatic Consumption	Mercury in fish tissue	5
Dovre	1998	Rainy River	69-0604-00		Aquatic Consumption	Mercury in fish tissue	5
Little Vermilion	1998	Rainy River	69-0608-00		Aquatic Consumption	Mercury in fish tissue	5
Echo	1998	Rainy River	69-0615-00		Aquatic Consumption	Mercury in fish tissue	5
Crane	1998	Rainy River	69-0616-00		Aquatic Consumption	Mercury in fish tissue	5
Sand Point	1998	Rainy River	69-0617-00		Aquatic Consumption	Mercury in fish tissue	5
Johnson	1998	Rainy River	69-0691-00		Aquatic Consumption	Mercury in fish tissue	5
Namakan	1998	Rainy River	69-0693-00		Aquatic Consumption	Mercury in fish tissue	5

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Rainy	1998	Rainy River	69-0694-00		Aquatic Consumption	Mercury in fish tissue	5
Little Sand	1998	Rainy River	69-0732-00		Aquatic Consumption	Mercury in fish tissue	5
Ban	1998	Rainy River	69-0742-00		Aquatic Consumption	Mercury in fish tissue	5
Elbow	1998	Rainy River	69-0744-00		Aquatic Consumption	Mercury in fish tissue	5
Kjostad	1998	Rainy River	69-0748-00		Aquatic Consumption	Mercury in fish tissue	5
Franklin	1998	Rainy River	69-0754-00		Aquatic Consumption	Mercury in fish tissue	5
Tooth	1998	Rainy River	69-0756-00		Aquatic Consumption	Mercury in fish tissue	5
Net	2002	Rainy River	69-0757-00		Aquatic Consumption	Mercury in fish tissue	5
Spring	1998	Rainy River	69-0761-00		Aquatic Consumption	Mercury in fish tissue	5
Dark	1998	Rainy River	69-0790-00		Aquatic Consumption	Mercury in fish tissue	5
Bell	2012	Rainy River	69-0805-00		Aquatic Consumption	Mercury in fish tissue	5
Moose	1998	Rainy River	69-0806-00		Aquatic Consumption	Mercury in fish tissue	5
Gannon	2010	Rainy River	69-0819-00		Aquatic Consumption	Mercury in fish tissue	5
Agnes	1998	Rainy River	69-0830-00		Aquatic Consumption	Mercury in fish tissue	5
Unnamed	2002	Rainy River	69-0835-00		Aquatic Consumption	Mercury in fish tissue	5
Beast	2004	Rainy River	69-0837-00		Aquatic Consumption	Mercury in fish tissue	5
Oslo	2002	Rainy River	69-0838-00		Aquatic Consumption	Mercury in fish tissue	5
Brown	2002	Rainy River	69-0839-00		Aquatic Consumption	Mercury in fish tissue	5
Jorgens	2002	Rainy River	69-0867-00		Aquatic Consumption	Mercury in fish tissue	5
Boot	2002	Rainy River	69-0868-00		Aquatic Consumption	Mercury in fish tissue	5
Unnamed	2002	Rainy River	69-0869-00		Aquatic Consumption	Mercury in fish tissue	5
Shoepack	1998	Rainy River	69-0870-00		Aquatic Consumption	Mercury in fish tissue	5
Loiten	2004	Rainy River	69-0872-00		Aquatic Consumption	Mercury in fish tissue	5
Perch	2012	Rainy River	69-0932-00		Aquatic Consumption	Mercury in fish tissue	5
Locator	1998	Rainy River	69-0936-00		Aquatic Consumption	Mercury in fish tissue	5
War Club	1998	Rainy River	69-0937-00		Aquatic Consumption	Mercury in fish tissue	5
Height of Land	2010	Red River of the North	03-0195-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Little Floyd	1998	Red River of the North	03-0386-00		Aquatic Consumption	Mercury in fish tissue	5
Wine	2012	Red River of the North	03-0398-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Melissa	2008	Red River of the North	03-0475-00		Aquatic Consumption	Mercury in fish tissue	5
Maud	2012	Red River of the North	03-0500-00		Aquatic Consumption	Mercury in fish tissue	5
Marshall	2012	Red River of the North	03-0526-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Gottenberg	2012	Red River of the North	03-0528-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Leif	2010	Red River of the North	03-0575-00		Aquatic Consumption	Mercury in fish tissue	5
Boyer	2012	Red River of the North	03-0579-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Talac	2002	Red River of the North	03-0619-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Forget-Me-Not	2012	Red River of the North	03-0624-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Sorenson	2010	Red River of the North	03-0625-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Stakke	2012	Red River of the North	03-0631-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Gourd	2012	Red River of the North	03-0635-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
West LaBelle	2012	Red River of the North	03-0645-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lime	2012	Red River of the North	03-0646-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Stinking	2012	Red River of the North	03-0647-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Sand	2008	Red River of the North	03-0659-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Blackduck	2010	Red River of the North	04-0069-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
East Toqua	2014	Red River of the North	06-0138-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5

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Lannon	2014	Red River of the North	06-0139-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bois de Sioux River	1998	Red River of the North	09020101-501		Aquatic Life	Dissolved oxygen	5
Bois de Sioux River	2014	Red River of the North	09020101-501		Aquatic Recreation	Escherichia coli	5
Bois de Sioux River	2002	Red River of the North	09020101-501		Aquatic Life	Fishes bioassessments	5
Bois de Sioux River	2016	Red River of the North	09020101-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Bois de Sioux River	2008	Red River of the North	09020101-501		Aquatic Life	Turbidity	5
Rabbit River	2014	Red River of the North	09020101-502		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rabbit River	2004	Red River of the North	09020101-502		Aquatic Life	Dissolved oxygen	5
Rabbit River	2010	Red River of the North	09020101-502		Aquatic Recreation	Escherichia coli	5
Rabbit River	2002	Red River of the North	09020101-502		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Doran Slough)	2014	Red River of the North	09020101-510		Aquatic Life	Dissolved oxygen	5
Unnamed creek (Doran Slough)	2014	Red River of the North	09020101-510		Aquatic Recreation	Escherichia coli	5
Rabbit River, South Fork	2014	Red River of the North	09020101-512		Aquatic Life	Dissolved oxygen	5
Rabbit River, South Fork	2014	Red River of the North	09020101-512		Aquatic Life	Fishes bioassessments	5
Rabbit River, South Fork	2014	Red River of the North	09020101-512		Aquatic Life	Turbidity	5
Unnamed creek	2014	Red River of the North	09020101-515		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2014	Red River of the North	09020101-515		Aquatic Life	Turbidity	5
Unnamed creek	2014	Red River of the North	09020101-535		Aquatic Life	Fishes bioassessments	5
County Ditch 52	2014	Red River of the North	09020101-540		Aquatic Life	Fishes bioassessments	5
Mustinka River (Old Channel)	2014	Red River of the North	09020102-502		Aquatic Life	Turbidity	5
Mustinka River	2006	Red River of the North	09020102-503		Aquatic Life	Dissolved oxygen	5
Mustinka River	2014	Red River of the North	09020102-506		Aquatic Life	Dissolved oxygen	5
Mustinka River	2014	Red River of the North	09020102-506		Aquatic Recreation	Escherichia coli	5
Eighteenmile Creek	2014	Red River of the North	09020102-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Eighteenmile Creek	2014	Red River of the North	09020102-508		Aquatic Life	Dissolved oxygen	5
Eighteenmile Creek	2014	Red River of the North	09020102-508		Aquatic Life	Fishes bioassessments	5
Fivemile Creek	2014	Red River of the North	09020102-510		Aquatic Recreation	Escherichia coli	5
Twelvemile Creek, West Branch	2010	Red River of the North	09020102-511		Aquatic Life	Dissolved oxygen	5
Twelvemile Creek, West Branch	2014	Red River of the North	09020102-511		Aquatic Recreation	Escherichia coli	5
Twelvemile Creek	2014	Red River of the North	09020102-514		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Twelvemile Creek	2010	Red River of the North	09020102-514		Aquatic Life	Dissolved oxygen	5
Twelvemile Creek	2014	Red River of the North	09020102-514		Aquatic Recreation	Escherichia coli	5
Twelvemile Creek	2014	Red River of the North	09020102-514		Aquatic Life	Fishes bioassessments	5
Twelvemile Creek	2010	Red River of the North	09020102-514		Aquatic Life	Turbidity	5
Mustinka River	2014	Red River of the North	09020102-518		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2014	Red River of the North	09020102-538		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Red River of the North	09020102-538		Aquatic Life	Fishes bioassessments	5
Twelvemile Creek	2014	Red River of the North	09020102-557		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Twelvemile Creek	2014	Red River of the North	09020102-557		Aquatic Recreation	Escherichia coli	5
Twelvemile Creek	2002	Red River of the North	09020102-557		Aquatic Life	Fishes bioassessments	5
Twelvemile Creek	2010	Red River of the North	09020102-557		Aquatic Life	Turbidity	5
Unnamed creek	2014	Red River of the North	09020102-578		Aquatic Life	Fishes bioassessments	5

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Mustinka River	2010	Red River of the North	09020102-580		Aquatic Life	Dissolved oxygen	5
Mustinka River	2014	Red River of the North	09020102-580		Aquatic Recreation	Escherichia coli	5
Mustinka River	2014	Red River of the North	09020102-580		Aquatic Life	Fishes bioassessments	5
Mustinka River	2008	Red River of the North	09020102-580		Aquatic Life	Turbidity	5
Mustinka River	2008	Red River of the North	09020102-582		Aquatic Life	Turbidity	5
Otter Tail River	2002	Red River of the North	09020103-504		Aquatic Life	Fishes bioassessments	5
Otter Tail River	2004	Red River of the North	09020103-504		Aquatic Life	Turbidity	5
Otter Tail River	1998	Red River of the North	09020103-532		Aquatic Life	Dissolved oxygen	5
Red River of the North	1998	Red River of the North	09020104-502		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020104-502		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	2006	Red River of the North	09020104-502		Aquatic Life	Turbidity	5
Red River of the North	2010	Red River of the North	09020104-503		Aquatic Recreation	Escherichia coli	5
Red River of the North	1998	Red River of the North	09020104-503		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020104-503		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1996	Red River of the North	09020104-503		Aquatic Life	Turbidity	5
Red River of the North	1998	Red River of the North	09020104-504		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020104-504		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1996	Red River of the North	09020104-504		Aquatic Life	Turbidity	5
Red River of the North	1998	Red River of the North	09020104-505		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020104-505		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1998	Red River of the North	09020104-506		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020104-506		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1998	Red River of the North	09020104-507		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020104-507		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1998	Red River of the North	09020104-508		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020104-508		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	2008	Red River of the North	09020104-508		Aquatic Life	Turbidity	5
Red River of the North	1998	Red River of the North	09020104-509		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020104-509		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1998	Red River of the North	09020104-510		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020104-510		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	2006	Red River of the North	09020104-510		Aquatic Life	Turbidity	5
Red River of the North	1998	Red River of the North	09020104-511		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020104-511		Aquatic Consumption	PCB in fish tissue	5
Wolverton Creek	2012	Red River of the North	09020104-512		Aquatic Recreation	Escherichia coli	5
Whiskey Creek	2012	Red River of the North	09020104-520		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Whiskey Creek	2010	Red River of the North	09020104-520		Aquatic Life	Dissolved oxygen	5
Whiskey Creek	2008	Red River of the North	09020104-520		Aquatic Recreation	Fecal Coliform	5
Whiskey Creek	1996	Red River of the North	09020104-520		Aquatic Life	Turbidity	5
Buffalo River	2012	Red River of the North	09020106-501		Aquatic Recreation	Escherichia coli	5
Buffalo River	1996	Red River of the North	09020106-501		Aquatic Life	Turbidity	5
Stony Creek	2010	Red River of the North	09020106-502		Aquatic Life	Dissolved oxygen	5
Stony Creek	2012	Red River of the North	09020106-502		Aquatic Recreation	Escherichia coli	5
Stony Creek	1996	Red River of the North	09020106-502		Aquatic Life	Turbidity	5
Buffalo River, South Branch	2012	Red River of the North	09020106-503		Aquatic Recreation	Escherichia coli	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Buffalo River, South Branch	2012	Red River of the North	09020106-503		Aquatic Life	Turbidity	5
Buffalo River, South Branch	2012	Red River of the North	09020106-504		Aquatic Recreation	Escherichia coli	5
Buffalo River, South Branch	2012	Red River of the North	09020106-504		Aquatic Life	Turbidity	5
Buffalo River, South Branch	2012	Red River of the North	09020106-505		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Buffalo River, South Branch	2012	Red River of the North	09020106-505		Aquatic Recreation	Escherichia coli	5
Buffalo River, South Branch	2010	Red River of the North	09020106-505		Aquatic Life	Turbidity	5
Deerhorn Creek	2012	Red River of the North	09020106-507		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Deerhorn Creek	2012	Red River of the North	09020106-507		Aquatic Recreation	Escherichia coli	5
Deerhorn Creek	2012	Red River of the North	09020106-507		Aquatic Life	Fishes bioassessments	5
Deerhorn Creek	2010	Red River of the North	09020106-507		Aquatic Life	Turbidity	5
Buffalo River, South Branch	2012	Red River of the North	09020106-508		Aquatic Life	Dissolved oxygen	5
Buffalo River, South Branch	2012	Red River of the North	09020106-508		Aquatic Recreation	Escherichia coli	5
Buffalo River, South Branch	2010	Red River of the North	09020106-508		Aquatic Life	Turbidity	5
Whisky Creek	2012	Red River of the North	09020106-509		Aquatic Recreation	Escherichia coli	5
Whisky Creek	2012	Red River of the North	09020106-509		Aquatic Life	Turbidity	5
Hay Creek	2012	Red River of the North	09020106-511		Aquatic Recreation	Escherichia coli	5
Unnamed ditch (Becker County Ditch 15)	2012	Red River of the North	09020106-515		Aquatic Recreation	Escherichia coli	5
Hay Creek	2012	Red River of the North	09020106-519		Aquatic Recreation	Escherichia coli	5
Hay Creek	2012	Red River of the North	09020106-520		Aquatic Recreation	Escherichia coli	5
Whisky Creek	2012	Red River of the North	09020106-521		Aquatic Recreation	Escherichia coli	5
Whisky Creek	2010	Red River of the North	09020106-521		Aquatic Life	Turbidity	5
Stony Creek	2012	Red River of the North	09020106-523		Aquatic Recreation	Escherichia coli	5
Stony Creek	2010	Red River of the North	09020106-523		Aquatic Life	Turbidity	5
State Ditch 14	2012	Red River of the North	09020106-531		Aquatic Recreation	Escherichia coli	5
Spring Creek	2012	Red River of the North	09020106-534		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Creek	2012	Red River of the North	09020106-534		Aquatic Recreation	Escherichia coli	5
Spring Creek	2012	Red River of the North	09020106-534		Aquatic Life	Fishes bioassessments	5
County Ditch 2	2012	Red River of the North	09020106-556		Aquatic Recreation	Escherichia coli	5
County Ditch 39	2012	Red River of the North	09020106-559		Aquatic Recreation	Escherichia coli	5
County Ditch 10	2012	Red River of the North	09020106-562		Aquatic Recreation	Escherichia coli	5
Buffalo River	2012	Red River of the North	09020106-593	White Earth	Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Buffalo River	2010	Red River of the North	09020106-593	White Earth	Aquatic Recreation	Escherichia coli	5
Buffalo River	2012	Red River of the North	09020106-593	White Earth	Aquatic Life	Fishes bioassessments	5
Buffalo River	2010	Red River of the North	09020106-593	White Earth	Aquatic Life	Turbidity	5
Buffalo River	2010	Red River of the North	09020106-594		Aquatic Recreation	Escherichia coli	5
Buffalo River	2010	Red River of the North	09020106-594		Aquatic Life	Turbidity	5
Buffalo River	2010	Red River of the North	09020106-595		Aquatic Recreation	Escherichia coli	5
Buffalo River	2010	Red River of the North	09020106-595		Aquatic Life	Turbidity	5
Red River of the North	2010	Red River of the North	09020107-501		Aquatic Life	Dissolved oxygen	5

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Red River of the North	1994	Red River of the North	09020107-501		Aquatic Recreation	Fecal Coliform	5
Red River of the North	1998	Red River of the North	09020107-501		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	2008	Red River of the North	09020107-501		Aquatic Consumption	Mercury in water column	5
Red River of the North	1998	Red River of the North	09020107-501		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1996	Red River of the North	09020107-501		Aquatic Life	Turbidity	5
Red River of the North	1998	Red River of the North	09020107-502		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020107-502		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1996	Red River of the North	09020107-502		Aquatic Life	Turbidity	5
Marsh River	2010	Red River of the North	09020107-503		Aquatic Life	Dissolved oxygen	5
Marsh River	2008	Red River of the North	09020107-503		Aquatic Life	Turbidity	5
Red River of the North	1998	Red River of the North	09020107-504		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020107-504		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1998	Red River of the North	09020107-505		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020107-505		Aquatic Consumption	PCB in fish tissue	5
Wild Rice River	2016	Red River of the North	09020108-501		Aquatic Consumption	Mercury in fish tissue	5
Wild Rice River	2010	Red River of the North	09020108-503		Aquatic Life	Turbidity	5
Marsh Creek	2008	Red River of the North	09020108-521	White Earth	Aquatic Life	Turbidity	5
Red River of the North	2010	Red River of the North	09020301-501		Aquatic Life	Dissolved oxygen	5
Red River of the North	1998	Red River of the North	09020301-501		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020301-501		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1996	Red River of the North	09020301-501		Aquatic Life	Turbidity	5
Red River of the North	1998	Red River of the North	09020301-502		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020301-502		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1998	Red River of the North	09020301-503		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020301-503		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1998	Red River of the North	09020301-504		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020301-504		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	2008	Red River of the North	09020301-504		Aquatic Life	Turbidity	5
Red River of the North	1998	Red River of the North	09020301-506		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020301-506		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1998	Red River of the North	09020301-507		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020301-507		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	2008	Red River of the North	09020301-507		Aquatic Life	Turbidity	5
County Ditch 17	2014	Red River of the North	09020301-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sand Hill River	2014	Red River of the North	09020301-536		Aquatic Recreation	Escherichia coli	5
Sand Hill River	2014	Red River of the North	09020301-536		Aquatic Consumption	Mercury in fish tissue	5
Sand Hill River	2014	Red River of the North	09020301-537		Aquatic Recreation	Escherichia coli	5
Sand Hill River	2014	Red River of the North	09020301-537		Aquatic Consumption	Mercury in fish tissue	5
Sand Hill River	2010	Red River of the North	09020301-537		Aquatic Life	Turbidity	5
Sand Hill River	2014	Red River of the North	09020301-541	White Earth	Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sand Hill River	2008	Red River of the North	09020301-541	White Earth	Aquatic Life	Dissolved oxygen	5
Sand Hill River	2014	Red River of the North	09020301-541	White Earth	Aquatic Recreation	Escherichia coli	5
Sand Hill River	2014	Red River of the North	09020301-541	White Earth	Aquatic Life	Fishes bioassessments	5
Sand Hill River	2010	Red River of the North	09020301-541	White Earth	Aquatic Life	Turbidity	5
Sand Hill River	2014	Red River of the North	09020301-542		Aquatic Recreation	Escherichia coli	5
Sand Hill River	2014	Red River of the North	09020301-542		Aquatic Life	Fishes bioassessments	5

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Blackduck River	2008	Red River of the North	09020302-512	Red Lake	Aquatic Life	Dissolved oxygen	5
Red Lake River	1998	Red River of the North	09020303-501		Aquatic Life	Turbidity	5
Red Lake River	2008	Red River of the North	09020303-502		Aquatic Life	Turbidity	5
Red Lake River	2002	Red River of the North	09020303-503		Aquatic Life	Turbidity	5
Red Lake River	2008	Red River of the North	09020303-504		Aquatic Life	Turbidity	5
Pennington County Ditch 96 (76)	2016	Red River of the North	09020303-505		Aquatic Recreation	Escherichia coli	5
Red Lake River	2008	Red River of the North	09020303-506		Aquatic Life	Turbidity	5
Red Lake River	2008	Red River of the North	09020303-512		Aquatic Life	Turbidity	5
Burnham Creek	2016	Red River of the North	09020303-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Burnham Creek	2016	Red River of the North	09020303-515		Aquatic Life	Fishes bioassessments	5
Kripple Creek	2016	Red River of the North	09020303-525		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Kripple Creek	2016	Red River of the North	09020303-525		Aquatic Recreation	Escherichia coli	5
Kripple Creek	2016	Red River of the North	09020303-525		Aquatic Life	Fishes bioassessments	5
Kripple Creek (County Ditch 66)	2016	Red River of the North	09020303-526		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Kripple Creek (County Ditch 66)	2016	Red River of the North	09020303-526		Aquatic Life	Fishes bioassessments	5
Little Black River	2016	Red River of the North	09020303-528		Aquatic Life	Fishes bioassessments	5
Black River	2016	Red River of the North	09020303-529		Aquatic Recreation	Escherichia coli	5
Judicial Ditch 60	2016	Red River of the North	09020303-542		Aquatic Life	Dissolved oxygen	5
Branch 5 of Pennington County Ditch 96	2016	Red River of the North	09020303-545		Aquatic Life	Fishes bioassessments	5
County Ditch 43	2016	Red River of the North	09020303-547		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 43	2016	Red River of the North	09020303-547		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Red River of the North	09020303-550		Aquatic Life	Dissolved oxygen	5
Burnham Creek	2016	Red River of the North	09020303-551		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Burnham Creek	2016	Red River of the North	09020303-551		Aquatic Life	Fishes bioassessments	5
Gentilly River	2016	Red River of the North	09020303-554		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Gentilly River	2016	Red River of the North	09020303-554		Aquatic Recreation	Escherichia coli	5
Gentilly River	2016	Red River of the North	09020303-554		Aquatic Life	Fishes bioassessments	5
Cyr Creek	2016	Red River of the North	09020303-556		Aquatic Recreation	Escherichia coli	5
Cyr Creek	2016	Red River of the North	09020303-556		Aquatic Life	Fishes bioassessments	5
Black River	2016	Red River of the North	09020303-558		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Black River	2008	Red River of the North	09020303-558		Aquatic Life	Dissolved oxygen	5
Black River	2016	Red River of the North	09020303-558		Aquatic Recreation	Escherichia coli	5
Black River	2016	Red River of the North	09020303-558		Aquatic Life	Fishes bioassessments	5
Thief River	2006	Red River of the North	09020304-501		Aquatic Life	Turbidity	5
Moose River	2006	Red River of the North	09020304-505		Aquatic Life	Dissolved oxygen	5
Mud River	2008	Red River of the North	09020304-507		Aquatic Life	Dissolved oxygen	5
Mud River	2014	Red River of the North	09020304-507		Aquatic Recreation	Escherichia coli	5
Unnamed ditch (Branch A Judicial Ditch 21)	2014	Red River of the North	09020304-555		Aquatic Recreation	Escherichia coli	5
Clearwater River	2006	Red River of the North	09020305-501		Aquatic Life	Turbidity	5
County Ditch 57	2002	Red River of the North	09020305-508		Aquatic Life	Dissolved oxygen	5
Walker Brook	2002	Red River of the North	09020305-509		Aquatic Life	Dissolved oxygen	5
Clearwater River	2002	Red River of the North	09020305-510		Aquatic Life	Dissolved oxygen	5

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Clearwater River	2008	Red River of the North	09020305-510		Aquatic Life	Turbidity	5
Clearwater River	2008	Red River of the North	09020305-511		Aquatic Life	Turbidity	5
Ruffy Brook	2008	Red River of the North	09020305-513		Aquatic Recreation	Fecal Coliform	5
Clearwater River	2010	Red River of the North	09020305-516		Aquatic Life	Ammonia, unionized	5
Clearwater River	2006	Red River of the North	09020305-517	White Earth	Aquatic Life	Dissolved oxygen	5
Poplar River	2002	Red River of the North	09020305-518		Aquatic Life	Dissolved oxygen	5
Silver Creek	2006	Red River of the North	09020305-527		Aquatic Recreation	Fecal Coliform	5
Lost River	2006	Red River of the North	09020305-529		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2006	Red River of the North	09020305-541		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2006	Red River of the North	09020305-542		Aquatic Life	Dissolved oxygen	5
Poplar River Diversion	2006	Red River of the North	09020305-543		Aquatic Life	Dissolved oxygen	5
Terrebonne Creek	2010	Red River of the North	09020305-574		Aquatic Recreation	Escherichia coli	5
Red River of the North	1998	Red River of the North	09020306-501		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	2008	Red River of the North	09020306-501		Aquatic Consumption	Mercury in water column	5
Red River of the North	1998	Red River of the North	09020306-501		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1998	Red River of the North	09020306-502		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020306-502		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1998	Red River of the North	09020306-503		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020306-503		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1998	Red River of the North	09020306-504		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020306-504		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1998	Red River of the North	09020306-505		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020306-505		Aquatic Consumption	PCB in fish tissue	5
Grand Marais Creek	2006	Red River of the North	09020306-507		Aquatic Life	Dissolved oxygen	5
Grand Marais Creek	2006	Red River of the North	09020306-507		Aquatic Life	Turbidity	5
Unnamed creek (Red Lake Watershed Ditch 15)	2016	Red River of the North	09020306-509		Aquatic Life	Dissolved oxygen	5
County Ditch 2	2016	Red River of the North	09020306-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 2	2016	Red River of the North	09020306-515		Aquatic Recreation	Escherichia coli	5
County Ditch 2	2016	Red River of the North	09020306-515		Aquatic Life	Fishes bioassessments	5
County Ditch 43 (Judicial Ditch 75)	2016	Red River of the North	09020306-517		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 43 (Judicial Ditch 75)	2016	Red River of the North	09020306-517		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 1	2016	Red River of the North	09020306-519		Aquatic Recreation	Escherichia coli	5
Judicial Ditch 75	2016	Red River of the North	09020306-520		Aquatic Recreation	Escherichia coli	5
Judicial Ditch 75	2016	Red River of the North	09020306-520		Aquatic Life	Fishes bioassessments	5
Grand Marais Cutoff Channel	2016	Red River of the North	09020306-522		Aquatic Life	Chlorpyrifos	5
Snake River	2002	Red River of the North	09020309-501		Aquatic Life	Dissolved oxygen	5
Snake River	2016	Red River of the North	09020309-501		Aquatic Life	Fishes bioassessments	5
Snake River	2016	Red River of the North	09020309-501		Aquatic Consumption	Mercury in water column	5
Snake River	2002	Red River of the North	09020309-501		Aquatic Life	Turbidity	5
Snake River	2016	Red River of the North	09020309-502		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Snake River	2010	Red River of the North	09020309-502		Aquatic Life	Dissolved oxygen	5
Snake River	2016	Red River of the North	09020309-502		Aquatic Life	Fishes bioassessments	5
Snake River	2010	Red River of the North	09020309-502		Aquatic Life	Turbidity	5

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Snake River	2016	Red River of the North	09020309-504		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Snake River	2016	Red River of the North	09020309-504		Aquatic Recreation	Escherichia coli	5
Snake River	2002	Red River of the North	09020309-504		Aquatic Life	Fishes bioassessments	5
Snake River	2008	Red River of the North	09020309-504		Aquatic Life	Turbidity	5
Judicial Ditch 29	2016	Red River of the North	09020309-519		Aquatic Life	Fishes bioassessments	5
Unnamed ditch	2016	Red River of the North	09020309-529		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Snake River	2016	Red River of the North	09020309-537		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Snake River	2004	Red River of the North	09020309-537		Aquatic Life	Dissolved oxygen	5
Snake River	2016	Red River of the North	09020309-537		Aquatic Recreation	Escherichia coli	5
Snake River	2002	Red River of the North	09020309-537		Aquatic Life	Fishes bioassessments	5
Middle River	2016	Red River of the North	09020309-538		Aquatic Life	Fishes bioassessments	5
Middle River	2008	Red River of the North	09020309-539		Aquatic Life	Dissolved oxygen	5
Middle River	2016	Red River of the North	09020309-540		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Middle River	2008	Red River of the North	09020309-540		Aquatic Life	Dissolved oxygen	5
Middle River	2008	Red River of the North	09020309-540		Aquatic Life	Turbidity	5
Middle River	2008	Red River of the North	09020309-541		Aquatic Life	Dissolved oxygen	5
Middle River	2008	Red River of the North	09020309-541		Aquatic Life	Turbidity	5
Snake River	2010	Red River of the North	09020309-542		Aquatic Life	Dissolved oxygen	5
Snake River	2016	Red River of the North	09020309-543		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Snake River	2010	Red River of the North	09020309-543		Aquatic Life	Dissolved oxygen	5
Snake River	2016	Red River of the North	09020309-543		Aquatic Recreation	Escherichia coli	5
Snake River	2016	Red River of the North	09020309-543		Aquatic Life	Fishes bioassessments	5
Snake River, South Branch (old channel)	2016	Red River of the North	09020309-544		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Snake River, South Branch (old channel)	2016	Red River of the North	09020309-544		Aquatic Life	Fishes bioassessments	5
Snake River, South Branch (new channel)	2016	Red River of the North	09020309-546		Aquatic Life	Fishes bioassessments	5
Red River of the North	1998	Red River of the North	09020311-501		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020311-501		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1996	Red River of the North	09020311-501		Aquatic Life	Turbidity	5
Red River of the North	1998	Red River of the North	09020311-502		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	2008	Red River of the North	09020311-502		Aquatic Consumption	Mercury in water column	5
Red River of the North	1998	Red River of the North	09020311-502		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	2008	Red River of the North	09020311-502		Aquatic Life	Turbidity	5
Tamarac River	2012	Red River of the North	09020311-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Tamarac River	2002	Red River of the North	09020311-503		Aquatic Life	Fishes bioassessments	5
Red River of the North	2010	Red River of the North	09020311-504		Aquatic Life	Dissolved oxygen	5
Red River of the North	1998	Red River of the North	09020311-504		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	2008	Red River of the North	09020311-504		Aquatic Consumption	Mercury in water column	5
Red River of the North	1998	Red River of the North	09020311-504		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	2008	Red River of the North	09020311-504		Aquatic Life	Turbidity	5
Tamarac River	2014	Red River of the North	09020311-505		Aquatic Life	Chlorpyrifos	5
Red River of the North	1998	Red River of the North	09020311-506		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020311-506		Aquatic Consumption	PCB in fish tissue	5
Red River of the North	1998	Red River of the North	09020311-507		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020311-507		Aquatic Consumption	PCB in fish tissue	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Red River of the North	1998	Red River of the North	09020311-508		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1998	Red River of the North	09020311-508		Aquatic Consumption	PCB in fish tissue	5
Joe River	2006	Red River of the North	09020311-513		Aquatic Life	Chloride	5
Joe River	2006	Red River of the North	09020311-513		Aquatic Life	pH	5
Judicial Ditch 19	2012	Red River of the North	09020311-516		Aquatic Recreation	Escherichia coli	5
Two River	2010	Red River of the North	09020312-501		Aquatic Recreation	Escherichia coli	5
Two River	2006	Red River of the North	09020312-501		Aquatic Life	Turbidity	5
Two River, South Branch	2016	Red River of the North	09020312-502		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Two River, South Branch	2016	Red River of the North	09020312-502		Aquatic Life	Fishes bioassessments	5
Two River, Middle Branch	2016	Red River of the North	09020312-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Two River, Middle Branch	2016	Red River of the North	09020312-503		Aquatic Recreation	Escherichia coli	5
Two River, Middle Branch	2002	Red River of the North	09020312-503		Aquatic Life	Fishes bioassessments	5
Two River, North Branch	2010	Red River of the North	09020312-504		Aquatic Life	Dissolved oxygen	5
Two River, North Branch	2002	Red River of the North	09020312-504		Aquatic Life	Fishes bioassessments	5
Two River, South Branch	2016	Red River of the North	09020312-505		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Two River, South Branch	2016	Red River of the North	09020312-505		Aquatic Recreation	Escherichia coli	5
Two River, South Branch	2016	Red River of the North	09020312-505		Aquatic Life	Fishes bioassessments	5
Two River, South Branch	2016	Red River of the North	09020312-506		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Two River, South Branch	2016	Red River of the North	09020312-506		Aquatic Recreation	Escherichia coli	5
Two River, South Branch	2002	Red River of the North	09020312-506		Aquatic Life	Fishes bioassessments	5
Two River, North Branch	2010	Red River of the North	09020312-508		Aquatic Life	Dissolved oxygen	5
Two River, North Branch	2016	Red River of the North	09020312-508		Aquatic Life	Fishes bioassessments	5
Two River	2008	Red River of the North	09020312-509		Aquatic Life	Turbidity	5
State Ditch 84	2016	Red River of the North	09020312-514		Aquatic Life	Fishes bioassessments	5
Lateral Ditch 1 of State Ditch 95	2016	Red River of the North	09020312-521		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Lateral Ditch 1 of State Ditch 95	2016	Red River of the North	09020312-521		Aquatic Life	Fishes bioassessments	5
County Ditch 4	2016	Red River of the North	09020312-522		Aquatic Life	Fishes bioassessments	5
State Ditch 72	2016	Red River of the North	09020312-531		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
State Ditch 72	2016	Red River of the North	09020312-531		Aquatic Life	Fishes bioassessments	5
County Ditch 13	2016	Red River of the North	09020312-535		Aquatic Recreation	Escherichia coli	5
Lateral Ditch 1 of State Ditch 95	2016	Red River of the North	09020312-539		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Lateral Ditch 1 of State Ditch 95	2016	Red River of the North	09020312-539		Aquatic Life	Fishes bioassessments	5
State Ditch 49	2016	Red River of the North	09020312-544		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 31	2016	Red River of the North	09020312-549		Aquatic Life	Fishes bioassessments	5
Roseau River	1996	Red River of the North	09020314-501		Aquatic Life	Dissolved oxygen	5
Roseau River	1998	Red River of the North	09020314-501		Aquatic Consumption	Mercury in fish tissue	5
Roseau River	2008	Red River of the North	09020314-501		Aquatic Life	Turbidity	5
Roseau River	1998	Red River of the North	09020314-502		Aquatic Consumption	Mercury in fish tissue	5
Roseau River	1998	Red River of the North	09020314-504	Red Lake	Aquatic Consumption	Mercury in fish tissue	5
Sprague Creek	2008	Red River of the North	09020314-508		Aquatic Life	Turbidity	5
Lee	2012	Red River of the North	14-0049-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Maria	2012	Red River of the North	14-0099-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pine	2006	Red River of the North	15-0149-00		Aquatic Consumption	Mercury in fish tissue	5

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Lightning	2014	Red River of the North	26-0282-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Ash	2014	Red River of the North	26-0294-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bronson	2016	Red River of the North	35-0003-00		Aquatic Consumption	Mercury in fish tissue	5
East Battle	2002	Red River of the North	56-0138-00		Aquatic Consumption	Mercury in fish tissue	5
STUART (MAIN BASIN)	2012	Red River of the North	56-0191-01		Aquatic Consumption	Mercury in fish tissue	5
Stuart (Little West Bay)	2012	Red River of the North	56-0191-02		Aquatic Consumption	Mercury in fish tissue	5
East Lost (North Bay)	2016	Red River of the North	56-0378-01		Aquatic Consumption	Mercury in fish tissue	5
East Lost (South Bay)	2016	Red River of the North	56-0378-02		Aquatic Consumption	Mercury in fish tissue	5
West Spirit	2008	Red River of the North	56-0502-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
West Silent	2008	Red River of the North	56-0519-00		Aquatic Consumption	Mercury in fish tissue	5
East Loon	2016	Red River of the North	56-0523-00		Aquatic Consumption	Mercury in fish tissue	5
Fish	2006	Red River of the North	56-0684-00		Aquatic Consumption	Mercury in fish tissue	5
South Lida	2012	Red River of the North	56-0747-02		Aquatic Consumption	Mercury in fish tissue	5
Crystal	2012	Red River of the North	56-0749-00		Aquatic Consumption	Mercury in fish tissue	5
Franklin	2010	Red River of the North	56-0759-00		Aquatic Consumption	Mercury in fish tissue	5
Long	2010	Red River of the North	56-0784-00		Aquatic Consumption	Mercury in fish tissue	5
Upper Lightning	2014	Red River of the North	56-0957-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Jacobs	2012	Red River of the North	56-1039-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Red Lake River Reservoir	2012	Red River of the North	57-0051-00		Aquatic Consumption	Mercury in fish tissue	5
Uff	2014	Red River of the North	60-0119-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cameron	2008	Red River of the North	60-0189-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2014	Red River of the North	60-0236-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Kittleson	2014	Red River of the North	60-0327-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mud	2014	Red River of the North	78-0024-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pine	2012	St. Croix River	01-0001-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
St Croix River	2006	St. Croix River	07030001-501		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-502		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-503		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-504		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-505		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-506		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-507		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-508		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-521		Aquatic Consumption	PCB in fish tissue	5
Grindstone River	1996	St. Croix River	07030003-501		Aquatic Recreation	Fecal Coliform	5
Grindstone River	2004	St. Croix River	07030003-501		Aquatic Life	Fishes bioassessments	5
Kettle River	1998	St. Croix River	07030003-502		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-503		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-505		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-506		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-508		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-510		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-511		Aquatic Consumption	Mercury in fish tissue	5
Grindstone River, South Branch	2002	St. Croix River	07030003-516		Aquatic Recreation	Fecal Coliform	5
Grindstone River, South Branch	2002	St. Croix River	07030003-516		Aquatic Life	Fishes bioassessments	5

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Kettle River	1998	St. Croix River	07030003-517		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-519		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-528		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-529		Aquatic Consumption	Mercury in fish tissue	5
Grindstone River, North Branch	2010	St. Croix River	07030003-541		Aquatic Recreation	Escherichia coli	5
Grindstone River, North Branch	2002	St. Croix River	07030003-544		Aquatic Recreation	Fecal Coliform	5
Kettle River	1998	St. Croix River	07030003-551		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-552		Aquatic Consumption	Mercury in fish tissue	5
Snake River	2002	St. Croix River	07030004-508		Aquatic Life	Fishes bioassessments	5
Spring Brook	2002	St. Croix River	07030004-515		Aquatic Life	Fishes bioassessments	5
Pokegama Creek	2004	St. Croix River	07030004-532		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mission Creek	2004	St. Croix River	07030004-547		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mission Creek	2010	St. Croix River	07030004-547		Aquatic Life	Dissolved oxygen	5
Mission Creek	2002	St. Croix River	07030004-547		Aquatic Life	Fishes bioassessments	5
Mission Creek	2008	St. Croix River	07030004-548		Aquatic Life	Dissolved oxygen	5
Mission Creek	2008	St. Croix River	07030004-548		Aquatic Life	Fishes bioassessments	5
Knife River	2004	St. Croix River	07030004-549		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Bear Creek	2008	St. Croix River	07030004-552		Aquatic Life	Fishes bioassessments	5
Bear Creek	2008	St. Croix River	07030004-552		Aquatic Life	pH	5
Groundhouse River, South Fork	2010	St. Croix River	07030004-573		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2010	St. Croix River	07030004-577		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2008	St. Croix River	07030004-577		Aquatic Life	Fishes bioassessments	5
Sunrise River, North Branch	2002	St. Croix River	07030005-501		Aquatic Life	Fishes bioassessments	5
St Croix River	2006	St. Croix River	07030005-502		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-503		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-504		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-505		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-506		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-507		Aquatic Consumption	PCB in fish tissue	5
Rush Creek	2004	St. Croix River	07030005-509		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rush Creek	2002	St. Croix River	07030005-509		Aquatic Life	Fishes bioassessments	5
Goose Creek	2002	St. Croix River	07030005-510		Aquatic Life	Fishes bioassessments	5
St Croix River	2006	St. Croix River	07030005-513		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-515		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-516		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-517		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-518		Aquatic Consumption	PCB in fish tissue	5
Browns Creek	2010	St. Croix River	07030005-520		Aquatic Life	Dissolved oxygen	5
Browns Creek	2012	St. Croix River	07030005-520		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2012	St. Croix River	07030005-521		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2010	St. Croix River	07030005-522		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2010	St. Croix River	07030005-522		Aquatic Recreation	Escherichia coli	5
Sunrise River	2010	St. Croix River	07030005-526		Aquatic Recreation	Escherichia coli	5

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Sunrise River	2012	St. Croix River	07030005-527		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sunrise River	2012	St. Croix River	07030005-527		Aquatic Life	Dissolved oxygen	5
Sunrise River	2012	St. Croix River	07030005-527		Aquatic Life	Fishes bioassessments	5
Sunrise River, South Branch	2012	St. Croix River	07030005-528		Aquatic Life	Dissolved oxygen	5
Sunrise River (Pool 3)	2012	St. Croix River	07030005-539		Aquatic Life	Fishes bioassessments	5
Sunrise River	2006	St. Croix River	07030005-540		Aquatic Life	Dissolved oxygen	5
Sunrise River	2012	St. Croix River	07030005-540		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2004	St. Croix River	07030005-555		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Trout Brook	2012	St. Croix River	07030005-568		Aquatic Recreation	Escherichia coli	5
Browns Creek	2004	St. Croix River	07030005-587		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Browns Creek	2010	St. Croix River	07030005-587		Aquatic Life	Dissolved oxygen	5
Browns Creek	2012	St. Croix River	07030005-587		Aquatic Recreation	Escherichia coli	5
Browns Creek	2002	St. Croix River	07030005-587		Aquatic Life	Lack of cold water assemblage	5
Unnamed creek	2010	St. Croix River	07030005-601		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2012	St. Croix River	07030005-601		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2010	St. Croix River	07030005-601		Aquatic Life	Turbidity	5
Unnamed creek	2012	St. Croix River	07030005-612		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2010	St. Croix River	07030005-641		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2010	St. Croix River	07030005-713		Aquatic Recreation	Escherichia coli	5
Unnamed ditch	2010	St. Croix River	07030005-723		Aquatic Life	Ammonia, unionized	5
Unnamed ditch	2010	St. Croix River	07030005-723		Aquatic Life	Dissolved oxygen	5
Unnamed ditch	2012	St. Croix River	07030005-723		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	St. Croix River	07030005-767		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2012	St. Croix River	07030005-913		Aquatic Recreation	Escherichia coli	5
Hanging Horn	1998	St. Croix River	09-0038-00		Aquatic Consumption	Mercury in fish tissue	5
Eddy	2002	St. Croix River	09-0039-00		Aquatic Consumption	Mercury in fish tissue	5
Moosehead	1998	St. Croix River	09-0041-00		Aquatic Consumption	Mercury in fish tissue	5
GOOSE (NORTH BAY)	2010	St. Croix River	13-0083-01		Aquatic Consumption	Mercury in fish tissue	5
GOOSE (SOUTH BAY)	2010	St. Croix River	13-0083-02		Aquatic Consumption	Mercury in fish tissue	5
Cross	2012	St. Croix River	58-0119-00		Aquatic Consumption	Mercury in fish tissue	5
Bass	1998	St. Croix River	58-0128-00		Aquatic Consumption	Mercury in fish tissue	5
Long	2002	St. Croix River	82-0021-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lily	2002	St. Croix River	82-0023-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lynch	2010	St. Croix River	82-0042-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Goose	2012	St. Croix River	82-0059-00		Aquatic Consumption	Mercury in fish tissue	5
Barker	2012	St. Croix River	82-0076-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2006	St. Croix River	82-0077-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Jane	2006	St. Croix River	82-0104-00		Aquatic Consumption	Mercury in fish tissue	5
Elmo	2008	St. Croix River	82-0106-00		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Downs	2012	St. Croix River	82-0110-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Goose (South)	2012	St. Croix River	82-0113-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Benz	2012	St. Croix River	82-0120-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2012	St. Croix River	82-0135-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Plaisted	2012	St. Croix River	82-0148-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
South School Section	2002	St. Croix River	82-0151-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Forest	2002	St. Croix River	82-0159-00		Aquatic Consumption	PCB in fish tissue	5

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Vermillion River	1998	Upper Mississippi River, Lower Portion	07040001-504	Prairie Island	Aquatic Consumption	PCB in fish tissue	5
Vermillion River	2012	Upper Mississippi River, Lower Portion	07040001-507		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Vermillion River	2012	Upper Mississippi River, Lower Portion	07040001-507		Aquatic Life	Fishes bioassessments	5
Vermillion River	2012	Upper Mississippi River, Lower Portion	07040001-517		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Vermillion River	2010	Upper Mississippi River, Lower Portion	07040001-517		Aquatic Life	Dissolved oxygen	5
Vermillion River	2012	Upper Mississippi River, Lower Portion	07040001-517		Aquatic Life	Fishes bioassessments	5
Mississippi River	1998	Upper Mississippi River, Lower Portion	07040001-531		Aquatic Consumption	PCB in fish tissue	5
Unnamed creek (Vermillion River Tributary)	2010	Upper Mississippi River, Lower Portion	07040001-545		Aquatic Life	Dissolved oxygen	5
Vermillion River	2012	Upper Mississippi River, Lower Portion	07040001-692		Aquatic Life	Fishes bioassessments	5
Cannon River	2010	Upper Mississippi River, Lower Portion	07040002-501		Aquatic Recreation	Escherichia coli	5
Cannon River	2016	Upper Mississippi River, Lower Portion	07040002-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Cannon River	2012	Upper Mississippi River, Lower Portion	07040002-501		Aquatic Consumption	PCB in fish tissue	5
Cannon River	2012	Upper Mississippi River, Lower Portion	07040002-502		Aquatic Consumption	PCB in fish tissue	5
Straight River	2014	Upper Mississippi River, Lower Portion	07040002-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Straight River	2004	Upper Mississippi River, Lower Portion	07040002-503		Aquatic Life	Turbidity	5
Prairie Creek	2014	Upper Mississippi River, Lower Portion	07040002-504		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Prairie Creek	2004	Upper Mississippi River, Lower Portion	07040002-504		Aquatic Life	Turbidity	5
Rush Creek	2006	Upper Mississippi River, Lower Portion	07040002-505		Aquatic Life	Turbidity	5
Cannon River	2014	Upper Mississippi River, Lower Portion	07040002-507		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cannon River	2010	Upper Mississippi River, Lower Portion	07040002-507		Aquatic Recreation	Escherichia coli	5
Cannon River	2006	Upper Mississippi River, Lower Portion	07040002-507		Aquatic Life	Turbidity	5
Cannon River	2010	Upper Mississippi River, Lower Portion	07040002-508		Aquatic Recreation	Escherichia coli	5
Cannon River	2008	Upper Mississippi River, Lower Portion	07040002-508		Aquatic Life	Turbidity	5
Cannon River	2014	Upper Mississippi River, Lower Portion	07040002-509		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cannon River	2014	Upper Mississippi River, Lower Portion	07040002-509		Aquatic Life	Fishes bioassessments	5
Cannon River	2004	Upper Mississippi River, Lower Portion	07040002-509		Aquatic Life	Turbidity	5
Unnamed creek	2014	Upper Mississippi River, Lower Portion	07040002-512		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2006	Upper Mississippi River, Lower Portion	07040002-512		Aquatic Life	Turbidity	5
Straight River	2014	Upper Mississippi River, Lower Portion	07040002-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Straight River	2004	Upper Mississippi River, Lower Portion	07040002-515		Aquatic Life	Turbidity	5
Pine Creek	2010	Upper Mississippi River, Lower Portion	07040002-520		Drinking Water	Nitrates	5
Heath Creek	2016	Upper Mississippi River, Lower Portion	07040002-521		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Heath Creek	2010	Upper Mississippi River, Lower Portion	07040002-521		Aquatic Recreation	Escherichia coli	5
Heath Creek	2016	Upper Mississippi River, Lower Portion	07040002-521		Aquatic Life	Fishes bioassessments	5
Wolf Creek	2014	Upper Mississippi River, Lower Portion	07040002-522		Aquatic Recreation	Escherichia coli	5
Wolf Creek	2006	Upper Mississippi River, Lower Portion	07040002-522		Aquatic Life	Turbidity	5
Little Cannon River (Goodhue County)	2014	Upper Mississippi River, Lower Portion	07040002-526		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Cannon River (Goodhue County)	2010	Upper Mississippi River, Lower Portion	07040002-526		Aquatic Recreation	Escherichia coli	5
Little Cannon River (Goodhue County)	2006	Upper Mississippi River, Lower Portion	07040002-526		Aquatic Life	Turbidity	5
Chub Creek	2014	Upper Mississippi River, Lower Portion	07040002-528		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Chub Creek	2014	Upper Mississippi River, Lower Portion	07040002-528		Aquatic Life	Fishes bioassessments	5
Straight River	2014	Upper Mississippi River, Lower Portion	07040002-536		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Straight River	2008	Upper Mississippi River, Lower Portion	07040002-536		Aquatic Life	Turbidity	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Cannon River	2012	Upper Mississippi River, Lower Portion	07040002-538		Aquatic Consumption	PCB in fish tissue	5
Cannon River	2014	Upper Mississippi River, Lower Portion	07040002-539		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cannon River	2012	Upper Mississippi River, Lower Portion	07040002-539		Aquatic Consumption	PCB in fish tissue	5
Cannon River	2010	Upper Mississippi River, Lower Portion	07040002-540		Aquatic Recreation	Escherichia coli	5
Cannon River	2016	Upper Mississippi River, Lower Portion	07040002-540		Aquatic Life	Nutrient/eutrophication biological indicators	5
Cannon River	2014	Upper Mississippi River, Lower Portion	07040002-542		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cannon River	2014	Upper Mississippi River, Lower Portion	07040002-542		Aquatic Life	Dissolved oxygen	5
Cannon River	2014	Upper Mississippi River, Lower Portion	07040002-542		Aquatic Recreation	Escherichia coli	5
Medford Creek	2014	Upper Mississippi River, Lower Portion	07040002-547		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Medford Creek	2014	Upper Mississippi River, Lower Portion	07040002-547		Aquatic Life	Fishes bioassessments	5
Unnamed ditch	2014	Upper Mississippi River, Lower Portion	07040002-555		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch	2014	Upper Mississippi River, Lower Portion	07040002-555		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Spring Brook)	2014	Upper Mississippi River, Lower Portion	07040002-557		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Spring Brook)	2010	Upper Mississippi River, Lower Portion	07040002-557		Aquatic Recreation	Escherichia coli	5
Unnamed creek (Spring Brook)	2010	Upper Mississippi River, Lower Portion	07040002-557		Drinking Water	Nitrates	5
Unnamed creek (Spring Brook)	2006	Upper Mississippi River, Lower Portion	07040002-557		Aquatic Life	Turbidity	5
Mud Creek	2006	Upper Mississippi River, Lower Portion	07040002-558		Aquatic Recreation	Fecal Coliform	5
Waterville Creek	2014	Upper Mississippi River, Lower Portion	07040002-560		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Waterville Creek	2010	Upper Mississippi River, Lower Portion	07040002-560		Aquatic Recreation	Escherichia coli	5
Waterville Creek	2014	Upper Mississippi River, Lower Portion	07040002-560		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Spring Brook)	2010	Upper Mississippi River, Lower Portion	07040002-562		Aquatic Recreation	Escherichia coli	5
Chub Creek, North Branch	2006	Upper Mississippi River, Lower Portion	07040002-566		Aquatic Recreation	Fecal Coliform	5
Unnamed creek (Trout Brook)	2010	Upper Mississippi River, Lower Portion	07040002-567		Drinking Water	Nitrates	5
Unnamed creek (Trout Brook)	2006	Upper Mississippi River, Lower Portion	07040002-567		Aquatic Life	Turbidity	5
Spring Creek	2014	Upper Mississippi River, Lower Portion	07040002-569		Aquatic Recreation	Escherichia coli	5
Spring Creek	2010	Upper Mississippi River, Lower Portion	07040002-569		Aquatic Life	Turbidity	5
Spring Creek	2008	Upper Mississippi River, Lower Portion	07040002-571		Aquatic Life	Turbidity	5
Dutch Creek	2016	Upper Mississippi River, Lower Portion	07040002-572		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Dutch Creek	2016	Upper Mississippi River, Lower Portion	07040002-572		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Trout Brook)	2014	Upper Mississippi River, Lower Portion	07040002-573		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
MacKenzie Creek	2014	Upper Mississippi River, Lower Portion	07040002-576		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
MacKenzie Creek	2014	Upper Mississippi River, Lower Portion	07040002-576		Aquatic Recreation	Escherichia coli	5
Devil Creek	2014	Upper Mississippi River, Lower Portion	07040002-577		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Devil Creek	2014	Upper Mississippi River, Lower Portion	07040002-577		Aquatic Recreation	Escherichia coli	5
Unnamed creek (Trout Brook)	2014	Upper Mississippi River, Lower Portion	07040002-580		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cannon River	2010	Upper Mississippi River, Lower Portion	07040002-581		Aquatic Recreation	Escherichia coli	5
Cannon River	2014	Upper Mississippi River, Lower Portion	07040002-582		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cannon River	2010	Upper Mississippi River, Lower Portion	07040002-582		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2014	Upper Mississippi River, Lower Portion	07040002-587		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Little Cannon River (Goodhue County)	2016	Upper Mississippi River, Lower Portion	07040002-589		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Cannon River (Goodhue County)	2010	Upper Mississippi River, Lower Portion	07040002-589		Aquatic Recreation	Escherichia coli	5
Little Cannon River (Goodhue County)	2016	Upper Mississippi River, Lower Portion	07040002-589		Aquatic Life	Fishes bioassessments	5
Little Cannon River (Goodhue County)	2010	Upper Mississippi River, Lower Portion	07040002-589		Drinking Water	Nitrates	5
Little Cannon River (Goodhue County)	2006	Upper Mississippi River, Lower Portion	07040002-589		Aquatic Life	Turbidity	5
Butler Creek	2014	Upper Mississippi River, Lower Portion	07040002-590		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Butler Creek	2010	Upper Mississippi River, Lower Portion	07040002-590		Aquatic Recreation	Escherichia coli	5
Butler Creek	2010	Upper Mississippi River, Lower Portion	07040002-590		Aquatic Life	Turbidity	5
Spring Creek	2014	Upper Mississippi River, Lower Portion	07040002-591		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 63	2014	Upper Mississippi River, Lower Portion	07040002-621		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2014	Upper Mississippi River, Lower Portion	07040002-638		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cannon River	2012	Upper Mississippi River, Lower Portion	07040002-646		Aquatic Consumption	PCB in fish tissue	5
Unnamed creek	2014	Upper Mississippi River, Lower Portion	07040002-699		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2010	Upper Mississippi River, Lower Portion	07040002-702		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2014	Upper Mississippi River, Lower Portion	07040002-703		Aquatic Recreation	Escherichia coli	5
Falls Creek	2014	Upper Mississippi River, Lower Portion	07040002-704		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2010	Upper Mississippi River, Lower Portion	07040002-705		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2014	Upper Mississippi River, Lower Portion	07040002-705		Aquatic Life	Fishes bioassessments	5
Whitewater Creek	2014	Upper Mississippi River, Lower Portion	07040002-706		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Whitewater Creek	2010	Upper Mississippi River, Lower Portion	07040002-706		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2014	Upper Mississippi River, Lower Portion	07040002-723		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Upper Mississippi River, Lower Portion	07040002-731		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Belle Creek	2010	Upper Mississippi River, Lower Portion	07040002-734		Aquatic Recreation	Escherichia coli	5
Belle Creek	2006	Upper Mississippi River, Lower Portion	07040002-734		Aquatic Life	Turbidity	5
Belle Creek	2010	Upper Mississippi River, Lower Portion	07040002-735		Aquatic Recreation	Escherichia coli	5
Belle Creek	2006	Upper Mississippi River, Lower Portion	07040002-735		Aquatic Life	Turbidity	5
Whitewater River, South Fork	2014	Upper Mississippi River, Lower Portion	07040003-512		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Whitewater River, Middle Fork	2014	Upper Mississippi River, Lower Portion	07040003-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Whitewater River, Middle Fork	2014	Upper Mississippi River, Lower Portion	07040003-515		Aquatic Life	Fishes bioassessments	5
Whitewater River, Middle Fork	2008	Upper Mississippi River, Lower Portion	07040003-515		Aquatic Life	Turbidity	5
Garvin Brook	1996	Upper Mississippi River, Lower Portion	07040003-542		Aquatic Life	Turbidity	5
Whitewater River, North Fork	2014	Upper Mississippi River, Lower Portion	07040003-553		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Whitewater River, North Fork	2014	Upper Mississippi River, Lower Portion	07040003-553		Aquatic Life	Fishes bioassessments	5
Bear Creek	2014	Upper Mississippi River, Lower Portion	07040003-581		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Bear Creek	2014	Upper Mississippi River, Lower Portion	07040003-581		Aquatic Life	Fishes bioassessments	5
Big Trout Creek (Pickwick Creek)	2014	Upper Mississippi River, Lower Portion	07040003-592		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mississippi River	2002	Upper Mississippi River, Lower Portion	07040003-627		Aquatic Consumption	PCB in fish tissue	5

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Whitewater River, South Fork	2014	Upper Mississippi River, Lower Portion	07040003-F16		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Whitewater River, South Fork	2014	Upper Mississippi River, Lower Portion	07040003-F16		Aquatic Life	Fishes bioassessments	5
Whitewater River, South Fork	2002	Upper Mississippi River, Lower Portion	07040003-F16		Aquatic Life	Turbidity	5
Whitewater River, Middle Fork	2014	Upper Mississippi River, Lower Portion	07040003-F19		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zumbro River	2004	Upper Mississippi River, Lower Portion	07040004-501		Aquatic Consumption	PCB in fish tissue	5
Zumbro River	2004	Upper Mississippi River, Lower Portion	07040004-502		Aquatic Consumption	PCB in fish tissue	5
Salem Creek	2016	Upper Mississippi River, Lower Portion	07040004-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zumbro River	2004	Upper Mississippi River, Lower Portion	07040004-504		Aquatic Consumption	PCB in fish tissue	5
Zumbro River	2004	Upper Mississippi River, Lower Portion	07040004-506		Aquatic Consumption	PCB in fish tissue	5
Zumbro River, South Fork	2016	Upper Mississippi River, Lower Portion	07040004-507		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zumbro River, South Fork	2016	Upper Mississippi River, Lower Portion	07040004-507		Aquatic Life	Nutrient/eutrophication biological indicators	5
Cold Creek	2016	Upper Mississippi River, Lower Portion	07040004-510		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Trout Brook (Mazeppa Creek)	2016	Upper Mississippi River, Lower Portion	07040004-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Trout Brook (Mazeppa Creek)	2016	Upper Mississippi River, Lower Portion	07040004-515		Aquatic Recreation	Escherichia coli	5
Zumbro River, South Fork	2016	Upper Mississippi River, Lower Portion	07040004-536		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Bear Creek	2016	Upper Mississippi River, Lower Portion	07040004-538		Aquatic Recreation	Escherichia coli	5
West Indian Creek	2016	Upper Mississippi River, Lower Portion	07040004-542		Aquatic Recreation	Escherichia coli	5
Milliken Creek	2010	Upper Mississippi River, Lower Portion	07040004-555		Aquatic Life	Turbidity	5
Shingle Creek	2016	Upper Mississippi River, Lower Portion	07040004-562		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Long Creek	2016	Upper Mississippi River, Lower Portion	07040004-565		Aquatic Recreation	Escherichia coli	5
Middle Creek	2016	Upper Mississippi River, Lower Portion	07040004-567		Aquatic Recreation	Escherichia coli	5
Spring Creek	2016	Upper Mississippi River, Lower Portion	07040004-568		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Creek	2016	Upper Mississippi River, Lower Portion	07040004-570		Aquatic Recreation	Escherichia coli	5
Spring Creek	2016	Upper Mississippi River, Lower Portion	07040004-570		Aquatic Life	Fishes bioassessments	5
Trout Brook	2016	Upper Mississippi River, Lower Portion	07040004-571		Aquatic Recreation	Escherichia coli	5
Unnamed creek (Hammond Creek)	2016	Upper Mississippi River, Lower Portion	07040004-575		Aquatic Recreation	Escherichia coli	5
Dry Run Creek	2016	Upper Mississippi River, Lower Portion	07040004-576		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-578		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-579		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cascade Creek	2016	Upper Mississippi River, Lower Portion	07040004-581		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Trout Brook	2016	Upper Mississippi River, Lower Portion	07040004-585		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2008	Upper Mississippi River, Lower Portion	07040004-595		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2008	Upper Mississippi River, Lower Portion	07040004-596		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-597		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-597		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-605		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Creek	2016	Upper Mississippi River, Lower Portion	07040004-606		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Henslin Creek	2016	Upper Mississippi River, Lower Portion	07040004-618		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Badger Run	2016	Upper Mississippi River, Lower Portion	07040004-620		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Spring Creek Tributary)	2016	Upper Mississippi River, Lower Portion	07040004-769		Aquatic Recreation	Escherichia coli	5

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Unnamed creek (Spring Creek Tributary)	2016	Upper Mississippi River, Lower Portion	07040004-769		Aquatic Life	Total suspended solids	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-800		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-800		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-964		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zumbro River, North Fork	2016	Upper Mississippi River, Lower Portion	07040004-971		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zumbro River, North Fork	2016	Upper Mississippi River, Lower Portion	07040004-971		Aquatic Recreation	Escherichia coli	5
Zumbro River, North Fork	2010	Upper Mississippi River, Lower Portion	07040004-971		Aquatic Life	Turbidity	5
Zumbro River, Middle Fork	2016	Upper Mississippi River, Lower Portion	07040004-973		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zumbro River, Middle Fork	2016	Upper Mississippi River, Lower Portion	07040004-973		Aquatic Recreation	Escherichia coli	5
Zumbro River, Middle Fork, South Branch	2016	Upper Mississippi River, Lower Portion	07040004-976		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zumbro River, Middle Fork, South Branch	2016	Upper Mississippi River, Lower Portion	07040004-978		Aquatic Recreation	Escherichia coli	5
Zumbro River, Middle Fork, South Branch	2016	Upper Mississippi River, Lower Portion	07040004-978		Aquatic Life	Nutrient/eutrophication biological indicators	5
Zumbro River, Middle Fork, South Branch	2016	Upper Mississippi River, Lower Portion	07040004-980		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 1 (Dodge Center Creek)	2016	Upper Mississippi River, Lower Portion	07040004-987		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Dodge Center Creek (Judicial Ditch 1)	2016	Upper Mississippi River, Lower Portion	07040004-988		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Dodge Center Creek (Judicial Ditch 1)	2016	Upper Mississippi River, Lower Portion	07040004-988		Aquatic Life	Fishes bioassessments	5
Dodge Center Creek	2016	Upper Mississippi River, Lower Portion	07040004-989		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Dodge Center Creek	2016	Upper Mississippi River, Lower Portion	07040004-989		Aquatic Recreation	Escherichia coli	5
Cascade Creek	2016	Upper Mississippi River, Lower Portion	07040004-991		Aquatic Life	Fishes bioassessments	5
Zumbro River, Middle Fork	2016	Upper Mississippi River, Lower Portion	07040004-992		Aquatic Recreation	Escherichia coli	5
Zumbro River, Middle Fork	2010	Upper Mississippi River, Lower Portion	07040004-993		Aquatic Life	Turbidity	5
Mississippi River	1998	Upper Mississippi River, Lower Portion	07040006-515		Aquatic Consumption	PCB in fish tissue	5
Root River	2012	Upper Mississippi River, Lower Portion	07040008-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River	1994	Upper Mississippi River, Lower Portion	07040008-501		Aquatic Life	Turbidity	5
Root River	2012	Upper Mississippi River, Lower Portion	07040008-502		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River	2012	Upper Mississippi River, Lower Portion	07040008-502		Aquatic Life	Turbidity	5
Root River, Middle Branch	2012	Upper Mississippi River, Lower Portion	07040008-506		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River, Middle Branch	2012	Upper Mississippi River, Lower Portion	07040008-506		Aquatic Recreation	Escherichia coli	5
Thompson Creek	2012	Upper Mississippi River, Lower Portion	07040008-507		Aquatic Recreation	Escherichia coli	5
Root River, South Fork	2012	Upper Mississippi River, Lower Portion	07040008-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River, South Fork	2012	Upper Mississippi River, Lower Portion	07040008-508		Aquatic Recreation	Escherichia coli	5
Root River, South Fork	2012	Upper Mississippi River, Lower Portion	07040008-508		Aquatic Life	Turbidity	5
Root River, South Fork	2012	Upper Mississippi River, Lower Portion	07040008-509		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River, South Fork	2012	Upper Mississippi River, Lower Portion	07040008-510		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River, South Fork	2008	Upper Mississippi River, Lower Portion	07040008-511		Aquatic Life	Turbidity	5
Riceford Creek	2012	Upper Mississippi River, Lower Portion	07040008-518		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Riceford Creek	2012	Upper Mississippi River, Lower Portion	07040008-519		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River	2012	Upper Mississippi River, Lower Portion	07040008-520		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Money Creek	2008	Upper Mississippi River, Lower Portion	07040008-521		Aquatic Life	Turbidity	5
Root River	2012	Upper Mississippi River, Lower Portion	07040008-522		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Rush Creek	2012	Upper Mississippi River, Lower Portion	07040008-523		Aquatic Recreation	Escherichia coli	5
Rush Creek	2012	Upper Mississippi River, Lower Portion	07040008-524		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pine Creek	2012	Upper Mississippi River, Lower Portion	07040008-526		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River	2012	Upper Mississippi River, Lower Portion	07040008-527		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River	2010	Upper Mississippi River, Lower Portion	07040008-527		Aquatic Life	Turbidity	5
Root River, Middle Branch	2012	Upper Mississippi River, Lower Portion	07040008-528		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River, Middle Branch	2012	Upper Mississippi River, Lower Portion	07040008-534		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River, Middle Branch	2010	Upper Mississippi River, Lower Portion	07040008-534		Aquatic Recreation	Escherichia coli	5
Root River, North Branch	2012	Upper Mississippi River, Lower Portion	07040008-535		Aquatic Recreation	Escherichia coli	5
Mill Creek	2012	Upper Mississippi River, Lower Portion	07040008-536		Aquatic Recreation	Escherichia coli	5
Upper Bear Creek	2012	Upper Mississippi River, Lower Portion	07040008-540		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Upper Bear Creek	2012	Upper Mississippi River, Lower Portion	07040008-540		Aquatic Life	Fishes bioassessments	5
Bear Creek	2012	Upper Mississippi River, Lower Portion	07040008-542		Aquatic Recreation	Escherichia coli	5
Bear Creek	2012	Upper Mississippi River, Lower Portion	07040008-544		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Deer Creek	2012	Upper Mississippi River, Lower Portion	07040008-546		Aquatic Recreation	Escherichia coli	5
Spring Valley Creek	2012	Upper Mississippi River, Lower Portion	07040008-548		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Valley Creek	2012	Upper Mississippi River, Lower Portion	07040008-548		Aquatic Recreation	Escherichia coli	5
Spring Valley Creek	2012	Upper Mississippi River, Lower Portion	07040008-548		Aquatic Life	Fishes bioassessments	5
Root River, South Branch	2012	Upper Mississippi River, Lower Portion	07040008-550		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River, South Branch	2012	Upper Mississippi River, Lower Portion	07040008-550		Aquatic Recreation	Escherichia coli	5
Watson Creek	2012	Upper Mississippi River, Lower Portion	07040008-552		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watson Creek	2012	Upper Mississippi River, Lower Portion	07040008-552		Aquatic Recreation	Escherichia coli	5
Watson Creek	2012	Upper Mississippi River, Lower Portion	07040008-552		Aquatic Life	Fishes bioassessments	5
Watson Creek	2010	Upper Mississippi River, Lower Portion	07040008-552		Drinking Water	Nitrates	5
Root River, South Branch	2006	Upper Mississippi River, Lower Portion	07040008-554		Aquatic Life	Turbidity	5
Root River, South Branch	2010	Upper Mississippi River, Lower Portion	07040008-555		Drinking Water	Nitrates	5
Root River, South Branch	2004	Upper Mississippi River, Lower Portion	07040008-555		Aquatic Life	Turbidity	5
Root River, South Branch	2012	Upper Mississippi River, Lower Portion	07040008-556		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River, South Branch	2006	Upper Mississippi River, Lower Portion	07040008-556		Aquatic Life	Turbidity	5
Canfield Creek	2010	Upper Mississippi River, Lower Portion	07040008-557		Drinking Water	Nitrates	5
Willow Creek	2012	Upper Mississippi River, Lower Portion	07040008-558		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Willow Creek	2012	Upper Mississippi River, Lower Portion	07040008-558		Aquatic Recreation	Escherichia coli	5
Willow Creek	2010	Upper Mississippi River, Lower Portion	07040008-558		Drinking Water	Nitrates	5
Camp Creek	2012	Upper Mississippi River, Lower Portion	07040008-559		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Camp Creek	2012	Upper Mississippi River, Lower Portion	07040008-559		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 1	2006	Upper Mississippi River, Lower Portion	07040008-561		Aquatic Life	Turbidity	5
Etna Creek	2010	Upper Mississippi River, Lower Portion	07040008-562		Drinking Water	Nitrates	5
Forestville Creek	2008	Upper Mississippi River, Lower Portion	07040008-563		Aquatic Recreation	Fecal Coliform	5
Forestville Creek	2010	Upper Mississippi River, Lower Portion	07040008-563		Drinking Water	Nitrates	5
Forestville Creek	2006	Upper Mississippi River, Lower Portion	07040008-563		Aquatic Life	Turbidity	5
Root River, South Fork	2012	Upper Mississippi River, Lower Portion	07040008-573		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River, South Fork	2012	Upper Mississippi River, Lower Portion	07040008-573		Aquatic Life	Turbidity	5
Pine Creek	2012	Upper Mississippi River, Lower Portion	07040008-576		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rice Creek	2012	Upper Mississippi River, Lower Portion	07040008-581		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rice Creek	2012	Upper Mississippi River, Lower Portion	07040008-581		Aquatic Life	Fishes bioassessments	5
Root River, South Branch	2004	Upper Mississippi River, Lower Portion	07040008-586		Aquatic Life	Turbidity	5

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Etna Creek	2012	Upper Mississippi River, Lower Portion	07040008-597		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Wadden Valley Creek)	2012	Upper Mississippi River, Lower Portion	07040008-605		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Corey Creek	2012	Upper Mississippi River, Lower Portion	07040008-631		Aquatic Life	Fishes bioassessments	5
Silver Creek	2012	Upper Mississippi River, Lower Portion	07040008-640		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Silver Creek	2012	Upper Mississippi River, Lower Portion	07040008-640		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Lower Portion	07040008-659		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Lower Portion	07040008-706		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River, North Branch	2012	Upper Mississippi River, Lower Portion	07040008-716		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River, North Branch	2008	Upper Mississippi River, Lower Portion	07040008-716		Aquatic Life	Turbidity	5
Root River, North Branch	2012	Upper Mississippi River, Lower Portion	07040008-717		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River, North Branch	2008	Upper Mississippi River, Lower Portion	07040008-717		Aquatic Life	Turbidity	5
Unnamed creek	2012	Upper Mississippi River, Lower Portion	07040008-F46		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Money Creek	2012	Upper Mississippi River, Lower Portion	07040008-F48		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sorenson Creek	2012	Upper Mississippi River, Lower Portion	07040008-F52		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Trout Run Creek	2012	Upper Mississippi River, Lower Portion	07040008-G87		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Trout Run Creek	2012	Upper Mississippi River, Lower Portion	07040008-G88		Aquatic Recreation	Escherichia coli	5
Mississippi River	1998	Upper Mississippi River, Lower Portion	07060001-509		Aquatic Consumption	PCB in fish tissue	5
Byllesby	2002	Upper Mississippi River, Lower Portion	19-0006-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Chub	2002	Upper Mississippi River, Lower Portion	19-0020-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pepin	2002	Upper Mississippi River, Lower Portion	25-0001-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Horseshoe	2010	Upper Mississippi River, Lower Portion	40-0001-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Upper Sakatah	2006	Upper Mississippi River, Lower Portion	40-0002-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Sunfish	2010	Upper Mississippi River, Lower Portion	40-0009-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Dora	2010	Upper Mississippi River, Lower Portion	40-0010-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mabel	2010	Upper Mississippi River, Lower Portion	40-0011-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Sabre	2012	Upper Mississippi River, Lower Portion	40-0014-00		Aquatic Consumption	Mercury in fish tissue	5
Sabre	2010	Upper Mississippi River, Lower Portion	40-0014-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Tetonka	2006	Upper Mississippi River, Lower Portion	40-0031-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Gorman	2010	Upper Mississippi River, Lower Portion	40-0032-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Volney	1998	Upper Mississippi River, Lower Portion	40-0033-00		Aquatic Consumption	Mercury in fish tissue	5
Silver	2014	Upper Mississippi River, Lower Portion	40-0048-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Frances	2008	Upper Mississippi River, Lower Portion	40-0057-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Tustin	2010	Upper Mississippi River, Lower Portion	40-0061-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Zumbro	2002	Upper Mississippi River, Lower Portion	55-0004-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cannon	2006	Upper Mississippi River, Lower Portion	66-0008-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Wells	2010	Upper Mississippi River, Lower Portion	66-0010-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Roberds	2006	Upper Mississippi River, Lower Portion	66-0018-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Circle	2006	Upper Mississippi River, Lower Portion	66-0027-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fox	2010	Upper Mississippi River, Lower Portion	66-0029-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Union	2006	Upper Mississippi River, Lower Portion	66-0032-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
French	2010	Upper Mississippi River, Lower Portion	66-0038-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mazaska	1998	Upper Mississippi River, Lower Portion	66-0039-00		Aquatic Consumption	Mercury in fish tissue	5
Mazaska	2006	Upper Mississippi River, Lower Portion	66-0039-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lower Sakatah	2010	Upper Mississippi River, Lower Portion	66-0044-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Hunt	2010	Upper Mississippi River, Lower Portion	66-0047-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5

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Rice	2010	Upper Mississippi River, Lower Portion	66-0048-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Caron	2010	Upper Mississippi River, Lower Portion	66-0050-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cedar	2010	Upper Mississippi River, Lower Portion	66-0052-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Shields	2010	Upper Mississippi River, Lower Portion	66-0055-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Rice	2016	Upper Mississippi River, Lower Portion	74-0001-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Clear	2004	Upper Mississippi River, Lower Portion	81-0014-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Loon	2010	Upper Mississippi River, Lower Portion	81-0015-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Toner's	2014	Upper Mississippi River, Lower Portion	81-0058-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Horseshoe	2010	Upper Mississippi River, Upper Portion	01-0034-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Wakefield	2016	Upper Mississippi River, Upper Portion	01-0036-00		Aquatic Consumption	Mercury in fish tissue	5
Remote	2016	Upper Mississippi River, Upper Portion	01-0038-00		Aquatic Consumption	Mercury in fish tissue	5
Glacier	2014	Upper Mississippi River, Upper Portion	01-0042-00		Aquatic Consumption	Mercury in fish tissue	5
Round	1998	Upper Mississippi River, Upper Portion	01-0070-00		Aquatic Consumption	Mercury in fish tissue	5
Sugar	2014	Upper Mississippi River, Upper Portion	01-0087-00		Aquatic Consumption	Mercury in fish tissue	5
Long	2016	Upper Mississippi River, Upper Portion	01-0089-00		Aquatic Consumption	Mercury in fish tissue	5
Gun	2010	Upper Mississippi River, Upper Portion	01-0099-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fleming	2010	Upper Mississippi River, Upper Portion	01-0105-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Elm Island	2010	Upper Mississippi River, Upper Portion	01-0123-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Waukenabo	2010	Upper Mississippi River, Upper Portion	01-0136-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Ripple	2010	Upper Mississippi River, Upper Portion	01-0146-00		Aquatic Consumption	Mercury in fish tissue	5
Esquagamah	2010	Upper Mississippi River, Upper Portion	01-0147-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Blind	2010	Upper Mississippi River, Upper Portion	01-0188-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Moulton	1998	Upper Mississippi River, Upper Portion	01-0212-00		Aquatic Consumption	Mercury in fish tissue	5
Unnamed	2004	Upper Mississippi River, Upper Portion	02-0079-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Sandy	2002	Upper Mississippi River, Upper Portion	02-0080-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Boot	1998	Upper Mississippi River, Upper Portion	03-0030-00		Aquatic Consumption	Mercury in fish tissue	5
Moose	2012	Upper Mississippi River, Upper Portion	04-0011-00	Leech Lake	Aquatic Consumption	Mercury in fish tissue	5
Gilstad	2012	Upper Mississippi River, Upper Portion	04-0024-00		Aquatic Consumption	Mercury in fish tissue	5
Three Island	2010	Upper Mississippi River, Upper Portion	04-0134-00		Aquatic Consumption	Mercury in fish tissue	5
Irving	2010	Upper Mississippi River, Upper Portion	04-0140-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Carr	1998	Upper Mississippi River, Upper Portion	04-0141-00		Aquatic Consumption	Mercury in fish tissue	5
Larson	2016	Upper Mississippi River, Upper Portion	04-0154-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Little Turtle	2008	Upper Mississippi River, Upper Portion	04-0155-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Moose	2016	Upper Mississippi River, Upper Portion	04-0342-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mississippi River	2016	Upper Mississippi River, Upper Portion	07010101-753		Aquatic Consumption	Mercury in fish tissue	5
Mississippi River	2016	Upper Mississippi River, Upper Portion	07010101-754	Leech Lake	Aquatic Consumption	Mercury in fish tissue	5
Kabekona River	2016	Upper Mississippi River, Upper Portion	07010102-511		Aquatic Recreation	Escherichia coli	5
Moose River	2012	Upper Mississippi River, Upper Portion	07010103-524		Aquatic Life	Dissolved oxygen	5
Mississippi River	2016	Upper Mississippi River, Upper Portion	07010103-708		Aquatic Life	Total suspended solids	5
Swan River	2010	Upper Mississippi River, Upper Portion	07010104-502		Aquatic Life	Dissolved oxygen	5
Rice River	2002	Upper Mississippi River, Upper Portion	07010104-505		Aquatic Life	Fishes bioassessments	5
Buffalo Creek (Little Buffalo Creek)	2006	Upper Mississippi River, Upper Portion	07010104-523		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Buffalo Creek (Little Buffalo Creek)	2002	Upper Mississippi River, Upper Portion	07010104-523		Aquatic Life	Fishes bioassessments	5
Mississippi River	1998	Upper Mississippi River, Upper Portion	07010104-655		Aquatic Life	Turbidity	5
Mississippi River	2016	Upper Mississippi River, Upper Portion	07010104-656		Aquatic Life	Total suspended solids	5

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Arvig Creek	2016	Upper Mississippi River, Upper Portion	07010105-509		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Arvig Creek	2016	Upper Mississippi River, Upper Portion	07010105-509		Aquatic Life	Fishes bioassessments	5
Wilson Creek	2016	Upper Mississippi River, Upper Portion	07010105-529		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pine River, South Fork	2016	Upper Mississippi River, Upper Portion	07010105-531		Aquatic Life	Fishes bioassessments	5
Willow Creek	2016	Upper Mississippi River, Upper Portion	07010105-631		Aquatic Life	Fishes bioassessments	5
Farnham Creek	2006	Upper Mississippi River, Upper Portion	07010106-522		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Farnham Creek	2002	Upper Mississippi River, Upper Portion	07010106-522		Aquatic Life	Fishes bioassessments	5
Tower Creek	2014	Upper Mississippi River, Upper Portion	07010106-528		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Redeye River	2014	Upper Mississippi River, Upper Portion	07010107-503		Aquatic Recreation	Escherichia coli	5
Leaf River	2014	Upper Mississippi River, Upper Portion	07010107-505		Aquatic Recreation	Escherichia coli	5
Union Creek	2014	Upper Mississippi River, Upper Portion	07010107-508		Aquatic Recreation	Escherichia coli	5
Leaf River	2014	Upper Mississippi River, Upper Portion	07010107-514		Aquatic Recreation	Escherichia coli	5
Bluff Creek	2014	Upper Mississippi River, Upper Portion	07010107-515		Aquatic Recreation	Escherichia coli	5
Oak Creek	2014	Upper Mississippi River, Upper Portion	07010107-516		Aquatic Recreation	Escherichia coli	5
Unnamed creek (Hay Creek)	2014	Upper Mississippi River, Upper Portion	07010107-526		Aquatic Recreation	Escherichia coli	5
South Bluff Creek	2014	Upper Mississippi River, Upper Portion	07010107-553		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
South Bluff Creek	2014	Upper Mississippi River, Upper Portion	07010107-553		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Upper Mississippi River, Upper Portion	07010107-554		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Upper Mississippi River, Upper Portion	07010107-557		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Wing River	2014	Upper Mississippi River, Upper Portion	07010107-559		Aquatic Life	Fishes bioassessments	5
Wing River	2014	Upper Mississippi River, Upper Portion	07010107-560		Aquatic Recreation	Escherichia coli	5
Long Prairie River	2002	Upper Mississippi River, Upper Portion	07010108-504		Aquatic Life	Fishes bioassessments	5
Long Prairie River	2002	Upper Mississippi River, Upper Portion	07010108-505		Aquatic Life	Fishes bioassessments	5
Eagle Creek	2014	Upper Mississippi River, Upper Portion	07010108-507		Aquatic Recreation	Escherichia coli	5
Moran Creek	2014	Upper Mississippi River, Upper Portion	07010108-511		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2014	Upper Mississippi River, Upper Portion	07010108-552		Aquatic Recreation	Escherichia coli	5
Venewitz Creek	2014	Upper Mississippi River, Upper Portion	07010108-568		Aquatic Life	Fishes bioassessments	5
Harris Creek	2014	Upper Mississippi River, Upper Portion	07010108-592		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Upper Mississippi River, Upper Portion	07010108-595		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Upper Mississippi River, Upper Portion	07010108-595		Aquatic Life	Fishes bioassessments	5
Bunker Hill Creek	2010	Upper Mississippi River, Upper Portion	07010201-511		Drinking Water	Nitrates	5
Skunk River	2008	Upper Mississippi River, Upper Portion	07010201-521		Aquatic Recreation	Fecal Coliform	5
South Two River	2016	Upper Mississippi River, Upper Portion	07010201-532		Aquatic Life	Nutrient/eutrophication biological indicators	5
Platte River	2002	Upper Mississippi River, Upper Portion	07010201-546		Aquatic Life	Fishes bioassessments	5
Little Rock Creek	2010	Upper Mississippi River, Upper Portion	07010201-548		Aquatic Life	Dissolved oxygen	5
Little Rock Creek	2002	Upper Mississippi River, Upper Portion	07010201-548		Aquatic Life	Lack of cold water assemblage	5
Little Rock Creek	2010	Upper Mississippi River, Upper Portion	07010201-548		Drinking Water	Nitrates	5
Sauk River	2016	Upper Mississippi River, Upper Portion	07010202-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Sauk River	1998	Upper Mississippi River, Upper Portion	07010202-501		Aquatic Consumption	PCB in fish tissue	5
Ashley Creek	2012	Upper Mississippi River, Upper Portion	07010202-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Ashley Creek	1998	Upper Mississippi River, Upper Portion	07010202-503		Aquatic Life	Dissolved oxygen	5
Ashley Creek	2010	Upper Mississippi River, Upper Portion	07010202-503		Aquatic Recreation	Escherichia coli	5
Ashley Creek	2012	Upper Mississippi River, Upper Portion	07010202-503		Aquatic Life	Fishes bioassessments	5
Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-505		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-505		Aquatic Recreation	Escherichia coli	5

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Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-505		Aquatic Life	Fishes bioassessments	5
Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-506		Aquatic Life	Fishes bioassessments	5
Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-507		Aquatic Life	Fishes bioassessments	5
Sauk River	2010	Upper Mississippi River, Upper Portion	07010202-508		Aquatic Recreation	Escherichia coli	5
Sauk River	2016	Upper Mississippi River, Upper Portion	07010202-517		Aquatic Life	Nutrient/eutrophication biological indicators	5
Sauk River	1998	Upper Mississippi River, Upper Portion	07010202-519		Aquatic Consumption	PCB in fish tissue	5
Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-520		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-520		Aquatic Life	Fishes bioassessments	5
Sauk River	1998	Upper Mississippi River, Upper Portion	07010202-520		Aquatic Consumption	PCB in fish tissue	5
County Ditch 6	2006	Upper Mississippi River, Upper Portion	07010202-521		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 6	2002	Upper Mississippi River, Upper Portion	07010202-521		Aquatic Life	Fishes bioassessments	5
Adley Creek	2010	Upper Mississippi River, Upper Portion	07010202-527		Aquatic Recreation	Escherichia coli	5
Stony Creek	2010	Upper Mississippi River, Upper Portion	07010202-541		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-542		Aquatic Recreation	Escherichia coli	5
Eden Lake Outlet	2012	Upper Mississippi River, Upper Portion	07010202-545		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Eden Lake Outlet	2010	Upper Mississippi River, Upper Portion	07010202-545		Aquatic Life	Dissolved oxygen	5
Eden Lake Outlet	2012	Upper Mississippi River, Upper Portion	07010202-545		Aquatic Recreation	Escherichia coli	5
Eden Lake Outlet	2012	Upper Mississippi River, Upper Portion	07010202-545		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-550		Limited Resource Value	Escherichia coli	5
Crooked Lake Ditch	2006	Upper Mississippi River, Upper Portion	07010202-552		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crooked Lake Ditch	2012	Upper Mississippi River, Upper Portion	07010202-552		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2006	Upper Mississippi River, Upper Portion	07010202-554		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-556		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-556		Aquatic Life	Fishes bioassessments	5
Getchell Creek (County Ditch 26)	2006	Upper Mississippi River, Upper Portion	07010202-562		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Getchell Creek (County Ditch 26)	2012	Upper Mississippi River, Upper Portion	07010202-562		Aquatic Recreation	Escherichia coli	5
Unnamed creek (Cold Spring Creek)	2012	Upper Mississippi River, Upper Portion	07010202-567		Aquatic Recreation	Escherichia coli	5
Kolling Creek	2010	Upper Mississippi River, Upper Portion	07010202-575		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-592		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-598		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-615		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2010	Upper Mississippi River, Upper Portion	07010202-616		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-660		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-660		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-662		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-663		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch	2012	Upper Mississippi River, Upper Portion	07010202-665		Aquatic Recreation	Escherichia coli	5
Unnamed ditch	2012	Upper Mississippi River, Upper Portion	07010202-666		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch	2012	Upper Mississippi River, Upper Portion	07010202-666		Aquatic Life	Fishes bioassessments	5
Sauk River	1994	Upper Mississippi River, Upper Portion	07010202-673		Aquatic Life	Dissolved oxygen	5
Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-673		Aquatic Life	Fishes bioassessments	5
Mill Creek	2012	Upper Mississippi River, Upper Portion	07010202-674		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mill Creek	2012	Upper Mississippi River, Upper Portion	07010202-674		Aquatic Life	Fishes bioassessments	5
Elk River	2012	Upper Mississippi River, Upper Portion	07010203-507		Aquatic Recreation	Escherichia coli	5

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Elk River	2012	Upper Mississippi River, Upper Portion	07010203-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Elk River	2012	Upper Mississippi River, Upper Portion	07010203-508		Aquatic Recreation	Escherichia coli	5
Elk River	2012	Upper Mississippi River, Upper Portion	07010203-508		Aquatic Life	Fishes bioassessments	5
Mayhew Creek	2006	Upper Mississippi River, Upper Portion	07010203-509		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mayhew Creek	2012	Upper Mississippi River, Upper Portion	07010203-509		Aquatic Recreation	Escherichia coli	5
Mayhew Creek	2002	Upper Mississippi River, Upper Portion	07010203-509		Aquatic Life	Fishes bioassessments	5
Clearwater River	2012	Upper Mississippi River, Upper Portion	07010203-511		Aquatic Life	Fishes bioassessments	5
Rice Creek	2012	Upper Mississippi River, Upper Portion	07010203-512		Aquatic Recreation	Escherichia coli	5
Tibbets Brook	2012	Upper Mississippi River, Upper Portion	07010203-522		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010203-528		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010203-528		Aquatic Life	Fishes bioassessments	5
Snake River	2012	Upper Mississippi River, Upper Portion	07010203-529		Aquatic Recreation	Escherichia coli	5
Battle Brook	2012	Upper Mississippi River, Upper Portion	07010203-535		Aquatic Recreation	Escherichia coli	5
Battle Brook	2012	Upper Mississippi River, Upper Portion	07010203-535		Aquatic Life	Fishes bioassessments	5
Elk River	2012	Upper Mississippi River, Upper Portion	07010203-548		Aquatic Recreation	Escherichia coli	5
Silver Creek	2012	Upper Mississippi River, Upper Portion	07010203-557		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Silver Creek	2012	Upper Mississippi River, Upper Portion	07010203-557		Aquatic Life	Dissolved oxygen	5
Silver Creek	2012	Upper Mississippi River, Upper Portion	07010203-557		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Fairhaven Creek)	2012	Upper Mississippi River, Upper Portion	07010203-565		Aquatic Recreation	Escherichia coli	5
Elk River	2012	Upper Mississippi River, Upper Portion	07010203-579		Aquatic Life	Fishes bioassessments	5
Johnson Creek (Meyer Creek)	2012	Upper Mississippi River, Upper Portion	07010203-639		Aquatic Life	Fishes bioassessments	5
Silver Creek	2012	Upper Mississippi River, Upper Portion	07010203-662		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Silver Creek	2012	Upper Mississippi River, Upper Portion	07010203-662		Aquatic Life	Fishes bioassessments	5
Mayhew Creek	2012	Upper Mississippi River, Upper Portion	07010203-675		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mayhew Creek	2012	Upper Mississippi River, Upper Portion	07010203-675		Aquatic Life	Fishes bioassessments	5
St Francis River	2012	Upper Mississippi River, Upper Portion	07010203-700		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
St Francis River	2012	Upper Mississippi River, Upper Portion	07010203-700		Aquatic Recreation	Escherichia coli	5
St Francis River	2012	Upper Mississippi River, Upper Portion	07010203-700		Aquatic Life	Fishes bioassessments	5
St Francis River	2012	Upper Mississippi River, Upper Portion	07010203-702		Aquatic Life	Fishes bioassessments	5
St Francis River	2012	Upper Mississippi River, Upper Portion	07010203-704		Aquatic Life	Fishes bioassessments	5
Clearwater River	2012	Upper Mississippi River, Upper Portion	07010203-717		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Clearwater River	2012	Upper Mississippi River, Upper Portion	07010203-717		Aquatic Life	Fishes bioassessments	5
Mississippi River	2002	Upper Mississippi River, Upper Portion	07010203-729		Aquatic Recreation	Fecal Coliform	5
Mississippi River	1998	Upper Mississippi River, Upper Portion	07010203-729		Aquatic Consumption	PCB in fish tissue	5
Crow River	2012	Upper Mississippi River, Upper Portion	07010204-502		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River	2002	Upper Mississippi River, Upper Portion	07010204-502		Aquatic Life	Fishes bioassessments	5
Crow River	2016	Upper Mississippi River, Upper Portion	07010204-502		Aquatic Life	Nutrient/eutrophication biological indicators	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-503		Aquatic Recreation	Escherichia coli	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-503		Aquatic Life	Fishes bioassessments	5
Crow River, North Fork	2016	Upper Mississippi River, Upper Portion	07010204-503		Aquatic Life	Nutrient/eutrophication biological indicators	5
Crow River, North Fork	2006	Upper Mississippi River, Upper Portion	07010204-504		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-506		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-506		Aquatic Life	Fishes bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-507		Aquatic Recreation	Escherichia coli	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-507		Aquatic Life	Fishes bioassessments	5
Crow River, Middle Fork	2012	Upper Mississippi River, Upper Portion	07010204-511		Aquatic Recreation	Escherichia coli	5
Grove Creek	2006	Upper Mississippi River, Upper Portion	07010204-514		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Grove Creek	2002	Upper Mississippi River, Upper Portion	07010204-514		Aquatic Life	Fishes bioassessments	5
Mill Creek	2012	Upper Mississippi River, Upper Portion	07010204-515		Aquatic Recreation	Escherichia coli	5
Mill Creek	2016	Upper Mississippi River, Upper Portion	07010204-515		Aquatic Life	Nutrient/eutrophication biological indicators	5
Washington Creek (County Ditch 9)	2012	Upper Mississippi River, Upper Portion	07010204-518		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2006	Upper Mississippi River, Upper Portion	07010204-543		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Battle Creek)	2006	Upper Mississippi River, Upper Portion	07010204-552		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Battle Creek)	2002	Upper Mississippi River, Upper Portion	07010204-552		Aquatic Life	Fishes bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-556		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-556		Aquatic Life	Dissolved oxygen	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-556		Aquatic Recreation	Escherichia coli	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-556		Aquatic Life	Fishes bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-556		Aquatic Life	Turbidity	5
Stag Brook	2012	Upper Mississippi River, Upper Portion	07010204-572		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Stag Brook	2012	Upper Mississippi River, Upper Portion	07010204-572		Aquatic Life	Fishes bioassessments	5
Jewitts Creek (County Ditch 19, 18, and 17)	2006	Upper Mississippi River, Upper Portion	07010204-585		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Jewitts Creek (County Ditch 19, 18, and 17)	2010	Upper Mississippi River, Upper Portion	07010204-585		Aquatic Life	Chloride	5
Jewitts Creek (County Ditch 19, 18, and 17)	2002	Upper Mississippi River, Upper Portion	07010204-585		Aquatic Life	Fishes bioassessments	5
Collinwood Creek	2012	Upper Mississippi River, Upper Portion	07010204-604		Aquatic Recreation	Escherichia coli	5
Sarah Creek	2012	Upper Mississippi River, Upper Portion	07010204-628		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2004	Upper Mississippi River, Upper Portion	07010204-667		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010204-667		Aquatic Life	Nutrient/eutrophication biological indicators	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010204-668		Aquatic Recreation	Escherichia coli	5
Twelvemile Creek	2012	Upper Mississippi River, Upper Portion	07010204-681		Aquatic Recreation	Escherichia coli	5
Sucker Creek	2012	Upper Mississippi River, Upper Portion	07010204-682		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sucker Creek	2012	Upper Mississippi River, Upper Portion	07010204-682		Aquatic Life	Turbidity	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-685		Aquatic Life	Dissolved oxygen	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-685		Aquatic Life	Fishes bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-687		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Buffalo Creek	2006	Upper Mississippi River, Upper Portion	07010205-502		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Buffalo Creek	2002	Upper Mississippi River, Upper Portion	07010205-502		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 67	2016	Upper Mississippi River, Upper Portion	07010205-504		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 67	2016	Upper Mississippi River, Upper Portion	07010205-504		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, South Fork	2010	Upper Mississippi River, Upper Portion	07010205-508		Aquatic Life	Chloride	5
Crow River, South Fork	2006	Upper Mississippi River, Upper Portion	07010205-508		Aquatic Recreation	Fecal Coliform	5
Crow River, South Fork	2002	Upper Mississippi River, Upper Portion	07010205-508		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-508		Aquatic Life	Nutrient/eutrophication biological indicators	5
Crow River, South Fork	2004	Upper Mississippi River, Upper Portion	07010205-508		Aquatic Life	Turbidity	5
Judicial Ditch 15	2016	Upper Mississippi River, Upper Portion	07010205-509		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Judicial Ditch 15	2016	Upper Mississippi River, Upper Portion	07010205-509		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-510		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-510		Aquatic Life	Dissolved oxygen	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-510		Aquatic Recreation	Escherichia coli	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-510		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-510		Aquatic Life	Nutrient/eutrophication biological indicators	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-511		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-511		Aquatic Recreation	Escherichia coli	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-511		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-511		Aquatic Life	Nutrient/eutrophication biological indicators	5
Crow River, South Fork	2006	Upper Mississippi River, Upper Portion	07010205-511		Aquatic Life	Turbidity	5
Judicial Ditch 15	2010	Upper Mississippi River, Upper Portion	07010205-513		Limited Resource Value	Escherichia coli	5
Bear Creek	2016	Upper Mississippi River, Upper Portion	07010205-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Bear Creek	2016	Upper Mississippi River, Upper Portion	07010205-515		Aquatic Life	Fishes bioassessments	5
County Ditch 4	2016	Upper Mississippi River, Upper Portion	07010205-528		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 4	2016	Upper Mississippi River, Upper Portion	07010205-528		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-533		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-533		Aquatic Life	Fishes bioassessments	5
Belle Creek	2016	Upper Mississippi River, Upper Portion	07010205-549		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Belle Creek	2016	Upper Mississippi River, Upper Portion	07010205-549		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 18	2016	Upper Mississippi River, Upper Portion	07010205-550		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 1	2016	Upper Mississippi River, Upper Portion	07010205-572		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 1	2016	Upper Mississippi River, Upper Portion	07010205-572		Aquatic Recreation	Escherichia coli	5
Judicial Ditch 1	2016	Upper Mississippi River, Upper Portion	07010205-572		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-585		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 8	2016	Upper Mississippi River, Upper Portion	07010205-591		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 8	2016	Upper Mississippi River, Upper Portion	07010205-591		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-593		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-593		Aquatic Recreation	Escherichia coli	5
Deer Creek	2016	Upper Mississippi River, Upper Portion	07010205-594		Aquatic Life	Dissolved oxygen	5
Deer Creek	2016	Upper Mississippi River, Upper Portion	07010205-594		Aquatic Recreation	Escherichia coli	5
State Ditch Branch 2	2016	Upper Mississippi River, Upper Portion	07010205-608		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
State Ditch Branch 2	2016	Upper Mississippi River, Upper Portion	07010205-608		Aquatic Life	Fishes bioassessments	5
County DItch 18	2016	Upper Mississippi River, Upper Portion	07010205-609		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County DItch 18	2016	Upper Mississippi River, Upper Portion	07010205-609		Aquatic Life	Fishes bioassessments	5
County Ditch 24A	2016	Upper Mississippi River, Upper Portion	07010205-610		Aquatic Life	Fishes bioassessments	5
County Ditch 26/27	2016	Upper Mississippi River, Upper Portion	07010205-611		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 26/27	2016	Upper Mississippi River, Upper Portion	07010205-611		Aquatic Life	Fishes bioassessments	5
King Creek	2016	Upper Mississippi River, Upper Portion	07010205-613		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-614		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-615		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-617		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-618		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-618		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-621		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-622		Aquatic Life	Fishes bioassessments	5

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Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-623		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-623		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-624		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-624		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 9	2016	Upper Mississippi River, Upper Portion	07010205-625		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 9	2016	Upper Mississippi River, Upper Portion	07010205-625		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 15 branch	2016	Upper Mississippi River, Upper Portion	07010205-626		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 15 branch	2016	Upper Mississippi River, Upper Portion	07010205-627		Aquatic Life	Fishes bioassessments	5
Judicial DItch 15 branch	2016	Upper Mississippi River, Upper Portion	07010205-628		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial DItch 15 branch	2016	Upper Mississippi River, Upper Portion	07010205-628		Aquatic Life	Fishes bioassessments	5
Unnamed ditch	2016	Upper Mississippi River, Upper Portion	07010205-630		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch	2016	Upper Mississippi River, Upper Portion	07010205-630		Aquatic Life	Fishes bioassessments	5
County Ditch 7A	2016	Upper Mississippi River, Upper Portion	07010205-631		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 7A	2016	Upper Mississippi River, Upper Portion	07010205-631		Aquatic Life	Fishes bioassessments	5
Buffalo Creek	2006	Upper Mississippi River, Upper Portion	07010205-638		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Buffalo Creek	2010	Upper Mississippi River, Upper Portion	07010205-638		Aquatic Life	Dissolved oxygen	5
Buffalo Creek	2002	Upper Mississippi River, Upper Portion	07010205-638		Aquatic Life	Fishes bioassessments	5
Silver Creek (County Ditch 13)	2016	Upper Mississippi River, Upper Portion	07010205-641		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Silver Creek (County Ditch 13)	2016	Upper Mississippi River, Upper Portion	07010205-641		Aquatic Life	Fishes bioassessments	5
Otter Creek	2016	Upper Mississippi River, Upper Portion	07010205-642		Aquatic Life	Fishes bioassessments	5
Otter Creek	2016	Upper Mississippi River, Upper Portion	07010205-643		Aquatic Recreation	Escherichia coli	5
Otter Creek	2016	Upper Mississippi River, Upper Portion	07010205-643		Aquatic Life	Fishes bioassessments	5
County Ditch 33	2016	Upper Mississippi River, Upper Portion	07010205-645		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 33	2016	Upper Mississippi River, Upper Portion	07010205-645		Aquatic Life	Fishes bioassessments	5
County Ditch 9	2016	Upper Mississippi River, Upper Portion	07010205-648		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 9	2016	Upper Mississippi River, Upper Portion	07010205-648		Aquatic Life	Fishes bioassessments	5
Pioneer Creek	2016	Upper Mississippi River, Upper Portion	07010205-653		Aquatic Life	Dissolved oxygen	5
Pioneer Creek	2016	Upper Mississippi River, Upper Portion	07010205-653		Aquatic Recreation	Escherichia coli	5
Pioneer Creek	2016	Upper Mississippi River, Upper Portion	07010205-654		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pioneer Creek	2016	Upper Mississippi River, Upper Portion	07010205-654		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-656		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-656		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2006	Upper Mississippi River, Upper Portion	07010205-658		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-658		Aquatic Recreation	Escherichia coli	5
Crow River, South Fork	2002	Upper Mississippi River, Upper Portion	07010205-658		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-658		Aquatic Life	Nutrient/eutrophication biological indicators	5
Crow River, South Fork	2006	Upper Mississippi River, Upper Portion	07010205-658		Aquatic Life	Turbidity	5
Crow River, South Fork	2006	Upper Mississippi River, Upper Portion	07010205-659		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-659		Aquatic Recreation	Escherichia coli	5
Crow River, South Fork	2002	Upper Mississippi River, Upper Portion	07010205-659		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-659		Aquatic Life	Nutrient/eutrophication biological indicators	5
Crow River, South Fork	2006	Upper Mississippi River, Upper Portion	07010205-659		Aquatic Life	Turbidity	5
Mississippi River	1998	Upper Mississippi River, Upper Portion	07010206-501		Aquatic Consumption	PCB in fish tissue	5
Mississippi River	1998	Upper Mississippi River, Upper Portion	07010206-502		Aquatic Consumption	PCB in fish tissue	5
Mississippi River	2008	Upper Mississippi River, Upper Portion	07010206-502		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5

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Mississippi River	2014	Upper Mississippi River, Upper Portion	07010206-502		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in water column	5
Mississippi River	2002	Upper Mississippi River, Upper Portion	07010206-503		Aquatic Recreation	Fecal Coliform	5
Mississippi River	1998	Upper Mississippi River, Upper Portion	07010206-504		Aquatic Consumption	PCB in fish tissue	5
Mississippi River	1996	Upper Mississippi River, Upper Portion	07010206-505		Aquatic Recreation	Fecal Coliform	5
Mississippi River	1998	Upper Mississippi River, Upper Portion	07010206-505		Aquatic Consumption	PCB in fish tissue	5
Elm Creek	2014	Upper Mississippi River, Upper Portion	07010206-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Elm Creek	2004	Upper Mississippi River, Upper Portion	07010206-508		Aquatic Life	Dissolved oxygen	5
Elm Creek	2010	Upper Mississippi River, Upper Portion	07010206-508		Aquatic Recreation	Escherichia coli	5
Elm Creek	2014	Upper Mississippi River, Upper Portion	07010206-508		Aquatic Life	Fishes bioassessments	5
Mississippi River	1998	Upper Mississippi River, Upper Portion	07010206-513		Aquatic Consumption	PCB in fish tissue	5
Mississippi River	1998	Upper Mississippi River, Upper Portion	07010206-514		Aquatic Consumption	PCB in fish tissue	5
Unnamed creek	2002	Upper Mississippi River, Upper Portion	07010206-517		Aquatic Life	Fishes bioassessments	5
Clearwater Creek	2006	Upper Mississippi River, Upper Portion	07010206-519		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Clearwater Creek	2002	Upper Mississippi River, Upper Portion	07010206-519		Aquatic Life	Fishes bioassessments	5
Diamond Creek	2014	Upper Mississippi River, Upper Portion	07010206-525		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Diamond Creek	2010	Upper Mississippi River, Upper Portion	07010206-525		Aquatic Life	Dissolved oxygen	5
Diamond Creek	2010	Upper Mississippi River, Upper Portion	07010206-525		Aquatic Recreation	Escherichia coli	5
Diamond Creek	2014	Upper Mississippi River, Upper Portion	07010206-525		Aquatic Life	Fishes bioassessments	5
Rush Creek	2014	Upper Mississippi River, Upper Portion	07010206-528		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rush Creek	2010	Upper Mississippi River, Upper Portion	07010206-528		Aquatic Life	Dissolved oxygen	5
Rush Creek	2010	Upper Mississippi River, Upper Portion	07010206-528		Aquatic Recreation	Escherichia coli	5
Rush Creek	2002	Upper Mississippi River, Upper Portion	07010206-528		Aquatic Life	Fishes bioassessments	5
Bassett Creek	2004	Upper Mississippi River, Upper Portion	07010206-538		Aquatic Life	Fishes bioassessments	5
Minnehaha Creek	2014	Upper Mississippi River, Upper Portion	07010206-539		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Minnehaha Creek	2010	Upper Mississippi River, Upper Portion	07010206-539		Aquatic Life	Dissolved oxygen	5
Minnehaha Creek	2004	Upper Mississippi River, Upper Portion	07010206-539		Aquatic Life	Fishes bioassessments	5
Sixmile Creek	2016	Upper Mississippi River, Upper Portion	07010206-551		Aquatic Life	Nutrient/eutrophication biological indicators	5
Unnamed ditch (Ramsey/Washington Judicial Ditch 1)	2004	Upper Mississippi River, Upper Portion	07010206-565		Aquatic Life	Dissolved oxygen	5
Rice Creek	2006	Upper Mississippi River, Upper Portion	07010206-583		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rice Creek	2004	Upper Mississippi River, Upper Portion	07010206-583		Aquatic Life	Fishes bioassessments	5
Rice Creek	2006	Upper Mississippi River, Upper Portion	07010206-584		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rice Creek	2014	Upper Mississippi River, Upper Portion	07010206-584		Aquatic Life	Fishes bioassessments	5
Battle Creek	2014	Upper Mississippi River, Upper Portion	07010206-592		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Battle Creek	2014	Upper Mississippi River, Upper Portion	07010206-592		Aquatic Life	Fishes bioassessments	5
Hardwood Creek	2004	Upper Mississippi River, Upper Portion	07010206-595		Aquatic Life	Dissolved oxygen	5
Fish Creek	2014	Upper Mississippi River, Upper Portion	07010206-606		Aquatic Recreation	Escherichia coli	5
Rush Creek, South Fork	2014	Upper Mississippi River, Upper Portion	07010206-732		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rush Creek, South Fork	2010	Upper Mississippi River, Upper Portion	07010206-732		Aquatic Recreation	Escherichia coli	5
Rush Creek, South Fork	2014	Upper Mississippi River, Upper Portion	07010206-732		Aquatic Life	Fishes bioassessments	5
Rush Creek, South Fork	2014	Upper Mississippi River, Upper Portion	07010206-760		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rush Creek, South Fork	2014	Upper Mississippi River, Upper Portion	07010206-760		Aquatic Life	Fishes bioassessments	5
Mississippi River	2002	Upper Mississippi River, Upper Portion	07010206-805		Aquatic Recreation	Fecal Coliform	5
Mississippi River	2016	Upper Mississippi River, Upper Portion	07010206-805		Aquatic Life	Nutrient/eutrophication biological indicators	5
Mississippi River	1998	Upper Mississippi River, Upper Portion	07010206-805		Aquatic Consumption	PCB in fish tissue	5

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Mississippi River Pool 2	2016	Upper Mississippi River, Upper Portion	07010206-806		Aquatic Life	Nutrient/eutrophication biological indicators	5
Stanchfield Creek	2016	Upper Mississippi River, Upper Portion	07010207-520		Aquatic Life	Fishes bioassessments	5
Cedar Creek	2016	Upper Mississippi River, Upper Portion	07010207-521		Aquatic Recreation	Escherichia coli	5
Bogus Brook	2016	Upper Mississippi River, Upper Portion	07010207-523		Aquatic Recreation	Escherichia coli	5
Rum River, West Branch	2016	Upper Mississippi River, Upper Portion	07010207-525		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rum River, West Branch	2016	Upper Mississippi River, Upper Portion	07010207-525		Aquatic Recreation	Escherichia coli	5
Seelye Brook	2016	Upper Mississippi River, Upper Portion	07010207-528		Aquatic Recreation	Escherichia coli	5
Cedar Creek (Little River)	2010	Upper Mississippi River, Upper Portion	07010207-546		Aquatic Life	Dissolved oxygen	5
Malone Creek (Thains Creek)	2012	Upper Mississippi River, Upper Portion	07010207-547	Mille Lacs	Aquatic Life	Dissolved oxygen	5
Borden Creek	2010	Upper Mississippi River, Upper Portion	07010207-554		Aquatic Life	Dissolved oxygen	5
Vondell Brook	2016	Upper Mississippi River, Upper Portion	07010207-567		Aquatic Life	Fishes bioassessments	5
Crooked Brook	2006	Upper Mississippi River, Upper Portion	07010207-575		Aquatic Life	Dissolved oxygen	5
Isanti Brook	2016	Upper Mississippi River, Upper Portion	07010207-592		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Isanti Brook	2016	Upper Mississippi River, Upper Portion	07010207-592		Aquatic Life	Fishes bioassessments	5
Washburn Brook	2016	Upper Mississippi River, Upper Portion	07010207-641		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010207-667		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Tibbetts Brook	2016	Upper Mississippi River, Upper Portion	07010207-676		Aquatic Life	Fishes bioassessments	5
Tibbetts Brook	2016	Upper Mississippi River, Upper Portion	07010207-677		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Estes Brook	2016	Upper Mississippi River, Upper Portion	07010207-679		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Estes Brook	2016	Upper Mississippi River, Upper Portion	07010207-679		Aquatic Recreation	Escherichia coli	5
Trott Brook	2016	Upper Mississippi River, Upper Portion	07010207-680		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Trott Brook	2016	Upper Mississippi River, Upper Portion	07010207-680		Aquatic Life	Dissolved oxygen	5
Trott Brook	2016	Upper Mississippi River, Upper Portion	07010207-680		Aquatic Life	Fishes bioassessments	5
Mahoney Brook	2016	Upper Mississippi River, Upper Portion	07010207-682		Aquatic Life	Fishes bioassessments	5
Vondell Brook	2016	Upper Mississippi River, Upper Portion	07010207-687		Aquatic Life	Fishes bioassessments	5
Eagle	2002	Upper Mississippi River, Upper Portion	09-0057-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Upper (North) Island	2010	Upper Mississippi River, Upper Portion	09-0060-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lower (South) Island	2008	Upper Mississippi River, Upper Portion	09-0060-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cross	1998	Upper Mississippi River, Upper Portion	09-0062-00		Aquatic Consumption	Mercury in fish tissue	5
Tamarack	1998	Upper Mississippi River, Upper Portion	09-0067-00		Aquatic Consumption	Mercury in fish tissue	5
Tamarack	2010	Upper Mississippi River, Upper Portion	09-0067-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Steiger	1998	Upper Mississippi River, Upper Portion	10-0045-00		Aquatic Consumption	Mercury in fish tissue	5
Mud	2016	Upper Mississippi River, Upper Portion	10-0094-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Vermillion	2012	Upper Mississippi River, Upper Portion	11-0029-00		Aquatic Consumption	Mercury in fish tissue	5
Roosevelt - North	2014	Upper Mississippi River, Upper Portion	11-0043-01		Aquatic Consumption	Mercury in fish tissue	5
Roosevelt - South	2014	Upper Mississippi River, Upper Portion	11-0043-02		Aquatic Consumption	Mercury in fish tissue	5
Lawrence	2012	Upper Mississippi River, Upper Portion	11-0053-00		Aquatic Consumption	Mercury in fish tissue	5
Mitten	2016	Upper Mississippi River, Upper Portion	11-0114-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Stevens	1998	Upper Mississippi River, Upper Portion	11-0116-00		Aquatic Consumption	Mercury in fish tissue	5
Boy	2008	Upper Mississippi River, Upper Portion	11-0143-00	Leech Lake	Aquatic Consumption	Mercury in fish tissue	5
Agate	1998	Upper Mississippi River, Upper Portion	11-0216-00		Aquatic Consumption	Mercury in fish tissue	5
Ten Mile	1998	Upper Mississippi River, Upper Portion	11-0413-00		Aquatic Consumption	Mercury in fish tissue	5
Portage	2012	Upper Mississippi River, Upper Portion	11-0476-00		Aquatic Consumption	Mercury in fish tissue	5
Steamboat	2006	Upper Mississippi River, Upper Portion	11-0504-00	Leech Lake	Aquatic Consumption	Mercury in fish tissue	5
CROOKED (SUGAR BAY)	2012	Upper Mississippi River, Upper Portion	18-0041-01		Aquatic Consumption	Mercury in fish tissue	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
CROOKED (MAIN BAY)	2012	Upper Mississippi River, Upper Portion	18-0041-02		Aquatic Consumption	Mercury in fish tissue	5
Hanks	2012	Upper Mississippi River, Upper Portion	18-0044-00		Aquatic Consumption	Mercury in fish tissue	5
Platte	2010	Upper Mississippi River, Upper Portion	18-0088-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Crow Wing	2010	Upper Mississippi River, Upper Portion	18-0155-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Emily	2016	Upper Mississippi River, Upper Portion	18-0203-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Kego	2010	Upper Mississippi River, Upper Portion	18-0293-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Rush	2014	Upper Mississippi River, Upper Portion	18-0311-00		Aquatic Consumption	Mercury in fish tissue	5
Little Pelican	2012	Upper Mississippi River, Upper Portion	18-0351-00		Aquatic Consumption	Mercury in fish tissue	5
Ossawinnamakee	1998	Upper Mississippi River, Upper Portion	18-0352-00		Aquatic Consumption	Mercury in fish tissue	5
Kimball	2012	Upper Mississippi River, Upper Portion	18-0361-00		Aquatic Consumption	Mercury in fish tissue	5
Lower Hay	2014	Upper Mississippi River, Upper Portion	18-0378-00		Aquatic Consumption	Mercury in fish tissue	5
Jail	2012	Upper Mississippi River, Upper Portion	18-0415-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Smith	2012	Upper Mississippi River, Upper Portion	21-0016-00		Aquatic Consumption	Mercury in fish tissue	5
Henry	2010	Upper Mississippi River, Upper Portion	21-0051-00		Aquatic Life	Chloride	5
Henry	2014	Upper Mississippi River, Upper Portion	21-0051-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Agnes	2010	Upper Mississippi River, Upper Portion	21-0053-00		Aquatic Life	Chloride	5
Agnes	2014	Upper Mississippi River, Upper Portion	21-0053-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Jessie	2014	Upper Mississippi River, Upper Portion	21-0055-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Carlos	1998	Upper Mississippi River, Upper Portion	21-0057-00		Aquatic Consumption	Mercury in fish tissue	5
Winona	2010	Upper Mississippi River, Upper Portion	21-0081-00		Aquatic Life	Chloride	5
Winona	2002	Upper Mississippi River, Upper Portion	21-0081-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mina	2010	Upper Mississippi River, Upper Portion	21-0108-00		Aquatic Consumption	Mercury in fish tissue	5
Echo	2014	Upper Mississippi River, Upper Portion	21-0157-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mill	2014	Upper Mississippi River, Upper Portion	21-0180-00		Aquatic Consumption	Mercury in fish tissue	5
Crooked (East Crooked)	2014	Upper Mississippi River, Upper Portion	21-0199-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Harriet	1998	Upper Mississippi River, Upper Portion	27-0016-00		Aquatic Consumption	Mercury in fish tissue	5
Harriet	2008	Upper Mississippi River, Upper Portion	27-0016-00		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Nokomis	1998	Upper Mississippi River, Upper Portion	27-0019-00		Aquatic Consumption	PCB in fish tissue	5
Calhoun	1998	Upper Mississippi River, Upper Portion	27-0031-00		Aquatic Consumption	Mercury in fish tissue	5
Calhoun	2008	Upper Mississippi River, Upper Portion	27-0031-00		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Cedar	1998	Upper Mississippi River, Upper Portion	27-0039-00		Aquatic Consumption	Mercury in fish tissue	5
Lake of the Isles	2008	Upper Mississippi River, Upper Portion	27-0040-00		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Upper Twin	1998	Upper Mississippi River, Upper Portion	27-0042-01		Aquatic Consumption	PCB in fish tissue	5
Upper Twin	2010	Upper Mississippi River, Upper Portion	27-0042-01		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Middle Twin	1998	Upper Mississippi River, Upper Portion	27-0042-02		Aquatic Consumption	PCB in fish tissue	5
Middle Twin	2010	Upper Mississippi River, Upper Portion	27-0042-02		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Lower Twin	1998	Upper Mississippi River, Upper Portion	27-0042-03		Aquatic Consumption	PCB in fish tissue	5
Lower Twin	2010	Upper Mississippi River, Upper Portion	27-0042-03		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Unnamed	2008	Upper Mississippi River, Upper Portion	27-0053-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Windsor	2008	Upper Mississippi River, Upper Portion	27-0082-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Parkers	1998	Upper Mississippi River, Upper Portion	27-0107-00		Aquatic Consumption	Mercury in fish tissue	5
Rice Main Lake	2010	Upper Mississippi River, Upper Portion	27-0116-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fish	2008	Upper Mississippi River, Upper Portion	27-0118-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Diamond	2006	Upper Mississippi River, Upper Portion	27-0125-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Peavey	2014	Upper Mississippi River, Upper Portion	27-0138-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
PETER (NORTH BAY)	2016	Upper Mississippi River, Upper Portion	27-0147-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5

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Spurzem	2008	Upper Mississippi River, Upper Portion	27-0149-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Half Moon	2016	Upper Mississippi River, Upper Portion	27-0152-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Ardmore	2016	Upper Mississippi River, Upper Portion	27-0153-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cowley	2010	Upper Mississippi River, Upper Portion	27-0169-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Henry	2008	Upper Mississippi River, Upper Portion	27-0175-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
North Whaletail	2008	Upper Mississippi River, Upper Portion	27-0184-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
South Whaletail	2006	Upper Mississippi River, Upper Portion	27-0184-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Irene, Lake	2016	Upper Mississippi River, Upper Portion	27-0189-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Rebecca	2008	Upper Mississippi River, Upper Portion	27-0192-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Hafften	2012	Upper Mississippi River, Upper Portion	27-0199-00		Aquatic Consumption	Mercury in fish tissue	5
Northwood	2004	Upper Mississippi River, Upper Portion	27-0627-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Twin	2006	Upper Mississippi River, Upper Portion	27-0656-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Williams	2002	Upper Mississippi River, Upper Portion	29-0015-00		Aquatic Consumption	Mercury in fish tissue	5
Tenth Crow Wing	2002	Upper Mississippi River, Upper Portion	29-0045-00		Aquatic Consumption	Mercury in fish tissue	5
Benedict	2012	Upper Mississippi River, Upper Portion	29-0048-00		Aquatic Consumption	Mercury in fish tissue	5
Hart	2016	Upper Mississippi River, Upper Portion	29-0063-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Kabekona	1998	Upper Mississippi River, Upper Portion	29-0075-00		Aquatic Consumption	Mercury in fish tissue	5
East Crooked	2010	Upper Mississippi River, Upper Portion	29-0101-01		Aquatic Consumption	Mercury in fish tissue	5
Little Sand	2014	Upper Mississippi River, Upper Portion	29-0150-00		Aquatic Consumption	Mercury in fish tissue	5
Blue	2002	Upper Mississippi River, Upper Portion	29-0184-00		Aquatic Consumption	Mercury in fish tissue	5
Frontenac	2016	Upper Mississippi River, Upper Portion	29-0241-00		Aquatic Consumption	Mercury in fish tissue	5
Alice	2016	Upper Mississippi River, Upper Portion	29-0286-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Beauty	2004	Upper Mississippi River, Upper Portion	29-0292-00		Aquatic Consumption	Mercury in fish tissue	5
Little Mantrap	2010	Upper Mississippi River, Upper Portion	29-0313-00		Aquatic Consumption	Mercury in fish tissue	5
Skogman	2008	Upper Mississippi River, Upper Portion	30-0022-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fannie	2008	Upper Mississippi River, Upper Portion	30-0043-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Little Stanchfield	2016	Upper Mississippi River, Upper Portion	30-0044-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Long	2016	Upper Mississippi River, Upper Portion	30-0072-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Francis	2016	Upper Mississippi River, Upper Portion	30-0080-00		Aquatic Life	Fishes bioassessments	5
Francis	2002	Upper Mississippi River, Upper Portion	30-0080-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Tennyson	2016	Upper Mississippi River, Upper Portion	30-0113-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Baxter	2016	Upper Mississippi River, Upper Portion	30-0114-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Green	2016	Upper Mississippi River, Upper Portion	30-0136-00		Aquatic Life	Fishes bioassessments	5
Green	2008	Upper Mississippi River, Upper Portion	30-0136-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Green	1998	Upper Mississippi River, Upper Portion	30-0136-00		Aquatic Consumption	PCB in fish tissue	5
South Stanchfield	2016	Upper Mississippi River, Upper Portion	30-0138-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
North Stanchfield	2016	Upper Mississippi River, Upper Portion	30-0143-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
O'Brien (north portion)	1998	Upper Mississippi River, Upper Portion	31-0032-01		Aquatic Consumption	Mercury in fish tissue	5
O'Brien (south portion)	1998	Upper Mississippi River, Upper Portion	31-0032-02		Aquatic Consumption	Mercury in fish tissue	5
Snowball	1998	Upper Mississippi River, Upper Portion	31-0108-00		Aquatic Consumption	Mercury in fish tissue	5
Wolf	1998	Upper Mississippi River, Upper Portion	31-0152-00		Aquatic Consumption	Mercury in fish tissue	5
Crooked	1998	Upper Mississippi River, Upper Portion	31-0193-00		Aquatic Consumption	Mercury in fish tissue	5
Trout	1998	Upper Mississippi River, Upper Portion	31-0216-00		Aquatic Consumption	Mercury in fish tissue	5
Lawrence	2012	Upper Mississippi River, Upper Portion	31-0231-00		Aquatic Consumption	Mercury in fish tissue	5
Balsam	2014	Upper Mississippi River, Upper Portion	31-0259-00		Aquatic Consumption	Mercury in fish tissue	5
Split Hand	2010	Upper Mississippi River, Upper Portion	31-0353-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Prairie	1998	Upper Mississippi River, Upper Portion	31-0384-00		Aquatic Consumption	Mercury in fish tissue	5
Prairie	2010	Upper Mississippi River, Upper Portion	31-0384-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Long	2002	Upper Mississippi River, Upper Portion	31-0570-00		Aquatic Consumption	Mercury in fish tissue	5
Rice	1998	Upper Mississippi River, Upper Portion	31-0717-00		Aquatic Consumption	Mercury in fish tissue	5
Dixon	2008	Upper Mississippi River, Upper Portion	31-0921-00	Leech Lake	Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Decker	2006	Upper Mississippi River, Upper Portion	31-0934-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lewis	1998	Upper Mississippi River, Upper Portion	33-0032-00		Aquatic Consumption	Mercury in fish tissue	5
Johnson	2016	Upper Mississippi River, Upper Portion	34-0012-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lillian	2016	Upper Mississippi River, Upper Portion	34-0072-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Minnetaga	2016	Upper Mississippi River, Upper Portion	34-0076-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Green	1998	Upper Mississippi River, Upper Portion	34-0079-00		Aquatic Consumption	Mercury in fish tissue	5
Big Kandiyohi	2008	Upper Mississippi River, Upper Portion	34-0086-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Little Kandiyohi	2010	Upper Mississippi River, Upper Portion	34-0096-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Kasota	2010	Upper Mississippi River, Upper Portion	34-0105-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lake Monongalia - main basin	2006	Upper Mississippi River, Upper Portion	34-0158-01		Aquatic Consumption	Mercury in fish tissue	5
Lake Monongalia - Middle Fork Crow River	2006	Upper Mississippi River, Upper Portion	34-0158-02		Aquatic Consumption	Mercury in fish tissue	5
Crow River Mill Pond (East)	2006	Upper Mississippi River, Upper Portion	34-0158-03		Aquatic Consumption	Mercury in fish tissue	5
Crow River Mill Pond(Middle)	2006	Upper Mississippi River, Upper Portion	34-0158-04		Aquatic Consumption	Mercury in fish tissue	5
Crow River Mill Pond (West)	2006	Upper Mississippi River, Upper Portion	34-0158-05		Aquatic Consumption	Mercury in fish tissue	5
Wakanda, Lake (Main Basin	2008	Upper Mississippi River, Upper Portion	34-0169-03		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Winsted	2016	Upper Mississippi River, Upper Portion	43-0012-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
South	2016	Upper Mississippi River, Upper Portion	43-0014-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Silver	2016	Upper Mississippi River, Upper Portion	43-0034-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bear	2016	Upper Mississippi River, Upper Portion	43-0076-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Marion	2010	Upper Mississippi River, Upper Portion	43-0084-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cedar	2010	Upper Mississippi River, Upper Portion	43-0115-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Little Swan	2016	Upper Mississippi River, Upper Portion	47-0025-00		Aquatic Consumption	Mercury in fish tissue	5
Belle Lake	2016	Upper Mississippi River, Upper Portion	47-0049-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Willie	2016	Upper Mississippi River, Upper Portion	47-0061-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Greenleaf	2010	Upper Mississippi River, Upper Portion	47-0062-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Hoff	2016	Upper Mississippi River, Upper Portion	47-0106-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Goose	2016	Upper Mississippi River, Upper Portion	47-0127-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Thompson	2016	Upper Mississippi River, Upper Portion	47-0159-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Twelve	2016	Upper Mississippi River, Upper Portion	49-0006-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Nelson	2014	Upper Mississippi River, Upper Portion	56-0065-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fish	2014	Upper Mississippi River, Upper Portion	56-0066-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Twin	2014	Upper Mississippi River, Upper Portion	56-0067-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Westport	2010	Upper Mississippi River, Upper Portion	61-0029-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Wakefield	2002	Upper Mississippi River, Upper Portion	62-0011-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2014	Upper Mississippi River, Upper Portion	62-0022-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Priebe	2014	Upper Mississippi River, Upper Portion	62-0036-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
West Vadnais	2014	Upper Mississippi River, Upper Portion	62-0038-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5

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Pleasant	2014	Upper Mississippi River, Upper Portion	62-0046-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bennett	2006	Upper Mississippi River, Upper Portion	62-0048-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Little Johanna	2012	Upper Mississippi River, Upper Portion	62-0058-00		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Turtle	2002	Upper Mississippi River, Upper Portion	62-0061-00		Aquatic Consumption	Mercury in fish tissue	5
Island (Basin S.of I-694)	2012	Upper Mississippi River, Upper Portion	62-0075-01		Aquatic Consumption	Mercury in fish tissue	5
ISLAND (BASIN N. OF I-694)	2012	Upper Mississippi River, Upper Portion	62-0075-02		Aquatic Consumption	Mercury in fish tissue	5
Jones	2008	Upper Mississippi River, Upper Portion	62-0076-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Jones	2008	Upper Mississippi River, Upper Portion	62-0076-00		Aquatic Life	Aquatic plant bioassessments	5
Johanna	2010	Upper Mississippi River, Upper Portion	62-0078-00		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Unnamed	1998	Upper Mississippi River, Upper Portion	62-0237-00		Aquatic Consumption	PCB in fish tissue	5
Preston	2016	Upper Mississippi River, Upper Portion	65-0002-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Boon	2016	Upper Mississippi River, Upper Portion	65-0013-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Prairie	1998	Upper Mississippi River, Upper Portion	69-0848-00		Aquatic Consumption	Mercury in fish tissue	5
Fremont	2012	Upper Mississippi River, Upper Portion	71-0016-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
West Hunter	2016	Upper Mississippi River, Upper Portion	71-0022-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
East Hunter	2016	Upper Mississippi River, Upper Portion	71-0023-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Diann	2012	Upper Mississippi River, Upper Portion	71-0046-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Elk	2012	Upper Mississippi River, Upper Portion	71-0055-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Goodners	2012	Upper Mississippi River, Upper Portion	73-0076-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Schneider	2004	Upper Mississippi River, Upper Portion	73-0082-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Great Northern	2004	Upper Mississippi River, Upper Portion	73-0083-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Knaus	2004	Upper Mississippi River, Upper Portion	73-0086-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Krays	2004	Upper Mississippi River, Upper Portion	73-0087-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bolfing	2004	Upper Mississippi River, Upper Portion	73-0088-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Zumwalde	2004	Upper Mississippi River, Upper Portion	73-0089-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cedar Island (Main Bay)	2004	Upper Mississippi River, Upper Portion	73-0133-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cedar Island (Koetter Lk)	2004	Upper Mississippi River, Upper Portion	73-0133-03		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Two Rivers	2010	Upper Mississippi River, Upper Portion	73-0138-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Long	2004	Upper Mississippi River, Upper Portion	73-0139-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
North Brown's	2016	Upper Mississippi River, Upper Portion	73-0147-00		Aquatic Consumption	Mercury in fish tissue	5
North Brown's	2008	Upper Mississippi River, Upper Portion	73-0147-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Eden	2016	Upper Mississippi River, Upper Portion	73-0150-00		Aquatic Consumption	Mercury in fish tissue	5
Eden	2010	Upper Mississippi River, Upper Portion	73-0150-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Vails	2010	Upper Mississippi River, Upper Portion	73-0151-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Horseshoe	2004	Upper Mississippi River, Upper Portion	73-0157-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Big	2014	Upper Mississippi River, Upper Portion	73-0159-00		Aquatic Consumption	Mercury in fish tissue	5
Sand	2010	Upper Mississippi River, Upper Portion	73-0199-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Uhlenkolts	2012	Upper Mississippi River, Upper Portion	73-0208-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Maria	2006	Upper Mississippi River, Upper Portion	73-0215-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Henry	2012	Upper Mississippi River, Upper Portion	73-0237-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Ellering	2012	Upper Mississippi River, Upper Portion	73-0244-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
McCormic	2010	Upper Mississippi River, Upper Portion	73-0273-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
George	2012	Upper Mississippi River, Upper Portion	73-0611-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Trace	2008	Upper Mississippi River, Upper Portion	77-0009-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Big Swan	2010	Upper Mississippi River, Upper Portion	77-0023-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Long	2012	Upper Mississippi River, Upper Portion	77-0027-00		Aquatic Consumption	Mercury in fish tissue	5
Latimer	2014	Upper Mississippi River, Upper Portion	77-0105-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Sauk (Southwest Bay)	2004	Upper Mississippi River, Upper Portion	77-0150-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Juergens	2012	Upper Mississippi River, Upper Portion	77-0163-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Little Sauk	2012	Upper Mississippi River, Upper Portion	77-0164-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Maple	2010	Upper Mississippi River, Upper Portion	77-0181-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Guernsey	2012	Upper Mississippi River, Upper Portion	77-0182-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lower Twin	2010	Upper Mississippi River, Upper Portion	80-0030-00		Aquatic Consumption	Mercury in fish tissue	5
White Rock	2010	Upper Mississippi River, Upper Portion	82-0072-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2006	Upper Mississippi River, Upper Portion	82-0087-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Markgrafs	2006	Upper Mississippi River, Upper Portion	82-0089-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Wilmes	2006	Upper Mississippi River, Upper Portion	82-0090-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Colby	2006	Upper Mississippi River, Upper Portion	82-0094-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
La	2014	Upper Mississippi River, Upper Portion	82-0097-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fish	2006	Upper Mississippi River, Upper Portion	82-0137-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Charlotte	2012	Upper Mississippi River, Upper Portion	86-0011-00		Aquatic Consumption	Mercury in fish tissue	5
School	2012	Upper Mississippi River, Upper Portion	86-0025-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Hunters	2012	Upper Mississippi River, Upper Portion	86-0026-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Rice	2016	Upper Mississippi River, Upper Portion	86-0032-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mud	2008	Upper Mississippi River, Upper Portion	86-0085-00		Aquatic Life	Aquatic plant bioassessments	5
Little Mary (South Bay)	2012	Upper Mississippi River, Upper Portion	86-0139-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Little Mary (North Bay)	2012	Upper Mississippi River, Upper Portion	86-0139-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Millstone	2012	Upper Mississippi River, Upper Portion	86-0152-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Clearwater (East)	1998	Upper Mississippi River, Upper Portion	86-0252-01		Aquatic Consumption	Mercury in fish tissue	5
Clearwater (West)	1998	Upper Mississippi River, Upper Portion	86-0252-02		Aquatic Consumption	Mercury in fish tissue	5
Cokato	2016	Upper Mississippi River, Upper Portion	86-0263-00		Aquatic Consumption	Mercury in fish tissue	5

Appendix 3: Approved 2018 303(d) List of Impaired Waters Needing TMDLs

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Cedar River	2012	Cedar River	07080201-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cedar River	2012	Cedar River	07080201-501		Aquatic Life	Fishes bioassessments	5
Cedar River	2002	Cedar River	07080201-501		Aquatic Life	Turbidity	5
Cedar River	2002	Cedar River	07080201-502		Aquatic Consumption	PCB in fish tissue	5
Cedar River	2002	Cedar River	07080201-502		Aquatic Life	Turbidity	5
Cedar River	2012	Cedar River	07080201-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cedar River	2006	Cedar River	07080201-503		Aquatic Recreation	Fecal Coliform	5
Cedar River	2002	Cedar River	07080201-503		Aquatic Consumption	PCB in fish tissue	5
Roberts Creek	2012	Cedar River	07080201-504		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Roberts Creek	2006	Cedar River	07080201-504		Aquatic Recreation	Fecal Coliform	5
Roberts Creek	2012	Cedar River	07080201-506		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Roberts Creek	2012	Cedar River	07080201-506		Aquatic Life	Fishes bioassessments	5
Wolf Creek	2006	Cedar River	07080201-510		Aquatic Recreation	Fecal Coliform	5
Cedar River	2002	Cedar River	07080201-511		Aquatic Consumption	PCB in fish tissue	5
Cedar River	2006	Cedar River	07080201-512		Aquatic Consumption	PCB in fish tissue	5
Cedar River	2012	Cedar River	07080201-514		Aquatic Recreation	Escherichia coli	5
Cedar River	2012	Cedar River	07080201-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cedar River	2012	Cedar River	07080201-515		Aquatic Life	Turbidity	5
Cedar River	2012	Cedar River	07080201-516		Aquatic Recreation	Escherichia coli	5
Cedar River	2012	Cedar River	07080201-516		Aquatic Life	Turbidity	5
Otter Creek	2006	Cedar River	07080201-517		Aquatic Recreation	Fecal Coliform	5
Little Cedar River	2012	Cedar River	07080201-518		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2012	Cedar River	07080201-519		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Cedar River	07080201-520		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rose Creek	2006	Cedar River	07080201-522		Aquatic Recreation	Fecal Coliform	5
Rose Creek	2012	Cedar River	07080201-522		Aquatic Life	Turbidity	5
Schwerin Creek	2012	Cedar River	07080201-523		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Woodbury Creek	2006	Cedar River	07080201-526		Aquatic Recreation	Fecal Coliform	5
Little Cedar River (Cedar River, Middle Fork)	2012	Cedar River	07080201-530		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Cedar River	07080201-533		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2006	Cedar River	07080201-533		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2012	Cedar River	07080201-534		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Cedar River	07080201-534		Aquatic Life	Fishes bioassessments	5
Dobbins Creek	2006	Cedar River	07080201-535		Aquatic Recreation	Fecal Coliform	5
Dobbins Creek	2012	Cedar River	07080201-535		Aquatic Life	Turbidity	5
Dobbins Creek	2006	Cedar River	07080201-537		Aquatic Recreation	Fecal Coliform	5
Dobbins Creek	2006	Cedar River	07080201-537		Aquatic Life	Turbidity	5
Orchard Creek	2006	Cedar River	07080201-539		Aquatic Recreation	Fecal Coliform	5
Turtle Creek	2012	Cedar River	07080201-540		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Turtle Creek	2006	Cedar River	07080201-540		Aquatic Recreation	Fecal Coliform	5
Turtle Creek	2012	Cedar River	07080201-540		Aquatic Life	Fishes bioassessments	5
Turtle Creek	2006	Cedar River	07080201-540		Aquatic Life	Turbidity	5
Unnamed creek	2012	Cedar River	07080201-547		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Cedar River, Middle Fork	2012	Cedar River	07080201-549		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Unnamed creek (Woodson Creek)	2012	Cedar River	07080201-554		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Woodson Creek)	2012	Cedar River	07080201-554		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Cedar River	07080201-577		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Cedar River	07080201-583		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Cedar River, West Fork)	2012	Cedar River	07080201-591		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Cedar River	07080201-593		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Shell Rock River	2012	Cedar River	07080202-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Shell Rock River	2012	Cedar River	07080202-501		Aquatic Life	Dissolved oxygen	5
Shell Rock River	2012	Cedar River	07080202-501		Aquatic Life	Fishes bioassessments	5
Shell Rock River	2016	Cedar River	07080202-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Shell Rock River	2008	Cedar River	07080202-501		Aquatic Life	pH	5
Shell Rock River	2002	Cedar River	07080202-501		Aquatic Life	Turbidity	5
Bancroft Creek (County Ditch 63)	2012	Cedar River	07080202-507		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2016	Cedar River	07080202-516		Aquatic Life	Nutrient/eutrophication biological indicators	5
Unnamed creek	2010	Cedar River	07080202-516		Aquatic Life	Turbidity	5
Unnamed creek	2012	Cedar River	07080202-531		Aquatic Recreation	Escherichia coli	5
Lime Creek	2018	Cedar River	07080203-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Lime Creek	2018	Cedar River	07080203-501		Aquatic Life	Dissolved oxygen	5
Lime Creek	2018	Cedar River	07080203-501		Aquatic Recreation	Escherichia coli	5
Lime Creek	2018	Cedar River	07080203-501		Aquatic Life	Fishes bioassessments	5
Lime Creek	2018	Cedar River	07080203-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Steward Creek (County Ditch 23)	2018	Cedar River	07080203-504		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Steward Creek (County Ditch 23)	2018	Cedar River	07080203-504		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2018	Cedar River	07080203-509		Aquatic Life	Dissolved oxygen	5
Judicial Ditch 25	2018	Cedar River	07080203-515		Aquatic Life	Dissolved oxygen	5
Judicial Ditch 25	2018	Cedar River	07080203-515		Aquatic Life	Fishes bioassessments	5
Albert Lea	2008	Cedar River	24-0014-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Geneva	2012	Cedar River	24-0015-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fountain (East Bay)	2008	Cedar River	24-0018-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fountain (West Bay)	2008	Cedar River	24-0018-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
White	2012	Cedar River	24-0024-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pickeral	2008	Cedar River	24-0025-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bear	2018	Cedar River	24-0028-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
State Line	2018	Cedar River	24-0030-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Des Moines River	1994	Des Moines River	07100001-501		Aquatic Life	Ammonia, unionized	5
Des Moines River	2018	Des Moines River	07100001-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Des Moines River	1994	Des Moines River	07100001-501		Aquatic Life	Dissolved oxygen	5
Des Moines River	2018	Des Moines River	07100001-501		Aquatic Life	Fishes bioassessments	5
Des Moines River	2016	Des Moines River	07100001-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
County Ditch 20	2018	Des Moines River	07100001-504		Aquatic Life	Fishes bioassessments	5
Lower Lake Sarah Outlet	2018	Des Moines River	07100001-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Lower Lake Sarah Outlet	2018	Des Moines River	07100001-508		Aquatic Life	Fishes bioassessments	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Okabena Creek	2010	Des Moines River	07100001-512		Limited Resource Value	Escherichia coli	5
Jack Creek	2018	Des Moines River	07100001-514		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-518		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-518		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 26	2018	Des Moines River	07100001-523		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Des Moines River	2018	Des Moines River	07100001-524		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Des Moines River	2018	Des Moines River	07100001-524		Aquatic Recreation	Escherichia coli	5
Des Moines River	2018	Des Moines River	07100001-524		Aquatic Life	Fishes bioassessments	5
Heron Lake Outlet	2018	Des Moines River	07100001-527		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Heron Lake Outlet	2018	Des Moines River	07100001-527		Aquatic Recreation	Escherichia coli	5
Heron Lake Outlet	2018	Des Moines River	07100001-527		Aquatic Life	Fishes bioassessments	5
Heron Lake Outlet	2016	Des Moines River	07100001-527		Aquatic Life	Nutrient/eutrophication biological indicators	5
Des Moines River	2018	Des Moines River	07100001-533		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Des Moines River	2018	Des Moines River	07100001-533		Aquatic Life	Fishes bioassessments	5
Lime Creek	2018	Des Moines River	07100001-535		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Lime Creek	2018	Des Moines River	07100001-535		Aquatic Life	Fishes bioassessments	5
Perkins Creek	2018	Des Moines River	07100001-544		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Des Moines River	2018	Des Moines River	07100001-545		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Des Moines River	2018	Des Moines River	07100001-545		Aquatic Life	Fishes bioassessments	5
Des Moines River	2018	Des Moines River	07100001-546		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Des Moines River	2018	Des Moines River	07100001-546		Aquatic Life	Fishes bioassessments	5
Jack Creek	2018	Des Moines River	07100001-549		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Jack Creek	2018	Des Moines River	07100001-549		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-551		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-551		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2008	Des Moines River	07100001-551		Aquatic Life	Turbidity	5
County Ditch 43 (Scheldorf Creek)	2018	Des Moines River	07100001-552		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 43 (Scheldorf Creek)	2018	Des Moines River	07100001-552		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-563		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-564		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-564		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2018	Des Moines River	07100001-564		Aquatic Life	Fishes bioassessments	5
Okabena Creek	2018	Des Moines River	07100001-602		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Okabena Creek	2018	Des Moines River	07100001-602		Aquatic Life	Chloride	5
Okabena Creek	2018	Des Moines River	07100001-602		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-613		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-614		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-618		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-618		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-619		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-621		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-624		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-624		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-625		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-625		Aquatic Life	Fishes bioassessments	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Unnamed creek	2018	Des Moines River	07100001-626		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-626		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-628		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-628		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-632		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-632		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-637		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Lake Shetek Inlet	2018	Des Moines River	07100001-641		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Lake Shetek Inlet	2018	Des Moines River	07100001-641		Aquatic Life	Fishes bioassessments	5
Lake Shetek Inlet	2018	Des Moines River	07100001-642		Aquatic Life	Fishes bioassessments	5
Lake Shetek Inlet	2018	Des Moines River	07100001-643		Aquatic Life	Fishes bioassessments	5
Beaver Creek	2018	Des Moines River	07100001-646		Aquatic Life	Chlorpyrifos	5
Beaver Creek	2018	Des Moines River	07100001-646		Aquatic Life	Fishes bioassessments	5
Jack Creek, North Branch	2018	Des Moines River	07100001-649		Aquatic Life	Fishes bioassessments	5
Jack Creek, North Branch	2018	Des Moines River	07100001-652		Aquatic Recreation	Escherichia coli	5
Jack Creek, North Branch	2018	Des Moines River	07100001-652		Aquatic Life	Fishes bioassessments	5
Elk Creek	2018	Des Moines River	07100001-656		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Elk Creek	2018	Des Moines River	07100001-656		Aquatic Life	Fishes bioassessments	5
Jack Creek	2018	Des Moines River	07100001-658		Aquatic Life	Chlorpyrifos	5
Jack Creek	2018	Des Moines River	07100001-658		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-661		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-661		Aquatic Life	Fishes bioassessments	5
Beaver Creek	2018	Des Moines River	07100001-663		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Beaver Creek	2018	Des Moines River	07100001-663		Aquatic Life	Fishes bioassessments	5
Beaver Creek	2018	Des Moines River	07100001-664		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 12	2018	Des Moines River	07100001-666		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 12	2018	Des Moines River	07100001-666		Aquatic Life	Fishes bioassessments	5
Devils Run Creek	2018	Des Moines River	07100001-668		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-670		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-672		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100001-672		Aquatic Life	Fishes bioassessments	5
Des Moines River	2018	Des Moines River	07100002-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Des Moines River	2018	Des Moines River	07100002-501		Aquatic Life	Fishes bioassessments	5
Brown Creek (Judicial Ditch 10)	2018	Des Moines River	07100002-502		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100002-504		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100002-504		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 56	2018	Des Moines River	07100002-505		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 56	2018	Des Moines River	07100002-505		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 56	2008	Des Moines River	07100002-505		Aquatic Life	Turbidity	5
Story Brook	2018	Des Moines River	07100002-507		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Story Brook	2018	Des Moines River	07100002-507		Aquatic Life	Fishes bioassessments	5
Unnamed ditch	2018	Des Moines River	07100002-510		Aquatic Life	Fishes bioassessments	5
County Ditch 11	2018	Des Moines River	07100003-503		Limited Resource Value	Escherichia coli	5
County Ditch 53	2018	Des Moines River	07100003-506		Aquatic Life	Fishes bioassessments	5
Fourmile Creek	2018	Des Moines River	07100003-510		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Fourmile Creek	2018	Des Moines River	07100003-510		Aquatic Recreation	Escherichia coli	5
Fourmile Creek	2018	Des Moines River	07100003-510		Aquatic Life	Fishes bioassessments	5
County Ditch 1/Judicial Ditch 50	2018	Des Moines River	07100003-515		Aquatic Recreation	Escherichia coli	5
Des Moines River, East Branch	2018	Des Moines River	07100003-525		Aquatic Recreation	Escherichia coli	5
Des Moines River, East Branch	2018	Des Moines River	07100003-525		Aquatic Life	Fishes bioassessments	5
Des Moines River, East Branch	2006	Des Moines River	07100003-527		Aquatic Life	Dissolved oxygen	5
Des Moines River, East Branch	2018	Des Moines River	07100003-527		Aquatic Recreation	Escherichia coli	5
Des Moines River, East Branch	2018	Des Moines River	07100003-527		Aquatic Life	Fishes bioassessments	5
Des Moines River, East Branch	2002	Des Moines River	07100003-527		Aquatic Life	Turbidity	5
Unnamed creek	2018	Des Moines River	07100003-529		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Des Moines River	07100003-529		Aquatic Life	Fishes bioassessments	5
Cottonwood	2018	Des Moines River	17-0022-00		Aquatic Life	Fishes bioassessments	5
North Oaks	2018	Des Moines River	17-0044-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Talcot	2018	Des Moines River	17-0060-00		Aquatic Life	Fishes bioassessments	5
Talcot	2010	Des Moines River	17-0060-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Boot	2018	Des Moines River	32-0015-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Flahtery	2010	Des Moines River	32-0045-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Teal	2018	Des Moines River	32-0053-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Heron (Duck)	2002	Des Moines River	32-0057-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Timber	2018	Des Moines River	32-0058-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Yankton	2018	Des Moines River	42-0047-00		Aquatic Life	Fishes bioassessments	5
Yankton	2010	Des Moines River	42-0047-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Okamanpeedan	2010	Des Moines River	46-0051-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bright	2018	Des Moines River	46-0052-00		Aquatic Life	Fishes bioassessments	5
Bright	2018	Des Moines River	46-0052-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pierce	2018	Des Moines River	46-0076-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Temperance	2018	Des Moines River	46-0103-00		Aquatic Life	Fishes bioassessments	5
Temperance	2018	Des Moines River	46-0103-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lime	2018	Des Moines River	51-0024-00		Aquatic Life	Fishes bioassessments	5
Lime	2010	Des Moines River	51-0024-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bloody	2010	Des Moines River	51-0040-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fox	2018	Des Moines River	51-0043-00		Aquatic Life	Fishes bioassessments	5
Fox	2018	Des Moines River	51-0043-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Shetek	2018	Des Moines River	51-0046-00		Aquatic Life	Fishes bioassessments	5
Shetek	2006	Des Moines River	51-0046-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Corabelle	2018	Des Moines River	51-0054-00		Aquatic Life	Fishes bioassessments	5
Corabelle	2018	Des Moines River	51-0054-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Sarah	2018	Des Moines River	51-0063-00		Aquatic Life	Fishes bioassessments	5
Sarah	2006	Des Moines River	51-0063-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Currant	2018	Des Moines River	51-0082-00		Aquatic Life	Fishes bioassessments	5
Currant	2008	Des Moines River	51-0082-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5

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East Graham	2018	Des Moines River	53-0020-00		Aquatic Life	Fishes bioassessments	5
East Graham	2008	Des Moines River	53-0020-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
West Graham	2018	Des Moines River	53-0021-00		Aquatic Life	Fishes bioassessments	5
West Graham	2008	Des Moines River	53-0021-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Brule River	1998	Lake Superior	04010101-502		Aquatic Consumption	Mercury in water column	5
Baptism River	2016	Lake Superior	04010101-508		Aquatic Consumption	Mercury in water column	5
Poplar River	1998	Lake Superior	04010101-613		Aquatic Consumption	Mercury in water column	5
Flute Reed River	2016	Lake Superior	04010101-D31		Aquatic Life	Total suspended solids	5
Flute Reed River	2010	Lake Superior	04010101-D32		Aquatic Life	Turbidity	5
Beaver River	2014	Lake Superior	04010102-501		Aquatic Life	Fishes bioassessments	5
Beaver River	1998	Lake Superior	04010102-501		Aquatic Consumption	Mercury in water column	5
Beaver River	2002	Lake Superior	04010102-501		Aquatic Life	pH	5
Beaver River	1996	Lake Superior	04010102-501		Aquatic Life	Turbidity	5
Knife River	1998	Lake Superior	04010102-504		Aquatic Consumption	Mercury in water column	5
Talmadge River (Talmadge Creek)	1996	Lake Superior	04010102-508		Aquatic Life	Dissolved oxygen	5
Talmadge River (Talmadge Creek)	2014	Lake Superior	04010102-508		Aquatic Life	Fishes bioassessments	5
Talmadge River (Talmadge Creek)	2004	Lake Superior	04010102-508		Aquatic Life	Turbidity	5
Amity Creek	2004	Lake Superior	04010102-511		Aquatic Life	Turbidity	5
Skunk Creek	2014	Lake Superior	04010102-528		Aquatic Recreation	Escherichia coli	5
Skunk Creek	2010	Lake Superior	04010102-528		Aquatic Life	Turbidity	5
Amity Creek, East Branch	2014	Lake Superior	04010102-540		Aquatic Life	Turbidity	5
Tischer Creek	2014	Lake Superior	04010102-544		Aquatic Recreation	Escherichia coli	5
Chester Creek	2014	Lake Superior	04010102-545		Aquatic Recreation	Escherichia coli	5
Lester River	1996	Lake Superior	04010102-549		Aquatic Life	Turbidity	5
Big Sucker Creek (Sucker River)	2006	Lake Superior	04010102-555		Aquatic Life	Turbidity	5
Beaver River, West Branch	2014	Lake Superior	04010102-577		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Beaver River, West Branch	2014	Lake Superior	04010102-577		Aquatic Life	Fishes bioassessments	5
French River	2004	Lake Superior	04010102-698		Aquatic Life	Turbidity	5
Little Knife River (East Branch Little Knife River)	2008	Lake Superior	04010102-840		Aquatic Life	Dissolved oxygen	5
Little Knife River (East Branch Little Knife River)	2008	Lake Superior	04010102-840		Aquatic Life	Turbidity	5
Leif Erikson Park Beach	2014	Lake Superior	04010102-C21		Aquatic Recreation	Escherichia coli	5
Burlington Bay Beach	2014	Lake Superior	04010102-C30		Aquatic Recreation	Escherichia coli	5
Agate Bay Beach	2016	Lake Superior	04010102-C31		Aquatic Recreation	Escherichia coli	5
St Louis River (St Louis Bay)	2002	Lake Superior	04010201-501		Aquatic Consumption	DDT	5
St Louis River (St Louis Bay)	2002	Lake Superior	04010201-501		Aquatic Consumption	Dieldrin	5
St Louis River (St Louis Bay)	2002	Lake Superior	04010201-501		Aquatic Consumption	Dioxin (including 2,3,7,8-TCDD)	5
St Louis River (St Louis Bay)	1998	Lake Superior	04010201-501		Aquatic Consumption	Mercury in fish tissue	5
St Louis River (St Louis Bay)	1998	Lake Superior	04010201-501		Aquatic Consumption	Mercury in water column	5

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St Louis River (St Louis Bay)	1998	Lake Superior	04010201-501		Aquatic Consumption	PCB in fish tissue	5
St Louis River (St Louis Bay)	2002	Lake Superior	04010201-501		Aquatic Consumption	PCB in water column	5
St Louis River (St Louis Bay)	2002	Lake Superior	04010201-501		Aquatic Consumption	Toxaphene	5
St Louis River	1998	Lake Superior	04010201-503		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-503		Aquatic Consumption	Mercury in water column	5
St Louis River	1998	Lake Superior	04010201-504		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-505		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-506		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-507		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2012	Lake Superior	04010201-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
St Louis River	1998	Lake Superior	04010201-508		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-510		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-511		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2016	Lake Superior	04010201-511		Aquatic Consumption	Mercury in water column	5
Miller Creek	2012	Lake Superior	04010201-512		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Miller Creek	2010	Lake Superior	04010201-512		Aquatic Life	Chloride	5
Miller Creek	2012	Lake Superior	04010201-512		Aquatic Recreation	Escherichia coli	5
Miller Creek	2002	Lake Superior	04010201-512		Aquatic Life	Lack of cold water assemblage	5
St Louis River	2002	Lake Superior	04010201-513		Aquatic Consumption	DDT	5
St Louis River	2002	Lake Superior	04010201-513		Aquatic Consumption	Dieldrin	5
St Louis River	1998	Lake Superior	04010201-513		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-513		Aquatic Consumption	Mercury in water column	5
St Louis River	1998	Lake Superior	04010201-513		Aquatic Consumption	PCB in fish tissue	5
St Louis River	2002	Lake Superior	04010201-513		Aquatic Consumption	PCB in water column	5
St Louis River	1998	Lake Superior	04010201-515		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2006	Lake Superior	04010201-515		Aquatic Consumption	PCB in fish tissue	5
St Louis River	1998	Lake Superior	04010201-516		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2006	Lake Superior	04010201-516		Aquatic Consumption	PCB in fish tissue	5
St Louis River	1998	Lake Superior	04010201-517		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2016	Lake Superior	04010201-517		Aquatic Consumption	Mercury in water column	5
Elbow Creek	2012	Lake Superior	04010201-518		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Elbow Creek	2012	Lake Superior	04010201-518		Aquatic Life	Fishes bioassessments	5
St Louis River	1998	Lake Superior	04010201-523		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2006	Lake Superior	04010201-523		Aquatic Consumption	PCB in fish tissue	5
St Louis River	1998	Lake Superior	04010201-524		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2006	Lake Superior	04010201-524		Aquatic Consumption	PCB in fish tissue	5
St Louis River	1998	Lake Superior	04010201-525		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	1998	Lake Superior	04010201-526		Aquatic Consumption	Mercury in fish tissue	5
Superior Bay	2002	Lake Superior	04010201-530		Aquatic Consumption	DDT	5
Superior Bay	2002	Lake Superior	04010201-530		Aquatic Consumption	Dieldrin	5
Superior Bay	2002	Lake Superior	04010201-530		Aquatic Consumption	Dioxin (including 2,3,7,8-TCDD)	5
Superior Bay	1998	Lake Superior	04010201-530		Aquatic Consumption	Mercury in fish tissue	5
Superior Bay	1998	Lake Superior	04010201-530		Aquatic Consumption	Mercury in water column	5
Superior Bay	1998	Lake Superior	04010201-530		Aquatic Consumption	PCB in fish tissue	5

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Superior Bay	2002	Lake Superior	04010201-530		Aquatic Consumption	PCB in water column	5
Superior Bay	2002	Lake Superior	04010201-530		Aquatic Consumption	Toxaphene	5
Superior Bay	2002	Lake Superior	04010201-531		Aquatic Consumption	DDT	5
Superior Bay	2002	Lake Superior	04010201-531		Aquatic Consumption	Dieldrin	5
Superior Bay	2002	Lake Superior	04010201-531		Aquatic Consumption	Dioxin (including 2,3,7,8-TCDD)	5
Superior Bay	1998	Lake Superior	04010201-531		Aquatic Consumption	Mercury in fish tissue	5
Superior Bay	1998	Lake Superior	04010201-531		Aquatic Consumption	Mercury in water column	5
Superior Bay	1998	Lake Superior	04010201-531		Aquatic Consumption	PCB in fish tissue	5
Superior Bay	2002	Lake Superior	04010201-531		Aquatic Consumption	PCB in water column	5
Superior Bay	2002	Lake Superior	04010201-531		Aquatic Consumption	Toxaphene	5
St Louis River	2002	Lake Superior	04010201-532		Aquatic Consumption	DDT	5
St Louis River	2002	Lake Superior	04010201-532		Aquatic Consumption	Dieldrin	5
St Louis River	2002	Lake Superior	04010201-532		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2002	Lake Superior	04010201-532		Aquatic Consumption	Mercury in water column	5
St Louis River	2006	Lake Superior	04010201-532		Aquatic Consumption	PCB in fish tissue	5
St Louis River	2002	Lake Superior	04010201-532		Aquatic Consumption	PCB in water column	5
St Louis River	2004	Lake Superior	04010201-533		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2004	Lake Superior	04010201-533		Aquatic Consumption	PCB in fish tissue	5
West Two River	2016	Lake Superior	04010201-534		Aquatic Consumption	Mercury in water column	5
West Two River	2012	Lake Superior	04010201-535		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Lake Superior	04010201-542		Aquatic Recreation	Escherichia coli	5
Pine River (White Pine River)	2012	Lake Superior	04010201-543		Aquatic Recreation	Escherichia coli	5
Unnamed branch	2012	Lake Superior	04010201-548		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed branch	2012	Lake Superior	04010201-548		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Lake Superior	04010201-551		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Partridge River	2016	Lake Superior	04010201-552		Aquatic Consumption	Mercury in fish tissue	5
Partridge River	2016	Lake Superior	04010201-552		Aquatic Consumption	Mercury in water column	5
St Louis River	2004	Lake Superior	04010201-554		Aquatic Consumption	Mercury in fish tissue	5
East Two River	2016	Lake Superior	04010201-555		Aquatic Consumption	Mercury in water column	5
Swan River	2016	Lake Superior	04010201-557		Aquatic Consumption	Mercury in water column	5
East Swan River	2012	Lake Superior	04010201-558		Aquatic Life	Turbidity	5
Floodwood River	2016	Lake Superior	04010201-560		Aquatic Consumption	Mercury in water column	5
Barber Creek (East Swan River)	2012	Lake Superior	04010201-569		Aquatic Recreation	Escherichia coli	5
Elbow Creek	2012	Lake Superior	04010201-570		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Embarrass River	2012	Lake Superior	04010201-579		Aquatic Life	Fishes bioassessments	5
Buhl Creek	2012	Lake Superior	04010201-580		Aquatic Recreation	Escherichia coli	5
Dempsey Creek	2012	Lake Superior	04010201-582		Aquatic Recreation	Escherichia coli	5
Sand Creek	2012	Lake Superior	04010201-607		Aquatic Life	Fishes bioassessments	5
Vaara Creek	2012	Lake Superior	04010201-623		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Vaara Creek	2012	Lake Superior	04010201-623		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Rocky Run Creek)	2012	Lake Superior	04010201-625		Aquatic Recreation	Escherichia coli	5
Kingsbury Creek	2012	Lake Superior	04010201-626		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Kingsbury Creek	2012	Lake Superior	04010201-626		Aquatic Life	Fishes bioassessments	5
Keene Creek	2012	Lake Superior	04010201-627		Aquatic Recreation	Escherichia coli	5

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Otter Creek	2012	Lake Superior	04010201-629		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
St Louis River	1998	Lake Superior	04010201-631		Aquatic Consumption	Mercury in fish tissue	5
Barber Creek (East Swan River)	2012	Lake Superior	04010201-641		Aquatic Recreation	Escherichia coli	5
St Louis River	1998	Lake Superior	04010201-644		Aquatic Consumption	Mercury in fish tissue	5
St Louis River	2016	Lake Superior	04010201-644		Aquatic Consumption	Mercury in water column	5
Hay Creek	2012	Lake Superior	04010201-751		Aquatic Recreation	Escherichia coli	5
Sargent Creek	2012	Lake Superior	04010201-848		Aquatic Recreation	Escherichia coli	5
Stewart Creek	2012	Lake Superior	04010201-884		Aquatic Recreation	Escherichia coli	5
Unnamed creek (East Swan Creek)	2012	Lake Superior	04010201-888		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (East Swan Creek)	2012	Lake Superior	04010201-888		Aquatic Recreation	Escherichia coli	5
Unnamed creek (Little Swan Creek)	2012	Lake Superior	04010201-891		Aquatic Life	Fishes bioassessments	5
Penobscot Creek	2012	Lake Superior	04010201-936		Aquatic Recreation	Escherichia coli	5
Wyman Creek	2012	Lake Superior	04010201-942		Aquatic Life	Fishes bioassessments	5
Stony Creek	2012	Lake Superior	04010201-963		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Stony Creek	2012	Lake Superior	04010201-963		Aquatic Life	Fishes bioassessments	5
Stony Creek	2016	Lake Superior	04010201-963		Aquatic Consumption	Mercury in water column	5
Unnamed creek (Merritt Creek)	2012	Lake Superior	04010201-987		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2012	Lake Superior	04010201-A17		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Skunk Creek	2012	Lake Superior	04010201-A18		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Skunk Creek	2012	Lake Superior	04010201-A18		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Lake Superior	04010201-A22		Aquatic Recreation	Escherichia coli	5
Paleface Creek	2012	Lake Superior	04010201-A24		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Paleface Creek	2012	Lake Superior	04010201-A24		Aquatic Life	Fishes bioassessments	5
Ely Creek	2012	Lake Superior	04010201-A26		Aquatic Life	Fishes bioassessments	5
Water Hen Creek	2012	Lake Superior	04010201-A31		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Water Hen Creek	2012	Lake Superior	04010201-A35		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Mine Creek	2012	Lake Superior	04010201-A42		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Mine Creek	2012	Lake Superior	04010201-A42		Aquatic Life	Fishes bioassessments	5
Park Point Sky Harbor Parking Lot Beach	2016	Lake Superior	04010201-A87		Aquatic Recreation	Escherichia coli	5
Park Point 20th St / Hearding Island Canal Beach	2014	Lake Superior	04010201-A89		Aquatic Recreation	Escherichia coli	5
Minnesota Point 15th Street Harbor Side Beach	2014	Lake Superior	04010201-A90		Aquatic Recreation	Escherichia coli	5
Clyde Avenue Boat Landing Beach	2014	Lake Superior	04010201-A91		Aquatic Recreation	Escherichia coli	5
Cloquet River	2016	Lake Superior	04010202-501		Aquatic Consumption	Mercury in fish tissue	5
Cloquet River	2016	Lake Superior	04010202-501		Aquatic Consumption	Mercury in water column	5
Cloquet River	2016	Lake Superior	04010202-502		Aquatic Consumption	Mercury in fish tissue	5
Cloquet River	2016	Lake Superior	04010202-504		Aquatic Consumption	Mercury in fish tissue	5
Beartrap Creek	2018	Lake Superior	04010202-521		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Beartrap Creek	2018	Lake Superior	04010202-521		Aquatic Life	Fishes bioassessments	5

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Unnamed creek (Elim Creek)	2014	Lake Superior	04010301-501		Aquatic Life	Fishes bioassessments	5
Thomson Reservoir	1998	Lake Superior	09-0001-00		Aquatic Consumption	Mercury in fish tissue	5
Sand	1998	Lake Superior	09-0016-00		Aquatic Consumption	Mercury in fish tissue	5
Superior	1998	Lake Superior	16-0001-00		Aquatic Consumption	Mercury in fish tissue	5
Superior	1998	Lake Superior	16-0001-00		Aquatic Consumption	PCB in fish tissue	5
Otter	1998	Lake Superior	16-0032-00		Aquatic Consumption	Mercury in fish tissue	5
Mountain	1998	Lake Superior	16-0093-00		Aquatic Consumption	Mercury in fish tissue	5
Musquash	1998	Lake Superior	16-0104-00		Aquatic Consumption	Mercury in water column	5
Ball Club	1998	Lake Superior	16-0182-00		Aquatic Consumption	Mercury in fish tissue	5
Ball Club	1998	Lake Superior	16-0182-00		Aquatic Consumption	Mercury in water column	5
Vista	1998	Lake Superior	16-0224-00		Aquatic Consumption	Mercury in fish tissue	5
Hand	2004	Lake Superior	16-0238-00		Aquatic Consumption	Mercury in fish tissue	5
Little Cascade	1998	Lake Superior	16-0347-00		Aquatic Consumption	Mercury in fish tissue	5
Winchell	2002	Lake Superior	16-0354-00		Aquatic Consumption	PCB in fish tissue	5
Holly	1998	Lake Superior	16-0366-00		Aquatic Consumption	Mercury in fish tissue	5
Juno	2002	Lake Superior	16-0402-00		Aquatic Consumption	Mercury in fish tissue	5
Star	2002	Lake Superior	16-0405-00		Aquatic Consumption	Mercury in fish tissue	5
East Fox	2010	Lake Superior	16-0636-00		Aquatic Consumption	Mercury in fish tissue	5
Frear	1998	Lake Superior	16-0806-00		Aquatic Consumption	Mercury in fish tissue	5
Cross River	1998	Lake Superior	38-0002-00		Aquatic Consumption	Mercury in fish tissue	5
Lost	2012	Lake Superior	38-0003-00		Aquatic Consumption	Mercury in fish tissue	5
Kowalski	2010	Lake Superior	38-0016-00		Aquatic Consumption	Mercury in fish tissue	5
Bone	2010	Lake Superior	38-0065-00		Aquatic Consumption	Mercury in fish tissue	5
Cloquet	1998	Lake Superior	38-0539-00		Aquatic Consumption	Mercury in fish tissue	5
Sink	2018	Lake Superior	38-0540-00		Aquatic Consumption	Mercury in fish tissue	5
Big Bear	2004	Lake Superior	69-0113-00		Aquatic Consumption	Mercury in fish tissue	5
Alden	2004	Lake Superior	69-0131-00		Aquatic Consumption	Mercury in fish tissue	5
Wolf	1998	Lake Superior	69-0143-00		Aquatic Consumption	Mercury in fish tissue	5
Otto	1998	Lake Superior	69-0144-00		Aquatic Consumption	Mercury in fish tissue	5
Colby	1998	Lake Superior	69-0249-00		Aquatic Consumption	Mercury in fish tissue	5
Island Lake Rsvr(W.Basin)	1998	Lake Superior	69-0372-01		Aquatic Consumption	Mercury in fish tissue	5
Island Lake Rsvr(E.Basin)	1998	Lake Superior	69-0372-02		Aquatic Consumption	Mercury in fish tissue	5
Whiteface Reservoir	1998	Lake Superior	69-0375-00		Aquatic Consumption	Mercury in fish tissue	5
Upper Comstock	2002	Lake Superior	69-0412-01		Aquatic Consumption	Mercury in fish tissue	5
Lower Comstock	2002	Lake Superior	69-0412-02		Aquatic Consumption	Mercury in fish tissue	5
South Twin	2006	Lake Superior	69-0420-00		Aquatic Consumption	Mercury in fish tissue	5
Loon	1998	Lake Superior	69-0426-00		Aquatic Consumption	Mercury in fish tissue	5
Sabin	1998	Lake Superior	69-0434-01		Aquatic Consumption	Mercury in fish tissue	5
Sabin	2014	Lake Superior	69-0434-01		Aquatic Consumption	Mercury in water column	5
Wynne	1998	Lake Superior	69-0434-02		Aquatic Consumption	Mercury in fish tissue	5
Wynne	2014	Lake Superior	69-0434-02		Aquatic Consumption	Mercury in water column	5
Mud Hen	2012	Lake Superior	69-0494-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Long	2018	Lake Superior	69-0495-00		Aquatic Consumption	Mercury in fish tissue	5
Long	2012	Lake Superior	69-0495-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Embarrass	2002	Lake Superior	69-0496-00		Aquatic Consumption	Mercury in fish tissue	5

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Grand	2012	Lake Superior	69-0511-00		Aquatic Consumption	Mercury in fish tissue	5
Strand	2002	Lake Superior	69-0529-00		Aquatic Consumption	Mercury in fish tissue	5
Strand	2012	Lake Superior	69-0529-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Dinham	2012	Lake Superior	69-0544-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Esquagama	1998	Lake Superior	69-0565-00		Aquatic Consumption	Mercury in fish tissue	5
Ely	1998	Lake Superior	69-0660-00		Aquatic Consumption	Mercury in fish tissue	5
Elbow	1998	Lake Superior	69-0717-00		Aquatic Consumption	Mercury in fish tissue	5
Manganika	2008	Lake Superior	69-0726-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
McQuade	2012	Lake Superior	69-0775-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
West Two Rivers Reservoir	2012	Lake Superior	69-0994-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Golf Course Pond	2002	Lake Superior	69-1345-00		Aquatic Consumption	PCB in fish tissue	5
Long Tom	2018	Minnesota River	06-0029-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2018	Minnesota River	06-0060-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Big Stone	2018	Minnesota River	06-0152-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
George	2002	Minnesota River	07-0047-00		Aquatic Consumption	Mercury in fish tissue	5
George	2016	Minnesota River	07-0047-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Duck	2008	Minnesota River	07-0053-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Wita	2016	Minnesota River	07-0077-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Loon	2010	Minnesota River	07-0096-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mills	2016	Minnesota River	07-0097-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Crystal	2016	Minnesota River	07-0098-00		Aquatic Life	Fishes bioassessments	5
Crystal	2006	Minnesota River	07-0098-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed creek (West Salmonsen Creek)	2018	Minnesota River	07020001-504		Aquatic Recreation	Escherichia coli	5
Little Minnesota River	2018	Minnesota River	07020001-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Minnesota River	2018	Minnesota River	07020001-508		Aquatic Recreation	Escherichia coli	5
Yellow Bank River, North Fork	2018	Minnesota River	07020001-510		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Five Mile Creek)	2018	Minnesota River	07020001-521		Aquatic Recreation	Escherichia coli	5
Unnamed creek (Five Mile Creek)	2018	Minnesota River	07020001-521		Aquatic Life	Fishes bioassessments	5
Yellow Bank River	2018	Minnesota River	07020001-525		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Yellow Bank River	2018	Minnesota River	07020001-525		Aquatic Life	Fishes bioassessments	5
Yellow Bank River, South Fork	2018	Minnesota River	07020001-526		Aquatic Life	Fishes bioassessments	5
Stony Run Creek	2018	Minnesota River	07020001-531		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Stony Run Creek	2018	Minnesota River	07020001-531		Aquatic Recreation	Escherichia coli	5
Stony Run Creek	2004	Minnesota River	07020001-531		Aquatic Life	Fishes bioassessments	5
Stony Run Creek	2018	Minnesota River	07020001-536		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2018	Minnesota River	07020001-541		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2018	Minnesota River	07020001-541		Aquatic Life	Fishes bioassessments	5
Emily Creek	2018	Minnesota River	07020001-547		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Emily Creek	2018	Minnesota River	07020001-547		Aquatic Recreation	Escherichia coli	5
Emily Creek	2018	Minnesota River	07020001-547		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2004	Minnesota River	07020001-548		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Minnesota River	07020001-551		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Unnamed creek	2018	Minnesota River	07020001-551		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2018	Minnesota River	07020001-551		Aquatic Life	Fishes bioassessments	5
Minnesota River	2018	Minnesota River	07020001-552		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Minnesota River	2018	Minnesota River	07020001-552		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2018	Minnesota River	07020001-559		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Minnesota River	07020001-560		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Minnesota River	07020001-561		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Meadowbrook Creek)	2018	Minnesota River	07020001-568		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Meadowbrook Creek)	2018	Minnesota River	07020001-568		Aquatic Recreation	Escherichia coli	5
Unnamed creek (Meadowbrook Creek)	2018	Minnesota River	07020001-568		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Minnesota River	07020001-569		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Minnesota River	07020001-570		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Minnesota River	07020001-570		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2018	Minnesota River	07020001-570		Aquatic Life	Fishes bioassessments	5
Fish Creek	2018	Minnesota River	07020001-571		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Fish Creek	2018	Minnesota River	07020001-571		Aquatic Recreation	Escherichia coli	5
Fish Creek	2018	Minnesota River	07020001-571		Aquatic Life	Fishes bioassessments	5
County Ditch 2 (Five Mile Creek)	2018	Minnesota River	07020001-574		Aquatic Life	Fishes bioassessments	5
Emily Creek	2018	Minnesota River	07020001-576		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Emily Creek	2018	Minnesota River	07020001-576		Aquatic Life	Fishes bioassessments	5
Pomme de Terre River	2012	Minnesota River	07020002-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pomme de Terre River	2012	Minnesota River	07020002-501		Aquatic Life	Fishes bioassessments	5
Pelican Creek	2012	Minnesota River	07020002-506		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Minnesota River	07020002-551		Aquatic Life	Fishes bioassessments	5
Pomme de Terre River	2012	Minnesota River	07020002-562		Aquatic Life	Fishes bioassessments	5
Lac qui Parle River	2018	Minnesota River	07020003-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Lac qui Parle River	2018	Minnesota River	07020003-501		Aquatic Life	Chlorpyrifos	5
Lac qui Parle River	2018	Minnesota River	07020003-502		Aquatic Recreation	Escherichia coli	5
Lac qui Parle River	2018	Minnesota River	07020003-505		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Lac qui Parle River	2006	Minnesota River	07020003-505		Aquatic Life	Fishes bioassessments	5
Lazarus Creek (Canby Creek)	2018	Minnesota River	07020003-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Lazarus Creek (Canby Creek)	2018	Minnesota River	07020003-508		Aquatic Life	Fishes bioassessments	5
Lazarus Creek	2018	Minnesota River	07020003-509		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Lazarus Creek	2006	Minnesota River	07020003-509		Aquatic Life	Fishes bioassessments	5
Lac qui Parle River, West Branch	2018	Minnesota River	07020003-513		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Lac qui Parle River, West Branch	2018	Minnesota River	07020003-513		Aquatic Recreation	Escherichia coli	5
Lac qui Parle River, West Branch	2018	Minnesota River	07020003-515		Aquatic Life	Fishes bioassessments	5
Lac qui Parle River, West Branch	2018	Minnesota River	07020003-516		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Lac qui Parle River, West Branch	2018	Minnesota River	07020003-516		Aquatic Life	Fishes bioassessments	5
Lost Creek	2018	Minnesota River	07020003-517		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Lost Creek	2018	Minnesota River	07020003-517		Aquatic Life	Dissolved oxygen	5
Lost Creek	2018	Minnesota River	07020003-517		Aquatic Recreation	Escherichia coli	5
Lost Creek	2018	Minnesota River	07020003-517		Aquatic Life	Fishes bioassessments	5
Lac qui Parle River, West Branch	2018	Minnesota River	07020003-519		Aquatic Recreation	Escherichia coli	5
Lac qui Parle River, West Branch	2018	Minnesota River	07020003-519		Aquatic Life	Fishes bioassessments	5
Crow Timber Creek	2018	Minnesota River	07020003-520		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Florida Creek	2018	Minnesota River	07020003-521		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Florida Creek	2006	Minnesota River	07020003-521		Aquatic Life	Fishes bioassessments	5
County Ditch 5	2018	Minnesota River	07020003-523		Limited Resource Value	Escherichia coli	5
County Ditch 34	2018	Minnesota River	07020003-526		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Minnesota River	07020003-530		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Minnesota River	07020003-530		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2018	Minnesota River	07020003-530		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Minnesota River	07020003-530		Aquatic Life	Total suspended solids	5
Unnamed creek	2018	Minnesota River	07020003-534		Aquatic Life	Fishes bioassessments	5
Canby Creek	2018	Minnesota River	07020003-557		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Canby Creek	2018	Minnesota River	07020003-557		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Minnesota River	07020003-567		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Minnesota River	07020003-569		Aquatic Life	Fishes bioassessments	5
Unnamed ditch	2018	Minnesota River	07020003-570		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch	2018	Minnesota River	07020003-571		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch	2018	Minnesota River	07020003-575		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch	2018	Minnesota River	07020003-575		Aquatic Life	Fishes bioassessments	5
Tenmile Creek	2018	Minnesota River	07020003-577		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Tenmile Creek	2004	Minnesota River	07020003-577		Aquatic Life	Fishes bioassessments	5
Tenmile Creek	2018	Minnesota River	07020003-578		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Tenmile Creek	2018	Minnesota River	07020003-578		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Minnesota River	07020003-580		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Minnesota River	07020003-580		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2018	Minnesota River	07020003-580		Aquatic Life	Fishes bioassessments	5
Unnamed ditch (County Ditch 4)	2018	Minnesota River	07020003-581		Aquatic Recreation	Escherichia coli	5
Unnamed ditch (County Ditch 4)	2018	Minnesota River	07020003-582		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch (County Ditch 4)	2018	Minnesota River	07020003-582		Aquatic Life	Fishes bioassessments	5
Cobb Creek	2018	Minnesota River	07020003-583		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Canby Creek	2018	Minnesota River	07020003-586		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Minnesota River	07020003-588		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Minnesota River	07020003-588		Aquatic Life	Fishes bioassessments	5
Yellow Medicine River	2002	Minnesota River	07020004-502		Aquatic Life	Turbidity	5
Spring Creek	2004	Minnesota River	07020004-538		Aquatic Life	Fishes bioassessments	5

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Yellow Medicine River, North Branch	2014	Minnesota River	07020004-542		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mud Creek	2014	Minnesota River	07020004-543		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 10 (Wood Lake Creek)	2006	Minnesota River	07020004-546		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 10 (Wood Lake Creek)	2014	Minnesota River	07020004-547		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 10 (Wood Lake Creek)	2014	Minnesota River	07020004-547		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Minnesota River	07020004-564		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Minnesota River	07020004-566		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2004	Minnesota River	07020004-566		Aquatic Life	Fishes bioassessments	5
Chetomba Creek	2018	Minnesota River	07020004-577		Aquatic Life	Chlorpyrifos	5
Chetomba Creek	2004	Minnesota River	07020004-577		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Minnesota River	07020004-595		Aquatic Life	Fishes bioassessments	5
Smith Creek (County Ditch 125A)	2014	Minnesota River	07020004-617		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 119	2014	Minnesota River	07020004-687		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 119	2014	Minnesota River	07020004-687		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Minnesota River	07020004-694		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Minnesota River	07020004-694		Aquatic Life	Fishes bioassessments	5
County Ditch 39	2014	Minnesota River	07020004-713		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 39	2014	Minnesota River	07020004-713		Aquatic Life	Fishes bioassessments	5
County Ditch 36	2014	Minnesota River	07020004-716		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 36	2014	Minnesota River	07020004-716		Aquatic Life	Fishes bioassessments	5
County Ditch 2	2014	Minnesota River	07020004-717		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Minnesota River	07020004-718		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Minnesota River	07020004-718		Aquatic Life	Fishes bioassessments	5
Minnesota River	2018	Minnesota River	07020004-747		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Minnesota River	1994	Minnesota River	07020004-747		Aquatic Recreation	Fecal Coliform	5
Minnesota River	2002	Minnesota River	07020004-747		Aquatic Life	Turbidity	5
Minnesota River	2018	Minnesota River	07020004-748	Upper Sioux	Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020004-748	Upper Sioux	Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2008	Minnesota River	07020004-748	Upper Sioux	Aquatic Life	Turbidity	5
Minnesota River	2018	Minnesota River	07020004-749		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Minnesota River	2018	Minnesota River	07020004-749		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020004-749		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2018	Minnesota River	07020004-749		Aquatic Life	Total suspended solids	5
Minnesota River	2018	Minnesota River	07020004-750		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Minnesota River	2016	Minnesota River	07020004-750		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020004-750		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2004	Minnesota River	07020004-750		Aquatic Life	Turbidity	5
Chippewa River	2002	Minnesota River	07020005-501		Aquatic Life	Turbidity	5
Chippewa River	2012	Minnesota River	07020005-502		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Chippewa River	2012	Minnesota River	07020005-502		Aquatic Life	Fishes bioassessments	5
Chippewa River	2012	Minnesota River	07020005-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Chippewa River	2006	Minnesota River	07020005-505		Aquatic Life	Fishes bioassessments	5

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Chippewa River	2012	Minnesota River	07020005-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Dry Weather Creek	2016	Minnesota River	07020005-509		Aquatic Life	Chlorpyrifos	5
Judicial Ditch 8	2004	Minnesota River	07020005-546		Aquatic Life	Fishes bioassessments	5
Mud Creek	2012	Minnesota River	07020005-551		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Shakopee Creek	2006	Minnesota River	07020005-559		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Minnesota River	07020005-623		Aquatic Life	Fishes bioassessments	5
Trapper Run Creek	2012	Minnesota River	07020005-628		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Trapper Run Creek	2012	Minnesota River	07020005-628		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Minnesota River	07020005-638		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Minnesota River	07020005-638		Aquatic Life	Fishes bioassessments	5
County Ditch 15	2012	Minnesota River	07020005-690		Aquatic Life	Fishes bioassessments	5
Little Chippewa River	2012	Minnesota River	07020005-713		Aquatic Life	Fishes bioassessments	5
Little Chippewa River	2012	Minnesota River	07020005-714		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Chippewa River	2006	Minnesota River	07020005-714		Aquatic Life	Fishes bioassessments	5
Redwood River	2016	Minnesota River	07020006-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Redwood River	2004	Minnesota River	07020006-501		Aquatic Life	Turbidity	5
Redwood River	2008	Minnesota River	07020006-502		Aquatic Life	Chloride	5
Redwood River	2002	Minnesota River	07020006-502		Aquatic Life	Fishes bioassessments	5
Redwood River	2002	Minnesota River	07020006-502		Aquatic Life	Turbidity	5
Redwood River	2002	Minnesota River	07020006-503		Aquatic Life	Fishes bioassessments	5
Redwood River	2010	Minnesota River	07020006-503		Aquatic Life	Turbidity	5
Threemile Creek	2004	Minnesota River	07020006-504		Aquatic Life	Turbidity	5
Redwood River	2002	Minnesota River	07020006-505		Aquatic Life	Fishes bioassessments	5
Redwood River	2002	Minnesota River	07020006-509		Aquatic Life	Turbidity	5
Redwood River	2008	Minnesota River	07020006-510		Aquatic Recreation	Fecal Coliform	5
Coon Creek	2004	Minnesota River	07020006-511		Aquatic Life	Fishes bioassessments	5
Altermatts Creek	2016	Minnesota River	07020007-518		Limited Resource Value	Escherichia coli	5
Wabasha Creek	2016	Minnesota River	07020007-527		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Wabasha Creek	2016	Minnesota River	07020007-527		Aquatic Recreation	Escherichia coli	5
Wabasha Creek	2016	Minnesota River	07020007-527		Aquatic Life	Fishes bioassessments	5
Minneopa Creek	2016	Minnesota River	07020007-531		Aquatic Life	Fishes bioassessments	5
Minneopa Creek	2016	Minnesota River	07020007-534		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Minneopa Creek	2016	Minnesota River	07020007-534		Aquatic Recreation	Escherichia coli	5
Minneopa Creek	2016	Minnesota River	07020007-534		Aquatic Life	Fishes bioassessments	5
Minneopa Creek	2006	Minnesota River	07020007-534		Aquatic Life	Turbidity	5
County Ditch 27	2016	Minnesota River	07020007-535		Aquatic Life	Fishes bioassessments	5
Cherry Creek	2016	Minnesota River	07020007-541		Aquatic Life	Fishes bioassessments	5
Cherry Creek	2016	Minnesota River	07020007-543		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 4/County Ditch 39	2016	Minnesota River	07020007-545		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rogers Creek	2016	Minnesota River	07020007-547		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rogers Creek	2004	Minnesota River	07020007-547		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020007-550		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2006	Minnesota River	07020007-550		Aquatic Life	Fishes bioassessments	5
County Ditch 56 (Lake Crystal Inlet)	2010	Minnesota River	07020007-557		Aquatic Recreation	Escherichia coli	5

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County Ditch 56 (Lake Crystal Inlet)	2016	Minnesota River	07020007-557		Aquatic Life	Fishes bioassessments	5
Sevenmile Creek	2016	Minnesota River	07020007-562		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sevenmile Creek	2006	Minnesota River	07020007-562		Aquatic Recreation	Fecal Coliform	5
Sevenmile Creek	2016	Minnesota River	07020007-562		Aquatic Life	Fishes bioassessments	5
Sevenmile Creek	2010	Minnesota River	07020007-562		Drinking Water	Nitrates	5
Sevenmile Creek	2006	Minnesota River	07020007-562		Aquatic Life	Turbidity	5
Crow Creek	2016	Minnesota River	07020007-569		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow Creek	2016	Minnesota River	07020007-569		Aquatic Recreation	Escherichia coli	5
Crow Creek	2016	Minnesota River	07020007-569		Aquatic Life	Fishes bioassessments	5
County Ditch 10 (John's Creek)	2016	Minnesota River	07020007-571		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 10 (John's Creek)	2016	Minnesota River	07020007-571		Aquatic Recreation	Escherichia coli	5
County Ditch 10 (John's Creek)	2016	Minnesota River	07020007-571		Aquatic Life	Fishes bioassessments	5
County Ditch 10 (John's Creek)	2012	Minnesota River	07020007-571		Drinking Water	Nitrates	5
Spring Creek	2016	Minnesota River	07020007-573		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Creek	2016	Minnesota River	07020007-573		Aquatic Recreation	Escherichia coli	5
Spring Creek	2016	Minnesota River	07020007-573		Aquatic Life	Fishes bioassessments	5
Spring Creek (Hindeman Creek)	2016	Minnesota River	07020007-574		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Creek (Hindeman Creek)	2016	Minnesota River	07020007-574		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020007-577		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Minnesota River	07020007-577		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020007-577		Drinking Water	Nitrates	5
Birch Coulee Creek	2016	Minnesota River	07020007-587		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Birch Coulee Creek	2016	Minnesota River	07020007-587		Aquatic Recreation	Escherichia coli	5
Birch Coulee Creek	2016	Minnesota River	07020007-587		Aquatic Life	Fishes bioassessments	5
Birch Coulee Creek	2016	Minnesota River	07020007-588		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Birch Coulee Creek	2016	Minnesota River	07020007-588		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 48	2016	Minnesota River	07020007-593		Aquatic Life	Fishes bioassessments	5
Unnamed ditch	2008	Minnesota River	07020007-598		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2008	Minnesota River	07020007-600		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2008	Minnesota River	07020007-602		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2008	Minnesota River	07020007-603		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2008	Minnesota River	07020007-604		Aquatic Recreation	Fecal Coliform	5
Rogers Creek (County Ditch 78)	2016	Minnesota River	07020007-613		Aquatic Recreation	Escherichia coli	5
Spring Creek (Judicial Ditch 29)	2016	Minnesota River	07020007-622		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Creek (Judicial Ditch 29)	2016	Minnesota River	07020007-622		Aquatic Recreation	Escherichia coli	5
Spring Creek (Judicial Ditch 29)	2016	Minnesota River	07020007-622		Aquatic Life	Fishes bioassessments	5
County Ditch 52	2016	Minnesota River	07020007-636		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Unnamed creek (Sevenmile Creek Tributary)	2010	Minnesota River	07020007-637		Aquatic Recreation	Escherichia coli	5
Heyman's Creek	2016	Minnesota River	07020007-640		Aquatic Recreation	Escherichia coli	5
Huelskamp Creek	2016	Minnesota River	07020007-641		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2016	Minnesota River	07020007-644		Aquatic Recreation	Escherichia coli	5
Purgatory Creek	2016	Minnesota River	07020007-645		Aquatic Recreation	Escherichia coli	5
County Ditch 11	2016	Minnesota River	07020007-657		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 67	2016	Minnesota River	07020007-658		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 67	2016	Minnesota River	07020007-658		Aquatic Life	Fishes bioassessments	5
County Ditch 3	2016	Minnesota River	07020007-660		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 11	2016	Minnesota River	07020007-661		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 8	2016	Minnesota River	07020007-666		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 8	2016	Minnesota River	07020007-666		Aquatic Life	Fishes bioassessments	5
County Ditch 124	2016	Minnesota River	07020007-670		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 115	2016	Minnesota River	07020007-673		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Heyman's Creek	2016	Minnesota River	07020007-675		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Cottonwood River	2016	Minnesota River	07020007-676		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Cottonwood River	2006	Minnesota River	07020007-676		Aquatic Recreation	Fecal Coliform	5
Little Cottonwood River	2016	Minnesota River	07020007-676		Aquatic Life	Fishes bioassessments	5
Little Cottonwood River	2006	Minnesota River	07020007-676		Aquatic Life	Turbidity	5
Little Cottonwood River	2016	Minnesota River	07020007-677		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Cottonwood River	2006	Minnesota River	07020007-677		Aquatic Recreation	Fecal Coliform	5
Little Cottonwood River	2006	Minnesota River	07020007-677		Aquatic Life	Turbidity	5
County Ditch 46A	2016	Minnesota River	07020007-678		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 46A	2016	Minnesota River	07020007-678		Aquatic Life	Fishes bioassessments	5
County Ditch 46A	2016	Minnesota River	07020007-679		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 46A	2006	Minnesota River	07020007-679		Aquatic Recreation	Fecal Coliform	5
County Ditch 46A	2006	Minnesota River	07020007-679		Aquatic Life	Turbidity	5
Swan Lake Outlet (Nicollet Creek)	2016	Minnesota River	07020007-683		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Swan Lake Outlet (Nicollet Creek)	2016	Minnesota River	07020007-683		Aquatic Recreation	Escherichia coli	5
Eightmile Creek	2016	Minnesota River	07020007-684		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Eightmile Creek	2016	Minnesota River	07020007-684		Aquatic Recreation	Escherichia coli	5
Eightmile Creek	2016	Minnesota River	07020007-684		Aquatic Life	Fishes bioassessments	5
Little Rock Creek (Judicial Ditch 31)	2016	Minnesota River	07020007-686		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Rock Creek (Judicial Ditch 31)	2016	Minnesota River	07020007-686		Aquatic Life	Fishes bioassessments	5
Little Rock Creek (Judicial Ditch 31)	2016	Minnesota River	07020007-687		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Rock Creek (Judicial Ditch 31)	2016	Minnesota River	07020007-687		Aquatic Recreation	Escherichia coli	5
Little Rock Creek (Judicial Ditch 31)	2016	Minnesota River	07020007-687		Aquatic Life	Fishes bioassessments	5
County Ditch 106A (Fort Ridgely Creek)	2016	Minnesota River	07020007-688		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Fort Ridgely Creek	2016	Minnesota River	07020007-689		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Fort Ridgely Creek	2016	Minnesota River	07020007-689		Aquatic Recreation	Escherichia coli	5
Fort Ridgely Creek	2016	Minnesota River	07020007-689		Aquatic Life	Fishes bioassessments	5
Morgan Creek	2016	Minnesota River	07020007-691		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Morgan Creek	2016	Minnesota River	07020007-691		Aquatic Recreation	Escherichia coli	5
Morgan Creek	2016	Minnesota River	07020007-691		Aquatic Life	Fishes bioassessments	5
Shanaska Creek	2016	Minnesota River	07020007-693		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Shanaska Creek	2016	Minnesota River	07020007-693		Aquatic Recreation	Escherichia coli	5
Shanaska Creek	2016	Minnesota River	07020007-693		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020007-696		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Minnesota River	07020007-696		Aquatic Life	Fishes bioassessments	5
Wabasha Creek	2016	Minnesota River	07020007-699		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 10	2016	Minnesota River	07020007-701		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sevenmile Creek	2016	Minnesota River	07020007-703		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sevenmile Creek	2006	Minnesota River	07020007-703		Aquatic Recreation	Fecal Coliform	5
Sevenmile Creek	2006	Minnesota River	07020007-703		Aquatic Life	Turbidity	5
Threemile Creek	2016	Minnesota River	07020007-704		Aquatic Recreation	Escherichia coli	5
Threemile Creek	2016	Minnesota River	07020007-704		Aquatic Life	Fishes bioassessments	5
Fritsche Creek (County Ditch 77)	2016	Minnesota River	07020007-709		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Fritsche Creek (County Ditch 77)	2016	Minnesota River	07020007-709		Aquatic Recreation	Escherichia coli	5
County Ditch 124	2016	Minnesota River	07020007-711		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 13	2016	Minnesota River	07020007-712		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 13	2016	Minnesota River	07020007-712		Aquatic Recreation	Escherichia coli	5
County Ditch 13	2016	Minnesota River	07020007-712		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020007-715		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 13	2016	Minnesota River	07020007-716		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 13	2016	Minnesota River	07020007-717		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 13	2016	Minnesota River	07020007-717		Aquatic Life	Fishes bioassessments	5
Minnesota River	2018	Minnesota River	07020007-720	Lower Sioux	Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020007-720	Lower Sioux	Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2002	Minnesota River	07020007-720	Lower Sioux	Aquatic Life	Turbidity	5
Minnesota River	2018	Minnesota River	07020007-721		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020007-721		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2018	Minnesota River	07020007-721		Aquatic Life	Total suspended solids	5
Minnesota River	2016	Minnesota River	07020007-722		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020007-722		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1998	Minnesota River	07020007-722		Aquatic Consumption	PCB in water column	5
Minnesota River	2002	Minnesota River	07020007-722		Aquatic Life	Turbidity	5
Minnesota River	2018	Minnesota River	07020007-723		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Minnesota River	1994	Minnesota River	07020007-723		Aquatic Recreation	Fecal Coliform	5
Minnesota River	2016	Minnesota River	07020007-723		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020007-723		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2002	Minnesota River	07020007-723		Aquatic Consumption	PCB in water column	5
Minnesota River	2002	Minnesota River	07020007-723		Aquatic Life	Turbidity	5
Cottonwood River	2002	Minnesota River	07020008-501		Aquatic Life	Turbidity	5
Cottonwood River	2006	Minnesota River	07020008-504		Aquatic Life	Turbidity	5

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Cottonwood River	2006	Minnesota River	07020008-508		Aquatic Life	Turbidity	5
Sleepy Eye Creek	2018	Minnesota River	07020008-512		Aquatic Life	Chlorpyrifos	5
Sleepy Eye Creek	2004	Minnesota River	07020008-512		Aquatic Life	Fishes bioassessments	5
Sleepy Eye Creek	2006	Minnesota River	07020008-512		Aquatic Life	Turbidity	5
Plum Creek (Judicial Ditch 20A)	2006	Minnesota River	07020008-516		Aquatic Life	Turbidity	5
Dutch Charley Creek	2006	Minnesota River	07020008-517		Aquatic Life	Fishes bioassessments	5
Dutch Charley Creek	2006	Minnesota River	07020008-517		Aquatic Life	Turbidity	5
Dutch Charley Creek	2006	Minnesota River	07020008-518		Aquatic Life	Fishes bioassessments	5
Dutch Charley Creek	2006	Minnesota River	07020008-518		Aquatic Life	Turbidity	5
Pell Creek	2010	Minnesota River	07020008-535		Aquatic Life	Turbidity	5
Blue Earth River	2002	Minnesota River	07020009-501		Aquatic Life	Turbidity	5
Elm Creek	2006	Minnesota River	07020009-502		Aquatic Life	Fishes bioassessments	5
Elm Creek	1996	Minnesota River	07020009-502		Aquatic Life	Turbidity	5
Center Creek	1996	Minnesota River	07020009-503		Aquatic Life	Ammonia, unionized	5
Center Creek	2002	Minnesota River	07020009-503		Aquatic Life	Fishes bioassessments	5
Center Creek	2002	Minnesota River	07020009-503		Aquatic Life	Turbidity	5
Blue Earth River	2004	Minnesota River	07020009-504		Aquatic Life	Fishes bioassessments	5
Blue Earth River	2002	Minnesota River	07020009-504		Aquatic Life	Turbidity	5
Judicial Ditch 3	1996	Minnesota River	07020009-505		Aquatic Life	Dissolved oxygen	5
Blue Earth River	2008	Minnesota River	07020009-507		Aquatic Life	Turbidity	5
Blue Earth River	2002	Minnesota River	07020009-508		Aquatic Life	Fishes bioassessments	5
Blue Earth River	2002	Minnesota River	07020009-508		Aquatic Life	Turbidity	5
Blue Earth River	2016	Minnesota River	07020009-509		Aquatic Life	Nutrient/eutrophication biological indicators	5
Blue Earth River	2004	Minnesota River	07020009-509		Aquatic Life	Turbidity	5
Blue Earth River	2010	Minnesota River	07020009-514		Aquatic Life	Turbidity	5
Blue Earth River	2002	Minnesota River	07020009-515		Aquatic Life	Fishes bioassessments	5
Blue Earth River	2002	Minnesota River	07020009-515		Aquatic Life	Turbidity	5
Blue Earth River	2004	Minnesota River	07020009-516		Aquatic Life	Fishes bioassessments	5
Blue Earth River	2008	Minnesota River	07020009-518		Aquatic Life	Turbidity	5
Cedar Creek (Cedar Run Creek)	2006	Minnesota River	07020009-521		Aquatic Life	Turbidity	5
Elm Creek	2006	Minnesota River	07020009-522		Aquatic Life	Turbidity	5
Elm Creek	2010	Minnesota River	07020009-523		Aquatic Life	Turbidity	5
Elm Creek, South Fork	2010	Minnesota River	07020009-524		Aquatic Life	Turbidity	5
Lily Creek	2006	Minnesota River	07020009-525		Aquatic Life	Turbidity	5
Dutch Creek	2006	Minnesota River	07020009-527		Aquatic Life	Turbidity	5
Blue Earth River, East Branch	2004	Minnesota River	07020009-553		Aquatic Life	Fishes bioassessments	5
Blue Earth River, East Branch	2008	Minnesota River	07020009-553		Aquatic Life	Turbidity	5
Blue Earth River, East Branch	2004	Minnesota River	07020009-554		Aquatic Life	Fishes bioassessments	5
Blue Earth River, East Branch	2008	Minnesota River	07020009-554		Aquatic Life	Turbidity	5
Brush Creek	2004	Minnesota River	07020009-555		Aquatic Life	Fishes bioassessments	5
Cedar Creek (Cedar Run Creek)	1994	Minnesota River	07020009-560		Aquatic Life	Dissolved oxygen	5

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Blue Earth River	2008	Minnesota River	07020009-565		Aquatic Life	Turbidity	5
Watonwan River	2016	Minnesota River	07020010-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River	2016	Minnesota River	07020010-501		Aquatic Life	Fishes bioassessments	5
Watonwan River	2002	Minnesota River	07020010-501		Aquatic Life	Turbidity	5
St James Creek	2016	Minnesota River	07020010-502		Limited Resource Value	Escherichia coli	5
Unnamed creek (Mountain Lake Inlet)	2016	Minnesota River	07020010-505		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River	2016	Minnesota River	07020010-510		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River	2016	Minnesota River	07020010-510		Aquatic Recreation	Escherichia coli	5
Watonwan River	2016	Minnesota River	07020010-510		Aquatic Life	Fishes bioassessments	5
Watonwan River	2008	Minnesota River	07020010-510		Aquatic Life	Turbidity	5
Watonwan River	2016	Minnesota River	07020010-511		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River	2004	Minnesota River	07020010-511		Aquatic Life	Fishes bioassessments	5
Watonwan River	2006	Minnesota River	07020010-511		Aquatic Life	Turbidity	5
St James Creek	2016	Minnesota River	07020010-515		Limited Resource Value	Escherichia coli	5
Butterfield Creek	2016	Minnesota River	07020010-516		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Butterfield Creek	2016	Minnesota River	07020010-516		Aquatic Recreation	Escherichia coli	5
Butterfield Creek	2016	Minnesota River	07020010-516		Aquatic Life	Fishes bioassessments	5
Butterfield Creek	2008	Minnesota River	07020010-516		Aquatic Life	Turbidity	5
Watonwan River, South Fork	2016	Minnesota River	07020010-517		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River, South Fork	2016	Minnesota River	07020010-517		Aquatic Life	Fishes bioassessments	5
Watonwan River, South Fork	2006	Minnesota River	07020010-517		Aquatic Life	Turbidity	5
Perch Creek	2016	Minnesota River	07020010-523		Aquatic Recreation	Escherichia coli	5
Perch Creek	2016	Minnesota River	07020010-523		Aquatic Life	Fishes bioassessments	5
Perch Creek	2016	Minnesota River	07020010-524		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Perch Creek	2016	Minnesota River	07020010-524		Aquatic Life	Fishes bioassessments	5
Perch Creek	2006	Minnesota River	07020010-524		Aquatic Life	Turbidity	5
Unnamed creek	2016	Minnesota River	07020010-526		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-526		Aquatic Life	Fishes bioassessments	5
St James Creek (Kansas Lake Inlet)	2002	Minnesota River	07020010-528		Aquatic Life	Turbidity	5
Spring Brook	2016	Minnesota River	07020010-540		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Brook	2016	Minnesota River	07020010-540		Aquatic Life	Fishes bioassessments	5
Watonwan River, South Fork	2016	Minnesota River	07020010-547		Aquatic Life	Fishes bioassessments	5
Watonwan River, South Fork	2006	Minnesota River	07020010-547		Aquatic Life	Turbidity	5
Unnamed creek	2016	Minnesota River	07020010-549		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-549		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-552		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-552		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-557		Aquatic Life	Fishes bioassessments	5
County Ditch 78	2016	Minnesota River	07020010-559		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 78	2016	Minnesota River	07020010-559		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-561		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Unnamed creek	2016	Minnesota River	07020010-561		Aquatic Life	Fishes bioassessments	5
Watonwan River	2006	Minnesota River	07020010-562		Aquatic Life	Turbidity	5
Watonwan River	2016	Minnesota River	07020010-563		Aquatic Life	Fishes bioassessments	5
Watonwan River	2006	Minnesota River	07020010-563		Aquatic Life	Turbidity	5
Watonwan River, North Fork	2016	Minnesota River	07020010-564		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River, North Fork	2016	Minnesota River	07020010-564		Aquatic Recreation	Escherichia coli	5
Watonwan River, North Fork	2016	Minnesota River	07020010-564		Aquatic Life	Fishes bioassessments	5
Watonwan River, North Fork	2006	Minnesota River	07020010-564		Aquatic Life	Turbidity	5
Watonwan River, North Fork	2016	Minnesota River	07020010-565		Aquatic Life	Fishes bioassessments	5
Watonwan River	2016	Minnesota River	07020010-566		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River	2004	Minnesota River	07020010-566		Aquatic Life	Fishes bioassessments	5
Watonwan River	2006	Minnesota River	07020010-566		Aquatic Life	Turbidity	5
Watonwan River	2004	Minnesota River	07020010-567		Aquatic Life	Fishes bioassessments	5
Watonwan River	2006	Minnesota River	07020010-567		Aquatic Life	Turbidity	5
Watonwan River, South Fork	2016	Minnesota River	07020010-568		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Watonwan River, South Fork	2016	Minnesota River	07020010-568		Aquatic Recreation	Escherichia coli	5
Watonwan River, South Fork	2016	Minnesota River	07020010-568		Aquatic Life	Fishes bioassessments	5
Watonwan River, South Fork	2016	Minnesota River	07020010-569		Aquatic Life	Fishes bioassessments	5
Willow Creek	2016	Minnesota River	07020010-571		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Willow Creek	2006	Minnesota River	07020010-571		Aquatic Life	Fishes bioassessments	5
Spring Branch Creek	2016	Minnesota River	07020010-574		Aquatic Recreation	Escherichia coli	5
Spring Branch Creek	2016	Minnesota River	07020010-574		Aquatic Life	Fishes bioassessments	5
St James Creek	2016	Minnesota River	07020010-576		Aquatic Recreation	Escherichia coli	5
Mink Creek	2016	Minnesota River	07020010-577		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mink Creek	2016	Minnesota River	07020010-577		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 1	2016	Minnesota River	07020010-579		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 1	2016	Minnesota River	07020010-579		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 1	2006	Minnesota River	07020010-580		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 1	2016	Minnesota River	07020010-581		Aquatic Recreation	Escherichia coli	5
Judicial Ditch 1	2016	Minnesota River	07020010-581		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-583		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Minnesota River	07020010-583		Aquatic Life	Fishes bioassessments	5
Le Sueur River	2012	Minnesota River	07020011-501		Aquatic Life	Fishes bioassessments	5
Le Sueur River	2002	Minnesota River	07020011-501		Aquatic Consumption	Mercury in water column	5
Le Sueur River	2016	Minnesota River	07020011-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Le Sueur River	2012	Minnesota River	07020011-501		Aquatic Consumption	PCB in fish tissue	5
Le Sueur River	2002	Minnesota River	07020011-501		Aquatic Consumption	PCB in water column	5
Le Sueur River	2002	Minnesota River	07020011-501		Aquatic Life	Turbidity	5
Unnamed creek (Little Beauford Ditch)	2018	Minnesota River	07020011-503		Aquatic Life	Chlorpyrifos	5

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Unnamed creek (Little Beauford Ditch)	2002	Minnesota River	07020011-503		Aquatic Consumption	Mercury in water column	5
Unnamed creek (Little Beauford Ditch)	2002	Minnesota River	07020011-503		Aquatic Consumption	PCB in water column	5
Unnamed creek (Little Beauford Ditch)	2002	Minnesota River	07020011-503		Aquatic Life	Turbidity	5
Little Cobb River	2002	Minnesota River	07020011-504		Aquatic Life	Fishes bioassessments	5
Little Cobb River	2002	Minnesota River	07020011-504		Aquatic Consumption	Mercury in water column	5
Little Cobb River	2016	Minnesota River	07020011-504		Aquatic Life	Nutrient/eutrophication biological indicators	5
Little Cobb River	2002	Minnesota River	07020011-504		Aquatic Life	Turbidity	5
Le Sueur River	2012	Minnesota River	07020011-506		Aquatic Consumption	PCB in fish tissue	5
Le Sueur River	2010	Minnesota River	07020011-506		Aquatic Life	Turbidity	5
Le Sueur River	2012	Minnesota River	07020011-507		Aquatic Life	Fishes bioassessments	5
Le Sueur River	2012	Minnesota River	07020011-507		Aquatic Consumption	PCB in fish tissue	5
Le Sueur River	2008	Minnesota River	07020011-507		Aquatic Life	Turbidity	5
Unnamed creek	2012	Minnesota River	07020011-510		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 6	2012	Minnesota River	07020011-522		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rice Creek	2012	Minnesota River	07020011-531		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rice Creek	2006	Minnesota River	07020011-531		Aquatic Life	Fishes bioassessments	5
Rice Creek	2010	Minnesota River	07020011-531		Aquatic Life	Turbidity	5
Maple River	2012	Minnesota River	07020011-534		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Maple River	2008	Minnesota River	07020011-534		Aquatic Life	Turbidity	5
Maple River	2012	Minnesota River	07020011-535		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Maple River	2012	Minnesota River	07020011-535		Aquatic Life	Fishes bioassessments	5
Maple River	2010	Minnesota River	07020011-535		Aquatic Life	Turbidity	5
County Ditch 3 (Judicial Ditch 9)	2010	Minnesota River	07020011-552		Aquatic Life	Turbidity	5
Cobb River	2012	Minnesota River	07020011-556		Aquatic Life	Fishes bioassessments	5
Cobb River	2016	Minnesota River	07020011-556		Aquatic Life	Nutrient/eutrophication biological indicators	5
Cobb River	2008	Minnesota River	07020011-556		Aquatic Life	Turbidity	5
County Ditch 12	2012	Minnesota River	07020011-558		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 12	2012	Minnesota River	07020011-558		Aquatic Life	Fishes bioassessments	5
Cobb River	2012	Minnesota River	07020011-568		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cobb River	2004	Minnesota River	07020011-568		Aquatic Life	Fishes bioassessments	5
Cobb River	2010	Minnesota River	07020011-568		Aquatic Life	Turbidity	5
Little Le Sueur River	2012	Minnesota River	07020011-573		Aquatic Life	Fishes bioassessments	5
Iosco Creek	2012	Minnesota River	07020011-576		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Iosco Creek	2012	Minnesota River	07020011-576		Aquatic Life	Fishes bioassessments	5
County Ditch 19	2012	Minnesota River	07020011-608		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 19	2012	Minnesota River	07020011-608		Aquatic Life	Fishes bioassessments	5
County Ditch 15-2	2012	Minnesota River	07020011-609		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 15-2	2012	Minnesota River	07020011-609		Aquatic Life	Fishes bioassessments	5
Le Sueur River	2012	Minnesota River	07020011-619		Aquatic Life	Fishes bioassessments	5
Le Sueur River	2012	Minnesota River	07020011-619		Aquatic Consumption	PCB in fish tissue	5
Le Sueur River	2010	Minnesota River	07020011-619		Aquatic Life	Turbidity	5
Le Sueur River	2012	Minnesota River	07020011-620		Aquatic Consumption	PCB in fish tissue	5
Le Sueur River	2010	Minnesota River	07020011-620		Aquatic Life	Turbidity	5

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Minnesota River	2016	Minnesota River	07020012-505		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020012-505		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1996	Minnesota River	07020012-505		Aquatic Life	Turbidity	5
Minnesota River	2016	Minnesota River	07020012-506		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020012-506		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1996	Minnesota River	07020012-506		Aquatic Life	Turbidity	5
Judicial Ditch 1A	2010	Minnesota River	07020012-509		Limited Resource Value	Escherichia coli	5
Riley Creek	2018	Minnesota River	07020012-511		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Riley Creek	2018	Minnesota River	07020012-511		Aquatic Recreation	Escherichia coli	5
Riley Creek	2018	Minnesota River	07020012-511		Aquatic Life	Fishes bioassessments	5
Riley Creek	2002	Minnesota River	07020012-511		Aquatic Life	Turbidity	5
Sand Creek	2018	Minnesota River	07020012-513		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sand Creek	2018	Minnesota River	07020012-513		Aquatic Recreation	Escherichia coli	5
Sand Creek	2004	Minnesota River	07020012-513		Aquatic Life	Fishes bioassessments	5
Sand Creek	2016	Minnesota River	07020012-513		Aquatic Life	Nutrient/eutrophication biological indicators	5
Sand Creek	2002	Minnesota River	07020012-513		Aquatic Life	Turbidity	5
Bevens Creek	2018	Minnesota River	07020012-514		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Bevens Creek	2018	Minnesota River	07020012-514		Aquatic Life	Fishes bioassessments	5
Eagle Creek	2018	Minnesota River	07020012-519		Aquatic Recreation	Escherichia coli	5
Rush River	2018	Minnesota River	07020012-521		Aquatic Life	Fishes bioassessments	5
Rush River	2008	Minnesota River	07020012-521		Aquatic Life	Turbidity	5
Unnamed creek	2006	Minnesota River	07020012-526		Aquatic Recreation	Fecal Coliform	5
Unnamed ditch	2006	Minnesota River	07020012-527		Aquatic Life	Dissolved oxygen	5
Unnamed ditch	2006	Minnesota River	07020012-527		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2006	Minnesota River	07020012-528		Aquatic Recreation	Fecal Coliform	5
Unnamed ditch	2018	Minnesota River	07020012-533		Limited Resource Value	Escherichia coli	5
Sand Creek	2018	Minnesota River	07020012-538		Aquatic Life	Fishes bioassessments	5
Sand Creek	2010	Minnesota River	07020012-538		Aquatic Life	Turbidity	5
Rush River	2018	Minnesota River	07020012-548		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rush River	2018	Minnesota River	07020012-548		Aquatic Life	Fishes bioassessments	5
Rush River	2010	Minnesota River	07020012-548		Aquatic Life	Turbidity	5
Rush River, Middle Branch (County Ditch 23 and 24)	2010	Minnesota River	07020012-550		Limited Resource Value	Escherichia coli	5
County Ditch 42	2018	Minnesota River	07020012-551		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rush River, North Branch (Judicial Ditch 18)	2018	Minnesota River	07020012-555		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rush River, North Branch (Judicial Ditch 18)	2018	Minnesota River	07020012-555		Aquatic Recreation	Escherichia coli	5
Rush River, North Branch (Judicial Ditch 18)	2018	Minnesota River	07020012-555		Aquatic Life	Fishes bioassessments	5
Rush River, North Branch (County Ditch 55)	2018	Minnesota River	07020012-556		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rush River, North Branch (County Ditch 55)	2018	Minnesota River	07020012-556		Aquatic Life	Fishes bioassessments	5
Rush River, North Branch (County Ditch 55)	2010	Minnesota River	07020012-558		Limited Resource Value	Escherichia coli	5
Unnamed ditch	2018	Minnesota River	07020012-565		Limited Resource Value	Escherichia coli	5
Unnamed creek	2018	Minnesota River	07020012-568		Aquatic Recreation	Escherichia coli	5

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Robert Creek	2018	Minnesota River	07020012-575		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Robert Creek	2018	Minnesota River	07020012-575		Aquatic Recreation	Escherichia coli	5
Robert Creek	2018	Minnesota River	07020012-575		Aquatic Life	Fishes bioassessments	5
Robert Creek	2018	Minnesota River	07020012-575		Aquatic Life	Total suspended solids	5
Unnamed creek (Picha Creek)	2018	Minnesota River	07020012-579		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Picha Creek)	2004	Minnesota River	07020012-579		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Picha Creek)	2018	Minnesota River	07020012-580		Aquatic Life	Fishes bioassessments	5
Unnamed creek (East Creek)	2018	Minnesota River	07020012-581		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (East Creek)	2006	Minnesota River	07020012-581		Aquatic Recreation	Fecal Coliform	5
Unnamed creek (East Creek)	2004	Minnesota River	07020012-581		Aquatic Life	Fishes bioassessments	5
Unnamed creek (East Creek)	2008	Minnesota River	07020012-581		Aquatic Life	Turbidity	5
Unnamed creek (Assumption Creek)	2018	Minnesota River	07020012-582		Aquatic Life	Fishes bioassessments	5
Rush River, Middle Branch (County Ditch 23 and 24)	2018	Minnesota River	07020012-586		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rush River, Middle Branch (County Ditch 23 and 24)	2018	Minnesota River	07020012-586		Aquatic Life	Fishes bioassessments	5
High Island Ditch 2	2006	Minnesota River	07020012-588		Aquatic Life	Turbidity	5
Judicial Ditch 11	2018	Minnesota River	07020012-590		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 11	2018	Minnesota River	07020012-593		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 11	2018	Minnesota River	07020012-593		Aquatic Life	Fishes bioassessments	5
Barney Fry Creek	2018	Minnesota River	07020012-602		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Barney Fry Creek	2018	Minnesota River	07020012-602		Aquatic Recreation	Escherichia coli	5
Barney Fry Creek	2018	Minnesota River	07020012-602		Aquatic Life	Fishes bioassessments	5
Unnamed creek (County Ditch 13)	2018	Minnesota River	07020012-604		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2008	Minnesota River	07020012-618		Aquatic Recreation	Fecal Coliform	5
Unnamed creek (Lake Waconia Inlet)	2008	Minnesota River	07020012-619		Aquatic Recreation	Fecal Coliform	5
Unnamed creek	2018	Minnesota River	07020012-621		Aquatic Recreation	Escherichia coli	5
County Ditch 10	2018	Minnesota River	07020012-628		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 10	2008	Minnesota River	07020012-628		Aquatic Recreation	Fecal Coliform	5
County Ditch 10	2018	Minnesota River	07020012-628		Aquatic Life	Nutrient/eutrophication biological indicators	5
Judicial Ditch 22	2006	Minnesota River	07020012-629		Aquatic Recreation	Fecal Coliform	5
County Ditch 13	2018	Minnesota River	07020012-636		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
High Island Creek	2018	Minnesota River	07020012-653		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
High Island Creek	2018	Minnesota River	07020012-653		Aquatic Life	Fishes bioassessments	5
High Island Creek	2006	Minnesota River	07020012-653		Aquatic Life	Turbidity	5
County Ditch 49	2018	Minnesota River	07020012-677		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 49	2018	Minnesota River	07020012-677		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 15	2018	Minnesota River	07020012-682		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 15	2018	Minnesota River	07020012-682		Aquatic Life	Fishes bioassessments	5

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County Ditch 39	2018	Minnesota River	07020012-683		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch	2018	Minnesota River	07020012-713		Aquatic Recreation	Escherichia coli	5
County Ditch 18	2018	Minnesota River	07020012-714		Aquatic Recreation	Escherichia coli	5
Raven Stream	2018	Minnesota River	07020012-716		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Raven Stream	2018	Minnesota River	07020012-716		Aquatic Recreation	Escherichia coli	5
Raven Stream	2018	Minnesota River	07020012-716		Aquatic Life	Fishes bioassessments	5
Ninemile Creek, South Fork	2018	Minnesota River	07020012-723		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Ninemile Creek, South Fork	2018	Minnesota River	07020012-723		Aquatic Life	Fishes bioassessments	5
Forest Prairie Creek	2018	Minnesota River	07020012-725		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Forest Prairie Creek	2018	Minnesota River	07020012-725		Aquatic Recreation	Escherichia coli	5
Forest Prairie Creek	2018	Minnesota River	07020012-725		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Prior Lake Outlet Channel)	2018	Minnesota River	07020012-728		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Prior Lake Outlet Channel)	2018	Minnesota River	07020012-728		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Minnesota River	07020012-732		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Minnesota River	07020012-732		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Minnesota River	07020012-746		Aquatic Recreation	Escherichia coli	5
Big Possum Creek	2018	Minnesota River	07020012-749		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2018	Minnesota River	07020012-753		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2018	Minnesota River	07020012-756		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2018	Minnesota River	07020012-761		Aquatic Recreation	Escherichia coli	5
Unnamed ditch	2018	Minnesota River	07020012-763		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch	2018	Minnesota River	07020012-763		Aquatic Life	Fishes bioassessments	5
County Ditch 34	2018	Minnesota River	07020012-764		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 34	2018	Minnesota River	07020012-764		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 4	2018	Minnesota River	07020012-767		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Minnesota River	07020012-768		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Minnesota River	07020012-768		Aquatic Life	Fishes bioassessments	5
County Ditch 42	2018	Minnesota River	07020012-772		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 42	2018	Minnesota River	07020012-772		Aquatic Life	Fishes bioassessments	5
County Ditch 32A	2018	Minnesota River	07020012-783		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 32A	2018	Minnesota River	07020012-783		Aquatic Life	Fishes bioassessments	5
County Ditch 9	2018	Minnesota River	07020012-784		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 1	2018	Minnesota River	07020012-785		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 44	2018	Minnesota River	07020012-786		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 44	2018	Minnesota River	07020012-786		Aquatic Life	Fishes bioassessments	5
Unnamed ditch	2018	Minnesota River	07020012-788		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 56	2018	Minnesota River	07020012-790		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 18	2018	Minnesota River	07020012-791		Aquatic Life	Fishes bioassessments	5
County Ditch 47A	2018	Minnesota River	07020012-792		Aquatic Life	Fishes bioassessments	5
County Ditch 75	2018	Minnesota River	07020012-793		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 12	2018	Minnesota River	07020012-794		Aquatic Life	Fishes bioassessments	5
County Ditch 50	2018	Minnesota River	07020012-796		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 50	2018	Minnesota River	07020012-796		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Minnesota River	07020012-798		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Minnesota River	07020012-798		Aquatic Life	Fishes bioassessments	5

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Minnesota River	1994	Minnesota River	07020012-799		Aquatic Recreation	Fecal Coliform	5
Minnesota River	2016	Minnesota River	07020012-799		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020012-799		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	2002	Minnesota River	07020012-799		Aquatic Life	Turbidity	5
Minnesota River	2002	Minnesota River	07020012-800		Aquatic Recreation	Fecal Coliform	5
Minnesota River	2016	Minnesota River	07020012-800		Aquatic Life	Nutrient/eutrophication biological indicators	5
Minnesota River	1998	Minnesota River	07020012-800		Aquatic Consumption	PCB in fish tissue	5
Minnesota River	1996	Minnesota River	07020012-800		Aquatic Life	Turbidity	5
County Ditch 30A	2018	Minnesota River	07020012-801		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 30A	2018	Minnesota River	07020012-801		Aquatic Life	Fishes bioassessments	5
Chaska Creek	2018	Minnesota River	07020012-803		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Chaska Creek	2018	Minnesota River	07020012-803		Aquatic Life	Fishes bioassessments	5
Chaska Creek	2006	Minnesota River	07020012-804		Aquatic Recreation	Fecal Coliform	5
Carver Creek	2018	Minnesota River	07020012-806		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Carver Creek	2018	Minnesota River	07020012-806		Aquatic Life	Fishes bioassessments	5
Carver Creek	2016	Minnesota River	07020012-806		Aquatic Life	Nutrient/eutrophication biological indicators	5
Ninemile Creek	2004	Minnesota River	07020012-807		Aquatic Life	Fishes bioassessments	5
Ninemile Creek	2018	Minnesota River	07020012-808		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Ninemile Creek	2018	Minnesota River	07020012-808		Aquatic Life	Fishes bioassessments	5
Ninemile Creek	2018	Minnesota River	07020012-809		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Ninemile Creek	2018	Minnesota River	07020012-809		Aquatic Recreation	Escherichia coli	5
Ninemile Creek	2018	Minnesota River	07020012-809		Aquatic Life	Fishes bioassessments	5
Credit River	2018	Minnesota River	07020012-811		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Credit River	2018	Minnesota River	07020012-811		Aquatic Life	Chloride	5
Credit River	2018	Minnesota River	07020012-811		Aquatic Recreation	Escherichia coli	5
Credit River	2018	Minnesota River	07020012-811		Aquatic Life	Fishes bioassessments	5
Silver Creek	2016	Minnesota River	07020012-813		Aquatic Life	Acetochlor	5
Silver Creek	2018	Minnesota River	07020012-813		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Silver Creek	2018	Minnesota River	07020012-813		Aquatic Life	Fishes bioassessments	5
Porter Creek	2010	Minnesota River	07020012-815		Aquatic Life	Turbidity	5
Porter Creek	2018	Minnesota River	07020012-817		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Porter Creek	2018	Minnesota River	07020012-817		Aquatic Recreation	Escherichia coli	5
Porter Creek	2018	Minnesota River	07020012-817		Aquatic Life	Fishes bioassessments	5
Porter Creek	2016	Minnesota River	07020012-817		Aquatic Life	Nutrient/eutrophication biological indicators	5
Porter Creek	2010	Minnesota River	07020012-817		Aquatic Life	Turbidity	5
Unnamed creek	2018	Minnesota River	07020012-822		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Minnesota River	07020012-822		Aquatic Life	Fishes bioassessments	5
Le Sueur Creek	2018	Minnesota River	07020012-823		Aquatic Life	Fishes bioassessments	5
Le Sueur Creek	2018	Minnesota River	07020012-824		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Le Sueur Creek	2018	Minnesota River	07020012-824		Aquatic Recreation	Escherichia coli	5
Le Sueur Creek	2018	Minnesota River	07020012-824		Aquatic Life	Fishes bioassessments	5
Rush River, South Branch	2018	Minnesota River	07020012-825		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rush River, South Branch	2018	Minnesota River	07020012-825		Aquatic Life	Fishes bioassessments	5
Rush River, South Branch	2018	Minnesota River	07020012-826		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rush River, South Branch	2018	Minnesota River	07020012-826		Aquatic Life	Fishes bioassessments	5
Purgatory Creek	2018	Minnesota River	07020012-828		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Purgatory Creek	2018	Minnesota River	07020012-828		Aquatic Recreation	Escherichia coli	5
Unnamed creek (Brewery Creek)	2018	Minnesota River	07020012-830		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Brewery Creek)	2018	Minnesota River	07020012-830		Aquatic Recreation	Escherichia coli	5
Unnamed creek (Brewery Creek)	2018	Minnesota River	07020012-830		Aquatic Life	Fishes bioassessments	5
Buffalo Creek	2018	Minnesota River	07020012-832		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Buffalo Creek	2004	Minnesota River	07020012-832		Aquatic Life	Fishes bioassessments	5
Buffalo Creek	2008	Minnesota River	07020012-832		Aquatic Life	Turbidity	5
High Island Creek	2018	Minnesota River	07020012-834		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
High Island Creek	2004	Minnesota River	07020012-834		Aquatic Life	Fishes bioassessments	5
High Island Creek	2006	Minnesota River	07020012-834		Aquatic Life	Turbidity	5
High Island Creek	2018	Minnesota River	07020012-838		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
High Island Creek	2018	Minnesota River	07020012-838		Aquatic Life	Fishes bioassessments	5
Sand Creek	2018	Minnesota River	07020012-839		Aquatic Life	Fishes bioassessments	5
Sand Creek	2016	Minnesota River	07020012-839		Aquatic Life	Nutrient/eutrophication biological indicators	5
Sand Creek	2010	Minnesota River	07020012-839		Aquatic Life	Turbidity	5
Sand Creek	2018	Minnesota River	07020012-840		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sand Creek	2018	Minnesota River	07020012-840		Aquatic Life	Fishes bioassessments	5
Sand Creek	2016	Minnesota River	07020012-840		Aquatic Life	Nutrient/eutrophication biological indicators	5
Sand Creek	2010	Minnesota River	07020012-840		Aquatic Life	Turbidity	5
Raven Stream, West Branch	2018	Minnesota River	07020012-842		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Raven Stream, West Branch	2008	Minnesota River	07020012-842		Aquatic Recreation	Fecal Coliform	5
Raven Stream, West Branch	2018	Minnesota River	07020012-842		Aquatic Life	Fishes bioassessments	5
Raven Stream, West Branch	2018	Minnesota River	07020012-842		Aquatic Life	Nutrient/eutrophication biological indicators	5
Bevens Creek	2018	Minnesota River	07020012-843		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Bevens Creek	2016	Minnesota River	07020012-843		Aquatic Life	Nutrient/eutrophication biological indicators	5
Bevens Creek	2018	Minnesota River	07020012-845		Aquatic Life	Fishes bioassessments	5
Bevens Creek	2018	Minnesota River	07020012-848		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Bevens Creek	2018	Minnesota River	07020012-848		Aquatic Life	Fishes bioassessments	5
Bevens Creek	2016	Minnesota River	07020012-848		Aquatic Life	Nutrient/eutrophication biological indicators	5
Unnamed creek	2018	Minnesota River	07020012-849		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Goose Lake Inlet)	2018	Minnesota River	07020012-907		Aquatic Recreation	Escherichia coli	5
Hanska	2016	Minnesota River	08-0026-00		Aquatic Life	Fishes bioassessments	5
Sleepy Eye	2002	Minnesota River	08-0045-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Rice Marsh	2018	Minnesota River	10-0001-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Riley	2018	Minnesota River	10-0002-00		Aquatic Life	Fishes bioassessments	5
Riley	2002	Minnesota River	10-0002-00		Aquatic Consumption	Mercury in fish tissue	5
Riley	2002	Minnesota River	10-0002-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lotus	2018	Minnesota River	10-0006-00		Aquatic Life	Fishes bioassessments	5
Lotus	2002	Minnesota River	10-0006-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Susan	2010	Minnesota River	10-0013-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5

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Hazeltine	2004	Minnesota River	10-0014-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Long	2006	Minnesota River	10-0016-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bavaria	2018	Minnesota River	10-0019-00		Aquatic Life	Fishes bioassessments	5
Bavaria	2006	Minnesota River	10-0019-00		Aquatic Consumption	Mercury in fish tissue	5
Miller	2012	Minnesota River	10-0029-00		Aquatic Consumption	Mercury in fish tissue	5
Gaystock	2004	Minnesota River	10-0031-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Maria	2004	Minnesota River	10-0058-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Waconia	2018	Minnesota River	10-0059-00		Aquatic Life	Fishes bioassessments	5
Rutz	2006	Minnesota River	10-0080-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
McKnight	2014	Minnesota River	10-0216-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Jonathan	2014	Minnesota River	10-0217-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2006	Minnesota River	10-0218-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2010	Minnesota River	12-0013-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	12-0013-00		Aquatic Life	Aquatic plant bioassessments	5
Mountain	2016	Minnesota River	17-0003-00		Aquatic Life	Fishes bioassessments	5
Bingham	2016	Minnesota River	17-0007-00		Aquatic Life	Fishes bioassessments	5
Bingham	2010	Minnesota River	17-0007-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Eagle	2010	Minnesota River	17-0020-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bean	2010	Minnesota River	17-0054-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Double (North Portion)	2010	Minnesota River	17-0056-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Crystal	1998	Minnesota River	19-0027-00		Aquatic Consumption	Mercury in fish tissue	5
Fish	2002	Minnesota River	19-0057-00		Aquatic Consumption	Mercury in fish tissue	5
Aaron	2018	Minnesota River	21-0242-00		Aquatic Consumption	Mercury in fish tissue	5
Moses	2012	Minnesota River	21-0245-00		Aquatic Consumption	Mercury in fish tissue	5
Unnamed PCA site #382	2010	Minnesota River	21-0692-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed PCA site #382	2010	Minnesota River	21-0692-00		Aquatic Life	Aquatic plant bioassessments	5
Penn	2018	Minnesota River	27-0004-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cornelia (North)	2008	Minnesota River	27-0028-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cornelia (South)	2018	Minnesota River	27-0028-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Edina	2008	Minnesota River	27-0029-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Hyland	2008	Minnesota River	27-0048-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bryant	2018	Minnesota River	27-0067-00		Aquatic Life	Fishes bioassessments	5
Staring	1998	Minnesota River	27-0078-00		Aquatic Consumption	Mercury in fish tissue	5
Staring	2002	Minnesota River	27-0078-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Wing	2010	Minnesota River	27-0091-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Rose	2010	Minnesota River	27-0092-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Silver	2016	Minnesota River	27-0136-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fish (Main Lake)	2016	Minnesota River	32-0018-03		Aquatic Life	Fishes bioassessments	5
Henderson	2002	Minnesota River	34-0116-00		Aquatic Consumption	Mercury in fish tissue	5
Willmar (main bay)	2018	Minnesota River	34-0180-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Middle	2012	Minnesota River	34-0208-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lac Qui Parle (SE Bay)	1992	Minnesota River	37-0046-01		Aquatic Life	Ammonia, unionized	5
Lac Qui Parle (SE Bay)	2018	Minnesota River	37-0046-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lac Qui Parle (NW Bay)	2018	Minnesota River	37-0046-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Marietta Kids Fishing Pond	2016	Minnesota River	37-0355-00		Aquatic Consumption	Mercury in fish tissue	5
Greenleaf	2018	Minnesota River	40-0020-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5

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Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Sanborn	2018	Minnesota River	40-0027-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pepin	2018	Minnesota River	40-0028-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Clear	2018	Minnesota River	40-0079-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Henry	2016	Minnesota River	40-0104-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Scotch	2016	Minnesota River	40-0109-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Washington	2016	Minnesota River	40-0117-00		Aquatic Life	Fishes bioassessments	5
Washington	2008	Minnesota River	40-0117-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Dead Coon (Main Lake)	2010	Minnesota River	41-0021-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Benton	2006	Minnesota River	41-0043-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Hendricks	2018	Minnesota River	41-0110-00		Aquatic Life	Fishes bioassessments	5
Unnamed	2010	Minnesota River	41-0128-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	41-0128-00		Aquatic Life	Aquatic plant bioassessments	5
School Grove	2010	Minnesota River	42-0002-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Rock	2010	Minnesota River	42-0052-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pochardt Slough	2010	Minnesota River	42-0080-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Weltz Slough	2010	Minnesota River	42-0092-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Weltz Slough	2010	Minnesota River	42-0092-00		Aquatic Life	Aquatic plant bioassessments	5
Goose	2010	Minnesota River	42-0093-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
George	2006	Minnesota River	46-0024-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Sisseton	2006	Minnesota River	46-0025-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Budd	2006	Minnesota River	46-0030-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Budd	1998	Minnesota River	46-0030-00		Aquatic Consumption	PCB in fish tissue	5
Hall	2006	Minnesota River	46-0031-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Amber	2006	Minnesota River	46-0034-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fox	2010	Minnesota River	46-0109-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Big Twin	2010	Minnesota River	46-0133-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2010	Minnesota River	51-0124-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	51-0124-00		Aquatic Life	Aquatic plant bioassessments	5
Unnamed	2010	Minnesota River	51-0128-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	51-0128-00		Aquatic Life	Aquatic plant bioassessments	5
Eagle	2012	Minnesota River	56-0253-00		Aquatic Consumption	Mercury in fish tissue	5
South Turtle	2014	Minnesota River	56-0377-00		Aquatic Consumption	Mercury in fish tissue	5
Unnamed	2010	Minnesota River	59-0008-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	59-0008-00		Aquatic Life	Aquatic plant bioassessments	5
Steenerson	2012	Minnesota River	61-0095-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pelican	2018	Minnesota River	61-0111-00		Aquatic Consumption	Mercury in fish tissue	5
Unnamed	2008	Minnesota River	61-0522-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cody	2018	Minnesota River	66-0061-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Phelps	2018	Minnesota River	66-0062-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Hatch	2018	Minnesota River	66-0063-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cleary	2008	Minnesota River	70-0022-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lower Prior	2018	Minnesota River	70-0026-00		Aquatic Life	Fishes bioassessments	5
St. Catherine	2018	Minnesota River	70-0029-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cynthia	2018	Minnesota River	70-0052-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Spring	2018	Minnesota River	70-0054-00		Aquatic Life	Fishes bioassessments	5
Fish	2006	Minnesota River	70-0069-00		Aquatic Consumption	Mercury in fish tissue	5

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Fish	2002	Minnesota River	70-0069-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pike	2002	Minnesota River	70-0076-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
O'Dowd	2018	Minnesota River	70-0095-00		Aquatic Life	Fishes bioassessments	5
Pleasant	2018	Minnesota River	70-0098-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Thole	2002	Minnesota River	70-0120-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Silver	2018	Minnesota River	72-0013-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Titlow	2010	Minnesota River	72-0042-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
HIGH ISLAND (MAIN BASIN)	2018	Minnesota River	72-0050-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Clear	2018	Minnesota River	72-0089-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2010	Minnesota River	75-0175-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	75-0175-00		Aquatic Life	Aquatic plant bioassessments	5
Unnamed	2010	Minnesota River	75-0375-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	75-0375-00		Aquatic Life	Aquatic plant bioassessments	5
Kansas	2016	Minnesota River	83-0036-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Long	2016	Minnesota River	83-0040-00		Aquatic Life	Fishes bioassessments	5
Butterfield	2016	Minnesota River	83-0056-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2010	Minnesota River	87-0121-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed	2010	Minnesota River	87-0121-00		Aquatic Life	Aquatic plant bioassessments	5
Medary Creek	2014	Missouri River	10170202-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pipestone Creek	2014	Missouri River	10170203-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pipestone Creek	2014	Missouri River	10170203-501		Aquatic Life	Fishes bioassessments	5
Flandreau Creek	2014	Missouri River	10170203-502		Aquatic Life	Fishes bioassessments	5
Pipestone Creek	2014	Missouri River	10170203-505		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pipestone Creek	2014	Missouri River	10170203-505		Aquatic Life	Fishes bioassessments	5
Pipestone Creek	2014	Missouri River	10170203-506		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pipestone Creek	2014	Missouri River	10170203-506		Aquatic Life	Fishes bioassessments	5
Split Rock Creek	2014	Missouri River	10170203-507		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Split Rock Creek	1994	Missouri River	10170203-507		Aquatic Life	Dissolved oxygen	5
Split Rock Creek	2014	Missouri River	10170203-507		Aquatic Life	Fishes bioassessments	5
Split Rock Creek	2014	Missouri River	10170203-509		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Split Rock Creek	2014	Missouri River	10170203-509		Aquatic Life	Fishes bioassessments	5
Split Rock Creek	2014	Missouri River	10170203-512		Aquatic Life	Fishes bioassessments	5
Split Rock Creek	2016	Missouri River	10170203-512		Aquatic Life	Nutrient/eutrophication biological indicators	5
Pipestone Creek, North Branch	2014	Missouri River	10170203-514		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pipestone Creek, North Branch	2014	Missouri River	10170203-514		Aquatic Life	Fishes bioassessments	5
Willow Creek	2014	Missouri River	10170203-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Willow Creek	2014	Missouri River	10170203-515		Aquatic Life	Fishes bioassessments	5
Flandreau Creek	2014	Missouri River	10170203-517		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Flandreau Creek	2014	Missouri River	10170203-517		Aquatic Life	Fishes bioassessments	5
Spring Creek	2014	Missouri River	10170203-518		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Beaver Creek	2014	Missouri River	10170203-521		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Beaver Creek	2014	Missouri River	10170203-522		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Beaver Creek	2014	Missouri River	10170203-522		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Missouri River	10170203-531		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Unnamed creek	2014	Missouri River	10170203-538		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170203-549		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170203-549		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Missouri River	10170203-553		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170203-553		Aquatic Life	Fishes bioassessments	5
Blood Run	2014	Missouri River	10170203-555		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rock River	2014	Missouri River	10170204-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rock River	2014	Missouri River	10170204-501		Aquatic Life	Fishes bioassessments	5
Rock River	2014	Missouri River	10170204-504		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rock River	2014	Missouri River	10170204-504		Aquatic Life	Fishes bioassessments	5
Rock River	2014	Missouri River	10170204-506		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rock River	2014	Missouri River	10170204-506		Aquatic Life	Fishes bioassessments	5
Rock River	2014	Missouri River	10170204-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rock River	2014	Missouri River	10170204-508		Aquatic Life	Fishes bioassessments	5
Rock River	2014	Missouri River	10170204-509		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rock River	2014	Missouri River	10170204-509		Aquatic Life	Fishes bioassessments	5
Little Rock Creek	2014	Missouri River	10170204-511		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Rock River	2014	Missouri River	10170204-512		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Rock River	2014	Missouri River	10170204-512		Aquatic Life	Fishes bioassessments	5
Little Rock River	2014	Missouri River	10170204-513		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Rock River	2014	Missouri River	10170204-513		Aquatic Life	Fishes bioassessments	5
Kanaranzi Creek, East Branch	2014	Missouri River	10170204-514		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Kanaranzi Creek, East Branch	2014	Missouri River	10170204-514		Aquatic Life	Fishes bioassessments	5
Kanaranzi Creek	2014	Missouri River	10170204-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Kanaranzi Creek	2014	Missouri River	10170204-515		Aquatic Life	Fishes bioassessments	5
Kanaranzi Creek	2014	Missouri River	10170204-516		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Kanaranzi Creek	2014	Missouri River	10170204-516		Aquatic Life	Fishes bioassessments	5
Kanaranzi Creek	2014	Missouri River	10170204-517		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Kanaranzi Creek	2014	Missouri River	10170204-517		Aquatic Life	Fishes bioassessments	5
Elk Creek	2014	Missouri River	10170204-519		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Elk Creek	2014	Missouri River	10170204-519		Aquatic Life	Fishes bioassessments	5
Champepadan Creek	2014	Missouri River	10170204-520		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Champepadan Creek	2014	Missouri River	10170204-520		Aquatic Life	Fishes bioassessments	5
Chanarambie Creek	2014	Missouri River	10170204-522		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Chanarambie Creek	2014	Missouri River	10170204-522		Aquatic Life	Fishes bioassessments	5
Poplar Creek	2014	Missouri River	10170204-523		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Poplar Creek	2014	Missouri River	10170204-523		Aquatic Life	Fishes bioassessments	5
Mud Creek	2014	Missouri River	10170204-525		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mud Creek	2014	Missouri River	10170204-525		Aquatic Life	Fishes bioassessments	5
Rock River, East Branch	2014	Missouri River	10170204-530		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Ash Creek	2014	Missouri River	10170204-539		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Ash Creek	2014	Missouri River	10170204-539		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Missouri River	10170204-559		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Chanarambie Creek, North Branch	2014	Missouri River	10170204-560		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Unnamed creek	2014	Missouri River	10170204-571		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170204-572		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170204-579		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170204-583		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170204-588		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170204-588		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Missouri River	10170204-589		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170204-593		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Missouri River	10170204-593		Aquatic Life	Fishes bioassessments	5
Ocheyedan River	2014	Missouri River	10230003-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Ocheyedan River	2014	Missouri River	10230003-501		Aquatic Life	Fishes bioassessments	5
Little Sioux River	2014	Missouri River	10230003-515		Aquatic Life	Fishes bioassessments	5
Little Spirit	2004	Missouri River	32-0024-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Ash River	2018	Rainy River	09030001-818		Aquatic Life	Total suspended solids	5
Blackduck River	2018	Rainy River	09030001-820		Aquatic Recreation	Escherichia coli	5
Blackduck River	2018	Rainy River	09030001-820		Aquatic Life	Total suspended solids	5
Vermilion River	2004	Rainy River	09030002-527		Aquatic Consumption	Mercury in fish tissue	5
Vermilion River	2004	Rainy River	09030002-529		Aquatic Consumption	Mercury in fish tissue	5
Vermilion River	2004	Rainy River	09030002-531		Aquatic Consumption	Mercury in fish tissue	5
Unnamed creek	2018	Rainy River	09030002-645		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2018	Rainy River	09030002-645		Aquatic Life	Fishes bioassessments	5
Little Fork River	2006	Rainy River	09030005-501		Aquatic Life	Turbidity	5
Little Fork River	2010	Rainy River	09030005-502		Aquatic Life	Turbidity	5
Little Fork River	2010	Rainy River	09030005-506		Aquatic Life	Turbidity	5
Little Fork River	2010	Rainy River	09030005-508	Bois Forte	Aquatic Life	Turbidity	5
Little Fork River	2008	Rainy River	09030005-510		Aquatic Life	Turbidity	5
Rice River	2012	Rainy River	09030005-517		Aquatic Life	Fishes bioassessments	5
Popple River	2014	Rainy River	09030006-512		Aquatic Life	Dissolved oxygen	5
Baudette River	1994	Rainy River	09030008-536		Aquatic Life	Dissolved oxygen	5
Black River	2006	Rainy River	09030008-547		Aquatic Consumption	Mercury in water column	5
Williams Creek	2016	Rainy River	09030009-501		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Williams Creek	2016	Rainy River	09030009-501		Aquatic Life	Dissolved oxygen	5
Williams Creek	2016	Rainy River	09030009-501		Aquatic Life	Fishes bioassessments	5
Williams Creek	2016	Rainy River	09030009-501		Aquatic Life	Total suspended solids	5
Warroad River, West Branch	2016	Rainy River	09030009-503		Aquatic Recreation	Escherichia coli	5
Warroad River, East Branch	2016	Rainy River	09030009-504		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Willow Creek	2010	Rainy River	09030009-505		Aquatic Life	Dissolved oxygen	5
Willow Creek	2016	Rainy River	09030009-505		Aquatic Life	Fishes bioassessments	5
Zippel Creek, West Branch (County Ditch 1)	2016	Rainy River	09030009-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zippel Creek, West Branch (County Ditch 1)	2016	Rainy River	09030009-515		Aquatic Life	Dissolved oxygen	5
Zippel Creek, West Branch (County Ditch 1)	2016	Rainy River	09030009-515		Aquatic Life	Fishes bioassessments	5
Zippel Creek, West Branch (County Ditch 1)	2016	Rainy River	09030009-515		Aquatic Life	Total suspended solids	5

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Unnamed ditch	2016	Rainy River	09030009-523		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch	2016	Rainy River	09030009-523		Aquatic Life	Fishes bioassessments	5
County Ditch 20	2016	Rainy River	09030009-560		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
East Pope	2010	Rainy River	16-0342-00		Aquatic Consumption	Mercury in fish tissue	5
Gunflint	1998	Rainy River	16-0356-00		Aquatic Consumption	Mercury in fish tissue	5
Loon	1998	Rainy River	16-0448-00		Aquatic Consumption	Mercury in fish tissue	5
Sea Gull	1998	Rainy River	16-0629-00		Aquatic Consumption	Mercury in fish tissue	5
GULL (MAIN BASIN)	2002	Rainy River	16-0632-01		Aquatic Consumption	Mercury in fish tissue	5
Hog	1998	Rainy River	16-0653-00		Aquatic Consumption	Mercury in fish tissue	5
Mesaba	1998	Rainy River	16-0673-00		Aquatic Consumption	Mercury in fish tissue	5
Wine	1998	Rainy River	16-0686-00		Aquatic Consumption	Mercury in fish tissue	5
Alpine	1998	Rainy River	16-0759-00		Aquatic Consumption	Mercury in fish tissue	5
Phoebe	2002	Rainy River	16-0808-00		Aquatic Consumption	Mercury in fish tissue	5
Ruby	2012	Rainy River	31-0422-00		Aquatic Consumption	Mercury in fish tissue	5
Coon	2016	Rainy River	31-0524-01		Aquatic Consumption	Mercury in fish tissue	5
Clubhouse	2016	Rainy River	31-0540-00		Aquatic Consumption	Mercury in fish tissue	5
North Star	2012	Rainy River	31-0653-00		Aquatic Consumption	Mercury in fish tissue	5
Little Spring	2014	Rainy River	31-0797-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Shallow Pond	2014	Rainy River	31-0910-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Moose	1998	Rainy River	36-0008-00		Aquatic Consumption	Mercury in fish tissue	5
Wanless	1998	Rainy River	38-0049-00		Aquatic Consumption	Mercury in fish tissue	5
Organ	2002	Rainy River	38-0067-00		Aquatic Consumption	Mercury in fish tissue	5
Windy	1998	Rainy River	38-0068-00		Aquatic Consumption	Mercury in fish tissue	5
Watonwan	1998	Rainy River	38-0079-00		Aquatic Consumption	Mercury in fish tissue	5
Polly	2006	Rainy River	38-0104-00		Aquatic Consumption	Mercury in fish tissue	5
Ottertrack	2002	Rainy River	38-0211-00		Aquatic Consumption	Mercury in fish tissue	5
Comfort	2018	Rainy River	38-0290-00		Aquatic Consumption	Mercury in fish tissue	5
Bunny	2002	Rainy River	38-0293-00		Aquatic Consumption	Mercury in fish tissue	5
Sylvania	2002	Rainy River	38-0395-00		Aquatic Consumption	Mercury in fish tissue	5
Insula	2004	Rainy River	38-0397-00		Aquatic Consumption	Mercury in fish tissue	5
Ensign	2006	Rainy River	38-0498-00		Aquatic Consumption	Mercury in fish tissue	5
Sucker	1998	Rainy River	38-0530-00		Aquatic Consumption	Mercury in fish tissue	5
Gander	1998	Rainy River	38-0554-00		Aquatic Consumption	Mercury in fish tissue	5
Grouse	1998	Rainy River	38-0557-00		Aquatic Consumption	Mercury in fish tissue	5
Gegoka	1998	Rainy River	38-0573-00		Aquatic Consumption	Mercury in fish tissue	5
Three	1998	Rainy River	38-0600-00		Aquatic Consumption	Mercury in fish tissue	5
Ojibway	1998	Rainy River	38-0640-00		Aquatic Consumption	Mercury in fish tissue	5
Ojibway	1998	Rainy River	38-0640-00		Aquatic Consumption	PCB in fish tissue	5
Greenwood	1998	Rainy River	38-0656-00		Aquatic Consumption	Mercury in fish tissue	5
South McDougal	2002	Rainy River	38-0659-00		Aquatic Consumption	Mercury in fish tissue	5
Dunnigan	1998	Rainy River	38-0664-00		Aquatic Consumption	Mercury in fish tissue	5
Slate	1998	Rainy River	38-0666-00		Aquatic Consumption	Mercury in fish tissue	5
Deep	1998	Rainy River	38-0668-00		Aquatic Consumption	Mercury in fish tissue	5
North McDougal	2002	Rainy River	38-0686-00		Aquatic Consumption	Mercury in fish tissue	5
August	1998	Rainy River	38-0691-00		Aquatic Consumption	Mercury in fish tissue	5
Gabbro	2018	Rainy River	38-0701-00		Aquatic Consumption	Mercury in fish tissue	5

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Nickel	2002	Rainy River	38-0705-00		Aquatic Consumption	Mercury in fish tissue	5
Sand	1998	Rainy River	38-0735-00		Aquatic Consumption	Mercury in fish tissue	5
Harris	1998	Rainy River	38-0736-00		Aquatic Consumption	Mercury in fish tissue	5
Beaver Hut	1998	Rainy River	38-0737-00		Aquatic Consumption	Mercury in fish tissue	5
North Branch Kawishiwi	2008	Rainy River	38-0738-00		Aquatic Consumption	Mercury in fish tissue	5
South Farm	2008	Rainy River	38-0778-00		Aquatic Consumption	Mercury in fish tissue	5
Farm	2008	Rainy River	38-0779-00		Aquatic Consumption	Mercury in fish tissue	5
Garden	1998	Rainy River	38-0782-00		Aquatic Consumption	Mercury in fish tissue	5
Sandpit	1998	Rainy River	38-0786-00		Aquatic Consumption	Mercury in fish tissue	5
Horse	1998	Rainy River	38-0792-00		Aquatic Consumption	Mercury in fish tissue	5
Fall	1998	Rainy River	38-0811-00		Aquatic Consumption	Mercury in fish tissue	5
Fourtown	1998	Rainy River	38-0813-00		Aquatic Consumption	Mercury in fish tissue	5
Crooked	1998	Rainy River	38-0817-00		Aquatic Consumption	Mercury in fish tissue	5
Lake of the Woods (Main)	2008	Rainy River	39-0002-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
LAKE OF THE WOODS(4 MI BAY)	2008	Rainy River	39-0002-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Birch	1998	Rainy River	69-0003-00		Aquatic Consumption	Mercury in fish tissue	5
White Iron	1998	Rainy River	69-0004-00		Aquatic Consumption	Mercury in fish tissue	5
Little	1998	Rainy River	69-0056-00		Aquatic Consumption	Mercury in fish tissue	5
Perch	1998	Rainy River	69-0058-00		Aquatic Consumption	Mercury in fish tissue	5
One Pine	1998	Rainy River	69-0061-00		Aquatic Consumption	Mercury in fish tissue	5
Minister	1998	Rainy River	69-0065-00		Aquatic Consumption	Mercury in fish tissue	5
Mudro	2016	Rainy River	69-0078-00		Aquatic Consumption	Mercury in fish tissue	5
Picket	2002	Rainy River	69-0079-00		Aquatic Consumption	Mercury in fish tissue	5
Nels	1998	Rainy River	69-0080-00		Aquatic Consumption	Mercury in fish tissue	5
Grassy	2002	Rainy River	69-0082-00		Aquatic Consumption	Mercury in fish tissue	5
Fenske	2002	Rainy River	69-0085-00		Aquatic Consumption	Mercury in fish tissue	5
Bear Island	1998	Rainy River	69-0115-00		Aquatic Consumption	Mercury in fish tissue	5
Burntside	1998	Rainy River	69-0118-00		Aquatic Consumption	Mercury in fish tissue	5
Everett	1998	Rainy River	69-0120-00		Aquatic Consumption	Mercury in fish tissue	5
Wolf	1998	Rainy River	69-0161-00		Aquatic Consumption	Mercury in fish tissue	5
East Twin	2002	Rainy River	69-0174-00		Aquatic Consumption	Mercury in fish tissue	5
Ole	2004	Rainy River	69-0175-00		Aquatic Consumption	Mercury in fish tissue	5
Slim	1998	Rainy River	69-0181-00		Aquatic Consumption	Mercury in fish tissue	5
Ed Shave	1998	Rainy River	69-0199-00		Aquatic Consumption	Mercury in fish tissue	5
Stuart	1998	Rainy River	69-0205-00		Aquatic Consumption	Mercury in fish tissue	5
Crab	2004	Rainy River	69-0220-00		Aquatic Consumption	Mercury in fish tissue	5
Lac la Croix	1998	Rainy River	69-0224-00		Aquatic Consumption	Mercury in fish tissue	5
Big Moose	1998	Rainy River	69-0316-00		Aquatic Consumption	Mercury in fish tissue	5
Oyster	1998	Rainy River	69-0330-00		Aquatic Consumption	Mercury in fish tissue	5
Hustler	1998	Rainy River	69-0343-00		Aquatic Consumption	Mercury in fish tissue	5
Hustler	1998	Rainy River	69-0343-00		Aquatic Consumption	Mercury in water column	5
Ge-Be-On-Equat	1998	Rainy River	69-0350-00		Aquatic Consumption	Mercury in fish tissue	5
Lynx	2006	Rainy River	69-0383-00		Aquatic Consumption	Mercury in fish tissue	5
Nigh	2002	Rainy River	69-0457-00		Aquatic Consumption	Mercury in fish tissue	5
Crellin	1998	Rainy River	69-0459-00		Aquatic Consumption	Mercury in fish tissue	5

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Upper Pauness	2008	Rainy River	69-0465-00		Aquatic Consumption	Mercury in fish tissue	5
Heritage	2006	Rainy River	69-0469-00		Aquatic Consumption	Mercury in fish tissue	5
Loon	1998	Rainy River	69-0470-00		Aquatic Consumption	Mercury in fish tissue	5
Eugene	2004	Rainy River	69-0473-00		Aquatic Consumption	Mercury in fish tissue	5
Little Loon	2012	Rainy River	69-0484-00		Aquatic Consumption	Mercury in fish tissue	5
Gun	1998	Rainy River	69-0487-00		Aquatic Consumption	Mercury in fish tissue	5
Pike River Flowage	1998	Rainy River	69-0580-00		Aquatic Consumption	Mercury in fish tissue	5
Pauline	1998	Rainy River	69-0588-00		Aquatic Consumption	Mercury in fish tissue	5
Astrid	1998	Rainy River	69-0589-00		Aquatic Consumption	Mercury in fish tissue	5
Maude	1998	Rainy River	69-0590-00		Aquatic Consumption	Mercury in fish tissue	5
Dovre	1998	Rainy River	69-0604-00		Aquatic Consumption	Mercury in fish tissue	5
Little Vermilion	1998	Rainy River	69-0608-00		Aquatic Consumption	Mercury in fish tissue	5
Echo	1998	Rainy River	69-0615-00		Aquatic Consumption	Mercury in fish tissue	5
Crane	1998	Rainy River	69-0616-00		Aquatic Consumption	Mercury in fish tissue	5
Sand Point	1998	Rainy River	69-0617-00		Aquatic Consumption	Mercury in fish tissue	5
Johnson	1998	Rainy River	69-0691-00		Aquatic Consumption	Mercury in fish tissue	5
Namakan	1998	Rainy River	69-0693-00		Aquatic Consumption	Mercury in fish tissue	5
Rainy	1998	Rainy River	69-0694-00		Aquatic Consumption	Mercury in fish tissue	5
Little Sand	1998	Rainy River	69-0732-00		Aquatic Consumption	Mercury in fish tissue	5
Ban	1998	Rainy River	69-0742-00		Aquatic Consumption	Mercury in fish tissue	5
Elbow	1998	Rainy River	69-0744-00		Aquatic Consumption	Mercury in fish tissue	5
Kjostad	1998	Rainy River	69-0748-00		Aquatic Consumption	Mercury in fish tissue	5
Myrtle	2018	Rainy River	69-0749-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Franklin	1998	Rainy River	69-0754-00		Aquatic Consumption	Mercury in fish tissue	5
Tooth	1998	Rainy River	69-0756-00		Aquatic Consumption	Mercury in fish tissue	5
Net	2002	Rainy River	69-0757-00		Aquatic Consumption	Mercury in fish tissue	5
Spring	1998	Rainy River	69-0761-00		Aquatic Consumption	Mercury in fish tissue	5
Dark	1998	Rainy River	69-0790-00		Aquatic Consumption	Mercury in fish tissue	5
Bell	2012	Rainy River	69-0805-00		Aquatic Consumption	Mercury in fish tissue	5
Moose	1998	Rainy River	69-0806-00		Aquatic Consumption	Mercury in fish tissue	5
Gannon	2010	Rainy River	69-0819-00		Aquatic Consumption	Mercury in fish tissue	5
Agnes	1998	Rainy River	69-0830-00		Aquatic Consumption	Mercury in fish tissue	5
Unnamed	2002	Rainy River	69-0835-00		Aquatic Consumption	Mercury in fish tissue	5
Beast	2004	Rainy River	69-0837-00		Aquatic Consumption	Mercury in fish tissue	5
Oslo	2002	Rainy River	69-0838-00		Aquatic Consumption	Mercury in fish tissue	5
Brown	2002	Rainy River	69-0839-00		Aquatic Consumption	Mercury in fish tissue	5
Jorgens	2002	Rainy River	69-0867-00		Aquatic Consumption	Mercury in fish tissue	5
Boot	2002	Rainy River	69-0868-00		Aquatic Consumption	Mercury in fish tissue	5
Unnamed	2002	Rainy River	69-0869-00		Aquatic Consumption	Mercury in fish tissue	5
Shoepack	1998	Rainy River	69-0870-00		Aquatic Consumption	Mercury in fish tissue	5
Loiten	2004	Rainy River	69-0872-00		Aquatic Consumption	Mercury in fish tissue	5
Perch	2012	Rainy River	69-0932-00		Aquatic Consumption	Mercury in fish tissue	5
Locator	1998	Rainy River	69-0936-00		Aquatic Consumption	Mercury in fish tissue	5
War Club	1998	Rainy River	69-0937-00		Aquatic Consumption	Mercury in fish tissue	5
Height of Land	2010	Red River of the North	03-0195-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Little Floyd	1998	Red River of the North	03-0386-00		Aquatic Consumption	Mercury in fish tissue	5

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Wine	2012	Red River of the North	03-0398-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Melissa	2008	Red River of the North	03-0475-00		Aquatic Consumption	Mercury in fish tissue	5
Maud	2012	Red River of the North	03-0500-00		Aquatic Consumption	Mercury in fish tissue	5
Leif	2010	Red River of the North	03-0575-00		Aquatic Consumption	Mercury in fish tissue	5
Blackduck	2010	Red River of the North	04-0069-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Crane	2018	Red River of the North	04-0165-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Strand	2018	Red River of the North	04-0178-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Long	2018	Red River of the North	04-0295-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Whitefish	2018	Red River of the North	04-0309-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bois de Sioux River	1998	Red River of the North	09020101-501		Aquatic Life	Dissolved oxygen	5
Bois de Sioux River	2014	Red River of the North	09020101-501		Aquatic Recreation	Escherichia coli	5
Bois de Sioux River	2002	Red River of the North	09020101-501		Aquatic Life	Fishes bioassessments	5
Bois de Sioux River	2016	Red River of the North	09020101-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Bois de Sioux River	2008	Red River of the North	09020101-501		Aquatic Life	Turbidity	5
Rabbit River	2014	Red River of the North	09020101-502		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rabbit River	2004	Red River of the North	09020101-502		Aquatic Life	Dissolved oxygen	5
Rabbit River	2010	Red River of the North	09020101-502		Aquatic Recreation	Escherichia coli	5
Rabbit River	2002	Red River of the North	09020101-502		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Doran Slough)	2014	Red River of the North	09020101-510		Aquatic Life	Dissolved oxygen	5
Unnamed creek (Doran Slough)	2014	Red River of the North	09020101-510		Aquatic Recreation	Escherichia coli	5
Rabbit River, South Fork	2014	Red River of the North	09020101-512		Aquatic Life	Dissolved oxygen	5
Rabbit River, South Fork	2014	Red River of the North	09020101-512		Aquatic Life	Fishes bioassessments	5
Rabbit River, South Fork	2014	Red River of the North	09020101-512		Aquatic Life	Turbidity	5
Unnamed creek	2014	Red River of the North	09020101-515		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2014	Red River of the North	09020101-515		Aquatic Life	Turbidity	5
Unnamed creek	2014	Red River of the North	09020101-535		Aquatic Life	Fishes bioassessments	5
County Ditch 52	2014	Red River of the North	09020101-540		Aquatic Life	Fishes bioassessments	5
Mustinka River	2006	Red River of the North	09020102-503		Aquatic Life	Dissolved oxygen	5
Mustinka River	2014	Red River of the North	09020102-506		Aquatic Life	Dissolved oxygen	5
Eighteenmile Creek	2014	Red River of the North	09020102-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Eighteenmile Creek	2014	Red River of the North	09020102-508		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Red River of the North	09020102-538		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Red River of the North	09020102-538		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Red River of the North	09020102-578		Aquatic Life	Fishes bioassessments	5
Otter Tail River	2002	Red River of the North	09020103-504		Aquatic Life	Fishes bioassessments	5
Otter Tail River	2004	Red River of the North	09020103-504		Aquatic Life	Turbidity	5
Otter Tail River	1998	Red River of the North	09020103-532		Aquatic Life	Dissolved oxygen	5
Whiskey Creek	2012	Red River of the North	09020104-520		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Whiskey Creek	2010	Red River of the North	09020104-520		Aquatic Life	Dissolved oxygen	5
Red River of the North	2010	Red River of the North	09020104-543		Aquatic Recreation	Escherichia coli	5
Red River of the North	1998	Red River of the North	09020104-543		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1996	Red River of the North	09020104-543		Aquatic Life	Turbidity	5
Red River of the North	2018	Red River of the North	09020104-544		Aquatic Recreation	Escherichia coli	5
Red River of the North	1998	Red River of the North	09020104-544		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1996	Red River of the North	09020104-544		Aquatic Life	Turbidity	5

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Stony Creek	2010	Red River of the North	09020106-502		Aquatic Life	Dissolved oxygen	5
Buffalo River, South Branch	2012	Red River of the North	09020106-505		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Deerhorn Creek	2012	Red River of the North	09020106-507		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Deerhorn Creek	2012	Red River of the North	09020106-507		Aquatic Life	Fishes bioassessments	5
Buffalo River, South Branch	2012	Red River of the North	09020106-508		Aquatic Life	Dissolved oxygen	5
Spring Creek	2012	Red River of the North	09020106-534		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Creek	2012	Red River of the North	09020106-534		Aquatic Life	Fishes bioassessments	5
Buffalo River	2012	Red River of the North	09020106-593	White Earth	Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Buffalo River	2010	Red River of the North	09020106-593	White Earth	Aquatic Recreation	Escherichia coli	5
Buffalo River	2012	Red River of the North	09020106-593	White Earth	Aquatic Life	Fishes bioassessments	5
Buffalo River	2010	Red River of the North	09020106-593	White Earth	Aquatic Life	Turbidity	5
Red River of the North	2010	Red River of the North	09020107-501		Aquatic Life	Dissolved oxygen	5
Red River of the North	1994	Red River of the North	09020107-501		Aquatic Recreation	Fecal Coliform	5
Red River of the North	1998	Red River of the North	09020107-501		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	2008	Red River of the North	09020107-501		Aquatic Consumption	Mercury in water column	5
Red River of the North	1996	Red River of the North	09020107-501		Aquatic Life	Turbidity	5
Marsh River	2018	Red River of the North	09020107-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Marsh River	2010	Red River of the North	09020107-503		Aquatic Life	Dissolved oxygen	5
Marsh River	2018	Red River of the North	09020107-503		Aquatic Recreation	Escherichia coli	5
Marsh River	2018	Red River of the North	09020107-503		Aquatic Life	Fishes bioassessments	5
Marsh River	2008	Red River of the North	09020107-503		Aquatic Life	Turbidity	5
County Ditch 11	2018	Red River of the North	09020107-517		Aquatic Life	Fishes bioassessments	5
Red River of the North	1998	Red River of the North	09020107-522		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1996	Red River of the North	09020107-522		Aquatic Life	Turbidity	5
Wild Rice River	2016	Red River of the North	09020108-501		Aquatic Consumption	Mercury in fish tissue	5
Wild Rice River	2018	Red River of the North	09020108-501		Aquatic Consumption	Mercury in water column	5
Wild Rice River	2018	Red River of the North	09020108-504	White Earth	Aquatic Life	Total suspended solids	5
Coon Creek	2018	Red River of the North	09020108-544		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2018	Red River of the North	09020108-546		Aquatic Recreation	Escherichia coli	5
County Ditch 45	2018	Red River of the North	09020108-553		Aquatic Recreation	Escherichia coli	5
Coon Creek	2018	Red River of the North	09020108-577		Aquatic Recreation	Escherichia coli	5
Garden Slough	2018	Red River of the North	09020108-579		Aquatic Life	Fishes bioassessments	5
Wild Rice River	2018	Red River of the North	09020108-643		Aquatic Recreation	Escherichia coli	5
Wild Rice River	2010	Red River of the North	09020108-643		Aquatic Life	Turbidity	5
Wild Rice River	2018	Red River of the North	09020108-644		Aquatic Recreation	Escherichia coli	5
Wild Rice River	2010	Red River of the North	09020108-644		Aquatic Life	Turbidity	5
Wild Rice River	2018	Red River of the North	09020108-646	White Earth	Aquatic Life	Fishes bioassessments	5
Spring Creek	2018	Red River of the North	09020108-648	White Earth	Aquatic Recreation	Escherichia coli	5
Mashaug Creek	2018	Red River of the North	09020108-650		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mashaug Creek	2018	Red River of the North	09020108-650		Aquatic Recreation	Escherichia coli	5
Mashaug Creek	2018	Red River of the North	09020108-650		Aquatic Life	Fishes bioassessments	5
Marsh Creek	2008	Red River of the North	09020108-652	White Earth	Aquatic Life	Turbidity	5
Felton Creek/County Ditch 45	2018	Red River of the North	09020108-654		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Felton Creek/County Ditch 45	2018	Red River of the North	09020108-654		Aquatic Life	Fishes bioassessments	5
Wild Rice River, South Branch	2018	Red River of the North	09020108-659		Aquatic Recreation	Escherichia coli	5
Wild Rice River, South Branch	2018	Red River of the North	09020108-661		Aquatic Life	Fishes bioassessments	5
Wild Rice River, South Branch	2018	Red River of the North	09020108-662		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Wild Rice River, South Branch	2018	Red River of the North	09020108-662		Aquatic Recreation	Escherichia coli	5
County Ditch 17	2014	Red River of the North	09020301-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sand Hill River	2014	Red River of the North	09020301-536		Aquatic Consumption	Mercury in fish tissue	5
Sand Hill River	2014	Red River of the North	09020301-537		Aquatic Consumption	Mercury in fish tissue	5
Sand Hill River	2014	Red River of the North	09020301-541	White Earth	Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sand Hill River	2008	Red River of the North	09020301-541	White Earth	Aquatic Life	Dissolved oxygen	5
Sand Hill River	2014	Red River of the North	09020301-541	White Earth	Aquatic Recreation	Escherichia coli	5
Sand Hill River	2014	Red River of the North	09020301-541	White Earth	Aquatic Life	Fishes bioassessments	5
Sand Hill River	2010	Red River of the North	09020301-541	White Earth	Aquatic Life	Turbidity	5
Sand Hill River	2014	Red River of the North	09020301-542		Aquatic Life	Fishes bioassessments	5
Red River of the North	1998	Red River of the North	09020301-543		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	2008	Red River of the North	09020301-543		Aquatic Life	Turbidity	5
Red River of the North	2010	Red River of the North	09020301-544		Aquatic Life	Dissolved oxygen	5
Red River of the North	1998	Red River of the North	09020301-544		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	1996	Red River of the North	09020301-544		Aquatic Life	Turbidity	5
Tamarac River	2018	Red River of the North	09020302-501		Aquatic Life	Fishes bioassessments	5
Shotley Brook	2018	Red River of the North	09020302-502		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Shotley Brook	2018	Red River of the North	09020302-502		Aquatic Recreation	Escherichia coli	5
Battle River, North Branch	2018	Red River of the North	09020302-503	Red Lake	Aquatic Life	Dissolved oxygen	5
Battle River, North Branch	2018	Red River of the North	09020302-503	Red Lake	Aquatic Recreation	Escherichia coli	5
Battle River, North Branch	2018	Red River of the North	09020302-503	Red Lake	Aquatic Life	Fishes bioassessments	5
North Cormorant River	2018	Red River of the North	09020302-506		Aquatic Life	Dissolved oxygen	5
North Cormorant River	2018	Red River of the North	09020302-506		Aquatic Recreation	Escherichia coli	5
North Cormorant River	2018	Red River of the North	09020302-506		Aquatic Life	Total suspended solids	5
South Cormorant River	2018	Red River of the North	09020302-507		Aquatic Recreation	Escherichia coli	5
Darrigans Creek	2018	Red River of the North	09020302-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Darrigans Creek	2018	Red River of the North	09020302-508		Aquatic Recreation	Escherichia coli	5
Blackduck River	2018	Red River of the North	09020302-510		Aquatic Recreation	Escherichia coli	5
Blackduck River	2018	Red River of the North	09020302-512	Red Lake	Aquatic Recreation	Escherichia coli	5
Hay Creek	2018	Red River of the North	09020302-518	Red Lake	Aquatic Recreation	Escherichia coli	5
Pike Creek	2018	Red River of the North	09020302-521	Red Lake	Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pike Creek	2018	Red River of the North	09020302-521	Red Lake	Aquatic Life	Dissolved oxygen	5
Pike Creek	2018	Red River of the North	09020302-521	Red Lake	Aquatic Life	Total suspended solids	5
Sandy River	2018	Red River of the North	09020302-522	Red Lake	Aquatic Recreation	Escherichia coli	5
Mud River	2018	Red River of the North	09020302-541	Red Lake	Aquatic Recreation	Escherichia coli	5
Mud River	2018	Red River of the North	09020302-541	Red Lake	Aquatic Life	Total suspended solids	5
O'Brien Creek	2018	Red River of the North	09020302-544		Aquatic Life	Dissolved oxygen	5
O'Brien Creek	2018	Red River of the North	09020302-544		Aquatic Recreation	Escherichia coli	5

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Unnamed creek	2018	Red River of the North	09020302-600		Aquatic Recreation	Escherichia coli	5
Lost River	2018	Red River of the North	09020302-602		Aquatic Life	Fishes bioassessments	5
Perry Creek	2018	Red River of the North	09020302-605		Aquatic Life	Fishes bioassessments	5
Red Lake River	1998	Red River of the North	09020303-501		Aquatic Life	Turbidity	5
Red Lake River	2008	Red River of the North	09020303-502		Aquatic Life	Turbidity	5
Red Lake River	2002	Red River of the North	09020303-503		Aquatic Life	Turbidity	5
Red Lake River	2008	Red River of the North	09020303-504		Aquatic Life	Turbidity	5
Pennington County Ditch 96 (76)	2016	Red River of the North	09020303-505		Aquatic Recreation	Escherichia coli	5
Red Lake River	2008	Red River of the North	09020303-506		Aquatic Life	Turbidity	5
Red Lake River	2008	Red River of the North	09020303-512		Aquatic Life	Turbidity	5
Burnham Creek	2016	Red River of the North	09020303-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Burnham Creek	2016	Red River of the North	09020303-515		Aquatic Life	Fishes bioassessments	5
Kripple Creek	2016	Red River of the North	09020303-525		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Kripple Creek	2016	Red River of the North	09020303-525		Aquatic Recreation	Escherichia coli	5
Kripple Creek	2016	Red River of the North	09020303-525		Aquatic Life	Fishes bioassessments	5
Kripple Creek (County Ditch 66)	2016	Red River of the North	09020303-526		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Kripple Creek (County Ditch 66)	2016	Red River of the North	09020303-526		Aquatic Life	Fishes bioassessments	5
Little Black River	2016	Red River of the North	09020303-528		Aquatic Life	Fishes bioassessments	5
Black River	2016	Red River of the North	09020303-529		Aquatic Recreation	Escherichia coli	5
Judicial Ditch 60	2016	Red River of the North	09020303-542		Aquatic Life	Dissolved oxygen	5
Branch 5 of Pennington County Ditch 96	2016	Red River of the North	09020303-545		Aquatic Life	Fishes bioassessments	5
County Ditch 43	2016	Red River of the North	09020303-547		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 43	2016	Red River of the North	09020303-547		Aquatic Life	Fishes bioassessments	5
Burnham Creek	2016	Red River of the North	09020303-551		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Burnham Creek	2016	Red River of the North	09020303-551		Aquatic Life	Fishes bioassessments	5
Gentilly River	2016	Red River of the North	09020303-554		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Gentilly River	2016	Red River of the North	09020303-554		Aquatic Recreation	Escherichia coli	5
Gentilly River	2016	Red River of the North	09020303-554		Aquatic Life	Fishes bioassessments	5
Cyr Creek	2016	Red River of the North	09020303-556		Aquatic Recreation	Escherichia coli	5
Cyr Creek	2016	Red River of the North	09020303-556		Aquatic Life	Fishes bioassessments	5
Black River	2016	Red River of the North	09020303-558		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Black River	2008	Red River of the North	09020303-558		Aquatic Life	Dissolved oxygen	5
Black River	2016	Red River of the North	09020303-558		Aquatic Recreation	Escherichia coli	5
Black River	2016	Red River of the North	09020303-558		Aquatic Life	Fishes bioassessments	5
Thief River	2006	Red River of the North	09020304-501		Aquatic Life	Turbidity	5
Moose River	2006	Red River of the North	09020304-505		Aquatic Life	Dissolved oxygen	5
Mud River	2008	Red River of the North	09020304-507		Aquatic Life	Dissolved oxygen	5
Mud River	2014	Red River of the North	09020304-507		Aquatic Recreation	Escherichia coli	5
Clearwater River	2006	Red River of the North	09020305-501		Aquatic Life	Turbidity	5
Lower Badger Creek	2018	Red River of the North	09020305-502		Aquatic Recreation	Escherichia coli	5
Poplar River	2018	Red River of the North	09020305-504		Aquatic Recreation	Escherichia coli	5
Clearwater River	2008	Red River of the North	09020305-511		Aquatic Life	Turbidity	5
Lost River	2018	Red River of the North	09020305-512		Aquatic Recreation	Escherichia coli	5

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Ruffy Brook	2008	Red River of the North	09020305-513		Aquatic Recreation	Fecal Coliform	5
Clearwater River	2006	Red River of the North	09020305-517	White Earth	Aquatic Life	Dissolved oxygen	5
Poplar River	2018	Red River of the North	09020305-518		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Poplar River	2002	Red River of the North	09020305-518		Aquatic Life	Dissolved oxygen	5
Poplar River	2018	Red River of the North	09020305-518		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Red River of the North	09020305-526		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2018	Red River of the North	09020305-526		Aquatic Recreation	Escherichia coli	5
Silver Creek	2018	Red River of the North	09020305-527		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Silver Creek	2006	Red River of the North	09020305-527		Aquatic Recreation	Fecal Coliform	5
Lost River	2006	Red River of the North	09020305-529		Aquatic Life	Dissolved oxygen	5
Lost River	2018	Red River of the North	09020305-529		Aquatic Recreation	Escherichia coli	5
Lost River	2018	Red River of the North	09020305-530		Aquatic Recreation	Escherichia coli	5
Hill River	2018	Red River of the North	09020305-539		Aquatic Recreation	Escherichia coli	5
Hill River	2018	Red River of the North	09020305-539		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Nassett Creek)	2018	Red River of the North	09020305-545		Aquatic Life	Dissolved oxygen	5
Unnamed creek (Nassett Creek)	2018	Red River of the North	09020305-545		Aquatic Recreation	Escherichia coli	5
Unnamed creek (Nassett Creek)	2018	Red River of the North	09020305-545		Aquatic Life	Total suspended solids	5
Judicial Ditch 73	2018	Red River of the North	09020305-550		Aquatic Life	Dissolved oxygen	5
Judicial Ditch 73	2018	Red River of the North	09020305-550		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2018	Red River of the North	09020305-561		Aquatic Life	Fishes bioassessments	5
Terrebonne Creek	2010	Red River of the North	09020305-574		Aquatic Recreation	Escherichia coli	5
Brooks Creek	2018	Red River of the North	09020305-578		Aquatic Recreation	Escherichia coli	5
Lost River	2018	Red River of the North	09020305-645		Aquatic Life	Dissolved oxygen	5
Lost River	2018	Red River of the North	09020305-645		Aquatic Life	Fishes bioassessments	5
Clearwater River	2018	Red River of the North	09020305-647	Red Lake	Aquatic Recreation	Escherichia coli	5
Clearwater River	2018	Red River of the North	09020305-647	Red Lake	Aquatic Life	Nutrient/eutrophication biological indicators	5
Clearwater River	2008	Red River of the North	09020305-647	Red Lake	Aquatic Life	Turbidity	5
Clearwater River	2008	Red River of the North	09020305-648		Aquatic Life	Turbidity	5
Beau Gerlot Creek	2018	Red River of the North	09020305-651		Aquatic Recreation	Escherichia coli	5
Beau Gerlot Creek	2018	Red River of the North	09020305-652		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Beau Gerlot Creek	2018	Red River of the North	09020305-652		Aquatic Life	Fishes bioassessments	5
Hill River	2018	Red River of the North	09020305-656		Aquatic Life	Dissolved oxygen	5
Hill River	2018	Red River of the North	09020305-656		Aquatic Life	Fishes bioassessments	5
County Ditch 23	2018	Red River of the North	09020305-658		Aquatic Life	Fishes bioassessments	5
Grand Marais Creek	2006	Red River of the North	09020306-507		Aquatic Life	Dissolved oxygen	5
Unnamed creek (Red Lake Watershed Ditch 15)	2016	Red River of the North	09020306-509		Aquatic Life	Dissolved oxygen	5
County Ditch 2	2016	Red River of the North	09020306-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 2	2016	Red River of the North	09020306-515		Aquatic Recreation	Escherichia coli	5
County Ditch 2	2016	Red River of the North	09020306-515		Aquatic Life	Fishes bioassessments	5
County Ditch 43 (Judicial Ditch 75)	2016	Red River of the North	09020306-517		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 43 (Judicial Ditch 75)	2016	Red River of the North	09020306-517		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 1	2016	Red River of the North	09020306-519		Aquatic Recreation	Escherichia coli	5

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Judicial Ditch 75	2016	Red River of the North	09020306-520		Aquatic Recreation	Escherichia coli	5
Judicial Ditch 75	2016	Red River of the North	09020306-520		Aquatic Life	Fishes bioassessments	5
Grand Marais Cutoff Channel	2016	Red River of the North	09020306-522		Aquatic Life	Chlorpyrifos	5
Red River of the North	1998	Red River of the North	09020306-523		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	2008	Red River of the North	09020306-523		Aquatic Consumption	Mercury in water column	5
Red River of the North	2018	Red River of the North	09020306-523		Aquatic Life	Total suspended solids	5
Red River of the North	1998	Red River of the North	09020306-524		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	2008	Red River of the North	09020306-524		Aquatic Consumption	Mercury in water column	5
Red River of the North	2018	Red River of the North	09020306-524		Aquatic Life	Total suspended solids	5
Snake River	2002	Red River of the North	09020309-501		Aquatic Life	Dissolved oxygen	5
Snake River	2016	Red River of the North	09020309-501		Aquatic Life	Fishes bioassessments	5
Snake River	2016	Red River of the North	09020309-501		Aquatic Consumption	Mercury in water column	5
Snake River	2002	Red River of the North	09020309-501		Aquatic Life	Turbidity	5
Snake River	2016	Red River of the North	09020309-502		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Snake River	2010	Red River of the North	09020309-502		Aquatic Life	Dissolved oxygen	5
Snake River	2016	Red River of the North	09020309-502		Aquatic Life	Fishes bioassessments	5
Snake River	2010	Red River of the North	09020309-502		Aquatic Life	Turbidity	5
Snake River	2016	Red River of the North	09020309-504		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Snake River	2016	Red River of the North	09020309-504		Aquatic Recreation	Escherichia coli	5
Snake River	2002	Red River of the North	09020309-504		Aquatic Life	Fishes bioassessments	5
Snake River	2008	Red River of the North	09020309-504		Aquatic Life	Turbidity	5
Judicial Ditch 29	2016	Red River of the North	09020309-519		Aquatic Life	Fishes bioassessments	5
Unnamed ditch	2016	Red River of the North	09020309-529		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Snake River	2016	Red River of the North	09020309-537		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Snake River	2004	Red River of the North	09020309-537		Aquatic Life	Dissolved oxygen	5
Snake River	2016	Red River of the North	09020309-537		Aquatic Recreation	Escherichia coli	5
Snake River	2002	Red River of the North	09020309-537		Aquatic Life	Fishes bioassessments	5
Middle River	2016	Red River of the North	09020309-538		Aquatic Life	Fishes bioassessments	5
Middle River	2008	Red River of the North	09020309-539		Aquatic Life	Dissolved oxygen	5
Middle River	2016	Red River of the North	09020309-540		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Middle River	2008	Red River of the North	09020309-540		Aquatic Life	Dissolved oxygen	5
Middle River	2008	Red River of the North	09020309-540		Aquatic Life	Turbidity	5
Middle River	2008	Red River of the North	09020309-541		Aquatic Life	Dissolved oxygen	5
Middle River	2008	Red River of the North	09020309-541		Aquatic Life	Turbidity	5
Snake River	2016	Red River of the North	09020309-543		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Snake River	2010	Red River of the North	09020309-543		Aquatic Life	Dissolved oxygen	5
Snake River	2016	Red River of the North	09020309-543		Aquatic Recreation	Escherichia coli	5
Snake River	2016	Red River of the North	09020309-543		Aquatic Life	Fishes bioassessments	5
Snake River, South Branch (old channel)	2016	Red River of the North	09020309-544		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Snake River, South Branch (old channel)	2016	Red River of the North	09020309-544		Aquatic Life	Fishes bioassessments	5
Snake River, South Branch (new channel)	2016	Red River of the North	09020309-546		Aquatic Life	Fishes bioassessments	5
Tamarac River	2012	Red River of the North	09020311-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Tamarac River	2002	Red River of the North	09020311-503		Aquatic Life	Fishes bioassessments	5

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Tamarac River	2014	Red River of the North	09020311-505		Aquatic Life	Chlorpyrifos	5
Joe River	2006	Red River of the North	09020311-513		Aquatic Life	Chloride	5
Joe River	2006	Red River of the North	09020311-513		Aquatic Life	pH	5
Judicial Ditch 19	2012	Red River of the North	09020311-516		Aquatic Recreation	Escherichia coli	5
Red River of the North	1998	Red River of the North	09020311-560		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	2008	Red River of the North	09020311-560		Aquatic Consumption	Mercury in water column	5
Red River of the North	2008	Red River of the North	09020311-560		Aquatic Life	Turbidity	5
Red River of the North	2010	Red River of the North	09020311-561		Aquatic Life	Dissolved oxygen	5
Red River of the North	1998	Red River of the North	09020311-561		Aquatic Consumption	Mercury in fish tissue	5
Red River of the North	2008	Red River of the North	09020311-561		Aquatic Consumption	Mercury in water column	5
Red River of the North	1996	Red River of the North	09020311-561		Aquatic Life	Turbidity	5
Two River	2010	Red River of the North	09020312-501		Aquatic Recreation	Escherichia coli	5
Two River	2006	Red River of the North	09020312-501		Aquatic Life	Turbidity	5
Two River, South Branch	2016	Red River of the North	09020312-502		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Two River, South Branch	2016	Red River of the North	09020312-502		Aquatic Life	Fishes bioassessments	5
Two River, Middle Branch	2016	Red River of the North	09020312-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Two River, Middle Branch	2016	Red River of the North	09020312-503		Aquatic Recreation	Escherichia coli	5
Two River, Middle Branch	2002	Red River of the North	09020312-503		Aquatic Life	Fishes bioassessments	5
Two River, North Branch	2010	Red River of the North	09020312-504		Aquatic Life	Dissolved oxygen	5
Two River, North Branch	2002	Red River of the North	09020312-504		Aquatic Life	Fishes bioassessments	5
Two River, South Branch	2016	Red River of the North	09020312-505		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Two River, South Branch	2016	Red River of the North	09020312-505		Aquatic Recreation	Escherichia coli	5
Two River, South Branch	2016	Red River of the North	09020312-505		Aquatic Life	Fishes bioassessments	5
Two River, South Branch	2016	Red River of the North	09020312-506		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Two River, South Branch	2016	Red River of the North	09020312-506		Aquatic Recreation	Escherichia coli	5
Two River, South Branch	2002	Red River of the North	09020312-506		Aquatic Life	Fishes bioassessments	5
Two River, North Branch	2010	Red River of the North	09020312-508		Aquatic Life	Dissolved oxygen	5
Two River, North Branch	2016	Red River of the North	09020312-508		Aquatic Life	Fishes bioassessments	5
Two River	2008	Red River of the North	09020312-509		Aquatic Life	Turbidity	5
State Ditch 84	2016	Red River of the North	09020312-514		Aquatic Life	Fishes bioassessments	5
Lateral Ditch 1 of State Ditch 95	2016	Red River of the North	09020312-521		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Lateral Ditch 1 of State Ditch 95	2016	Red River of the North	09020312-521		Aquatic Life	Fishes bioassessments	5
County Ditch 4	2016	Red River of the North	09020312-522		Aquatic Life	Fishes bioassessments	5
State Ditch 72	2016	Red River of the North	09020312-531		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
State Ditch 72	2016	Red River of the North	09020312-531		Aquatic Life	Fishes bioassessments	5
County Ditch 13	2016	Red River of the North	09020312-535		Aquatic Recreation	Escherichia coli	5
Lateral Ditch 1 of State Ditch 95	2016	Red River of the North	09020312-539		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Lateral Ditch 1 of State Ditch 95	2016	Red River of the North	09020312-539		Aquatic Life	Fishes bioassessments	5
State Ditch 49	2016	Red River of the North	09020312-544		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 31	2016	Red River of the North	09020312-549		Aquatic Life	Fishes bioassessments	5
Roseau River	1998	Red River of the North	09020314-501		Aquatic Consumption	Mercury in fish tissue	5
Roseau River	1998	Red River of the North	09020314-502		Aquatic Consumption	Mercury in fish tissue	5
Roseau River	1998	Red River of the North	09020314-504	Red Lake	Aquatic Consumption	Mercury in fish tissue	5

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Hay Creek	2018	Red River of the North	09020314-505		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Hay Creek	2018	Red River of the North	09020314-505		Aquatic Recreation	Escherichia coli	5
Hay Creek	2018	Red River of the North	09020314-505		Aquatic Life	Fishes bioassessments	5
Hay Creek	2018	Red River of the North	09020314-505		Aquatic Life	Total suspended solids	5
Sprague Creek	2008	Red River of the North	09020314-508		Aquatic Life	Turbidity	5
Severson Creek (County Ditch 23)	2018	Red River of the North	09020314-516		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Severson Creek/County Ditch 23	2018	Red River of the North	09020314-541		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pine Creek	2018	Red River of the North	09020314-542		Aquatic Life	Fishes bioassessments	5
Lee	2012	Red River of the North	14-0049-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Rockstad	2018	Red River of the North	15-0075-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pine	2006	Red River of the North	15-0149-00		Aquatic Consumption	Mercury in fish tissue	5
Stony	2018	Red River of the North	15-0156-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Ash	2014	Red River of the North	26-0294-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bronson	2016	Red River of the North	35-0003-00		Aquatic Consumption	Mercury in fish tissue	5
Bartlett	2018	Red River of the North	36-0018-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
East Battle	2002	Red River of the North	56-0138-00		Aquatic Consumption	Mercury in fish tissue	5
STUART (MAIN BASIN)	2012	Red River of the North	56-0191-01		Aquatic Consumption	Mercury in fish tissue	5
Stuart (Little West Bay)	2012	Red River of the North	56-0191-02		Aquatic Consumption	Mercury in fish tissue	5
East Lost (North Bay)	2016	Red River of the North	56-0378-01		Aquatic Consumption	Mercury in fish tissue	5
East Lost (South Bay)	2016	Red River of the North	56-0378-02		Aquatic Consumption	Mercury in fish tissue	5
West Spirit	2008	Red River of the North	56-0502-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
West Silent	2008	Red River of the North	56-0519-00		Aquatic Consumption	Mercury in fish tissue	5
East Loon	2016	Red River of the North	56-0523-00		Aquatic Consumption	Mercury in fish tissue	5
Fish	2006	Red River of the North	56-0684-00		Aquatic Consumption	Mercury in fish tissue	5
South Lida	2012	Red River of the North	56-0747-02		Aquatic Consumption	Mercury in fish tissue	5
Crystal	2012	Red River of the North	56-0749-00		Aquatic Consumption	Mercury in fish tissue	5
Franklin	2010	Red River of the North	56-0759-00		Aquatic Consumption	Mercury in fish tissue	5
Lizzie (north portion)	1998	Red River of the North	56-0760-01		Aquatic Consumption	Mercury in fish tissue	5
Rush-Lizzie(south portion)	1998	Red River of the North	56-0760-02		Aquatic Consumption	Mercury in fish tissue	5
Long	2010	Red River of the North	56-0784-00		Aquatic Consumption	Mercury in fish tissue	5
Upper Lightning	2014	Red River of the North	56-0957-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Red Lake River Reservoir	2012	Red River of the North	57-0051-00		Aquatic Consumption	Mercury in fish tissue	5
Cameron	2008	Red River of the North	60-0189-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mud	2014	Red River of the North	78-0024-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pine	2012	St. Croix River	01-0001-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
St Croix River	2006	St. Croix River	07030001-501		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-502		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-503		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-504		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-505		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-506		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-507		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-508		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030001-521		Aquatic Consumption	PCB in fish tissue	5
Grindstone River	1996	St. Croix River	07030003-501		Aquatic Recreation	Fecal Coliform	5

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Grindstone River	2004	St. Croix River	07030003-501		Aquatic Life	Fishes bioassessments	5
Kettle River	1998	St. Croix River	07030003-502		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-503		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-505		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-506		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-508		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-510		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-511		Aquatic Consumption	Mercury in fish tissue	5
Grindstone River, South Branch	2002	St. Croix River	07030003-516		Aquatic Recreation	Fecal Coliform	5
Grindstone River, South Branch	2002	St. Croix River	07030003-516		Aquatic Life	Fishes bioassessments	5
Kettle River	1998	St. Croix River	07030003-517		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-519		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-528		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-529		Aquatic Consumption	Mercury in fish tissue	5
Grindstone River, North Branch	2010	St. Croix River	07030003-541		Aquatic Recreation	Escherichia coli	5
Grindstone River, North Branch	2002	St. Croix River	07030003-544		Aquatic Recreation	Fecal Coliform	5
Kettle River	1998	St. Croix River	07030003-551		Aquatic Consumption	Mercury in fish tissue	5
Kettle River	1998	St. Croix River	07030003-552		Aquatic Consumption	Mercury in fish tissue	5
Snake River	2002	St. Croix River	07030004-508		Aquatic Life	Fishes bioassessments	5
Spring Brook	2002	St. Croix River	07030004-515		Aquatic Life	Fishes bioassessments	5
Pokegama Creek	2004	St. Croix River	07030004-532		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mission Creek	2004	St. Croix River	07030004-547		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mission Creek	2010	St. Croix River	07030004-547		Aquatic Life	Dissolved oxygen	5
Mission Creek	2002	St. Croix River	07030004-547		Aquatic Life	Fishes bioassessments	5
Mission Creek	2008	St. Croix River	07030004-548		Aquatic Life	Dissolved oxygen	5
Mission Creek	2008	St. Croix River	07030004-548		Aquatic Life	Fishes bioassessments	5
Knife River	2004	St. Croix River	07030004-549		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Bear Creek	2008	St. Croix River	07030004-552		Aquatic Life	Fishes bioassessments	5
Bear Creek	2008	St. Croix River	07030004-552		Aquatic Life	pH	5
Groundhouse River, South Fork	2010	St. Croix River	07030004-573		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2010	St. Croix River	07030004-577		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2008	St. Croix River	07030004-577		Aquatic Life	Fishes bioassessments	5
Sunrise River, North Branch	2002	St. Croix River	07030005-501		Aquatic Life	Fishes bioassessments	5
St Croix River	2006	St. Croix River	07030005-502		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-503		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-504		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-505		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-506		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-507		Aquatic Consumption	PCB in fish tissue	5
Rush Creek	2004	St. Croix River	07030005-509		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rush Creek	2002	St. Croix River	07030005-509		Aquatic Life	Fishes bioassessments	5
Goose Creek	2002	St. Croix River	07030005-510		Aquatic Life	Fishes bioassessments	5

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St Croix River	2006	St. Croix River	07030005-513		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-515		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-516		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-517		Aquatic Consumption	PCB in fish tissue	5
St Croix River	2006	St. Croix River	07030005-518		Aquatic Consumption	PCB in fish tissue	5
Browns Creek	2010	St. Croix River	07030005-520		Aquatic Life	Dissolved oxygen	5
Browns Creek	2012	St. Croix River	07030005-520		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2012	St. Croix River	07030005-521		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2010	St. Croix River	07030005-522		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2010	St. Croix River	07030005-522		Aquatic Recreation	Escherichia coli	5
Sunrise River	2010	St. Croix River	07030005-526		Aquatic Recreation	Escherichia coli	5
Sunrise River	2012	St. Croix River	07030005-527		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sunrise River	2012	St. Croix River	07030005-527		Aquatic Life	Dissolved oxygen	5
Sunrise River	2012	St. Croix River	07030005-527		Aquatic Life	Fishes bioassessments	5
Sunrise River, South Branch	2012	St. Croix River	07030005-528		Aquatic Life	Dissolved oxygen	5
Sunrise River (Pool 3)	2012	St. Croix River	07030005-539		Aquatic Life	Fishes bioassessments	5
Sunrise River	2006	St. Croix River	07030005-540		Aquatic Life	Dissolved oxygen	5
Sunrise River	2012	St. Croix River	07030005-540		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2004	St. Croix River	07030005-555		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Trout Brook	2012	St. Croix River	07030005-568		Aquatic Recreation	Escherichia coli	5
Browns Creek	2004	St. Croix River	07030005-587		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Browns Creek	2010	St. Croix River	07030005-587		Aquatic Life	Dissolved oxygen	5
Browns Creek	2012	St. Croix River	07030005-587		Aquatic Recreation	Escherichia coli	5
Browns Creek	2002	St. Croix River	07030005-587		Aquatic Life	Lack of cold water assemblage	5
Unnamed creek	2010	St. Croix River	07030005-601		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2012	St. Croix River	07030005-601		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2010	St. Croix River	07030005-601		Aquatic Life	Turbidity	5
Unnamed creek	2012	St. Croix River	07030005-612		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2010	St. Croix River	07030005-641		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2010	St. Croix River	07030005-713		Aquatic Recreation	Escherichia coli	5
Unnamed ditch	2010	St. Croix River	07030005-723		Aquatic Life	Ammonia, unionized	5
Unnamed ditch	2010	St. Croix River	07030005-723		Aquatic Life	Dissolved oxygen	5
Unnamed ditch	2012	St. Croix River	07030005-723		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	St. Croix River	07030005-767		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2012	St. Croix River	07030005-913		Aquatic Recreation	Escherichia coli	5
Hanging Horn	1998	St. Croix River	09-0038-00		Aquatic Consumption	Mercury in fish tissue	5
Eddy	2002	St. Croix River	09-0039-00		Aquatic Consumption	Mercury in fish tissue	5
Moosehead	1998	St. Croix River	09-0041-00		Aquatic Consumption	Mercury in fish tissue	5
GOOSE (NORTH BAY)	2010	St. Croix River	13-0083-01		Aquatic Consumption	Mercury in fish tissue	5
GOOSE (SOUTH BAY)	2010	St. Croix River	13-0083-02		Aquatic Consumption	Mercury in fish tissue	5
Cross	2012	St. Croix River	58-0119-00		Aquatic Consumption	Mercury in fish tissue	5
Bass	1998	St. Croix River	58-0128-00		Aquatic Consumption	Mercury in fish tissue	5
Long	2002	St. Croix River	82-0021-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lily	2002	St. Croix River	82-0023-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lynch	2010	St. Croix River	82-0042-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Goose	2012	St. Croix River	82-0059-00		Aquatic Consumption	Mercury in fish tissue	5

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Barker	2012	St. Croix River	82-0076-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2006	St. Croix River	82-0077-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Jane	2006	St. Croix River	82-0104-00		Aquatic Consumption	Mercury in fish tissue	5
Elmo	2008	St. Croix River	82-0106-00		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Downs	2012	St. Croix River	82-0110-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Goose (South)	2012	St. Croix River	82-0113-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Benz	2012	St. Croix River	82-0120-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2012	St. Croix River	82-0135-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Plaisted	2012	St. Croix River	82-0148-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
South School Section	2002	St. Croix River	82-0151-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Forest	2002	St. Croix River	82-0159-00		Aquatic Consumption	PCB in fish tissue	5
Vermillion River	1998	Upper Mississippi River, Lower Portion	07040001-504	Prairie Island	Aquatic Consumption	PCB in fish tissue	5
Vermillion River	2012	Upper Mississippi River, Lower Portion	07040001-507		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Vermillion River	2012	Upper Mississippi River, Lower Portion	07040001-507		Aquatic Life	Fishes bioassessments	5
Vermillion River	2012	Upper Mississippi River, Lower Portion	07040001-517		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Vermillion River	2010	Upper Mississippi River, Lower Portion	07040001-517		Aquatic Life	Dissolved oxygen	5
Vermillion River	2012	Upper Mississippi River, Lower Portion	07040001-517		Aquatic Life	Fishes bioassessments	5
Mississippi River	1998	Upper Mississippi River, Lower Portion	07040001-531		Aquatic Consumption	PCB in fish tissue	5
Unnamed creek (Vermillion River Tributary)	2010	Upper Mississippi River, Lower Portion	07040001-545		Aquatic Life	Dissolved oxygen	5
Vermillion River	2012	Upper Mississippi River, Lower Portion	07040001-692		Aquatic Life	Fishes bioassessments	5
Cannon River	2016	Upper Mississippi River, Lower Portion	07040002-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Cannon River	2012	Upper Mississippi River, Lower Portion	07040002-501		Aquatic Consumption	PCB in fish tissue	5
Cannon River	2012	Upper Mississippi River, Lower Portion	07040002-502		Aquatic Consumption	PCB in fish tissue	5
Cannon River	2014	Upper Mississippi River, Lower Portion	07040002-507		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cannon River	2006	Upper Mississippi River, Lower Portion	07040002-507		Aquatic Life	Turbidity	5
Cannon River	2008	Upper Mississippi River, Lower Portion	07040002-508		Aquatic Life	Turbidity	5
Heath Creek	2016	Upper Mississippi River, Lower Portion	07040002-521		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Heath Creek	2016	Upper Mississippi River, Lower Portion	07040002-521		Aquatic Life	Fishes bioassessments	5
Cannon River	2012	Upper Mississippi River, Lower Portion	07040002-538		Aquatic Consumption	PCB in fish tissue	5
Cannon River	2014	Upper Mississippi River, Lower Portion	07040002-539		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cannon River	2012	Upper Mississippi River, Lower Portion	07040002-539		Aquatic Consumption	PCB in fish tissue	5
Cannon River	2016	Upper Mississippi River, Lower Portion	07040002-540		Aquatic Life	Nutrient/eutrophication biological indicators	5
Cannon River	2014	Upper Mississippi River, Lower Portion	07040002-542		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cannon River	2014	Upper Mississippi River, Lower Portion	07040002-542		Aquatic Life	Dissolved oxygen	5
Medford Creek	2014	Upper Mississippi River, Lower Portion	07040002-547		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Medford Creek	2014	Upper Mississippi River, Lower Portion	07040002-547		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Spring Brook)	2014	Upper Mississippi River, Lower Portion	07040002-557		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Spring Brook)	2006	Upper Mississippi River, Lower Portion	07040002-557		Aquatic Life	Turbidity	5
Waterville Creek	2014	Upper Mississippi River, Lower Portion	07040002-560		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Waterville Creek	2014	Upper Mississippi River, Lower Portion	07040002-560		Aquatic Life	Fishes bioassessments	5
Spring Creek	2010	Upper Mississippi River, Lower Portion	07040002-569		Aquatic Life	Turbidity	5
Dutch Creek	2016	Upper Mississippi River, Lower Portion	07040002-572		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Dutch Creek	2016	Upper Mississippi River, Lower Portion	07040002-572		Aquatic Life	Fishes bioassessments	5

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Unnamed creek (Trout Brook)	2014	Upper Mississippi River, Lower Portion	07040002-573		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
MacKenzie Creek	2014	Upper Mississippi River, Lower Portion	07040002-576		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Devil Creek	2014	Upper Mississippi River, Lower Portion	07040002-577		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Trout Brook)	2014	Upper Mississippi River, Lower Portion	07040002-580		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cannon River	2014	Upper Mississippi River, Lower Portion	07040002-582		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Upper Mississippi River, Lower Portion	07040002-587		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Cannon River (Goodhue County)	2016	Upper Mississippi River, Lower Portion	07040002-589		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Little Cannon River (Goodhue County)	2016	Upper Mississippi River, Lower Portion	07040002-589		Aquatic Life	Fishes bioassessments	5
Spring Creek	2014	Upper Mississippi River, Lower Portion	07040002-591		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Upper Mississippi River, Lower Portion	07040002-638		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cannon River	2012	Upper Mississippi River, Lower Portion	07040002-646		Aquatic Consumption	PCB in fish tissue	5
Unnamed creek	2014	Upper Mississippi River, Lower Portion	07040002-705		Aquatic Life	Fishes bioassessments	5
Whitewater Creek	2014	Upper Mississippi River, Lower Portion	07040002-706		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Upper Mississippi River, Lower Portion	07040002-723		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2014	Upper Mississippi River, Lower Portion	07040002-731		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Whitewater River, South Fork	2014	Upper Mississippi River, Lower Portion	07040003-512		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Whitewater River, Middle Fork	2014	Upper Mississippi River, Lower Portion	07040003-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Whitewater River, Middle Fork	2014	Upper Mississippi River, Lower Portion	07040003-515		Aquatic Life	Fishes bioassessments	5
Whitewater River, Middle Fork	2008	Upper Mississippi River, Lower Portion	07040003-515		Aquatic Life	Turbidity	5
Garvin Brook	1996	Upper Mississippi River, Lower Portion	07040003-542		Aquatic Life	Turbidity	5
Whitewater River, North Fork	2014	Upper Mississippi River, Lower Portion	07040003-553		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Whitewater River, North Fork	2014	Upper Mississippi River, Lower Portion	07040003-553		Aquatic Life	Fishes bioassessments	5
Bear Creek	2014	Upper Mississippi River, Lower Portion	07040003-581		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Bear Creek	2014	Upper Mississippi River, Lower Portion	07040003-581		Aquatic Life	Fishes bioassessments	5
Big Trout Creek (Pickwick Creek)	2014	Upper Mississippi River, Lower Portion	07040003-592		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mississippi River	1998	Upper Mississippi River, Lower Portion	07040003-627		Aquatic Consumption	PCB in fish tissue	5
Whitewater River, South Fork	2014	Upper Mississippi River, Lower Portion	07040003-F16		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Whitewater River, South Fork	2014	Upper Mississippi River, Lower Portion	07040003-F16		Aquatic Life	Fishes bioassessments	5
Whitewater River, South Fork	2002	Upper Mississippi River, Lower Portion	07040003-F16		Aquatic Life	Turbidity	5
Whitewater River, Middle Fork	2014	Upper Mississippi River, Lower Portion	07040003-F19		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zumbro River	2004	Upper Mississippi River, Lower Portion	07040004-501		Aquatic Consumption	PCB in fish tissue	5
Zumbro River	2004	Upper Mississippi River, Lower Portion	07040004-502		Aquatic Consumption	PCB in fish tissue	5
Salem Creek	2016	Upper Mississippi River, Lower Portion	07040004-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zumbro River	2004	Upper Mississippi River, Lower Portion	07040004-504		Aquatic Consumption	PCB in fish tissue	5
Zumbro River	2004	Upper Mississippi River, Lower Portion	07040004-506		Aquatic Consumption	PCB in fish tissue	5

Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Zumbro River, South Fork	2016	Upper Mississippi River, Lower Portion	07040004-507		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cold Creek	2016	Upper Mississippi River, Lower Portion	07040004-510		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Trout Brook (Mazeppa Creek)	2016	Upper Mississippi River, Lower Portion	07040004-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zumbro River, South Fork	2016	Upper Mississippi River, Lower Portion	07040004-536		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Shingle Creek	2016	Upper Mississippi River, Lower Portion	07040004-562		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Creek	2016	Upper Mississippi River, Lower Portion	07040004-568		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Creek	2016	Upper Mississippi River, Lower Portion	07040004-570		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-578		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-579		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cascade Creek	2016	Upper Mississippi River, Lower Portion	07040004-581		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Trout Brook	2016	Upper Mississippi River, Lower Portion	07040004-585		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-597		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-597		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-605		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Creek	2016	Upper Mississippi River, Lower Portion	07040004-606		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Henslin Creek	2016	Upper Mississippi River, Lower Portion	07040004-618		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Badger Run	2016	Upper Mississippi River, Lower Portion	07040004-620		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-800		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-800		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Lower Portion	07040004-964		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zumbro River, North Fork	2016	Upper Mississippi River, Lower Portion	07040004-971		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zumbro River, Middle Fork	2016	Upper Mississippi River, Lower Portion	07040004-973		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zumbro River, Middle Fork, South Branch	2016	Upper Mississippi River, Lower Portion	07040004-976		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Zumbro River, Middle Fork, South Branch	2016	Upper Mississippi River, Lower Portion	07040004-978		Aquatic Life	Nutrient/eutrophication biological indicators	5
Zumbro River, Middle Fork, South Branch	2016	Upper Mississippi River, Lower Portion	07040004-980		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 1 (Dodge Center Creek)	2016	Upper Mississippi River, Lower Portion	07040004-987		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Dodge Center Creek (Judicial Ditch 1)	2016	Upper Mississippi River, Lower Portion	07040004-988		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Dodge Center Creek (Judicial Ditch 1)	2016	Upper Mississippi River, Lower Portion	07040004-988		Aquatic Life	Fishes bioassessments	5
Dodge Center Creek	2016	Upper Mississippi River, Lower Portion	07040004-989		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cascade Creek	2016	Upper Mississippi River, Lower Portion	07040004-991		Aquatic Life	Fishes bioassessments	5
Mississippi River	1998	Upper Mississippi River, Lower Portion	07040006-515		Aquatic Consumption	PCB in fish tissue	5
Pine Creek	2018	Upper Mississippi River, Lower Portion	07040006-576		Aquatic Recreation	Escherichia coli	5
Root River, Middle Branch	2012	Upper Mississippi River, Lower Portion	07040008-506		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River, South Fork	2012	Upper Mississippi River, Lower Portion	07040008-510		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River, South Fork	2008	Upper Mississippi River, Lower Portion	07040008-511		Aquatic Life	Turbidity	5
Riceford Creek	2012	Upper Mississippi River, Lower Portion	07040008-518		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Riceford Creek	2012	Upper Mississippi River, Lower Portion	07040008-519		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Money Creek	2008	Upper Mississippi River, Lower Portion	07040008-521		Aquatic Life	Turbidity	5
Rush Creek	2012	Upper Mississippi River, Lower Portion	07040008-524		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pine Creek	2012	Upper Mississippi River, Lower Portion	07040008-526		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Root River, Middle Branch	2012	Upper Mississippi River, Lower Portion	07040008-534		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Upper Bear Creek	2012	Upper Mississippi River, Lower Portion	07040008-540		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Upper Bear Creek	2012	Upper Mississippi River, Lower Portion	07040008-540		Aquatic Life	Fishes bioassessments	5
Bear Creek (South Fork Bear Creek)	2012	Upper Mississippi River, Lower Portion	07040008-544		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Valley Creek	2012	Upper Mississippi River, Lower Portion	07040008-548		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Spring Valley Creek	2012	Upper Mississippi River, Lower Portion	07040008-548		Aquatic Life	Fishes bioassessments	5
Willow Creek	2012	Upper Mississippi River, Lower Portion	07040008-558		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Camp Creek	2012	Upper Mississippi River, Lower Portion	07040008-559		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Camp Creek	2012	Upper Mississippi River, Lower Portion	07040008-559		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 1	2006	Upper Mississippi River, Lower Portion	07040008-561		Aquatic Life	Turbidity	5
Forestville Creek	2006	Upper Mississippi River, Lower Portion	07040008-563		Aquatic Life	Turbidity	5
Pine Creek	2012	Upper Mississippi River, Lower Portion	07040008-576		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rice Creek	2012	Upper Mississippi River, Lower Portion	07040008-581		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rice Creek	2012	Upper Mississippi River, Lower Portion	07040008-581		Aquatic Life	Fishes bioassessments	5
Root River, South Branch	2004	Upper Mississippi River, Lower Portion	07040008-586		Aquatic Life	Turbidity	5
Etna Creek	2012	Upper Mississippi River, Lower Portion	07040008-597		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Wadden Valley Creek)	2012	Upper Mississippi River, Lower Portion	07040008-605		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Corey Creek	2012	Upper Mississippi River, Lower Portion	07040008-631		Aquatic Life	Fishes bioassessments	5
Silver Creek	2012	Upper Mississippi River, Lower Portion	07040008-640		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Silver Creek	2012	Upper Mississippi River, Lower Portion	07040008-640		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Lower Portion	07040008-659		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Lower Portion	07040008-706		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Lower Portion	07040008-F46		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Money Creek	2012	Upper Mississippi River, Lower Portion	07040008-F48		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sorenson Creek	2012	Upper Mississippi River, Lower Portion	07040008-F52		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Trout Run Creek	2012	Upper Mississippi River, Lower Portion	07040008-G87		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mississippi River	1998	Upper Mississippi River, Lower Portion	07060001-509		Aquatic Consumption	PCB in fish tissue	5
Crooked Creek	2018	Upper Mississippi River, Lower Portion	07060001-519		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crooked Creek	2018	Upper Mississippi River, Lower Portion	07060001-519		Aquatic Recreation	Escherichia coli	5
Clear Creek	2018	Upper Mississippi River, Lower Portion	07060001-524		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crooked Creek, South Fork	2018	Upper Mississippi River, Lower Portion	07060001-574		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crooked Creek, South Fork	2018	Upper Mississippi River, Lower Portion	07060001-574		Aquatic Life	Fishes bioassessments	5
Winnebago Creek	2018	Upper Mississippi River, Lower Portion	07060001-693		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Winnebago Creek	2018	Upper Mississippi River, Lower Portion	07060001-693		Aquatic Recreation	Escherichia coli	5
Winnebago Creek	2018	Upper Mississippi River, Lower Portion	07060001-693		Aquatic Life	Total suspended solids	5
Bear Creek	2018	Upper Mississippi River, Lower Portion	07060002-503		Limited Resource Value	Escherichia coli	5
Upper Iowa River	2018	Upper Mississippi River, Lower Portion	07060002-509		Aquatic Recreation	Escherichia coli	5
Pine Creek	2018	Upper Mississippi River, Lower Portion	07060002-512		Limited Resource Value	Escherichia coli	5
Bee Creek (Waterloo Creek)	2018	Upper Mississippi River, Lower Portion	07060002-515		Aquatic Recreation	Escherichia coli	5
Deer Creek	2018	Upper Mississippi River, Lower Portion	07060002-520		Aquatic Life	Fishes bioassessments	5
Elliot Creek	2018	Upper Mississippi River, Lower Portion	07060002-521		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Upper Mississippi River, Lower Portion	07060002-537		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Upper Mississippi River, Lower Portion	07060002-540		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Upper Mississippi River, Lower Portion	07060002-544		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Beaver Creek	2018	Upper Mississippi River, Lower Portion	07060002-546		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Beaver Creek	2018	Upper Mississippi River, Lower Portion	07060002-546		Aquatic Recreation	Escherichia coli	5
Little Iowa River	2018	Upper Mississippi River, Lower Portion	07060002-548		Aquatic Recreation	Escherichia coli	5
Upper Iowa River	2018	Upper Mississippi River, Lower Portion	07060002-550		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Upper Iowa River	2018	Upper Mississippi River, Lower Portion	07060002-550		Aquatic Recreation	Escherichia coli	5
Wapsipinicon River	2018	Upper Mississippi River, Lower Portion	07080102-507		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Wapsipinicon River	2018	Upper Mississippi River, Lower Portion	07080102-507		Aquatic Recreation	Escherichia coli	5
Wapsipinicon River	2018	Upper Mississippi River, Lower Portion	07080102-507		Aquatic Life	Fishes bioassessments	5
Pepin	2002	Upper Mississippi River, Lower Portion	25-0001-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Sabre	2012	Upper Mississippi River, Lower Portion	40-0014-00		Aquatic Consumption	Mercury in fish tissue	5
Volney	1998	Upper Mississippi River, Lower Portion	40-0033-00		Aquatic Consumption	Mercury in fish tissue	5
Zumbro	2002	Upper Mississippi River, Lower Portion	55-0004-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mazaska	1998	Upper Mississippi River, Lower Portion	66-0039-00		Aquatic Consumption	Mercury in fish tissue	5
Horseshoe	2010	Upper Mississippi River, Upper Portion	01-0034-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Wakefield	2016	Upper Mississippi River, Upper Portion	01-0036-00		Aquatic Consumption	Mercury in fish tissue	5
Remote	2016	Upper Mississippi River, Upper Portion	01-0038-00		Aquatic Consumption	Mercury in fish tissue	5
Glacier	2014	Upper Mississippi River, Upper Portion	01-0042-00		Aquatic Consumption	Mercury in fish tissue	5
Round	1998	Upper Mississippi River, Upper Portion	01-0070-00		Aquatic Consumption	Mercury in fish tissue	5
Sugar	2014	Upper Mississippi River, Upper Portion	01-0087-00		Aquatic Consumption	Mercury in fish tissue	5
Long	2016	Upper Mississippi River, Upper Portion	01-0089-00		Aquatic Consumption	Mercury in fish tissue	5
Gun	2010	Upper Mississippi River, Upper Portion	01-0099-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fleming	2010	Upper Mississippi River, Upper Portion	01-0105-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Elm Island	2010	Upper Mississippi River, Upper Portion	01-0123-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Waukenabo	2010	Upper Mississippi River, Upper Portion	01-0136-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Ripple	2010	Upper Mississippi River, Upper Portion	01-0146-00		Aquatic Consumption	Mercury in fish tissue	5
Esquagamah	2010	Upper Mississippi River, Upper Portion	01-0147-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Blind	2010	Upper Mississippi River, Upper Portion	01-0188-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Moulton	1998	Upper Mississippi River, Upper Portion	01-0212-00		Aquatic Consumption	Mercury in fish tissue	5
Unnamed	2004	Upper Mississippi River, Upper Portion	02-0079-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Sandy	2002	Upper Mississippi River, Upper Portion	02-0080-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Boot	1998	Upper Mississippi River, Upper Portion	03-0030-00		Aquatic Consumption	Mercury in fish tissue	5
Moose	2012	Upper Mississippi River, Upper Portion	04-0011-00	Leech Lake	Aquatic Consumption	Mercury in fish tissue	5
Gilstad	2012	Upper Mississippi River, Upper Portion	04-0024-00		Aquatic Consumption	Mercury in fish tissue	5
Three Island	2010	Upper Mississippi River, Upper Portion	04-0134-00		Aquatic Consumption	Mercury in fish tissue	5
Irving	2010	Upper Mississippi River, Upper Portion	04-0140-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Carr	1998	Upper Mississippi River, Upper Portion	04-0141-00		Aquatic Consumption	Mercury in fish tissue	5
Larson	2016	Upper Mississippi River, Upper Portion	04-0154-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Little Turtle	2008	Upper Mississippi River, Upper Portion	04-0155-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Moose	2016	Upper Mississippi River, Upper Portion	04-0342-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mississippi River	2016	Upper Mississippi River, Upper Portion	07010101-753		Aquatic Consumption	Mercury in fish tissue	5
Mississippi River	2016	Upper Mississippi River, Upper Portion	07010101-754	Leech Lake	Aquatic Consumption	Mercury in fish tissue	5
Kabekona River	2016	Upper Mississippi River, Upper Portion	07010102-511		Aquatic Recreation	Escherichia coli	5
Sandy River	2018	Upper Mississippi River, Upper Portion	07010103-512		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sandy River	2018	Upper Mississippi River, Upper Portion	07010103-512		Aquatic Life	Fishes bioassessments	5
Minnewawa Creek	2018	Upper Mississippi River, Upper Portion	07010103-518		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Minnewawa Creek	2018	Upper Mississippi River, Upper Portion	07010103-518		Aquatic Life	Fishes bioassessments	5
Minnewawa Creek	2018	Upper Mississippi River, Upper Portion	07010103-519		Aquatic Life	Fishes bioassessments	5

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Split Hand Creek	2018	Upper Mississippi River, Upper Portion	07010103-574		Aquatic Recreation	Escherichia coli	5
Pickerel Creek	2018	Upper Mississippi River, Upper Portion	07010103-590		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pickerel Creek	2018	Upper Mississippi River, Upper Portion	07010103-590		Aquatic Life	Fishes bioassessments	5
Hasty Brook	2018	Upper Mississippi River, Upper Portion	07010103-603		Aquatic Recreation	Escherichia coli	5
Mississippi River	2016	Upper Mississippi River, Upper Portion	07010103-708		Aquatic Life	Total suspended solids	5
Unnamed creek	2018	Upper Mississippi River, Upper Portion	07010103-726		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2018	Upper Mississippi River, Upper Portion	07010103-726		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Upper Mississippi River, Upper Portion	07010103-727		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Upper Mississippi River, Upper Portion	07010103-728		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Upper Mississippi River, Upper Portion	07010103-730		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2018	Upper Mississippi River, Upper Portion	07010103-731		Aquatic Life	Fishes bioassessments	5
Pokegama Creek	2018	Upper Mississippi River, Upper Portion	07010103-733		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pokegama Creek	2018	Upper Mississippi River, Upper Portion	07010103-733		Aquatic Life	Fishes bioassessments	5
Unnamed ditch	2018	Upper Mississippi River, Upper Portion	07010103-739		Aquatic Life	Fishes bioassessments	5
White Elk Creek	2018	Upper Mississippi River, Upper Portion	07010103-741		Aquatic Life	Fishes bioassessments	5
Willow River	2018	Upper Mississippi River, Upper Portion	07010103-751		Aquatic Recreation	Escherichia coli	5
Swan River	2018	Upper Mississippi River, Upper Portion	07010103-753		Aquatic Recreation	Escherichia coli	5
Unnamed ditch	2018	Upper Mississippi River, Upper Portion	07010103-756		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch	2018	Upper Mississippi River, Upper Portion	07010103-756		Aquatic Life	Fishes bioassessments	5
Tamarack River	2018	Upper Mississippi River, Upper Portion	07010103-758		Aquatic Recreation	Escherichia coli	5
Prairie River	2018	Upper Mississippi River, Upper Portion	07010103-760		Aquatic Recreation	Escherichia coli	5
Swan River	2010	Upper Mississippi River, Upper Portion	07010104-502		Aquatic Life	Dissolved oxygen	5
Nokasippi River	2018	Upper Mississippi River, Upper Portion	07010104-504		Aquatic Consumption	Mercury in fish tissue	5
Rice River	2002	Upper Mississippi River, Upper Portion	07010104-505		Aquatic Life	Fishes bioassessments	5
Nokasippi River	2018	Upper Mississippi River, Upper Portion	07010104-509		Aquatic Consumption	Mercury in fish tissue	5
Nokasippi River	2018	Upper Mississippi River, Upper Portion	07010104-510		Aquatic Consumption	Mercury in fish tissue	5
Nokasippi River	2018	Upper Mississippi River, Upper Portion	07010104-511		Aquatic Consumption	Mercury in fish tissue	5
Buffalo Creek (Little Buffalo Creek)	2006	Upper Mississippi River, Upper Portion	07010104-523		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Buffalo Creek (Little Buffalo Creek)	2002	Upper Mississippi River, Upper Portion	07010104-523		Aquatic Life	Fishes bioassessments	5
Mississippi River	1998	Upper Mississippi River, Upper Portion	07010104-655		Aquatic Life	Turbidity	5
Mississippi River	2016	Upper Mississippi River, Upper Portion	07010104-656		Aquatic Life	Total suspended solids	5
Arvig Creek	2016	Upper Mississippi River, Upper Portion	07010105-509		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Arvig Creek	2016	Upper Mississippi River, Upper Portion	07010105-509		Aquatic Life	Fishes bioassessments	5
Wilson Creek	2016	Upper Mississippi River, Upper Portion	07010105-529		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pine River, South Fork	2016	Upper Mississippi River, Upper Portion	07010105-531		Aquatic Life	Fishes bioassessments	5
Willow Creek	2016	Upper Mississippi River, Upper Portion	07010105-631		Aquatic Life	Fishes bioassessments	5
Farnham Creek	2006	Upper Mississippi River, Upper Portion	07010106-522		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Farnham Creek	2002	Upper Mississippi River, Upper Portion	07010106-522		Aquatic Life	Fishes bioassessments	5
Tower Creek	2014	Upper Mississippi River, Upper Portion	07010106-528		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
South Bluff Creek	2014	Upper Mississippi River, Upper Portion	07010107-553		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
South Bluff Creek	2014	Upper Mississippi River, Upper Portion	07010107-553		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Upper Mississippi River, Upper Portion	07010107-554		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2014	Upper Mississippi River, Upper Portion	07010107-557		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Wing River	2014	Upper Mississippi River, Upper Portion	07010107-559		Aquatic Life	Fishes bioassessments	5
Long Prairie River	2002	Upper Mississippi River, Upper Portion	07010108-504		Aquatic Life	Fishes bioassessments	5

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Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Long Prairie River	2002	Upper Mississippi River, Upper Portion	07010108-505		Aquatic Life	Fishes bioassessments	5
Venewitz Creek	2014	Upper Mississippi River, Upper Portion	07010108-568		Aquatic Life	Fishes bioassessments	5
Harris Creek	2014	Upper Mississippi River, Upper Portion	07010108-592		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Skunk River	2008	Upper Mississippi River, Upper Portion	07010201-521		Aquatic Recreation	Fecal Coliform	5
Platte River	2002	Upper Mississippi River, Upper Portion	07010201-546		Aquatic Life	Fishes bioassessments	5
Sauk River	2016	Upper Mississippi River, Upper Portion	07010202-501		Aquatic Life	Nutrient/eutrophication biological indicators	5
Sauk River	1998	Upper Mississippi River, Upper Portion	07010202-501		Aquatic Consumption	PCB in fish tissue	5
Ashley Creek	2012	Upper Mississippi River, Upper Portion	07010202-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Ashley Creek	1998	Upper Mississippi River, Upper Portion	07010202-503		Aquatic Life	Dissolved oxygen	5
Ashley Creek	2012	Upper Mississippi River, Upper Portion	07010202-503		Aquatic Life	Fishes bioassessments	5
Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-505		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-505		Aquatic Recreation	Escherichia coli	5
Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-505		Aquatic Life	Fishes bioassessments	5
Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-506		Aquatic Life	Fishes bioassessments	5
Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-507		Aquatic Life	Fishes bioassessments	5
Sauk River	2016	Upper Mississippi River, Upper Portion	07010202-517		Aquatic Life	Nutrient/eutrophication biological indicators	5
Sauk River	1998	Upper Mississippi River, Upper Portion	07010202-519		Aquatic Consumption	PCB in fish tissue	5
Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-520		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-520		Aquatic Life	Fishes bioassessments	5
Sauk River	1998	Upper Mississippi River, Upper Portion	07010202-520		Aquatic Consumption	PCB in fish tissue	5
County Ditch 6	2006	Upper Mississippi River, Upper Portion	07010202-521		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 6	2002	Upper Mississippi River, Upper Portion	07010202-521		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-542		Aquatic Recreation	Escherichia coli	5
Eden Lake Outlet	2012	Upper Mississippi River, Upper Portion	07010202-545		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Eden Lake Outlet	2010	Upper Mississippi River, Upper Portion	07010202-545		Aquatic Life	Dissolved oxygen	5
Eden Lake Outlet	2012	Upper Mississippi River, Upper Portion	07010202-545		Aquatic Recreation	Escherichia coli	5
Eden Lake Outlet	2012	Upper Mississippi River, Upper Portion	07010202-545		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-550		Limited Resource Value	Escherichia coli	5
Crooked Lake Ditch	2006	Upper Mississippi River, Upper Portion	07010202-552		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crooked Lake Ditch	2012	Upper Mississippi River, Upper Portion	07010202-552		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2006	Upper Mississippi River, Upper Portion	07010202-554		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-556		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-556		Aquatic Life	Fishes bioassessments	5
Getchell Creek (County Ditch 26)	2006	Upper Mississippi River, Upper Portion	07010202-562		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Getchell Creek (County Ditch 26)	2012	Upper Mississippi River, Upper Portion	07010202-562		Aquatic Recreation	Escherichia coli	5
Unnamed creek (Cold Spring Creek)	2012	Upper Mississippi River, Upper Portion	07010202-567		Aquatic Recreation	Escherichia coli	5
Kolling Creek	2010	Upper Mississippi River, Upper Portion	07010202-575		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-592		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-598		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-615		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2010	Upper Mississippi River, Upper Portion	07010202-616		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-660		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-660		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-662		Aquatic Life	Fishes bioassessments	5

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Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010202-663		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch	2012	Upper Mississippi River, Upper Portion	07010202-665		Aquatic Recreation	Escherichia coli	5
Unnamed ditch	2012	Upper Mississippi River, Upper Portion	07010202-666		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch	2012	Upper Mississippi River, Upper Portion	07010202-666		Aquatic Life	Fishes bioassessments	5
Sauk River	1994	Upper Mississippi River, Upper Portion	07010202-673		Aquatic Life	Dissolved oxygen	5
Sauk River	2012	Upper Mississippi River, Upper Portion	07010202-673		Aquatic Life	Fishes bioassessments	5
Mill Creek	2012	Upper Mississippi River, Upper Portion	07010202-674		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mill Creek	2012	Upper Mississippi River, Upper Portion	07010202-674		Aquatic Life	Fishes bioassessments	5
Elk River	2012	Upper Mississippi River, Upper Portion	07010203-507		Aquatic Recreation	Escherichia coli	5
Elk River	2012	Upper Mississippi River, Upper Portion	07010203-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Elk River	2012	Upper Mississippi River, Upper Portion	07010203-508		Aquatic Recreation	Escherichia coli	5
Elk River	2012	Upper Mississippi River, Upper Portion	07010203-508		Aquatic Life	Fishes bioassessments	5
Mayhew Creek	2006	Upper Mississippi River, Upper Portion	07010203-509		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mayhew Creek	2012	Upper Mississippi River, Upper Portion	07010203-509		Aquatic Recreation	Escherichia coli	5
Mayhew Creek	2002	Upper Mississippi River, Upper Portion	07010203-509		Aquatic Life	Fishes bioassessments	5
Clearwater River	2012	Upper Mississippi River, Upper Portion	07010203-511		Aquatic Life	Fishes bioassessments	5
Rice Creek	2012	Upper Mississippi River, Upper Portion	07010203-512		Aquatic Recreation	Escherichia coli	5
Tibbets Brook	2012	Upper Mississippi River, Upper Portion	07010203-522		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010203-528		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010203-528		Aquatic Life	Fishes bioassessments	5
Snake River	2012	Upper Mississippi River, Upper Portion	07010203-529		Aquatic Recreation	Escherichia coli	5
Battle Brook	2012	Upper Mississippi River, Upper Portion	07010203-535		Aquatic Recreation	Escherichia coli	5
Battle Brook	2012	Upper Mississippi River, Upper Portion	07010203-535		Aquatic Life	Fishes bioassessments	5
Elk River	2012	Upper Mississippi River, Upper Portion	07010203-548		Aquatic Recreation	Escherichia coli	5
Silver Creek	2012	Upper Mississippi River, Upper Portion	07010203-557		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Silver Creek	2012	Upper Mississippi River, Upper Portion	07010203-557		Aquatic Life	Dissolved oxygen	5
Silver Creek	2012	Upper Mississippi River, Upper Portion	07010203-557		Aquatic Life	Fishes bioassessments	5
Unnamed creek (Fairhaven Creek)	2012	Upper Mississippi River, Upper Portion	07010203-565		Aquatic Recreation	Escherichia coli	5
Elk River	2012	Upper Mississippi River, Upper Portion	07010203-579		Aquatic Life	Fishes bioassessments	5
Johnson Creek (Meyer Creek)	2012	Upper Mississippi River, Upper Portion	07010203-639		Aquatic Life	Fishes bioassessments	5
Silver Creek	2012	Upper Mississippi River, Upper Portion	07010203-662		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Silver Creek	2012	Upper Mississippi River, Upper Portion	07010203-662		Aquatic Life	Fishes bioassessments	5
Mayhew Creek	2012	Upper Mississippi River, Upper Portion	07010203-675		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Mayhew Creek	2012	Upper Mississippi River, Upper Portion	07010203-675		Aquatic Life	Fishes bioassessments	5
St Francis River	2012	Upper Mississippi River, Upper Portion	07010203-700		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
St Francis River	2012	Upper Mississippi River, Upper Portion	07010203-700		Aquatic Recreation	Escherichia coli	5
St Francis River	2012	Upper Mississippi River, Upper Portion	07010203-700		Aquatic Life	Fishes bioassessments	5
St Francis River	2012	Upper Mississippi River, Upper Portion	07010203-702		Aquatic Life	Fishes bioassessments	5
St Francis River	2012	Upper Mississippi River, Upper Portion	07010203-704		Aquatic Life	Fishes bioassessments	5
Clearwater River	2012	Upper Mississippi River, Upper Portion	07010203-717		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Clearwater River	2012	Upper Mississippi River, Upper Portion	07010203-717		Aquatic Life	Fishes bioassessments	5
Mississippi River	2002	Upper Mississippi River, Upper Portion	07010203-729		Aquatic Recreation	Fecal Coliform	5
Mississippi River	1998	Upper Mississippi River, Upper Portion	07010203-729		Aquatic Consumption	PCB in fish tissue	5
Crow River	2012	Upper Mississippi River, Upper Portion	07010204-502		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River	2002	Upper Mississippi River, Upper Portion	07010204-502		Aquatic Life	Fishes bioassessments	5

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Crow River	2016	Upper Mississippi River, Upper Portion	07010204-502		Aquatic Life	Nutrient/eutrophication biological indicators	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-503		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-503		Aquatic Recreation	Escherichia coli	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-503		Aquatic Life	Fishes bioassessments	5
Crow River, North Fork	2016	Upper Mississippi River, Upper Portion	07010204-503		Aquatic Life	Nutrient/eutrophication biological indicators	5
Crow River, North Fork	2006	Upper Mississippi River, Upper Portion	07010204-504		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-506		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-506		Aquatic Life	Fishes bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-507		Aquatic Recreation	Escherichia coli	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-507		Aquatic Life	Fishes bioassessments	5
Crow River, Middle Fork	2012	Upper Mississippi River, Upper Portion	07010204-511		Aquatic Recreation	Escherichia coli	5
Grove Creek	2006	Upper Mississippi River, Upper Portion	07010204-514		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Grove Creek	2002	Upper Mississippi River, Upper Portion	07010204-514		Aquatic Life	Fishes bioassessments	5
Mill Creek	2012	Upper Mississippi River, Upper Portion	07010204-515		Aquatic Recreation	Escherichia coli	5
Mill Creek	2016	Upper Mississippi River, Upper Portion	07010204-515		Aquatic Life	Nutrient/eutrophication biological indicators	5
Washington Creek (County Ditch 9)	2012	Upper Mississippi River, Upper Portion	07010204-518		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2006	Upper Mississippi River, Upper Portion	07010204-543		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Battle Creek)	2006	Upper Mississippi River, Upper Portion	07010204-552		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek (Battle Creek)	2002	Upper Mississippi River, Upper Portion	07010204-552		Aquatic Life	Fishes bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-556		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-556		Aquatic Life	Dissolved oxygen	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-556		Aquatic Recreation	Escherichia coli	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-556		Aquatic Life	Fishes bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-556		Aquatic Life	Turbidity	5
Stag Brook	2012	Upper Mississippi River, Upper Portion	07010204-572		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Stag Brook	2012	Upper Mississippi River, Upper Portion	07010204-572		Aquatic Life	Fishes bioassessments	5
Jewitts Creek (County Ditch 19, 18, and 17)	2006	Upper Mississippi River, Upper Portion	07010204-585		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Jewitts Creek (County Ditch 19, 18, and 17)	2010	Upper Mississippi River, Upper Portion	07010204-585		Aquatic Life	Chloride	5
Jewitts Creek (County Ditch 19, 18, and 17)	2002	Upper Mississippi River, Upper Portion	07010204-585		Aquatic Life	Fishes bioassessments	5
Collinwood Creek	2012	Upper Mississippi River, Upper Portion	07010204-604		Aquatic Recreation	Escherichia coli	5
Unnamed creek	2004	Upper Mississippi River, Upper Portion	07010204-667		Aquatic Life	Dissolved oxygen	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010204-667		Aquatic Life	Nutrient/eutrophication biological indicators	5
Unnamed creek	2012	Upper Mississippi River, Upper Portion	07010204-668		Aquatic Recreation	Escherichia coli	5
Twelvemile Creek	2012	Upper Mississippi River, Upper Portion	07010204-681		Aquatic Recreation	Escherichia coli	5
Sucker Creek	2012	Upper Mississippi River, Upper Portion	07010204-682		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Sucker Creek	2012	Upper Mississippi River, Upper Portion	07010204-682		Aquatic Life	Turbidity	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-685		Aquatic Life	Dissolved oxygen	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-685		Aquatic Life	Fishes bioassessments	5
Crow River, North Fork	2012	Upper Mississippi River, Upper Portion	07010204-687		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Buffalo Creek	2006	Upper Mississippi River, Upper Portion	07010205-502		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Buffalo Creek	2002	Upper Mississippi River, Upper Portion	07010205-502		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 67	2016	Upper Mississippi River, Upper Portion	07010205-504		Aquatic Life	Aquatic macroinvertebrate bioassessments	5

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Judicial Ditch 67	2016	Upper Mississippi River, Upper Portion	07010205-504		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-508		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, South Fork	2006	Upper Mississippi River, Upper Portion	07010205-508		Aquatic Recreation	Fecal Coliform	5
Crow River, South Fork	2002	Upper Mississippi River, Upper Portion	07010205-508		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-508		Aquatic Life	Nutrient/eutrophication biological indicators	5
Crow River, South Fork	2004	Upper Mississippi River, Upper Portion	07010205-508		Aquatic Life	Turbidity	5
Judicial Ditch 15	2016	Upper Mississippi River, Upper Portion	07010205-509		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 15	2016	Upper Mississippi River, Upper Portion	07010205-509		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-510		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-510		Aquatic Life	Dissolved oxygen	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-510		Aquatic Recreation	Escherichia coli	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-510		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-510		Aquatic Life	Nutrient/eutrophication biological indicators	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-511		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-511		Aquatic Recreation	Escherichia coli	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-511		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-511		Aquatic Life	Nutrient/eutrophication biological indicators	5
Crow River, South Fork	2006	Upper Mississippi River, Upper Portion	07010205-511		Aquatic Life	Turbidity	5
Judicial Ditch 15	2010	Upper Mississippi River, Upper Portion	07010205-513		Limited Resource Value	Escherichia coli	5
Bear Creek	2016	Upper Mississippi River, Upper Portion	07010205-515		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Bear Creek	2016	Upper Mississippi River, Upper Portion	07010205-515		Aquatic Life	Fishes bioassessments	5
County Ditch 4	2016	Upper Mississippi River, Upper Portion	07010205-528		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 4	2016	Upper Mississippi River, Upper Portion	07010205-528		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-533		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-533		Aquatic Life	Fishes bioassessments	5
Belle Creek	2016	Upper Mississippi River, Upper Portion	07010205-549		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Belle Creek	2016	Upper Mississippi River, Upper Portion	07010205-549		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 18	2016	Upper Mississippi River, Upper Portion	07010205-550		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 1	2016	Upper Mississippi River, Upper Portion	07010205-572		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 1	2016	Upper Mississippi River, Upper Portion	07010205-572		Aquatic Recreation	Escherichia coli	5
Judicial Ditch 1	2016	Upper Mississippi River, Upper Portion	07010205-572		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-585		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 8	2016	Upper Mississippi River, Upper Portion	07010205-591		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 8	2016	Upper Mississippi River, Upper Portion	07010205-591		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-593		Aquatic Life	Dissolved oxygen	5
Deer Creek	2016	Upper Mississippi River, Upper Portion	07010205-594		Aquatic Life	Dissolved oxygen	5
State Ditch Branch 2	2016	Upper Mississippi River, Upper Portion	07010205-608		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
State Ditch Branch 2	2016	Upper Mississippi River, Upper Portion	07010205-608		Aquatic Life	Fishes bioassessments	5
County Ditch 18	2016	Upper Mississippi River, Upper Portion	07010205-609		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 18	2016	Upper Mississippi River, Upper Portion	07010205-609		Aquatic Life	Fishes bioassessments	5
County Ditch 24A	2016	Upper Mississippi River, Upper Portion	07010205-610		Aquatic Life	Fishes bioassessments	5
County Ditch 26/27	2016	Upper Mississippi River, Upper Portion	07010205-611		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 26/27	2016	Upper Mississippi River, Upper Portion	07010205-611		Aquatic Life	Fishes bioassessments	5
King Creek	2016	Upper Mississippi River, Upper Portion	07010205-613		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-614		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-615		Aquatic Life	Fishes bioassessments	5

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Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-617		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-618		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-618		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-621		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-622		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-623		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-623		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-624		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-624		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 9	2016	Upper Mississippi River, Upper Portion	07010205-625		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial Ditch 9	2016	Upper Mississippi River, Upper Portion	07010205-625		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 15 branch	2016	Upper Mississippi River, Upper Portion	07010205-626		Aquatic Life	Fishes bioassessments	5
Judicial Ditch 15 branch	2016	Upper Mississippi River, Upper Portion	07010205-627		Aquatic Life	Fishes bioassessments	5
Judicial DItch 15 branch	2016	Upper Mississippi River, Upper Portion	07010205-628		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Judicial DItch 15 branch	2016	Upper Mississippi River, Upper Portion	07010205-628		Aquatic Life	Fishes bioassessments	5
Unnamed ditch	2016	Upper Mississippi River, Upper Portion	07010205-630		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed ditch	2016	Upper Mississippi River, Upper Portion	07010205-630		Aquatic Life	Fishes bioassessments	5
County Ditch 7A	2016	Upper Mississippi River, Upper Portion	07010205-631		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 7A	2016	Upper Mississippi River, Upper Portion	07010205-631		Aquatic Life	Fishes bioassessments	5
Buffalo Creek	2006	Upper Mississippi River, Upper Portion	07010205-638		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Buffalo Creek	2010	Upper Mississippi River, Upper Portion	07010205-638		Aquatic Life	Dissolved oxygen	5
Buffalo Creek	2002	Upper Mississippi River, Upper Portion	07010205-638		Aquatic Life	Fishes bioassessments	5
Silver Creek (County Ditch 13)	2016	Upper Mississippi River, Upper Portion	07010205-641		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Silver Creek (County Ditch 13)	2016	Upper Mississippi River, Upper Portion	07010205-641		Aquatic Life	Fishes bioassessments	5
Otter Creek	2016	Upper Mississippi River, Upper Portion	07010205-642		Aquatic Life	Fishes bioassessments	5
Otter Creek	2016	Upper Mississippi River, Upper Portion	07010205-643		Aquatic Recreation	Escherichia coli	5
Otter Creek	2016	Upper Mississippi River, Upper Portion	07010205-643		Aquatic Life	Fishes bioassessments	5
County Ditch 33	2016	Upper Mississippi River, Upper Portion	07010205-645		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 33	2016	Upper Mississippi River, Upper Portion	07010205-645		Aquatic Life	Fishes bioassessments	5
County Ditch 9	2016	Upper Mississippi River, Upper Portion	07010205-648		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
County Ditch 9	2016	Upper Mississippi River, Upper Portion	07010205-648		Aquatic Life	Fishes bioassessments	5
Pioneer Creek	2016	Upper Mississippi River, Upper Portion	07010205-653		Aquatic Life	Dissolved oxygen	5
Pioneer Creek	2016	Upper Mississippi River, Upper Portion	07010205-654		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Pioneer Creek	2016	Upper Mississippi River, Upper Portion	07010205-654		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-656		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010205-656		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2006	Upper Mississippi River, Upper Portion	07010205-658		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-658		Aquatic Recreation	Escherichia coli	5
Crow River, South Fork	2002	Upper Mississippi River, Upper Portion	07010205-658		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-658		Aquatic Life	Nutrient/eutrophication biological indicators	5
Crow River, South Fork	2006	Upper Mississippi River, Upper Portion	07010205-658		Aquatic Life	Turbidity	5
Crow River, South Fork	2006	Upper Mississippi River, Upper Portion	07010205-659		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-659		Aquatic Recreation	Escherichia coli	5
Crow River, South Fork	2002	Upper Mississippi River, Upper Portion	07010205-659		Aquatic Life	Fishes bioassessments	5
Crow River, South Fork	2016	Upper Mississippi River, Upper Portion	07010205-659		Aquatic Life	Nutrient/eutrophication biological indicators	5

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Crow River, South Fork	2006	Upper Mississippi River, Upper Portion	07010205-659		Aquatic Life	Turbidity	5
Unnamed creek	2002	Upper Mississippi River, Upper Portion	07010206-517		Aquatic Life	Fishes bioassessments	5
Clearwater Creek	2006	Upper Mississippi River, Upper Portion	07010206-519		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Clearwater Creek	2002	Upper Mississippi River, Upper Portion	07010206-519		Aquatic Life	Fishes bioassessments	5
Bassett Creek	2004	Upper Mississippi River, Upper Portion	07010206-538		Aquatic Life	Fishes bioassessments	5
Minnehaha Creek	2014	Upper Mississippi River, Upper Portion	07010206-539		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Minnehaha Creek	2010	Upper Mississippi River, Upper Portion	07010206-539		Aquatic Life	Dissolved oxygen	5
Minnehaha Creek	2004	Upper Mississippi River, Upper Portion	07010206-539		Aquatic Life	Fishes bioassessments	5
Sixmile Creek	2016	Upper Mississippi River, Upper Portion	07010206-551		Aquatic Life	Nutrient/eutrophication biological indicators	5
Unnamed ditch (Ramsey/Washington Judicial Ditch 1)	2004	Upper Mississippi River, Upper Portion	07010206-565		Aquatic Life	Dissolved oxygen	5
Rice Creek	2006	Upper Mississippi River, Upper Portion	07010206-583		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rice Creek	2004	Upper Mississippi River, Upper Portion	07010206-583		Aquatic Life	Fishes bioassessments	5
Rice Creek	2006	Upper Mississippi River, Upper Portion	07010206-584		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Rice Creek	2014	Upper Mississippi River, Upper Portion	07010206-584		Aquatic Life	Fishes bioassessments	5
Hardwood Creek	2004	Upper Mississippi River, Upper Portion	07010206-595		Aquatic Life	Dissolved oxygen	5
Mississippi River	2006	Upper Mississippi River, Upper Portion	07010206-805		Aquatic Recreation	Fecal Coliform	5
Mississippi River	2016	Upper Mississippi River, Upper Portion	07010206-805		Aquatic Life	Nutrient/eutrophication biological indicators	5
Mississippi River	2002	Upper Mississippi River, Upper Portion	07010206-805		Aquatic Consumption	PCB in fish tissue	5
Mississippi River	1994	Upper Mississippi River, Upper Portion	07010206-814		Aquatic Recreation	Fecal Coliform	5
Mississippi River	2016	Upper Mississippi River, Upper Portion	07010206-814		Aquatic Life	Nutrient/eutrophication biological indicators	5
Mississippi River	1998	Upper Mississippi River, Upper Portion	07010206-814		Aquatic Consumption	PCB in fish tissue	5
Mississippi River	2008	Upper Mississippi River, Upper Portion	07010206-814		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Mississippi River	2014	Upper Mississippi River, Upper Portion	07010206-814		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in water column	5
Stanchfield Creek	2016	Upper Mississippi River, Upper Portion	07010207-520		Aquatic Life	Fishes bioassessments	5
Rum River, West Branch	2016	Upper Mississippi River, Upper Portion	07010207-525		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Cedar Creek (Little River)	2010	Upper Mississippi River, Upper Portion	07010207-546		Aquatic Life	Dissolved oxygen	5
Malone Creek (Thains Creek)	2012	Upper Mississippi River, Upper Portion	07010207-547	Mille Lacs	Aquatic Life	Dissolved oxygen	5
Borden Creek	2010	Upper Mississippi River, Upper Portion	07010207-554		Aquatic Life	Dissolved oxygen	5
Vondell Brook	2016	Upper Mississippi River, Upper Portion	07010207-567		Aquatic Life	Fishes bioassessments	5
Crooked Brook	2006	Upper Mississippi River, Upper Portion	07010207-575		Aquatic Life	Dissolved oxygen	5
Isanti Brook	2016	Upper Mississippi River, Upper Portion	07010207-592		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Isanti Brook	2016	Upper Mississippi River, Upper Portion	07010207-592		Aquatic Life	Fishes bioassessments	5
Washburn Brook	2016	Upper Mississippi River, Upper Portion	07010207-641		Aquatic Life	Fishes bioassessments	5
Unnamed creek	2016	Upper Mississippi River, Upper Portion	07010207-667		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Tibbetts Brook	2016	Upper Mississippi River, Upper Portion	07010207-676		Aquatic Life	Fishes bioassessments	5
Estes Brook	2016	Upper Mississippi River, Upper Portion	07010207-679		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Trott Brook	2016	Upper Mississippi River, Upper Portion	07010207-680		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Trott Brook	2016	Upper Mississippi River, Upper Portion	07010207-680		Aquatic Life	Fishes bioassessments	5
Mahoney Brook	2016	Upper Mississippi River, Upper Portion	07010207-682		Aquatic Life	Fishes bioassessments	5
Vondell Brook	2016	Upper Mississippi River, Upper Portion	07010207-687		Aquatic Life	Fishes bioassessments	5
Eagle	2002	Upper Mississippi River, Upper Portion	09-0057-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Upper (North) Island	2010	Upper Mississippi River, Upper Portion	09-0060-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lower (South) Island	2018	Upper Mississippi River, Upper Portion	09-0060-02		Aquatic Life	Fishes bioassessments	5
Lower (South) Island	2008	Upper Mississippi River, Upper Portion	09-0060-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5

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Cross	1998	Upper Mississippi River, Upper Portion	09-0062-00		Aquatic Consumption	Mercury in fish tissue	5
Tamarack	1998	Upper Mississippi River, Upper Portion	09-0067-00		Aquatic Consumption	Mercury in fish tissue	5
Tamarack	2010	Upper Mississippi River, Upper Portion	09-0067-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Steiger	1998	Upper Mississippi River, Upper Portion	10-0045-00		Aquatic Consumption	Mercury in fish tissue	5
Church	2018	Upper Mississippi River, Upper Portion	10-0046-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mud	2016	Upper Mississippi River, Upper Portion	10-0094-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Vermillion	2012	Upper Mississippi River, Upper Portion	11-0029-00		Aquatic Consumption	Mercury in fish tissue	5
Roosevelt - North	2014	Upper Mississippi River, Upper Portion	11-0043-01		Aquatic Consumption	Mercury in fish tissue	5
Roosevelt - South	2014	Upper Mississippi River, Upper Portion	11-0043-02		Aquatic Consumption	Mercury in fish tissue	5
Lawrence	2012	Upper Mississippi River, Upper Portion	11-0053-00		Aquatic Consumption	Mercury in fish tissue	5
Mitten	2016	Upper Mississippi River, Upper Portion	11-0114-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Stevens	1998	Upper Mississippi River, Upper Portion	11-0116-00		Aquatic Consumption	Mercury in fish tissue	5
Boy	2008	Upper Mississippi River, Upper Portion	11-0143-00	Leech Lake	Aquatic Consumption	Mercury in fish tissue	5
Agate	1998	Upper Mississippi River, Upper Portion	11-0216-00		Aquatic Consumption	Mercury in fish tissue	5
Ten Mile	1998	Upper Mississippi River, Upper Portion	11-0413-00		Aquatic Consumption	Mercury in fish tissue	5
Portage	2012	Upper Mississippi River, Upper Portion	11-0476-00		Aquatic Consumption	Mercury in fish tissue	5
Steamboat	2006	Upper Mississippi River, Upper Portion	11-0504-00	Leech Lake	Aquatic Consumption	Mercury in fish tissue	5
CROOKED (SUGAR BAY)	2012	Upper Mississippi River, Upper Portion	18-0041-01		Aquatic Consumption	Mercury in fish tissue	5
CROOKED (MAIN BAY)	2012	Upper Mississippi River, Upper Portion	18-0041-02		Aquatic Consumption	Mercury in fish tissue	5
Hanks	2012	Upper Mississippi River, Upper Portion	18-0044-00		Aquatic Consumption	Mercury in fish tissue	5
Platte	2010	Upper Mississippi River, Upper Portion	18-0088-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Crow Wing	2010	Upper Mississippi River, Upper Portion	18-0155-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Emily	2016	Upper Mississippi River, Upper Portion	18-0203-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Rush	2014	Upper Mississippi River, Upper Portion	18-0311-00		Aquatic Consumption	Mercury in fish tissue	5
Little Pelican	2012	Upper Mississippi River, Upper Portion	18-0351-00		Aquatic Consumption	Mercury in fish tissue	5
Ossawinnamakee	1998	Upper Mississippi River, Upper Portion	18-0352-00		Aquatic Consumption	Mercury in fish tissue	5
Kimball	2012	Upper Mississippi River, Upper Portion	18-0361-00		Aquatic Consumption	Mercury in fish tissue	5
Lower Hay	2014	Upper Mississippi River, Upper Portion	18-0378-00		Aquatic Consumption	Mercury in fish tissue	5
Smith	2012	Upper Mississippi River, Upper Portion	21-0016-00		Aquatic Consumption	Mercury in fish tissue	5
Henry	2010	Upper Mississippi River, Upper Portion	21-0051-00		Aquatic Life	Chloride	5
Henry	2014	Upper Mississippi River, Upper Portion	21-0051-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Agnes	2010	Upper Mississippi River, Upper Portion	21-0053-00		Aquatic Life	Chloride	5
Agnes	2014	Upper Mississippi River, Upper Portion	21-0053-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Carlos	1998	Upper Mississippi River, Upper Portion	21-0057-00		Aquatic Consumption	Mercury in fish tissue	5
Winona	2010	Upper Mississippi River, Upper Portion	21-0081-00		Aquatic Life	Chloride	5
Winona	2002	Upper Mississippi River, Upper Portion	21-0081-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mina	2010	Upper Mississippi River, Upper Portion	21-0108-00		Aquatic Consumption	Mercury in fish tissue	5
Mill	2014	Upper Mississippi River, Upper Portion	21-0180-00		Aquatic Consumption	Mercury in fish tissue	5
Powderhorn	2018	Upper Mississippi River, Upper Portion	27-0014-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Harriet	1998	Upper Mississippi River, Upper Portion	27-0016-00		Aquatic Consumption	Mercury in fish tissue	5
Harriet	2008	Upper Mississippi River, Upper Portion	27-0016-00		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Nokomis	1998	Upper Mississippi River, Upper Portion	27-0019-00		Aquatic Consumption	PCB in fish tissue	5
Calhoun	1998	Upper Mississippi River, Upper Portion	27-0031-00		Aquatic Consumption	Mercury in fish tissue	5
Calhoun	2008	Upper Mississippi River, Upper Portion	27-0031-00		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Cedar	1998	Upper Mississippi River, Upper Portion	27-0039-00		Aquatic Consumption	Mercury in fish tissue	5
Lake of the Isles	2008	Upper Mississippi River, Upper Portion	27-0040-00		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5

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Upper Twin	1998	Upper Mississippi River, Upper Portion	27-0042-01		Aquatic Consumption	PCB in fish tissue	5
Upper Twin	2010	Upper Mississippi River, Upper Portion	27-0042-01		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Middle Twin	1998	Upper Mississippi River, Upper Portion	27-0042-02		Aquatic Consumption	PCB in fish tissue	5
Middle Twin	2010	Upper Mississippi River, Upper Portion	27-0042-02		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Lower Twin	1998	Upper Mississippi River, Upper Portion	27-0042-03		Aquatic Consumption	PCB in fish tissue	5
Lower Twin	2010	Upper Mississippi River, Upper Portion	27-0042-03		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Unnamed	2008	Upper Mississippi River, Upper Portion	27-0053-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Windsor	2008	Upper Mississippi River, Upper Portion	27-0082-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Parkers	1998	Upper Mississippi River, Upper Portion	27-0107-00		Aquatic Consumption	Mercury in fish tissue	5
Peavey	2014	Upper Mississippi River, Upper Portion	27-0138-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Irene, Lake	2016	Upper Mississippi River, Upper Portion	27-0189-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Hafften	2012	Upper Mississippi River, Upper Portion	27-0199-00		Aquatic Consumption	Mercury in fish tissue	5
Northwood	2004	Upper Mississippi River, Upper Portion	27-0627-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Twin	2006	Upper Mississippi River, Upper Portion	27-0656-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Williams	2002	Upper Mississippi River, Upper Portion	29-0015-00		Aquatic Consumption	Mercury in fish tissue	5
Tenth Crow Wing	2002	Upper Mississippi River, Upper Portion	29-0045-00		Aquatic Consumption	Mercury in fish tissue	5
Benedict	2012	Upper Mississippi River, Upper Portion	29-0048-00		Aquatic Consumption	Mercury in fish tissue	5
Hart	2016	Upper Mississippi River, Upper Portion	29-0063-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Kabekona	1998	Upper Mississippi River, Upper Portion	29-0075-00		Aquatic Consumption	Mercury in fish tissue	5
East Crooked	2010	Upper Mississippi River, Upper Portion	29-0101-01		Aquatic Consumption	Mercury in fish tissue	5
Little Sand	2014	Upper Mississippi River, Upper Portion	29-0150-00		Aquatic Consumption	Mercury in fish tissue	5
Blue	2002	Upper Mississippi River, Upper Portion	29-0184-00		Aquatic Consumption	Mercury in fish tissue	5
Frontenac	2016	Upper Mississippi River, Upper Portion	29-0241-00		Aquatic Consumption	Mercury in fish tissue	5
Alice	2016	Upper Mississippi River, Upper Portion	29-0286-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Beauty	2004	Upper Mississippi River, Upper Portion	29-0292-00		Aquatic Consumption	Mercury in fish tissue	5
Little Mantrap	2010	Upper Mississippi River, Upper Portion	29-0313-00		Aquatic Consumption	Mercury in fish tissue	5
Little Stanchfield	2016	Upper Mississippi River, Upper Portion	30-0044-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Francis	2016	Upper Mississippi River, Upper Portion	30-0080-00		Aquatic Life	Fishes bioassessments	5
Tennyson	2016	Upper Mississippi River, Upper Portion	30-0113-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Green	2016	Upper Mississippi River, Upper Portion	30-0136-00		Aquatic Life	Fishes bioassessments	5
Green	1998	Upper Mississippi River, Upper Portion	30-0136-00		Aquatic Consumption	PCB in fish tissue	5
O'Brien (north portion)	1998	Upper Mississippi River, Upper Portion	31-0032-01		Aquatic Consumption	Mercury in fish tissue	5
O'Brien (south portion)	1998	Upper Mississippi River, Upper Portion	31-0032-02		Aquatic Consumption	Mercury in fish tissue	5
Snowball	1998	Upper Mississippi River, Upper Portion	31-0108-00		Aquatic Consumption	Mercury in fish tissue	5
Wolf	1998	Upper Mississippi River, Upper Portion	31-0152-00		Aquatic Consumption	Mercury in fish tissue	5
Crooked	1998	Upper Mississippi River, Upper Portion	31-0193-00		Aquatic Consumption	Mercury in fish tissue	5
Little Cowhorn	2018	Upper Mississippi River, Upper Portion	31-0198-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Trout	1998	Upper Mississippi River, Upper Portion	31-0216-00		Aquatic Consumption	Mercury in fish tissue	5
Lawrence	2012	Upper Mississippi River, Upper Portion	31-0231-00		Aquatic Consumption	Mercury in fish tissue	5
King	2018	Upper Mississippi River, Upper Portion	31-0258-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Balsam	2014	Upper Mississippi River, Upper Portion	31-0259-00		Aquatic Consumption	Mercury in fish tissue	5
Split Hand	2010	Upper Mississippi River, Upper Portion	31-0353-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Long	2002	Upper Mississippi River, Upper Portion	31-0570-00		Aquatic Consumption	Mercury in fish tissue	5
Rice	1998	Upper Mississippi River, Upper Portion	31-0717-00		Aquatic Consumption	Mercury in fish tissue	5
Dixon	2008	Upper Mississippi River, Upper Portion	31-0921-00	Leech Lake	Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Decker	2006	Upper Mississippi River, Upper Portion	31-0934-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5

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Lewis	1998	Upper Mississippi River, Upper Portion	33-0032-00		Aquatic Consumption	Mercury in fish tissue	5
Johnson	2016	Upper Mississippi River, Upper Portion	34-0012-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lillian	2016	Upper Mississippi River, Upper Portion	34-0072-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Minnetaga	2016	Upper Mississippi River, Upper Portion	34-0076-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Green	1998	Upper Mississippi River, Upper Portion	34-0079-00		Aquatic Consumption	Mercury in fish tissue	5
Big Kandiyohi	2008	Upper Mississippi River, Upper Portion	34-0086-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Little Kandiyohi	2010	Upper Mississippi River, Upper Portion	34-0096-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Kasota	2010	Upper Mississippi River, Upper Portion	34-0105-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Lake Monongalia - main basin	2006	Upper Mississippi River, Upper Portion	34-0158-01		Aquatic Consumption	Mercury in fish tissue	5
Lake Monongalia - Middle Fork Crow River	2006	Upper Mississippi River, Upper Portion	34-0158-02		Aquatic Consumption	Mercury in fish tissue	5
Crow River Mill Pond (East)	2006	Upper Mississippi River, Upper Portion	34-0158-03		Aquatic Consumption	Mercury in fish tissue	5
Crow River Mill Pond(Middle)	2006	Upper Mississippi River, Upper Portion	34-0158-04		Aquatic Consumption	Mercury in fish tissue	5
Crow River Mill Pond (West)	2006	Upper Mississippi River, Upper Portion	34-0158-05		Aquatic Consumption	Mercury in fish tissue	5
Wakanda, Lake (Main Basin	2008	Upper Mississippi River, Upper Portion	34-0169-03		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Winsted	2016	Upper Mississippi River, Upper Portion	43-0012-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
South	2016	Upper Mississippi River, Upper Portion	43-0014-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Silver	2016	Upper Mississippi River, Upper Portion	43-0034-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bear	2016	Upper Mississippi River, Upper Portion	43-0076-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Marion	2010	Upper Mississippi River, Upper Portion	43-0084-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cedar	2010	Upper Mississippi River, Upper Portion	43-0115-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Little Swan	2016	Upper Mississippi River, Upper Portion	47-0025-00		Aquatic Consumption	Mercury in fish tissue	5
Belle Lake	2016	Upper Mississippi River, Upper Portion	47-0049-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Willie	2016	Upper Mississippi River, Upper Portion	47-0061-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Greenleaf	2010	Upper Mississippi River, Upper Portion	47-0062-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Stella	2018	Upper Mississippi River, Upper Portion	47-0068-00		Aquatic Consumption	Mercury in fish tissue	5
Hoff	2016	Upper Mississippi River, Upper Portion	47-0106-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Goose	2016	Upper Mississippi River, Upper Portion	47-0127-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Star	2018	Upper Mississippi River, Upper Portion	47-0129-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Thompson	2016	Upper Mississippi River, Upper Portion	47-0159-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Twelve	2016	Upper Mississippi River, Upper Portion	49-0006-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2014	Upper Mississippi River, Upper Portion	62-0022-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Priebe	2014	Upper Mississippi River, Upper Portion	62-0036-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
West Vadnais	2014	Upper Mississippi River, Upper Portion	62-0038-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Pleasant	2014	Upper Mississippi River, Upper Portion	62-0046-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Little Johanna	2012	Upper Mississippi River, Upper Portion	62-0058-00		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5
Turtle	2002	Upper Mississippi River, Upper Portion	62-0061-00		Aquatic Consumption	Mercury in fish tissue	5
Island (Basin S.of I-694)	2012	Upper Mississippi River, Upper Portion	62-0075-01		Aquatic Consumption	Mercury in fish tissue	5
ISLAND (BASIN N. OF I-694)	2012	Upper Mississippi River, Upper Portion	62-0075-02		Aquatic Consumption	Mercury in fish tissue	5
Jones	2008	Upper Mississippi River, Upper Portion	62-0076-00		Aquatic Life	Aquatic macroinvertebrate bioassessments	5
Jones	2008	Upper Mississippi River, Upper Portion	62-0076-00		Aquatic Life	Aquatic plant bioassessments	5
Johanna	2010	Upper Mississippi River, Upper Portion	62-0078-00		Aquatic Consumption	Perfluorooctane Sulfonate (PFOS) in fish tissue	5

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Unnamed	1998	Upper Mississippi River, Upper Portion	62-0237-00		Aquatic Consumption	PCB in fish tissue	5
Preston	2016	Upper Mississippi River, Upper Portion	65-0002-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Boon	2016	Upper Mississippi River, Upper Portion	65-0013-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Prairie	1998	Upper Mississippi River, Upper Portion	69-0848-00		Aquatic Consumption	Mercury in fish tissue	5
Fremont	2012	Upper Mississippi River, Upper Portion	71-0016-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Diann	2012	Upper Mississippi River, Upper Portion	71-0046-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Elk	2012	Upper Mississippi River, Upper Portion	71-0055-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Goodners	2012	Upper Mississippi River, Upper Portion	73-0076-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Schneider	2004	Upper Mississippi River, Upper Portion	73-0082-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Great Northern	2004	Upper Mississippi River, Upper Portion	73-0083-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Knaus	2004	Upper Mississippi River, Upper Portion	73-0086-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Krays	2004	Upper Mississippi River, Upper Portion	73-0087-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Bolfing	2004	Upper Mississippi River, Upper Portion	73-0088-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Zumwalde	2004	Upper Mississippi River, Upper Portion	73-0089-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Big Spunk	2018	Upper Mississippi River, Upper Portion	73-0117-00		Aquatic Consumption	Mercury in fish tissue	5
Cedar Island (Main Bay)	2004	Upper Mississippi River, Upper Portion	73-0133-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Cedar Island (Koetter Lk)	2004	Upper Mississippi River, Upper Portion	73-0133-03		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Two Rivers	2010	Upper Mississippi River, Upper Portion	73-0138-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Long	2004	Upper Mississippi River, Upper Portion	73-0139-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
North Brown's	2016	Upper Mississippi River, Upper Portion	73-0147-00		Aquatic Consumption	Mercury in fish tissue	5
North Brown's	2008	Upper Mississippi River, Upper Portion	73-0147-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Eden	2016	Upper Mississippi River, Upper Portion	73-0150-00		Aquatic Consumption	Mercury in fish tissue	5
Eden	2010	Upper Mississippi River, Upper Portion	73-0150-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Vails	2010	Upper Mississippi River, Upper Portion	73-0151-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Horseshoe	2004	Upper Mississippi River, Upper Portion	73-0157-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Big	2014	Upper Mississippi River, Upper Portion	73-0159-00		Aquatic Consumption	Mercury in fish tissue	5
Maria	2006	Upper Mississippi River, Upper Portion	73-0215-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Ellering	2012	Upper Mississippi River, Upper Portion	73-0244-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
George	2012	Upper Mississippi River, Upper Portion	73-0611-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Trace	2008	Upper Mississippi River, Upper Portion	77-0009-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Big Swan	2010	Upper Mississippi River, Upper Portion	77-0023-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Long	2012	Upper Mississippi River, Upper Portion	77-0027-00		Aquatic Consumption	Mercury in fish tissue	5
Lower Twin	2010	Upper Mississippi River, Upper Portion	80-0030-00		Aquatic Consumption	Mercury in fish tissue	5
White Rock	2010	Upper Mississippi River, Upper Portion	82-0072-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Unnamed	2006	Upper Mississippi River, Upper Portion	82-0087-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Markgrafs	2006	Upper Mississippi River, Upper Portion	82-0089-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Wilmes	2006	Upper Mississippi River, Upper Portion	82-0090-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Colby	2006	Upper Mississippi River, Upper Portion	82-0094-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
La	2014	Upper Mississippi River, Upper Portion	82-0097-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Fish	2006	Upper Mississippi River, Upper Portion	82-0137-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Charlotte	2012	Upper Mississippi River, Upper Portion	86-0011-00		Aquatic Consumption	Mercury in fish tissue	5
School	2012	Upper Mississippi River, Upper Portion	86-0025-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Hunters	2012	Upper Mississippi River, Upper Portion	86-0026-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Rice	2016	Upper Mississippi River, Upper Portion	86-0032-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Mud	2008	Upper Mississippi River, Upper Portion	86-0085-00		Aquatic Life	Aquatic plant bioassessments	5
Upper Maple	2002	Upper Mississippi River, Upper Portion	86-0134-01		Aquatic Consumption	Mercury in fish tissue	5

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Water body name	Year added to List	Basin	River AUID# or Lake ID #	Partial tribal designation	Affected designated use	Pollutant or stressor	EPA category
Maple (Northeast Bay)	2018	Upper Mississippi River, Upper Portion	86-0134-03		Aquatic Consumption	Mercury in fish tissue	5
Little Mary (South Bay)	2012	Upper Mississippi River, Upper Portion	86-0139-01		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Little Mary (North Bay)	2012	Upper Mississippi River, Upper Portion	86-0139-02		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Millstone	2012	Upper Mississippi River, Upper Portion	86-0152-00		Aquatic Recreation	Nutrient/eutrophication biological indicators	5
Somers	2018	Upper Mississippi River, Upper Portion	86-0230-00		Aquatic Consumption	Mercury in fish tissue	5
Clearwater (East)	1998	Upper Mississippi River, Upper Portion	86-0252-01		Aquatic Consumption	Mercury in fish tissue	5
Clearwater (West)	1998	Upper Mississippi River, Upper Portion	86-0252-02		Aquatic Consumption	Mercury in fish tissue	5
Cokato	2016	Upper Mississippi River, Upper Portion	86-0263-00		Aquatic Consumption	Mercury in fish tissue	5

Appendix 4: Waters being removed from the 2016 303(d) list

2016 Water body name	2016 River AUID# or Lake ID #	2014 Water body name	2014 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2016 303(d) list
Des Moines River Basin							
		Okamanpeedan	46-0051-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	Iowa TMDL plan approved in 2005, MPCA agrees with the TMDL conclusions and removes the Minnesota 303(d) listing from its 2016 303(d) list
Lake Superior Basin							
Elbow (North Bay)	16-0805-02	Elbow (North Bay)	16-0805-00	Aquatic Consumption	Mercury in fish tissue	4A	Carry 2014 impairment from 16-0805-00 to 2016 303(d) list in water body segment 16-0805-02
Minnesota River Basin							
		Unnamed Creek	07020004-562	Aquatic Life	Fishes Bioassessments	2	Appelicable Water Quality Standards (WQS) attained
		O'Dowd	70-0095-00	Aquatic Recreation	Nutrient/Eutrophication Biological Indicators	2	Appelicable Water Quality Standards (WQS) attained
		Grass	27-0681-00	Aquatic Recreation	Nutrient/Eutrophication Biological Indicators	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		Redwood	64-0058-00	Aquatic Recreation	Nutrient/Eutrophication Biological Indicators	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		Schneider	70-0120-02	Aquatic Recreation	Nutrient/Eutrophication Biological Indicators	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
Little Cottonwood River	07020007-676	Little Cottonwood River	07020007-515	Aquatic Recreation	Fecal Coliform	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Little Cottonwood River	07020007-677	Little Cottonwood River	07020007-515	Aquatic Recreation	Fecal Coliform	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Little Cottonwood River	07020007-676	Little Cottonwood River	07020007-515	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Little Cottonwood River	07020007-677	Little Cottonwood River	07020007-515	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
County Ditch 46A	07020007-679	County Ditch 46A	07020007-516	Aquatic Recreation	Fecal Coliform	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
County Ditch 46A	07020007-679	County Ditch 46A	07020007-516	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Sevenmile Creek	07020007-703	Sevenmile Creek	07020007-564	Aquatic Recreation	Fecal Coliform	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Sevenmile Creek	07020007-703	Sevenmile Creek	07020007-564	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Madison	07-0044-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Eagle (North)	07-0060-01	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Dry Wood Creek	07020002-556	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Dry Wood Creek	07020002-556	Aquatic Life	Dissolved oxygen	4A	TMDL Approved
		Dry Wood Creek	07020002-556	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Dry Wood Creek	07020002-556	Aquatic Life	Fishes bioassessments	4A	TMDL Approved
		Dry Wood Creek	07020002-556	Aquatic Life	Turbidity	4A	TMDL Approved
		Pomme de Terre River	07020002-563	Aquatic Life	Fishes bioassessments	4A	TMDL Approved
		Chippewa River	07020005-503	Aquatic Life	Turbidity	4A	TMDL Approved
		Chippewa River	07020005-504	Aquatic Life	Turbidity	4A	TMDL Approved
		Chippewa River	07020005-505	Aquatic Life	Turbidity	4A	TMDL Approved
		Chippewa River	07020005-508	Aquatic Life	Turbidity	4A	TMDL Approved
		Chippewa River, East Branch	07020005-514	Aquatic Life	Turbidity	4A	TMDL Approved
		Shakopee Creek	07020005-559	Aquatic Life	Turbidity	4A	TMDL Approved
		Unnamed creek	07020005-574	Aquatic Life	Turbidity	4A	TMDL Approved
		Little Chippewa River	07020005-713	Aquatic Life	Turbidity	4A	TMDL Approved

2016 Water body name	2016 River AUID# or Lake ID #	2014 Water body name	2014 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2016 303(d) list
		Unnamed creek (Freeborn Lake Inlet)	07020005-901	Aquatic Life	Turbidity	4A	TMDL Approved
Watonwan River	07020010-562	Watonwan River	07020010-512	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Watonwan River	07020010-563	Watonwan River	07020010-512	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Watonwan River	07020010-566	Watonwan River	07020010-514	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Watonwan River	07020010-567	Watonwan River	07020010-514	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Little Cobb River	07020011-504	Aquatic Life	Dissolved oxygen	4A	TMDL Approved
		Le Sueur River	07020011-507	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Boot Creek	07020011-516	Limited Resource Value	Escherichia coli	4A	TMDL Approved
		Rice Creek	07020011-531	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		County Ditch 3 (Judicial Ditch 9)	07020011-552	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Cobb River	07020011-556	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Sand Creek	07020012-513	Aquatic Life	Chloride	4A	TMDL Approved
		Raven Stream, East Branch	07020012-543	Aquatic Life	Chloride	4A	TMDL Approved
		Sand Creek	07020012-662	Aquatic Life	Chloride	4A	TMDL Approved
		Raven Stream	07020012-716	Aquatic Life	Chloride	4A	TMDL Approved
		Lemay	19-0055-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Unnamed	19-0064-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Quigley	19-0066-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Unnamed	19-0077-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Augusta	19-0081-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Christina	21-0375-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Freeborn	24-0044-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
Norway (Northwest Basin)	34-0251-01	Norway (Northwest Basin)	34-0251-00	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Norway (Southern Basin)	34-0251-02	Norway (Southern Basin)	34-0251-00	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Hendricks	41-0110-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	South Dakota TMDL plan approved in 1999, MPCA agrees with the TMDL conclusions and removes the Minnesota 303(d) listing from its 2016 303(d) list
		North Turtle	56-0379-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Perkins	75-0075-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Hattie	75-0200-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Elysian (Main Lake)	81-0095-01	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
Watonwan River	07020010-562	Watonwan River	07020010-512	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Watonwan River	07020010-563	Watonwan River	07020010-512	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Watonwan River, North Fork	07020010-564	Watonwan River, North Fork	07020010-513	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Watonwan River	07020010-566	Watonwan River	07020010-514	Aquatic Life	Fishes bioassessments	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Watonwan River	07020010-567	Watonwan River	07020010-514	Aquatic Life	Fishes bioassessments	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Watonwan River	07020010-566	Watonwan River	07020010-514	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Watonwan River	07020010-567	Watonwan River	07020010-514	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID

2016 Water body name	2016 River AUID# or Lake ID #	2014 Water body name	2014 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2016 303(d) list
Willow Creek	07020010-571	Willow Creek	07020010-521	Aquatic Life	Fishes bioassessments	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Judicial Ditch 1	07020010-580	Judicial Ditch 1	07020010-548	Aquatic Life	Fishes bioassessments	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Norway (Northwest Basin)	34-0251-01	Norway (Northwest Basin)	34-0251-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Norway (Southern Basin)	34-0251-02	Norway (Southern Basin)	34-0251-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Missouri River Basin							
		Little Spirit	32-0024-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	Iowa TMDL plan approved in 2005, MPCA agrees with the TMDL conclusions and removes the Minnesota 303(d) listing from its 2016 303(d) list
Rainy River Basin							
		Border waters	09030001-812	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Namakan Narrows	09030001-813	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Rainy River	09030008-538	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Rainy River	09030008-539	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Rainy River	09030008-540	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Rainy River	09030008-541	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Rainy River	09030008-542	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Echo	69-0615-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4D	MPCA determined impairment was due to natural conditions
		Black River	09030008-547	Aquatic Consumption	Mercury in water column	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Red River of the North Basin							
		Burnham Creek	09020303-515	Aquatic Life	Turbidity	2	Appelicable Water Quality Standards (WQS) attained
		Black River	09020303-529	Aquatic Life	Turbidity	2	Appelicable Water Quality Standards (WQS) attained
Black River	09020303-557	Black River	09020303-530	Aquatic Life	Turbidity	2	Carry forward impairment from 2014 AUID to revised 2016 AUID & Appelicable Water Quality Standards (WQS) attained
Black River	09020303-558	Black River	09020303-530	Aquatic Life	Turbidity	2	Carry forward impairment from 2014 AUID to revised 2016 AUID & Appelicable Water Quality Standards (WQS) attained
Middle River	09020309-539	Middle River	09020309-505	Aquatic Life	Turbidity	2	Carry forward impairment from 2014 AUID to revised 2016 AUID & Appelicable Water Quality Standards (WQS) attained
		Two River, North Branch	09020312-508	Aquatic Life	Turbidity	2	Appelicable Water Quality Standards (WQS) attained
		Unnamed ditch (Little Black River)	09020303-527	Aquatic Recreation	Escherichia coli	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
Red Lake River	09020303-560	Red Lake River	09020303-530	Aquatic Life	Dissolved oxygen	3	Carry forward impairment from 2014 AUID to revised 2016 AUID & MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list

2016 Water body name	2016 River AUID# or Lake ID #	2014 Water body name	2014 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2016 303(d) list
		Grand Marais Creek	09020306-507	Aquatic Life	Chlorpyrifos	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
Grand Marais Creek	09020306-521	Grand Marais Creek	09020306-512	Aquatic Life	Turbidity	3	Carry forward impairment from 2014 AUID to revised 2016 AUID & MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		St. Clair	03-0382-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
Red Lake River	09020303-561	Red Lake River	09020303-508	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Red Lake River	09020303-562	Red Lake River	09020303-508	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Black River	09020303-558	Black River	09020303-530	Aquatic Life	Dissolved oxygen	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Snake River	09020309-537	Snake River	09020309-503	Aquatic Life	Dissolved oxygen	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Snake River	09020309-537	Snake River	09020309-503	Aquatic Life	Fishes bioassessments	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Middle River	09020309-539	Middle River	09020309-505	Aquatic Life	Dissolved oxygen	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Middle River	09020309-540	Middle River	09020309-505	Aquatic Life	Dissolved oxygen	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Middle River	09020309-541	Middle River	09020309-505	Aquatic Life	Dissolved oxygen	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Middle River	09020309-540	Middle River	09020309-505	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Middle River	09020309-541	Middle River	09020309-505	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Snake River	09020309-542	Snake River	09020309-506	Aquatic Life	Dissolved oxygen	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Snake River	09020309-543	Snake River	09020309-506	Aquatic Life	Dissolved oxygen	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
St. Croix River Basin							
		Unnamed	82-0011-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		Eagle Point	82-0109-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		Kramer	82-0117-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		Linwood	02-0026-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Rush Creek	07030005-509	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Goose Creek	07030005-510	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Judicial Ditch 2	07030005-525	Aquatic Life	Chloride	4A	TMDL Approved
		Sunrise River, West Branch	07030005-529	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Sunrise River, West Branch	07030005-529	Aquatic Life	Fishes bioassessments	4A	TMDL Approved
		Sunrise River, West Branch	07030005-529	Aquatic Life	Turbidity	4A	TMDL Approved
		Sunrise River	07030005-543	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Hay Creek	07030005-545	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Sunrise River, West Branch	07030005-563	Aquatic Life	pH	4A	TMDL Approved
		Sunrise River, West Branch	07030005-563	Aquatic Life	Turbidity	4A	TMDL Approved
		Rock Creek	07030005-584	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek	07030005-606	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Second	13-0025-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved

2016 Water body name	2016 River AUID# or Lake ID #	2014 Water body name	2014 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2016 303(d) list
		Vibo	13-0030-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		White Stone	13-0048-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		East Rush	13-0069-01	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		West Rush	13-0069-02	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Horseshoe	13-0073-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Goose (North Bay)	13-0083-01	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Goose (South Bay)	13-0083-02	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Sunfish	82-0107-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
Upper Mississippi River, Lower Portion							
Zumbro River, Middle Fork, North Branch	07040004-975	Zumbro River, Middle Fork, North Branch	07040004-523	Aquatic Life	Turbidity	2	Carry forward impairment from 2014 AUID to revised 2016 AUID & Appelicable Water Quality Standards (WQS) attained
		Zumbro River, South Fork	07040004-534	Aquatic Life	Turbidity	2	Appelicable Water Quality Standards (WQS) attained
		Bear Creek	07040004-538	Aquatic Life	Turbidity	2	Appelicable Water Quality Standards (WQS) attained
		Bear Creek	07040004-539	Aquatic Life	Turbidity	2	Appelicable Water Quality Standards (WQS) attained
Willow Creek	07040004-986	Willow Creek	07040004-540	Aquatic Life	Turbidity	2	Carry forward impairment from 2014 AUID to revised 2016 AUID & Appelicable Water Quality Standards (WQS) attained
		Unnamed creek	07040004-601	Aquatic Life	Turbidity	2	Appelicable Water Quality Standards (WQS) attained
		Vermillion River	07040001-516	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Vermillion River	07040001-517	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Vermillion River	07040001-517	Aquatic Life	Turbidity	4A	TMDL Approved
		Hay Creek	07040001-518	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Bullard Creek	07040001-526	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek	07040001-527	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Gilbert Creek	07040001-530	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Mississippi River	07040001-531	Aquatic Life	Total suspended solids	4A	TMDL Approved
		Miller Creek	07040001-534	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek	07040001-542	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Unnamed creek (Vermillion River Tributary)	07040001-545	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Unnamed creek	07040001-546	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek	07040001-548	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek (Vermillion River Tributary)	07040001-668	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Unnamed creek (Vermillion River Tributary)	07040001-670	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek (Vermillion River Tributary)	07040001-671	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Vermillion River, South Branch	07040001-706	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Vermillion River, South Branch	07040001-707	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Wells Creek	07040001-708	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Whitewater River, South Fork	07040003-512	Drinking Water	Nitrates	4A	TMDL Approved
		Whitewater River, South Fork	07040003-512	Aquatic Life	Turbidity	4A	TMDL Approved
		Whitewater River, Middle Fork	07040003-515	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Whitewater River, North Fork	07040003-523	Aquatic Life	Turbidity	4A	TMDL Approved
		Peterson Creek	07040003-529	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Rollingstone Creek	07040003-533	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Rollingstone Creek	07040003-533	Aquatic Life	Turbidity	4A	TMDL Approved
		Logan Branch	07040003-536	Aquatic Life	Turbidity	4A	TMDL Approved
		Whitewater River	07040003-537	Aquatic Life	Turbidity	4A	TMDL Approved
		Whitewater River	07040003-539	Aquatic Recreation	Escherichia coli	4A	TMDL Approved

2016 Water body name	2016 River AUID# or Lake ID #	2014 Water body name	2014 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2016 303(d) list
		Whitewater River	07040003-539	Aquatic Life	Turbidity	4A	TMDL Approved
		Logan Branch	07040003-552	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Whitewater River, North Fork	07040003-553	Aquatic Life	Turbidity	4A	TMDL Approved
		Whitewater River, North Fork	07040003-554	Aquatic Life	Turbidity	4A	TMDL Approved
		Stockton Valley Creek	07040003-559	Aquatic Life	Turbidity	4A	TMDL Approved
		Garvin Brook	07040003-595	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Garvin Brook	07040003-595	Aquatic Life	Turbidity	4A	TMDL Approved
		Crow Spring (Middle Fork Whitewater River Tributary)	07040003-611	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Crow Spring (Middle Fork Whitewater River Tributary)	07040003-611	Aquatic Life	Escherichia coli	4A	TMDL Approved
		Whitewater River, South Fork	07040003-F17	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Whitewater River, South Fork	07040003-F17	Aquatic Life	Turbidity	4A	TMDL Approved
		Whitewater River, Middle Fork	07040003-F19	Drinking Water	Nitrates	4A	TMDL Approved
		Whitewater River, Middle Fork	07040003-F19	Aquatic Life	Turbidity	4A	TMDL Approved
Zumbro River, Middle Fork	07040004-973	Zumbro River, Middle Fork	07040004-522	Aquatic Life	Turbidity	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Zumbro River, Middle Fork, South Branch	07040004-976	Zumbro River, Middle Fork, South Branch	07040004-525	Aquatic Life	Turbidity	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Zumbro River, Middle Fork, South Branch	07040004-980	Zumbro River, Middle Fork, South Branch	07040004-526	Aquatic Life	Turbidity	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Dodge Center Creek	07040004-989	Dodge Center Creek	07040004-592	Aquatic Life	Turbidity	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Cascade Creek	07040004-991	Cascade Creek	07040004-639	Aquatic Life	Turbidity	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Alimagnet	19-0021-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Unnamed	19-0349-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Volney	40-0033-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		German	40-0063-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		East Jefferson	40-0092-01	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		West Jefferson	40-0092-02	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Swede's Bay	40-0092-03	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Middle Jefferson	40-0092-04	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Winona (Southeast Bay)	85-0011-01	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Winona (Northwest Bay)	85-0011-02	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Gilbert Creek	07040001-530	Aquatic Life	Fishes bioassessments	4C	MPCA determined that TMDL is not needed because impaired is not caused by a pollutant
		Beaver Creek	07040003-566	Aquatic Life	Aquatic macroinvertebrate bioassessments	4C	MPCA determined that TMDL is not needed because impaired is not caused by a pollutant
Zumbro River, North Fork	07040004-971	Zumbro River, North Fork	07040004-512	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Zumbro River, Middle Fork	07040004-993	Zumbro River, Middle Fork	07040004-519	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Upper Mississippi River, Upper Portion							
Mississippi River	07010104-658	Mississippi River	07010104-519	Aquatic Recreation	Escherichia coli	2	Carry forward impairment from 2014 AUID to revised 2016 AUID & Appelicable Water Quality Standards (WQS) attained
		Mississippi River	07010203-510	Aquatic Life	Fishes Bioassessments	2	Appelicable Water Quality Standards (WQS) attained
		Crow River, South Fork	07010205-510	Aquatic Life	Turbidity	2	Appelicable Water Quality Standards (WQS) attained
		Unnamed creek	07010206-745	Aquatic Life	Chloride	2	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list

2016 Water body name	2016 River AUID# or Lake ID #	2014 Water body name	2014 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2016 303(d) list
		Rogers	02-0104-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
Mississippi River	07010101-756 (tribal)	Mississippi River	07010101-501	Aquatic Life	Dissolved oxygen	3	Carry forward impairment from 2014 AUID to revised 2016 AUID & MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
Mississippi River	07010101-753	Mississippi River	07010101-924	Aquatic Life	Dissolved oxygen	3	Carry forward impairment from 2014 AUID to revised 2016 AUID & MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		South Two River	07010201-532	Aquatic Life	Nutrient/eutrophication biological indicators	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		Buffalo Creek	07010205-638	Aquatic Life	Nutrient/eutrophication biological indicators	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		Reddy Creek (Marmon Creek)	07010207-544	Aquatic Life	Dissolved oxygen	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		Unnamed creek (Seastade Creek)	07010207-558	Aquatic Life	Dissolved oxygen	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		Clifford	21-0003-00	Aquatic Recreation	Nutrient/Eutrophication Biological Indicators	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		Otter (Main Basin)	43-0085-01	Aquatic Consumption	Mercury in fish tissue	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		Otter (Main Basin)	43-0085-01	Aquatic Recreation	Nutrient/eutrophication biological indicators	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		Otter (South Arm)	43-0085-02	Aquatic Consumption	Mercury in fish tissue	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		Otter (North Arm/Campbells)	43-0085-03	Aquatic Consumption	Mercury in fish tissue	3	MPCA determined that original listing of this segment was incorrect, removed from 2016 303(d) list
		East Moore	02-0075-01	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
Bemidji (main lake)	04-0130-02	Bemidji (main lake)	04-0130-00	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Donovan (main bay)	05-0004-02	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
Mississippi River	07010101-756 (tribal)	Mississippi River	07010101-725	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Mississippi River	07010103-708	Mississippi River	07010103-501; 07010103-505	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Mississippi River	07010103-707	Mississippi River	07010103-502; 07010103-503; 07010103-507; 07010103-510	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Mississippi River	07010104-656	Mississippi River	07010104-501; 07010104-516	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Mississippi River	07010104-655	Mississippi River	07010104-503; 07010104-512; 07010104-517	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID

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2016 Water body name	2016 River AUID# or Lake ID #	2014 Water body name	2014 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2016 303(d) list
Mississippi River	07010104-658	Mississippi River	07010104-513; 07010104-519; 07010104-520; 07010104-577	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Mississippi River	07010104-657	Mississippi River	07010104-515; 07010104-576	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Crow Wing River	07010106-721	Crow Wing River	07010106-501; 07010106-506; 07010106-507	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Partridge River	07010106-518	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Home Brook	07010106-524	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Swan Creek	07010106-527	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Swan Creek	07010106-527	Aquatic Life	Dissolved oxygen	4A	TMDL Approved
		Swan Creek	07010106-527	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Cat River	07010106-544	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Straight River	07010106-558	Aquatic Life	Dissolved oxygen	4A	TMDL Approved
		Pillager Creek	07010106-577	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Mayo Creek	07010106-604	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Shell River	07010106-681	Aquatic Life	Dissolved oxygen	4A	TMDL Approved
		Unnamed creek	07010106-684	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Stoney Brook	07010106-698	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Cory Brook	07010106-700	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Farnham Creek	07010106-702	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
Mississippi River	07010201-631	Mississippi River	07010201-501; 07010201-502; 07010201-508; 07010201-509; 07010201-513; 07010201-514; 07010201-606; 07010201-607	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Little Two River	07010201-516	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Two River	07010201-523	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Spunk Creek	07010201-525	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Watab River	07010201-528	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Watab River, North Fork	07010201-529	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		County Ditch 12	07010201-537	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		South Two River	07010201-543	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Watab River, South Fork	07010201-554	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		County Ditch 13	07010201-564	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
Mississippi River	07010203-729	Mississippi River	07010203-503; 07010203-510	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Clearwater River	07010203-511	Aquatic Life	Dissolved oxygen	4A	TMDL Approved
		Rice Creek	07010203-512	Aquatic Life	Dissolved oxygen	4A	TMDL Approved
		Rice Creek	07010203-512	Aquatic Life	Turbidity	4A	TMDL Approved
Mississippi River	07010203-728	Mississippi River	07010203-513; 07010203-574; 07010203-575	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Unnamed creek	07010203-528	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Battle Brook	07010203-535	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Silver Creek	07010203-557	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek (Luxemburg Creek)	07010203-561	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Plum Creek	07010203-572	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Johnson Creek (Meyer Creek)	07010203-635	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Johnson Creek (Meyer Creek)	07010203-639	Aquatic Recreation	Escherichia coli	4A	TMDL Approved

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		Unnamed creek (Robinson Hill Creek)	07010203-724	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Grove Creek	07010204-514	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Grove Creek	07010204-514	Aquatic Life	Turbidity	4A	TMDL Approved
		Mill Creek	07010204-515	Aquatic Life	Turbidity	4A	TMDL Approved
		Unnamed creek (Regal Creek)	07010204-542	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Jewitts Creek (County Ditch 19, 18, and 17)	07010204-585	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek	07010204-667	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek	07010204-668	Aquatic Life	Turbidity	4A	TMDL Approved
		Twelvemile Creek	07010204-681	Aquatic Life	Dissolved oxygen	4A	TMDL Approved
Buffalo Creek	07010205-638	Buffalo Creek	07010205-501	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Crow River, South Fork	07010205-658	Crow River, South Fork	07010205-540	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
Crow River, South Fork	07010205-659	Crow River, South Fork	07010205-540	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Mississippi River	07010206-501	Aquatic Life	Total suspended solids	4A	TMDL Approved
		Mississippi River	07010206-502	Aquatic Life	Total suspended solids	4A	TMDL Approved
		Mississippi River	07010206-504	Aquatic Life	Total suspended solids	4A	TMDL Approved
		Mississippi River	07010206-505	Aquatic Life	Total suspended solids	4A	TMDL Approved
		Shingle Creek (County Ditch 13)	07010206-506	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Elm Creek	07010206-508	Aquatic Life	Chloride	4A	TMDL Approved
Mississippi River	07010206-805	Mississippi River	07010206-509; 07010206-510; 07010206-511; 07010206-512; 07010206-567; 07010206-568	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2014 AUID to revised 2016 AUID
		Unnamed creek	07010206-526	Aquatic Life	Chloride	4A	TMDL Approved
		Unnamed creek	07010206-526	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Coon Creek	07010206-530	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Coon Creek	07010206-530	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Bassett Creek	07010206-538	Aquatic Life	Chloride	4A	TMDL Approved
		Bassett Creek	07010206-538	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Minnehaha Creek	07010206-539	Aquatic Life	Chloride	4A	TMDL Approved
		Unnamed creek	07010206-542	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek	07010206-552	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		County Ditch 17	07010206-557	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		County Ditch 17	07010206-557	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Sand Creek	07010206-558	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Sand Creek	07010206-558	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Rice Creek	07010206-584	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Battle Creek	07010206-592	Aquatic Life	Chloride	4A	TMDL Approved
		Unnamed ditch	07010206-594	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Unnamed ditch	07010206-594	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Painter Creek	07010206-700	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek	07010206-718	Aquatic Life	Chloride	4A	TMDL Approved
		Rush Creek, South Fork	07010206-732	Aquatic Life	Chloride	4A	TMDL Approved
		Bass Creek	07010206-784	Aquatic Life	Chloride	4A	TMDL Approved
		Unnamed creek	07010206-909	Aquatic Life	Chloride	4A	TMDL Approved
		Tamarack	10-0010-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		East Auburn	10-0044-02	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Turbid	10-0051-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Stone	10-0056-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved

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		Sibley	18-0404-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Mayo	18-0408-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Thompson	19-0048-00	Aquatic Life	Chloride	4A	TMDL Approved
		Thompson	19-0048-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Sunfish	19-0050-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Powderhorn	27-0014-00	Aquatic Life	Chloride	4A	TMDL Approved
		Diamond	27-0022-00	Aquatic Life	Chloride	4A	TMDL Approved
		Sweeney	27-0035-01	Aquatic Life	Chloride	4A	TMDL Approved
		Wirth	27-0037-00	Aquatic Life	Chloride	4A	TMDL Approved
		Brownie	27-0038-00	Aquatic Life	Chloride	4A	TMDL Approved
		Gleason	27-0095-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Parkers	27-0107-00	Aquatic Life	Chloride	4A	TMDL Approved
		Snyder	27-0108-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Hadley	27-0109-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Minnetonka-Halsteds Bay	27-0133-09	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Minnetonka-Stubbs Bay	27-0133-12	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Minnetonka-West Arm	27-0133-14	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Minnetonka-Jennings Bay	27-0133-15	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Mooney	27-0134-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Peavey	27-0138-00	Aquatic Life	Chloride	4A	TMDL Approved
		Forest	27-0139-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Tanager	27-0141-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		School	27-0151-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Wolsfeld	27-0157-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Holy Name	27-0158-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Long	27-0160-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Dutch	27-0181-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Langdon	27-0182-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Hafften	27-0199-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Spring	27-0654-00	Aquatic Life	Chloride	4A	TMDL Approved
		Loring (South Bay)	27-0655-02	Aquatic Life	Chloride	4A	TMDL Approved
		Eighth Crow Wing	29-0072-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		First Crow Wing	29-0086-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Portage	29-0250-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Nest	34-0154-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Hook	43-0073-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Jennie	47-0015-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Spring	47-0032-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Big Swan	47-0038-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Dunns	47-0082-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Richardson	47-0088-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Long	47-0177-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Hope	47-0183-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Kohlman	62-0006-00	Aquatic Life	Chloride	4A	TMDL Approved
		Como	62-0055-00	Aquatic Life	Chloride	4A	TMDL Approved
		Little Johanna	62-0058-00	Aquatic Life	Chloride	4A	TMDL Approved
		Little Johanna	62-0058-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		South Long	62-0067-02	Aquatic Life	Chloride	4A	TMDL Approved
		South Long	62-0067-02	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Pike	62-0069-00	Aquatic Life	Chloride	4A	TMDL Approved
		Pike	62-0069-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Valentine	62-0071-00	Aquatic Life	Chloride	4A	TMDL Approved
		Valentine	62-0071-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Island (Basin S.of I-694)	62-0075-01	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		ISLAND (BASIN N. OF I-694)	62-0075-02	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Silver	62-0083-00	Aquatic Life	Chloride	4A	TMDL Approved

2016 Water body name	2016 River AUID# or Lake ID #	2014 Water body name	2014 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2016 303(d) list
		Mallard Marsh	62-0259-00	Aquatic Life	Chloride	4A	TMDL Approved
		Kasota Pond North	62-0280-00	Aquatic Life	Chloride	4A	TMDL Approved
		Kasota Pond West	62-0281-00	Aquatic Life	Chloride	4A	TMDL Approved
		Upper Orono	71-0013-01	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Lower Orono	71-0013-02	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Birch	71-0057-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Julia	71-0145-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Briggs	71-0146-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Rush	71-0147-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Lower Twin	80-0030-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Blueberry	80-0034-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Battle Creek	82-0091-00	Aquatic Life	Chloride	4A	TMDL Approved
		Tanners	82-0115-00	Aquatic Life	Chloride	4A	TMDL Approved
		Carver	82-0166-00	Aquatic Life	Chloride	4A	TMDL Approved
		Foster	86-0001-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Beebe	86-0023-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Pelican	86-0031-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Dean	86-0041-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Constance	86-0051-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Fountain	86-0086-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Buffalo	86-0090-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Little Waverly	86-0106-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Deer	86-0107-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Malardi	86-0112-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Waverly	86-0114-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Ramsey	86-0120-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Light Foot	86-0122-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Albert	86-0127-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Silver	86-0140-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Locke	86-0168-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Rock	86-0182-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Fish	86-0183-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Dutch	86-0184-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Howard	86-0199-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Granite	86-0217-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Camp	86-0221-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Indian	86-0223-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Mink	86-0229-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Somers	86-0230-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Smith	86-0250-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Cokato	86-0263-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Brooks	86-0264-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		French	86-0273-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Collinwood	86-0293-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Unnamed creek	07010106-687	Aquatic Life	Fishes bioassessments	4C	MPCA determined that TMDL is not needed because impaired is not caused by a pollutant
Mississippi River	07010104-655	Mississippi River	07010104-503	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Mississippi River	07010203-729	Mississippi River	07010203-503	Aquatic Consumption	PCB in fish tissue	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Mississippi River	07010203-729	Mississippi River	07010203-510	Aquatic Recreation	Fecal Coliform	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Buffalo Creek	07010205-638	Buffalo Creek	07010205-501	Aquatic Life	Aquatic macroinvertebrate bioassessments	5	Carry forward impairment from 2014 AUID to revised 2016 AUID

2016 Water body name	2016 River AUID# or Lake ID #	2014 Water body name	2014 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2016 303(d) list
Buffalo Creek	07010205-638	Buffalo Creek	07010205-501	Aquatic Life	Dissolved oxygen	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Buffalo Creek	07010205-638	Buffalo Creek	07010205-501	Aquatic Life	Fishes bioassessments	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Crow River, South Fork	07010205-658	Crow River, South Fork	07010205-540	Aquatic Life	Aquatic macroinvertebrate bioassessments	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Crow River, South Fork	07010205-659	Crow River, South Fork	07010205-540	Aquatic Life	Aquatic macroinvertebrate bioassessments	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Crow River, South Fork	07010205-658	Crow River, South Fork	07010205-540	Aquatic Life	Fishes bioassessments	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Crow River, South Fork	07010205-659	Crow River, South Fork	07010205-540	Aquatic Life	Fishes bioassessments	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Crow River, South Fork	07010205-658	Crow River, South Fork	07010205-540	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Crow River, South Fork	07010205-659	Crow River, South Fork	07010205-540	Aquatic Life	Turbidity	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Mississippi River	07010206-805	Mississippi River	07010206-509; 07010206-510; 07010206-511; 07010206-512; 07010206-567; 07010206-568	Aquatic Consumption	PCB in fish tissue	5	Carry forward impairment from 2014 AUID to revised 2016 AUID
Mississippi River	07010206-805	Mississippi River	07010206-509; 07010206-567; 07010206-568	Aquatic Recreation	Fecal Coliform	5	Carry forward impairment from 2014 AUID to revised 2016 AUID

Appendix 5: Waters being removed from the 2018 303(d) list

2018 Water body name	2018 River AUID# or Lake ID #	2016 Water body name	2016 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2018 303(d) list
Des Moines River Basin							
Lake Shetek Inlet	07100001-644	Lake Shetek Inlet	07100001-502	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Lake Shetek Inlet	07100001-643	Lake Shetek Inlet	07100001-502	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Beaver Creek	07100001-646	Beaver Creek	07100001-503	Aquatic Life	Turbidity	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Beaver Creek	07100001-646	Beaver Creek	07100001-503	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Jack Creek, North Branch	07100001-651	Jack Creek, North Branch	07100001-505	Aquatic Life	Turbidity	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Jack Creek, North Branch	07100001-652	Jack Creek, North Branch	07100001-505	Aquatic Life	Turbidity	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Elk Creek	07100001-656	Elk Creek	07100001-507	Aquatic Life	Turbidity	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Elk Creek	07100001-656	Elk Creek	07100001-507	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Jack Creek	07100001-659	Jack Creek	07100001-509	Aquatic Life	Turbidity	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Jack Creek	07100001-659	Jack Creek	07100001-509	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Jack Creek	07100001-658	Jack Creek	07100001-509	Aquatic Life	Turbidity	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Jack Creek	07100001-658	Jack Creek	07100001-509	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Des Moines River, East Branch	07100003-527	Des Moines River, East Branch	07100003-501	Aquatic Life	Dissolved oxygen	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Des Moines River, East Branch	07100003-527	Des Moines River, East Branch	07100003-501	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Lake Superior Basin							
		Miller Creek	04010201-512	Aquatic Life	Temperature, water	4A	TMDL Approved
		Skunk Creek	04010301-502	Aquatic Life	Turbidity	4A	TMDL Approved
		Rock Creek	04010301-508	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Rock Creek	04010301-508	Aquatic Life	Fishes bioassessments	4A	TMDL Approved
		Clear Creek	04010301-527	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Clear Creek	04010301-527	Aquatic Life	Fishes bioassessments	4A	TMDL Approved
		Clear Creek	04010301-527	Aquatic Life	Turbidity	4A	TMDL Approved
		Deer Creek	04010301-531	Aquatic Life	Fishes bioassessments	4A	EPA category changed from 5 to 4A
		Unnamed creek	04010301-532	Aquatic Life	Turbidity	4A	TMDL Approved
		Mud Creek	04010301-537	Aquatic Life	Fishes bioassessments	4A	TMDL Approved
		Mud Creek	04010301-537	Aquatic Life	Turbidity	4A	TMDL Approved
		Nemadji River, South Fork	04010301-558	Aquatic Life	Turbidity	4A	TMDL Approved
		Nemadji River, South Fork	04010301-558	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Rock Creek	04010301-573	Aquatic Life	Turbidity	4A	TMDL Approved
		Nemadji River	04010301-757	Aquatic Life	Turbidity	4A	TMDL Approved
		Nemadji River	04010301-758	Aquatic Life	Turbidity	4A	TMDL Approved
		Nemadji River	04010301-758	Aquatic Recreation	Escherichia coli	4A	TMDL Approved

2018 Water body name	2018 River AUID# or Lake ID #	2016 Water body name	2016 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2018 303(d) list
		Lac La Belle	09-0011-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Net	58-0038-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Petrel Creek	04010202-666	Aquatic Life	Fishes bioassessments	4D	MPCA determined impairment was due to natural conditions
		Sand	69-0016-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4D	MPCA determined impairment was due to natural conditions
Minnesota River Basin							
		Mud Creek	07020004-543	Aquatic Life	Turbidity	2	Appelicable Water Quality Standards (WQS) attained
		High Island Creek	07020012-838	Aquatic Life	Turbidity	2	Appelicable Water Quality Standards (WQS) attained
Minnesota River	07020001-554	Minnesota River	07020001-517	Aquatic Life	Ammonia, unionized	3	MPCA determined that original listing of this segment was incorrect, removed from 2018 303(d) list & Carry forward impairment from 2016 AUID to revised 2018 AUID
		Yellow Medicine River	07020004-502	Aquatic Life	Nutrient/eutrophication biological indicators	3	MPCA determined that original listing of this segment was incorrect, removed from 2018 303(d) list
		Yellow Medicine River, North Branch	07020004-542	Aquatic Life	Turbidity	3	MPCA determined that original listing of this segment was incorrect, removed from 2018 303(d) list
		Unnamed ditch	07020012-788	Aquatic Life	Fishes bioassessments	3	MPCA determined WQS being met and removed listing from 2018 303(d) list
		Dean	70-0074-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	3	MPCA determined that original listing of this segment was incorrect, removed from 2018 303(d) list
Minnesota River	07020001-552	Minnesota River	07020001-503; 07020001-506; 07020001-511	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Tenmile Creek	07020003-578	Tenmile Creek	07020003-511	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Tenmile Creek	07020003-577	Tenmile Creek	07020003-511	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020004-747	Minnesota River	07020004-501; 07020004-519; 07020004-575; 07020004-583; 07020004-688	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
		Yellow Medicine River, South Branch (County Ditch 35)	07020004-503	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Yellow Medicine River, South Branch (County Ditch 35)	07020004-503	Aquatic Life	Turbidity	4A	TMDL Approved
Minnesota River	07020004-749	Minnesota River	07020004-504; 07020004-506; 07020004-517	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020004-750	Minnesota River	07020004-507; 07020004-509; 07020004-511	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
		Yellow Medicine River	07020004-513	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Yellow Medicine River	07020004-513	Aquatic Life	Turbidity	4A	TMDL Approved
Minnesota River	07020004-748	Minnesota River	07020004-515; 07020004-516; 07020004-612; 07020004-613	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID

2018 Water body name	2018 River AUID# or Lake ID #	2016 Water body name	2016 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2018 303(d) list
		Timms Creek	07020004-525	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Sacred Heart Creek	07020004-526	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Beaver Creek	07020004-528	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Beaver Creek	07020004-528	Aquatic Life	Turbidity	4A	TMDL Approved
		Beaver Creek, West Fork	07020004-530	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Beaver Creek, West Fork	07020004-530	Aquatic Life	Turbidity	4A	TMDL Approved
		Palmer Creek (County Ditch 68)	07020004-534	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Stony Run Creek	07020004-535	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Hazel Creek	07020004-536 (tribal)	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Spring Creek	07020004-538	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Mud Creek	07020004-543	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek	07020004-545	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Judicial Ditch 10 (Wood Lake Creek)	07020004-547	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Judicial Ditch 29	07020004-550	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Boiling Spring Creek	07020004-555	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Hawk Creek	07020004-568	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Hawk Creek	07020004-568	Aquatic Life	Turbidity	4A	TMDL Approved
		Yellow Medicine River	07020004-584	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Yellow Medicine River	07020004-584	Aquatic Life	Turbidity	4A	TMDL Approved
		Beaver Creek, East Fork	07020004-586	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Hawk Creek	07020004-587	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Hawk Creek	07020004-587	Aquatic Life	Turbidity	4A	TMDL Approved
		Unnamed ditch	07020004-589	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed ditch	07020004-589	Aquatic Life	Turbidity	4A	TMDL Approved
		Unnamed creek	07020004-595	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek	07020004-597	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Unnamed creek	07020004-599	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Unnamed creek	07020004-600	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Middle Creek	07020004-615	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Smith Creek (County Ditch 125A)	07020004-617	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Judicial Ditch 17	07020004-622	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek (County Ditch 119)	07020004-648	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		County Ditch 11	07020004-689	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Chippewa River	07020005-506	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Chippewa River	07020005-507	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Chippewa River	07020005-507	Aquatic Life	Turbidity	4A	TMDL Approved
		Cottonwood Creek	07020005-511	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Chippewa River, East Branch	07020005-515	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Mud Creek	07020005-518	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Outlet Creek	07020005-523	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Outlet Creek	07020005-523	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Outlet Creek	07020005-523	Aquatic Life	Fishes bioassessments	4A	TMDL Approved
		Mud Creek	07020005-554	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Mud Creek	07020005-554	Aquatic Life	Dissolved oxygen	4A	TMDL Approved
		Mud Creek	07020005-554	Aquatic Recreation	Escherichia coli	4A	TMDL Approved

2018 Water body name	2018 River AUID# or Lake ID #	2016 Water body name	2016 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2018 303(d) list
		Mud Creek	07020005-554	Aquatic Life	Fishes bioassessments	4A	TMDL Approved
		Shakopee Creek	07020005-557	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		County Ditch 3	07020005-579	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek	07020005-584	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Unnamed creek	07020005-584	Aquatic Life	Dissolved oxygen	4A	TMDL Approved
		Unnamed creek	07020005-584	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Trapper Run Creek	07020005-628	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Little Chippewa River	07020005-713	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek (Huse Creek)	07020005-917	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
Minnesota River	07020007-723	Minnesota River	07020007-501	Aquatic Consumption	Mercury in water column	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-723	Minnesota River	07020007-501; 07020007-502; 07020007-599	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-722	Minnesota River	07020007-503; 07020007-504; 07020007-505; 07020007-506; 07020007-507	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-722	Minnesota River	07020007-505	Aquatic Consumption	Mercury in water column	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-721	Minnesota River	07020007-508; 07020007-509	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-720	Minnesota River	07020007-510; 07020007-511; 07020007-512; 07020007-514; 07020007-559; 07020007-560	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020012-800	Minnesota River	07020012-501	Aquatic Consumption	Mercury in water column	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020012-800	Minnesota River	07020012-501; 07020012-502; 07020012-532	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020012-799	Minnesota River	07020012-503	Aquatic Consumption	Mercury in water column	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020012-799	Minnesota River	07020012-503; 07020012-504; 07020012-507	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Carver Creek	07020012-806	Carver Creek	07020012-516	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Carver Creek	07020012-806	Carver Creek	07020012-516	Aquatic Life	Turbidity	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Ninemile Creek	07020012-809	Ninemile Creek	07020012-518	Aquatic Life	Chloride	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Silver Creek	07020012-813	Silver Creek	07020012-523	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Silver Creek	07020012-813	Silver Creek	07020012-523	Aquatic Life	Turbidity	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Raven Stream, East Branch	07020012-819	Raven Stream, East Branch	07020012-543	Aquatic Life	Chloride	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Rush River, South Branch	07020012-826	Rush River, South Branch	07020012-553	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID

2018 Water body name	2018 River AUID# or Lake ID #	2016 Water body name	2016 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2018 303(d) list
Rush River, South Branch	07020012-825	Rush River, South Branch	07020012-553	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Buffalo Creek	07020012-832	Buffalo Creek	07020012-578	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
High Island Creek	07020012-834	High Island Creek	07020012-589	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
High Island Creek	07020012-838	High Island Creek	07020012-654	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
High Island Creek	07020012-837	High Island Creek	07020012-654	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Sand Creek	07020012-840	Sand Creek	07020012-662	Aquatic Life	Chloride	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Sand Creek	07020012-839	Sand Creek	07020012-662	Aquatic Life	Chloride	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Bevens Creek	07020012-844	Bevens Creek	07020012-717	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Bevens Creek	07020012-843	Bevens Creek	07020012-717	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Bevens Creek	07020012-846	Bevens Creek	07020012-717	Aquatic Life	Turbidity	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Bevens Creek	07020012-848	Bevens Creek	07020012-718	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Bevens Creek	07020012-847	Bevens Creek	07020012-718	Aquatic Recreation	Fecal Coliform	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Bevens Creek	07020012-848	Bevens Creek	07020012-718	Aquatic Life	Turbidity	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Bevens Creek	07020012-847	Bevens Creek	07020012-718	Aquatic Life	Turbidity	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
		Gilbert	21-0189-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Red Rock	21-0291-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Jennie	21-0323-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Long	21-0343-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Thompson	26-0020-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Swan	34-0186-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		West Solomon	34-0245-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Norway (Northwest)	34-0251-01	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Norway (Southern)	34-0251-02	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Olson	34-0266-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Saint Johns	34-0283-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Stay	41-0034-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Perch	41-0067-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Steep Bank	41-0082-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved

2018 Water body name	2018 River AUID# or Lake ID #	2016 Water body name	2016 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2018 303(d) list
		Cottonwood	42-0014-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Lady Slipper	42-0020-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Block	56-0079-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Johanna	61-0006-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Simon	61-0034-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Swenoda	61-0051-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Leven	61-0066-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Gilchrist	61-0072-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Reno	61-0078-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Hanson	61-0080-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Rasmuson	61-0086-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Mary	61-0099-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Edwards	61-0106-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Pelican	61-0111-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Ann	61-0122-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		John	61-0123-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Strandness	61-0128-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Malmedal	61-0162-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Jorgenson	61-0164-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Emily	61-0180-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Danielson Slough	61-0194-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		McIver	61-0199-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Wicklund	61-0204-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Irgens	61-0211-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Long	75-0024-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Monson	76-0033-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Hollerberg	76-0057-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Hassel	76-0086-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved

2018 Water body name	2018 River AUID# or Lake ID #	2016 Water body name	2016 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2018 303(d) list
		Curtis	87-0016-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Wood	87-0030-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
Tenmile Creek	07020003-577	Tenmile Creek	07020003-511	Aquatic Life	Fishes bioassessments	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020004-747	Minnesota River	07020004-501	Aquatic Recreation	Fecal Coliform	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020004-747	Minnesota River	07020004-501	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020004-749	Minnesota River	07020004-504; 07020004-506; 07020004-517	Aquatic Consumption	PCB in fish tissue	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020004-750	Minnesota River	07020004-507; 07020004-509; 07020004-511	Aquatic Consumption	PCB in fish tissue	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020004-750	Minnesota River	07020004-509	Aquatic Life	Nutrient/eutrophication biological indicators	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020004-750	Minnesota River	07020004-509	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020004-748	Minnesota River	07020004-515	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020004-748	Minnesota River	07020004-515; 07020004-516	Aquatic Consumption	PCB in fish tissue	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-723	Minnesota River	07020007-501	Aquatic Recreation	Fecal Coliform	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-723	Minnesota River	07020007-501	Aquatic Life	Nutrient/eutrophication biological indicators	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-723	Minnesota River	07020007-501	Aquatic Consumption	PCB in water column	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-723	Minnesota River	07020007-501; 07020007-502	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-723	Minnesota River	07020007-501; 07020007-502; 07020007-599	Aquatic Consumption	PCB in fish tissue	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-722	Minnesota River	07020007-503; 07020007-504; 07020007-505	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-722	Minnesota River	07020007-503; 07020007-504; 07020007-505; 07020007-506; 07020007-507	Aquatic Consumption	PCB in fish tissue	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-722	Minnesota River	07020007-505	Aquatic Life	Nutrient/eutrophication biological indicators	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-722	Minnesota River	07020007-505	Aquatic Consumption	PCB in water column	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-721	Minnesota River	07020007-508; 07020007-509	Aquatic Consumption	PCB in fish tissue	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020007-720	Minnesota River	07020007-510; 07020007-511; 07020007-512; 07020007-514; 07020007-559; 07020007-560	Aquatic Consumption	PCB in fish tissue	5	Carry forward impairment from 2016 AUID to revised 2018 AUID

2018 Water body name	2018 River AUID# or Lake ID #	2016 Water body name	2016 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2018 303(d) list
Minnesota River	07020007-720	Minnesota River	07020007-514	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020012-800	Minnesota River	07020012-501	Aquatic Life	Nutrient/eutrophication biological indicators	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020012-800	Minnesota River	07020012-501	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020012-800	Minnesota River	07020012-501; 07020012-502	Aquatic Recreation	Fecal Coliform	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020012-800	Minnesota River	07020012-501; 07020012-502; 07020012-532	Aquatic Consumption	PCB in fish tissue	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020012-799	Minnesota River	07020012-503	Aquatic Life	Nutrient/eutrophication biological indicators	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020012-799	Minnesota River	07020012-503; 07020012-504; 07020012-507	Aquatic Consumption	PCB in fish tissue	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020012-799	Minnesota River	07020012-503; 07020012-507	Aquatic Recreation	Fecal Coliform	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Minnesota River	07020012-799	Minnesota River	07020012-503; 07020012-507	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Chaska Creek	07020012-804	Chaska Creek	07020012-512	Aquatic Recreation	Fecal Coliform	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Carver Creek	07020012-806	Carver Creek	07020012-516	Aquatic Life	Nutrient/eutrophication biological indicators	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Ninemile Creek	07020012-807	Ninemile Creek	07020012-518	Aquatic Life	Fishes bioassessments	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Silver Creek	07020012-813	Silver Creek	07020012-523	Aquatic Life	Acetochlor	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Porter Creek	07020012-817	Porter Creek	07020012-540	Aquatic Life	Nutrient/eutrophication biological indicators	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Porter Creek	07020012-815	Porter Creek	07020012-540	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Porter Creek	07020012-817	Porter Creek	07020012-540	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Buffalo Creek	07020012-832	Buffalo Creek	07020012-578	Aquatic Life	Fishes bioassessments	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Buffalo Creek	07020012-832	Buffalo Creek	07020012-578	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
High Island Creek	07020012-834	High Island Creek	07020012-589	Aquatic Life	Fishes bioassessments	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
High Island Creek	07020012-834	High Island Creek	07020012-589	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Sand Creek	07020012-840	Sand Creek	07020012-662	Aquatic Life	Nutrient/eutrophication biological indicators	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Sand Creek	07020012-839	Sand Creek	07020012-662	Aquatic Life	Nutrient/eutrophication biological indicators	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Sand Creek	07020012-840	Sand Creek	07020012-662	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Sand Creek	07020012-839	Sand Creek	07020012-662	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Raven Stream, West Branch	07020012-842	Raven Stream, West Branch	07020012-715	Aquatic Recreation	Fecal Coliform	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Bevens Creek	07020012-843	Bevens Creek	07020012-717	Aquatic Life	Nutrient/eutrophication biological indicators	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Bevens Creek	07020012-848	Bevens Creek	07020012-718	Aquatic Life	Nutrient/eutrophication biological indicators	5	Carry forward impairment from 2016 AUID to revised 2018 AUID

2018 Water body name	2018 River AUID# or Lake ID #	2016 Water body name	2016 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2018 303(d) list
Minnesota River Basin							
		Champepadan Creek	10170204-520	Aquatic Life	Turbidity	2	Appelicable Water Quality Standards (WQS) attained
		Judicial Ditch 6 (Lake Okabena Outflow)	10230003-502	Aquatic Life	Turbidity	2	Appelicable Water Quality Standards (WQS) attained
		Flandreau Creek	10170203-502	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Pipestone Creek	10170203-505	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Split Rock Creek	10170203-512	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Split Rock Creek	10170203-512	Aquatic Life	Turbidity	4A	TMDL Approved
		Beaver Creek	10170203-522	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Beaver Creek	10170203-522	Aquatic Life	Turbidity	4A	TMDL Approved
		Rock River	10170204-504	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Rock River	10170204-504	Aquatic Life	Turbidity	4A	TMDL Approved
		Rock River	10170204-506	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Rock River	10170204-506	Aquatic Life	Turbidity	4A	TMDL Approved
		Rock River	10170204-508	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Rock River	10170204-508	Aquatic Life	Turbidity	4A	TMDL Approved
		Little Rock Creek	10170204-511	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Little Rock Creek	10170204-511	Aquatic Life	Turbidity	4A	TMDL Approved
		Little Rock River	10170204-512	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Little Rock River	10170204-512	Aquatic Life	Turbidity	4A	TMDL Approved
		Little Rock River	10170204-513	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Little Rock River	10170204-513	Aquatic Life	Turbidity	4A	TMDL Approved
		Kanaranzi Creek, East Branch	10170204-514	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Kanaranzi Creek, East Branch	10170204-514	Aquatic Life	Turbidity	4A	TMDL Approved
		Kanaranzi Creek	10170204-515	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Kanaranzi Creek	10170204-517	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Kanaranzi Creek	10170204-517	Aquatic Life	Turbidity	4A	TMDL Approved
		Norwegian Creek	10170204-518	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Elk Creek	10170204-519	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Champepadan Creek	10170204-520	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed creek	10170204-521	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Chanarambie Creek	10170204-522	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Chanarambie Creek	10170204-522	Aquatic Life	Turbidity	4A	TMDL Approved
		Poplar Creek	10170204-523	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Poplar Creek	10170204-523	Aquatic Life	Turbidity	4A	TMDL Approved
		Mud Creek	10170204-525	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Mud Creek	10170204-525	Aquatic Life	Turbidity	4A	TMDL Approved
		Unnamed creek	10170204-545	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Mound Creek	10170204-551	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Little Sioux River, West Fork	10230003-508	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Little Sioux River, West Fork	10230003-509	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Judicial Ditch 13 (Skunk Creek)	10230003-511	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Judicial Ditch 13 (Skunk Creek)	10230003-511	Aquatic Life	Turbidity	4A	TMDL Approved
		Little Sioux River	10230003-514	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Little Sioux River	10230003-515	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Little Sioux River	10230003-515	Aquatic Life	Turbidity	4A	TMDL Approved
		Unnamed creek	10230003-516	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Loon	32-0020-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Clear	32-0022-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Round	32-0069-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Iowa	32-0084-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved

2018 Water body name	2018 River AUID# or Lake ID #	2016 Water body name	2016 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2018 303(d) list
		Indian	53-0007-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Ocheda (West Basin)	53-0024-01	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Okabena	53-0028-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Bella	53-0045-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Little Spirit	32-0024-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	5	EPA category changed from 4A to 5 due to EPA comment
Rainy River Basin							
Kawishiwi River	09030001-988	Kawishiwi River	09030001-656	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Kawishiwi River	09030001-990	Kawishiwi River	09030001-656	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Kawishiwi River	09030001-992	Kawishiwi River	09030001-656	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
		Island	31-0913-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
East Twin	69-0163-01	East Twin	69-0163-00	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
West Twin	69-0163-02	West Twin	69-0163-00	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
		Keely Creek	09030001-520	Aquatic Life	Aluminum	4D	MPCA determined impairment was due to natural conditions
		Filson Creek	09030001-605	Aquatic Life	Aluminum	4D	MPCA determined impairment was due to natural conditions
		Filson Creek	09030001-605	Aquatic Life	Copper	4D	MPCA determined impairment was due to natural conditions
		Unnamed creek	09030001-983	Aquatic Life	Aluminum	4D	MPCA determined impairment was due to natural conditions
		Kawishiwi River	09030001-992	Aquatic Life	Aluminum	4D	MPCA determined impairment was due to natural conditions
		Blueberry	69-0054-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4D	MPCA determined impairment was due to natural conditions
Rainy River Basin							
		Blackduck River	09020302-512	Aquatic Life	Dissolved oxygen	3	Appelicable Water Quality Standards (WQS) attained
		County Ditch 57	09020305-508	Aquatic Life	Dissolved oxygen	3	MPCA determined that original listing of this segment was incorrect, removed from 2018 303(d) list
		Unnamed creek	09020305-541	Aquatic Life	Dissolved oxygen	3	Appelicable Water Quality Standards (WQS) attained
		Unnamed creek	09020305-542	Aquatic Life	Dissolved oxygen	3	Appelicable Water Quality Standards (WQS) attained
		Snake River	09020309-542	Aquatic Life	Dissolved oxygen	3	MPCA determined that original listing of this segment was incorrect, removed from 2018 303(d) list
		Roseau River	09020314-501	Aquatic Life	Dissolved oxygen	3	MPCA determined that original listing of this segment was incorrect, removed from 2018 303(d) list
		Marshall	03-0526-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Gottenberg	03-0528-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved

2018 Water body name	2018 River AUID# or Lake ID #	2016 Water body name	2016 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2018 303(d) list
		Boyer	03-0579-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Talac	03-0619-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Forget-Me-Not	03-0624-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Sorenson	03-0625-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Stakke	03-0631-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Gourd	03-0635-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		West LaBelle	03-0645-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Lime	03-0646-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Stinking	03-0647-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Sand	03-0659-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		East Toqua	06-0138-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Lannon	06-0139-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Mustinka River (Old Channel)	09020102-502	Aquatic Life	Turbidity	4A	TMDL Approved
		Mustinka River	09020102-506	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Eighteenmile Creek	09020102-508	Aquatic Life	Dissolved oxygen	4A	TMDL Approved
		Fivemile Creek	09020102-510	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Twelvemile Creek, West Branch	09020102-511	Aquatic Life	Dissolved oxygen	4A	TMDL Approved
		Twelvemile Creek, West Branch	09020102-511	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Twelvemile Creek	09020102-514	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Twelvemile Creek	09020102-514	Aquatic Life	Dissolved oxygen	4A	TMDL Approved
		Twelvemile Creek	09020102-514	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Twelvemile Creek	09020102-514	Aquatic Life	Fishes bioassessments	4A	TMDL Approved
		Twelvemile Creek	09020102-514	Aquatic Life	Turbidity	4A	TMDL Approved
		Mustinka River	09020102-518	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Twelvemile Creek	09020102-557	Aquatic Life	Aquatic macroinvertebrate bioassessments	4A	TMDL Approved
		Twelvemile Creek	09020102-557	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Twelvemile Creek	09020102-557	Aquatic Life	Fishes bioassessments	4A	TMDL Approved
		Twelvemile Creek	09020102-557	Aquatic Life	Turbidity	4A	TMDL Approved
		Mustinka River	09020102-580	Aquatic Life	Dissolved oxygen	4A	TMDL Approved
		Mustinka River	09020102-580	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Mustinka River	09020102-580	Aquatic Life	Fishes bioassessments	4A	TMDL Approved
		Mustinka River	09020102-580	Aquatic Life	Turbidity	4A	TMDL Approved
		Mustinka River	09020102-582	Aquatic Life	Turbidity	4A	TMDL Approved
		Wolverton Creek	09020104-512	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Whiskey Creek	09020104-520	Aquatic Recreation	Fecal Coliform	4A	TMDL Approved
		Whiskey Creek	09020104-520	Aquatic Life	Turbidity	4A	TMDL Approved
		Buffalo River	09020106-501	Aquatic Recreation	Escherichia coli	4A	TMDL Approved

2018 Water body name	2018 River AUID# or Lake ID #	2016 Water body name	2016 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2018 303(d) list
		Buffalo River	09020106-501	Aquatic Life	Turbidity	4A	TMDL Approved
		Stony Creek	09020106-502	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Stony Creek	09020106-502	Aquatic Life	Turbidity	4A	TMDL Approved
		Buffalo River, South Branch	09020106-503	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Buffalo River, South Branch	09020106-503	Aquatic Life	Turbidity	4A	TMDL Approved
		Buffalo River, South Branch	09020106-504	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Buffalo River, South Branch	09020106-504	Aquatic Life	Turbidity	4A	TMDL Approved
		Buffalo River, South Branch	09020106-505	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Buffalo River, South Branch	09020106-505	Aquatic Life	Turbidity	4A	TMDL Approved
		Deerhorn Creek	09020106-507	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Deerhorn Creek	09020106-507	Aquatic Life	Turbidity	4A	TMDL Approved
		Buffalo River, South Branch	09020106-508	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Buffalo River, South Branch	09020106-508	Aquatic Life	Turbidity	4A	TMDL Approved
		Whisky Creek	09020106-509	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Whisky Creek	09020106-509	Aquatic Life	Turbidity	4A	TMDL Approved
		Hay Creek	09020106-511	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Unnamed ditch (Becker County Ditch 15)	09020106-515	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Hay Creek	09020106-519	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Hay Creek	09020106-520	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Whisky Creek	09020106-521	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Whisky Creek	09020106-521	Aquatic Life	Turbidity	4A	TMDL Approved
		Stony Creek	09020106-523	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Stony Creek	09020106-523	Aquatic Life	Turbidity	4A	TMDL Approved
		State Ditch 14	09020106-531	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Spring Creek	09020106-534	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		County Ditch 2	09020106-556	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		County Ditch 39	09020106-559	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		County Ditch 10	09020106-562	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Buffalo River	09020106-594	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Buffalo River	09020106-594	Aquatic Life	Turbidity	4A	TMDL Approved
		Buffalo River	09020106-595	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Buffalo River	09020106-595	Aquatic Life	Turbidity	4A	TMDL Approved
		Sand Hill River	09020301-536	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Sand Hill River	09020301-537	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
		Sand Hill River	09020301-537	Aquatic Life	Turbidity	4A	TMDL Approved
		Sand Hill River	09020301-542	Aquatic Recreation	Escherichia coli	4A	TMDL Approved
Clearwater River	09020305-648	Clearwater River	09020305-510	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Clearwater River	09020305-647	Clearwater River	09020305-510	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Clearwater River	09020305-649	Clearwater River	09020305-514	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Clearwater River	09020305-650	Clearwater River	09020305-514	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Clearwater River	09020305-653	Clearwater River	09020305-516	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
Clearwater River	09020305-654	Clearwater River	09020305-516	Aquatic Consumption	Mercury in fish tissue	4A	Carry forward impairment from 2016 AUID to revised 2018 AUID
		Maria	14-0099-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Lightning	26-0282-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Jacobs	56-1039-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved

2018 Water body name	2018 River AUID# or Lake ID #	2016 Water body name	2016 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2018 303(d) list
		Uff	60-0119-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Unnamed	60-0236-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Kittleson	60-0327-00	Aquatic Recreation	Nutrient/eutrophication biological indicators	4A	TMDL Approved
		Unnamed creek	09020303-550	Aquatic Life	Dissolved oxygen	4C	MPCA determined that TMDL is not needed because impaired is not caused by a pollutant
		Poplar River Diversion	09020305-543	Aquatic Life	Dissolved oxygen	4C	MPCA determined that TMDL is not needed because impaired is not caused by a pollutant
Red River of the North	09020104-543	Red River of the North	09020104-503	Aquatic Consumption	Arsenic	4D	Carry forward impairment from 2016 AUID to revised 2018 AUID
Red River of the North	09020301-544	Red River of the North	09020301-501	Aquatic Consumption	Arsenic	4D	Carry forward impairment from 2016 AUID to revised 2018 AUID
		Walker Brook	09020305-509	Aquatic Life	Dissolved oxygen	4D	MPCA determined impairment was due to natural conditions
Red River of the North	09020306-523	Red River of the North	09020306-501	Aquatic Consumption	Arsenic	4D	Carry forward impairment from 2016 AUID to revised 2018 AUID
Red River of the North	09020306-524	Red River of the North	09020306-501	Aquatic Consumption	Arsenic	4D	Carry forward impairment from 2016 AUID to revised 2018 AUID
Red River of the North	09020311-560	Red River of the North	09020311-502	Aquatic Consumption	Arsenic	4D	Carry forward impairment from 2016 AUID to revised 2018 AUID
Red River of the North	09020311-561	Red River of the North	09020311-504	Aquatic Consumption	Arsenic	4D	Carry forward impairment from 2016 AUID to revised 2018 AUID
Red River of the North	09020104-544	Red River of the North	09020104-502; 09020104-504; 09020104-507; 09020104-508; 09020104-511	Aquatic Consumption	Mercury in fish tissue	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Red River of the North	09020104-544	Red River of the North	09020104-502; 09020104-504; 09020104-508	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Red River of the North	09020104-543	Red River of the North	09020104-503	Aquatic Recreation	Escherichia coli	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Red River of the North	09020104-543	Red River of the North	09020104-503; 09020104-505; 09020104-506; 09020104-509; 09020104-510	Aquatic Consumption	Mercury in fish tissue	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Red River of the North	09020104-543	Red River of the North	09020104-503; 09020104-510	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Red River of the North	09020107-522	Red River of the North	09020107-502	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Red River of the North	09020107-522	Red River of the North	09020107-502; 09020107-504; 09020107-505	Aquatic Consumption	Mercury in fish tissue	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Wild Rice River	09020108-643	Wild Rice River	09020108-503	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Wild Rice River	09020108-644	Wild Rice River	09020108-503	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Marsh Creek	09020108-652	Marsh Creek	09020108-521	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Red River of the North	09020301-544	Red River of the North	09020301-501	Aquatic Life	Dissolved oxygen	5	Carry forward impairment from 2016 AUID to revised 2018 AUID

2018 Water body name	2018 River AUID# or Lake ID #	2016 Water body name	2016 River AUID# or Lake ID #	Affected designated use	Pollutant or stressor	EPA Category	Reason for removing water from 2018 303(d) list
Red River of the North	09020301-544	Red River of the North	09020301-501; 09020301-502; 09020301-503; 09020301-504	Aquatic Consumption	Mercury in fish tissue	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Red River of the North	09020301-544	Red River of the North	09020301-501; 09020301-504	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Red River of the North	09020301-543	Red River of the North	09020301-506; 09020301-507	Aquatic Consumption	Mercury in fish tissue	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Red River of the North	09020301-543	Red River of the North	09020301-507	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Clearwater River	09020305-648	Clearwater River	09020305-510	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID
Clearwater River	09020305-647	Clearwater River	09020305-510	Aquatic Life	Turbidity	5	Carry forward impairment from 2016 AUID to revised 2018 AUID

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JAN 27 2010

REPLY TO THE ATTENTION OF:

E-19J

Mr. Ralph J. Augustin
State Program Manager
US. Army Corps of Engineers
190 Fifth Street East, Suite 401
St. Paul, Minnesota 55101-1638

RE: Draft Environmental Impact Statement, U.S. Steel Keetac Taconite Mine Expansion Project, near Keewatin in Itasca and St. Louis Counties, Minnesota EIS # 20090419

I am providing comments on the Draft Environmental Impact Statement (EIS) for the U.S. Steel (USS) Keetac Taconite Mine Expansion Project, consistent with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

The Keetac project is an expansion of the existing Keetac open pit mine, ore processing plant, and tailings basin near Keewatin in Itasca and St. Louis Counties in Minnesota. The proposed project would increase the taconite pellet production capacity by expanding the mine pit, adding stockpile areas, upgrading the concentrating and agglomerating processes, and restarting the Phase I line, which was previously idled. The indurating furnace equipment from the Phase I line would be refurbished and fueled by natural gas and biomass, with coal and fuel oil used as backup fuels. With these changes, Keetac's taconite pellet production output would increase by 3.6 million short tons per year (MSTY) to a total annual output of 9.6 MSTY.

The proposed action alternative would require new permits or amendments to the existing permits. The proposer estimates after considering maximum use of in-pit and existing stockpiles that 118 million bank cubic yards (Mbcy) of excess surface materials will need to be stockpiled over a 21.5 year period in order to have uninterrupted mining of taconite. The proposer plans to stockpile this excess material on available land adjacent to the mine pit area. The Draft EIS estimates that 560 acres of forest will be impacted and approximately 780 acres of wetlands will be impacted (direct and indirect), plus temporary impacts to wetlands. Additionally, the project will contribute to an increase in sulfate levels in nearby Swan Lake and increases in air emissions, including mercury emissions.

The United States Environmental Protection Agency - Region 5 (EPA) provided scoping comments to the U.S. Army Corps of Engineers (USACE) on the Keetac project and has reviewed and commented on technical reports and the Preliminary Draft EIS for the project.

After our review of the Draft EIS, we have identified significant issues with the wetlands analysis. As you know, the Clean Water Act Section 404(b)(1) Guidelines require that the applicant demonstrate there are no practicable alternatives available that would have a less adverse impact on the aquatic environment for non-water dependent activities. The Guidelines presume that less damaging upland alternatives are available for these activities unless demonstrated otherwise by the applicant. The applicant must follow a sequence of steps to be in compliance with the 404(b)(1) Guidelines, which include avoidance, minimization, and compensation for unavoidable impacts. After review of the information available, EPA has determined the applicant has not demonstrated that impacts have been avoided and minimized to the maximum extent practicable and is not in compliance with the 404(b)(1) Guidelines at this time.

Based on the information provided in the Draft EIS, EPA has assigned a rating of Environmental Objections – Insufficient Information "EO-2." Additional information needs to be provided to support the impact analysis documented in the DEIS. This rating will be published in the Federal Register. Our objections are based on the impacts to wetlands and the need for demonstrated measures to avoid and minimize those impacts, as well as concerns over the compensatory wetland plan. At this point, we question whether the project will meet Clean Water Act Section 404 requirements for selecting the least environmentally damaging practicable alternative (LEDPA). We also have identified issues in water quality, air emissions, and financial assurance. Discussion of these issues are enclosed.

Thank you for the opportunity to review and provide comments on the Draft EIS. If you have any questions or would like to discuss our concerns and recommendations, please contact me at (312) 886-2910 or Sherry Kamke of my staff at either kamke.sherry@epa.gov or (312) 353-5794.

Sincerely yours,

Kenneth A. Westlake
NEPA Implementation Section
Office of Enforcement and Compliance Assurance

Enclosures

EPA Region 5 Comments for the Draft Environmental Impact Statement (EIS) for the U.S. Steel Keetac Taconite Mine Expansion Project

Wetland Avoidance, Minimization and Compensatory Mitigation

After our review of the Draft EIS, we have identified significant issues with the wetlands analysis. As you know, the Clean Water Act Section 404(b)(1) Guidelines require that the applicant demonstrate there are no practicable alternatives available that would have a less adverse impact on the aquatic environment for non-water dependent activities. The Guidelines presume that less damaging upland alternatives are available for these activities unless demonstrated otherwise by the applicant. The applicant must follow a sequence of steps to be in compliance with the 404(b)(1) Guidelines; which include avoidance, minimization, and compensation for unavoidable impacts. After review of the information available, EPA has determined the applicant: 1) has not demonstrated that impacts have been avoided and minimized to the maximum extent practicable, and 2) is not in compliance with the 404(b)(1) Guidelines at this time. Our detailed comments follow.

Avoidance and Minimization

The Draft EIS states that the project's purpose and need is to increase the rate and total quantity of taconite pellet production at the Keetac facility using existing infrastructure. The proposed project would increase the taconite pellet production capacity by expanding the mine pit, adding stockpile areas, upgrading the concentrating and agglomerating processes, and restarting the Phase I line, which was previously idled. We agree with the proposer that alternative sites or modified designs for the plant, pit, tailings thickener, and tailings basin do not have advantages over the proposed project because those portions of the proposed project take advantage of existing infrastructure.

The proposed impacts to wetlands in the project area are significant (780 acres) and the need to avoid and minimize these impacts is critical. We agree with the statement on page EX-9 that positioning of stockpiles is crucial to minimizing impacts to wetland and potentially other natural resources. According to the Draft EIS, approximately 454 acres of wetlands of varying quality will be directly impacted from the two stockpiles. According to the Draft EIS, 9% of the proposed wetland impacts are high quality, 77% are moderate quality, and 14% are low quality. The location and design of the stockpiles provide the best opportunity to demonstrate avoidance and minimization of wetland impacts, especially impacts to higher quality wetlands.

There is information in the Draft EIS addressing the need to use the proposed stockpiles, such as the following statement: "The Project Proposer has indicated that the footprint of the proposed east and south stockpiles is required to meet the out-of-pit stockpiling needs after maximizing in-pit stockpiling." However, there isn't a sufficient amount of information included to substantiate the statement. Throughout the Draft EIS, similar statements about stockpiling are made without adequate support. While the project

Lack of Water Quality Data

Generally, there is not enough water quality information provided in the Draft EIS to allow for any detailed review of water quality as a whole. Likewise, EPA did not have access to technical reports pertaining to water quality topics that might provide this information, most specifically, the "Water Quantity and Quality Report" or the "Water Quality Sampling Plan (Liesch, 2008)". There are multiple references in the Draft EIS where the statement is made that water quality won't be an issue, but there is no support in the Draft EIS for that statement. Typically, for a project of this size, we expect to see detailed water quality data or a summary of water quality values versus standards. This type of data was not included in the Draft EIS. This is particularly important, since Swan Lake and other waterbodies that will be directly impacted by the project have the highest aquatic life designation and human health protection since they are designated for domestic consumption.

It appears that a determination was made that sulfate and mercury (see below) were the only contaminants of concern and thus concentration information was included for only these two parameters. It is important for the Final EIS to provide information about relevant water quality parameters, so that the reader can determine independently that no other contaminants are of concern. We recommend that the Final EIS provide a summary with enough detail to support any conclusions that are reached, including applicable Minnesota water quality standards that would be appropriate for the waterbodies in the project area.

The project area already has waterbodies that are impacted with levels of mercury. This project will increase the levels of mercury in all those impacted waterbodies as well as the levels of mercury in fish tissue. Tables 4.7.19 and 5.5.2 show ambient fish mercury concentrations from all nearby lakes and the amount that these levels will increase due to the proposed project. It is not clear what form of mercury is being used here, but the existing levels are exceeding the current Minnesota methylmercury concentration to protect human health (fish consumption) of 0.2 ppm (the MPCA Total Maximum Daily Load (TMDL) goal for mercury concentrations in fish). The Final EIS should discuss how mercury impacts on aquatic life and human health will be covered under the National Pollutant Discharge Elimination System (NPDES) permits and a TMDL(s) since these waters are already impaired for mercury.

Sulfate and Protection of Wild Rice

Section 5.4 includes a good discussion of wild rice located in the project area water bodies. The Draft EIS leaves no doubt that wild rice stands are present in Swan Lake, Swan River, Hay Creek and Hay Lake, and that these water bodies have documented harvesters, despite the MDNR conclusion that the yields range from poor to moderate. As a result of the information provided in the Draft EIS, we understand that the MN sulfate standard of 10 mg/L for the protection of wild rice is applicable. The Draft EIS appears to indicate uncertainty as to whether the 10 mg/L standard is applicable by providing a discussion of other acceptable sulfate ranges of 50 mg/L to 282 mg/L for wild rice growth. The discussion at section 5.4.2 on page 5-46 under "Regulatory

Framework" also leaves some doubt as to what standard is applicable by stating, "The current state rule establishes pollutant standards to be used as a guide for determining the suitability of waters for such uses, including the production of wild rice." EPA recognizes the uncertainty in sulfate impacts on wild rice, and supports the gathering of more monitoring and research. However, the current applicable Minnesota water quality standard for sulfate in these waterbodies is 10 mg/L. The Final EIS would be strengthened by including a more detailed discussion addressing the following concerns:

- An affirmative statement that the 10 mg/L sulfate criterion is applicable for the four water bodies;
- A discussion of the past monitoring data and exceedance of the 10 mg/L sulfate standard;
- A discussion of state antidegradation rules and whether an expanded discharge of this pollutant could occur in the NPDES permit, given that the standard is already exceeded; and
- How several of the mitigation options discussed on page 5-50, at Section 5.4.6, will be used to meet the standard (e.g. sulfate removal technologies, alternate discharge locations, etc.), rather than reserving these options only for mitigation if adverse changes are detected in wild rice stands during the proposed project.

Air Emissions

The Keetac facility is an existing major source of air emissions under the Prevention of Significant Deterioration (PSD) regulations. EPA is aware that the Minnesota Pollution Control Agency (MPCA) and the project applicant are discussing air emissions and air permitting requirements. EPA will continue to discuss air permitting factors with MPCA, which has authority for direct implementation of the Clean Air Act in Minnesota.

Mercury

Based on a review of the information included in the Draft EIS, it isn't clear what type and configuration of mercury emissions control will be installed and implemented at Keetac. Throughout the Draft EIS, the mercury emissions control is described differently. For example, on page 3-24, the Draft EIS includes a statement, "the Project Proposer has chosen to install activated carbon injection (ACI) to control mercury emissions for the new line." However, on page 4-125 and 4-126 there is a statement "...the proposed pollution control system consists of a circulating fluidized bed (CFB) scrubber for control of sulfur dioxide, followed by a dry electrostatic precipitator (ESP) for control of particulate emissions. The ESP would also provide some mercury control for mercury associated with particulate" with no mention of the ACI technology. Later on page 4-126, a statement is made that ACI "is viewed by the MPCA and the Project Proposer as having the highest potential for controlling mercury emissions from the proposed furnace. Because ACI technology has not been demonstrated on taconite facilities and the efficiency is yet undetermined, impact analyses have been conducted by

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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FEB 18 2010

REPLY TO THE ATTENTION OF:
E-19J

Colonel Jon L. Christensen
District Engineer
St. Paul District
U.S. Army Corps of Engineers
190 Fifth Street East
St. Paul, Minnesota 55101

Re: NorthMet Project – Draft Environmental Impact Statement
CEQ# 20090387

Dear Colonel Christensen:

The United States Environmental Protection Agency (EPA) has reviewed the NorthMet Project Draft Environmental Impact Statement (DEIS) in accordance with our authorities under Section 309 of the Clean Air Act and the National Environmental Policy Act.

The project, located in St. Louis County, Minnesota, is a copper sulfide ore open pit mine and processing plant. The U.S. Army Corps of Engineers (USACE) is the lead federal agency for this project, which requires a permit pursuant to Section 404 of the Clean Water Act (CWA). USACE is a co-lead with the Minnesota Department of Natural Resources (MDNR), which is preparing an environmental impact statement for compliance with state environmental law. The Fond du Lac Band of Chippewa and the Bois Forte Band of Chippewa are cooperating agencies.

The project is the first non-ferrous mine on the Mesabi Iron Range and includes three open pits and a related hydrometallurgical processing plant which will produce copper metal and precipitates of nickel and platinum group minerals. The processing facilities are located on the old LTV Steel Mining Company (LTVSMC) site, and the PolyMet Corporation proposes to use the existing LTV tailings basin. The mine site is within the Superior National Forest. The U.S. Forest Service has determined that a land exchange or sale is necessary for the mining operation to take place and will prepare a separate DEIS for this action (the USACE NorthMet Project DEIS presumes a successful land exchange). The project is within land ceded by American Indian tribes to the U.S. by treaty, known as the1854 Ceded Territory, upon which tribes exercise reserved rights.

According to the DEIS, all waste rock at the site is acid generating, and acidic water moving through the waste rock and tailings will mobilize metals and sulfates, leaching them into groundwater and surface water. The DEIS projects that water quality standards will be exceeded for sulfates and other contaminants and describes mitigation measures that include tailings basin seepage collection, wastewater collection and recycling into process water, and various barrier methods for waste rock, tailings and exposed rock faces. The proposed project would fill approximately 1,000 wetlands acres, largely high quality and forested, and indirectly affect approximately 500 more acres.

Based on our review of the DEIS, EPA has rated the DEIS as Environmentally Unsatisfactory – Inadequate, or EU-3. Environmentally Unsatisfactory (EU) indicates that our review has identified adverse environmental impacts that are of sufficient magnitude that EPA believes the proposed action must not proceed as proposed. The numeric portion of the rating indicates the DEIS does not present adequate information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment or EPA identifies reasonably available alternatives which could reduce the environmental impacts of the action. This rating applies to the Proposed Action, the Mine Site Alternative and the Tailings Basin Alternative. Our summary of ratings definitions is enclosed.

EPA has assigned the EU rating because our review of the DEIS determined that the proposed action will result in environmentally unsatisfactory water quality impacts. Specifically, EPA believes that the project will exceed water quality standards because of discharges during the life of the mining operation and on a long-term basis, including the post-closure period. These water quality impacts are largely related to water that contacts acid-generating waste rock and mine faces and to wastewater escaping the tailings basin through seeps and in groundwater. EPA also finds the wetlands mitigation plan environmentally unacceptable because it does not provide mitigation for all impacts to wetlands, particularly for indirect impacts.

EPA has assigned the Inadequate (3) rating to the DEIS because EPA believes that the analyses of the hydrogeological profiles at both the mine and processing sites are inadequate to determine the full extent of impacts or to justify mitigation options. Consequently, we believe that the DEIS likely underestimates water quality impacts and that the project is likely to have additional unmitigated long-term discharges. EPA has identified information gaps relating to groundwater impacts, groundwater-surface water interaction, tailings basin stability and containment, and groundwater discharges to surface water. EPA believes the DEIS should evaluate alternatives to avoid mine pit overflow and explore additional mitigation for discharges and waste rock management, some of which are identified briefly in the document. Furthermore, EPA does not agree with the compensation described for wetlands impacts and proposes alternative mitigation ratios. The DEIS did not provide information on financial assurance, which EPA believes critical to the decision-making process when long-term impacts and mitigation are involved.

We have enclosed detailed comments outlining our issues more completely and offer recommendations as a starting point for discussion. Our main issues are summarized below.

Water Quality

EPA determined that the project will result in unacceptable and long-term water quality impacts, which include exceeding water quality standards, releasing unmitigated wastewater discharges to water bodies (during operation and in the post-closure period), and increasing mercury loadings into the Lake Superior watershed.

EPA believes the information about the project's estimation of acid generation needs to be updated. The project's proposed operation and post-closure management plan for acid-generating waste rock and wastewater is inadequate and needs to be improved. The proposed approaches to manage acid generation are untested or unproven at the proposed scale. EPA believes the tailings basin will contribute to water quality impacts by leaking contaminants into groundwater that may be hydraulically connected to surface water. EPA believes the Environmental Impact Statement (EIS) needs to include adequate hydrogeological and hydrological analyses for the tailings basin and surrounding area and for the mine site. Tailings basin and mine site water management needs to be based on adequate hydrogeological/hydrological information.

Wetlands

EPA finds this project may have substantial and unacceptable adverse impacts on aquatic resources of national importance (ARNI). EPA believes the coniferous and open bogs, comprising a large percentage of the approximately 33,880 total wetland acres, within the Partridge River Watershed to be an ARNI due to the values they provide in terms of unique habitat, biodiversity, downstream water quality, and flood control specifically, to the Lake Superior Watershed and the Great Lakes Basin.

With impacts to over 1,000 acres of wetlands, the DEIS provides incomplete and inadequate compensation for the loss of wetlands and their function. Indirect impacts to wetlands are not completely identified or compensated for in the mitigation plan. EPA also believes that some of the mitigation offered for direct impacts is inadequate, given that the type and function of wetlands impacted is difficult to replace. EPA's preferred mitigation ratios for the project's impacts are described in the attached detailed comments. Insofar as the DEIS for this project is the chief environmental document supporting the issuance of the USACE CWA Section 404 permit, a revised or supplemental DEIS should identify and describe mitigation for all impacts. It should also include wetland monitoring plans and adaptive management plans, especially related to indirect impacts to mine site wetlands. The Section 404(b)(1) Guidelines, 40 CFR Section 230.10(b), prohibit discharges that will result in a violation of the water quality standards. If water quality standards cannot be met in conjunction with this project as described within the DEIS, U.S. EPA would not support the issuance of a permit for this project. If our concerns are not addressed prior to the issuance of the Section 404 permit, EPA may elevate pursuant to Part IV, paragraph 3(a) and 3(b) of the August 1992 CWA Section 404(q) of the Memorandum of Agreement between EPA and the Department of Army.

Financial Assurance

Long-term post-closure treatment will be necessary to protect water quality; therefore, EPA believes financial assurance information should have been included in the DEIS. The amount and viability of financial assurance are critical factors in determining the effectiveness of these activities, and EPA believes it is necessary to analyze and disclose financial assurance factors in the DEIS to determine the significance of the impacts and inform decisions about the project. Financial assurance information includes a description of State and/or federal agency requirements, closure costs, estimated bond amounts needed for each closure and reclamation activity, and how the bonds should be modified should additional temporary, long-term, or perpetual treatment and/or remediation needs be determined during operations.

EPA believes that because of deficiencies in the DEIS, additional information, alternatives, and mitigation measures should be evaluated and made available for public comment in a revised or supplemental DEIS. EPA will continue to work with USACE and the cooperating agencies to resolve the issues we have identified. If we are unable to resolve our concerns, this matter may be a candidate for referral to the Council on Environmental Quality (CEQ) for resolution. We appreciate the opportunity to review the DEIS. Please feel free to contact me at 312-353-2000 or Kenneth Westlake of my staff at 312-886-2910 should you desire a meeting to discuss these comments.

Sincerely,

Richard C Karl for

Bharat Mathur
Acting Regional Administrator

Enclosures: NorthMet Project DEIS Detailed Comments
Summary of Ratings Definitions

cc:
Tamara Cameron, Environmental Review Manager, USACE St. Paul.
Jon Ahlness, Project ManagerUSACE St. Paul
Jim Sanders, Forest Supervisor, USFS Superior National
Jim McDonald, Regional NEPA Contact, USFS
Mark Holsten, Director, Minnesota Department of Natural Resources
Marty Vadis, Land & Minerals Director, Minnesota Department of Natural Resources
Stuart Arkley, Project Manager, Minnesota Department of Natural Resources
Karen Diver, Chairwoman, Fond du Lac Band of Lake Superior Chippewa
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Rebecca Flood, Asst. Commissioner for Water, Minnesota Pollution Control Agency
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EPA DETAILED COMMENTS
NORTHMET PROJECT DRAFT ENVIRONMENTAL IMPACT STATEMENT

I. Water Quality

Synopsis: The DEIS describes a proposed action that will exceed or have the potential to exceed surface water quality standards in the Partridge River, Embarrass River and downstream in Colby Lake (a drinking water source) and the St. Louis River. EPA also concludes that the DEIS underestimates the potential for waste rock and exposed pit faces to generate acid rock drainage (ARD) and the potential for this drainage to enter the environment. EPA believes that there are water quality impacts that have been unevaluated because of gaps in hydrogeological and hydrological site assessments. Since hydrogeology at the mine site is not well described, EPA is concerned that fate and destination of long-term drainage is unknown. We are concerned that mine operation and closure decisions will be made based on inadequate information. Neither the Tailings Basin Alternative nor the Mine Site Alternative would completely prevent or mitigate impacts to water quality. We have also identified discharges that may require National Pollutant Discharge Elimination System (NPDES) permit coverage in addition to the permit requirements listed in Table 1.1-1 (Government Permit and Approvals). Finally, due to the projected need for long-term water treatment, EPA does not agree with DEIS statements that the Proposed Action could achieve maintenance-free closure.

A. Mine Site

Acid generation potential

The DEIS underestimates the potential for waste rock to generate ARD. We are aware that mine plans have changed since the tests to evaluate waste rock chemistry and acid generation potential were completed, and it is not clear if relative proportions of the waste rock in the current mine plan will be the same as those used in the waste rock characterization. We question whether the waste rock analyses are still representative of the waste rock that will be generated by the project. For example, we note from supporting technical documents that Unit 7 was not included in the analysis, although it will contribute to the waste rock. In addition, the DEIS states that more extensive characterization of the overburden is needed. (Page 4.1-65, Section 4.1.3.1).

> **Recommendation:** The revised/supplemental DEIS should evaluate whether the waste rock chemistry predictions, waste rock management plans and post-closure needs are taken into consideration in the current mining plans. We further recommend that USACE and the applicant determine what additional tests may be necessary to reflect the current mine plan, then complete those tests.

Acid generation prevention measures

The DEIS analysis relies on unproven measures to limit oxidation of waste rock and assumes full success of these measures. EPA does not believe this assumption is supported, in part because several of the approaches proposed to control ARD (such as compaction, membrane covers, and lining of pit walls) have not been demonstrated as effective. For example, the East Pit closure cover includes ARD reduction measures that the DEIS admits have not been demonstrated successfully in the U.S. (Section 4.1-16). In addition, the plan to isolate the Category 4 in-situ material (Virginia formation) in the final backfill is not clear, inasmuch as the narrative indicates that four inches of limestone will be placed over this material that will be developed in a steep face. The DEIS also notes that waste rock oxidation will be limited by compaction measures, another unproven approach. Subsequent management plans based on these assumptions may lead to potential water quality impacts. Therefore, EPA believes the DEIS should assume that waste rock will in fact be oxidized and the extent should be predicted.

> **Recommendation:** EPA suggests that the revised/supplemental DEIS model ARD inflows assuming various degrees of effectiveness of covers and other designs. We further recommend analyzing other management strategies to prevent ARD and developing adaptive management options that can address the likely situation that ARD will be generated post-closure from pit walls. Regarding the stockpile liners, we recommend the revised/supplemental DEIS consider measures to protect the permanent stockpile liners from erosion or other surface impacts that could occur over the long term. These liners have potential to be damaged if they are exposed.

Potential mercury generation from waste rock

EPA supports the goals of the 1991 "Binational Program to Restore and Protect the Lake Superior Basin" to establish a Zero Discharge Demonstration Program for critical pollutants (of which mercury is one), and we question whether the waste rock and the project overall have been adequately evaluated for their potential to introduce mercury into the Lake Superior watershed. The DEIS states that results from 36-day batch tests suggest that mercury will be absorbed by minerals in the waste rock (p. 4.1-122). Details of these experiments are not provided, but it is not clear that conditions expected to occur under field conditions were accurately simulated in the batch tests, nor is it established that the time scale under which these tests were conducted is adequate for predictions of long-term mercury behavior. In addition, EPA does not agree that "scientific understanding of mercury methylation and bioaccumulation is limited" (p. 4.1-122). A large body of work has been done on this topic (see, e.g., the references cited in the section discussing mercury methylation beginning on p. 4.1-125).

> **Recommendation:** The revised/supplemental DEIS should include information upon which conclusions regarding mercury behavior at the site were based. Depending on this information, EPA may suggest that the applicant perform additional or more appropriate studies on potential for mercury mobilization.

Waste rock management

According to the DEIS, all waste rock at the site is acid generating. The proponent's plan to segregate waste rock into four categories (based on potential to generate ARD) is a key management approach in reducing the potential for acid generation. Supporting documentation has noted that acid generation in Category 2 waste rock is sensitive to the inclusion of Category 3 and 4 waste rock, meaning that if some proportion of the latter category rock is included in the

Category 2 rock, the resulting overall drainage could be acidic and result in increased metal solubility (Report RS53/42). The DEIS explains that no sampling of the overburden will take place during stripping; instead, field determinations will be relied on for assessing overburden type (p. 4.1-66). Once acid generation begins, it cannot be reversed and will require more extensive management to minimize environmental risks. The DEIS does not describe how successful segregation will be achieved on a real-time basis; therefore, EPA does not have confidence that segregation will happen so as to assure that waste rock is stored properly according to its reactivity in a real-time operational timeframe. EPA is very concerned about the possibility that segregation would fail to separate reactive waste categories effectively to prevent eventual ARD.

Recommendation: Waste rock management needs to be described thoroughly to allow decision-makers to evaluate whether it will sufficiently prevent ARD from entering the aquatic environment. EPA recommends the revised/supplemental DEIS describe how waste rock would be sorted during operation, and how the success of segregation will be determined. We also recommend a discussion of criteria for the field determinations and any plans for quality assurance in these field decisions. We also recommend the revised/supplemental DEIS describe how waste rock management and pits would be adaptively managed should segregation be compromised or ineffective in preventing ARD.

EPA believes Category 1 waste rock should not be used for construction material since it has ARD potential, which could be increased if segregation techniques are not sufficient to prevent mixing.

Wastewater treatment at the mine site

The DEIS does not offer supporting data that the proposed wastewater treatment facility (WWTF) has the capacity to treat all ARD effluent and will be sufficient to address waste rock pile drainage over a long-term timeframe. The proposed WWTF is intended to capture and treat all drainage from waste rock piles and recycle the water into the processing plant, or to discharge treated water into the Partridge River, in the event that process water is not needed. WWTF capacity is not described; therefore, there is inadequate information to know whether it could process all the contaminated stormwater flows during a maximum spring snow melt situation. In addition, the design capacity of the WWTF may be inadequate, since the project plan assumes that pit walls will not generate ARD.

Recommendation: We recommend describing the WWTF further, in particular its capacity relative to anticipated flows. We also recommend using revised ARD assumptions (as described in above comments) to evaluate loading to the WWTF. Management plans should recognize that long-term treatment and discharge will likely be necessary in the post-closure period.

The DEIS proposes an artificial wetland to treat contaminated water at the mine site in perpetuity. Artificial wetlands have successfully treated low flows of acid waters; however, their success has been quite limited in treating flows containing a range of metals. The DEIS does not demonstrate that this treatment option will be successful in the severe winter environment found at the site or that if the artificial wetland fails how treatment will be accomplished. Other management decisions are contingent on the success of this proposed mitigation measure.

> **Recommendation:** The revised/supplemental DEIS should include information about the operation of the treatment wetlands. The information should include a long-term adaptive management plan for the treatment wetlands, especially with regard to plant maintenance, removal of accumulated metals in the wetland plants and sediment, and monitoring for effectiveness.
>
> Given that the performance history on treatment wetlands of this size and scope is limited, EPA further recommends the revised/supplemental DEIS explore additional alternatives for treating this wastewater.

West Pit overflows

The predicted West Pit overflows to an unnamed tributary of the Partridge River will cause serious water quality impacts. The DEIS indicates that arsenic, cobalt, copper, nickel, and selenium would exceed water quality standards (p. 4.1-113). The DEIS notes uncertainty as to whether the West Pit overflow would meet the Great Lakes Initiative standard for mercury (p. 4.1-124). The presumption that the unnamed tributary would "essentially function as a mixing zone" is questionable. Considering that the Partridge River ambient levels for several of these parameters are already high (Table 4.1-24) and, in the case of aluminum, exceed the water quality standard, dilution is not a feasible solution to any West Pit overflows. In addition, many of these constituents will accumulate over time, especially in sediment. Sediment is where the majority of mercury methylation will occur. The results of the deterministic modeling and follow-up uncertainty analysis suggest that "as many as five parameters (i.e., arsenic, cobalt, copper, nickel, and selenium) could exceed surface water quality standards, in addition to relatively high sulfate concentrations."

> **Recommendation:** EPA recommends the revised/supplemental DEIS develop operations and closure alternatives that will avoid or prevent pit overflow. The overflow scenario should include measures that will protect water quality downstream, among them treatment alternatives, a monitoring plan, and adaptive management plans for the overflow. We also recommend further evaluation of whether overflow from the West Pit will meet Lake Superior mercury standards.

Hydrogeology/hydrology assessment and impacts: mine site

The model assumptions and the amount of data used for groundwater modeling at the mine site are inadequate and may not be protective of water quality. The DEIS states that concentrations of several solutes could exceed water quality standards at mine site boundaries. In addition, the DEIS states that firm conclusions cannot be drawn due to conflicts between the results from deterministic modeling and the Uncertainty Analysis at the mine site (p. 4.1-84). Given the DEIS-stated potential for long-term (> 2000 yrs) leaching of solutes from waste rock to groundwater, further evaluation is necessary.

Our issues fall into the following categories:

- Inadequate data collection

  Neither the number of wells (3) nor the frequency of monitoring (once a year in 2005, 2006, and 2009) constitutes adequate characterization of the surficial aquifer.

- Inadequate model assumptions

  The DEIS states "The MODFLOW model was not developed to accurately predict drawdown in the surficial aquifer or the impact, if any, such drawdown would have on adjacent wetlands and surface waters" (p. 4.1-60). Consequently, its use and ability to represent potential impacts due to pit dewatering and maintenance pumping are very limited. Furthermore, given this caveat to using MODFLOW to evaluate the effects of mine pit dewatering on the Partridge River flows, it is not the optimal tool for predicting this information.

  The DEIS assumes the complete effectiveness of unproven anti-oxidation measures for groundwater modeling purposes (see above comments). This is not a conservative approach, and, therefore, modeling results based on this assumption are not credible.

  Several conclusions are provided that refer to groundwater elevation recovery following the closure of the mine. However, the DEIS states, "MnDNR believes that actual hydrogeological characteristics of the project site do not fit the model assumptions of homogeneous porous media flow (uniform vertical and horizontal conductivity) for the bedrock and till layers" (p. 4.1-57). With the potential deficiencies of the model, it is not consistent to provide relatively precise post-closure groundwater recovery elevations and dates of recovery based on the MODFLOW model.

- Insufficient discussion/disclosure of empirical and reference data

  The revised/supplemental DEIS needs to present the available empirical or reference data that was used to assess potential impacts to the adjacent wetlands and surface water bodies. Based on comments in the DEIS, this data appears to include groundwater information and maps from dewatered mines in the area.

  Recommendations: The revised/supplemental DEIS should include an adequate hydrogeological and hydrological evaluation of the mine site. EPA maintains that additional data gathering is crucial to assessing impacts. Additional field data may be necessary. Furthermore, the revised/supplemental DEIS should clarify how and why the MODFLOW model is appropriate for use in the mine pit area. We also believe model assumptions should be re-assessed to take into account previous comments on the potential for ARD and less-than-complete success of untested anti-oxidation measures. If models continue to prove uncertain in this area, we suggest re-evaluating groundwater analysis and developing more protective management and mitigation measures. The same applies to the use of the model for evaluating mine dewatering impacts on the Partridge River.

Mine pit water quality and wildlife

EPA recommends that the revised/supplemental DEIS further evaluate the impacts of mine pit water quality on wildlife. The DEIS indicates fencing will be used as a deterrent for potentially sensitive wildlife species; however, aquatic-dependent migratory birds may use the pit lakes as a stopover, exposing wildlife to contaminants. The Endangered Species Act of 1973 (ESA) mandates all federal departments and agencies to conserve listed species and to utilize their authorities in furtherance of the purposes of the ESA. Given the potential for exposure near or at the West Pit, migration potential through the project area should also be considered for endangered species typically using this migration path (e.g., piping plover). Section 4.4.1.1 on page 4.4-1 only addresses federally- and state-listed endangered, threatened and species of special concern that are potentially present in the project area.

> **Recommendation:** We suggest the revised/supplemental DEIS discuss mine pit impacts to migratory birds, whether Federally-listed or not, as well as opportunities to reduce the risk of adverse impacts to tribal members' health due to subsistence consumption of potentially contaminated trust resources.

The DEIS needs to evaluate how ground water exceedences from the mine site may affect downstream fish populations. Groundwater sampling and modeling at the mine site (noted in Table 4.1-5) indicate that data from 9 bedrock wells exceed water quality standards for aluminum, iron, and manganese with occasional exceedances of beryllium, nickel and sulfate. Fish populations located in areas with high metal concentrations often adapt to a water quality level that allows for decent sustained population stability. Often, however, slight increases or decreases in metal loadings can have serious adverse affects.

> **Recommendation:** We recommend the revised/supplemental DEIS determine potential impacts to fish populations in waters downstream of the Mine Site. Water quality standard exceedances that may ultimately affect fish populations should be mitigated.

B. Plant Site

Plant site storm water management

Although the DEIS states that the lack of stormwater management facilities could result in increased pollutant loadings to the Partridge River, none are described. The nature of this discharge (construction, industrial) is not described nor is the method of conveyance to surface waters.

> **Recommendation:** We recommend that the revised/supplemental DEIS include information to determine whether and what type of NPDES permit coverage is required at the plant site.

Tailings basin stability

The DEIS does not include a recent, detailed engineering analyses on the structural stability and integrity of the existing LTV tailings basin. Consequently, the stability of the existing tailings basin and its ability to retain the project's additional tailings and processing residues is not known, and this is an unacceptable data gap. The DEIS notes that geotechnical stability studies will be conducted during permitting (Section 4.1.3). These issues should be addressed in the revised/supplemental DEIS. The following issues should be addressed:

- The tailings basins are already leaking.
- The effect of the additional weight of new tailings and process wastes has not been estimated or analyzed.
- The understanding of water flow through the waste is not well understood or described.
- Groundwater data surrounding the tailings basin is scant; the groundwater flow regime is poorly characterized here, as is the potential for groundwater to impact surface water down gradient of the tailings basin.
- NorthMet proposes to dispose of hydrometallurgical wastes in lined cells on top of existing tailing ponds – the integrity of the tailings basin to accommodate this management option is not described.

> **Recommendation:** EPA believes that analyzing tailing basin stability is important as part of informed decision-making for this project; clearly, the basin's ability to retain additional mine tailings and hydrometallurgical wastes is crucial to preventing releases to the environment. The revised/supplemental DEIS should include a stability analysis of the tailings basin in its current state and under the project's operating and post-closure conditions. Furthermore, if the basin is found potentially unusable as proposed, another disposal area would need to be evaluated as an alternative as part of the revised/supplemental DEIS.

Hydrogeology/hydrology assessment and impacts: plant site

The Partridge and Embarrass Rivers already exceed or are close to exceeding water quality standards for some constituents. Section 4.1 of the DEIS describes storm water discharges from the Plant Site (excluding the Tailings Basin). These discharges would be routed to Second Creek, a tributary to the Partridge River. However, the DEIS has not adequately assessed these rivers. For example, the Partridge River flow-data summarized on page 4.1-21 and Table 4.1-12 is outdated (1980 to 1988). The Embarrass River flow data summarized in Table 4.1-17 is extremely old (1942-1964) and for this reason alone is not appropriate for characterizing existing flow conditions.

> **Recommendations:** More information is necessary to evaluate impacts to these rivers. We recommend the following. The revised/supplemental DEIS should provide a complete impact analysis of the Partridge River and Embarrass River based on an accurate characterization of their flow and assimilative capacity, under current and project conditions. More data is needed to describe conditions in the downstream lakes. Where current data is lacking, data collection may be warranted. Where historical data is not available, we recommend considering reference data from other similar streams in the area.

The DEIS lacks an adequate groundwater characterization at the tailings basin. There are information gaps related to the extent of existing contamination, potential releases from the project, the groundwater pathway of potential releases, and the potential for contaminated groundwater to impact surface water. As evidence for inadequate analysis, EPA points out the following data deficiencies that should be addressed:

- Some groundwater quality constituents were monitored only one to three times (p. 4.1-12 and 4.1-13, Tables 4.1-6 and 4.1-7), which we believe resulted in an extremely large range of concentrations.
- Some constituents in water from the Tailings Basin and Tailings Basin area have only been measured a few times in the period reported (2001-2004), and this monitoring period and sampling frequency do not constitute adequate characterization (pp. 4.1-12 to 4.1-13, Section 4.1.1.2, Tables 4.1-6 and 4.1-7).
- The number of monitoring points and the sampling frequency of wells downgradient from the LTVSMC Tailings Basin are not adequate to characterize groundwater in this area (p. 4.1-15, Section 4.1.1.2, Table 4.1-8).
- The tailings basin model did not address the potential fate and transport of constituents that would mobilize at higher pH (e.g. antimony and arsenic), of particular concern because the current effluent is higher pH than proposed acidic tailings and mixing effects aren't evaluated.
- Monitoring data relating to the LTVSMC Tailings Basin seeps was not available in the DEIS.
- The extent of on-site contamination from previous operations is not characterized.

Upwelling groundwater beyond the tailings basin barrier will potentially cause exceedences of water quality standards in waters receiving flow from the tailings basin. The DEIS suggests a connection between the tailings basin and surface water. In addition, upwelling flow at the tailings basin may continue past the closure of the tailings basin, requiring continued monitoring and management of surplus water. The DEIS states that current groundwater seepage from the tailings basin to the north toward the Embarrass River exceeds the aquifer flux capacity, resulting in upwelling of groundwater to the surface. This upwelling, in conjunction with the surface seeps, has inundated some wetlands immediately downgradient of the tailings basin. This seepage contains high levels of contaminants, such as aluminum, manganese, lead, and total dissolved solids. Under the proposed action, seepage from the tailings basin and long-term groundwater upwelling will continue. In addition, the surface seepage to Second Creek is expected to continue indefinitely (p. 4.1-56). This upwelling would inundate portions of the wetlands north of the tailings basin and potentially introduce high sulfate concentrations to the wetlands and downstream lakes on the Embarrass River. The Closure Plan does not propose any remediation of groundwater seepage from the tailings basin.

Recommendations: We recommend that a revised/supplemental DEIS include adequate information about groundwater flow at the tailings basin and about the contribution of upwelling groundwater to surface water. Adequate information will also include an analysis of existing contamination. We recommend the revised/supplemental DEIS address the potential for metals or other contaminants to mobilize at higher pH (antimony and arsenic) and evaluate how mixing current and project –related tailings may affect contaminant mobility.

If the contaminated flow is directly hydrologically connected to surface water, a NPDES permit would be required for the discharge. The DEIS should evaluate this possibility.

Tailings basin seepage

The DEIS states that surface seeps will continue at the tailings basin during operation and following the closure of the mine. The DEIS does not provide adequate data on the anticipated amount of surface seepage at the tailings basin, because it appears the anticipated surface seepage conditions are based on conditions present in October 2008 (measurements made about seven years after the closure of the LTVSMC mine). DEIS predictions of basin seepage does not account for additional tailings loadings and different chemistry. Furthermore, the expectation that most seeps will dry out is unlikely given the addition of NorthMet's project tailings and process water and changes to the topographic and hydraulic features. Based on the continued seepage over seven years following the closure of the LTVSMC Tailings basin, without additional mitigation, probable seepage will continue following the closure of the NorthMet operations.

Recommendation: Further study and justification is needed to validate the conclusion that conditions present in October 2008 will represent conditions when the NorthMet mine is active. EPA believes that a revised/supplemental DEIS should re-evaluate the estimated flow, location or duration of existing and potential future seeps. We also recommend the revised/supplemental DEIS describe the monitoring program that would address seeps, and the alternative remedies needed in the event that continued post-closure seepage does not meet water quality standards.

EPA recommends further evaluation of the plan to use LTVSMC tailings as embankment material. The LTVSMC tailings are thought to be a source of sulfates and arsenic; we recommend modeling the chemical interaction between the chemically-different old and new tailings and evaluating other inert materials.

Data supporting predictions that the proposed seepage collection system would be adequate to capture tailings basin seepage is inadequate. Table 4.1-35 indicates that 2 to 4 percent of the total seepage toward the Embarrass River will be recovered. In addition, the collection system places wells mainly in the area of current seeps, which may not be protective, given that past seepage occurred on the western tailings basin face and that the potential exists for additional seeps on other basin faces. Regarding the seepage recovery trench located to the south of the tailings basin, we note that the tailings basin MODFLOW was not prepared to evaluate the impact of seepage on the adjacent unconsolidated sediments. The proposed location of the recovery trench does not include groundwater monitoring points, so model calibration in this area was not possible.

Recommendation: Additional justification needs to be provided ensuring that future mining operations will not result in the west side surface seeps to again become active. Depending on the results of this work, the seepage collection system may need to be enhanced to address these potential seeps. Any potential groundwater recovery system will also need to be evaluated for use along the western boundary of the tailings basin.

Proposed seepage trench placement should be based on or adjusted to provide a more complete understanding or model of area hydrogeology. We recommend more comprehensive monitoring, including installation/expansion of a monitoring well network, around the tailings basin.

The DEIS' finding that the addition of NorthMet tailings to the LTVSMC tailings basin would improve leachate quality is not well supported. The DEIS concludes the effects of interaction between the NorthMet seepage and underlying LTVSMC tailings suggest that the latter will remove certain constituents from the NorthMet leachate. These column experiments were conducted for a limited period of time (~35 weeks; RS46); long-term results may differ significantly. In addition, the results of these experiments assumes that solutes from the NorthMet seepage are sorbed onto hydrous ferric oxide, manganese oxide, and aluminum oxides surfaces, but these are stable only under oxidizing conditions (assumed to be the experimental conditions, as no details of redox controls in the experimental columns were provided). Under the subaqueous conditions that are expected to prevail in the long term at the Mine Site, depletion of oxygen and the onset of reducing conditions will result in dissolution of oxides and the release of sorbed metals. This scenario should be reconciled with the conclusions drawn from the column experiments.

Recommendation: Additional support is necessary to confirm the conclusions regarding improved water quality when NorthMet tailings are added to the LTVSMC tailings. We note that these experimental results cannot be interpreted further unless it can be established that the experiments that form the basis of this conclusion accurately simulate long-term behavior of the tailings under *in situ* conditions (i.e., pH, redox conditions, microbial effects, etc.).

Tailings Basin Alternative

The DEIS should include adequate information on the efficacy of the Tailings Basin Alternative to prevent water quality impacts, particularly because hydrogeological information and analysis are inadequate. In addition, the DEIS indicates that this alternative would not remove the possibility of significant groundwater upwelling, particularly after closure.

While the DEIS describes that pumping will occur until no longer needed, it also acknowledges that the total groundwater seepage rate (NorthMet seepage plus residual seepage from Cell 2W) would still significantly exceed aquifer flux capacity during operations and would approximately be four times the aquifer capacity during the post-closure period. Section 4.1-64 states that the total unrecovered groundwater seepage from tailings would be 1600 gallons per minute (gpm) in year 1 and up to 2900 gpm in year 20. A maximum seepage rate of 3800 gpm could be reached in year 20. The DEIS inadequately described how groundwater modeling on unrecovered seepage was conducted and whether unrecovered seepage exceed water quality standards. The levels of sulfate are well above levels that are considered protective of wild rice and will generally lead to increased mercury methylation and higher fish tissue levels of mercury in downstream waters. The Tailings Basin Alternative mitigation measures, as summarized on Page 4.1-162 and in Table 4.1-88, indicates that this option would still significantly increase sulfate loading and reduce assimilative capacity.

The placement of collection wells appears to be based on existing or past seepage incidents, without modeling for future project conditions, and, therefore, may not adequately address seepage. Furthermore, it is unclear whether this alternative would address long-term discharges to groundwater occurring post-closure. The DEIS description of the duration of pumping and long-term goals is open-ended.

> **Recommendations:** The revised/supplemental DEIS should also include a discussion of adaptive placement of collection wells, a discussion of long-term performance goals for this alternative, and an analysis of how this alternative will achieve water quality standards. We also suggest including a year-by-year modeling of this seepage to determine if its metal loadings increase over time.
>
> The DEIS indicates that PolyMet is conducting additional sampling to better understand mercury behavior in the Project Area. EPA recommends completing this study and presenting the results and conclusions in the revised/supplemental DEIS, prior to formulating conclusions regarding potential mercury impacts associated with the Tailings Basin Alternative.

Under the Tailings Basin Alternative, groundwater seepage captured by the groundwater recovery system would be discharged, untreated, to the Partridge River. While the DEIS states that the effluent would meet water quality standards, adequate supporting data is not included and this discharge may need to be treated.

> **Recommendation:** The Tailings Basin Alternative should include a water quality monitoring program to assess groundwater quality prior to its discharge.
>
> EPA recommends the revised/supplemental DEIS evaluate using a non-discharge alternative for stormwater runoff, if it can be carried out without increasing ground water flow to the pit, as opposed to the direct discharge of stormwater to the river. Benefits can include enhanced recharge to wetland areas, as well as providing groundwater storage and increased base flow during drought periods.

The Tailings Basin Alternative would use a permeable reactive barrier (PRB) to reduce metals loadings (e.g., arsenic, sulfate and antimony). While there is published research on how such barriers may operate, EPA had found no data for the proposed barrier at the commercial scale. EPA also believes the proposed PRB would not address all contaminants because, while microbial sulfate reduction (with added organic substrate) is presented in the DEIS as "the only viable alternative for sulfate removal" (pp 4.1-169 through 4.1-171), the use of zero-valent iron does not appear to address the removal of arsenic and selenium (both oxyanions).

> **Recommendation:** The revised/supplemental DEIS should provide more information on the PRB aspect of this alternative, including the proposed design of the PRB and a discussion of the mechanisms invoked for the simultaneous removal of sulfate, arsenic, and selenium. Given the uncertainty of this approach, we recommend the revised/supplemental DEIS evaluate contingency treatment alternatives for metals-

contaminated water if the barrier system were to fail to meet its operating design and describe an approach for adaptive management.

Hydrometallurgical plant and wastes

The uncertainties associated with the design and operation of the hydrometallurgical plant and with management of the hydrometallurgical processing waste disposal cells within the existing tailings basin cell 2W must be addressed.

The proposed hydrometallurgical plant would use selective leaching and precipitation to collect target metals out of solution. While hydrometallurgical processes are currently being used in both the gold and copper sectors, the DEIS states that the proposed hydrometallurgical plant process has not previously been employed on a commercial scale (p. 4.1-95) and that predictions of residue chemistry, settling times, and consolidation are uncertain. The DEIS, however, assumes for all the modeled environmental impacts that this plant will operate as proposed and that all of its wastes or discharges into the environment will meet the expected design parameters. The DEIS does not address the scenario of the plant not operating as designed and if the process may generate an unanticipated range of wastes and discharges that are not described in the DEIS, requiring treatment.

Hydrometallurgical waste disposal into cells within the existing tailings basin are assumed to be fully contained and to cease drainage after 34 years. The project description does not adequately discuss where the drainage is occurring relative to the cells or how it is captured. It appears to indicate some drainage is exiting the cells on a regular basis, but will cease 34 years after operations begin. This assumption seems unlikely, since the area has a positive water balance. In addition, we understand that a lime mixture will be added to reduce process waste acidity. Since the hydrometallurgical waste cell units would be lined but not covered until closed, rain water and snow melt will accumulate in the units, and flows may continue for many years.

Recommendation: The revised/supplemental DEIS needs to further clarify information on hydrometallurgical waste drainage, and we recommend adopting a management plan to monitor for drainage and, as necessary, manage drainage beyond year 34 from these cells. The revised/supplemental DEIS should more fully explain how the 34-year limit would be appropriate for hydrometallurgical cell drainage.

Downstream Water Quality

Downstream lakes and drinking water sources

The limited amount of monitoring data for Colby Lake and the Whitewater Reservoir are inadequate to accurately evaluate water quality (p. 4.1-37 and Table 4.1-25). The existing high levels of aluminum and mercury in Colby Lake are a concern. Mean levels at this site from available monitoring data exceed the chronic Class 2Bd water quality standard for aluminum, which is 125 ug/L, and the range of data shows significantly high values. Even given the lack of sufficient data, the modeling results show concentrations for several contaminants in Colby Lake in excess of the water quality standards. Furthermore, the modeling does not appear to evaluate potential mercury impacts. The DEIS acknowledges that there is little water quality information on Whitewater Reservoir. Our review finds the evaluation of water quality impacts in the DEIS to be inadequate.

Recommendation: We recommend collecting adequate additional data for Colby Lake and the Whitewater Reservoir that will support the proposed action will meet water quality standards.

The amount of arsenic predicted to be in Colby Lake is 4.9 ug/L; the standard is 2.0 ug/L (p. 4.1-141). The text describes adjusting the model to achieve lower concentrations, but does not offer the data and reasoning behind the adjustment. Readjusting variables to less conservative inputs still produced a highest predicted arsenic concentration of 1.9 ug/L.

Recommendation: We recommend the revised/supplemental DEIS evaluate mitigation options that will reduce arsenic levels from the proposed action.

Predicted concentrations of other constituents in Colby Lake may call for long-term prevention or management. Predicted elevations of iron, manganese, thallium and sulfate will exceed the wild rice standard of 10 mg/L. Colby Lake is classified as a Class 1B water which only requires disinfection as a treatment for use as a public water supply. This treatment would not successfully address the constituents mentioned above.

Regarding manganese, there are sufficient studies and data currently available to generate a water quality criterion for this chemical. While this has not been done by EPA at the national level, or by the Minnesota Pollution Control Agency at the state level to date, the data are available and are being used by other states to develop criteria. For example, Illinois EPA has a proposed acute aquatic life water quality standard for manganese before the Illinois Pollution Control Board; the proposed standard (which is below 10 mg/l) has a hardness relationship and was developed for 50 mg/L hardness. (At higher hardness levels, the toxicity of manganese is lower and the resulting criterion would therefore be higher.) The hardness in Colby Lake seems to be within a range of 50 mg/L, and manganese would be elevated under project conditions. This information is mentioned here for consideration when discussing possible impacts on aquatic life.

Recommendation: We recommend the revised/supplemental DEIS address the potential for additional management to prevent contamination to Colby Lake, or additional treatment at the Colby Lake Public Water Supply.

There is no Safe Drinking Water Act maximum contaminant limit (MCL) for aluminum, however, several studies have shown various health effects related to aluminum. Aluminum, iron and manganese are easily removed by certain treatment technologies; however, the DEIS does not specify whether these technologies are in use in the Hoyt Lake public water system (PWS). We understand that the Hoyt Lake PWS uses open basin sedimentation, gravity sand filtration and some form of corrosion control. Although these techniques will help reduce the concentration of these metals, they are not the most effective at making significant reductions. A discussion of metals removal is needed to determine impacts on the public water systems of Hoyt Lake. It may be adequate to cite the American Water Works Association 2006 survey of 52 utilities that primarily used "conventional treatment" and the effectiveness of this treatment on manganese removal. The average manganese removal was 86%.

> **Recommendation:** The revised/supplemental DEIS should include information to support the DEIS conclusion that there will not be any impacts to the public water system in Hoyt Lakes. An analysis of the water systems treatment removal capabilities, especially for aluminum, should be included to ensure that these contaminants will not be an issue.

Wild rice

The DEIS does not clearly address whether the Minnesota water quality criterion of 10 mg/L for wild rice waters will apply to the project. The DEIS acknowledges that isolated patches of wild rice were found in the Upper Partridge River, a tributary of the St. Louis River. Minn. R. Ch. 7050.0470 designates the St. Louis River as a wild rice water. The DEIS concludes, however, that both the proposed action and the Mine Site Alternative would comply with all surface water quality standards along the Partridge River, though the project may cause sulfates to exceed 10 mg/L.

> **Recommendation:** The revised/supplemental DEIS should clarify the application of the Minnesota wild rice sulfate water quality standards in Minn. R.Ch. 7050.0220 and 7050.0224, given that the DEIS acknowledges the presence of isolated patches of wild rice in the Upper Partridge River, and describe whether sulfates from the project will impact the St. Louis River. We recommend the revised/supplemental DEIS include the 10 mg/L sulfate number within the tables of lists of applicable standards and predicted water quality (Page 4.1-141) and include a discussion of how it applies to on-site and downstream waters potentially affected.

Tribal water quality standards

Reservation lands of the Fond du Lac Band of Minnesota Chippewa are located directly downstream from the mining site along the St. Louis River and have EPA-approved tribal water quality standards. Many of the Tribe's water quality standards are more stringent than Minnesota's standards because the Tribe uses a higher fish consumption rate in the numeric criteria calculations (i.e. 60 grams/day compared to 30 grams/day for Minnesota). The project's potential to affect water quality on the reservation needs to evaluated.

> **Recommendation:** The revised/supplemental DEIS should include the Fond du Lac downstream water quality standards in its discussion of applicable water quality standards and how the standards will be met (pp. 4.1-30 - 4.1-32).

The Grand Portage Band of Minnesota Chippewa, whose reservation is located northeast of the project site, has EPA-approved water quality standards. Many of that Tribe's human health numeric criteria, for example mercury, are calculated using a subsistence fish consumption rate of 142 grams/day, so any additional mercury (either direct discharges, or indirectly through the sulfate influence on methylation) to Lake Superior may have indirect impacts on the Grand Portage Band and their subsistence resources due to the bioaccumulation of mercury through the food chain. Page 4.5-20 of the DEIS concludes that there will be no incremental risks to recreational or subsistence fishers; however, the fish consumption levels for "recreational" and "subsistence fishers" are not defined. The Grand Portage Band has wildlife mercury standards to protect fish-eating birds (e.g., bald eagles, kingfishers, mergansers, etc.), as well as fish-eating mammals (e.g., otter and mink). The DEIS acknowledges that mercury will be discharged to the Partridge River and may eventually end up in Lake Superior.

Recommendation: The revised/supplemental DEIS should define the subsistence fish consumption levels used to support the DEIS conclusions. It should also consider other Tribes located on Lake Superior that may also be adversely affected by higher mercury levels in fish tissue due to consumption rates higher than the general population (e.g., the Bad River and Red Cliff Reservations in Wisconsin, and the Keweenaw Bay Indian Community's Ontonagon Reservation on the Upper Peninsula of Michigan). We recommend the revised/supplemental DEIS describe how the NorthMet project may contribute to exceedance of the Grand Portage Band's water quality standards for wildlife.

Cumulative Impacts to Water Quality

The water quality analyses in the DEIS mentions existing high constituent baselines (for example, arsenic in Colby Lake) when discussing the reasons that the project will potentially bring the water body nearer to exceeding water quality standards. EPA points out that the purpose of the cumulative impacts assessment is to identify just these instances. However high the baseline, a new project should not contribute an increment that brings the water body to the point of exceeding water quality standards.

Recommendation: We recommend re-evaluating cumulative impacts based on relevant data on project impacts, as noted in the comments in the water quality section above.

II. Wetlands

Synopsis: Insofar as the USACE is using the DEIS to support the CWA Section 404 wetlands fill permit decision, the revised/supplemental DEIS needs to address several wetlands permitting issues, including alternative mine plans, an assessment of wetlands functions, mitigation ratios, and a complete analysis of and mitigation for the indirect impacts to wetlands. EPA has determined that the DEIS does not contain sufficient information to demonstrate compliance with the CWA 404(b)(1) Guidelines (Guidelines). Pursuant to the Guidelines, the applicant bears the burden of clearly demonstrating that the preferred alternative is the least environmentally damaging practicable alternative (LEDPA) that achieves the overall project purpose, minimizes impacts to the aquatic environment to the maximum extent practicable, and does not cause or contribute to significant degradation of waters of the U.S. The Guidelines contain four main requirements (40 CFR 230.10(a) through (d)) and each must be satisfied to comply with Section 404.

Wetland Permitting

In our June 9, 2005 letter the to the District Engineer, EPA reserved its right to elevate our objections to the individual wetlands fill permit for this project, under CWA Section 404(q) due to the potential that this project may result in substantial and unacceptable impacts to aquatic resources of national importance (ARNI). The proposed Mine Site contains approximately 1,300 wetland acres, which are within the Partridge River Watershed, which flows through Colby Lake to the Embarrass River and then to the St. Louis River and Lake Superior. Of these, 73% of the more than 1,100 wetlands acres proposed to be impacted consist of open bog and coniferous bog communities. Other wetland types at the Mine Site are coniferous swamp, alder thicket, hardwood swamp, wet meadow, and some shallow marsh. The wetland functional assessment included in the DEIS indicates that more than 90% of the wetlands to be impacted have Minnesota Rapid Assessment Method (MnRAM) scores corresponding to high vegetative diversity and high overall wetland quality. The DEIS also states that the Minnesota County Biological Survey (MCBS) has identified the Mine Site as having High Biodiversity Significance. For the above reasons, EPA believes the coniferous and open bogs, comprising a large percentage of the approximately 33,880 total wetland acres within the Partridge River Watershed to be an ARNI due to the values they provide in terms of unique habitat, biodiversity, downstream water quality, and flood control.

The lack of information on mining alternatives could be an issue in determining if the proposed mine plan is practicable based on 40 CFR 230.10(a) of the Guidelines. EPA believes that the DEIS does not support the Proposed Action as the least environmentally damaging practicable alternative (LEDPA). EPA is concerned that alternatives exist that would have less adverse impacts to the aquatic environment. The DEIS states that underground mining is not a feasible alternative because it would not be economically viable (Table 3.2-4: Alternatives E7 Underground Mining and Footnote 22), but the DEIS lacks information to justify this statement.

As detailed above, the water quality impacts are also a concern with regard to the Guidelines. In particular, 40 CFR Section 230.10(b), prohibits "discharges that will result in a violation of the water quality standards." If water quality standards cannot be met in conjunction with this project as described within the DEIS (e.g. West Pit Overflow-Page 4.1-113), we would not support the issuance of a permit for this project.

The Guidelines also prohibit a project that causes or contributes to significant degradation of aquatic resources (40 CFR 230.10(c)). Effects contributing to significant degradation include: (1) adverse affects on plankton, fish, shellfish, wildlife, and special aquatic sites (40 CFR 230.10(c)(1)), (2) adverse affects on life stages of aquatic life (40 CFR 230.10(c)(2)), and (3) aquatic ecosystem diversity, productivity, and stability including loss of fish and wildlife habitat (40 CFR 230.10(c)(3)). The DEIS lacks information to justify that the project will not cause or contribute to significant degradation of aquatic resources because (1) even with mitigation some of the proposed mitigation options are unlikely to replace lost aquatic resource functions, and (2) the DEIS underestimates the amount of indirect wetland impacts.

Because much of the wetland impact monitoring and mitigation will be finalized during the permitting process, the revised/supplemental DEIS should include a description of the status of the 404 permit review and, if applicable, further 401 certification review (such as timeline, agency and public participation).

Recommendations: We recommend the revised/supplemental DEIS include information about the feasibility and economic viability of underground mining for this project. We recommend resolving water quality concerns prior to the 404 permit review.

Wetland compensation and mitigation

EPA recommends that mitigation for forested and bog wetland types have a minimum ratio of 2:1 for restoration due to the quality of the wetlands, the relative uncertainty of mitigation success, and the extended period of time (decades) that functions associated with forested/bog wetland types will be lost while mitigation areas are establishing themselves. The DEIS presumes a ratio of 1.5:1 and states that the actual replacement ratios required in permitting may exceed the minimum allowed, based on wetland functions and values (Page 4.2-29). Pursuant to 40 CFR Part 230.94, *Compensatory Mitigation for Losses of Aquatic Resources (Mitigation Rule)*, a compensatory mitigation plan must be submitted and approved by the Corps before the District Engineer can issue an Individual CWA section 404 permit. This plan must address a number of critical details regarding mitigation including: clearly articulated project goals and objectives; project site selection criteria; site protection instruments (e.g., conservation easements); detailed quantitative and qualitative baseline information describing both the impact and compensation sites; a detailed discussion of the mitigation project's credit determination methodology and results; a maintenance plan; ecological performance standards used to evaluate the degree to which the compensation projects are replacing lost functions and area; detailed monitoring requirements; a long-term management plan describing necessary long-term stewardship of the compensation sites and who is responsible for performing this stewardship; an adaptive management plan; and financial assurances to ensure project construction, implementation, and long-term management. Compensatory mitigation is intended only for unavoidable impacts after the LEDPA has been determined.

Given the magnitude of direct and indirect impacts, we believe that the revised/supplemental DEIS should include specific information on the wetland mitigation plan for all impacts and describe how the wetlands mitigation plan will address functional replacement. More information is also needed on the proposed on-site wetland mitigation, as well. Currently, the mitigation plan described in the DEIS does not account for functional replacement of the impacted wetlands, which include high quality forested wetland types. The DEIS projects that 175 acres of on-site wetlands will be used for compensation, but few details are outlined in either the DEIS or the referenced *Wetlands Mitigation Plan Supplement.* The DEIS also states that 40 acres of created wetlands would be established within the East Pit, separate from treatment wetlands created to treat effluent from the WWTF. It is not clear how the treatment wetlands would be separated from the mitigation wetlands.

The mitigation plan does not include compensation for the additional 475 acres of wetlands impacts at the mine site that were identified in the DEIS.

Recommendations:

- EPA recommends adopting a 2:1 mitigation ratio for restoration, given the relative uncertainty of success and the extended period of time (decades) that functions associated with forested/bog wetland types will be lost while mitigation areas are establishing themselves.

- EPA recommends adding the following in the revised/supplemental DEIS regarding the wetland monitoring plan: when the plan will be developed, how long monitoring will be required, and who will have the opportunity to review the plan.
- We recommend that the wetland mitigation and monitoring plan also include a description of financial assurances that will be established to ensure adequate long-term implementation.
- We recommend the revised/supplemental DEIS describe how the wetlands mitigation plan will address functional replacement.
- The revised/supplemental DEIS should include additional information on the 175-acre on-site compensation (such as wetland type, soil characteristics, and past history of wetland creation on copper mine spoils) to assess its viability.
- We recommend using native seed mixes and weed-free mulch in the on-site wetland mitigation site. (This approach is described only for minimizing direct wetland impacts in the DEIS.)
- We recommend the DEIS address mitigation for the remaining potential 475 acres of wetlands impacts.

Indirect wetlands impacts

The potential for releases of ore and other mine debris and consequent impacts to soil, surface water, groundwater, and wetlands along the rail lines should be quantified and addressed in this document. On page 4.2-21, the text asserts that spillage of ore from rail cars is difficult to estimate. If so, the DEIS should offer information to support the conclusion that predicted impacts to wetlands along the transportation corridor are likely to be insignificant. The discussion of predicted indirect wetland impacts to areas beyond the mine site is based in part on empirical evidence from taconite mines in the area (p. 4.2-20, Section 4.2.3.1). Before the conclusion that little indirect impact is anticipated at the Mine Site can be accepted, additional support should be provided with details of the experience at other sites and in particular how those sites compare to the proposed project.

The procedure used to estimate the area of indirect wetland impacts north of the tailings basin needs further support. The use of this methodology should be supported by its use at other similar open pit mine sites or cited by its use in scientific literature.

The text states that additional wetland vegetation and hydrologic monitoring "would be conducted to determine if any additional indirect wetland impacts would occur" (p. 4.2-25). The conditions under which this additional monitoring will be conducted should be specified.

Recommendations: EPA recommends the revised/supplemental DEIS include a complete discussion of indirect impacts to wetlands along rail lines and at the mine site.

The assessments of indirect impacts at the tailings basin and along rail lines should be supported by specific information from other sites, if they are referenced, or by a discussion of methodologies. We recommend describing proposed monitoring.

Groundwater/ wetland interaction: mine site

Page 4.1-5, Section 4.1.1.2, 3rd paragraph: While information gained from the aquifer tests will be important to evaluate potential interaction between the wetlands and the deeper aquifers, these tests may not provide direct evidence on whether wetlands adjacent to the mine pits will be indirectly impacted by mine dewatering activities. The pumping test methodology is not provided in the DEIS. The pumped well will affect groundwater heads in the pumped aquifer; this stress may or may not influence groundwater heads in the wetland sediments. However, conceptually, the ability of the pumping test to evaluate future mining dewatering conditions is not clear. The project is proposed to be an open pit mine, with the overlying unconsolidated material removed to extract the ore – this is conceptually different from the presumed pumping tests where the overlying wetland sediments were present. The open pit would then provide a direct conduit for potential infiltration of wetland sediments adjacent to the pit.

Page 4.1-21, Section 4.1.1.3, 3rd paragraph: The DEIS states that base flow to the Partridge River is low during winter months because of reduced groundwater recharge. This statement appears accurate; however, on page 4.1-5, 1st paragraph, the DEIS cites extremely low seepage rates from wetlands to the underlying surficial aquifer. Does the low base flow during winter, as opposed to more steady base flow conditions, reflect a closer interactive between wetlands, unconsolidated aquifer underlying wetlands, and surface water than expected?

Page 4.2-19, Section 4.2.3.1, 1st and 2nd paragraphs: The distinction between wetlands that are bogs (precipitation-supported) and other communities dependent on groundwater (e.g., swamps) is critical. The assertions in this section regarding the lack of communication between perched bogs and the underlying groundwater require additional support with data from the project area before the conclusion that "no indirect wetland impacts are anticipated at the Mine Site from groundwater quality" can be accepted. Some data and analysis from the site suggests a connection between bedrock aquifers and surficial aquifers, such as the presence of ammonia and nitrates in the deeper aquifer.

Recommendation: EPA recommends that additional ground water data be collected to adequately evaluate the interconnection between bedrock and the surficial aquifers and wetlands.

III. Air Emissions

Mercury emissions

The DEIS states that the facility could emit up to 8.3 pounds of mercury per year (p. 4.6-34). Minnesota's Statewide Mercury Total Maximum Daily Load (TMDL) recognizes mercury air emissions as a chief source of depositional mercury to surface waters. In the TMDL implementation plan, MPCA notes a need for mercury emission reductions overall. The DEIS does not, however, discuss plans to control mercury emissions. Current gold mining operations in Nevada currently employ either activated carbon filters or the Boliden chlorine treatment method to essentially remove all elemental mercury from the gas exhaust streams. Nevada gold mines also effectively treat mercury emissions from autoclaves using activated carbon filtration.

> **Recommendation:** We recommend the revised/supplemental DEIS describe mercury mitigation measures for the project.

Cumulative impacts modeling

EPA notes that the air quality modeling presented in the DEIS excluded emissions from the Keetac Taconite Mine and Processing Expansion Project and other proposed projects in the vicinity of the NorthMet project. Tribal cooperating agencies have noted this in several comments in the DEIS.

> **Recommendation:** The air quality modeling to assess cumulative impacts should consider all current and reasonably foreseeable projects in the area. We recommend adding these sources into the model and including the new information in the revised/supplemental DEIS.

IV. Financial Assurance

Financial assurance should be discussed in a revised or supplemental Draft EIS because it is critical to determining whether all funding will be available and adequate for proper closure, reclamation, and post-closure care can be met by the mining company. Because the amount and viability of financial assurance are critical factors in determining the effectiveness of these activities, EPA believes it is necessary to analyze these factors in the revised/supplemental DEIS to determine the significance of potential impacts and the feasibility of long-term mitigation measures. For example, if appropriate closure, reclamation, and post-closure care measures are significantly under-funded, contamination of surface water and groundwater may not be controlled. EPA believes the adequacy of financial assurance for these activities could make the difference between a project sufficiently managed over the long-term by the site operator, or an unfunded or underfunded contaminated site that becomes a liability for the Federal government and the public, e.g., under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

> **Recommendation:** We recommend USACE ask the mining company to describe adequate financial assurance as part of a revised/supplemental DEIS so that the

information on the feasibility and commitment to long-term controls and/or treatment can be evaluated during the decision-making process. The State requirements for financial assurance should be described in the revised/supplemental DEIS, as well. We recommend that the revised or supplemental DEIS identify the estimated bond amounts needed for each closure and reclamation activity for the proposed project facilities and also discuss whether and how the state can modify the bond during the course of operations if temporary, long-term, or perpetual treatment and/or remediation needs are discovered during operations. We recommend identifying responsible parties for any post-closure cleanup actions should they be necessary, as part of financial assurance.

We recommend the DEIS estimate contingency reclamation cost. While the DEIS acknowledges that Minnesota Rule 6132.1200 requires the mining company to establish financial assurance one year after the beginning of operations, this information is not included in the DEIS. There is no discussion of how NorthMet intends to meet the Minnesota contingency rule, except that it pledges to comply.

EPA suggests the revised/supplemental DEIS include a reasonable determination of contingency closure cost estimates based on the plan of operations.

V. Other Issues

Asbestos-like minerals

The DEIS does not evaluate the potential for asbestos-like minerals to be released in water effluent or air emissions, although asbestos-like minerals and their health effects are emerging concerns on the Iron Range. Section 4.6.5.1 of the DEIS indicates that asbestos and asbestos-like fibers may be found in the ore deposit. The DEIS concluded that "impact [from asbestos fibers] is of uncertain magnitude." This conclusion is not supported by the analysis, and the potential impacts to air and water quality from this source bear further discussion and quantification.

Recommendation: EPA recommends that the revised/supplemental DEIS include an appendix that reevaluates the potential for asbestos-like minerals to be found in the ore deposit. It should discuss an adaptive management approach that includes how the company proposes to monitor, and if necessary, address the potential release of asbestos-like minerals into the environment during operation, closure, and post-closure.

Impacts along rail lines

We recommend quantifying the potential for releases of ore and other mine debris along rail lines between the mine site and processing plant. The revised/supplemental DEIS should describe and address any consequent impacts to soil, surface water, groundwater, and wetlands along the rail lines.

U.S. Forest Service connected action: land transfer

The Mine Site is located within the Superior National Forest. Based on the nature of title to this land, the U.S. Forest Service (USFS) maintains it does not have the authority to make a decision regarding open-pit mining. USFS has indicated access to the mineral body is achievable via a land exchange or sale. Therefore, mining activities cannot take place without the transfer of land from the USFS to PolyMet.

Proposed actions are connected if they are interdependent parts of a larger action and depend on the larger action for their justification (CFR 1508.25). The National Forest land in question would not be transferred out of USFS ownership if not for the nature of the proposed mining project, making the proposed land transfer a connected action. As a connected action, impacts associated with the land transfer should be identified and analyzed as part of this DEIS. EPA finds the DEIS incomplete without the following: 1) a discussion of USFS regulations governing land transfers, 2) an analysis focused on the trade-offs between the two parcels, and 3) information explaining that any decision made by USACE is conditioned upon a successful land exchange between the USFS and PolyMet. Effects to threatened and endangered species, timber production, and recreation are among the issues that should be identified and analyzed for both parcels.

Federal trust responsibilities should also be addressed since the land proposed for the Mine Site is part of tribal 1854 Treaty Ceded Territory. The DEIS should be revised to identify and analyze all impacts to tribes and Tribal trust resources that would result from a land transfer. Issues related to tribal resource availability and tribal access will be particularly important. The following questions should be addressed:

- What will this new parcel(s) contribute to treaty rights or resources?
- What impacts to quality and quantity of tribal trust resources will occur due to a potential land transfer?
- What cumulative impacts to 1854 Treaty Ceded Territory trust resources will occur as a result of this land transfer (for example, impacts to moose movement and habitat quantity and quality over the entire 1854 Treaty Ceded Territory)?

As federal agencies, USACE, USFS, and EPA need to ensure that federal trust responsibilities are adequately addressed in this analysis.

> **Recommendation:** We recommend the revised/supplemental DEIS address analysis pertaining to the land transfer with the USFS and impacts to tribal trust resources. The subsequent Final EIS would encompass impacts from all aspects of the proposed project and present a comprehensive, cumulative impacts analysis. This information is necessary to make an informed decision regarding the proposed project.

Impacts in the 1854 Ceded Territory and to tribes practicing reserved rights in the Territory

Insofar as a cumulative impacts study's geographic area need to reflect the geographic range of an individual resource outside a project property line, so should it reflect the geographic range of uses. In this case, the 1854 Ceded Territory functions as a single geographic area of legal jurisdiction in which tribes may engage in certain practices of cultural heritage and subsistence.

Recommendation: We recommend the revised/supplemental DEIS evaluate and disclose impacts to all media collectively across the 1854 Ceded Territory as a whole. We also recommend removing references to the draft work known as "the Protocol to Assess Expanded Cumulative Impacts to Native Americans." The referenced work is a draft document in development and is neither published by EPA nor publicly available.

SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION*

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS sate, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alterative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

DEC 2 1 2016

REPLY TO THE ATTENTION OF
WN-15J

Ann Foss
Metallic Mining Sector Director
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155-4194

Re: U.S. Environmental Protection Agency Review of the Draft NPDES/SDS Permit for U.S. Steel Corp. – Minntac Tailings Basin Area, Permit No. MN0057207

Dear Ms. Foss:

The U.S. Environmental Protection Agency has reviewed the Minnesota Pollution Control Agency's (MPCA) draft National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) permit and related documents which was public noticed on November 15, 2016. EPA is providing the following comments on the draft permit.

We are concerned that this draft permit as written does not address, under MPCA's approved National Pollutant Discharge Elimination System (NPDES) program and in accordance with the Clean Water Act (CWA), all discharges to surface waters from this tailings basin. MPCA acknowledges in the fact sheet that discharges from this 8,700 acre tailings basin are causing exceedances of surface water quality standards. Based on this and facts supporting this conclusion, the CWA requires all such discharges to surface waters from the tailings basin be authorized by an NPDES permit. The original NPDES permit, which was issued in 1987, did not contemplate the full extent of the discharges to surface waters from this facility. In the years between expiration of that permit and today the nature and water quality impacts of the discharges to surface waters have continued and are better understood.

As a result, there is a need for an NPDES permit that includes extensive and specific actions, and definitive timeframes for these actions that will result in attaining water quality standards in the receiving waters. MPCA's proposed approach would establish compliance schedules that do not set a date by which compliance with surface water quality standards will be achieved nor do they fully describe the steps necessary to achieve compliance with these standards. In addition, we are concerned that some of the statements in MPCA's draft fact sheet regarding EPA's interpretation of the scope of the NPDES program are incorrect and should be corrected prior to MPCA finalizing this draft permit.

In this case the tailings basin is a point source which, according to MPCA's own documentation is discharging pollutants to nearby surface waters in the Sand and Dark River watersheds via direct, unmonitored surface seeps and subsurface pathways, as well as to the Dark River via the monitoring point identified as SD001. The permittee, by its own documentation acknowledges that approximately 3,000 gallons per minute, or 4.3 million gallons per day are discharged from the tailings basin via subsurface seepage to the Sand and Dark River watersheds[1]. MPCA appears willing only to regulate the portion of the discharge to the Dark River that passes through Monitoring Station SD001 as a discharge requiring NPDES permit coverage.

The tailings basin is a point source that discharges pollutants to surface waters in the Sand and Dark River watersheds, which, as explained above is consistent with EPA's past interpretation that the CWA applies to discharges of pollutants from a point source to waters of the United States, including those made via ground water that has a "direct hydrologic connection" to surface water.[2] EPA's longstanding position is that a discharge from a point source to jurisdictional surface waters that moves through groundwater with a direct hydrological connection comes under the purview of the CWA's permitting requirements. *E.g.,* Amendments to the Water Quality Standards Regulations that Pertain to Standards on Indian Reservations, 56 Fed. Reg. 64,876, 64,982 (Dec. 12, 1991) ("[T]he affected ground waters are not considered 'waters of the United States' but discharges to them are regulated because such discharges are effectively discharges to the directly connected surface waters.").

The CWA's language prohibiting "any addition of any pollutant to navigable waters from any point source" does not limit liability only to discharges of pollutants *directly* to navigable waters. *See Rapanos v. United States*, 547 U.S. 715 at 743 (2006) (plurality op.) (emphasis in original). Courts have interpreted the CWA as covering not only discharges of pollutants directly to navigable waters, but also discharges of pollutants that travel from a point source to navigable waters over the surface of the ground or through underground means. *E.g., Sierra Club v. Abston Constr. Co.*, 620 F.2d 41, 44-45 (5th Cir. 1980). As one court noted, "it would hardly make sense for the CWA to encompass a polluter who discharges pollutants via a pipe running from the factory directly to the riverbank, but not a polluter who dumps the same pollutants into a man-made settling basin some distance short of the river and then allows the pollutants to seep into the river via the groundwater." *N. Cal. River Watch v. Mercer Fraser Co.*, No. 04-4620, 2005 WL 2122052, at *2 (N.D. Cal. Sept. 1, 2005).

The CWA defines point sources as follows:

> The term 'point source' means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. This term does not include agricultural stormwater discharges and return flows from irrigated agriculture. *33 U.S.C 1362(14)*

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[1] Liesch Associates, Inc. Memorandum to U.S. Steel. RE: January 2010 Minntac Tailings Basin Seep Estimate. January 26, 2010. (enclosed)

[2] See, Proposed National Pollutant Discharge Elimination System Regulations for Concentrated Animal Feeding Operations, 66 *Fed. Reg*. 2960, 3015 (Jan. 12, 2001); NPDES General Permits for Storm Water Discharges from Construction Activities, 63 *Fed. Reg.* 7,858, 7,881 (Feb. 17. 1998).

The need for an NPDES permit is highly dependent on the facts surrounding each situation. 66 *Fed. Reg.* at 3015; 63 *Fed. Reg.* at 7881. As EPA has explained:

> The determination of whether a particular discharge to surface waters via ground water which has a direct hydrologic connection is a discharge which is prohibited without an NPDES permit is a factual inquiry, like all point source determinations. The time and distance by which a point source discharge is connected to surface waters via hydrologically connected [ground] waters will be affected by many site specific factors, such as geology, flow, and slope. . . 66 *Fed. Reg.* at 3017.

The facts in this situation include the following and support a finding that the tailings basin point source is discharging pollutants to the nearby surface waters:

- The tailings basin is a container that holds tailings and wastewater
- The tailings basin is discharging pollutants to the surrounding surface waters through direct surface discharges and seeps and via subsurface flow which has a direct hydrologic connection as evidenced by:
  - Elevated pollutant concentrations in the receiving waters which are also present in the tailings basin waters
  - No other sources, or minimal other sources, contributing those pollutants to the same receiving waters,
  - Pre basin construction surface water quality data that demonstrate that the pollutants were not elevated in the receiving waters prior to basin construction, and
  - U.S. Steel's estimate that approximately 3,000 gallons of wastewater per minute are being discharged from the tailings basin to surface waters.

Receiving Waters – MPCA, by its own documentation acknowledges that pollutants are being discharged from the basin into the Sand River watershed. MPCA has even drafted compliance limits that apply in the Sand River watershed (although these limits do not have any effective date). However, the Sand River is not listed among the surface waters authorized to receive discharges under the draft NPDES permit. Failing to include the Sand River as a receiving water to which U.S. Steel is authorized to discharge under the NPDES permit would constitute a discharge of pollutants to surface waters in the absence of NPDES permit coverage, a violation of the Clean Water Act.

Timber Creek runs along the western side of the tailings basin and flows into the Dark River. There is evidence of ponding along the west side of the Basin, viewable from aerial imagery, indicating that pollutants are seeping from the basin directly into adjacent surface waters on the west side of the basin. It is likely that these pollutants are flowing into Timber Creek and reach the Dark River. Timber Creek is also not listed among the receiving waters to which U.S. Steel would be authorized to discharge to under this NPDES permit.

There is evidence, based on aerial imagery that the tailings basin is creating ponding in wetlands immediately adjacent to the basin on both the east and west sides. However, the permit would not authorize these discharges, as wetlands are not among the surface waters to which the permittee would be authorized to discharge and, if confirmed, would constitute a discharge of pollutants to surface waters in the absence of NPDES permit coverage, a violation of the Clean Water Act.

Compliance Schedule – MPCA has included some compliance limits in the draft permit that apply at certain surface water monitoring stations. However, these limits are not effective until the "Final Period". There is no definition of the "Final Period" in the draft permit. However, since MPCA has determined that the limits effective in the "Final Period" are necessary and there is no date at which they would be effective, the permit does not contain limits as stringent as necessary to ensure compliance with the applicable water quality requirements, as required by 40 C.F.R. § 122.4(d).

While the draft permit contains "compliance schedules" in three different Sections of Chapter 1, none of the schedules comport with 40 C.F.R. § 122.47, as they do not contain dates by which the permittee must attain compliance with final effluent limits, and do not contain enforceable milestones that ensure that the permittee is attaining compliance as soon as possible. An enforceable compliance schedule (or schedules) that contains a final compliance date is particularly important in light of the possibility that this NPDES permit is once again administratively continued for a long period of time. MPCA would be able to modify the schedule upon permit reissuance if new information becomes available that justifies a modification to the schedule.

Further, the draft permit includes schedules that require submittals of plans and schedules that then would become part of the permit. It appears that these submittals would constitute permit modifications that do not follow the procedures for modifying permits, including issuing public notice, in 40 C.F.R. § 124.

Limits and Monitoring Requirements –

Sandy and Little Sandy Lakes (a.k.a. the "Twin Lakes"), on the east side and downstream of the tailings basin, have been known to produce wild rice historically, as documented by the Minnesota Department of Natural Resources (MNDNR)[3] and in more recent years in a diminished capacity as documented by the 1854 Treaty Authority in their 2016 report.[4] The Sand River and Twin Lakes are downstream waters receiving discharges from the tailings basin and it appears that wild rice production is an existing use in these water bodies as defined by 40 C.F.R. § 131.3(e). Therefore, MPCA needs to include the Sand River in the draft NDPES permit including water quality based limits that will meet all applicable water quality standards [including the state's wild rice standard based on the documented wild rice stands in the Sand River and Twin Lakes, or explain why this standard does not apply].

Dark River at (SD001) - MPCA calculated WQBELs, shown in the fact sheet, for sulfate at 1221 mg/L daily maximum and monthly average of 1080 mg/L. The Draft Permit incorrectly expresses the monthly average limit as 1221 mg/L and does not contain the necessary daily maximum limit. Similarly, for specific conductance the fact sheet says that the daily maximum limit should be 1197 mg/L and the average monthly limit should be 1072 mg/L, but MPCA has only included an incorrect monthly average limit at 2430 mg/L. In addition, the fact sheet indicates that MPCA's calculation of the average monthly limit is based on 2x per month

[3] Minnesota DNR. Memo from Gerald McHugh, Wild Rice Coordinator, December 7, 1987 (enclosed)

[4] 1854 Treaty Authority. Sandy Lake and Little Sandy Lake Monitoring (2010-2016). Vegetation Surveys starting on Page 16. (enclosed)

monitoring, but the permit only requires 1x per month monitoring. No justification for the discrepancy is included in the Fact Sheet.

Class 1B Reach of the Dark River (AUID 09030005-525) – the fact sheet states that discharges from the tailings basin are contributing to an exceedance of water quality standards (sulfate) that applies in the section of the Dark River downstream of the tailings basin that is designated as a Class 1B water. MPCA is proposing to implement a limit based on the criteria that apply in the Class 1B reach at a compliance monitoring station upstream, rather than at a compliance point in the Class 1B segment. MPCA appears to be applying a rationale that the concentration of sulfate at the upstream location ("SW003") can be approximately double the criteria that must be met in the downstream Class 1B segment of the River, based in part on available dilution. It is unclear how MPCA can authorize a discharge, to a surface water that is not meeting criteria, and limit sulfate to more than double the concentration necessary to protect the criteria.

Reasonable Potential Analysis - MPCA has decided not to conduct a reasonable potential analysis for several parameters for which it has limited data pertaining to discharge characterization (despite the facility operating under an NPDES permit since 1987). MPCA should conduct the reasonable potential analysis with the information that it has, and in addition should add monitoring requirements to the draft permit, for all of the surface water and discharge monitoring stations, monthly monitoring for at least the following parameters that have been detected in the discharge: Selenium, Arsenic, Cobalt, Copper, Manganese, and Thallium.

Permit Modification – In a few paragraphs in the permit, MPCA requests that the company apply for permit modifications. As you are aware, the permit may be modified during its term for cause under 40 C.F.R. § 122.62. MPCA need not wait for the permittee to submit an application for permit modification, if, for example, MPCA promulgates and EPA approves new water quality standards that need to be applied in the permit, as this would be a cause for permit modification under 40 C.F.R. § 122.62(a)(2).

Federal Effluent Limitations Guidelines at 40 C.F.R § 440.10 - It is unclear how MPCA is implementing the zero discharge requirements at 40 C.F.R. § 440.12(c) which requires that the facility not discharge wastewater from mills… with the exception of "a volume of water equivalent to the difference between annual precipitation falling on the treatment facility and … the annual evaporation…". In this case the processing facility is located at the adjacent mining area which is covered under NPDES Permit No. MN0052493. In order to evaluate compliance with 40 C.F.R. § 440.12(c), discharges from the mining area permit and the tailings basin area permit would have to be considered. The permit would have to require monitoring and reporting of all of the discharges from the tailings basin rather than limiting the monitoring, reporting, and therefore the estimation of the volume of discharge, to just that which passes through the monitoring station at SD001.

Construction of Dark River Seep Collection and Return System - It is unclear why MPCA is requiring the permittee to build a Seep Collection and Return System on the west side of the basin. There is no basis for this requirement provided in the fact sheet, and to our knowledge there is limited information as to how the system is predicted to resolve outstanding water quality standards exceedances in the Dark River. In a letter from EPA to the St. Paul District Army Corps of Engineers dated September 16, 2015 regarding the pending CWA Section 404 application for the construction of the Dark River Seepage Collection and Return System (SCRS), we articulated concerns regarding the substantial changes in hydrology and loss of function to wetlands within the project boundary as well as adjacent wetlands; specifically the effect the proposed discharges will have on water circulation, fluctuation, water chemistry[5] as well as secondary effects on aquatic ecosystems[6]. The wetlands and open water complexes within the project footprint, as both conduits and storage basins for mine tailings seep water, will be subjected to increased concentrations of mine tailings constituents (e.g. hardness, total dissolved solids, specific conductance, alkalinity and sulfate), thus resulting in lower quality wetlands with diminished functional capabilities. In the letter, EPA objected to the construction of the Dark River SCRS because of a lack of compliance with the 404(b)(1) Guidelines. As such, EPA recommended a comprehensive monitoring plan and additional compensatory mitigation be required to address our concerns regarding the determination of wetland impacts and compensatory mitigation requirements.

The comments provided in this letter transmit EPA's initial concerns with the draft permit. Please see the enclosure for additional comments that you should consider to improve the enforceability or clarity of the draft permit language. We look forward to working with you as we conduct a formal review of the permit consistent with Section II. of our Memorandum of Agreement. When the Proposed Permit is prepared, please forward a copy and any significant comments received during any public notice period to r5npdes@epa.gov. Please include the permit number, the facility name, and the words "Proposed Permit" in the message title. If you have any technical questions related to EPA's review, please contact Krista McKim at (312) 353-8270 or at mckim.krista@epa.gov.

Sincerely,

Kevin M. Pierard, Chief
NPDES Programs Branch

cc: Erik Smith, MPCA

Enclosures:

Enclosure A: Additional comments

Liesch Associates, Inc. Memorandum to U.S. Steel. RE: January 2010 Minntac Tailings Basin Seep Estimate. January 26, 2010.

Minnesota DNR. Memo from Gerald McHugh, Wild Rice Coordinator, December 7, 1987

1854 Treaty Authority. Sandy Lake and Little Sandy Lake Monitoring (2010-2016). (enclosed)

[5] 40 CFR § 230.11(b)
[6] 40 CFR § 230.11(h)

Enclosure A:
EPA's Additional Comments on the Draft
NPDES/SDS Permit No. MN0057207

Monitoring Station Location information
We recommend that you provide latitude-longitude coordinates in the monitoring station identification descriptions to improve the precision of this information in the permit and fact sheet

Throughout the draft permit MPCA interchanges different names for monitoring stations. For example, "CR668" is sometimes used to refer to SW003 or D-1. To improve the clarity of the permit, we suggest MPCA revise the permit to refer to monitoring stations by the same name throughout the permit.

Internal outfall monitoring stations WS002, WS003, WS004, WS005, WS006 and WS007 were all removed from this permit when compared to the previous draft. Please provide an explanation as to why monitoring at these locations is no longer needed or desired.

Please provide an explanation as to why the limit for oil and grease and monitoring for dissolved oxygen at SD001 have been removed from this draft permit when compared to the previously issued permit.

Please provide an explanation as to why dissolved oxygen monitoring requirements were removed from the surface water monitoring stations in the draft permit

Please explain why the monitoring station SW004, which was proposed in the pre-public notice draft of the permit that EPA reviewed in 2014 to be located in the Class 1B reach of the Dark River has been removed completely from this draft of the permit.

Please explain why monitoring for sulfate was removed for monitoring station SW005 during the final period.

Compliance Schedule at Chapter 1.1.1:
MPCA has included a schedule in the draft permit to require the permittee to reduce the concentration of sulfate in the basin pool water ultimately to 357 mg/L "within ten years of permit issuance, or the shortest reasonable period of time…". If MPCA intends for this schedule to end after ten years, the language should be revised to be clear that ten years is the maximum amount of time allotted to the permittee in this schedule. Also, neither this schedule nor any other included in the draft permit comports with 40 C.F.R. § 122.47.

Compliance Schedule starting at Chapter 1.1.6:
Aside from this schedule also failing to meet the requirements of 40 C.F.R § 122.47 because it lacks enforceable milestones, and a final compliance date, the schedule also appears to remove from MPCA the ability to approve any of the plans and schedules that the permittee would submit under the schedule. We recommend that the language be changed to provide the

permittee with explicit plan requirements, specifications, quality assurance and milestones for any plan to allow the permittee to move forward in implementation of the plan once it is developed in accordance to those requirements. Such plans should be provided to MPCA 30 days prior to implementation. The permit should contain explicit, enforceable milestones that require the permittee to make progress toward and ultimately achieve compliance with water quality standards.

Compliance Schedule starting at Chapter 1.1.22

While this schedule does require the permittee to construct and operate the Seep Collection and Return system by a date certain, and the text refers to monitoring requirements at SW003, there is no link to any "Final Period" or date at which the sulfate limit that is effective in the final period would come into effect. Therefore, this schedule also fails to comport to 40 C.F.R. § 122.47. Further, the schedule indicates that the permittee or MPCA would be evaluating the "mathematical relationship" of results from samples taken at "CR668" and "CR65" for 12 months. The text does not explain what the mathematical relationship should be compared to or evaluated against. There are no monitoring requirements in the permit at "CR65" (a.k.a. SW004), so it is unclear how the permittee is supposed to compare new data taken from the crossing of CR65 at the Dark River to data taken at SW003 (a.k.a. "CR668"). It is also not clear what MPCA is requiring the permittee to request in terms of a permit modification in this paragraph. As stated earlier, MPCA can modify the permit for cause under 40 C.F.R § 122.62, and would not necessarily need the permittee to apply for a permit modification if one of the causes listed in 40 C.F.R. § 122.62(a) are present.

Whole Effluent Toxicity Testing

Whole Effluent Toxicity (WET) testing is required by the draft permit in the Sand River watershed at SW005, which is over a mile from the basin. WET testing should be conducted on the effluent, and therefore on a sample taken from a monitoring station closer to the basin so that the sample can be as representative of the effluent as possible.

Minn. Chamber of Commerce v. Minn. Pollution Control Agency

Minnesota District Court, County of Ramsey, Second Judicial District

May 10, 2012, Decided; May 10, 2012, Entered

Court File No. 62-CV-10-11824

Reporter
2012 Minn. Dist. LEXIS 194 *

Minnesota Chamber of Commerce, Plaintiff, vs. Minnesota Pollution Control Agency, Defendant, and WaterLegacy, Defendant-Intervenor.

Subsequent History: Affirmed by Minn. Chamber of Commerce v. Minn. Pollution Control Agency, 2012 Minn. App. Unpub. LEXIS 1199 (Minn. Ct. App., Dec. 17, 2012)

Prior History: Minnesota Chamber of Commerce v. Minnesota Pollution Control Agency, 469 N.W.2d 100, 1991 Minn. App. LEXIS 388 (Minn. Ct. App., 1991)

Core Terms

rice, sulfate, vague, void, cultivated, irrigation, narrative, plant, unconstitutionally, agricultural, Pollution, wildlife, Declaratory, susceptible, injunction, aquatic

Counsel: **[*1]** For Plaintiff: Thaddeus Lightfoot, Esq.

For Minnesota Pollution Control Agency, Defendant: Robert B. Roche, Assistant Attorney General.

For WaterLegacy, Defendant-Intervenor: Paula Maccabee, Esq.

Judges: HON. MARGARET M. MARRINAN, JUDGE OF DISTRICT COURT.

Opinion by: MARGARET M. MARRINAN

Opinion

FINDINGS OF FACT, CONCLUSIONS OF LAW AND ORDER FOR JUDGMENT

This matter came on for hearing on the parties' cross motions for summary judgment on March 1, 2012. Thaddeus Lightfoot, Esq., appeared on behalf of Plaintiff; Assistant Attorney General Robert B. Roche appeared on behalf of Defendant Minnesota Pollution Control Agency; Paula Maccabee, Esq., appeared on behalf of Defendant-Intervenor WaterLegacy.

Plaintiff has withdrawn its claim regarding Count I of the Amended Complaint.

Plaintiff seeks partial summary judgment on the remaining following counts:

> 1) Count II: in which it alleges that the "Wild Rice Rule" is unconstitutionally vague and thus a violation of due process. The basis for this allegation is that the term "when rice may be susceptible to damage from high sulfate levels" is

not defined.

2) Count III: in which it alleges that Defendant's actions applying the "Wild Rice Rule" exceed Defendant's statutory authority **[*2]** and are arbitrary and capricious because:

a. Defendant would apply them to all waters in the state rather than limit them to waters used for agricultural irrigation in the production of wild rice; and

b. Defendant has created a narrative wild rice classification for Class 4A waters without specifically listing or otherwise classifying those waters; and

c. Defendant has required that Plaintiff members perform wild rice surveys to determine whether waters fall within the narrative sub-classification.

3) Count IV: in which it asks the Court to construe the Wild Rice Rule under the authority of the Minnesota Declaratory Judgments Act (Minn. Stat. Ch.555).

Defendant and Defendant-Intervenor seek summary judgment regarding all of Plaintiff's claims.

FINDINGS OF FACT

1. The Minnesota Legislature has adopted wild rice as the official grain of the State of Minnesota and has explicitly recognized the importance of protecting it. Minn. Stat. § 1.148, subd. 1 (2010).

2. In keeping with the policy set by Minn. R. 7050.0186,[1] and in order to comply with the United States Environmental Protection Agency (EPA) requirements under the Federal Water Pollution Control Act Amendments of 1972, in 1973 the Minnesota Pollution Control Agency **[*3]** (MPCA) adopted water quality standards for Class 4 waters of the state.

The rationale for protection of these waters is addressed by Minn. R. 7050.0224, subp.1:

> The *numeric* and *narrative* [emphasis supplied] water quality standards in this part prescribe the qualities or properties of the waters of the state that are necessary for the agriculture and wildlife designated public uses and benefits. Wild rice is an aquatic plant resource found in certain waters within the state. The harvest and use of grains from this plant serve as a food source for wildlife and humans. In recognition of the ecological importance of this resource, and in conjunction with Minnesota Indian tribes, selected wild rice waters have been specifically identified [WR] and listed in part 7050.0470, subp.1.[2] The quality of these waters and the aquatic habitat necessary to support the propagation and maintenance of wild rice plant species must not be materially impaired or degraded. If the standards in this part are exceeded in waters of the state that have the Class 4 designation, it is considered indicative of a polluted condition which is actually or potentially deleterious, harmful, detrimental, or injurious with **[*4]** respect to the designated uses.

Minnesota's wild rice sulfate standard is found in Minn. R. 7050.0224, subp. 2 (2011). The rule provides in pertinent part:

> Class 4A waters. The quality of Class 4A waters of the state shall be such as to permit their use for irrigation without significant damage or adverse effects *upon any crops or vegetation usually grown in the waters or area*, [emphasis supplied] including truck garden crops. The following standards shall be used as a guide in determining the suitability of the waters for such uses ...: Sulfates (SO_4) 10 mg/L, applicable to water used for production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels.
>
> Minn. R. 7050.0224, subp. 2 (2011).

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[1] "It is the policy of the state to protect wetlands and prevent significant adverse impacts on wetland beneficial uses caused by chemical, physical, biological or radiological changes. The quality of wetlands shall be maintained to permit the **[*5]** propagation and maintenance of a healthy community of aquatic and terrestrial species indigenous to wetlands, preserve wildlife habitat, and support biological diversity of the landscape. In addition these waters shall be suitable for.... irrigation... as specified in part 7050.0224, subpart 4...."

[2] This rule specifically identifies as [WR] the sub-set of wild rice waters in the Lake Superior watershed.

Of the subparts to the water quality standards in Minn.R. 7050.0224, subpart 2 (Class 4A waters) is the only one that specifically refers to crops and vegetation. Classes 4B and C have as their focus livestock and wildlife.

3. The MPCA adopted a wild rice numeric sulfate standard of 10 milligrams per liter ("mg/L") for water used for production of wild rice based on recommendations by the Minnesota Department of Natural Resources ("MDNR") that sulfate concentrations above that level are a serious detriment to the natural and cultivated growth of wild rice.

4. In addition to the numeric standard, Minnesota Rules also adopted a narrative standard that applies only to specifically identified wild rice waters. Minn.R. 7050.0224, subp.1, *supra*.

5. Whether standing alone, or viewed in tandem with the above rules, the term "when the rice may be susceptible to damage by high sulfate levels" is straightforward and understandable: if the rice is at a point in development when sulfates can damage it, the maximum sulfate **[*6]** level is 10 mg/L.

6. Testimony from the hearing on the initial adoption of the wild rice sulfate standard clearly establishes that, from the time of its initial adoption, the MPCA intended the wild rice sulfate standard to protect both naturally growing and cultivated wild rice.[3]

7. The first time that the MPCA imposed a discharge limit based on the wild rice sulfate rule (Minn. R. 7050.0224, Subp. 2) was in a 1975 permit for the Clay Boswell Steam Electric Station ("Clay Boswell Permit").

8. The record of the administrative hearing for the Clay Boswell Permit reflects that the hearing examiner supported application of a sulfate limit in that permit in order to protect natural stands of wild rice, not agricultural irrigation of cultivated wild rice.[4]

9. The MPCA issued sulfate limits three other times: a June 17, 2010 permit modification for U.S. Steel Corporation (Keetac mining area) and two October 25, 2011 permits for U.S. Steel (Keetac mining area and tailings basin). It is notable that the areas **[*7]** in question affect *natural* stands of wild rice, not the agricultural irrigation of cultivated rice. The direct receiving waters included both listed waters (Welcome Creek and O'Brien Creek) and unlisted waters (Welcome Lake and O'Brien Reservoir). All of these waters were classified as Class 4A and 4B waters. U.S. Steel neither requested an administrative hearing nor challenged the permit at the Court of Appeals.

10. In 2010, the EPA, addressing the issue of sulfate discharge for the Keetac mine expansion and the proposed PolyMet NorthMet mining project, advised Defendant MPCA that the wild rice protection rule must be applied to limit that discharge in receiving waters. Both of those projects affected natural stands of wild rice, rather than agricultural irrigation for cultivated rice[5] The waters to which this sulfate limit applied included lakes, rivers and creeks not specifically listed as wild rice waters in Minn. R. 7050.0470, Subp. 1.[6]

11. The MPCA has approximately ten years of sulfate data for mining discharges because it has monitored wastewater discharges from **[*8]** mining operations in order to evaluate their overall toxicity and their potential to adversely affect groundwater. The agency concluded that this data could be useful in evaluating the potential impact of mining discharges on the wild rice sulfate standard.[7]

12. To determine whether sulfate dischargers are potentially interfering with attaining the wild rice sulfate standard, the MPCA reviews permit applications on a case-by-case basis. Where the data suggests that a discharge has high levels of sulfates upstream of a water identified as one potentially used for production of wild

[3] Affidavit of Gerald Blaha, Ex. C, p. 27: testimony of John McGuire, Chief of the Section of Standards and Surveys, Division of Water Quality, MPCA.

[4] Affidavit of Gerald Blaha, Paragraph 9.

[5] Affidavit of Paula Maccabee, Ex. 8 and 9.

[6] Swan Lake, Swan River, Hay Creek, Hay Lake and Upper Partridge River. *Id*.

[7] The MPCA does not yet have similar data for municipal discharges, but is in the process of obtaining it as part of a broader MPCA strategy to evaluate the impact of wastewater discharges on Class 3 and Class 4 water standards. It intends to use the monitoring data to determine whether additional discharge limits are necessary to protect Class 3 and 4 water quality standards, including the wild rice sulfate standard.

rice, the agency may request dischargers to conduct surveys to determine if the discharge is, in fact, upstream of a water used for production of wild rice. This authority derives from M.S. 115.03, subd. 1 (e) (7) **[*9]** which gives the agency the authority to require owners and operators of such discharge systems to do so.

13. As part of the permit review process, the MPCA reviews the following information: (i) available wild rice records and databases that the MDNR maintains; (ii) consultation with aquatic plant biologists at the MDNR; (iii) information received from external stakeholders, including, but not limited to, Native American tribes and environmental groups; and (iv) information provided by the discharger.

14. The MDNR's list of waters where wild rice has been identified is not an exhaustive list of waters used for production of wild rice. Where a permit applicant discharges upstream of a water that is not on the MDNR list, but which has been identified as potentially producing wild rice, the MPCA has requested that the permit applicant conduct a survey of any wild rice stands in the receiving waters to help determine whether the receiving water is a water used for production of wild rice.

15. Any party who disagrees with the MPCA's determination of 1) whether a water qualifies as a water used for production of wild rice or 2) whether the permit needs to include a sulfate limit **[*10]** has the option of requesting a contested case hearing before an administrative law judge on the issue pursuant to Minn. R. 7000.1800. Although Plaintiff's members allege they have been affected by the wild rice sulfate standard, they failed to request such a hearing, and have sought relief under Chapter 555 of the Minnesota Statutes.

16. During the 2011 Minnesota Legislative Session, it was proposed that the application of Minnesota's wild rice sulfate standard be suspended, or that the sulfate standard be increased from 10 mg/L to 50 mg/L. In response to those proposals, on May 13, 2011 the U.S. EPA[8] wrote the sponsoring legislators warning that:

> 1) "[L]egislation changes [to] the EPA-approved water quality standards for Minnesota...must be submitted to EPA for review...and are not effective for Clean Water Act (CWA) purposes, including [National Pollutant Discharge Elimination System] permits, unless and until approved by EPA; and
> 2) If it "determined that a state is not administering its federally approved NPDES program in accordance with requirements of the CWA, EPA has the authority to...withdraw authorization of the program...."

17. Rather than passing either of the above bills, the 2011 Minnesota legislature passed, and the governor signed, a bill regarding the wild rice sulfate standard. Minn. Laws 2011 1 Sp. c. 2, art. 4, § 32. That law requires the MPCA to form an advisory group and conduct an extensive study of the impacts of sulfates and other substances on wild rice. *Id*. at § 32(c)&(d). Once that research is complete, the bill requires the MPCA to amend the wild rice sulfate standard to:

> (i) address water quality for both natural stands of wild rice and cultivated wild rice;
>
> (ii) specifically designate waters to which the wild rice sulfate standard applies; and
>
> (iii) designate the times of year when the standard applies. *Id*. at § 32(a)(1)-(3).

18. Pursuant to that legislation, the MPCA has formed an advisory group and held three meetings of that group to date (October 10, 2011, November 30, 2011 and March 27, 2012), established a study protocol, published a Request for Proposals to undertake research outlined in the study protocol, submitted a legislative report as required by December 15, 2011, and awarded a contract to the University of Minnesota to conduct the **[*12]** wild rice/sulfate studies.

CONCLUSIONS OF LAW

1. Plaintiff has withdrawn its claim that the MPCA's application of the wild rice sulfate standard has violated the Equal Protection Clause of the United States Constitution. Summary Judgment in favor of the MPCA and Defendant-Intervenor is therefore proper as to that claim.

2. Summary judgment is appropriate under the

[8] The EPA has delegated the administration of the federal **[*11]** Clean Water Act in Minnesota to the MPCA.

Minnesota Rules of Civil Procedure, when "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that either party is entitled to judgment as a matter of law. Minn.R.Civ.P. 56.03.

3. There are no genuine issues of material fact and the MPCA has demonstrated that it is entitled to judgment as a matter of law on each of Plaintiff's alleged claims.

A. Counts II and Count III: The Wild Rice Rule does not violate due process. It is not unconstitutionally vague, nor is the application of the rule arbitrary and capricious.

4. An agency rule is unreasonable (and therefore invalid) when it fails to comport with substantive due process because it is not rationally related to the objective sought to be achieved.[9] **[*13]** The rationale underlying the Wild Rice Rule (Minn. R. 7050.0224, subp. 2) is found in the subparagraph preceding it: since wild rice is a food source for both wildlife and humans, the quality of the waters and the aquatic habitat necessary to support its propagation and maintenance must not be materially impaired or degraded. The policy upon which this rationale is based (Minn.R.7050.0186) is the protection of the quality of wetlands so as to "permit the propagation and maintenance of a healthy community of...species indigenous to wetlands...In addition these waters shall be suitable for...irrigation...."

5. Where a rule is challenged as "invalid as applied", Minnesota law allows only limited judicial inquiry into the validity of an administrative regulation in question. The party challenging the rule bears a heavy burden and must establish that the rule is not rationally related to the legislative ends sought to be achieved or that in adopting the rule the MPCA exceeded its statutory authority.[10]

6. **[*14]** Plaintiff has not met its burden of proving that the MPCA's application of the wild rice sulfate rule conflicts with statutory authority or is otherwise not rationally related to the legislative goal of protecting the environment. MPCA's application of the wild rice sulfate rule is reasonably related to achieving the legitimate goal of protecting Minnesota's environment.

7. Minnesota's Class 4 waters, which encompass the sub-classification of Class 4A waters, are "waters of the state that are or may be used for any agricultural purposes, including stock watering and irrigation, or by waterfowl or other wildlife, and for which quality control is or may be necessary to protect terrestrial life and its habitat or the public health, safety, or welfare." Minn. R. 7050.0140, subp. 5 (2011).

8. Minnesota's Class 4A water quality standards are intended to protect both naturally occurring vegetation grown in the waters themselves and cultivated crops in the area around the water. The MPCA's application of the wild rice sulfate standard to protect naturally growing wild rice in ambient waters of the state is legally valid because it is consistent with the plain language of the water quality standard. **[*15]** Minn. R. 7050.0224, subp. 2.

9. Under Minnesota law, "[t]he object of all interpretation and construction of laws is to ascertain and effectuate the intention of the legislature." Minn. Stat. § 645.16 (2010). Minnesota courts apply the provisions of chapter 645 to both statutes and administrative rules. The administrative and legislative records clearly demonstrate that the MPCA has always intended the wild rice sulfate rule to protect both cultivated and natural stands of wild rice. The agency's application of the rule to waters with natural stands of wild rice is legally valid because it is consistent with the administrative history and intention of the regulation.

10. The MPCA's application of the wild rice sulfate rule to protect waters with natural stands of wild rice is also consistent with a number of established legislative policies and statutory duties, among them the duty to ensure that the State of Minnesota maintains its responsibility to administer the federal Clean Water Act in Minnesota.[11]

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[9] *Mammenga v. Dep't of Human Services*, 442 N.W. 2d 786, 789 (Minn. 1989).

[10] *Mammenga v. Dep't of Human Services*, 442 N.W. 2d 786 (Minn. 1989); *Hirsch v. Bartley-Lindsay Co.*, 537 N.W.2d 480 (Minn. 1995).

[11] Minn. Stat. § 115.03, subd. 5 (2010) ("the agency shall have the authority to . . . establish and appl[y] rules . . . and permit conditions, consistent with and, therefore not less **[*16]** stringent than the provisions of the Federal Water Pollution Control Act, as amended,

11. In the 2011 special session, the legislature specifically directed the MPCA to adopt an amended rule which shall "address water quality standards for waters containing natural beds of wild rice, as well as for irrigation waters used for production of wild rice . . . ." Minn. Laws 2011 1 Sp. c. 2, art. 4, § 32 (a)(1). The MPCA's application of the wild rice rule to protect natural stands of wild rice is consistent with legislative policy that explicitly recognizes the importance of wild rice to the State of Minnesota.

12. The wild rice sulfate standard is a numeric standard set forth in Minn. R. 7050.0224, subp. 2. Minn. R. 7050.0224, subp.1 also includes a narrative standard that applies only to specifically identified wild rice waters. Minn. R. 7050.0470, subp. 1 (2011), in turn, specifically identifies [WR] the sub-set of wild rice waters in the Lake Superior watershed to which this narrative applies.

To the extent Plaintiff claims that the narrative wild rice standard does **[*17]** not identify the waters to which that narrative standard applies, the claim fails as a matter of law.

13. Under Minnesota law, "[a] statute that does not implicate First Amendment freedoms is facially void for vagueness only if it is vague in all its applications. Unless the statute proscribes no comprehensible course of conduct at all, it will be upheld against a facial challenge."[12]

14. The Plaintiff has not established that the wild rice sulfate rule is vague in all of its applications or that it proscribes no comprehensible course of conduct at all. The MPCA applied this rule in the Clay Boswell Permit and an independent hearing examiner supported the application of the rule in that case. The MPCA has recently applied the rule in the reissuance of the U.S. Steel Keewatin Taconite permit. U.S. Steel neither requested an administrative hearing nor challenged the permit in the Court of Appeals.

15. Under Minnesota law, a party challenging a law on constitutional grounds, including vagueness, bears a heavy burden **[*18]** of proof.[13] The Plaintiff must overcome every presumption of constitutionality and show that the wild rice sulfate standard is unconstitutionally vague as applied to Plaintiff's members. Plaintiff has not met this burden.

Sulfate Standard not Void for Vagueness

16. Contrary to Plaintiff's assertion, the fact that the wild rice sulfate standard does not include an explicit definition for the term "when the rice may be susceptible to damage by high sulfate levels" does not render the rule void as applied. The void for vagueness doctrine demands **[*19]** only that laws be drafted with "sufficient definiteness that ordinary people can understand what conduct is prohibited."[14] Even if a law speaks in "broad, flexible standards that require persons subject to a statute to exercise judgment," or requires persons to "rely on common sense and intelligence to determine whether their conduct complies with the law [it] does not render the law unconstitutionally vague."[15]

17. The civil, regulatory nature of the wild rice sulfate standard is subject to a "vagueness test" that is less strict than for criminal statutes. "To find a civil statute void for vagueness, the statute must be 'so vague and indefinite as really to be no rule or standard at all.'"[16] The challenged law must "define the forbidden or required act in terms so vague that individuals must guess at its meaning . . . ."[17] Put another way: "a statute

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applicable to the participation by the State of Minnesota in the national pollutant discharge elimination system (NPDES)")

[12] *State v. Normandale Properties, Inc.*, 420 N.W.2d 259, 262 (Minn. Ct. App. 1988) (citing *Village of Hoffman Estates v. Flipside Hoffman Estates, Inc.*, 455 U.S. 489, 102 S.Ct. 1186, 1191, 71 L. Ed. 2d 362 (1982).

[13] "In attacking a rule on due process grounds, including a vagueness challenge, the challenger bears a heavy burden [cit. om.] The standard for determining vagueness is well-settled: [it is] void for vagueness if it fails to give a person of ordinary intelligence a reasonable opportunity to know what is prohibited or fails to provide sufficient standards for enforcement...The rule should be upheld unless the terms are so uncertain and indefinite that after exhausting all rules of construction it is impossible to ascertain legislative intent." *Minnesota Chamber of Commerce v. Minnesota Pollution Control Agency*, 469 N.W.2d 100, 107 (Mn.App. 1991).

[14] *State v. Romine*, 757 N.W.2d 884, 891 (Minn. Ct. App. 2008) (quoting *Kolender v. Lawson*, 461 U.S. 352, 103 S. Ct. 1855, 1858, 75 L. Ed. 2d 903 (1983)).

[15] *State v. Enyeart*, 676 N.W.2d 311, 321 (Minn. Ct. App. 2004).

[16] *Seniors Civil Liberties Ass'n v. Kemp*, 965 F.2d 1030, 1036 (11th Cir. 1992).

[17] *Humenansky v. Minn. Bd. of Med. Examiners*, 525 N.W.2d 559,

will be upheld against a facial challenge unless [it] proscribes no comprehensible course of conduct at all".[18]

18. Civil laws regulating business are less likely to be void for vagueness than criminal laws "because businesses, which face economic demands to plan behavior carefully, can be expected to consult relevant legislation in advance of action. Indeed, the regulated enterprise may have the ability to clarify the meaning of the regulation by its own inquiry, or by resort to an administrative process."[19]

19. The application of the wild rice sulfate rule to Plaintiff in this case is not unconstitutionally vague under this standard. Plaintiff's members are not left to guess as to what conduct is prohibited or required under this rule.

20. The wild rice sulfate rule is an ambient water quality standard. As such, it describes the desired condition of Minnesota's waters, but is not a discharge standard and does not proscribe or prohibit conduct.[20] The only way that the MPCA can require or prohibit action based on the wild rice sulfate standard is through a permitting action.[21]

21. Before the MPCA issues a permit for a point source such as Plaintiff's members, it is legally required to publish a draft of the permit for public review and comment. Minn. R. 7001.0100 (2011). If Plaintiff's proposed permit includes a limit based on that rule, then Plaintiff's members have thirty days to review, comment on, and question that proposed limit. Any party who disagrees with the terms of a proposed MPCA permit has the right to request a contested case hearing before an administrative law judge to review and clarify the terms of the proposed permit. Minn. R. 7000.1800 (2011). Any party who is aggrieved by the agency's final decision in a permitting action has a right of certiorari review by the Court of Appeals. Minn. Stat. § 115.05, subd. 11 (2010). Plaintiff **[*22]** has not and cannot show that any of its members have been left guessing as to what conduct is required or prohibited. Plaintiff's void for vagueness challenge fails as a matter of law.

22. The term "when the rice may be susceptible to damage by high sulfate levels" is straightforward and can be understood using plain language. If wild rice is at a point in its life cycle when sulfates will damage the plant, then the receiving water must not exceed 10 mg/L. Because the rule can be applied based on its plain language, it is not void for vagueness. The goal of the law is to protect production of wild rice in Minnesota. In view of that goal it is reasonable to conclude that the standard applies at a point in the wild rice life cycle when sulfate is found to damage the plant. The rule is not void for vagueness.

"Bodies of Water" not Void for Vagueness

23. The fact that the MPCA does not specifically list every body of water to which the wild rice sulfate standard applies neither violates the Due Process clause of the Constitution nor does it exceed MPCA's statutory authority: neither the Constitution nor Minnesota or federal statutes require a state to list expressly every surface water to **[*23]** which a water quality standard applies. Such a requirement would be particularly absurd in a state such as Minnesota.[22]

24. Nor does the lack of a specific listing render the rule unconstitutionally vague. Plaintiff's members are not left guessing as to whether the wild rice sulfate standard applies to a particular water or as to what is required of them under the standard because the proposed permit details exactly what is required of Plaintiff's members.

25. The wild rice sulfate standard is likewise consistent

564 **[*20]** (citing Kolender v. Lawson, 461 U.S. 352, 103 S. Ct. 1855, 1858, 75 L. Ed. 2d 903 (1983).

[18] *State v. Normandale Properties, Inc*., 420 N.W.2d 259, 262 (Minn. App 1988).

[19] *Village of Hoffman Estates*, 102 S.Ct. at 1193

[20] Minn. R. 7050.0224, subp. 2.

[21] See, for **[*21]** example., 40 C.F.R. § 122.44(d)(1) (2011) (requiring permitting authority to impose discharge limits in permits where evidence shows that discharge has reasonable potential to cause or contribute to a violation of a water quality standard in a receiving water); Minn. R. 7001.0150, subp. 2 (2011) (requiring MPCA issued permits to include terms necessary to achieve compliance with applicable state and federal law).

[22] According to the Minnesota Legislative Manual (2011-2012) there are 11,842 lakes of more than 10 acres, 3 major river systems, and 6,564 (69,200 miles) rivers and streams.

with state and federal statutory requirements.

State Law

26. Under Minnesota law, the MPCA has the duty and the authority "to establish and alter such reasonable pollution standards for any waters of the state in relation to the public use to which they are or may be put as it shall deem necessary for the purposes of this chapter . . ." Minn. Stat. § 115.03, subd. 1(c) (2010). Nothing in the statute suggests that the MPCA is required to list every single water to which a water quality standard applies. The **[*24]** legislature has given the MPCA broad discretion as to how to best structure Minnesota's water quality standards and has expressly recognized that it is proper for the MPCA to establish water quality standards for *groups* of waters instead of listing every single water to which a standard applies. The legislature has required the MPCA to "group the designated waters of the state into classes, and adopt classifications and standards of purity and quality therefore." Minn. Stat. § 115.44, subd. 2 (2010).

27. The MPCA's administrative rules likewise recognize the need for the agency to employ grouping in the establishment of water quality standards.[23] The assertion that Minnesota law requires a specific list of each water to which a water quality standard applies is without merit.

28. In adopting the wild rice sulfate standard, the MPCA established a group of waters to which the standard applies. That group of waters consists of "waters used for production of wild rice." Minn. R. 7050.0224, subp. 2 (2011). This type of grouping is expressly authorized under Minnesota **[*25]** law.

29. As the EPA made clear in its May 13, 2011 letter to the Minnesota Legislature, the EPA has formally approved Minnesota's wild rice sulfate standard. When the EPA approves a state's water quality standard, it must determine whether the standard is "consistent with the requirements of the Clean Water Act." 40 C.F.R. § 131.5 (a)(1). In approving the wild rice sulfate standard, the EPA concluded that the standard is consistent with the federal Clean Water Act. Plaintiff's assertion that the wild rice sulfate standard is in any way inconsistent with the Clean Water Act lacks merit.

Federal Law

30. There is no requirement in federal law for the state to list expressly every single water to which a water quality standard applies in order for the standard to apply. On the contrary, the federal Clean Water Act allows for application of water quality standards to water bodies that are implicated without being expressly listed on an individual basis.

31. Minn. Laws 2011 1 Sp. c. 2, art. 4, § 32(a)(2) directs the MPCA to initiate rulemaking regarding identification of waters to which this wild rice sulfate standard applies. Plaintiff's assertion that state and federal law would require such **[*26]** a listing is inaccurate and would significantly impede the MPCA's ability to fulfill its statutory obligation to promulgate and enforce water quality standards for the State of Minnesota.

32. The Wild Rice Rule (Minn. R. 7050.0224, subp.2) is rationally related to both the stated policy and rationale of the rules and is not void for vagueness.

B. Count IV: Plaintiff's are not entitled to a Declaratory Judgment.

33. M.S. 555.02 specifies the actions a court may construe under the Declaratory Judgment Act:

> Any person...whose rights, status or other legal relations are affected by a statute, municipal ordinance, contract, or franchise may have determined any question of construction or validity arising [under the same] and obtain a declaration of rights, status or other legal relations thereunder.

34. This act is not an express independent source of jurisdiction[24]: it does not create an independent cause of action. Because Plaintiff's substantive claims all fail as a matter of law, Plaintiff's Declaratory Judgment Act claim must also be dismissed.

35. To the extent that Plaintiff's claims are **[*27]** based

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[23] *See* Minn. R. 7050.0140, subp. 1 ("the waters of the state are grouped into one or more of the classes in subparts 2 to 8.")

[24] *Alliance for Metropolitan Stability v. Metropolitan Council*, 671 N.W.2d 905, 915 (Minn. App. 2003).

on permitting actions that the MPCA may take in the future, those claims are conjectural and not subject to court action at this time.[25]

36. Given the above, Plaintiff has adequate remedies at law and is not entitled to a declaratory judgment.

C. Request for Equitable Relief

37. Plaintiff has requested that the Court "preliminarily and permanently" enjoin the MPCA from imposing any of the sulfate discharge limitations discussed above. Case law addressing Minn.R.Civ. P. 65.02 (temporary injunctions) has established five factors determining whether such an injunction should be granted: a) the nature of the relationship; b) relative hardships; c) likelihood of success on the merits; d) public policy; and e) administrative burdens.[26]

38. Analyzed under those factors, Plaintiff's request should be denied. As with Minn. R. Civ.P.65.01, the threshold question is whether there is immediate and irreparable injury that constitutes a ground for the issuance of the injunction and whether that party **[*28]** does not have an adequate remedy at law.[27] The failure to meet this burden is, in and of itself, a sufficient basis on which to deny the relief.[28] In this case, each of Plaintiff's claims are based on actions that the MPCA allegedly *may* take in the context of permitting proceedings. Plaintiff has an adequate remedy at law for any MPCA permitting decision: the right to request a contested case hearing before an administrative law judge on any MPCA permitting matter,[29] and a statutory right of certiorari review of any final MPCA permitting decision before the Minnesota Court of Appeals.[30] Because Plaintiff clearly has adequate remedies at law in this case its request for equitable relief must be denied.

39. Analyzed under the *Dahlberg* factors, the Court reaches the same conclusion. In this case the determinative factors under *Dahlberg* are a) the likelihood of success on the merits (see discussion, *supra*;) and b) public policy[31] Balancing the relative hardships between **[*29]** the parties, the analysis also favors the Defendant. While complying with the rules may be more costly to the Plaintiff's members, the rationale for Defendant's action is clearly stated in Minn.R. 7050.0224, subp.1:

> "...The harvest and use of grains from this plant serve as a food source for wildlife and humans...the quality of these waters and aquatic habitat necessary to support the propagation and maintenance of wild rice plant species must not be materially impaired or degraded...

40. Plaintiff's argument that its members may have to take action to comply with the wild rice sulfate standard during the interim period in which the MPCA conducts the research necessary to amend the rule as directed by the Legislature is without merit. The Legislature has already addressed how the wild rice sulfate standard is to be applied during that interim period.[32]

For this Court to second-guess the Legislature's determination of how the standard should be applied while the standard is in the process of being amended is inappropriate. Plaintiff's request for injunctive relief **[*30]** should be denied.

NOW THEREFORE, IT IS HEREBY ORDERED:

1. The motion for summary judgment of Defendant MPCA and Defendant-Intervenor WaterLegacy's is granted in its entirety.
2. Plaintiff's motion for a "preliminary and permanent" injunction is denied.
2. Plaintiff's partial motion for summary judgment is denied in its entirety.
3. Plaintiff's Complaint is dismissed in its entirety with prejudice and on the merits.

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[25] Any such quasi-judicial action is reviewable via certiorari to the Court of Appeals under M.S. 115.05, subd. 11(2010).

[26] *Dahlberg Bros., Inc. v. Ford Motor Co.*, 272 Minn. 264, 137 N.W.2d 314 (1965).

[27] *Unlimited Horizon Mktg., Inc. v. Precision Hub, Inc.*, 533 N.W. 2d 63 (Minn. App. 1995).

[28] *Morse v. City of Waterville*, 458 N.W. 2d 728 (Minn. App. 1990).

[29] Minn. R. 7000.1800 (2011).

[30] Minn. Stat. § 115.05, subd. 11(1) (2010).

[31] See discussion supra at p. 3 regarding Minn.R. 7050.0186, M.S. 1.148, subd. 1.

[32] Minn. Laws. 2011 1 Sp. c. 2, art. 4, § 32 (e).

Attachment 2. Proposed Waters by Basin and the Sources Used to Demonstrate the Beneficial Use

This attachment to the Statement of Need and Reasonableness includes all of the basins where proposed wild rice waters are located. The wild rice waters in each basin are organized by watersheds and include:

- The name of the waterbody
- The county in which the waterbody is located
- The Water Identification Number (WID)
- The water type
- Whether the water is currently listed in Minn. R. pt. 7050.0470 as a wild rice water [WR]
- Identification of the source(s) of information the MPCA is relying on as a basis for listing the water body as a wild rice water.

A key to the codes used to identify the sources of information is provided for each basin.

Contents

Lake Superior Basin

Key for sources in Table

Source	Abbreviation for Source
Natural Wild Rice in Minnesota—A Wild Rice Study Report to the Legislature	MDNR 2008a, MDNR 2008b
Minnesota DNR Wild Rice Harvester Survey Report	2007
Minnesota Wild Rice Management Workgroup List of 350 Important Wild Rice Waters	2010
1854 Treaty Authority List of Wild Rice Waters (3/24/16 version)	1854 List
MDNR Aquatic Plant Management Database	MDNR APM
MPCA Biomonitoring Field Sites	MPCA Biomon
University of Minnesota/MPCA Wild Rice Study Field Survey Sites	U of M/MPCA 2013
Minnesota Biological Survey Database	MBS 2011, MBS 2017
MPCA 2013 Call for Data	MPCA 2013
Permittee Monitoring	Permittee
WR Waters (7050.0470)	7050.047
Waters identified by MDNR in 2015 as wild rice waters	MDNR 2015
Waters identified through MPCA review of various water surveys	Survey

MDNR 2008a indicates waters in MDNR 2008 report with greater than or equal to 2 acres of wild rice.
MDNR 2008b indicates waters in MDNR 2008 report with estimates of less than 2 acres of wild rice or without acreage estimates.

04010101 Lake Superior - North (3/21/2017)

Name	County	WID	Water Type	7050.0470	Source(s)
Baker Lake	Cook	16-0486-00	Lake		1854 List, MPCA 2013
Bigsby Lake	Cook	16-0344-00	Lake		1854 List, MDNR 2008b
Bluebill Lake	Lake	38-0261-00	Lake	[WR]	1854 List, 7050.0470, MDNR 2008a
Bower Trout Lake	Cook	16-0175-00	Lake		1854 List
Brule River	Cook	04010101-502	Stream		1854 List
Cabin Lake	Lake	38-0260-00	Lake	[WR]	1854 List, 2007, 7050.0470, MDNR 2008a, 2010
Caribou Lake	Cook	16-0360-00	Lake	[WR]	1854 List, MDNR 2008a
Christine Lake	Cook	16-0373-00	Lake	[WR]	1854 List, 7050.0470, MDNR 2008a
Cramer Homestead Lake	Lake	38-0246-00	Lake		1854 List, MPCA 2013
Cramer Lake	Lake	38-0014-00	Lake		1854 List, 2007, MDNR 2008a, 2010
Crooked Lake	Lake	38-0024-00	Lake		1854 List, MDNR 2008b
Cross River Lake	Lake	38-0002-00	Lake		1854 List, MPCA 2013
Crown Lake	Lake	38-0419-00	Lake		1854 List, MDNR 2008b
Cuffs Lake	Cook	16-0006-00	Lake		1854 List, MDNR 2008b
Dick Lake	Cook	16-0157-00	Lake		1854 List
East Pipe Lake	Cook	16-0386-00	Lake		1854 List, MPCA 2013
Elbow Lake	Cook	16-0096-00	Lake		1854 List, 2007, MDNR 2008a, 2010
Fourmile Lake	Cook	16-0639-00	Lake	[WR]	1854 List, 7050.0470, MDNR 2008a, 2010
Grassy Lake	Cook	16-0390-00	Lake		1854 List, MDNR 2008b
Gust Lake	Cook	16-0380-00	Lake		1854 List

04010101 Lake Superior - North (3/21/2017)

Name	County	WID	Water Type	7050.0470	Source(s)
Hoist Creek	Lake	04010101-D81	Stream		1854 List
Hoist Lake	Lake	38-0251-00	Lake		1854 List, 2007, MDNR 2008b, 2010
Jack Lake	Cook	16-0521-00	Lake		1854 List, MDNR 2008a
John Lake	Cook	16-0035-00	Lake		1854 List, MDNR 2008b, MPCA 2013
Kelly Lake	Cook	16-0476-00	Lake		1854 List, MDNR 2008a, 2010
Kelso Lake	Cook	16-0706-00	Lake		MPCA 2013
Kowalski Lake	Lake	38-0016-00	Lake		1854 List, MPCA 2013
Little John Lake	Cook	16-0026-00	Lake		1854 List, MPCA 2013
Mark Lake	Cook	16-0250-00	Lake		1854 List, 2007, MDNR 2008b, 2010
Marsh Lake	Cook	16-0048-00	Lake		1854 List, MPCA 2013
Marsh Lake	Cook	16-0488-00	Lake	[WR]	1854 List, 2007, 7050.0470, MDNR 2008a, 2010
Merganser Lake	Cook	16-0107-00	Lake		1854 List
Moore Lake	Cook	16-0489-00	Lake	[WR]	1854 List, 7050.0470, MDNR 2008a, 2010
Moose Lake	Lake	38-0036-00	Lake		1854 List, MDNR 2008b, 2010
Mt. Maud Wetland	Cook	16-0914-00	Wetland		1854 List, MDNR 2008b
North Fowl Lake	Cook	16-0036-00	Lake		1854 List, MDNR 2008b, 2010
North Wigwam	Cook	16-0804-00	Lake		MPCA 2013
Northern Light Lake	Cook	16-0089-00	Lake	[WR]	1854 List, 7050.0470, MDNR 2008a, 2010
Otter Lake	Cook	16-0032-00	Lake		1854 List, MPCA 2013
Peterson Lake	Cook	16-0478-00	Lake		1854 List, MDNR 2008b
Pigeon River	Cook	04010101-501	Stream		1854 List
Prout Lake	Cook	16-0013-00	Lake		1854 List, MDNR 2008b
Rice Lake	Cook	16-0453-00	Lake	[WR]	1854 List, 2007, 7050.0470, MDNR 2008a, 2010
Richey Lake	Cook	16-0643-00	Lake		1854 List, MDNR 2008b
Round Island Lake	Lake	38-0417-00	Lake	[WR]	1854 List, 2007, 7050.0470, MDNR 2008a, 2010
Royal Lake	Cook	16-0025-00	Lake		1854 List
Royal River	Cook	04010101-D75	Stream		1854 List, MDNR 2008b
Sonju Lake	Lake	38-0248-00	Lake		1854 List
South Fowl Lake	Cook	16-0034-00	Lake		1854 List, MDNR 2008b, 2010
South Wigwam Lake	Lake	38-0001-00	Lake		1854 List, MPCA 2013
Swamp Lake	Cook	16-0009-00	Lake		1854 List, MDNR 2008b
Swamp Lake	Cook	16-0256-00	Lake		1854 List
Swamp River Reservoir	Cook	16-0901-00	Lake	[WR]	1854 List, 7050.0470, MDNR 2008a, 2010
Teal Lake	Cook	16-0003-00	Lake		1854 List, MDNR 2008b
Temperance River	Cook	04010101-610	Stream		1854 List, MDNR 2008b
Toohey Lake	Cook	16-0645-00	Lake		1854 List, MDNR 2008b
Turtle Lake	Cook	16-0251-00	Lake		1854 List, 2007, MDNR 2008b
Twentythree Lake	Lake	38-0247-00	Lake		1854 List, MPCA 2013

04010101 Lake Superior - North (3/21/2017)

Name	County	WID	Water Type	7050.0470	Source(s)
Two Island Lake	Cook	16-0156-00	Lake		1854 List
Unnamed (Grd Portage)	Cook	04010101-757	Stream		1854 List
Vern River	Cook	04010101-899	Stream		1854 List, MPCA 2013
White Pine Lake	Cook	16-0369-00	Lake	[WR]	1854 List, 7050.0470, MDNR 2008b
Wonder Lake	Cook	16-0664-00	Lake		1854 List, MPCA 2013

04010102 Lake Superior - South (3/21/2017)

Name	County	WID	Water Type	7050.0470	Source(s)
Christianson Lake	Lake	38-0750-00	Lake		1854 List, MDNR 2008b
Eagle Lake	St. Louis	69-0238-00	Lake		MPCA 2013

04010201 St. Louis River (3/21/2017)

Name	County	WID	Water Type	7050.0470	Source(s)
Anchor Lake	St. Louis	69-0641-00	Lake		1854 List, MDNR 2008a, 2010
Andy Lake	St. Louis	69-0618-00	Lake		1854 List, MPCA 2013
Artichoke Lake	St. Louis	69-0623-00	Lake	[WR]	1854 List, 7050.0470, MDNR 2008b
Bang Lake	Carlton	09-0046-00	Lake		1854 List, MDNR 2008b
Bug Creek	St. Louis	04010201-545	Stream		1854 List
Bug (Whitchel) Lake	St. Louis	69-0531-00	Lake		1854 List, MDNR 2008a, 2010
Butterball (Long) Lake	St. Louis	69-0044-00	Lake	[WR]	1854 List, 2007, 7050.0470, MDNR 2008a, 2010
Cedar Island Lake	St. Louis	69-0568-00	Lake		1854 List
Cedar Lake	Carlton	09-0031-00	Lake		1854 List, MDNR 2008a
Comet Lake	St. Louis	69-0267-00	Lake		1854 List, MDNR 2008b
Cranberry Lake	St. Louis	69-0147-00	Lake		1854 List, MDNR 2008b
Dead Fish Lake	Carlton	09-0051-00	Lake		1854 List, 2007, MDNR 2008a, 2010, UofM/MPCA 2013
Dollar Lake	St. Louis	69-0534-00	Lake		1854 List, MDNR 2008a, 2010
East Stone Lake	St. Louis	69-0638-00	Lake		1854 List, MDNR 2008b, 2010
Elliott Lake	St. Louis	69-0642-00	Lake		1854 List, MDNR 2008a
Embarrass Lake	St. Louis	69-0496-00	Lake		1854 List UofM/MPCA 2013
Embarrass River	St. Louis	04010201-577	Stream		1854 List, 2007, MDNR 2008b, Permittee
Embarrass River	St. Louis	04010201-579	Stream		1854 List, Permittee
Esquagama Lake	St. Louis	69-0565-00	Lake		1854 List
Fourth Lake	St. Louis	69-0573-00	Lake		1854 List
Gill Lake	St. Louis	69-0667-00	Lake		1854 List, MDNR 2008b
Grass Lake	St. Louis	69-0776-00	Lake		1854 List, MDNR 2008b
Hardwood Lake	Carlton	09-0030-00	Lake		1854 List, MDNR 2008a
Hay Lake	St. Louis	69-0150-00	Lake		1854 List, MDNR 2008b
Hay Lake	St. Louis	69-0417-00	Lake		1854 List, 2007, MDNR 2008a, 2010

04010201 St. Louis River (3/21/2017)

Name	County	WID	Water Type	7050.0470	Source(s)
Hay Lake	St. Louis	69-0435-00	Lake	[WR]	1854 List, 7050.0470, MDNR 2008a, 2010, MDNR APM
Hay Lake	St. Louis	69-0439-00	Lake		1854 List, MDNR 2008b
Hay Lake	St. Louis	69-0441-00	Lake		1854 List, MDNR 2008b
Hush Lake	St. Louis	69-0988-00	Lake		1854 List
Jaskari Lake	Carlton	09-0050-00	Lake		1854 List, MDNR 2008a, 2010
Kingburg Lake	St. Louis	69-0771-00	Lake		1854 List, MPCA 2013
Leeman Lake	St. Louis	69-0875-00	Lake		1854 List, MDNR 2008a, 2010
Little Birch Lake	St. Louis	69-0271-00	Lake		1854 List, MDNR 2008b
Lobo Lake	Lake	38-0766-00	Lake		1854 List, MDNR 2008a, 2010
Martin Lake	St. Louis	69-0768-00	Lake		1854 List, MDNR 2008b
Miller Lake	Carlton	09-0053-00	Lake		1854 List, MDNR 2008a, 2010
Mogie Lake	St. Louis	69-0391-00	Lake		1854 List, MPCA 2013
Moose Lake	St. Louis	69-0442-00	Lake		1854 List, MPCA 2013, MDNR APM
Mud (Black Mallard) Lake	St. Louis	69-0047-00	Lake		1854 List, MDNR 2008b
Mud Hen Lake	St. Louis	69-0494-00	Lake		1854 List, MDNR 2008b, MPCA 2013
Mud Lake	St. Louis	69-0151-00	Lake		1854 List, MDNR 2008b
Mud Lake	St. Louis	69-0652-00	Lake		1854 List, Permittee
Nichols Lake	St. Louis	69-0627-00	Lake		1854 List, MDNR 2008a
Partridge River	St. Louis	04010201-552	Stream		1854 List, 2010, UofM/MPCA 2013, Permittee
Perch Lake	Carlton	09-0036-00	Lake		1854 List, MDNR 2008a, 2010
Perch Lake	St. Louis	69-0688-00	Lake		1854 List, MDNR 2008a
Pine Lake	St. Louis	69-0001-00	Lake		1854 List
Rice Portage Lake	Carlton	09-0037-00	Lake		1854 List, 2007, MDNR 2008a, 2010
Round Lake	St. Louis	69-0048-00	Lake	[WR]	1854 List, 7050.0470, MDNR 2008b
Round Lake	St. Louis	69-0649-00	Lake		1854 List, Permittee
Second Creek	St. Louis	04010201-952	Stream		1854 List UofM/MPCA 2013, Permittee
Seven Beaver Lake	St. Louis	69-0002-00	Lake	[WR]	1854 List, 2007, 7050.0470, MDNR 2008a, 2010
Shiver Creek Impoundment	St. Louis	04010201-A37			1854 List
Side Lake	St. Louis	69-0699-00	Lake		1854 List, MDNR 2008a
Simian Lake	St. Louis	69-0619-00	Lake		1854 List, MDNR 2008a
St. Louis River/ Estuary	St. Louis	04010201-532	Stream		MPCA 2013, UofM/MPCA 2013, Permittee, MDNR 2008b
St. Louis Estuary (2)	St. Louis	04010201-533	Stream		1854 List
St. Louis River	St. Louis	04010201-631	Stream	[WR]	1854 List, 7050.0470, UofM/MPCA 2013
St. Louis River	St. Louis	04010201-644	Stream		1854 List, 2010
Stone Lake	St. Louis	69-0046-00	Lake	[WR]	2007, 7050.0470, MDNR 2008a, 2010, MBS 2011, UofM/MPCA 2013
Stone Lake	St. Louis	69-0686-00	Lake	[WR]	1854 List, 7050.0470, MDNR 2008a, MPCA 2013

04010201 St. Louis River (3/21/2017)

Name	County	WID	Water Type	7050.0470	Source(s)
Sullivan Lake	St. Louis	69-0246-00	Lake		1854 List, MPCA 2013
Turpela Lake	St. Louis	69-0427-00	Lake		1854 List, MDNR 2008a, 2010, UofM/MPCA 2013
Twin Lake	St. Louis	69-0504-00	Lake		1854 List, MDNR 2008b
Twin Lake	St. Louis	69-0695-00	Lake		1854 List, MDNR 2008b
Unnamed (FDL1)	Carlton	09-0178-00	Lake		1854 List, MPCA 2013
Unnamed (FDL2) Lake	St. Louis	69-1454-00	Lake		1854 List, MPCA 2013
Unnamed Lake	St. Louis	69-0634-00	Lake		1854 List, MDNR 2008a
Upper Bug Lake	St. Louis	69-0406-00	Lake		1854 List, MDNR 2008b
Vang Lake	St. Louis	69-0876-00	Lake		1854 List, MDNR 2008a
Wabuse Lake	St. Louis	69-0408-00	Lake		1854 List, MDNR 2008a, 2010
Washusk Number One Lake	St. Louis	69-0409-00	Lake		1854 List, MDNR 2008a, 2010
Washusk Number Two Lake	St. Louis	69-0410-00	Lake		1854 List, 2010, MPCA 2013
White Lake	St. Louis	69-0571-00	Lake		1854 List
Wynne Lake	St. Louis	69-0434-02	Lake		1854 List, MPCA 2013

04010202 Cloquet River (3/21/2017)

Name	County	WID	Water Type	7050.0470	Source(s)
Alden Lake	St. Louis	69-0131-00	Lake		1854 List, MDNR 2008b
Angell Pool	St. Louis	69-1466-00	Lake		1854 List, MDNR 2008a, 2010
Bassett Lake	St. Louis	69-0041-00	Lake		1854 List, MPCA 2013
Bear (Mud) Lake	St. Louis	69-0112-00	Lake		1854 List, MDNR 2008a, 2010
Beaver (Joker) Lake	St. Louis	69-0015-00	Lake		1854 List, MDNR 2008a
Breda Lake	St. Louis	69-0037-00	Lake	[WR]	1854 List, 2007, 7050.0470, MDNR 2008a, 2010
Caribou Lake	St. Louis	69-0489-00	Lake		1854 List, MDNR 2008a, UofM/MPCA 2013
Clark Lake	Lake	38-0647-00	Lake		1854 List, 2007, MDNR 2008b, 2010
Cloquet Lake	Lake	38-0539-00	Lake		1854 List, 2007, MDNR 2008b, 2010, UofM/MPCA 2013
Cloquet River	Lake	04010202-507	Stream		1854 List, MDNR 2008b
Driller Lake	Lake	38-0652-00	Lake		1854 List, MDNR 2008b
Fish Lake (east)	St. Louis	69-0491-00	Lake		1854 List, MPCA 2013
Grand Lake	St. Louis	69-0511-00	Lake		1854 List, MDNR 2008a, UofM/MPCA 2013
Hjalmer Lake	Lake	38-0758-00	Lake		1854 List, MDNR 2008a, 2010
Indian Lake	St. Louis	69-0023-00	Lake		1854 List, MDNR 2008b
Island Lake Reservoir	St. Louis	69-0372-00	Lake		1854 List, MPCA 2013
King Lake	St. Louis	69-0008-00	Lake		1854 List, MDNR 2008a

04010202 Cloquet River (3/21/2017)

Name	County	WID	Water Type	7050.0470	Source(s)
Kookoosh Lake	St. Louis	69-0009-00	Lake		1854 List
Kylen Lake	St. Louis	69-0034-00	Lake		1854 List, MDNR 2008a
Lake George	St. Louis	69-0040-00	Lake		1854 List, 2007, MDNR 2008b
Langley Lake	Lake	38-0648-00	Lake		1854 List
Legler Lake	Lake	38-0649-00	Lake		1854 List, MPCA 2013
Lieuna (Lieung) Lake	St. Louis	69-0123-00	Lake	[WR]	1854 List, 7050.0470, MDNR 2008a, MDNR APM
Little Cloquet River	St. Louis	04010202-590	Stream		1854 List, MDNR 2008b
Little Stone Lake	St. Louis	69-0028-00	Lake		1854 List, 2007, MDNR 2008b
Papoose Lake	St. Louis	69-0024-00	Lake	[WR]	1854 List, 7050.0470, MDNR 2008a, 2010
Petrel Creek	St. Louis	04010202-664	Stream		1854 List, 2007, MDNR 2008b, 2010
Ruth Lake	St. Louis	69-0014-00	Lake		1854 List, MDNR 2008a
Sink Lake	Lake	38-0540-00	Lake		1854 List
Smith (Little Pequaywan) Lake	St. Louis	69-0111-00	Lake		1854 List
Stone (Tommila) Lake	St. Louis	69-0035-00	Lake	[WR]	1854 List, 7050.0470, MDNR 2008a, 2010
Trettel Pool	St. Louis	69-1482-00	Lake		MDNR 2008a
Upland Lake	Lake	38-0756-00	Lake		1854 List, MDNR 2008b
Warren	St. Louis	69-0017-00	Lake		1854 List
Wild Rice Reservoir	St. Louis	69-0371-00	Lake		1854 List, MDNR 2008b, UofM/MPCA 2013
Wolf Lake	St. Louis	69-0143-00	Lake		1854 List, MDNR 2008b, 2010, MBS 2011, UofM/MPCA 2013, MDNR APM

04010301 Nemadji River (3/21/2017)

Name	County	WID	Water Type	7050.0470	Source(s)
Hay Lake	Carlton	09-0010-00	Lake		1854 List, 2007, MDNR 2008b, 2010, MDNR APM
Net Lake	Pine	58-0038-00	Lake		1854 List, MDNR APM

Lower Mississippi Basin

Key for sources in Table

Source	Abbreviation for Source
Natural Wild Rice in Minnesota—A Wild Rice Study Report to the Legislature	MDNR 2008a, MDNR 2008b
Minnesota DNR Wild Rice Harvester Survey Report	2007
Minnesota Wild Rice Management Workgroup List of 350 Important Wild Rice Waters	2010
1854 Treaty Authority List of Wild Rice Waters (3/24/16 version)	1854 List
MDNR Aquatic Plant Management Database	MDNR APM
MPCA Biomonitoring Field Sites	MPCA Biomon
University of Minnesota/MPCA Wild Rice Study Field Survey Sites	U of M/MPCA 2013
Minnesota Biological Survey Database	MBS 2011, MBS 2017
MPCA 2013 Call for Data	MPCA 2013
Permittee Monitoring	Permittee
WR Waters (7050.0470)	7050.047
Waters identified by MDNR in 2015 as wild rice waters	MDNR 2015
Waters identified through MPCA review of various water surveys	Survey

MDNR 2008a indicates waters in MDNR 2008 report with greater than or equal to 2 acres of wild rice.
MDNR 2008b indicates waters in MDNR 2008 report with estimates of less than 2 acres of wild rice or without acreage estimates.

07040001 Mississippi River - Lake Pepin (3/21/2017)

Name	County	WID	Water Type	Source(s)
Sturgeon Lake	Goodhue	25-0017-01	Lake	MDNR 2008b, Survey

07040002 Cannon River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Cedar Lake	Rice	66-0052-00	Lake	MDNR 2008a
Everson Lake	Waseca	81-0027-00	Lake	2010
Hunt Lake	Rice	66-0047-00	Lake	MDNR 2008a, UofM/MPCA 2013
Mud Lake	Rice	66-0054-00	Lake	MDNR 2008a, 2010
Oak Glen Lake	Steele	74-0004-00	Lake	MDNR 2008a
Weinberger Lake	Rice	66-0041-00	Lake	MDNR 2008a
Willing Lake	Rice	66-0051-00	Lake	MDNR 2008a

07040003 Mississippi River - Winona (3/21/2017)

Name	County	WID	Water Type	Source(s)
Maloney Lake	Wabasha	79-0001-03	Lake	UofM/MPCA 2013
Mississippi Pool 4/Robinson Lake	Wabasha	79-0005-02	Lake	UofM/MPCA 2013
Mississippi Pool 5 / Spring Lake	Wabasha	07040003-627	Stream	MDNR 2008b, UofM/MPCA 2013
Unnamed Lake (McCarthy Lake WMA)	Wabasha	79-0052-00	Lake	MDNR 2008a, 2010

07040004 Zumbro River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Rice Lake	Steele	74-0001-00	Lake	MDNR 2008a, UofM/MPCA 2013, MDNR APM

07040006 Mississippi River – La Crescent (3/21/2017)

Name	County	WID	Water Type	Source(s)
Blue Lake	Houston	28-0005-03	Lake	MDNR 2008b, Survey
Target Lake	Houston	28-0005-02	Lake	MDNR 2008b, Survey

07060001 Mississippi River - Reno (3/21/2017)

Name	County	WID	Water Type	Source(s)
Lawrence Lake	Houston	28-0005-01	Lake	MDNR 2008b, Survey
Mississippi River backwater	Houston	28-0005-00	Wetland	MPCA Biomon
Mississippi Pool 8	Houston	28-0005-99	Stream	UofM/MPCA 2013

Minnesota River Basin

Key for Sources in Table

Source	Abbreviation for Source
Natural Wild Rice in Minnesota—A Wild Rice Study Report to the Legislature	MDNR 2008a, MDNR 2008b
Minnesota DNR Wild Rice Harvester Survey Report	2007
Minnesota Wild Rice Management Workgroup List of 350 Important Wild Rice Waters	2010
1854 Treaty Authority List of Wild Rice Waters (3/24/16 version)	1854 List
MDNR Aquatic Plant Management Database	MDNR APM
MPCA Biomonitoring Field Sites	MPCA Biomon
University of Minnesota/MPCA Wild Rice Study Field Survey Sites	U of M/MPCA 2013
Minnesota Biological Survey Database	MBS 2011, MBS 2017
MPCA 2013 Call for Data	MPCA 2013
Permittee Monitoring	Permittee
WR Waters (7050.0470)	7050.047
Waters identified by MDNR in 2015 as wild rice waters	MDNR 2015
Waters identified through MPCA review of various water surveys	Survey

MDNR 2008a indicates waters in MDNR 2008 report with greater than or equal to 2 acres of wild rice.

MDNR 2008b indicates waters in MDNR 2008 report with estimates of less than 2 acres of wild rice or without acreage estimates.

07020002 Pomme De Terre River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Ina Lake	Douglas	21-0355-00	Lake	UofM/MPCA 2013
North Turtle Lake	Otter Tail	56-0379-00	Lake	MDNR APM
South Turtle Lake	Otter Tail	56-0377-00	Lake	MPCA 2013, MDNR APM
Spitzer Lake	Otter Tail	56-0160-00	Lake	MPCA 2013, MDNR APM
Stalker Lake	Otter Tail	56-0437-00	Lake	MPCA 2013, MDNR APM
Tamarack	Otter Tail	56-0433-00	Lake	MDNR 2008b, Survey

07020005 Chippewa River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Andrea	Kandiyohi	34-0652-00	Wetland	MPCA Biomon
Blaamyhre Lake	Kandiyohi	34-0345-00	Lake	MDNR 2008b, UofM/MPCA 2013
Glesne Slough (Unnamed) Lake	Kandiyohi	34-0353-00	Lake	UofM/MPCA 2013
Ole Lake	Kandiyohi	34-0342-00	Lake	MDNR 2008b, Survey
Signalness (Mountain) Lake	Pope	61-0149-00	Lake	MPCA 2013, MDNR APM

07020011 Le Sueur River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Lily Lake	Waseca	81-0067-00	Lake	2010, MPCA 2013, UofM/MPCA 2013, MDNR APM
Spicer Lake	Freeborn	24-0045-00	Lake	MDNR 2008a
Trenton Lake	Freeborn	24-0049-00	Lake	MDNR 2008a

07020012 Lower Minnesota River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Blue Lake	Scott	70-0088-00	Lake	MDNR 2008a, 2010
Fisher Lake	Scott	70-0087-00	Lake	MDNR 2008a, 2010, UofM/MPCA 2013
Hatch Lake	Rice	66-0063-00	Lake	MDNR 2008a
Rice Lake	Scott	70-0025-00	Lake	MDNR 2008a, 2010

Rainy River -Lake of the Woods Basin

Key for sources in Table

Source	Abbreviation for Source
Natural Wild Rice in Minnesota—A Wild Rice Study Report to the Legislature	MDNR 2008a, MDNR 2008b
Minnesota DNR Wild Rice Harvester Survey Report	2007
Minnesota Wild Rice Management Workgroup List of 350 Important Wild Rice Waters	2010
1854 Treaty Authority List of Wild Rice Waters (3/24/16 version)	1854 List
MDNR Aquatic Plant Management Database	MDNR APM
MPCA Biomonitoring Field Sites	MPCA Biomon
University of Minnesota/MPCA Wild Rice Study Field Survey Sites	U of M/MPCA 2013
Minnesota Biological Survey Database	MBS 2011, MBS 2017
MPCA 2013 Call for Data	MPCA 2013
Permittee Monitoring	Permittee
WR Waters (7050.0470)	7050.047
Waters identified by MDNR in 2015 as wild rice waters	MDNR 2015
Waters identified through MPCA review of various water surveys	Survey

MDNR 2008a indicates waters in MDNR 2008 report with greater than or equal to 2 acres of wild rice.
MDNR 2008b indicates waters in MDNR 2008 report with estimates of less than 2 acres of wild rice or without acreage estimates.

09030001 Rainy River - Headwaters (3/21/2017)

Name	County	WID	Water Type	Source(s)
August Lake	Lake	38-0691-00	Lake	1854 List, MPCA 2013
Bald Eagle Lake	Lake	38-0637-00	Lake	1854 List, MDNR 2008b
Basswood Lake	Lake	38-0645-00	Lake	1854 List, MDNR 2008a, 2010
Bear Island River	St. Louis	09030001-608	Stream	1854 List, 2007, MDNR 2008b
Beartrap Lake	St. Louis	69-0089-00	Lake	1854 List, MDNR 2008b
Big Lake	St. Louis	69-0190-00	Lake	1854 List, MDNR 2008a
Big Rice Lake	St. Louis	69-0178-00	Lake	1854 List, MDNR 2008a, 2010
Birch Lake	St. Louis	69-0003-00	Lake	1854 List, 2007, MDNR 2008a, 2010, UofM/MPCA 2013
Blueberry Lake	St. Louis	69-0054-00	Lake	1854 List, MDNR 2008a, MBS 2017
Bonga Lake	Lake	38-0762-00	Lake	1854 List, MDNR 2008a, 2010
Bootleg Lake	St. Louis	69-0452-00	Lake	1854 List, MDNR 2008b
Burntside Lake	St. Louis	69-0118-00	Lake	1854 List, 2007, MDNR 2008b, 2010
Burntside River	St. Louis	09030001-808	Stream	1854 List, MPCA Biomon
Camp East Creek	Lake	09030001-623	Stream	1854 List
Campers Lake	Lake	38-0679-00	Lake	1854 List, 2007, MDNR 2008a, 2010
Canary Lake	St. Louis	69-0055-00	Lake	1854 List, MDNR 2008b
Charity Lake	Lake	38-0055-00	Lake	1854 List, MDNR 2008b
Comfort Lake	Lake	38-0290-00	Lake	1854 List, MDNR 2008b, MBS 2011

09030001 Rainy River - Headwaters (3/21/2017)

Name	County	WID	Water Type	Source(s)
Cougar Lake	Lake	38-0767-00	Lake	1854 List, MDNR 2008b
Crooked Lake	Lake	38-0817-00	Lake	1854 List, MDNR 2008b
Deadmans	St. Louis	69IMP001	Lake	1854 List, MDNR 2008b
Dragon	Lake	38-0552-00	Lake	1854 List, MPCA 2013
Duck Lake	St. Louis	69-0191-00	Lake	1854 List, MDNR 2008b
Dumbbell Lake	Lake	38-0393-00	Lake	1854 List, MDNR 2008a, 2010
Dumbbell River	Lake	09030001-632	Stream	MPCA Biomon
Dumbbell River Pool	Lake	38-0270-00	Lake	1854 List, MPCA 2013
Dunnigan Lake	Lake	38-0664-00	Lake	1854 List
Ed Shave Lake	St. Louis	69-0199-00	Lake	1854 List, MDNR 2008b
Eighteen Lake	Lake	38-0432-00	Lake	1854 List, MPCA 2013
Ella Hall Lake	Lake	38-0727-00	Lake	1854 List, MDNR 2008b
Fall Lake	Lake	38-0811-00	Lake	1854 List, MDNR 2008a, MPCA 2013
Farm Lake	Lake	38-0779-00	Lake	1854 List, 2007, MDNR 2008b, 2010, MBS 2017
Fente Lake	Cook	16-0741-00	Lake	1854 List, MDNR 2008b
Flat Horn Lake	Lake	38-0568-00	Lake	1854 List, MDNR 2008b, MBS 2011
Fools Lake	Lake	38-0761-00	Lake	1854 List, MDNR 2008a
Gabbro Lake	Lake	38-0701-00	Lake	1854 List, MDNR 2008b
Garden Lake	Lake	38-0782-00	Lake	1854 List, 2007, MDNR 2008a, 2010
Gegoka Lake	Lake	38-0573-00	Lake	1854 List, 2007, MDNR 2008a, 2010, MBS 2011
Grass Lake	Lake	38-0635-00	Lake	1854 List, MPCA 2013
Grassy Lake	St. Louis	69-0082-00	Lake	1854 List, MDNR 2008b
Grassy Lake	St. Louis	69-0216-00	Lake	1854 List, MDNR 2008b
Green Wing Lake	Lake	38-0264-00	Lake	1854 List, MPCA 2013
Greenwood Lake	Lake	38-0656-00	Lake	1854 List, 2007, MDNR 2008a, 2010, MBS 2011
Grouse Lake	Lake	38-0557-00	Lake	1854 List, MPCA 2013
Gull Lake	St. Louis	69-0092-00	Lake	1854 List, MDNR 2008a
Harriet Lake	Lake	38-0048-00	Lake	1854 List, MPCA 2013
Harris Lake	Lake	38-0736-00	Lake	1854 List, MDNR 2008a
Horse River	Lake	09030001-719	Stream	1854 List, MDNR 2008b
Horseshoe Lake	St. Louis	69-0255-00	Lake	1854 List, MDNR 2008a
Hula Lake	Lake	38-0728-00	Lake	1854 List, 2007, MDNR 2008a, 2010
Iron Lake	Cook	16-0328-00	Lake	1854 List, 2007, MDNR 2008b
Isabella Lake	Lake	38-0396-00	Lake	1854 List, MDNR 2008b
Isabella River	Lake	09030001-527	Stream	1854 List, MDNR 2008b
Island River	Lake	09030001-563	Stream	MPCA 2013
Island River Lake	Lake	38-0289-00	Lake	MBS 2011, MPCA 2013
Island River Lake	Lake	38-0842-00	Lake	1854 List, 2007, MDNR 2008a, 2010, MPCA 2013
Jeanette Lake	St. Louis	69-0456-00	Lake	1854 List, MDNR 2008b, MBS 2017
Johnson Lake	St. Louis	69-0117-00	Lake	1854 List, MDNR 2008a, MPCA 2013
Kawishiwi Lake	Lake	38-0080-00	Lake	1854 List, MDNR 2008b
Kawishiwi River	Lake	09030001-512	Stream	1854 List, MDNR 2008b

09030001 Rainy River - Headwaters (3/21/2017)

Name	County	WID	Water Type	Source(s)
Kitigan Lake	Lake	38-0559-00	Lake	1854 List, MPCA 2013
Lapond Lake	St. Louis	69-0177-00	Lake	1854 List, MDNR 2008a, 2010
Little Gabbro Lake	Lake	38-0703-00	Lake	1854 List, MDNR 2008b
Little Indian Sioux River	St. Louis	09030001-557	Stream	1854 List, 2007, MDNR 2008b, 2010
Little Indian Sioux River	St. Louis	09030001-636	Stream	1854 List, 2007, MDNR 2008b, 2010
Little Indian Sioux River	St. Louis	09030001-637	Stream	1854 List, 2007, MDNR 2008b, 2010
Little Indian Sioux River	St. Louis	09030001-641	Stream	1854 List, 2007, MDNR 2008b, 2010
Little Indian Sioux River	St. Louis	09030001-642	Stream	1854 List, 2007, MDNR 2008b, 2010
Little Indian Sioux River	St. Louis	09030001-643	Stream	1854 List, 2007, MDNR 2008b, 2010
Little Rice	St. Louis	69-0180-00	Lake	MDNR 2008b, 2010
Little Vermillion Lake	St. Louis	69-0608-00	Lake	1854 List, 2007, MDNR 2008b
Little Wampus Lake	Lake	38-0684-00	Lake	1854 List, MDNR 2008b
Low Lake	St. Louis	69-0070-00	Lake	1854 List, 2007, MDNR 2008a, 2010
Lower Pauness Lake	St. Louis	69-0464-00	Lake	1854 List, MDNR 2008b
Manomin Lake	Lake	38-0616-00	Lake	1854 List, MDNR 2008a
Middle McDougal Lake	Lake	38-0658-00	Lake	1854 List, 2007, MDNR 2008b, 2010
Moose Lake	Lake	38-0644-00	Lake	1854 List, MPCA 2013
Moose River	St. Louis	09030001-540	Stream	1854 List
Mud Lake	Lake	38-0742-00	Lake	1854 List, MDNR 2008b
Muskeg Lake	Lake	38-0788-00	Lake	1854 List, MDNR 2008a, 2010
Nels Lake	St. Louis	69-0080-00	Lake	1854 List, MDNR 2008a
Newton Lake	Lake	38-0784-00	Lake	1854 List, MDNR 2008b
Nina Moose River	St. Louis	09030001-650	Stream	1854 List, 2007
Nine A M Lake	Lake	38-0445-00	Lake	1854 List, MDNR 2008a
North McDougal Lake	Lake	38-0686-00	Lake	1854 List, MDNR 2008b
One Pine Lake	St. Louis	69-0061-00	Lake	1854 List, MDNR 2008a, MPCA 2013, MBS 2017
Osier Lake	Lake	38-0420-00	Lake	1854 List, MPCA 2013
Papoose Lake	Lake	38-0818-00	Lake	1854 List, MDNR 2008a
Pea Soup Lake	Lake	38-0739-00	Lake	MDNR APM
Perent Lake	Lake	38-0220-00	Lake	1854 List, MPCA 2013
Phantom Lake	Lake	38-0653-00	Lake	1854 List, MDNR 2008b, 2010
Phoebe Lake	Cook	16-0808-00	Lake	1854 List, MDNR 2008b
Picket Lake	St. Louis	69-0079-00	Lake	1854 List, MDNR 2008a
Polly Lake	Lake	38-0104-00	Lake	1854 List, MPCA 2013
Railroad Lake	Lake	38-0655-00	Lake	1854 List, MDNR 2008b
Rat Lake	Lake	38-0567-00	Lake	1854 List, MPCA 2013
Rib Lake	Cook	16-0544-00	Lake	1854 List, MDNR 2008b
Rice Lake	St. Louis	69-0180-00	Lake	1854 List, 2010
Rice Lake	Lake	38-0465-00	Lake	1854 List, MDNR 2008a, 2010
Riparian, stream wetland	Lake	09030001-985	Wetland	MPCA Biomon
Roe Lake	Lake	38-0139-00	Lake	1854 List, MDNR 2008b
Sand Lake	Lake	38-0735-00	Lake	1854 List, 2007, MDNR 2008a, 2010

09030001 Rainy River - Headwaters (3/21/2017)

Name	County	WID	Water Type	Source(s)
Scarp (Cliff) Lake	Lake	38-0058-00	Lake	1854 List, MPCA 2013
Scott Lake	Lake	38-0271-00	Lake	1854 List, MDNR 2008b
Silver Island Lake	Lake	38-0219-00	Lake	1854 List, MDNR 2008b
Slate (Spider) Lake	Lake	38-0666-00	Lake	1854 List, MDNR 2008b, MPCA 2013
Snowbank Lake	Lake	38-0529-00	Lake	1854 List, MDNR 2008a, 2010
Source Lake	Lake	38-0654-00	Lake	1854 List, MDNR 2008b
Sourdough Lake	Lake	38-0708-00	Lake	1854 List, MDNR 2008a
South Farm Lake	Lake	38-0778-00	Lake	1854 List, MPCA 2013
South Kawishiwi River	Lake	09030001-536	Stream	1854 List
South McDougal Lake	Lake	38-0659-00	Lake	1854 List, MDNR 2008a
Stony Lake	Lake	38-0660-00	Lake	1854 List, 2007, MDNR 2008a, 2010
Stony (Sand) River	Lake	09030001-985	Stream	1854 List, 2007, MDNR 2008b
Surprise Lake	Lake	38-0550-00	Lake	1854 List, MPCA 2013
Swallow(Shallow,Deep) Lake	Lake	38-0668-00	Lake	1854 List
Sylvania Lake	Lake	38-0395-00	Lake	1854 List, MPCA 2013
Twin (East Twin) Lake	St. Louis	69-0163-00	Lake	1854 List, MDNR 2008b
Twin Lakes (East Twin)	St. Louis	69-0174-00	Lake	1854 List, MPCA 2013
Unnamed (Scott Creek Tributary) Creek	Lake	09030001-598	Stream	1854 List
Unnamed Lake	Cook	16-0416-00	Lake	1854 List, MDNR 2008a
Upper Pauness Lake	St. Louis	69-0465-00	Lake	1854 List, MDNR 2008b
Vera Lake	Lake	38-0491-00	Lake	1854 List, MDNR 2008b
Wampus Lake	Lake	38-0685-00	Lake	1854 List, MDNR 2008b
White Iron Lake	St. Louis	69-0004-00	Lake	1854 List, MDNR 2008b
Wind Lake	Lake	38-0642-00	Lake	1854 List, MDNR 2008a
Wood Lake	Lake	38-0729-00	Lake	1854 List, MDNR 2008a, 2010
Wye Lake	Lake	38-0042-00	Lake	1854 List, MPCA 2013

09030002 Vermilion River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Black Lake	St. Louis	69-0740-00	Lake	1854 List, MDNR 2008b
Camp 97 Impoundment	St. Louis	69-0594-00	Lake	1854 List, MDNR 2008b, MDNR APM
Camp Forty Creek	St. Louis	09030002-586	Stream	1854 List
Crane Lake	St. Louis	69-0616-00	Lake	1854 List, 2007, MDNR 2008a, 2010
Eagles Nest 3 Lake	St. Louis	69-0285-03	Lake	1854 List, MDNR 2008b
Echo Lake	St. Louis	69-0615-00	Lake	1854 List, MDNR 2008b
Echo River	St. Louis	09030002-532	Stream	1854 List
Elbow River	St. Louis	09030002-602	Stream	MDNR 2015
Fivemile Lake	St. Louis	69-0288-00	Lake	1854 List, MDNR 2008a
Fourmile Lake	St. Louis	69-0281-00	Lake	1854 List, MDNR 2008b
Gafvert Lake	St. Louis	69-0280-00	Lake	1854 List, MDNR 2008b
Hay Lake	St. Louis	69-0579-00	Lake	1854 List, MDNR 2008a, 2010

09030002 Vermilion River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Hoodoo Lake	St. Louis	69-0802-00	Lake	2007, MDNR 2008a, 2010
Kabustasa Lake (Rice)	St. Louis	69-0679-00	Lake	1854 List, MPCA 2013
Little Sandy Lake	St. Louis	69-0729-00	Lake	1854 List, MDNR 2008a, 2010
Myrtle Lake	St. Louis	69-0749-00	Lake	1854 List, MDNR 2008b
Oriniack Lake	St. Louis	69-0587-00	Lake	1854 List, MDNR 2008b
Pelican Lake	St. Louis	69-0841-00	Lake	2007, MDNR 2008a, 2010
Pelican River	St. Louis	09030002-530	Stream	2007, MDNR 2008b, MDNR 2015
Pike River	St. Louis	09030002-503	Stream	1854 List, 2007, MDNR 2008b, 2010, UofM/MPCA 2013
Rice Lake	St. Louis	69-0578-00	Lake	MDNR 2008a, 2010
Rice Lake	St. Louis	69-0803-00	Lake	2010, MDNR 2015
Sand River	St. Louis	09030002-501	Stream	1854 List, 2010, UofM/MPCA 2013
Sandy Lake	St. Louis	69-0730-00	Lake	1854 List, MDNR 2008a, 2010, UofM/MPCA 2013
Sixmile Lake	St. Louis	69-0283-00	Lake	1854 List, MDNR 2008b
Sunset Lake	St. Louis	69-0764-00	Lake	1854 List, MDNR 2008a
Susan Lake	St. Louis	69-0741-00	Lake	1854 List, MDNR 2008b
Vermilion River	St. Louis	09030002-531	Stream	2007, MDNR 2008b, MPCA 2013, MPCA Biomon
Vermilion River Lake	St. Louis	69-0613-00	Lake	1854 List, MDNR 2008a, 2010
Vermillion (Rice Bay) Lake	St. Louis	69-0378-00	Lake	1854 List, MDNR 2008a, 2010

09030003 Rainy River - Rainy Lake (3/21/2017)

Name	County	WID	Water Type	Source(s)
Rainy Lake	Koochiching	69-0694-00	Lake	2007, MDNR 2008b, 2010
Rat Root Lake	Koochiching	36-0006-00	Lake	2007, MDNR 2008b, 2010
Tilson Creek	Koochiching	09030003-629	Stream	2007, MDNR 2008b

09030005 Little Fork River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Auto Lake	St. Louis	69-0731-00	Lake	MPCA 2013
Balkan Lake	St. Louis	69-0860-00	Lake	MDNR 2008a
Big Rice Lake	St. Louis	69-0669-00	Lake	1854 List, 2007, MDNR 2008a, 2010, MPCA 2013
Herrigan Lake	Itasca	31-0174-00	Lake	MDNR 2008a
Kelly Lake	Itasca	31-0291-00	Lake	MDNR 2008a
Knuckey (Mud) Lake	St. Louis	69-0800-00	Lake	2007, MDNR 2008a, 2010, MBS 2017
Little Rice Lake	St. Louis	69-0612-00	Lake	1854 List, 2007, MDNR 2008a, 2010, MPCA 2013, UofM/MPCA 2013
Moose Lake	St. Louis	69-0798-00	Lake	1854 List, 2007, MDNR 2008a, 2010
Mud (Watercress) Lake	St. Louis	69-0797-00	Lake	1854 List, MDNR 2008a, 2010
Nett Lake	Koochiching	36-0001-00	Lake	2007, MDNR 2008b, 2010
Otter Lake	Itasca	31-0301-00	Lake	2007, MDNR 2008b

09030005 Little Fork River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Rat (Jamer) Lake	St. Louis	69-0737-00	Lake	1854 List, MDNR 2008b
Sand Lake	St. Louis	69-0736-00	Lake	MPCA 2013
Shannon Lake	St. Louis	69-0925-00	Lake	2007, MDNR 2008a, 2010
Shannon River	St. Louis	09030005-605	Stream	2007, MDNR 2008b
Sturgeon Lake	St. Louis	69-0939-01	Lake	MDNR 2008b, 2010, UofM/MPCA 2013
Sturgeon Lake, Middle	St. Louis	69-0939-02	Lake	UofM/MPCA 2013
Sturgeon River	St. Louis	09030005-527	Stream	UofM/MPCA 2013
Unnamed Lake	Itasca	31-0066-00	Lake	MDNR 2008a
Unnamed Lake	Itasca	31-0322-00	Lake	MDNR 2008a
Unnamed Lake	Itasca	31-0288-00	Lake	MPCA 2013
Unnamed Lake	Itasca	31-0961-00	Lake	MDNR 2008a
Wagon Wheel Lake	St. Louis	69-0735-00	Lake	1854 List, MDNR 2008a
Walters Lake	Itasca	31-0298-00	Lake	MDNR 2008a

09030006 Big Fork River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Aspen Lake	Itasca	31-0690-00	Lake	2007, MDNR 2008a
Big Fork River	Itasca	09030006-505	Stream	2007, MDNR 2008b, 2010
Blue Rock Lake	Itasca	31-0919-00	Lake	MDNR APM
Bowstring River	Itasca	09030006-555	Stream	MDNR 2008b, 2010, UofM/MPCA 2013
Cameron Lake	Itasca	31-0544-00	Lake	MPCA 2013
Canoe Lake (Unnamed)	Itasca	31-0519-00	Lake	MPCA 2013
Coddington Lake	Itasca	31-0883-00	Lake	MDNR 2008a
Deer Lake	Itasca	31-0334-00	Lake	2007, MDNR 2008b
Dishpan Lake	Itasca	31-0992-00	Lake	MDNR 2008a
Dora Lake	Itasca	31-0882-00	Lake	2007, MDNR 2008a, 2010
Fiske Lake	Itasca	31-0918-00	Lake	MDNR APM
Grass Lake	Itasca	31-0727-00	Lake	MDNR 2008b, Survey
Hamrey Lake	Itasca	31-0911-00	Lake	MDNR 2008a
Helen Lake	Itasca	31-0840-00	Lake	MDNR 2008a, 2010
Hinken Creek	Itasca	09030006-538	Stream	UofM/MPCA 2013
Little Island Lake	Itasca	31-0179-00	Lake	MDNR 2008a
Little Spring Lake	Itasca	31-0797-00	Lake	MDNR 2008a
Marie Lake	Itasca	31-0507-00	Lake	2007
Natures Lake	Itasca	31-0877-00	Lake	2007, MDNR 2008a, 2010
Popple River	Itasca	09030006-512	Stream	UofM/MPCA 2013
Rice Lake	Itasca	31-0876-00	Lake	2007, MDNR 2008a, 2010
Rice Lake	Itasca	31-0315-00	Lake	MDNR 2008a
Rice Lake	Itasca	31-0707-00	Lake	MDNR 2008b, Survey
Rice River	Itasca	09030006-539	Stream	UofM/MPCA 2013
Ruby Lake	Itasca	31-0422-00	Lake	MDNR 2008a
Shallow Pond	Itasca	31-0910-00	Lake	MDNR 2008a

09030006 Big Fork River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Teufer (Labrie) Lake	Koochiching	36-0019-00	Lake	MBS 2017
Whitefish Lake	Itasca	31-0843-00	Lake	MDNR 2008a

09030008 Rainy River - Lower (3/21/2017)

Name	County	WID	Water Type	Source(s)
Baudette River	Lake of the Woods	09030008-535	Stream	2007, MDNR 2008b
Rainy River	Lake of the Woods	09030008-505	Stream	2007, MDNR 2008b, 2010
Silver Creek	Lake of the Woods	09030008-513	Stream	2007, MDNR 2008b
Winter Road River	Lake of the Woods	09030008-502	Stream	2007, MDNR 2008b, 2010

09030009 Lake of the Woods (3/21/2017)

Name	County	WID	Water Type	Source(s)
Bednar Impoundment	Roseau	68-0150-00	Lake	MDNR 2008a
Lake of the Woods	Lake of the Woods	39-0002-00	Lake	2007, MDNR 2008b

Red River of the North Basin

Key for sources in Table

Source	Abbreviation for Source
Natural Wild Rice in Minnesota—A Wild Rice Study Report to the Legislature	MDNR 2008a, MDNR 2008b
Minnesota DNR Wild Rice Harvester Survey Report	2007
Minnesota Wild Rice Management Workgroup List of 350 Important Wild Rice Waters	2010
1854 Treaty Authority List of Wild Rice Waters (3/24/16 version)	1854 List
MDNR Aquatic Plant Management Database	MDNR APM
MPCA Biomonitoring Field Sites	MPCA Biomon
University of Minnesota/MPCA Wild Rice Study Field Survey Sites	U of M/MPCA 2013
Minnesota Biological Survey Database	MBS 2011, MBS 2017
MPCA 2013 Call for Data	MPCA 2013
Permittee Monitoring	Permittee
WR Waters (7050.0470)	7050.047
Waters identified by MDNR in 2015 as wild rice waters	MDNR 2015
Waters identified through MPCA review of various water surveys	Survey

MDNR 2008a indicates waters in MDNR 2008 report with greater than or equal to 2 acres of wild rice.

MDNR 2008b indicates waters in MDNR 2008 report with estimates of less than 2 acres of wild rice or without acreage estimates.

09020103 Otter Tail River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Acorn Lake	Becker	03-0258-00	Lake	MBS 2011, MPCA 2013
Albertson Lake	Becker	03-0266-00	Lake	MDNR 2008b, Survey
Berger Lake	Otter Tail	56-1149-00	Lake	MDNR 2008b, MDNR APM
Big Elbow Lake	Becker	03-0159-00	Lake	MDNR APM
Big Floyd Lake	Becker	03-0387-00	Lake	MDNR APM
Big Pine Lake	Otter Tail	56-0130-00	Lake	MDNR APM
Blackbird Lake	Becker	03-0197-00	Lake	2007, MDNR 2008a, 2010
Boedigheimer Lake	Otter Tail	56-0212-00	Lake	MPCA 2013
Bolton Lake	Otter Tail	56-0318-00	Lake	MDNR APM
Booth Lake	Becker	03-0198-00	Lake	MDNR 2008a, 2010
Bray Lake	Otter Tail	56-0472-00	Lake	MPCA 2013, UofM/MPCA 2013
Bush Lake	Becker	03-0212-00	Lake	MDNR 2008a, 2010
Camp Seven Lake	Becker	03-0151-00	Lake	MDNR 2008a
Carman Lake	Becker	03-0209-00	Lake	2007, MDNR 2008a, 2010
Chippewa Lake	Becker	03-0196-00	Lake	2007, MDNR 2008a, 2010
Crane Lake	Otter Tail	56-0293-00	Lake	MDNR APM
Crystal Lake	Otter Tail	56-0749-00	Lake	MDNR APM
Dead Lake	Becker	03-0160-00	Lake	MDNR 2008b, Survey
Dead Lake	Otter Tail	56-0383-00	Lake	MDNR 2008b, MDNR APM
Deer Lake	Otter Tail	56-0298-00	Lake	MPCA 2013, MDNR APM
Depressional Wetland	Otter Tail	56-1554-00	Wetland	MPCA Biomon
Duck Lake	Otter Tail	56-0925-00	Lake	MDNR 2008b, Survey

09020103 Otter Tail River (3/21/2017)

Name	County	WID	Water Type	Source(s)
East Battle Lake	Otter Tail	56-0138-00	Lake	MDNR APM
East Loon Lake	Otter Tail	56-0523-00	Lake	MPCA 2013, MDNR APM
East Lost Lake	Otter Tail	56-0378-00	Lake	MPCA 2013, MDNR APM
East Red River Lake	Otter Tail	56-0573-00	Lake	MDNR 2008b, Survey
East Wing Pond	Otter Tail	56-1787-00	Wetland	MPCA Biomon
Emma Lake	Otter Tail	56-0194-00	Lake	MDNR 2008b, Survey
Equay Lake	Becker	03-0219-00	Lake	MDNR 2008a
Fish Lake	Otter Tail	56-0768-00	Lake	MDNR APM
Flat Lake	Becker	03-0242-00	Lake	2007, MDNR 2008a, 2010
Fogard Lake	Otter Tail	56-0571-00	Lake	MDNR APM
Hanson Lake	Becker	03-0177-00	Lake	MPCA 2013, MDNR APM
Head Lake	Otter Tail	56-0213-00	Lake	MDNR 2008b, MDNR APM
Height Of Land Lake	Becker	03-0195-00	Lake	2007, MDNR 2008a, 2010, MBS 2011, UofM/MPCA 2013, MDNR APM
Heilberger Lake	Otter Tail	56-0695-00	Lake	MPCA 2013, MDNR APM
Hoffman Lake	Otter Tail	56-1627-00	Lake	MDNR APM
Hoot Lake	Otter Tail	56-0782-00	Lake	MPCA 2013, MDNR APM
Hubbel Pond Lake	Becker	03-0240-00	Lake	2007, MDNR 2008a, 2010
Ida Lake	Becker	03-0582-00	Lake	MDNR APM
Jim Lake	Otter Tail	56-0364-00	Lake	MBS 2011, MPCA 2013
Johnson Lake	Becker	03-0199-00	Lake	MDNR 2008a, 2010
Johnson Lake	Becker	03-0374-01	Lake	MDNR APM
Lake Sixteen	Otter Tail	56-0100-00	Lake	2007, MDNR 2008b, 2010
Lida North Lake	Otter Tail	56-0747-01	Lake	MPCA 2013, MDNR APM
Little Flat Lake	Becker	03-0217-00	Lake	MDNR 2008a, 2010, UofM/MPCA 2013
Little Floyd Lake	Becker	03-0386-00	Lake	MPCA 2013, MDNR APM
Little Rice Lake	Becker	03-0239-00	Lake	MDNR 2008a
Little Toad Lake	Becker	03-0189-00	Lake	MPCA 2013, MDNR APM
Lizzie Lake	Otter Tail	56-0760-01	Lake	MDNR APM
Long Lake	Becker	03-0383-00	Lake	MDNR APM
Long Lake	Otter Tail	56-0210-00	Lake	MDNR 2008b, Survey
Long Lake	Otter Tail	56-0784-00	Lake	MDNR APM
Long Lake	Otter Tail	56-0388-00	Lake	MDNR APM
Lower Egg Lake	Becker	03-0210-00	Lake	2007, MDNR 2008a, 2010
Many Point Lake	Becker	03-0158-00	Lake	MBS 2011, MPCA 2013
Maria Lake	Otter Tail	56-0498-00	Lake	MPCA 2013
Marion Lake	Otter Tail	56-0243-00	Lake	MDNR APM
Mud Lake	Otter Tail	56-0222-00	Lake	MDNR 2008b, Survey
Otter Tail Lake	Otter Tail	56-0242-00	Lake	MDNR APM
Otter Tail River	Otter Tail	09020103-541	Stream	MDNR APM
Otter Tail River	Otter Tail	09020103-570	Stream	2007, MDNR 2008b, 2010, MDNR APM
Pelican Lake	Otter Tail	56-0786-00	Lake	MPCA 2013, MDNR APM
Red River Lake	Otter Tail	56-0711-00	Lake	MPCA 2013, MDNR APM

09020103 Otter Tail River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Reeves Lake	Becker	03-0374-02	Lake	MDNR APM
Rice Lake	Becker	03-0201-00	Lake	MDNR 2008a, 2010, MBS 2011, MDNR APM
Rice Lake	Otter Tail	56-0211-00	Lake	MDNR 2008b, Survey
Rice Lake	Otter Tail	56-0363-00	Lake	MDNR 2008b, Survey
Rose Lake	Otter Tail	56-0360-00	Lake	MPCA 2013, MDNR APM
Round Lake	Becker	03-0155-00	Lake	2007, MDNR 2008b, MBS 2011, MDNR APM
Rush Lake	Otter Tail	56-0141-00	Lake	MDNR 2008b, MDNR APM
Saint Patrick Lake	Becker	03-0277-00	Lake	MPCA 2013
Scalp Lake	Otter Tail	56-0358-00	Lake	MPCA 2013, MDNR APM
Schultz Lake	Becker	03-0278-00	Lake	MDNR 2008a, 2010
Sieverson / Sivertson Lake	Becker	03-0108-00	Lake	MBS 2011, MPCA 2013
Spindler Lake	Becker	03-0214-00	Lake	MDNR 2008a, 2010
Star Lake	Otter Tail	56-0385-00	Lake	2007, MDNR 2008b, 2010, MDNR APM
Stuart Lake	Otter Tail	56-0191-00	Lake	MDNR APM
Tamarac NWR - Egg River- (Ogemash Pool)	Becker	09020103-748	Stream	MDNR 2008a
Tamarack Lake	Becker	03-0388-00	Lake	MDNR APM
Tea Cracker Lake	Becker	03-0157-00	Lake	MDNR 2008a
Toad Lake	Becker	03-0107-00	Lake	MPCA 2013, MDNR APM
Town Lake	Becker	03-0264-00	Lake	MDNR 2008a
Trieglaff Lake	Becker	03-0263-00	Lake	MDNR 2008a, 2010
Unnamed	Otter Tail	56-0927-00	Lake	MDNR 2008b, Survey
Unnamed (Big Slough) Lake	Becker	03-0185-00	Lake	MPCA 2013
Unnamed - Davis Lake	Becker	03-0268-00	Lake	MPCA 2013
Unnamed Lake	Becker	03-1093-00	Lake	MDNR 2008a
Unnamed Lake	Becker	03-0776-00	Lake	MDNR 2008a
Unnamed Lake	Becker	03-0716-00	Lake	MDNR 2008a
Unnamed - Myrel's Pond	Becker	03-1285-00	Wetland	MPCA 2013
Unnamed Osprey Pond	Becker	03-1284-00	Wetland	MPCA 2013
Unnamed - Trout Pond	Becker	03-1286-00	Wetland	MPCA 2013
Upper Egg Lake	Becker	03-0206-00	Lake	2007, MDNR 2008a, 2010
Walker Lake	Otter Tail	56-0310-00	Lake	MDNR APM
West Battle Lake	Otter Tail	56-0239-00	Lake	MDNR 2008b, UofM/MPCA 2013
West Lost Lake	Otter Tail	56-0481-00	Lake	MDNR 2008b, MDNR APM
West Silent	Otter Tail	56-0519-00	Lake	MPCA 2013, MDNR APM
Winter Lake	Becker	03-0216-00	Lake	MDNR 2008a, 2010
Wright Lake	Otter Tail	56-0783-00	Lake	MDNR APM

09020106 Buffalo River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Balsam Lake	Becker	03-0292-00	Lake	MDNR 2008a
Big Sugarbush Lake	Becker	03-0304-00	Lake	MPCA 2013, MDNR APM
Buffalo Lake	Becker	03-0350-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
Bullhead Lake	Becker	03-0312-00	Lake	MDNR 2008a
Eagen Lake	Becker	03-0318-00	Lake	2007, MDNR 2008b
Little Round Lake	Becker	03-0302-00	Lake	2007, MDNR 2008b, 2010, UofM/MPCA 2013
Mary Yellowhead Lake	Becker	03-0243-00	Lake	MDNR 2008a
Rice Lake	Becker	03-0291-00	Lake	2007, MDNR 2008a, 2010
Rock Lake	Becker	03-0293-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
St. Clair Lake	Becker	03-0430-00	Lake	MBS 2011, MPCA 2013
Tamarack North Lake	Becker	03-0241-02	Lake	MDNR 2008b, 2010, MBS 2011, MPCA 2013
Tamarack South Lake	Becker	03-0241-01	Lake	MDNR 2008b, 2010, MBS 2011
Unnamed Lake	Becker	03-0434-00	Lake	MDNR 2008a

09020108 Wild Rice River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Anderson Lake	Clearwater	15-0074-00	Lake	MDNR 2008a
Big Rat Lake	Becker	03-0246-00	Lake	MDNR 2008a, 2010
Cabin Lake	Becker	03-0346-00	Lake	2007, MDNR 2008b, 2010
Depressional Wetland	Mahnomen	44-0054-00	Wetland	MPCA Biomon
Gull Creek	Becker	09020108-569	Stream	2007, MDNR 2008b
Lone Long Lake	Mahnomen	44-0002-00	Lake	2007, MDNR 2008b, MBS 2011
Lower Rice Lake	Clearwater	15-0130-00	Lake	2007, MDNR 2008a, 2010
Mahn	Mahnomen	44-0572-00	Wetland	MPCA Biomon
McCraney Lake	Mahnomen	44-0080-00	Lake	MPCA 2013, MDNR APM
Minerva Lake	Clearwater	15-0079-00	Lake	2007, MDNR 2008a, 2010
Mud Lake	Clearwater	15-0061-00	Lake	2007, MDNR 2008a, 2010
Roy Lake	Mahnomen	44-0001-00	Lake	MDNR 2008b, Survey
Unnamed (Rice Bed)	Clearwater	15-0021-00	Lake	MDNR 2008a, 2010
Upper Rice Lake	Clearwater	15-0059-00	Lake	2007, MDNR 2008a, 2010, MBS 2011
White Earth Lake	Becker	03-0328-00	Lake	MPCA 2013, MDNR APM
Wild Rice River	Clearwater	09020108-512	Stream	UofM/MPCA 2013, 2008b, Survey
Wild Rice River	Mahnomen	09020108-510	Stream	MPCA Biomon

09020302 Upper/Lower Red Lake (3/21/2017)

Name	County	WID	Water Type	Source(s)
Blackduck Lake	Beltrami	04-0069-00	Lake	MDNR APM
Blackduck River	Beltrami	09020302-513	Stream	MPCA Biomon
Cranberry Lake	Beltrami	04-0123-00	Lake	2007, MDNR 2008a, 2010
George Lake	Beltrami	04-0175-00	Lake	MDNR 2008a
Gourd Lake	Beltrami	04-0253-00	Lake	UofM/MPCA 2013
Heart Lake	Beltrami	04-0271-00	Lake	2007, MDNR 2008b
Little Puposky Lake	Beltrami	04-0197-00	Lake	MDNR 2008a, 2010
Medicine Lake	Beltrami	04-0122-00	Lake	MDNR 2008a, 2010
Norman Lake	Beltrami	04-0029-00	Lake	MDNR 2008a
Puposky Lake	Beltrami	04-0198-00	Lake	MDNR 2008a, 2010
Whitefish Lake	Beltrami	04-0309-00	Lake	2007, MDNR 2008b

09020305 Clearwater River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Bagley Lake	Clearwater	15-0040-00	Lake	2007, MDNR 2008b
Bee Lake	Polk	60-0192-00	Lake	MPCA 2013, UofM/MPCA 2013
Clearwater River	Clearwater	09020305-517	Stream	UofM/MPCA 2013
Clearwater Lake	Beltrami	04-0343-00	Lake	MDNR 2008b, MDNR APM
Clearwater River	Clearwater/Pennington	09020305-647	Stream	2007, MDNR 2008b, 2010, UofM/MPCA 2013
Eighteen Lake	Polk	60-0199-00	Lake	MPCA 2013, UofM/MPCA 2013
First Lake	Clearwater	15-0139-00	Lake	MDNR 2008a
Lomond Lake	Clearwater	15-0081-00	Lake	MDNR 2008a
Minnow Lake	Clearwater	15-0137-00	Lake	MPCA 2013, MDNR APM
Pine Lake	Clearwater	15-0149-00	Lake	MDNR 2008a, 2010, UofM/MPCA 2013
Second Lake	Clearwater	15-0140-00	Lake	MDNR 2008a, MBS 2011
Second Lake	Clearwater	15-0091-00	Lake	UofM/MPCA 2013
Spike Lake	Clearwater	15-0035-00	Lake	MBS 2011, MPCA 2013
Third Lake	Clearwater	15-0141-00	Lake	MDNR 2008a
Unnamed (Round) Lake	Polk	60-0721-00	Lake	MDNR 2008a
Walker Brook Lake	Clearwater	15-0060-00	Lake	MBS 2011, MPCA 2013

09020314 Roseau River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Roseau Flowage	Lake of the Woods	39-0009-00	Lake	MDNR 2008a, 2010
Roseau River WMA - Pool 2	Roseau	68-0006-00	Lake	MPCA 2013
Roseau River WMA - Pool 3	Roseau	68-0007-00	Lake	MPCA 2013

St. Croix River Basin

Key for Sources

Source	Abbreviation for Source
Natural Wild Rice in Minnesota—A Wild Rice Study Report to the Legislature	MDNR 2008a, MDNR 2008b
Minnesota DNR Wild Rice Harvester Survey Report	2007
Minnesota Wild Rice Management Workgroup List of 350 Important Wild Rice Waters	2010
1854 Treaty Authority List of Wild Rice Waters (3/24/16 version)	1854 List
MDNR Aquatic Plant Management Database	MDNR APM
MPCA Biomonitoring Field Sites	MPCA Biomon
University of Minnesota/MPCA Wild Rice Study Field Survey Sites	U of M/MPCA 2013
Minnesota Biological Survey Database	MBS 2011, MBS 2017
MPCA 2013 Call for Data	MPCA 2013
Permittee Monitoring	Permittee
WR Waters (7050.0470)	7050.047
Waters identified by MDNR in 2015 as wild rice waters	MDNR 2015
Waters identified through MPCA review of various water surveys	Survey

MDNR 2008a indicates waters in MDNR 2008 report with greater than or equal to 2 acres of wild rice.

MDNR 2008b indicates waters in MDNR 2008 report with estimates of less than 2 acres of wild rice or without acreage estimates.

07030001 Upper St. Croix River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Crooked Lake	Pine	58-0026-00	Lake	2007, MDNR 2008a, 2010
Hay Creek	Pine	07030001-511	Stream	2007
Hay Creek Flowage	Pine	58-0005-00	Lake	MDNR 2008a, 2010, UofM/MPCA 2013
Riparian, stream wetland	Pine	07030001-549	Wetland	MPCA Biomon

07030003 Kettle River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Bob Lake	Carlton	09-0026-00	Lake	1854 List, MDNR 2008b
Cedar Lake	Pine	58-0089-00	Lake	MDNR 2008b, Survey
Fox Lake	Pine	58-0102-00	Lake	MDNR 2008b, Survey
Grindstone River (South Fork)	Pine	07030003-516	Stream	MPCA Biomon
Kettle Lake	Carlton	09-0074-00	Lake	1854 List, MPCA 2013
Kettle Lake	Carlton	09-0049-00	Lake	1854 List, 2007, MDNR 2008a, 2010
Kettle River	Pine	07030003-502	Stream	MDNR 2008b, Survey
Kettle River	Carlton	07030003-511	Stream	1854 List
Little Island Lake	Pine	58-0061-00	Lake	1854 List, MPCA 2013
Little Kettle Lake	Carlton	09-0077-00	Lake	1854 List, 2010, MPCA 2013
Little North Sturgeon Lake	Pine	58-0066-00	Lake	1854 List, MDNR 2008b
McCormick Lake	Pine	58-0058-00	Lake	MDNR 2008b, Survey
Moose (Little) Lake	Carlton	09-0043-00	Lake	1854 List, MDNR 2008b, MBS 2017
Moose Horn River	Carlton	07030003-531	Stream	1854 List, 2007, 2010

07030003 Kettle River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Moosehead Lake	Carlton	09-0041-00	Lake	1854 List, MDNR 2008b
Pine Lake	Aitkin	01-0001-00	Lake	MDNR 2008a
Sawyer WMA (Sawyer Pool)	Carlton	09-0145-00	Lake	1854 List, MPCA 2013
Sawyer WMA (Sterly Pool)	Carlton	09-0187-00	Lake	1854 list, MDNR2008a
Split Rock Lake	Aitkin	01-0002-00	Lake	1854 List, MDNR 2008b
Stanton Lake	Pine	58-0111-00	Lake	MDNR 2008a, MDNR APM
Unnamed (SW Torchlight)	Carlton	09-0027-00	Lake	1854 List, MPCA 2013
Walli Lake	Carlton	09-0071-00	Lake	1854 List, MPCA 2013
Wild Rice Lake	Carlton	09-0023-00	Lake	1854 List, MDNR 2008a, 2010, UofM/MPCA 2013
Willow River	Pine	07030003-504	Stream	2007, MDNR 2008b, 2010

07030004 Snake River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Ann Lake	Kanabec	33-0040-00	Lake	2007, MDNR 2008a
Ann riparian wetland	Kanabec	07030004-511	Riparian wetland	MPCA Biomon
Dewitt Marsh Lake	Mille Lacs	48-0020-00	Lake	MDNR 2008a, 2010
Ernst Pool Lake	Mille Lacs	48-0036-00	Lake	MDNR 2008a, 2010
Mille Lacs WMA, Headquarters 2 P	Mille Lacs	48-0044-03	Wetland	MDNR 2008a
Mille Lacs WMA, Jones 1 Pool	Mille Lacs	48-0044-02	Wetland	MDNR 2008a
Mille Lacs WMA, Olson Pool	Mille Lacs	48-0074-00	Wetland	MDNR 2008a
Mille Lacs WMA, Townhall Pool	Mille Lacs	48-0078-00	Wetland	MDNR 2008a
Mission Creek	Pine	07030004-547	Stream	UofM/MPCA 2013
Mud (Quamba) Lake	Kanabec	33-0015-00	Lake	MDNR 2008b, Survey
Pokegama Creek	Pine	070300040-533	Stream	2007, MDNR 2008b
Pokegama Creek (Pokegama River)	Pine	07030004-533	Riparian, stream wetland	MPCA Biomon
Pokegama Lake	Pine	58-0142-00	Lake	MDNR 2008a MDNR APM
Snake River Bay	Pine	07030004-503	Stream	MDNR APM
Unnamed (Pool 3)	Mille Lacs	48-0054-00	Lake	MDNR 2008a
Unnamed Lake	Mille Lacs	48-0043-00	Lake	MDNR 2008a
Unnamed Lake	Kanabec	33-0111-00	Lake	MDNR 2008a
Upper Rice Lake	Isanti	30-0057-00	Lake	MDNR 2008a, 2010

07030005 Lower St. Croix River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Carlos Avery WMA - Mud	Chisago	13-0059-02	Lake	MPCA 2013
Carlos Avery WMA - North Sunrise Pool	Chisago	13-0059-03	Lake	MPCA 2013
Carlos Avery WMA - Peterson Slough	Chisago	13-0060-00	Lake	MPCA 2013
Carlos Avery WMA - Pool 1	Anoka	02-0505-00	Lake	MDNR 2008a
Carlos Avery WMA - Pool 2	Anoka	02-0505-00	Lake	MDNR 2008a
Carlos Avery WMA - Pool 3	Anoka	02-0505-00	Lake	MDNR 2008a, 2010
Carlos Avery WMA - Pool 5	Anoka	02-0504-00	Lake	MDNR 2008a
Carlos Avery WMA - Pool 7	Anoka	02-0497-00	Lake	MDNR 2008a
Carlos Avery WMA - Pool 9	Anoka	02-0504-00	Lake	MDNR 2008a, 2010, UofM/MPCA 2013
Carlos Avery - Pool 9 (2)	Anoka	02-0508-00	Lake	MDNR 2008a
Carlos Avery WMA - Pool 22	Anoka	02-0029-00	Lake	MDNR 2008a
Carlos Avery WMA - Pool 24	Anoka	02-0496-00	Lake	MDNR 2008a
Carlos Avery WMA - Pool 26	Anoka	02-0020-00	Lake	MDNR 2008a
Carlos Avery WMA - South Sunrise Pool	Chisago	13-0059-01	Lake	MPCA 2013
Little Coon Lake	Anoka	02-0032-00	Lake	MDNR 2008a

Upper Mississippi Basin

Key for sources in Table

Source	Abbreviation for Source
Natural Wild Rice in Minnesota—A Wild Rice Study Report to the Legislature	MDNR 2008a, MDNR 2008b
Minnesota DNR Wild Rice Harvester Survey Report	2007
Minnesota Wild Rice Management Workgroup List of 350 Important Wild Rice Waters	2010
1854 Treaty Authority List of Wild Rice Waters (3/24/16 version)	1854 List
MDNR Aquatic Plant Management Database	MDNR APM
MPCA Biomonitoring Field Sites	MPCA Biomon
University of Minnesota/MPCA Wild Rice Study Field Survey Sites	U of M/MPCA 2013
Minnesota Biological Survey Database	MBS 2011, MBS 2017
MPCA 2013 Call for Data	MPCA 2013
Permittee Monitoring	Permittee
WR Waters (7050.0470)	7050.047
Waters identified by MDNR in 2015 as wild rice waters	MDNR 2015
Waters identified through MPCA review of various water surveys	Survey

MDNR 2008a indicates waters in MDNR 2008 report with greater than or equal to 2 acres of wild rice.
MDNR 2008b indicates waters in MDNR 2008 report with estimates of less than 2 acres of wild rice or without acreage estimates.

07010101 Mississippi - Headwaters (3/21/2017)

Name	County	WID	Water Type	Source(s)
Bass Lake	Itasca	31-0576-00	Lake	2007, MDNR 2008a, 2010, UofM/MPCA 2013
Big Vermillion Lake	Cass	11-0029-00	Lake	MDNR APM
Blackwater Lake	Itasca	31-0561-00	Lake	2007, MDNR 2008a, 2010
Bootleg Lake	Beltrami	04-0211-00	Lake	2007, MDNR 2008a, 2010
Campbell Lake	Beltrami	04-0196-00	Lake	MDNR 2008a, MBS 2011
Carr Lake	Beltrami	04-0141-00	Lake	2007, MDNR 2008a
Damon Lake	Itasca	31-0944-00	Lake	2007, MDNR 2008a
Decker Lake	Itasca	31-0934-00	Lake	MDNR 2008a, 2010
Depressional Wetland	Beltrami	04-0460-00	Wetland	MPCA Biomon
Dixon Lake	Itasca	31-0921-00	Lake	2007, MDNR 2008a, 2010
Dutchman Lake	Beltrami	04-0067-00	Lake	MDNR 2008b, Survey
Elk Lake	Clearwater	15-0010-00	Lake	MDNR 2008b, UofM/MPCA 2013
Erickson NW Lake	Beltrami	04-0068-01	Lake	MDNR 2008b, 2010
Erickson SE Lake	Beltrami	04-0068-02	Lake	MDNR 2008b, 2010
Gill Lake	Clearwater	15-0019-00	Lake	MDNR 2008a
Grant Creek	Beltrami	07010101-546	Stream	2007, MDNR 2008b
Gull Lake	Beltrami	04-0064-00	Lake	MDNR 2008a
Gull Lake	Beltrami	04-0120-00	Lake	UofM/MPCA 2013
Hattie Lake	Hubbard	29-0300-00	Lake	MDNR 2008b, Survey

07010101 Mississippi - Headwaters (3/21/2017)

Name	County	WID	Water Type	Source(s)
Irving Lake	Beltrami	04-0140-00	Lake	MDNR 2008a, 2010
Island Lake	Itasca	31-0754-00	Lake	MDNR 2008a
Itasca Lake	Clearwater	15-0016-00	Lake	MDNR 2008b, UofM/MPCA 2013
Lake Alice	Hubbard	29-0286-00	Lake	2007, MDNR 2008a, 2010
Lake George	Hubbard	29-0216-00	Lake	2007, MDNR 2008a, 2010, MBS 2011
Lillian Lake	Itasca	31-0750-00	Lake	MDNR 2008a
Little Drum Lake	Itasca	31-0741-00	Lake	MDNR 2008a
Little Moose Lake	Itasca	31-0610-00	Lake	MDNR 2008a
Little Rice Lake	Itasca	31-0716-00	Lake	MDNR 2008b, Survey
Little Turtle Lake	Beltrami	04-0155-00	Lake	MDNR 2008a
Little Vermillion Lake	Cass	11-0030-00	Lake	MDNR 2008a
Long Lake	Beltrami	04-0227-00	Lake	MPCA 2013, MDNR APM
Mallard Lake	Clearwater	15-0018-00	Lake	MDNR 2008a
Manomin Lake	Beltrami	04-0286-00	Lake	2007, MDNR 2008a, 2010
Marie Lake	Itasca	31-0937-00	Lake	MDNR 2008a
Marquette Lake	Beltrami	04-0142-00	Lake	MDNR 2008b, MDNR APM
Mary Lake	Hubbard	29-0289-00	Lake	MBS 2011, MPCA 2013
Mississippi River	Itasca	07010101-756	Stream	2007, MDNR 2008b, 2010, UofM/MPCA 2013, MDNR APM
Mississippi River	Clearwater/Hubbard	07010101-753	Stream	2007, MDNR 2008b
Moose Lake	Beltrami	04-0342-00	Lake	2007, MDNR 2008b, MBS 2011
Moose Lake	Beltrami	04-0011-00	Lake	MDNR 2008a, 2010
Morph Lake	Itasca	31-0929-00	Lake	MDNR 2008a MDNR APM
Movil Lake	Beltrami	04-0152-00	Lake	MPCA 2013, MDNR APM
Mud Lake	Hubbard	29-0065-00	Lake	MBS 2011, MPCA 2013
Munzer Lake	Itasca	31-0360-00	Lake	MDNR 2008a
North Turtle River	Beltrami	07010101-570	Stream	MPCA Biomon
Pimushe Lake	Beltrami	04-0032-00	Lake	2007, MDNR 2008a, 2010, MBS 2011
Plantagenet Lake	Hubbard	29-0156-00	Lake	MDNR 2008b, MDNR APM
Pokegama Lake	Itasca	31-0532-00	Lake	MDNR 2008a, 2010, MDNR APM
Rabideau Lake	Beltrami	04-0034-00	Lake	2007, MDNR 2008a, 2010, MBS 2011, MDNR APM
Rice Lake	Itasca	31-0717-00	Lake	MDNR 2008b, Survey
Rice Pond	Beltrami	04-0059-00	Lake	MDNR 2008a, 2010
Schoolcraft Lake	Hubbard	29-0215-00	Lake	2007, MDNR 2008a, MBS 2011
Skimmerhorn Lake	Itasca	31-0939-00	Lake	MDNR 2008a

07010101 Mississippi - Headwaters (3/21/2017)

Name	County	WID	Water Type	Source(s)
Skunk Lake	Cass	11-0027-00	Lake	MDNR 2008a
Spring Lake	Cass	11-0022-00	Lake	MDNR 2008a
Stevens	Itasca	31-0718-00	Lake	MDNR 2008a
Sucker Lake	Clearwater	15-0020-00	Lake	2007, MDNR 2008a, 2010, MBS 2011
Third River	Itasca	07010101-526	Stream	2007
Three Island Lake	Beltrami	04-0134-00	Lake	2007, MDNR 2008a, 2010
Turtle Lake	Beltrami	04-0159-00	Lake	MBS 2011, MPCA 2013, MDNR APM
Turtle River	Beltrami	07010101-510	Stream	MPCA Biomon
Turtle River Lake	Beltrami	04-0111-00	Lake	2007, MDNR 2008b, 2010, MDNR APM
White Oak Lake	Itasca	31-0776-00	Lake	2007, MDNR 2008a, 2010
Winnibigoshish Lake	Cass	11-0147-00	Lake	2007, MDNR 2008a, 2010

07010102 Leech Lake River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Baby Lake	Cass	11-0283-00	Lake	MDNR 2008a
Bass Lake 2	Hubbard	29-0132-00	Lake	MBS 2011, MPCA 2013
Big Sand Lake	Cass	11-0077-00	Lake	MDNR 2008a, MBS 2011
Birch Lake	Cass	11-0412-00	Lake	MDNR 2008b, MDNR APM
Boy Lake	Cass	11-0143-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
Boy River	Cass	07010102-520	Stream	MDNR 2008b, MPCA Biomon
Boy River	Cass	07010102-518	Stream	2007, MDNR 2008b
Cedar Lake	Cass	11-0082-00	Lake	MBS 2011, MPCA 2013
Cedar Lake	Cass	11-0481-00	Lake	MDNR 2008a
Child Lake	Cass	11-0263-00	Lake	MDNR 2008a, MBS 2011, MDNR APM
Garfield Lake	Hubbard	29-0061-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
Girl Lake	Cass	11-0174-00	Lake	MPCA 2013, MDNR APM
Goose Lake	Cass	11-0096-00	Lake	2007, MDNR 2008a, 2010, MBS 2011
Hart Lake	Hubbard	29-0063-00	Lake	2007, MDNR 2008a, 2010, MBS 2011
Horseshoe Lake	Hubbard	29-0059-00	Lake	MDNR 2008b, MBS 2011, MDNR APM
Hunter Lake	Cass	11-0170-00	Lake	MDNR 2008a
Inguadona Lake	Cass	11-0120-00	Lake	2007, MDNR 2008a, MBS 2011
Kabekona Lake	Hubbard	29-0075-00	Lake	2007, MDNR 2008b
Kabekona River	Hubbard	07010102-511	Stream	2007, MDNR 2008b
Kerr Lake	Cass	11-0268-00	Lake	MDNR 2008b, Survey
Kid Lake	Cass	11-0262-00	Lake	MDNR 2008a
Laura Lake	Cass	11-0104-00	Lake	2007, MDNR 2008a, 2010, MBS 2011
Leech Lake	Cass	11-0203-00	Lake	2007, MDNR 2008a, 2010
Little Boy Lake	Cass	11-0167-00	Lake	MDNR 2008a
Little Gulch Lake	Hubbard	29-0123-00	Lake	MBS 2011, MPCA 2013

07010102 Leech Lake River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Little Swift Lake	Cass	11-0131-00	Lake	MDNR 2008a
Little Woman Lake	Cass	11-0265-00	Lake	MDNR 2008a, MBS 2011
Lower Milton Lake	Cass	11-0080-00	Lake	MDNR 2008a
Lower Trelipe Lake	Cass	11-0129-00	Lake	2007, MDNR 2008a, MDNR APM
McCarthey Lake	Cass	11-0168-00	Lake	MDNR 2008a, 2010
McKeown Lake	Cass	11-0261-00	Lake	MDNR 2008a
Moon Lake	Cass	11-0078-00	Lake	MDNR 2008a
Mud Lake	Cass	11-0100-00	Lake	2007, MDNR 2008a, 2010, MBS 2011
Necktie River	Hubbard	07010102-502	Stream	2007, MDNR 2008b
Oak Lake	Hubbard	29-0060-00	Lake	2007, MDNR 2008b
Ododikossi Lake	Cass	11-0074-00	Lake	MDNR 2008a
Oxbow Lake	Cass	11-0075-00	Lake	MDNR 2008a
Pick Lake	Cass	11-0267-00	Lake	MDNR 2008b, MBS 2011
Pleasant Lake	Cass	11-0383-00	Lake	MPCA 2013, UofM/MPCA 2013
Portage Lake	Cass	11-0476-00	Lake	2007, MDNR 2008b, 2010
Portage Lake	Cass	11-0204-00	Lake	MPCA 2013, MDNR APM
Rice Lake	Cass	11-0162-00	Lake	MDNR 2008a, 2010, MDNR APM
Shingobee Lake	Hubbard	29-0043-00	Lake	MBS 2011, MPCA 2013
Swift Lake	Cass	11-0133-00	Lake	MDNR 2008a, 2010, MBS 2011, MDNR APM
Tamarack Lake	Cass	11-0189-00	Lake	MDNR 2008a
Twin (East Twin) Lake	Cass	11-0123-00	Lake	MDNR 2008a, 2010, MBS 2011
Upper Trelipe Lake	Cass	11-0105-00	Lake	MPCA 2013, MDNR APM
Wabedo Lake	Cass	11-0171-00	Lake	MDNR 2008a, MBS 2011
Wax Lake	Cass	11-0124-00	Lake	MDNR 2008a
West Twin Lake	Cass	11-0125-00	Lake	MDNR 2008a
Woman Lake	Cass	11-0201-00	Lake	2007, MDNR 2008a, 2010, MDNR APM

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Name	County	WID	Water Type	Source(s)
Aitkin Lake	Aitkin	01-0040-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
Anderson Lake	Aitkin	01-0031-00	Lake	MDNR 2008a
Ann Lake	Itasca	31-0305-00	Lake	MDNR 2008a
Big Birch Lake	Cass	11-0017-00	Lake	MDNR 2008a, 2010
Big Rice Lake	Cass	11-0073-00	Lake	2007, MDNR 2008a, 2010, MBS 2011
Big Sandy Lake	Aitkin	01-0062-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
Blackberry Lake	Itasca	31-0210-00	Lake	2007, MDNR 2008a, 2010
Bluebill Lake	Itasca	31-0265-00	Lake	MDNR 2008a
Bosley Lake	Itasca	31-0403-00	Lake	MDNR 2008a
Brown Lake	Aitkin	01-0078-00	Lake	MDNR 2008a
Buckman Lake	Itasca	31-0272-00	Lake	MDNR 2008a
Clear Lake	Aitkin	01-0106-00	Lake	MDNR 2008a

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Name	County	WID	Water Type	Source(s)
Clearwater Lake	Itasca	31-0402-00	Lake	MDNR 2008a
Cornish Lake	Aitkin	01-0427-00	Lake	MDNR 2008a, MPCA 2013
Crescent Lake	Itasca	31-0294-00	Lake	MDNR 2008a
Crooked Lake	Itasca	31-0193-00	Lake	MPCA 2013, MBS 2017
Crooked Lake	Itasca	31-0203-00	Lake	2007, MDNR 2008a
Cross Lake	Carlton	09-0062-00	Lake	1854 List, MDNR 2008a
Davis Lake	Aitkin	01-0071-01	Lake	2007, MDNR 2008a
Day Brook	Itasca, St. Louis	07010103-542	Stream	Permittee
Flowage Lake	Aitkin	01-0061-00	Lake	2007, MDNR 2008a, 2010, MBS 2011, UofM/MPCA 2013
Flower Lake	Carlton	09-0064-00	Lake	1854 List, MDNR 2008a
Gunny Sack Lake	Itasca	31-0267-00	Lake	MDNR 2008a
Hay Lake	Itasca	31-0037-00	Lake	MDNR 2008b, UofM/MPCA 2013
Hockey Lake	St. Louis	69-0849-00	Lake	1854 List, 2007, MDNR 2008a, 2010
Horseshoe Lake	Aitkin	01-0034-00	Lake	MPCA 2013, MDNR APM
Hunters Lake	Itasca	31-0450-00	Lake	MDNR 2008a
Island Lower Lake	Carlton	09-0060-02	Lake	1854 List, 2007, MDNR 2008b, 2010
Island Upper Lake	Carlton	09-0060-01	Lake	1854 List, 2007, MDNR 2008b, 2010
Lawrence Lake	Itasca	31-0231-00	Lake	MDNR 2008a MDNR APM
Little Birch Lake	Cass	11-0018-00	Lake	MDNR 2008a, MBS 2011
Little Hill River WMA - Impoundment	Aitkin	01-0433-00	Lake	MDNR 2008a
Little McKinney Lake	Aitkin	01-0197-00	Lake	MDNR 2008a
Little Red Horse Lake	Aitkin	01-0052-00	Lake	2007, MDNR 2008a
Long Lake	Carlton	09-0066-00	Lake	1854 List, MDNR 2008a, 2010
Marble Lake	Itasca	31-0271-00	Lake	MDNR 2008a
Minnewawa Lake	Aitkin	01-0033-00	Lake	2007, MDNR 2008a, 2010
Moose Lake	Aitkin	01-0140-00	Lake	2007, MDNR 2008a, 2010
Moose Lake	Itasca	31-0242-00	Lake	MPCA 2013
Moose River	Aitkin	07010103-524	Stream	MDNR 2008b, Survey
Moose River Pool	Aitkin	01-0358-00	Lake	MDNR 2008a, 2010
Moose Willow WMA - Willow Pool	Aitkin	01-0431-00	Lake	MDNR 2008a, 2010
Mud Lake	Itasca	31-0206-00	Lake	MDNR 2008a, 2010
Mud Lake	Aitkin	01-0194-00	Lake	MDNR 2008a, 2010
Nagel Lake	Itasca	31-0377-00	Lake	MDNR 2008a, 2010
Nelson Lake	Aitkin	01-0010-00	Lake	1854 List, MDNR 2008b
O'Brien (Leighton) Lake	Itasca	31-0032-00	Lake	MDNR 2008a
O'Donnell Lake	Itasca	31-0303-00	Lake	MDNR 2008a
Ox Hide Lake	Itasca	31-0106-00	Lake	UofM/MPCA 2013
Prairie Lake	Itasca	31-0384-00	Lake	MDNR 2008a, 2010

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Name	County	WID	Water Type	Source(s)
Prairie Lake	Itasca	31-0053-00	Lake	2007, MDNR 2008b, 2010
Prairie Lake	St. Louis	69-0848-00	Lake	1854 List, MDNR 2008a
Prairie River	Itasca	07010103-508	Stream	2007, MDNR 2008b, UofM/MPCA 2013
Prairie River	Aitkin	07010103-515	Stream	2007, MDNR 2008b, 2010
Prairie River	St. Louis	07010103-516	Stream	1854 List
Rat House Lake	Aitkin	01-0053-00	Lake	2007, MDNR 2008a, 2010
Rat Lake	Aitkin	01-0077-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
Red Lake	Aitkin	01-0107-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
Rice Lake	Aitkin	01-0005-00	Lake	2007, MDNR 2008a, 2010
Rice Lake	Itasca	31-0201-00	Lake	MDNR 2008a
Rice Pad	Cass	11-0720-00	Lake	MDNR 2008a
Rock Lake	Aitkin	01-0072-00	Lake	MDNR 2008a, 2010, MPCA 2013
Sailor Lake	Cass	11-0019-00	Lake	MDNR 2008a
Salo Marsh State WMA Imp.	Aitkin	01-0415-00	Lake	1854 List, MDNR 2008a, 2010
Sanders Lake	Aitkin	01-0076-00	Lake	MDNR 2008a
Sandy River	Aitkin	07010103-512	Stream	MDNR 2008b, Survey
Sandy River Lake	Aitkin	01-0060-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
Savanna Lake	Aitkin	01-0014-00	Lake	MDNR 2008b, Survey
Savanna River	Aitkin	07010103-514	Stream	2007, MDNR 2008b
Shovel Lake	Aitkin	01-0200-00	Lake	2007, MDNR 2008a, 2010
Soneman Lake	Itasca	31-0276-00	Lake	MDNR 2008a
Spruce Lake	Itasca	31-0347-00	Lake	MDNR 2008a, 2010
Steamboat Lake	Aitkin	01-0071-02	Lake	MDNR 2008a
Stony Lake	Aitkin	01-0017-00	Lake	MDNR 2008a
Swan Lake (Southwest Bay)	Itasca	31-0067-03	Lake	2007, MDNR 2008a, 2010, UofM/MPCA 2013, Permittee
Swan River	Itasca	07010103-506	Stream	Permittee
Tamarack Lake	Carlton	09-0067-00	Lake	1854 List, MDNR 2008a, 2010, MDNR APM
Tamarack River	Carlton	07010103-521	Stream	1854 List, MDNR 2008b, 2010
Tamarack River	Aitkin	07010103-521	Stream	MDNR 2008b, Survey
Thiebault Lake	Cass	11-0020-00	Lake	MDNR 2008a
Third Guide Lake	Cass	11-0001-00	Lake	MDNR 2008a
Thunder Lake	Cass	11-0062-00	Lake	MDNR 2008a
Unnamed Lake	Itasca	31-0204-00	Lake	MDNR 2008a
Washburn Lake	Aitkin	01-0111-00	Lake	MDNR 2008a
White Elk Lake	Aitkin	01-0148-00	Lake	2007, MDNR 2008a, 2010
White Fish Lake	Itasca	31-0142-00	Lake	MDNR 2008a
Wolf Lake	Itasca	31-0152-00	Lake	MPCA 2013, MBS 2017
Woodbury Lake	Carlton	09-0063-00	Lake	1854 List, MDNR 2008a

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Name	County	WID	Water Type	Source(s)
Bay Lake	Crow Wing	18-0034-00	Lake	MDNR 2008b, MDNR APM
Beauty Lake	Todd	77-0035-00	Lake	MPCA 2013, MDNR APM
Big Swan Lake	Todd	77-0023-00	Lake	MPCA 2013, UofM/MPCA 2013, MDNR APM
Birch Lake	Aitkin	01-0206-00	Lake	MDNR 2008a
Blind Lake	Aitkin	01-0188-00	Lake	2007, MDNR 2008a, MDNR APM
Buffalo Lake	Crow Wing	18-0152-00	Lake	MDNR 2008a
Camp Lake	Aitkin	01-0098-00	Lake	MDNR 2008a
Cedar Lake	Aitkin	01-0209-00	Lake	MPCA 2013, MDNR APM
Crow Wing Lake	Crow Wing	18-0155-00	Lake	2007, MDNR 2008b
Deadmans Lake	Crow Wing	18-0188-00	Lake	MDNR 2008a
Deer Lake	Crow Wing	18-0182-00	Lake	MDNR 2008a
Dog Lake	Crow Wing	18-0107-00	Lake	MDNR 2008a, 2010
Elm Island Lake	Aitkin	01-0123-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
Farm Island Lake	Aitkin	01-0159-00	Lake	2007, MDNR 2008a MDNR APM
Faupel Lake	Crow Wing	18-0237-00	Lake	MDNR 2008a
Flanders Lake	Crow Wing	18-0247-00	Lake	MDNR 2008a
Fleming Lake	Aitkin	01-0105-00	Lake	MDNR 2008b, MDNR APM
Gilbert Lake	Crow Wing	18-0320-00	Lake	MDNR 2008a MDNR APM
Gun Lake	Aitkin	01-0099-00	Lake	MDNR 2008a, 2010, MDNR APM
Half Moon Lake	Crow Wing	18-0238-00	Lake	2007, MDNR 2008a
Hanging Kettle Lake	Aitkin	01-0170-00	Lake	MPCA 2013, MDNR APM
Happy Lake	Crow Wing	18-0101-00	Lake	MDNR 2008a
Hay Lake	Crow Wing	18-0444-00	Lake	MDNR 2008a
Hay Lake	Crow Wing	18-0120-00	Lake	MDNR APM
Hickory Lake	Aitkin	01-0179-00	Lake	MDNR 2008a, MDNR APM
Horseshoe Lake	Crow Wing	18-0317-00	Lake	MDNR 2008a
Island Lake	Crow Wing	18-0052-00	Lake	MDNR 2008a
Island Lake	Crow Wing	18-0383-00	Lake	MDNR 2008a
Jewett State WMA - Impoundment	Aitkin	01-0383-00	Lake	MDNR 2008a
Johnson Lake	Aitkin	01-0131-00	Lake	MDNR 2008a
Killroy Lake	Aitkin	01-0238-00	Lake	MDNR 2008a
Kimberly WMA - Lower Pool	Aitkin	01-0411-00	Lake	MDNR 2008a
Kimberly WMA – Upper Pool	Aitkin	01-0410-00	Lake	MDNR 2008a
Krilwitz Lake	Aitkin	01-0283-00	Lake	MDNR 2008a
Lily Lake	Aitkin	01-0088-00	Lake	MDNR 2008a
Little Pine Lake	Aitkin	01-0176-00	Lake	MDNR 2008b, MDNR APM
Little Willow R. WMA - Upper Pool	Aitkin	01-0420-00	Lake	MDNR 2008a
Little Willow River WMA Pool 2	Aitkin	01-0332-00	Lake	MDNR 2008a
Long Lake	Todd	77-0027-00	Lake	MPCA 2013, MDNR APM

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Name	County	WID	Water Type	Source(s)
Lower Dean Lake	Crow Wing	18-0181-00	Lake	2007, MDNR 2008a, 2010
Lower Mission Lake	Crow Wing	18-0243-00	Lake	MDNR 2008a, 2010, MDNR APM
Mallard Lake	Aitkin	01-0149-00	Lake	2007, MDNR 2008a, 2010
Mandy Lake	Aitkin	01-0068-00	Lake	MDNR 2008a
Maple Lake	Crow Wing	18-0045-00	Lake	MDNR 2008a
Miller Lake	Morrison	49-0051-00	Lake	MDNR 2008a
Mississippi River	Crow Wing	07010104-656	Stream	2007, MDNR 2008b, 2010, UofM/MPCA 2013, MDNR APM
Monson Lake	Aitkin	01-0126-00	Lake	MDNR 2008a
Mud Lake	Crow Wing	18-0094-00	Lake	MDNR 2008a
Mud Lake	Crow Wing	18-0137-00	Lake	MDNR 2008a, 2010
Nelson Lake	Crow Wing	18-0164-00	Lake	MDNR 2008a, 2010
Newstrom Lake	Aitkin	01-0097-00	Lake	2007, MDNR 2008a, 2010
Olson Lake	Crow Wing	18-0171-00	Lake	MDNR 2008a
Pointon Lake	Crow Wing	18-0105-00	Lake	MDNR 2008a, MPCA 2013
Portage Lake	Aitkin	01-0069-00	Lake	MDNR 2008a
Rice (Blomberg's) Lake	Crow Wing	18-0121-00	Lake	MDNR 2008a, 2010
Rice (Deerwood) Lake	Crow Wing	18-0068-00	Lake	2007, MDNR 2008a, 2010
Rice (Hesitation WMA) Lake	Crow Wing	18-0053-00	Lake	2007, MDNR 2008a, 2010, UofM/MPCA 2013
Rice (Pratt's) Lake	Crow Wing	18-0316-00	Lake	MDNR 2008a, 2010
Rice Lake	Aitkin	01-0067-00	Lake	MDNR 2008a, 2010
Rice River	Aitkin	07010104-508	Stream	MDNR 2008b, Survey
Ripple Lake	Aitkin	01-0146-00	Lake	MDNR 2008a, 2010, MDNR APM
Ripple River	Aitkin	07010104-661	Stream	2007, MDNR 2008b, 2010
Robbinson Pond	Todd	77-0378-00	Lake	MDNR 2008a
Rogers Lake	Crow Wing	18-0184-00	Lake	MDNR 2008a
Round Lake	Crow Wing	18-0147-00	Lake	MDNR 2008a
Sebie Lake	Crow Wing	18-0161-00	Lake	MDNR 2008a
Section Ten Lake	Aitkin	01-0115-00	Lake	2007, MDNR 2008a, 2010
Section Twelve Lake	Aitkin	01-0120-00	Lake	2007, MDNR 2008b, 2010, MDNR APM
Sewells Pond	Crow Wing	18-0446-00	Lake	MDNR 2008a
Sisabagamah Lake	Aitkin	01-0129-00	Lake	MDNR 2008a
Sitas Lake	Aitkin	01-0134-00	Lake	MDNR 2008a
Sjodin Lake	Aitkin	01-0316-00	Lake	2007, MDNR 2008a, 2010
South Long Lake	Crow Wing	18-0136-00	Lake	MDNR 2008a
Spirit Lake	Aitkin	01-0178-00	Lake	2007, MDNR 2008a, MBS 2017
Spruce Lake	Aitkin	01-0151-00	Lake	MDNR 2008a, 2010
Swamp Lake	Aitkin	01-0092-00	Lake	MDNR 2008b, MDNR APM
Tamarack Lake	Crow Wing	18-0318-00	Lake	MDNR 2008a
Terry Lake	Crow Wing	18-0162-00	Lake	MDNR 2008a, 2010
Twin Island Lake	Crow Wing	18-0106-00	Lake	MDNR 2008a, 2010
Twin Lake	Todd	77-0021-00	Lake	MDNR 2008a, 2010

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Name	County	WID	Water Type	Source(s)
Unnamed - Little Willow River WMA	Aitkin	01-0332-00	Lake	MDNR 2008a, 2010
Unnamed (Nokasippi R. Rice Bed)	Crow Wing	18-0485-00	Lake	MDNR 2008a, 2010
Unnamed (Round Lake Pothole)	Aitkin	01-0285-00	Lake	MDNR 2008a
Unnamed Lake	Crow Wing	18-0550-00	Lake	MDNR 2008a
Upper Blind Lake	Aitkin	01-0331-00	Lake	MDNR 2008a
Upper Dean Lake	Crow Wing	18-0170-00	Lake	MDNR 2008a, MBS 2017
Upper Mission Lake	Crow Wing	18-0242-00	Lake	MDNR 2008a MDNR APM
Waukenabo Lake	Aitkin	01-0136-00	Lake	MDNR 2008a, 2010, MDNR APM
West Lake	Aitkin	01-0287-00	Lake	2007, MDNR 2008a
Wilson Lake	Crow Wing	18-0049-00	Lake	MDNR 2008a
Wolf Lake	Crow Wing	18-0112-00	Lake	MDNR 2008a

07010105 Pine River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Arrowhead Lake	Crow Wing	18-0366-00	Lake	MDNR 2008a, 2010
Beuber Lake	Cass	11-0353-00	Lake	2007, MDNR 2008a, 2010, MBS 2011
Big Bird Lake	Crow Wing	18-0285-00	Lake	MDNR 2008a
Big Portage Lake	Cass	11-0308-00	Lake	MDNR 2008a, MBS 2011, MDNR APM
Birchdale Lake	Crow Wing	18-0175-00	Lake	MDNR 2008a, 2010, MDNR APM
Bowen	Cass	11-0350-00	Lake	MDNR 2008b, Survey
Brockway Lake	Cass	11-0366-00	Lake	2007, MDNR 2008a, 2010, MBS 2011
Caraway Lake	Crow Wing	18-0179-00	Lake	MDNR 2008a
Cedar Lake	Cass	11-0444-00	Lake	MDNR 2008a
Clough Creek Lake	Crow Wing	18-0414-00	Lake	MDNR APM
Dahler Lake	Crow Wing	18-0204-00	Lake	2007, MDNR 2008a, 2010
Ding Pot Lake	Cass	11-0565-00	Lake	MDNR 2008a
Duck Lake	Crow Wing	18-0178-00	Lake	MDNR 2008a, 2010, UofM/MPCA 2013
Duck Lake	Crow Wing	18-0314-00	Lake	2007, MDNR 2008a
Eagle Lake	Crow Wing	18-0296-00	Lake	MDNR 2008b, MDNR APM
Emily Lake	Crow Wing	18-0203-00	Lake	MDNR 2008a
Five Point Lake	Cass	11-0351-00	Lake	MDNR 2008a MDNR APM
George Lake	Cass	11-0101-00	Lake	2007, MDNR 2008a, 2010, MBS 2011
Goodrich Lake	Crow Wing	18-0226-00	Lake	MDNR 2008a
Google Lake	Crow Wing	18-0223-00	Lake	2007, MDNR 2008a, 2010
Grass Lake	Crow Wing	18-0230-00	Lake	MDNR 2008a
Greer Lake	Crow Wing	18-0287-00	Lake	MDNR 2008a
Hattie Lake	Cass	11-0232-00	Lake	MDNR 2008a, 2010, MDNR APM
Hay Lake	Cass	11-0199-00	Lake	MDNR 2008a
Island Lake	Cass	11-0360-00	Lake	2007, MDNR 2008a, MBS 2011
Island Lake	Cass	11-0102-00	Lake	MDNR 2008a, 2010

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Name	County	WID	Water Type	Source(s)
Jail Lake	Crow Wing	18-0415-00	Lake	MDNR 2008a
Lily Pad Lake	Crow Wing	18-0275-00	Lake	MDNR 2008a
Lind (Lindsey) Lake	Cass	11-0367-00	Lake	2007, MDNR 2008a, 2010
Little Hattie Lake (Unnamed)	Cass	11-0232-01	Lake	MBS 2011, MPCA 2013
Little Pine Lake	Crow Wing	18-0266-00	Lake	MDNR 2008a, MDNR APM
Little Pine Lake	Crow Wing	18-0176-00	Lake	2007, MDNR 2008a, 2010
Lizotte Lake	Cass	11-0231-00	Lake	MDNR 2008a, 2010
Lizzie Lake	Crow Wing	18-0416-00	Lake	2007, MDNR 2008a, 2010, MBS 2011
Lower Hand Lake	Cass	11-0251-00	Lake	MDNR 2008a, 2010
Lows Lake	Crow Wing	18-0180-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
Mitchell Lake	Crow Wing	18-0294-00	Lake	MDNR 2008a
Mud Lake	Crow Wing	18-0198-00	Lake	MDNR 2008a
Mud Lake	Cass	11-0309-00	Lake	MDNR 2008a
Norway Lake	Cass	11-0307-00	Lake	2007, MDNR 2008a MDNR APM
Ossawinnamakee	Crow Wing	18-0352-00	Lake	MDNR 2008b, Survey
Pelican Lake	Crow Wing	18-0308-00	Lake	MDNR APM
Peterson Lake	Cass	11-0154-00	Lake	MDNR 2008a
Pine Lake	Crow Wing	18-0261-00	Lake	MDNR 2008a, 2010
Pine Mountain Lake	Cass	11-0411-00	Lake	MDNR 2008a, 2010
Pine River (Norway Brook)	Cass	07010105-671	Stream	MDNR APM
Potshot Lake	Cass	11-0149-00	Lake	MDNR 2008a
Rainy Lake	Cass	11-0356-00	Lake	MDNR APM
Rat Lake	Crow Wing	18-0410-00	Lake	MDNR 2008a
Rice (Carrol's) Lake	Cass	11-0227-00	Lake	MDNR 2008a, 2010
Rice Bed Lake	Crow Wing	18-0187-00	Lake	MDNR 2008a, 2010
Schafer Lake	Cass	11-0004-00	Lake	MDNR 2008a
Scribner Lake	Cass	11-0441-00	Lake	MDNR 2008a
South Fork Pine River	Cass	07010105-534	Stream	2007
Stewart Lake	Crow Wing	18-0367-00	Lake	MDNR 2008a
Tamarack Lake	Cass	11-0347-00	Lake	MDNR 2008a
Unnamed (Lost Rice)	Crow Wing	18-0228-00	Lake	MDNR 2008a, 2010
Unnamed (Pistol Lake Rice Bed)	Cass	11-0738-00	Lake	MDNR 2008a
Unnamed Lake	Crow Wing	18-0413-00	Lake	MDNR 2008a
Upper Hand Lake	Cass	11-0242-00	Lake	MDNR 2008a
Upper Hay Lake	Crow Wing	18-0412-00	Lake	MDNR 2008a MDNR APM
Upper Whitefish Lake	Crow Wing	18-0310-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
Velvet Lake	Crow Wing	18-0284-00	Lake	MDNR 2008a
Washburn Lake	Cass	11-0059-00	Lake	MDNR 2008a, 2010, MDNR APM

07010106 Crow Wing River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Abners Lake	Becker	03-0039-00	Lake	MDNR 2008a, 2010
Aspinwall Lake	Becker	03-0104-00	Lake	MDNR 2008a
Bass Lake	Becker	03-0088-00	Lake	MDNR 2008a MDNR APM
Beden Lake	Hubbard	29-0265-00	Lake	MBS 2011, MPCA 2013
BelleTaine Lake	Hubbard	29-0146-00	Lake	MDNR APM
Bergkeller Lake	Cass	11-0447-00	Lake	MDNR 2008a
Big Basswood Lake	Becker	03-0096-00	Lake	2007, MDNR 2008a, 2010, MBS 2011
Big Rush Lake	Becker	03-0103-00	Lake	MDNR 2008a
Blueberry Lake	Becker	03-0007-00	Lake	MDNR 2008a
Blueberry Lake	Wadena	80-0034-00	Lake	MDNR 2008a, 2010
Burgen Lake	Wadena	80-0018-00	Lake	MDNR 2008a, 2010
Cat Lake	Cass	11-0509-00	Lake	MDNR 2008a
Clark Lake	Crow Wing	18-0374-00	Lake	MDNR 2008a MDNR APM
Clausens	Hubbard	29-0097-00	Lake	MDNR 2008b, Survey
Crow Wing Lake	Hubbard	29-0116-00	Lake	2007, MDNR 2008b, 2010
Crow Wing River	Hubbard	07010106-516	Stream	MDNR 2008b, Survey
Deer Lake	Hubbard	29-0090-00	Lake	MDNR 2008b, MDNR APM
Dinner Lake	Becker	03-0044-00	Lake	2007, MDNR 2008a
Duck Lake	Hubbard	29-0142-00	Lake	MDNR APM
Eagle Lake	Hubbard	29-0256-00	Lake	MDNR 2008a MDNR APM
Edward Lake	Crow Wing	18-0556-00	Lake	MDNR APM
Eighth Crow Wing Lake	Hubbard	29-0072-00	Lake	MDNR 2008b, MBS 2011, MDNR APM
Esterday Lake	Cass	11-0511-00	Lake	MDNR 2008a
Farnham Lake	Cass	11-0513-00	Lake	2007, MDNR 2008a, 2010
Fifth Crow Wing Lake	Hubbard	29-0092-00	Lake	2007, MDNR 2008a, MBS 2011, MDNR APM
Finn Lake	Wadena	80-0028-00	Lake	MDNR 2008a
First Crow Wing Lake	Hubbard	29-0086-00	Lake	MDNR 2008a, 2010
First Crow Wing River	Hubbard	07010106-523	Stream	2007
Fish Hook Lake	Hubbard	29-0242-00	Lake	MPCA 2013, MDNR APM
Fishhook River	Hubbard	07010106-627	Stream	MDNR APM
Fourth Crow Wing Lake	Hubbard	29-0078-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
Garden Lake	Crow Wing	18-0329-00	Lake	2007, MDNR 2008a, 2010
Granning Lake	Wadena	80-0012-00	Lake	MDNR 2008a, 2010
Gull Lake	Cass	11-0305-00	Lake	MDNR 2008a, MDNR APM
Gull River	Cass	07010106-502	Stream	2007, MDNR 2008a, 2010
Gyles Lake	Becker	03-0066-00	Lake	MDNR 2008a, MDNR APM
Hardy Lake	Cass	11-0332-00	Lake	MDNR 2008a
Hay Creek	Hubbard	07010106-617	Stream	2007
Hole-in-the-Day Lake	Crow Wing	18-0401-00	Lake	MDNR 2008a, 2010
Indian Creek	Becker	07010106-569	Stream	2007, MDNR 2008b
Island Lake	Hubbard	29-0254-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
Johnson Lake	Crow Wing	18-0328-00	Lake	MDNR 2008a

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Name	County	WID	Water Type	Source(s)
Kane Lake	Becker	03-0042-00	Lake	MBS 2011, MPCA 2013
Kelly Lake	Cass	11-0428-00	Lake	MDNR 2008a
Kneebone Lake	Becker	03-0090-00	Lake	MDNR 2008a
Knutson Lake	Becker	03-0004-00	Lake	MBS 2011, MPCA 2013
Little Basswood Lake	Becker	03-0092-00	Lake	2007, MDNR 2008a, 2010
Little Dinner Lake	Becker	03-0045-00	Lake	MDNR 2008a
Little Mud Lake	Becker	03-0022-00	Lake	MDNR 2008a
Little Sand Lake	Hubbard	29-0150-00	Lake	MDNR APM
Love Lake	Crow Wing	18-0388-00	Lake	MDNR 2008a, MDNR APM
Lower Bottle Lake	Hubbard	29-0180-00	Lake	MDNR 2008a, MDNR APM
Lower Mud Lake	Hubbard	29-0267-00	Lake	MDNR 2008a
Lower Twin Lake	Wadena	80-0030-00	Lake	MDNR 2008a, MBS 2011
Mallard Lake	Crow Wing	18-0334-00	Lake	MDNR 2008a
Mantrap Lake	Hubbard	29-0151-00	Lake	2007, MDNR 2008a, 2010
Margaret Lake	Cass	11-0222-00	Lake	MDNR 2008a, MDNR APM
Mayo Lake	Crow Wing	18-0408-00	Lake	MDNR APM
Middle Cullen Lake	Crow Wing	18-0377-00	Lake	2007, MDNR 2008a, 2010
Mollie Lake	Crow Wing	18-0335-00	Lake	MDNR 2008a
Moose Lake	Cass	11-0424-00	Lake	2007, MDNR 2008b, 2010
Mud Lake	Becker	03-0120-00	Lake	MDNR 2008b, Survey
Mud Lake	Becker	03-0023-00	Lake	MDNR 2008a, 2010
Mud Lake	Becker	03-0067-00	Lake	MDNR 2008a, 2010
Mud Lake	Crow Wing	18-0326-00	Lake	MDNR 2008a, 2010
Mud Lake	Hubbard	29-0119-00	Lake	MDNR 2008a
Ninth Crow Wing Lake	Hubbard	29-0025-00	Lake	MDNR 2008b, MBS 2011
Nisswa Lake	Crow Wing	18-0399-00	Lake	MDNR 2008a, MDNR APM
North Long Lake	Crow Wing	18-0372-00	Lake	2007, MDNR 2008a, MDNR APM
Perch Lake	Crow Wing	18-0304-00	Lake	MDNR 2008a
Pillager Lake	Cass	11-0320-00	Lake	MDNR 2008a
Placid Lake	Morrison	49-0080-00	Lake	2007, MDNR 2008b
Portage Lake	Hubbard	29-0250-00	Lake	MDNR 2008b, Survey
Potato Lake	Hubbard	29-0243-00	Lake	MDNR 2008a, MBS 2011, MDNR APM
Ray Lake	Cass	11-0220-00	Lake	MDNR 2008a
Red Sand Lake	Crow Wing	18-0386-00	Lake	MDNR 2008a, MDNR APM
Rice (Clark) Lake	Crow Wing	18-0327-00	Lake	MDNR 2008a, 2010
Rice (Lowell WMA) Lake	Crow Wing	18-0405-00	Lake	MDNR 2008a
Rice (Pillager) Lake	Cass	11-0321-00	Lake	2007, MDNR 2008a, 2010
Rice Lake	Hubbard	29-0177-00	Lake	2007, MDNR 2008a, 2010
Rock Lake	Cass	11-0324-00	Lake	MDNR 2008a, MDNR APM
Round Lake	Crow Wing	18-0373-00	Lake	MDNR APM
Round Lake	Wadena	80-0019-00	Lake	MDNR 2008a, 2010

07010106 Crow Wing River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Roy Lake	Crow Wing	18-0398-00	Lake	MDNR 2008a, MDNR APM
Second Crow Wing Lake	Hubbard	29-0085-00	Lake	MDNR 2008a
Seventh Crow Wing Lake	Hubbard	29-0091-00	Lake	MDNR 2008a, MBS 2011
Shallow Lake	Hubbard	29-0089-00	Lake	MDNR 2008a
Shell Lake	Becker	03-0102-00	Lake	2007, MDNR 2008a, 2010, MBS 2011, MDNR APM
Shell River	Hubbard	07010106-681	Stream	2007, MDNR 2008b
Shipman	Becker	03-0005-00	Lake	MDNR 2008b, Survey
Sibley Lake	Crow Wing	18-0404-00	Lake	MDNR 2008a, MDNR APM
Sixth Crow Wing Lake	Hubbard	29-0093-00	Lake	2007, MDNR 2008a, MBS 2011
Stocking Lake	Wadena	80-0037-00	Lake	MPCA 2013, MDNR APM
Strike Lake	Wadena	80-0013-00	Lake	MDNR 2008a, 2010
Sylvan Lake	Cass	11-0304-00	Lake	MPCA 2013, MDNR APM
Tamarack Lake	Hubbard	29-0094-00	Lake	MDNR 2008b, Survey
Tenth Crow Wing Lake	Hubbard	29-0045-00	Lake	MDNR 2008a, MDNR APM
Third Crow Wing Lake	Hubbard	29-0077-00	Lake	MDNR 2008a, 2010, MDNR APM
Twin Island Lake	Becker	03-0033-00	Lake	2007, MDNR 2008a
Two Inlets Lake	Becker	03-0017-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
Unnamed (Blackies Slough)	Crow Wing	18-0544-00	Lake	MDNR 2008a
Unnamed (Hay Creek) Lake	Hubbard	29-0554-00	Lake	MDNR 2008a
Unnamed (Indian Creek Pool) Lake	Becker	03-0786-00	Lake	2007, MNDNR 2008b
Unnamed (Total's Pothole)	Crow Wing	18-0543-00	Lake	MDNR 2008a
Unnamed Creek (Mud Creek)	Hubbard	07010106-722	Stream	MDNR 2008b, Survey
Unnamed Lake	Cass	11-0777-00	Lake	MDNR 2008b, Survey
Unnamed Lake	Cass	11-0780-00	Lake	MDNR 2008a
Unnamed Lake	Wadena	80-0007-00	Lake	MDNR 2008a
Upper Bottle Lake	Hubbard	29-0148-00	Lake	2007, MDNR 2008a
Upper Cullen Lake	Crow Wing	18-0376-00	Lake	2007, MDNR 2008a, MDNR APM
Upper Gull Lake	Cass	11-0218-00	Lake	MDNR 2008a, MDNR APM
Upper Mud Lake	Hubbard	29-0284-00	Lake	MDNR 2008a, 2010
Upper Twin Lake	Hubbard	29-0157-00	Lake	MDNR 2008b, Survey
Whipple Lake	Crow Wing	18-0387-00	Lake	MDNR 2008a, 2010
Yaeger Lake	Wadena	80-0022-00	Lake	MDNR 2008a, 2010

07010107 Redeye River (3/21/2017)

Name	County	WID	Water Type	Source(s)
East Leaf Lake	Otter Tail	56-0116-02	Lake	MPCA 2013, MDNR APM
Gourd Lake	Otter Tail	56-0139-00	Lake	MDNR 2008b, Survey

Grass Lake	Otter Tail	56-0115-00	Lake	MDNR 2008b, Survey
Middle Leaf Lake	Otter Tail	56-0116-01	Lake	MDNR APM
North Maple Lake	Otter Tail	56-0013-00	Lake	MDNR 2008b, Survey
South Maple Lake	Otter Tail	56-0004-00	Lake	MDNR 2008b, Survey
Tamarack Lake	Otter Tail	56-0192-00	Lake	MDNR 2008b, UofM/MPCA 2013
Unnamed (Cemetery) Lake	Otter Tail	56-0024-00	Lake	MDNR APM
West Leaf Lake	Otter Tail	56-0114-00	Lake	MPCA 2013, MDNR APM
Wing River	Otter Tail	56-0043-00	Lake	MDNR 2008b, Survey
Wolf Lake	Becker	03-0101-00	Lake	2007, MDNR 2008a

07010108 Long Prairie River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Alexander Lake	Morrison	49-0079-00	Lake	MPCA 2013, MDNR APM
Beck Lake	Todd	77-0056-00	Lake	MDNR 2008a
Cass County Lake	Todd	77-0004-00	Lake	MDNR 2008a
Charlotte Lake	Todd	77-0120-00	Lake	MPCA 2013, MDNR APM
Fish Trap Lake	Morrison	49-0137-00	Lake	MPCA 2013, MBS 2017, MDNR APM
Ham Lake	Morrison	49-0136-00	Lake	MBS 2017
Ida Lake	Douglas	21-0123-00	Lake	MPCA 2013, MDNR APM
Irene Lake	Douglas	21-0076-00	Lake	MPCA 2013, MDNR APM
Jaeger Lake	Todd	77-0075-00	Lake	MDNR 2008a
Jessie Lake	Douglas	21-0055-00	Lake	MDNR APM
Latoka Lake	Douglas	21-0106-00	Lake	MDNR APM
Long Lake	Todd	77-0069-00	Lake	2007, MDNR 2008a, 2010
Long Prairie River	Morrison	07010108-501	Stream	2007
Long Prairie River	Douglas	07010108-505	Stream	UofM/MPCA 2013
Long Prairie River	Douglas	07010108-535	Stream	UofM/MPCA 2013
Louise Lake	Douglas	21-0094-00	Lake	MPCA 2013, UofM/MPCA 2013, MDNR APM
Mill Pond Lake	Douglas	21-0034-00	Lake	MPCA 2013, UofM/MPCA 2013
Miltona Lake	Douglas	21-0083-00	Lake	MPCA 2013, UofM/MPCA 2013, MDNR APM
Mud Lake	Morrison	49-0072-00	Lake	MDNR 2008a
Mud Lake	Todd	77-0087-00	Lake	MDNR 2008a, 2010
Rice Lake	Todd	77-0061-00	Lake	MDNR 2008a, 2010
Rogers Lake	Todd	77-0073-00	Lake	2007, MDNR 2008a, 2010
Shamineau Lake	Morrison	49-0127-00	Lake	MPCA 2013, MDNR APM
Stoney(Stone) Lake	Douglas	21-0101-00	Lake	MPCA 2013
Taylor Lake	Douglas	21-0105-00	Lake	MDNR APM
Turtle Creek	Todd	07010108-513	Stream	2007
Turtle Lake	Todd	77-0088-00	Lake	MDNR APM
Union (North Union) Lake	Douglas	21-0095-00	Lake	MPCA 2013
Union Lake	Douglas	21-0041-00	Lake	MPCA 2013, MDNR APM
Unnamed Lake	Douglas	21-0416-00	Lake	MBS 2011, MPCA 2013
Unnamed Lake	Todd	77-0178-00	Lake	MDNR 2008a

07010108 Long Prairie River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Unnamed Lake	Todd	77-0176-00	Lake	MDNR 2008a
West Nelson Lake	Todd	77-0005-00	Lake	MDNR 2008a, 2010

07010201 Mississippi River - Sartell (3/21/2017)

Name	County	WID	Water Type	Source(s)
Anna Lake	Stearns	73-0126-00	Lake	MDNR 2008b, Survey
Bass Lake	Crow Wing	18-0011-00	Lake	MDNR 2008a
Big Spunk Lake	Stearns	73-0117-00	Lake	MPCA 2013, MDNR APM
Bulldog Lake	Crow Wing	18-0014-00	Lake	MDNR 2008a, MBS 2017, MDNR APM
Coon Lake	Morrison	49-0020-00	Lake	MDNR 2008a, 2010
Erskine Lake	Crow Wing	18-0009-00	Lake	MDNR 2008a
Hannah Lake	Morrison	49-0014-00	Lake	MDNR 2008a
Linneman Lake	Stearns	73-0127-00	Lake	MDNR 2008b, Survey
Little Rice Lake	Stearns	73-0167-00	Lake	MDNR 2008b, Survey
Long Lake	Morrison	49-0015-00	Lake	MDNR 2008a, MBS 2017, MDNR APM
Lower Spunk Lake	Stearns	73-0123-00	Lake	MDNR 2008b, Survey
Mud Lake	Morrison	49-0027-00	Lake	MDNR 2008a, MDNR APM
Ochotto Lake	Stearns	73-0122-00	Lake	MBS 2017, MDNR APM
Peavy Lake	Morrison	49-0005-00	Lake	2007, MDNR 2008b
Pelkey Lake	Morrison	49-0030-00	Lake	MDNR 2008a, UofM/MPCA 2013
Platte Lake	Crow Wing	18-0088-00	Lake	2007, MDNR 2008a, 2010, MDNR APM
Platte River	Morrison	07010201-507	Stream	MDNR 2008b, Survey
Rice Creek	Morrison	07010201-618	Stream	MDNR 2008b, Survey
Rice Lake	Morrison	49-0025-00	Lake	MDNR 2008a, 2010
Rock Lake	Crow Wing	18-0016-00	Lake	MDNR 2008a
Round Lake	Morrison	49-0019-00	Lake	MDNR 2008a
Skunk Lake	Morrison	49-0026-00	Lake	MDNR 2008a, 2010, MDNR APM
Sullivan Lake	Morrison	49-0016-00	Lake	MDNR 2008a, MBS 2017, MDNR APM
Twentytwo Lake	Crow Wing	18-0008-00	Lake	MDNR 2008a, 2010

07010202 Sauk River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Cedar Lake	Stearns	73-0226-00	Lake	MDNR 2008b, Survey
Goodners Lake	Stearns	73-0076-00	Lake	MPCA 2013, MDNR APM
Grand Lake	Stearns	73-0055-00	Lake	MPCA 2013, MDNR APM
Little Birch Lake	Todd	77-0089-00	Lake	MPCA 2013, UofM/MPCA 2013, MDNR APM
Little Osakis Lake	Todd	77-0201-00	Lake	MDNR APM
McCormic Lake	Stearns	73-0273-00	Lake	MDNR 2008b, UofM/MPCA 2013
South Twin Lake	Stearns	73-0276-00	Lake	MPCA 2013

07010202 Sauk River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Unnamed (Tower WMA)	Stearns	73-0343-00	Lake	MPCA 2013
Unnamed Lake	Stearns	73-0274-00	Lake	MPCA 2013
Westport Lake	Pope	61-0029-00	Lake	MPCA 2013, UofM/MPCA 2013

07010203 Mississippi River - St. Cloud (3/21/2017)

Name	County	WID	Water Type	Source(s)
Beaver Lake	Stearns	73-0023-00	Lake	MDNR APM
Big Mud Lake	Sherburne	71-0085-00	Lake	MDNR 2008a, UofM/MPCA 2013
Boyd Lake	Sherburne	71-0118-00	Lake	MPCA 2013
Buck Lake	Sherburne	71-0187-00	Lake	MDNR 2008a
Clearwater Lake	Wright	86-0252-00	Lake	MDNR APM
Jim Lake	Sherburne	71-0111-00	Lake	MDNR 2008a
Johnson Slough	Sherburne	71-0084-00	Lake	MDNR 2008a
Josephine Pool	Sherburne	71-0068-00	Lake	MDNR 2008a, 2010
Little Mary (Maria) Lake	Wright	86-0139-02	Lake	MBS 2017
Lower Roadside Lake	Sherburne	71-0376-00	Lake	MDNR 2008a
Lundberg Slough	Sherburne	71-0109-00	Lake	MDNR 2008b, Survey
Muskrat Pool	Sherburne	71-0297-00	Lake	MDNR 2008a
Nixon	Wright	86-0238-00	Lake	MBS 2017
Orrock Lake	Sherburne	71-0085-00	Lake	MDNR 2008a, 2010
Pool 2	Sherburne	71-0084-00	Lake	MDNR 2008a
Rice	Sherburne	71-0078-00	Lake	MDNR 2008b, 2010
Rice Lake	Sherburne	71-0142-00	Lake	MDNR 2008a
Sand Prairie WMA-Vision Pool	Sherburne	To be assigned	Lake	MPCA 2013
Sandy Lake	Wright	86-0224-00	Lake	MDNR 2008a, 2010
Schoolhouse Pool	Sherburne	71-0296-00	Lake	MDNR 2008a, 2010
Sugar Lake	Wright	86-0233-00	Lake	MBS 2017, MDNR APM
Unnamed Lake	Wright	86-0231-00	Lake	UofM/MPCA 2013

07010204 North Fork Crow River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Crow Lake	Stearns	73-0279-00	Lake	MDNR 2008b, Survey
Depressional Wetland	Kandiyohi	34-0143-00	Wetland	MPCA Biomon
Fish Lake	Stearns	73-0281-00	Lake	MDNR 2008b, Survey
Grove Lake	Pope	61-0023-00	Lake	MPCA 2013, MDNR APM
Middle Fork Crow River	Kandiyohi	07010204-537	Stream	UofM_MPCA 2013
Monongalia Lake	Kandiyohi	34-0158-00	Lake	MDNR 2008b, UofM/MPCA 2013
North Fork Crow River (North Fork WMA)	Stearns	07010204-685	Stream	MPCA 2013
Padua Lake	Stearns	73-0277-00	Lake	UofM/MPCA 2013
Raymond Lake	Stearns	73-0285-00	Lake	MDNR 2008b, UofM/MPCA 2013

07010204 North Fork Crow River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Smith Lake	Wright	86-0250-00	Lake	MDNR 2008b, Survey
Stella Lake	Meeker	47-0068-00	Lake	MPCA 2013, UofM/MPCA 2013
Tamarack Lake	Stearns	73-0278-00	Lake	MDNR 2008a, 2010
Unnamed Lake	Kandiyohi	34-0611-00	Lake	UofM/MPCA 2013
West Lake Sylvia	Wright	86-0279-00	Lake	MPCA 2013, MBS 2017, MDNR APM

07010205 South Fork Crow River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Cedar Lake	Wright	86-0034-00	Lake	MDNR 2008b, Survey
Dagger Slough	McLeod	43-0168-00	Wetland	MPCA Biomon

07010206 Mississippi River - Twin Cities (3/21/2017)

Amelia Lake	Anoka	02-0014-00	Lake	MDNR APM
Carlos Avery WMA-Pool 13	Anoka	02-0520-00	Lake	MDNR 2008a
Carlos Avery WMA-Pool 14	Anoka	02-0520-00	Lake	MNDR 2008a
Rice Lake	Washington	82-0146-00	Lake	MPCA 2013, MDNR APM

07010207 Rum River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Borden Lake	Crow Wing	18-0020-00	Lake	MDNR 2008a
Camp Lake	Crow Wing	18-0018-00	Lake	2007, MDNR 2008a, MDNR APM
Deer Lake	Aitkin	01-0086-00	Lake	MDNR 2008a
German Lake	Isanti	30-0100-00	Lake	2007, MDNR 2008b, MBS 2017
Hickey Lake	Anoka	02-0096-00	Lake	2007, MDNR 2008b, 2010
Holt Lake	Crow Wing	18-0029-00	Lake	2007, MDNR 2008a
Long Lake	Crow Wing	18-0031-00	Lake	MDNR 2008a
Long Lake	Isanti	30-0056-00	Lake	MBS 2017
Long Pond	Sherburne	71-0036-00	Lake	MDNR 2008b, Survey
Mille Lacs Lake	Mille Lacs	48-0002-00	Lake	MPCA 2013
MilleLacs WMA Korsness Pool 1	Mille Lacs	48-0035-00	Lake	MDNR 2008a
Ogechie Lake	Mille Lacs	48-0014-00	Lake	MDNR 2008b, Survey
Onamia Lake	Mille Lacs	48-0009-00	Lake	2007, MDNR 2008a, 2010
Pickerel Lake	Anoka	02-0130-00	Lake	MDNR 2008a, MBS 2017
Round (Round-Rice Bed WMA)	Crow Wing	18-0032-00	Lake	MDNR 2008a
Scott Lake	Crow Wing	18-0033-00	Lake	MDNR APM
Shakopee Lake	Mille Lacs	48-0012-00	Lake	MDNR 2008b, Survey
Smith Lake	Crow Wing	18-0028-00	Lake	MDNR 2008a, 2010, MDNR APM
Stanchfield Creek	Isanti	07010207-518	Stream	MPCA Biomon
Swan Lake	Anoka	02-0098-00	Lake	MDNR 2008a

07010207 Rum River (3/21/2017)

Name	County	WID	Water Type	Source(s)
Trott Brook	Anoka	07010207-680	Stream	MPCA Biomon
Twelve Lake	Morrison	49-0006-00	Lake	MDNR 2008a, 2010
Twenty Lake	Aitkin	01-0085-00	Lake	2007, MDNR 2008a, 2010
Unnamed Lake	Anoka	02-0101-00	Lake	MPCA 2013
Whitefish Lake	Crow Wing	18-0001-00	Lake	MDNR 2008a, MDNR APM
Williams Lake	Crow Wing	18-0024-00	Lake	MDNR 2008a

Blaha, Gerald (MPCA)

From:	Kessler, Katrina (MPCA)
Sent:	Tuesday, August 06, 2013 10:20 AM
To:	'Bill Latady'; 'Brad Kalk'; 'Chris Holm (cholm@boisforte-nsn.gov)'; 'Corey Strong (cstrong@boisforte-nsn.gov)'; 'Darren Vogt'; 'Deb Dirlam (deb.dirlam@lowersioux.com)'; 'Ed Fairbanks (fairbanks.ed@epa.gov)'; Blaha, Gerald (MPCA); 'Esteban Chiriboga-GLIFWIC'; 'Gabe Prescott (gprescott@lowersioux.com)'; 'Jeff Harper'; 'Joel Rohde (jrohde@redlakenation.org)'; 'John Coleman'; 'Kari Hedin'; 'Kevin Leecy (kevin.leecy@boisforte-NSN.gov)'; 'Kyle Herdina (kherdina@piic.org)'; 'Levi Brown (levib@lldrm.org)'; 'Margaret Watkins'; 'Megan Ulrich'; 'Mike Swan (mikes@whiteearth.com)'; 'Monica Hedstrom'; 'Nancy Schuldt'; 'Perry Bunting'; 'Reginald DeFoe (reggiedefoe@fdlrez.com)'; 'Rose Berens (rberens@boisforte-NSN.gov)'; 'Ryan Rupp'; Hansen, Scott; 'Scott Walz'; 'Seth Moore'; 'Shane Bowe'; 'Stan Ellison'; 'Tara Geschick'; 'Thomas Howes'; 'Wayne DuPuis'; 'Andrea Junker'; 'Brad Frazier'; 'Brandy Toft'; 'Charlie Lippert'; 'Cody Charwood'; 'Curtis Gagnon'; 'Dallas Ross'; 'Daniel Cozza'; 'Dave Conner'; 'Ed Fairbanks'; Hansen, Scott; 'harmon.darrel@epa.gov'; 'Heather Westra'; 'Jammie Thomas'; 'Jesse Anderson'; 'Joy Wiecks'; 'Kayla Bowe'; 'Kenneth Westlake'; 'Kevin Koski'; 'lisa johnson'; 'MICHAEL B WHITT'; 'Sam Malloy'; 'Scott Doig'; 'Steve Mortensen'; 'Susan Kedzie'; 'Tara Loomis'; 'Willie Harris'; 'Yvette Chenaux'; Thornton, J. David (MPCA)
Cc:	Proto, Paul (proto.paul@epa.gov)
Subject:	MPCA Sulfate and Wild Rice Assessment Update

SO4 Bob P
Darren V
Lowell B
Mark Briggs
Barr
MCES
Joe M - USGS WWTF

WR Ann G.
Bob P
Lowell B
Bruce H

Hello:

I am writing to provide you an update on the wild rice sulfate standard assessment work that the MPCA has been conducting over the past several months. During our February 22, 2013 conference call I provided an overview of the steps the MPCA planned to take to complete surface water assessments for the 10 mg/L sulfate standard for wild rice production waters. At the conclusion of that call participants indicated that they would prefer to receive information and updates about the assessment work via emails. To that end the purpose of this message is to let you know where we are in the process and to highlight opportunities for participation going forward.

On April 1, 2013 the MPCA advertised a month-long call for sulfate data and wild rice information. The call for data was published in the State Register and sent via a Gov.Delivery notice. In response to that notice the MPCA received seven sulfate datasets and four sets of wild rice data. During May 2013 the MPCA received a number of comments on the draft assessment method available on the MPCA website. Since that time MPCA staff has been reviewing existing and newly submitted data for quality assurance and getting data into the MPCA's EQuIS water quality database so that the data can be considered for assessment. Additionally, time has been spent considering comments on and making changes to the draft assessment method. At this point the data have been made ready for assessment and staff has begun to review the sulfate and wild rice data using statistical methods and mapping tools. In the coming weeks the MPCA will be evaluating data, documenting considerations, and making initial recommendations for waters to be included on the 2014 draft 303(d) impaired waters list. In September a professional judgment group of MPCA staff and the collectors of the data under review will convene to review the recommendations. The group will discuss the preliminary assessments, give a local perspective, and provide input towards either confirming or refining the preliminary assessments based on additional knowledge of the water resources

The MPCA plans to put the 2014 draft 303(d) impaired waters list on public notice for 30 days in October 2013 to provide interested parties the opportunity to comment. Prior to the public notice period the MPCA will communicate with interested tribal entities to give them a preview of the list and provide an overview of the entire assessment. If there is interest in a face-to-face meeting, and if schedules permit, the MPCA will facilitate a meeting with tribes to walk through the decision making processes. Following the 30-day public comment, period, the MPCA will review and respond to comments and make potential revisions to the list. The deadline for submittal of the draft 2014 303(d) impaired waters list to EPA Region 5 for review and approval is April 2014.

Please let me know if you have questions about the process thus far or if you have an interest in a meeting to discuss the assessment process prior to the public notice period in October 2013.

Best regards,
Katrina

Katrina Kessler, P.E.
Water Assessment and Environmental Information Section Manager
MPCA - St. Paul
651 757-2490

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MAY 13 2011

REPLY TO THE ATTENTION OF: W-15J

The Honorable Thomas M. Bakk
Minnesota Senate
147 State Office Building
100 Rev. Dr. Martin Luther King, Jr. Blvd.
St. Paul, Minnesota 55155-1606

The Honorable David Dill
Minnesota House of Representatives
147 State Office Building
100 Rev. Dr. Martin Luther King, Jr. Blvd.
St. Paul, Minnesota 55155-1606

Dear Mr. Bakk and Mr. Dill:

I am writing in response to your May 9, 2011 letter, in which you requested that the U.S. Environmental Protection Agency provide its views of two draft bills, which would alter the Minnesota Pollution Control Agency's (MPCA) implementation of the current, federally-approved water quality standard of 10 mg/L sulfate for wild rice waters. Because you requested a prompt response, we are able to offer only general comments that focus on two aspects of the bills.

As you know, H.F.1010 and S.F. 1029 propose to modify or suspend the current, federally-approved water quality standard for wild rice waters of 10 mg/L, and H.F. 1010-3 (sec. 19, lines 41.15-41.20), specifically sets 50 mg/L as the numeric criterion for sulfate in wild rice waters until a new standard is developed. To the extent that any legislation changes the EPA-approved water quality standards for Minnesota, such revised water quality standards must be submitted to EPA for review and approval pursuant to 33 U.S.C. §1313(c)(2)(A), Clean Water Act (CWA) §303(c)(2)(A), and are not effective for CWA purposes, including National Pollutant Discharge Elimination System (NPDES) permits, unless and until approved by EPA (see 40 C.F.R. §131.21). Should Minnesota wish to submit these to EPA as changes to Minnesota's water quality standards, the federal regulations at 40 C.F.R. §131.6 provide the submittal requirements. These include, among other things, the methods and analyses conducted to support the water quality standards revisions, including how the revised water quality criteria are sufficient to protect the designated uses (see generally 40 C.F.R. §131 Subpart B, and 40 C.F.R. §§ 131.11 and 131.20). Federal regulations require that criteria be protective of a state's designated uses and EPA's approval is based, among other factors, on determining that there is a scientifically defensible basis for finding that the criteria are sufficient to protect designated uses (see generally 40 C.F.R. §§ 131.5, 131.11, and 131.21). Absent such a showing, EPA would be unable to approve a revised criterion (see generally 40 C.F.R. §131.6(b)). An EPA decision to approve water quality standards would be available for judicial review.

With respect to S.F. 1029, Sec. 62(f), lines 58.4 - 58.12 and H.F.1010-3, lines 40.34-41.13, Sec. 18(e) (both of which generally prevent MPCA from including sulfate limitations in permits until a new standard is developed), EPA believes that the effect of these respective provisions will be to prevent MPCA from including water quality based effluent limitations (WQBELs) based on the federally approved criterion in permits issued under the state's authorized NPDES program. A state with a federally authorized NPDES program is required to issue permits that ensure the protection of federally approved water quality standards. See 33 U.S.C. §1311(b)(1)(C), CWA §301(b)(1)(C); and generally, 40 C.F.R. Part 123 (see especially 40 C.F.R. §123.25(a)(1)); and 40 C.F.R. §§122.4 and 122.44(d)(1). Where a state proposes to issue a permit that fails to apply, or to ensure compliance with, any applicable requirement, including WQBELs, EPA has the authority to review and to object to such permit issuance pursuant to its authority under 40 C.F.R. §123.44. Should EPA object to a state-proposed permit, the state or any interested person would be provided 90 days (from the date on which EPA makes a specific objection) to request a public hearing on the objection, consistent with 40 C.F.R. §123.44(e). EPA would hold such a hearing, pursuant to the procedures outlined in 40 C.F.R. §§123.44(e)-(f). Pursuant to 40 C.F.R. §122.4(c), the state may not issue a permit over EPA's objection. Where EPA has provided notice of an objection, and where the state has failed to revise the permit to meet EPA's objection, EPA has the authority to issue a federal permit for a potential discharger, pursuant to the authority in 40 C.F.R. §123.44(e). Additionally, should EPA determine that a state is not administering its federally approved NPDES program in accordance with requirements of the CWA, EPA has the authority to require the state to take corrective action, and if necessary, to withdraw authorization of the program, pursuant to 33 U.S.C. §§1342(c)(2)-(3).

I hope you find this information helpful.

Sincerely,

for Tinka G. Hyde
Director, Water Division

Anita —
Please make copies for:
- Chris
- Robie
- Tom.
L.

https://mn.gov/oah/assets/9003-34519-pca-sulfate-water-quality-wild-rice-rules-chief-judge-reconsideration-order_tcm19-335811.pdf

OAH 80-9003-34519
Revisor R-4324

In the Matter of the Proposed Rules of the Pollution Control Agency Amending the Sulfate Water Quality Standard Applicable to Wild Rice and Identification of Wild Rice Rivers, Minnesota Rules parts 7050.0130, 7050.0220, 7050.0224, 7050.0470, 7050.0471, 7053.0135, 7053.0205 and 7053.0406

CHIEF ADMINISTRATIVE LAW JUDGE'S ORDER ON REVIEW OF RULES UNDER MINN. STAT. § 14.16, SUBD. 2, AND MINN. R. 1400.2240, SUBP. 5.

Background

The Minnesota Pollution Control Agency (MPCA or Agency) proposes to amend the state's existing rules governing Minnesota's water quality standard to protect wild rice from excess sulfate. The current standard limits sulfate to 10 milligrams per liter in waters used for the production of wild rice as well as in wild rice waters that do not contain cultivated wild rice.[1] The proposed rule amendments identify approximately 1,300 bodies of water in Minnesota as "wild rice waters" designated as subject to the new sulfate standard.[2]

The new standard is set forth in proposed rule at Minn. R. 7050.0224, subd. 5(B).[3] The proposed standard establishes an equation used to calculate the sulfate limit for each MPCA-designated body of water. The equation factors site-specific information and establishes a unique sulfate limit based upon the concentration of iron, organic carbon, and sulfide in the sediment of each designated body of water.[4]

When sulfate in water interacts with iron and organic carbon in sediment, sulfide can form, which the MPCA has determined is toxic to wild rice.[5] Key features of the proposed rules include limits on the amount of sulfide in the sediment of designated waters, and sampling and analytical methods to determine the amount of sulfide, carbon and iron present in the saturated sediment.[6]

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[1] *See, e.g.,* Minn. R. 7050.0224, subps. 1 and 2 and Minn. R. 7050.0220, subps. 1, 3a, 4a,5a, and 6a (2017).
[2] MPCA Resubmission at 8 and Attachment 8, at 58 – 116.
[3] In the July 24, 2017 version of the proposed rules, the methods for calculating sulfate limits were found in part 7050.0224, subp. 5(B)(1). In the revised draft dated March 16, 2108, the requirements appear in part 7050.0224, subp. 5(B).
[4] *See* MPCA's Resubmission, Attachment 1, at 1, and Attachment 8, at 54-55.
[5] Report of the Administrative Law Judge, OAH Docket No. 80-9003-34519, at 1, 5 (January 9, 2018) (Report of the Administrative Law Judge).
[6] *See generally,* MPCA Resubmission, Attachment 8.

Procedural Posture

The Minnesota Pollution Control Agency commenced this rulemaking process on October 26, 2015 with its publication of a Request for Comments in the *State Register*.[7] With necessary approval, the Agency published its initial Notice of Hearing on August 21, 2017[8] and announced a series of hearings scheduled in October and November, 2017.[9] Over 350 individuals attended the six public hearings.[10] Members of the public submitted approximately 4,500 written comments on the proposed rule amendments.[11]

In a report dated January 9, 2018, Administrative Law Judge LauraSue Schlatter disapproved many of the proposed revisions to Minn. R. 7050.0220, 7050.0224 and 7050.0471. The matter then came before the Chief Administrative Law Judge pursuant to Minn. Stat. § 14.15, subd. 3 (2016), and Minn. R. 1400.2240, subp. 4 (2017). These authorities require that the Chief Administrative Law Judge review an Administrative Law Judge's disapproval of an Agency's proposed rule.

In a Report dated January 11, 2018, the Chief Administrative Law Judge concurred with the disapproval determinations of the Administrative Law Judge.[12] As a result:

1. The following proposed rules were disapproved:

    a. Proposed Minn. R. 7050.0220, subps. 3a, 4a, 5a, 6a
    b. Proposed Minn. R. 7050.0224, subp. 2
    c. Proposed Minn. R. 7050.0224, subp. 5, A
    d. Proposed Minn. R. 7050.0224, subp. 5, B (1)
    e. Proposed Minn. R. 7050.0224, subp. 5, C
    f. Proposed Minn. R. 7050.0224, subp. 6
    g. Proposed Minn. R. 7050.0471, subps. 3 through 9

2. The following modifications to rules as originally proposed were also disapproved:

    a. Proposed changes to Minn. R. 7050.0224, subp. 5, B (1)
    b. Proposed changed to Minn. R. 7050.0224, subps. 5, E, F
    c. Proposed changes to Minn. R. 7050.0224, subp. 5, B (2)

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[7] *Id.* at 9, Finding 17.
[8] A second Notice of Hearing was published in September 2017 after the Agency scheduled a hearing to be held at the Fond du Lac Tribal Community College.
[9] *Id.* at 9, Finding 20.
[10] *Id.* at 2-3.
[11] *Id.* at 4.
[12] Report of the Chief Administrative Law Judge, OAH Docket No. 80-9003-34519, at 1, 5 (January 11, 2018) (Report of the Chief Administrative Law Judge).

The Report of the Chief Administrative Law Judge specifically instructed the MPCA on the statutory procedure for the Agency to follow in the event it decided not to correct the defects identified in the proposed rules, as follows:

> If the Department elects not to correct the defects associated with the repeal of the existing rules and the defects associated with the proposed rules, the Department must submit the proposed rules to the Legislative Coordinating Commission and the House of Representatives and Senate policy committees with primary jurisdiction over state governmental operations, for review under Minn. Stat. § 14.15, subd. 4 (2016).[13]

Effective on April 2, 2018, the MPCA requested that the Chief Administrative Law Judge review additional submissions in the matter, including the following:

a) March 28, 2018, Letter Response to the Report of the Chief Administrative Law Judge dated January 11, 2018 (Response), with the following attachments:

- Attachment 1: March 5, 2018 Letter from Christopher Korleski, Environmental Protection Agency, Region V, to Shannon Lotthammer, Assistant Commissioner, MPCA (EPA 2018 Letter);
- Attachment 2: November 5, 2015 Letter from Tinka G. Hyde, Environmental Protection Agency, Region V, to Rebecca Flood, MPCA (EPA 2015 Letter);
- Attachment 3: EPA's Review of Revisions to Minnesota's Water Quality Standards: Human Health Standards Methods (Nov. 5, 2015);
- Attachment 4: November 22, 2017 Letter from Christopher Korleski, Environmental Protection Agency, Region V, to LauraSue Schlatter, Administrative Law Judge with enclosed comments on Minnesota's "Proposed Rules Relating to Wild Rice Sulfate Standard and Wild Rice Water" (EPA 2017 Comments);
- Attachment 5: Sampling and Analytical Method for Wild Rice Methods (March 2018);
- Attachment 6: Technical Discussion of Proposed Equation Related Changes to the Rule;
- Attachment 7: List of Proposed Rule Changes;

[13] Report of the Chief Administrative Law Judge at 2.

- Attachment 8: Revisor's March 16, 2018, version of Proposed Rule incorporating changes as proposed in March 28, 2018 filing (Revisor's AR4324);

- Attachment 9: January 19, 1999 Memorandum from Marvin E. Hora, Manager, Environmental Research and Reporting, Environmental Outcomes Division to the Minnesota Pollution Control Agency Board Water Quality Committee regarding Proposed Revisions of Minn. Rules ch. 7050;

- Attachment 10: Statement of Need and Reasonableness "In the Matter of the Proposed Revisions to the Rules Governing the Classification and Standards for Waters of the State, Minnesota Rules Chapter 7050" page 54 (April 27, 1993) and attached draft rule page;

b) Draft Order Adopting Rules (filed April 2, 2018); and

c) Revisor's July 24, 2017, version of Proposed Rules (Revisor's RD4324A).

The MPCA's request for review was made pursuant to Minn. Stat. § 14.16, subd. 2 (2016) and Minn. R. 1400.2240, subp. 5 (2017).

Legal Analysis

Rulemaking is a statutory process governed by the provisions of the Minnesota Administrative Procedure Act (Act), Minn. Stat. Ch. 14. The Office of Administrative Hearings is statutorily required to review rulemaking matters in accordance with the dictates of that Act.[14]

Relevant to the current proceeding, Minn. Stat. § 14.14, subdivision 2 (2016), provides as follows:

> **At the public hearing** the agency shall make an affirmative presentation of facts establishing the need for and reasonableness of the proposed rule and fulfilling any relevant substantive or procedural requirements imposed on the agency by law or rule. The agency may, in addition to its affirmative presentation, rely upon facts presented by others on the record during the rule proceeding to support the rule adopted.[15]

In this case, the Administrative Law Judge determined that the MPCA failed to meet this and other requirements of the Act and therefore disapproved the proposed rule.[16] As required by law, the disapproval was reviewed by the Chief Administrative Law

[14] Minn. Stat. §§14.05 and 14.08 (2016).
[15] Emphasis added.
[16] Report of the Administrative Law Judge at 5-6.

Judge and, in a January 11, 2018 Report, the MPCA was advised regarding how to correct the determined defects.

Building upon the statutory directive that an agency meet all requirements of the Act relevant to rulemaking, Minn. Stat. § 14.15, subd. 4, provides as follows:

> If the chief administrative law judge determines that the need for or reasonableness of the rule has not been established pursuant to section 14.14, subdivision 2, and if the agency does not elect to follow the suggested actions of the chief administrative law judge to correct that defect, then the agency shall submit the proposed rule to the Legislative Coordinating Commission and to the house of representatives and senate policy committees with primary jurisdiction over state governmental operations for advice and comment. The agency may not adopt the rule until it has received and considered the advice of the commission and committees. However, the agency is not required to wait for advice for more than 60 days after the commission and committees have received the agency's submission.

The MPCA has not complied with the law in this regard. In its Resubmissions, it has not followed the Chief Administrative Law Judge's directives regarding how to correct the defects in the proposed rule, nor has it submitted the disapproved rule to the identified legislative bodies for advice. Instead, the MPCA has, in effect, requested reconsideration of the rule's disapproval and seeks an order allowing adoption of the proposed rule, in modified form.

The Chief Administrative Law Judge declines to grant the MPCA its requested relief. While it is clear that the Agency has made significant efforts to reexamine the proposed rule and make clarifications and revisions where deemed appropriate, it is just as clear that the Agency has not followed the provided directives for curing all identified defects, nor identified other record-based and public-vetted solutions to achieve the same ends consistent with the spirit and the letter of the Minnesota Administrative Procedure Act.[17] Neither has the Agency availed itself of the only other statutory alternative: seeking legislative advice as required by the law.

The Chief Administrative Law Judge is cognizant of the fact that the Agency is dedicated to protecting the quality of the waters in the state and so has invested significant human, temporal and financial resources in this effort. Mindful that the protection of Minnesota's wild rice waters will remain an important policy and regulatory goal for and in the state, the Chief Administrative Law Judge has set forth below additional information that may prove useful to the Agency as it continues to address this issue on behalf of all Minnesotans.

[17] Minn. Stat. 14.001 (2016).

Substantive Review of Agency Resubmissions

The Agency submitted three categories of information to the Chief Administrative Law Judge in support of its request for review. The bulk of the submissions constitute legal argument intended to serve as a basis for reversal of various findings of rule disapproval contained in both the Administrative Law Judge's Report and the Chief Administrative Law Judge's Report.[18] In addition, the submissions include proposed modifications to portions of the disapproved rule. Last, the filings encompass other proposed rule changes not recommended by the Administrative Law Judge.[19] The MPCA's filings are silent on many of the disapproved rule parts notwithstanding the fact that the Administrative Law Judge specified various legal grounds for their disapproval.

Below, the Chief Administrative Law Judge has summarily addressed each of the major issues raised in the MPCA's Resubmissions.

I. Equation-Based Standard

A. Numeric Expression of the Standard

The MPCA argues that the Administrative Law Judge found the proposed equation-based standard to be *per se* invalid, and argues that the existence of other approved rules which rely on mathematical equations proves the Administrative Law Judge's determination to be incorrect.[20] In fact, it is the MPCA that is incorrect. The Administrative Law Judge did not disapprove the proposed standard based on the fact that it contained an equation, but instead determined that the Agency had met its statutory burden to show the equation-based standard to be necessary and reasonable.[21] The Administrative Law Judge went on to find that the proposed implementation of the equation-based standard requires measurement of 1,300 identified waters, a feat that will require approximately ten years to accomplish, and until that is completed no one can know exactly what standard applies and must be met in each identified body of water.[22] Given these facts, the Administrative Law Judge determined that the proposed rule was insufficiently specific to be approved[23] and that it was not "rationally related to the Agency's objective" of "protect[ing] wild rice from the impact of sulfate, so that wild rice can continue to be used as a food source by humans and wildlife."[24] Pursuant to Minn. R. 1400.2100.B., a rule cannot lawfully be approved if it does not rationally relate to the

[18] The Report of the Chief Administrative Law Judge concurred in all respects with the findings and conclusions contained in the Report of the Administrative Law Judge. For the convenience of the reader, further references to the issued Reports will cite only to the Report of the Administrative Law Judge.
[19] MPCA Resubmission at 1.
[20] MPCA Resubmission at 1-4.
[21] Report of the Administrative Law Judge at 60-61, Findings 251, 256, 257.
[22] *Id.* at 61, Finding 258 and at 55-59, Findings 234-249.
[23] *Id.* at 58, Finding 247. *See also Minnesota Chamber of Commerce v. Minnesota Pollution Control Agency*, 469 N.W.2d 100, 107 (Minn. Ct. App. 1991) ("A rule, like a statute, is void for vagueness if it fails to give a person of ordinary intelligence a reasonable opportunity to know what is prohibited or fails to provide sufficient standards for enforcement") (citing *Grayned v. City of Rockford,* 408 U.S. 104, 108-09 (1972)).
[24] Report of the Administrative Law Judge at 58, Finding 246.

Agency's objectives. Having reached this conclusion, the Administrative Law Judge disapproved the proposed rule.

In its Resubmissions the Agency reverts to its argument that:

> "[e]ffluent limit review is case-specific and includes evaluating information such as pollution concentrations in the receiving water and the discharge . . . and how many sources contribute to the receiving water. … Until that information is reviewed and the effluent limit is established, no permittee can know if or to what extent they will have to treat their wastewater discharge for the given pollutant, even if the standard that the effluent limit is protecting is a single numeric value."[25]

In essence, the Agency ignores the Administrative Law Judge's rational relationship analysis and continues to insist that the proposed equation-based rule should be approved based upon the fact that it is necessary and reasonable. Unfortunately, the Administrative Procedure Act does not provide for approval based on that factor alone; all other requirements of statute and rule must also be met in order for rule approval to be lawfully granted.[26]

Even while continuing to argue that the proposed equation-based standard is legally sufficient and should be approved, the MPCA's Resubmissions include several key clarifications and revisions to the equation and required analysis. Three major revisions, and the Chief Administrative Law Judge's responses to each, are addressed below.

(1) Removal of Second Lake

The MPCA revised the proposed equation through the removal of one of four identified outliers in the dataset upon which it had relied in originally promulgating the formulaic equation. This proposed change was made as a result of the Agency's apparent post-January 2018 recognition, grounded in "new information" published in a 2017 study which the Agency relied upon at the rulemaking hearings,[27] which established that "the equation would potentially be made inaccurate if the concentrations [of sulfate compared between groundwater and surface water] were significantly different."[28] A significant difference in the concentrations suggests that upwelling groundwater rather than downward-moving sediment from overlying surface water could be responsible for the "observed false positives in the MPCA data set (false positives are waterbodies for which the equation predicts that sulfide should exceed 120 micrograms per liter, but the sulfide is less than 120)."[29] Having found the concentrations to be materially different in four water bodies, but only having data documenting the fact of upwelling groundwater in one of the four (Second Creek), the Agency proposes removal of this one outlier water body

[25] *Id*. at 4.
[26] Minn. Stat. § 14.05 (2016).
[27] *See* Hearing Exhibit L.2, Ng et al., 2017.
[28] MPCA Resubmissions, Attachment 6 at 1.
[29] *Id.*

from the data set. The result of this removal is a resulting in a change in the mathematical terms included in the equation.[30]

The Agency's newly-submitted revision, based on the exclusion of one outlier in the data set, is based on information available at the time of hearings. This indicates that the Agency's discernment of the proper criteria for inclusion/non-inclusion in the proposed equation-based standard continues to evolve. While this is laudatory, it supports the view expressed at hearing that the proposed standard is too much a continuing work-in-progress to be adopted as an enforceable rule.

By law, a rule is defined as an "agency statement of general applicability and future effect, including amendments, suspensions, and repeals of rules, adopted to implement or make specific the law enforced or administered by that agency or to govern its organization or procedure."[31] It is not difficult to understand how the public questions whether a standard that is unknowable until sufficiently sampled and calculated over a period of ten years, which consists of an equation with mathematical terms that continue to evolve even before adoption, can constitute a rule by which their actions can be regulated.

(2) Inserted Caps

In the proposed revised standard, the MPCA sets minimum and maximum sulfate limits separate and apart from the site-specific limits derived from the equation calculation in proposed rule Minn. R. 7050.0224, subd. 5(B). Functioning as boundaries on the standard, the Agency proposes that the minimum numeric expression of the sulfate standard would be 0.5 milligrams per liter and the maximum numeric expression of the standard would be 335 milligrams per liter.[32]

The insertion of capped boundaries appears to be a prudent and reasonable change to the proposed standard. The Chief Administrative Law Judge notes, however, that the public has had no opportunity to comment regarding whether these specific, proposed caps are the appropriate ones for inclusion in the proposed rule.

(3) Choosing Between Competing Values

The Administrative Law Judge disapproved the proposed rule, in part, based upon the fact that the Agency allowed for any person to measure and propose the standard for an identified water body but had provided no written, transparent process or criteria for doing so. Neither had the Agency identified what process it would rely upon when required to choose among differing, submitted numeric standards.[33]

In its Resubmissions, the Agency clarified that any person, including persons who are not MPCA staff, are allowed to calculate the allowable amount of sulfate for a

[30] *Id*.; Part 7050.0224, subp. 5, Item B.
[31] Minn. Stat. § 14.02, subd. 4 (2016).
[32] MPCA Resubmissions, Attachment 8 at 55.
[33] Report of the Administrative Law Judge at 74, Findings 308-310.

particular body of water by undertaking collection and calculation processes in compliance with the Agency's publication titled *Sampling and Analytical Methods for Wild Rice Waters*.[34] This required technical methodology is incorporated by reference at proposed Minn. R. 7050.0224, subd. 5 (E).

In an apparent attempt to address the issue of choosing between competing and differently valued samples, the Agency's Resubmissions provide as follows:

> All data collected in a wild rice water would be used to set the numeric expression of the standard for that wild rice water. If MPCA has already collected and analyzed 15 (or more) values, then the next 15 (or more) values would be added to the calculation. Moving to a percentile approach will provide greater stability in the numeric expression of the standard – as more data is collected, the numeric expression will converge on the "true" value. This will reduce the likelihood of major changes in the calculated expression of the standard.[35]

The Chief Administrative Law Judge finds this statement to be an insufficient response to the stated concern. First, the statement is not contained in the language of the proposed rule; it is included only in correspondence filed with the Chief Administrative Law Judge as part of the Agency's Resubmissions. This will not become part of any published rule available for future reference or review, and will not have the force and effect of law. Second, the described process does not address the Agency's planned response when less than 15 samples are submitted. For example, assume that Measurer A samples, calculates and submits a proposed standard of .1X for an identified water and Measurer B samples, calculates and submits a proposed standard of 100X for the same body. While the Resubmissions imply that the Agency would average the two submissions into its existing 15 or more samples, that process is not explicitly stated.

In addition, the Agency's Resubmissions clearly indicate that "as more data is collected" the standard for any specified water body will continue to change.[36] In essence, then, the public will be unable to rely upon even the Agency's publication of any specified standard. As an example, consider a situation wherein a water body is sufficiently sampled and the standard calculated to be Y, a value with the Agency publishes on its website and is relied upon by the public. An hour after publication, a different measurer gathers, calculates and submits 15 additional samples to the Agency, which promptly "add[s] them to the calculation" so as to allows the standard to "converge on the 'true' value."[37] As a result, the enforceable standard is immediately changed, and the public would have no knowledge of the change absent continual monitoring of the Agency's website. In essence, the proposed standard becomes not a measuring stick, but a slide

[34] MPCA Resubmission at 4 ("the proposed wild rice rule requires sampling from specific water bodies in order to generate data needed to plug into the equation before a numeric expression can be developed and provides notice of how that data should be gathered and the numeric expression to be determined"). Part 7050.0224, subp. 5, item E.
[35] *Id*., Attachment 6 at 10.
[36] *Id.*
[37] *Id.*

rule. It is difficult to conclude that such a process could ever "give a person of ordinary intelligence a reasonable opportunity to know what is prohibited or … provide sufficient standards for enforcement."[38] Failing to do so, the proposed rule cannot withstand legal scrutiny.

Overall, it is possible that the Agency's submitted clarifications and revisions noted above may represent improvements in the proposed rule. Even so, the fact remains that none of these refinements were made available for public comment or discussion, at hearing or otherwise.

B. Repeal of existing 10 mg/L standard

In her Report disapproving the rule, the Administrative Law Judge noted the public's significant concern that increases in sulfate could lead to increases in methyl mercury, which bio-accumulates in fish and has long-term serious health effects on humans.[39] The MPCA agreed that "enhanced production of methylmercury is a significant concern,"[40] but insisted that this issue was outside the scope of this rulemaking process.[41]

In its Resubmissions, the Agency clarified that it would continue to rely on the state's existing eutrophication standards and mercury standards to ensure that all applicable water standards are met.[42] The Agency admitted that this fact was "so fundamental" to its work that it "escaped mention" in its written response to the public's comments on this issue.[43] If the Agency resubmits this rule in the future, it should include evidence in the record to support its allegations regarding its ability to ensure that all applicable water standards are met.

C. Downstream Waters: Tribes

Both the Fond du Lac Band and the Grand Portage Band of Lake Superior Chippewa have in place wild rice water quality standards that limit sulfate to 10 milligrams/liter. These standards are federally approved and not alterable by the state.[44] The Administrative Law Judge expressed a concern that loosening the sulfate standard for the state's designated waters could degrade the quality of the Bands' wild rice waters.[45]

In its Resubmissions, the Agency recognized the possibility that completing the calculation in proposed Minn. R. 7050.0224, subd. 5(B), might result in numeric expressions of the sulfate standard that are greater than 10 milligrams per liter. In such

[38] *Minnesota Chamber of Commerce v. Minnesota Pollution Control Agency*, 469 N.W.2d 100, 107 (Minn. Ct. App. 1991).
[39] Report of the Administrative Law Judge at 51-52, Findings 219-221.
[40] *Id.* at 52, Finding 220.
[41] *Id.* at 52, Finding 221.
[42] MPCA Resubmission at 5.
[43] *Id.* at 6.
[44] Minn. R. 7050.0155; Report of the Administrative Law Judge at 52, n. 326, citing Hearing Ex. 1020.
[45] Report of the Administrative Law Judge at 52-53, Findings 223-225.

cases, the Agency asserts that it would use other regulatory controls to ensure that waters flowing downstream into areas still governed by the current 10 milligram per liter standard continue to meet applicable water quality standards.[46] If this rule is resubmitted for approval, the Agency should include in the record sufficient evidence to support this assertion.

II. Proposed List of Waters

Federal law delegates to states the authority to establish designated uses of waters and to establish water quality criteria to protect those designated uses in bodies of water.[47] States are prohibited from removing a designated use, if such a use is an "existing use," unless a use with more stringent criteria is added.[48] An existing use is one "actually attained in the water body on or after November 28, 1975, whether or not it is included in the water quality standards."[49]

In the proposed rule, the Agency identified a list of approximately 1,300 waters at Minn. R. 7050.0471. The MPCA based its list upon, among other sources, a comprehensive, reviewed list compiled by the Minnesota Department of Natural Resources (DNR) in a 2008 Report to the Legislature.[50] The MPCA recognized that the DNR's list "is widely considered the most comprehensive source of information regarding where rice may be found in Minnesota" and so extensively reviewed the DNR list when making its designations.[51] In compliance with its legislative directive, the MPCA also consulted with the various Tribes when compiling its list.[52]

In making its determinations as to which water bodies would be included in the list, the MPCA did not explicitly apply the standards it intends to use in future rulemakings to determine whether a water body should be added to the list of wild rice waters.[53] Instead, the Agency used a "weight of evidence" standard to identify waters that met its criteria for "beneficial use as a wild rice water."[54] The rulemaking record does not identify each water considered and rejected for inclusion on the list, nor does it reveal on what basis the Agency rejected any proposed water from inclusion on the list.[55] The MPCA

[46] MPCA Resubmission, at 6 ("Protection of downstream waters is required by 40 CFR 131.10(b). The MPCA already complies with this requirement and there is now a state rule that expressly requires such compliance, Minn. R. 7050.0155…. [To protect these waters, MPCA will] 'facilitate consistent and efficient implementation and coordination of water quality-related management actions' such as permits.").
[47] 40 C.F.R. § 131.3.
[48] 40 C.F.R. § 131.11(h)(1).
[49] 40 C.F.R. § 131.3(e); *See* Report of the Administrative Law Judge at 65, 68, Findings 269, 283.
[50] Report of the Administrative Law Judge at 63-64, Findings 263, 265.
[51] *Id.* at 64, Finding 265.
[52] *Id.* at 62, Finding 261.
[53] *Id.* at 67, Finding 279.
[54] *Id.* at 67, Finding 278.
[55] *Id.* at 67, Finding 279. According to its Resubmissions, the Agency recently asked the federal Environmental Protection Agency (EPA) how uses are designated and whether an existing use can be a designated use. The EPA responded in a March 5, 2018 letter to the Agency (March 28 letter, Att. 1, at 5-8). The only discussion of "existing use" is a clarification of the regulatory definition at 40 CFR 131.3 (e) ("those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards.") The EPA explains "that existing uses are known to be 'actually

acknowledged that it may not have included in the proposed list all waters where the wild rice use has existed since Nov. 28, 1975.[56]

The Administrative Law Judge disapproved the proposed list, concluding that the MPCA's approach excluded hundreds of water bodies previously on lists from the DNR and other sources, including the 1854 Treaty Authority's 2016 and 2017 lists of wild rice waters.[57] The Administrative Law Judge determined that these exclusions violated the federal prohibition against removing a designated use if such a use is an existing use.[58] She also expressed concerns with the reasonableness of the Agency's exclusion of waters without any explicit standards or discussion.[59]

In its Resubmissions, the Agency argued that it compiled its list in consultation with the DNR and tribes, but insisted that it alone can determine what constitutes an "existing use" in Minnesota for purposes of the federal Clean Water Act (CWA).[60] Citing Minn. Stat. §§ 115.03, subd. 1(b) and 115.44, the MPCA argues that it is the only state agency with legal authority to classify waters of the state and assign designated uses.[61]

The Agency's authority is not as clear as it asserts. Minn. Stat. §§ 115.03, subd. 1(b) and 115.44 address the Agency's authority to classify waters, not specifically to determine existing uses for purposes of the CWA. While federal law provides that "the state" may determine existing uses, it does not specify which agency within a state has that unique authority.[62]

Even if the MPCA can establish that its authority trumps that of the DNR or any other state agency, it cannot establish that it is the sole decider of what constitutes an existing use for purposes of federal law. The CWA specifically authorizes certain Indian tribes to make designations as well. The Fond du Lac Band and the Grand Portage Band of Lake Superior Chippewa are both authorized to do so based on approved agreements with the federal government regarding water quality standards.[63] Both Bands agreed that, in rejecting the DNR's report and the 1854 Treaty Authority's list, the MPCA was removing waters that the Bands had already designated as having wild rice as an existing use under federal law.[64]

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attained' when theh use has actually occurred *and* the water quality necessary to support the use has been attained. EPA recognizes, however, that all necessary data may not be available to determine whether the use actually occurred or the water quality to support the use has been attained. When determining an existing use, the EPA provides substantial flexibility to states and authorized tribes to evaluate the strength of the available data . . . ." *See* MPCA Resubmissions, Attachment 1 at 8, citing 80 Fed. Reg. 51027.

[56] Report of the Administrative Law Judge at 67, Findings 280-282.

[57] *Id.* at 65, Finding 269.

[58] *Id.* at 69, Finding 287.

[59] *Id.* at 68, Finding 283.

[60] MPCA Resubmissions at 8-10.

[61] *Id.* at 9.

[62] The Chief Administrative Law Judge notes that the MPCA is designated as the "agency responsible for providing section 401 certifications for nationwide permits: under the CWA. Minn. Stat. 115.03, subd. 4a (2016).

[63] MPCA Resubmissions at 9, n 44.

[64] Report of the Administrative Law Judge at 65, Finding 269, n 395.

III. **Narrative criteria**: Minn. R. 7050.0224, subp. 6

In Part 7050.0224, subp. 6,[65] the MPCA leaves in place an existing (but slightly re-worded) narrative standard for protecting certain wild rice waters. The Administrative Law Judge disapproved this standard because it applies only to some, and not all, wild rice waters.[66] The record reveals no showing of need and/or reasonableness for distinguishing between application of the narrative standard to some waters and the numeric standard to others.[67]

In its resubmissions, the Agency clarified that establishing a sulfate limit standard for certain bodies of water designated in the proposed rule does not remove protections under the federal Clean Water Act for other bodies of water not designated in the proposed rule.[68] The Agency argued that federal law allows a narrative standard to be applied to a set of identified waters that are not the same set to which a numeric standard applies.[69]

Without more, this argument is not convincing. While federal law clearly allows for different regulatory standards for subgroups of waters, Minnesota's rulemaking statute requires an explanation for differentiating between similarly situated groups in these circumstances. The missing explanation relates to whether the differentiation is necessary and reasonable, a foundational criteria for approval of any proposed rule.

IV. Unaddressed Technical Errors[70]

The Chief Administrative Law Judge's review of the Agency's resubmissions has revealed the following instances wherein the Agency has failed to address technical errors identified as additional bases for disapproval.

A. Part 7050.0220, subp. 5a.[71]

According to a review of the 2017 rule language published at the Revisor of Statutes website, the existing rule language highlighted below continues to be missing from the proposed rule amendment.

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[65] *See* Lines 9.13 - 9.18 in 7/24/17 version and lines 56.18 - 56.23 in 3/16/18 version.
[66] Report of the Administrative Law Judge at 69, Finding 287b.
[67] Report of the Administrative Law Judge at 69-70.
[68] MPCA Resubmissions at 7 ("[H]aving different standards for different reaches is not inherently unprotective of downstream waters. As required by federal law, the MPCA has met, and will continue to meet requirements to ensure that downstream standards are protected in the permitting process. The MPCA submits that ... with respect to the proposed rule, as with all its rules, it has and is obligated to implement its rules so as to be protective of downstream uses.").
[69] *Id.*, Attachment 1 at 8-9. The EPA cited to 40 CFR 131.10(c), which provides that "States may adopt sub-categories of a use and set the appropriate criteria to reflect varying needs of such sub-categories of uses, for instance, to differentiate between cold water and warm water fisheries." The MPCA offers no explanation for distinguishing between the categories of wild rice waters.
[70] MPCA Resubmissions, Proposed Order at 7, comment 28.
[71] *See* Lines 4.19-4.24 of 7/24/17 version and lines 38.21-39.3 of 3/16/18 version.

Subp. 5a.

Cool and warm water aquatic life and habitat and associated use classes.

Water quality standards applicable to use classes 2B, 2Be, 2Bg, 2Bm, 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. The water quality standards in part 7050.0222, subpart 4, that apply to class 2B also apply to classes 2Be, 2Bg, and 2Bm. In addition to the water quality standards in part 7050.0222, subpart 4, the biological criteria defined in part 7050.0222, subpart 4d, apply to classes 2Be, 2Bg, and 2Bm.

B. Part 7050.0470, subps. 1 through 9.[72]

Based on the 2017 rule language available for review on the Revisor of Statutes website, the Agency is proposing to amend an outdated version of subparts 1-9. Subpart 1 is given as an example, below. The highlighted language is the language on the Revisor's website and noted as "published electronically on November 20, 2017." The language without highlighting is the language the Agency now presents as the current language, with proposed amendments indicated.

Subpart 1.

Lake Superior basin.

The water use classifications for the listed waters in the in the Lake Superior basin are as identified in items A to D. See parts 7050.0425 ~~and~~, 7050.0430, and 7050.0471 for the classifications of waters not listed. Thus, it appears that the Agency proposes to amend an out-of-date version of the rule. This applies to all 9 subparts of part 7050.0470.

Lake Superior basin.

The water-use classifications for the stream reaches within each of the major watersheds in the Lake Superior basin listed in item A are found in tables entitled "Beneficial Use Designations for Stream Reaches" published on the Web site of the Minnesota Pollution Control Agency at www.pca.state.mn.us/regulations/minnesota-rulemaking. The tables are incorporated by reference and are not subject to frequent change. The date after each watershed listed in item A is the publication date of the applicable table. The water-use classifications for the other listed waters in the Lake Superior basin are as identified in items B to D. See parts 7050.0425 and 7050.0430 for the classifications of waters not listed. Designated use information for water bodies can also be accessed through the agency's

[72] *See* Lines 9.21-11.13 of 7/24/17 version and lines 57.3-58.17 of 3/16/18 version.

Environmental Data Access (http://www.pca.state.mn.us/quick-links/eda-surface-water-data).

V. Approved Rule Modifications

In Attachment 7 of its Resubmissions, the Agency provides a list of 22 proposed rule changes for consideration by the Chief Administrative Law Judge. Upon review, the Chief Administrative Law Judges finds as follows:

- Proposed Rule Changes 1 – 4: Already approved in the Report of the Administrative Law Judge

- Proposed Rule Changes 5 – 8: Relate to the proposed equation-based standard and not approved for the reasons specified in the Report of the Administrative Law Judge and this Order.

- Proposed Rule Changes 9 – 11: Already approved in the Report of the Administrative Law Judge

- Proposed Rule Changes 12 – 13: Approved as related to Proposed Rule Change 11

- Proposed Rule Changes 14 – 16: Approved as minor clarifications

- Proposed Rule Changes 17 – 21: Already approved in the Report of the Administrative Law Judge

- Proposed Rule Change 22: Not approved for the reasons set forth in the Report of the Administrative Law Judge and this Order.

Based upon a review of the rulemaking docket, the Report of the Administrative Law Judge, the Report of the Chief Administrative Law Judge and the Agency's Resubmissions, the Chief Administrative Law Judge issues the following:

ORDER

1. The proposed rules, dated July 27, 2017, as modified by the Agency's Resubmissions, remain disapproved for the reasons set forth in the Report of the Administrative Law Judge, as modified and or clarified by the provisions of this Order.

2. Pursuant to Minn. Stat. 14.15, subd. 4, if the Agency elects not to correct the identified defects as identified in the Report of the Chief Administrative Law Judge, the Agency shall submit the proposed rule to the Legislative Coordinating Commission

and to the legislative policy committees with primary jurisdiction over state governmental operations for advice and comment. The Agency may not adopt the rule until it has either: received and considered the advice of the commission and committees; or 60 days have passed following the Agency's submission of the rule to the commission and committees.

Dated: April 12, 2018

TAMMY L. PUST
Chief Administrative Law Judge

MINNESOTA POLLUTION CONTROL AGENCY

MPCA to withdraw Wild Rice rulemaking

Thursday, April 26, 2018

Contact: Dave Verhasselt, 651-757-2278

The Minnesota Pollution Control Agency (MPCA) is withdrawing the Wild Rice rule from the rulemaking process that it has been in for nearly a year.

“We’ve heard many, many voices, including the Administrative Law Judge on this topic, and the message is clear,” says MPCA Commissioner John Linc Stine. “Although the science is accurate, when it comes to how best to apply the science and affordably implement the rule, we still have more work to do. So, the MPCA will withdraw it from the rulemaking process. We look forward to working with legislators over the next three weeks to determine an alternative path forward.”

Recent findings by an Administrative Law Judge and the ongoing expressions of concern from all sides led the agency to reevaluate their plans, according to Stine. The agency engaged Minnesota Native American tribes, elected officials, businesses and municipal wastewater systems that may be impacted by the rule, and also received thousands of comments from environmental advocacy groups, other stakeholders and the public. However, the MPCA concluded it was time to withdraw the proposed rule to allow for more work on the implementation process.

Background and context

Wild rice is an important part of the ecosystem in many Minnesota lakes and streams. Wild rice has strong cultural significance and use to many Minnesotans, and is an important economic resource to those who harvest and market it.

In 1973, Minnesota adopted a sulfate standard to protect wild rice based on studies showing that wild rice was found primarily in low sulfate waters. The MPCA and many other organizations and individuals have been working on revising and updating this standard for several years.

In 2011, the Minnesota Legislature directed the MPCA to conduct research on the effects of sulfate and other substances on the growth of wild rice. This research was intended to inform an evaluation of the existing wild rice sulfate standard.

After extensive research, data analysis and discussions, the MPCA proposed changes in the fall of 2017 to the water quality standard designed to protect wild rice from adverse impacts due to sulfate pollution. During the last year, the draft rule went through a public notice and comment period. The MPCA modified its proposal based on that public input, before forwarding the updated draft Wild Rice rule to an Administrative Law Judge with the Minnesota Office of Administrative Hearings.

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STATE OF MINNESOTA

Journal of the House

NINETIETH SESSION - 2018

NINETY-FIFTH DAY

SAINT PAUL, MINNESOTA, THURSDAY, MAY 10, 2018

PETITIONS AND COMMUNICATIONS

The following communication was received:

STATE OF MINNESOTA

OFFICE OF THE GOVERNOR
SAINT PAUL 55155

May 9, 2018

The Honorable Kurt Daudt
Speaker of the House of Representatives
The State of Minnesota

Dear Speaker Daudt:

I write to inform you that I have vetoed H. F. No. 3280, the Wild Rice Bill, because it is an extreme overreach that eliminates important protections for wild rice, attempts to exempt Minnesota from the federal Clean Water Act, and ensures ongoing litigation that will prolong, not relieve, the current regulatory uncertainties.

Instead, I urge Legislative Leaders to use the remainder of this Session to bring the different stakeholders together and forge a resolution that respects the federal law, provides regulatory certainty to affected companies and municipalities, and protects our priceless wild rice resource for future generations.

Wild rice is very special to Minnesota. It is essential to the culture and spirituality of many Native American Tribes in our state. In 1973, the state set a 10 mg/L sulfate standard to protect wild rice. That standard has proven to be extremely difficult to implement, due in part to the current costs of sulfate treatment. Furthermore, recent scientific studies have questioned whether the sulfate limit needs to be that low in all wild rice waters to provide the protection it needs.

However, the bill passed this week by the Legislature does not solve the law's implementation challenges or provide regulatory certainty to those industrial and municipal operations affected by it. Instead, it throws out all we have learned about wild rice and sulfate and takes Minnesota backward in our efforts to balance the necessary protections of wild rice with the economic imperatives of jobs and environmentally sound industrial progress.

The bill you have sent to me is in direct conflict with federal law. If enacted, the Minnesota Pollution Control Agency (MPCA) would have to submit scientific evidence to the Environmental Protection Agency (EPA) that demonstrates how the state can repeal its current 10 mg/L sulfate standard and still protect wild rice. This puts the Agency in an impossible bind, as the research it conducted – at the direction of the Legislature – demonstrated the need for a sulfate standard to protect the growth of wild rice. Furthermore, if the Agency tried to issue any permits after the Legislature repealed the 10 mg/L standard without EPA approval of that repeal, municipalities and businesses seeking new permits could not expand or modify their discharges, creating additional regulatory limbo and litigation. Without a scientifically defensible basis for the repeal of the existing standard, the EPA should have to rule that it violates the Clean Water Act.

In 2011, the Legislature directed the MPCA to develop a new wild rice standard. Now, however, some Legislators have decided – based upon their own subjective analyses – that they do not like the science. In response, they have attempted to abolish the standard and pretend that is solves the problem.

This Legislature can do better. Minnesotans – including those whose cultural, environmental, and economic interests are invested in this complex issue – deserve much better. I, for one, believe strongly that working together, we can achieve a more ideal, workable, and sustainable solution for all the people of Minnesota.

For these reasons, today I am vetoing H. F. No. 3280 immediately to provide adequate time to resolve this issue during the remainder of this Legislative Session.

Sincerely,

MARK DAYTON
Governor

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REPORTS OF STANDING COMMITTEES AND DIVISIONS

Knoblach from the Committee on Ways and Means to which was referred:

H. F. No. 3424, A bill for an act relating to state lands; modifying lease provisions; modifying requirements of public land sales; adding to and deleting from state parks and forests; authorizing certain mixed uses; providing for sales and conveyances of interests in state lands; amending Minnesota Statutes 2016, sections 92.50, by adding a subdivision; 92.502; 94.10, subdivision 2; Minnesota Statutes 2017 Supplement, section 89.17; Laws 2015, chapter 25, section 7; Laws 2017, chapter 93, article 2, section 155, subdivision 4; proposing coding for new law in Minnesota Statutes, chapter 103F; repealing Laws 2008, chapter 368, article 1, section 21, subdivision 2.

Reported the same back with the following amendments:

Page 4, line 18, delete "legally described as the North 33 feet"

Page 4, line 19, delete the first "of" and insert "in"

Page 10, line 14, delete "must" and insert "has agreed to"

Page 14, after line 12, insert:

"Sec. 18. **CONVEYANCE OF TAX-FORFEITED LAND; SHERBURNE COUNTY.**

(a) Notwithstanding Minnesota Statutes, section 282.01, subdivision 1a, and the public sale provisions of Minnesota Statutes, chapter 282, Sherburne County may convey to the city of Big Lake for no consideration the tax-forfeited land described in paragraph (c).

(b) The land must be conveyed in fee title, subject only to the reservation of mineral rights to the state. The conveyance must be in a form approved by the attorney general. The attorney general may make changes to the land description to correct errors and ensure accuracy.

(c) The land to be conveyed is located in Sherburne County and is described as: Outlot A, Habitat 1st Addition, Section 30, Township 33, Range 27 (parcel identification 65-451-0010).

Sincerely,

STEVE SIMON
Secretary of State

[NOTE: * Indicates that H. F. No. 4425 contains a line item veto.]

STATE OF MINNESOTA
OFFICE OF THE GOVERNOR
SAINT PAUL 55155

May 30, 2018

The Honorable Kurt Daudt
Speaker of the House of Representatives
The State of Minnesota

Dear Speaker Daudt:

I have vetoed and am returning H. F. No. 3463, Chapter No. 206, a bill relating to motor vehicles.

While I support the policy goals reflected in H. F. No. 3463, I will not sign a bill that requires changes in the MNLARS system, unless sufficient funding is provided to carry out that work. The Legislature has refused to provide adequate funding to improve the MNLARS system over the remainder of this biennium. Therefore, further mandating policy changes without any additional funds undermines the established stakeholder process and jeopardizes the completion of high priority items.

I also will not sign a bill that reduces resources for the Minnesota Department of Public Safety (DPS). It is imperative that the DVS Special Revenue Accounts remain stable, in order for the agency to meet its statutory business obligations into the future, as was intended when the Legislature established those accounts.

These concerns were communicated by my Commissioners and their staff throughout this Session; but, unfortunately, the parties were unable to reach a mutually agreeable solution for the final bill. DPS and Minnesota IT Services (MN.IT) will continue to work with all stakeholders on development priorities for MNLARS within the resources available.

Sincerely,

MARK DAYTON
Governor

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STATE OF MINNESOTA
OFFICE OF THE GOVERNOR
SAINT PAUL 55155

May 30, 2018

The Honorable Kurt Daudt
Speaker of the House of Representatives
The State of Minnesota

Dear Speaker Daudt:

I have vetoed H. F. No. 3422, Chapter No. 210, the Wild Rice Bill. My administration has repeatedly expressed my commitment to protect wild rice waters without imposing unaffordable treatment costs on Minnesota cities and businesses. To continue that process, today I am issuing an Executive Order to establish a Wild Rice Task Force that will address the issues I had hoped could be part of a legislative solution in the past session.

Furthermore, until such time as cost-effective sulfate treatment technologies are available, I have instructed the MPCA Commissioner implement the federal Clean Water Act by working closely with dischargers to assure that <u>no</u> existing permitted facility will be required to install unaffordable treatment to meet the existing sulfate standard. Other tools authorized under the Clean Water Act will be used to protect the Agency and permitted dischargers from allegations of non-compliance.

While I do recognize that H. F. No. 3422 represents some progress over previous legislation, it is not enough to make up for the rest of bill's shortcomings.

Of particular note is the inclusion of a work group process and set of tasks that were acceptable only to the bill's proponents. During the ten days my staff and MPCA staff met with stakeholders, several of my Administration's draft proposals included the creation of an inclusive work group that would focus on recommendations for documenting, protecting, and enhancing natural stands of wild rice, and for reviewing existing scientific literature. However, it appeared that the interests, who advocated for the initial bill, were principally concerned with rehashing disagreements with MPCA on the scientific research supporting the sulfate standard, and with attempting to replace the MPCA's responsibilities under state and federal laws with the authority of the work group.

Giving a work group the power to decide the state's wild rice water quality standard is an unlawful delegation of authority under the federal Clean Water Act, as well as offensive to the Native American Tribes, who place great significance on wild rice. By contrast, the Task Force I am creating will provide the opportunity to bring together a diverse group of stakeholders to work on practical measures to protect and restore wild rice.

While today I am vetoing H. F. No. 3422, I also restate my desire to bring Minnesotans together and find a path forward on this important issue.

Sincerely,

MARK DAYTON
Governor

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STATE OF MINNESOTA
OFFICE OF THE SECRETARY OF STATE
ST. PAUL 55155

The Honorable Kurt Daudt
Speaker of the House of Representatives

The Honorable Warren Limmer
President Pro Tem of the Senate

I have the honor to inform you that the following enrolled Act of the 2018 Session of the State Legislature has been received from the Office of the Governor and is deposited in the Office of the Secretary of State for preservation, pursuant to the State Constitution, Article IV, Section 23:

S. F. No.	H. F. No.	Session Laws Chapter No.	Time and Date Approved 2018	Date Filed 2018
2620		211	9:59 a.m. May 31	May 31

Sincerely,

STEVE SIMON
Secretary of State

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Natural Wild Rice In Minnesota

A Wild Rice Study document submitted to the Minnesota Legislature by the Minnesota Department of Natural Resources February 15, 2008

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Aitkin	Aitkin	01004000	850	298
Aitkin	Anderson	01003100	97	30
Aitkin	Bear	01006400	127	1
Aitkin	Big Sandy	01006200	9,380	94
Aitkin	Birch	01020600	449	5
Aitkin	Blind	01018800	323	39
Aitkin	Brown	01007800	97	34
Aitkin	Camp	01009800	127	30
Aitkin	Clear	01010600	123	20
Aitkin	Cornish Pool	01042700	600	30
Aitkin	Davis	01007101	76	30
Aitkin	Deer	01008600	47	3
Aitkin	Elm Island	01012300	656	30
Aitkin	Farm Island	01015900	2,025	20
Aitkin	Fleming	01010500	326	1
Aitkin	Flowage	01006100	720	432
Aitkin	Gun	01009900	735	60
Aitkin	Hammal	01016100	376	1
Aitkin	Hay	01005900	133	1
Aitkin	Hickory	01017900	183	10
Aitkin	Jenkins	01010000	127	1
Aitkin	Jewett State WMA - Impoundment	01038300	180	30
Aitkin	Johnson	01013100	27	6
Aitkin	Killroy	01023800	23	4
Aitkin	Kimberly State WMA - Lower Pool	01043300	300	30
Aitkin	Kimberly State WMA - Upper Pool	01041100	900	76
Aitkin	Krilwitz	01IMP002	30	6
Aitkin	Lily	01008800	50	2
Aitkin	Little Hill River State WMA - Pool 1	01043300	135	18
Aitkin	Little McKinney	01019700	26	6
Aitkin	Little Pine	01017600	126	1
Aitkin	Little Prairie	01001600	78	1
Aitkin	Little Red Horse Lake	01005200	32	3
Aitkin	Little Willow River State WMA - Upper Pool	W0642001	50	20
Aitkin	Little Willow State WMA - Lower Pool	01033200	140	50
Aitkin	Mallard	01014900	354	320
Aitkin	Mandy	01006800	107	27
Aitkin	Minnewawa	01003300	2,451	130
Aitkin	Monson	01012600	48	25
Aitkin	Moose	01014000	148	117
Aitkin	Moose River	01r4		

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Aitkin	Moose Willow State WMA - Moose Pool	01035800	900	89
Aitkin	Moose Willow State WMA - Willow Pool	01043100	300	50
Aitkin	Moulton	01021200	282	1
Aitkin	Mud (Grayling Marsh WMA, pool 1)	01002900	400	1
Aitkin	Mud (Little White Elk)	01019400	135	68
Aitkin	Nelson	01001000	71	1
Aitkin	Newstrom	01009700	97	76
Aitkin	Pine	01000100	391	4
Aitkin	Portage	01006900	387	5
Aitkin	Prairie River	01r6		
Aitkin	Rat	01007700	442	45
Aitkin	Rat House	01005300	122	100
Aitkin	Red	01010700	97	4
Aitkin	Rice	01000500	83	50
Aitkin	Rice (Big)	01006700	3,635	1,700
Aitkin	Rice River	01r1	190	25
Aitkin	Ripple	01014600	676	50
Aitkin	Ripple River	01r3		
Aitkin	Rock	01007200	366	50
Aitkin	Round	01013700	634	1
Aitkin	Salo Marsh State WMA - Pool	01041500	690	76
Aitkin	Sanders	01007600	55	36
Aitkin	Sandy River	01006000	368	200
Aitkin	Sandy River	01r2		
Aitkin	Savanna	01001400	86	1
Aitkin	Savanna River	01r5		
Aitkin	Section Ten	01011500	440	52
Aitkin	Section Twelve	01012000	167	1
Aitkin	Shovel	01020000	230	207
Aitkin	Sissabagamah	01012900	386	39
Aitkin	Sitas	01013200	59	5
Aitkin	Sixteen	01012400	18	1
Aitkin	Sjodin	01031600	43	28
Aitkin	Spectacle	01015600	107	1
Aitkin	Spirit	01017800	523	26
Aitkin	Split Rock	01000200	27	1
Aitkin	Spruce	01015100	80	80
Aitkin	Steamboat	01007102	59	15
Aitkin	Stony	01001700	52	5
Aitkin	Sugar	01008400	23	1
Aitkin	Sugar	01008700	416	1
Aitkin	Swamp	01009200	270	1

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Aitkin	Tamarack River	01r7		
Aitkin	Twenty	01008500	153	119
Aitkin	Unnamed (L. Wolf)	01002000	19	1
Aitkin	Unnamed (Rice)	01041900	16	1
Aitkin	Unnamed (Round Lake Pothole)	01028500	15	12
Aitkin	Unnamed (Upper Blind)	01033100	14	3
Aitkin	Unnamed (W. Washburn)	01026200	14	1
Aitkin	Washburn	01011100	73	4
Aitkin	Waukenabo	01013600	819	49
Aitkin	West	01028700	51	20
Aitkin	White Elk	01014800	780	350
Anoka	Carlos Avery WMA - Pool 1	W9001001	180	15
Anoka	Carlos Avery WMA - Pool 13	W9001013	586	2
Anoka	Carlos Avery WMA - Pool 14	W9001014	749	15
Anoka	Carlos Avery WMA - Pool 15	W9001015	365	1
Anoka	Carlos Avery WMA - Pool 16	W9001016	67	
Anoka	Carlos Avery WMA - Pool 17	W9001017	185	
Anoka	Carlos Avery WMA - Pool 2	W9001002	683	20
Anoka	Carlos Avery WMA - Pool 22	W9001022	141	10
Anoka	Carlos Avery WMA - Pool 23	W9001023	1,600	
Anoka	Carlos Avery WMA - Pool 24	W9001024	35	2
Anoka	Carlos Avery WMA - Pool 26	W9001026	200	5
Anoka	Carlos Avery WMA - Pool 3	W9001003	186	120
Anoka	Carlos Avery WMA - Pool 5	W9001005	52	25
Anoka	Carlos Avery WMA - Pool 6	W9001006	200	1
Anoka	Carlos Avery WMA - Pool 7	W9001007	240	3
Anoka	Carlos Avery WMA - Pool 9	W9001009	269	120
Anoka	Carlos Avery WMA - Pool 9(2)	W9001011	71	30
Anoka	East Twin	02002000	171	1
Anoka	Grass	02011300		
Anoka	Grass	02009200		
Anoka	Hickey	02009600	41	
Anoka	Little Coon	02003200	486	10
Anoka	Pickerel	02013000	303	25
Anoka	Rice	02000800		
Anoka	Rice	02004300		
Anoka	Rice Creek	02r1		
Anoka	Rondeau	02001500	552	
Anoka	Rum River	02r2		
Anoka	Swan	02009800	273	33
Anoka	West Twin	02003300	18	
Becker	Abners	03003900	100	80

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Becker	Albertson	03026600	73	
Becker	Aspinwall	03010400	178	18
Becker	Axberg	03066000	47	
Becker	Balsam	03029200	148	10
Becker	Bass	03048000	28	
Becker	Bass	03008800	208	10
Becker	Bean	03041100	19	
Becker	Big Basswood	03009600	586	304
Becker	Big Rat	03024600	1,102	110
Becker	Big Rush	03010300	1,128	20
Becker	Blackbird	03019700	284	42
Becker	Blueberry	03000700	160	2
Becker	Booth	03019800	48	43
Becker	Buffalo	03035000	444	89
Becker	Bullhead	03031200	39	6
Becker	Bush	03021200	110	40
Becker	Cabin	03034600	38	
Becker	Camp Seven	03015100	78	8
Becker	Carman	03020900	217	30
Becker	Chippewa	03019600	960	288
Becker	Dahlberg	03057700	77	
Becker	Dead	03016000	296	
Becker	Dinner	03004400	53	11
Becker	Eagen	03031800	85	
Becker	Equay	03021900	73	7
Becker	Flat	03024200	1,970	197
Becker	Gull Creek	03r2		
Becker	Gyles	03006600	42	16
Becker	Halverson	03041200	18	
Becker	Height of Land	03019500	3,943	197
Becker	Hubbel Pond	03024000	561	168
Becker	Indian Creek Imp.	03r4		
Becker	Johnson	03019900	181	40
Becker	Kneebone	03009000	149	15
Becker	Little Basswood	03009200	105	31
Becker	Little Dinner	03004500	12	5
Becker	Little Flat	03021700	235	211
Becker	Little Mud	03002200	25	6
Becker	Little Rice	03023900	110	21
Becker	Little Round	03030200	565	
Becker	Lower Egg	03021000	171	75
Becker	Lyman WPA	03IMP003		

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Becker	Manomin Creek	03r5		
Becker	Mary Yellowhead	03024300	68	7
Becker	Mud	03012000	170	
Becker	Mud	03002300	85	42
Becker	Mud	03006700	88	83
Becker	Mud	03001600	86	
Becker	Ottertail River	03r1		
Becker	Pearl	03048600	268	
Becker	Rice	03028500	51	
Becker	Rice	03017300	37	
Becker	Rice	03029100	245	196
Becker	Rice	03020100	245	245
Becker	Rock	03029300	1,198	240
Becker	Round	03015500	1,094	
Becker	Schultz	03027800	103	82
Becker	Shell	03010200	3,147	169
Becker	Shipman	03000500	71	1
Becker	Spindler	03021400	185	125
Becker	Tamarack	03024100	2,227	245
Becker	Tamarack NWR - Ogemash Pool	03IMP002	71	20
Becker	Tea Cracker	03015700	122	30
Becker	Town	03026400	117	35
Becker	Trieglaff	03026300	111	56
Becker	Twin Island	03003300	71	5
Becker	Two Inlets	03001700	643	40
Becker	Unnamed	03008700	23	
Becker	Unnamed	03060000	59	
Becker	Unnamed	03059800	36	
Becker	Unnamed	03059900	34	
Becker	Unnamed	03014000	43	
Becker	Unnamed	03109300	72	7
Becker	Unnamed	03077600	20	10
Becker	Unnamed	03071600	25	12
Becker	Unnamed	03043400	21	17
Becker	Upper Egg	03020600	493	24
Becker	Wild Rice River	03r3		
Becker	Winter	03021600	117	43
Becker	Wolf	03010100	1,453	10
Beltrami	Big	04004900	3,565	250
Beltrami	Big Rice	04003100	642	96
Beltrami	Bootleg	04021100	308	185
Beltrami	Burns	04000100	131	105

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Beltrami	Campbell	04019600	462	23
Beltrami	Carr	04014100	51	8
Beltrami	Cass	04003000	15,958	10
Beltrami	Clearwater	04034300	1,039	
Beltrami	Cranberry	04012300	77	46
Beltrami	Dutchman	04006700	171	
Beltrami	Erickson	04006800	111	50
Beltrami	George	04017500	89	18
Beltrami	Grant Creek	04r1		
Beltrami	Grass	04021600	233	
Beltrami	Gull	04006400	170	34
Beltrami	Heart	04027100	10	
Beltrami	Irving	04014000	644	97
Beltrami	Kitchi	04000700	1,850	185
Beltrami	Little Puposky	04019700	158	95
Beltrami	Little Rice	04017000	72	
Beltrami	Little Rice	04001500	123	60
Beltrami	Little Rice Pond	04002300		
Beltrami	Little Turtle	04015500	464	23
Beltrami	Manomin	04028600	288	144
Beltrami	Marquette	04014200	578	
Beltrami	Medicine	04012200	458	69
Beltrami	Mississippi	04r2		
Beltrami	Moose	04001100	617	96
Beltrami	Moose	04034200	133	
Beltrami	Norman	04002900	61	8
Beltrami	Pimushe	04003200	1,350	135
Beltrami	Puposky	04019800	2,120	236
Beltrami	Rabideau	04003400	723	217
Beltrami	Rice	04017400	55	
Beltrami	Rice	04012100	36	
Beltrami	Rice	04025000	124	
Beltrami	Rice Pond	04005900	247	123
Beltrami	Three Island	04013400	836	125
Beltrami	Turtle River	04011100	1,664	
Beltrami	Upper Red	04003501	119,271	
Beltrami	Whitefish	04030900	126	
Blue Earth	Rice	07005900		
Blue Earth	Rice Creek	07r1		
Brown	Altematt	08005400		
Brown	Rice Lake	08003500		
Carlton	Bang	09004600	58	1

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Carlton	Bob	09002600	78	1
Carlton	Cedar	09003100	62	10
Carlton	Cross	09006200	110	6
Carlton	Dead Fish	09005100	153	115
Carlton	Flower	09006400	14	10
Carlton	Hardwood	09003000	100	25
Carlton	Hay	09001000	103	1
Carlton	Island	09006000	456	46
Carlton	Jaskari	09005000	74	74
Carlton	Kettle	09004900	611	415
Carlton	Long	09006600	17	4
Carlton	Miller	09005300	156	156
Carlton	Moose	09004300		
Carlton	Moosehead	09004100		
Carlton	Perch	09003600	796	597
Carlton	Rice Portage	09003700	832	120
Carlton	Sterle Pool	W0854002	29	2
Carlton	Tamarack	09006700	228	11
Carlton	Tamarack River	09r1		
Carlton	Wild Rice	09002300	54	36
Carlton	Woodbury	09006300	59	10
Cass	Baby	11028300	736	7
Cass	Bergkeller	11044700	120	5
Cass	Beuber	11035300	135	15
Cass	Big Birch	11001700	255	45
Cass	Big Portage	11030800	956	30
Cass	Big Rice (Remer)	11007300	2,717	1,411
Cass	Big Sand	11007700	752	10
Cass	Birch	11041200	1,262	1
Cass	Bluebill	11039700	51	1
Cass	Bowen	11035000	182	
Cass	Boy (& Boy River)	11014300	5,544	340
Cass	Brockway	11036600	182	55
Cass	Bullhead	11018400	88	
Cass	Cat	11050900	108	5
Cass	Cedar	11048100	34	3
Cass	Cedar	11044400	17	4
Cass	Child	11026300	295	12
Cass	Chub	11051700	57	51
Cass	Ding Pot	11056500	29	29
Cass	Donkey	11028000	54	
Cass	Drumbeater	11014500	376	5

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Cass	East Twin	11012300	297	50
Cass	Esterday	11051100	43	3
Cass	Farnham	11051300	142	71
Cass	Five Point	11035100	265	13
Cass	George	11010100	720	262
Cass	Gijik	11018500	118	1
Cass	Goose	11009600	844	844
Cass	Grass	11031500	113	
Cass	Grass	11009000		
Cass	Gull	11030500	9,541	15
Cass	Gull River	11r1	219	110
Cass	Hand (Lower)	11025100	122	50
Cass	Hand (Upper)	11024200	316	20
Cass	Hardy	11033200	89	2
Cass	Hattie	11023200	592	40
Cass	Hay	11019900	364	36
Cass	Hole-In-Bog	11019700	76	
Cass	Hunter	11017000	189	2
Cass	Inguadona	11012000	935	19
Cass	Island	11010200	390	10
Cass	Island	11036000	117	30
Cass	Kelly	11042800	50	10
Cass	Kerr	11026800	81	1
Cass	Kid	11026200	167	3
Cass	Laura	11010400	1,424	854
Cass	Leech	11020300	109,415	4,000
Cass	Lind	11036700	462	95
Cass	Little Birch	11001800	25	25
Cass	Little Boy	11036900	71	1
Cass	Little Boy	11016700	1,396	10
Cass	Little Swift	11013100	62	16
Cass	Little Vermillion	11003000	138	15
Cass	Little Woman	11026500	50	8
Cass	Lizotte	11023100	75	50
Cass	Lomish	11013600	282	197
Cass	Lower Milton	11008000	80	5
Cass	Lower Trelipe	11012900	618	20
Cass	Mad Dog	11019300	27	
Cass	Margaret	11022200	230	3
Cass	McCarthey	11016800	194	78
Cass	McKeown	11026100	171	3
Cass	Moon	11007800	58	5

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Cass	Moose	11042400	92	1
Cass	Mud	11030900	18	18
Cass	Mud	11010000	1,440	1,300
Cass	Norway	11030700	498	10
Cass	Nushka	11013700	78	
Cass	Ododikossi	11007400	20	10
Cass	Oxbow	11007500	172	4
Cass	Peterson	11015400	139	3
Cass	Pick	11026700	36	1
Cass	Pickerel	11035200	66	
Cass	Pillager	11032000	213	10
Cass	Pine Mountain	11041100	1,657	40
Cass	Portage	11047600	277	
Cass	Potshot	11014900	28	14
Cass	Rat	11028500	104	
Cass	Ray	11022000	183	37
Cass	Rice	11040200	188	5
Cass	Rice	11016200	342	137
Cass	Rice	11013800	55	1
Cass	Rice (Carrol's)	11022700	46	46
Cass	Rice (Pillager)	11032100	232	100
Cass	Rice Pad	11072000	14	4
Cass	Rock	11032400	249	10
Cass	Sailor	11001900	42	10
Cass	Schafer	11000400	44	2
Cass	Scribner	11044100	93	5
Cass	Six Mile	11014600	1,288	70
Cass	Skunk	11002700	145	30
Cass	Spring	11002200	86	12
Cass	Stephens	11021300	104	1
Cass	Swift	11013300	359	51
Cass	Tamarack	11034700	46	4
Cass	Tamarack	11018900	63	6
Cass	Thiebault	11002000	37	5
Cass	Third Guide	11000100	44	14
Cass	Thirty-Six	11017300	49	1
Cass	Thunder	11006200	1,316	2
Cass	Twin	11048400	168	
Cass	Unnamed	11077700	40	
Cass	Unnamed	11078000	10	4
Cass	Unnamed (Pistol Lake Rice Bed)	11073800	22	20
Cass	Unnamed (Rice Swamp)	11069800	11	

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Cass	Unnamed (Rice)	11061500	11	
Cass	Upper Gull	11021800	345	2
Cass	Upper Loon	11022500	114	
Cass	Wabedo	11017100	1,272	5
Cass	Wabegon	11040300	42	4
Cass	Washburn	11005900	1,768	60
Cass	Wax	11012400	95	10
Cass	West Twin	11012500	200	11
Cass	White Oak	11001600	68	1
Cass	Widow	11027300	197	
Cass	Winnibigoshish	11014700	69,821	1,000
Cass	Woman	11020100	5,360	54
Chippewa	Chippewa River	12r1		
Chisago	Goose	13008300	710	
Chisago	Rush	13006900	3,170	
Clay	Cromwell	14010300	27	
Clearwater	Anderson	15007400	53	3
Clearwater	Bagley	15004000	106	
Clearwater	Berg	15002500	50	
Clearwater	Clearwater River	15r1		
Clearwater	Duncan	15002400	18	
Clearwater	Elk	15001000	305	
Clearwater	First	15013900	60	3
Clearwater	Gill	15001900	380	38
Clearwater	Itasca	15001600	1,065	
Clearwater	Lomond	15008100	108	5
Clearwater	Lower Red	15020200		
Clearwater	Lower Rice	15013000	2,375	1,568
Clearwater	Mallard	15001800	123	25
Clearwater	Minerva	15007900	239	36
Clearwater	Mississippi	15r3		
Clearwater	Mud	15006100	294	103
Clearwater	Pine	15014900	1,465	220
Clearwater	Second	15014000	68	7
Clearwater	Sucker	15002000	90	14
Clearwater	Tamarack	15005600	21	
Clearwater	Tamarack	15013600	115	
Clearwater	Third	15014100	38	2
Clearwater	Unnamed (Rice Bed)	15002100	150	45
Clearwater	Upper Rice	15005900	1,860	1,116
Clearwater	Wild Rice River	15r2		
Cook	Bigsby	16034400	89	1

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Cook	Caribou	16036000	714	7
Cook	Christine	16037300	192	19
Cook	Elbow	16009600	415	124
Cook	Fente	16074100	35	
Cook	Four Mile	16063900	593	42
Cook	Grassy	16039000	22	
Cook	Gust	16038000	159	1
Cook	Iron	16032800	125	
Cook	Jack	16052100	127	12
Cook	Kelly	16047600	188	56
Cook	Luffs	16000600		
Cook	Mark	16025000	126	
Cook	Marsh	16048800	62	31
Cook	Moore	16048900	64	48
Cook	Mt. Maud	16wtld2		
Cook	North Fowl	16003600	297	
Cook	Northern Light	16008900	443	133
Cook	Peterson	16047800	104	1
Cook	Phoebe	16080800	758	1
Cook	Prout	16001300	18	
Cook	Rib	16054400	89	
Cook	Rice	16045300	230	92
Cook	Richey	16064300	114	
Cook	Royal River	16r1		
Cook	South Fowl	16003400	508	
Cook	Swamp	16000900		
Cook	Swamp River	16r2		
Cook	Swamp River Reservoir	16090100	165	153
Cook	Teal	16000300	73	1
Cook	Temperance River	16r3		
Cook	Toohey	16064500	369	
Cook	Turtle	16025100	61	
Cook	Unnamed	16wtld1		
Cook	Unnamed	16041600	14	14
Cook	White Pine	16036900	374	
Crow Wing	Arrowhead	18036600	285	40
Crow Wing	Bass	18001100	65	13
Crow Wing	Bass	18022900	114	1
Crow Wing	Bay	18003400	2,435	1
Crow Wing	Big Bird	18028500	205	10
Crow Wing	Birchdale	18017500	80	40
Crow Wing	Borden	18002000	1,038	31

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Crow Wing	Buffalo	18015200	36	18
Crow Wing	Bulldog	18001400	151	5
Crow Wing	Butterfield	18023100	225	1
Crow Wing	Camp	18001800	537	22
Crow Wing	Caraway	18017900	40	32
Crow Wing	Carlson	18039500	45	1
Crow Wing	Clark	18037400	309	3
Crow Wing	Cole	18012700	114	1
Crow Wing	Crow Wing	18015500	378	
Crow Wing	Dahler	18020400	277	28
Crow Wing	Deadman's	18018800	28	5
Crow Wing	Deer	18018200	78	30
Crow Wing	Dog	18010700	71	71
Crow Wing	Duck	18017800	310	175
Crow Wing	Duck	18031400	160	3
Crow Wing	Eagle	18029600	356	1
Crow Wing	Emily	18020300	675	2
Crow Wing	Erskine	18000900	186	7
Crow Wing	Faupel	18023700	42	25
Crow Wing	Flanders	18024700	181	20
Crow Wing	Garden	18032900	262	100
Crow Wing	Gilbert	18032000	391	7
Crow Wing	Goggle	18022300	107	11
Crow Wing	Goodrich	18022600	382	5
Crow Wing	Grass	18036200	45	1
Crow Wing	Grass	18023000	78	4
Crow Wing	Green	18023300	14	1
Crow Wing	Greer	18028700	384	20
Crow Wing	Half Moon	18023800	70	14
Crow Wing	Happy	18010100	51	36
Crow Wing	Hay	18044400	46	29
Crow Wing	Hole-in-the-Day	18040100	217	90
Crow Wing	Holt	18002900	164	10
Crow Wing	Horseshoe	18031700	33	13
Crow Wing	Island	18005200	37	18
Crow Wing	Island	18038300	85	2
Crow Wing	Jail	18041500	190	2
Crow Wing	Johnson	18032800	129	25
Crow Wing	Lily Pad	18027500	47	30
Crow Wing	Little Pine	18026600	384	20
Crow Wing	Little Pine	18017600	135	30
Crow Wing	Lizzie	18041600	384	100

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Crow Wing	Long	18003100	80	4
Crow Wing	Love	18038800	88	18
Crow Wing	Lower Dean	18018100	372	360
Crow Wing	Lower Mission	18024300	739	50
Crow Wing	Lows	18018000	320	45
Crow Wing	Mahnomen	18012600	238	1
Crow Wing	Mallard	18033400	73	4
Crow Wing	Maple	18004500	68	20
Crow Wing	Middle Cullen	18037700	405	2
Crow Wing	Mississippi River	18r1		1
Crow Wing	Mitchell	18029400	460	3
Crow Wing	Mollie	18033500	421	17
Crow Wing	Mud	18009400	78	6
Crow Wing	Mud	18013700	132	40
Crow Wing	Mud	18032600	82	60
Crow Wing	Mud	18019800	103	10
Crow Wing	Nelson	18016400	323	100
Crow Wing	Nisswa	18039900	213	25
Crow Wing	North Long	18037200	6,178	10
Crow Wing	Olson	18017100	28	3
Crow Wing	Ossawinnamakee	18035200	739	1
Crow Wing	Perch	18030400	181	8
Crow Wing	Pine	18026100	391	60
Crow Wing	Platte	18008800	1,768	350
Crow Wing	Pointon	18010500	193	14
Crow Wing	Rat	18041000	100	2
Crow Wing	Red Sand	18038600	569	28
Crow Wing	Rice (Blomberg's)	18012100	78	60
Crow Wing	Rice (Clark Lake rice bed)	18032700	181	124
Crow Wing	Rice (Deerwood)	18006800	185	170
Crow Wing	Rice (Hesitation State WMA)	18005300	168	138
Crow Wing	Rice (Lowell State WMA)	18040500	85	33
Crow Wing	Rice (Pratt's)	18031600	100	90
Crow Wing	Rice Bed	18018700	50	47
Crow Wing	Rock	18001600	210	10
Crow Wing	Rogers	18018400	249	4
Crow Wing	Round	18014700	144	5
Crow Wing	Round (Round-Rice Bed State WMA)	18003200	82	5
Crow Wing	Roy	18039800	310	5
Crow Wing	Sebie	18016100	180	2
Crow Wing	Sewells Pond	18044600	20	16
Crow Wing	Sibley	18040400	412	10

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Crow Wing	Smith	18002800	486	49
Crow Wing	South Long	18013600	1,380	4
Crow Wing	Stewart	18036700	254	5
Crow Wing	Tamarack	18031800	34	30
Crow Wing	Terry	18016200	102	55
Crow Wing	Twenty Two	18000800	169	42
Crow Wing	Twin Island	18010600	85	42
Crow Wing	Unnamed	18020100	16	1
Crow Wing	Unnamed	18041300	103	27
Crow Wing	Unnamed	18055000	30	30
Crow Wing	Unnamed	18005500	70	1
Crow Wing	Unnamed (Blackies Slough)	18054400	33	20
Crow Wing	Unnamed (Lost Rice)	18022800	157	80
Crow Wing	Unnamed (Nokasippi R. Rice Bed)	18048500	166	40
Crow Wing	Unnamed (Total's Pothole)	18054300	28	16
Crow Wing	Upper Cullen	18037600	459	23
Crow Wing	Upper Dean	18017000	263	10
Crow Wing	Upper Hay	18041200	640	2
Crow Wing	Upper Mission	18024200	895	5
Crow Wing	Upper Whitefish	18031000	7,969	50
Crow Wing	Velvet	18028400	167	2
Crow Wing	Whipple	18038700	345	40
Crow Wing	Whitefish	18000100	709	30
Crow Wing	Williams	18002400	47	3
Crow Wing	Wilson	18004900	63	4
Crow Wing	Wolf	18011200	218	25
Dakota	Blackhawk	19005900		
Dakota	Chub	19002000	301	1
Douglas	Mud	21023600	50	
Faribault	Minnesota	22003300	1,915	
Faribault	Rice	22000700		
Faribault	Rice	22007500		
Fillmore	Rice Creek	23r1		
Freeborn	Bear	24002800	1,560	
Freeborn	Geneva	24001500	1,875	18
Freeborn	Spicer	24004500	125	100
Freeborn	Trenton	24004900	184	18
Goodhue	Cannon River	25r2		
Goodhue	Rice Bottoms	25r1		
Goodhue	Sturgeon	25001701		
Hennepin	Grass	27008000	326	
Hennepin	Rice	27013200	294	

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Hennepin	Rice	27011600		
Houston	Blue	28000503	362	
Houston	Lawrence	28000501	142	
Houston	Target	28000502	424	
Hubbard	Alice	29028600	150	15
Hubbard	Birch Creek	29r1		
Hubbard	Clausens	29009700	222	
Hubbard	Crow Wing	29011600		
Hubbard	Crow Wing River	29river		
Hubbard	Deer	29009000	193	
Hubbard	Eagle	29025600	440	4
Hubbard	Eighth Crow Wing	29007200	493	1
Hubbard	Eleventh Crow Wing	29003600	752	1
Hubbard	Fifth Crow Wing	29009200	406	10
Hubbard	First Crow Wing	29008600	564	50
Hubbard	Fishhook River	29r4		
Hubbard	Fourth Crow Wing	29007800	523	130
Hubbard	Garfield	29006100	984	90
Hubbard	George	29021600	882	18
Hubbard	Hart	29006300	236	118
Hubbard	Hattie	29030000	359	
Hubbard	Holland-Lucy	29009500	44	
Hubbard	Horseshoe	29005900	264	
Hubbard	Island	29025400	522	60
Hubbard	Kabekona River	29r6		
Hubbard	Kabekona River	290075T2		
Hubbard	Kabenkona	29007500		
Hubbard	Little Rice	29018300	27	1
Hubbard	Little Stony	29008000	55	
Hubbard	Loon	29002000	112	
Hubbard	Lower Bottle	29018000	712	10
Hubbard	Lower Mud	29026700	30	30
Hubbard	Mantrap	29015100	1,770	200
Hubbard	Mud	29011900	146	30
Hubbard	Mud Creek	29r3		
Hubbard	Necktie River	29r2		
Hubbard	Ninth Crow Wing	29002500	235	
Hubbard	Oak	29006000	58	1
Hubbard	Oelschlager Slough	29000600	328	
Hubbard	Paine	29021700	258	
Hubbard	Plantagenet	29015600	2,620	
Hubbard	Portage	29025000	429	

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Hubbard	Potato	29024300	2,239	30
Hubbard	Rice	29017700	230	58
Hubbard	Schoolcraft	29021500	176	35
Hubbard	Second Crow Wing	29008500	228	5
Hubbard	Seventh Crow Wing	29009100	251	10
Hubbard	Shallow	29008900	295	9
Hubbard	Shell River	29r5		
Hubbard	Sixth Crow Wing	29009300	358	5
Hubbard	Spider	29011700	593	
Hubbard	Spring	29005400	43	
Hubbard	Sunday	29014400	62	
Hubbard	Tamarack	29009400	36	
Hubbard	Tenth Crow Wing	29004500	185	9
Hubbard	Third Crow Wing	29007700	636	40
Hubbard	Tripp	29000500	155	1
Hubbard	Twin	29029300		
Hubbard	Unnamed	29011500	16	
Hubbard	Unnamed	29011800	21	
Hubbard	Unnamed	29011400	24	
Hubbard	Unnamed	29008400	87	
Hubbard	Unnamed	29007900	38	
Hubbard	Unnamed	29017900	16	
Hubbard	Unnamed	29009900	26	
Hubbard	Unnamed	29015800	60	
Hubbard	Unnamed	29002100		
Hubbard	Unnamed	29026300	20	
Hubbard	Unnamed	29001900	15	
Hubbard	Unnamed (Boudora)	29008200	48	1
Hubbard	Unnamed (Hay Creek)	29055400	38	20
Hubbard	Upper Bass	29003400	30	
Hubbard	Upper Bottle	29014800	505	30
Hubbard	Upper Mud	29028400	50	50
Hubbard	Upper Twin	29015700	212	1
Isanti	Elizabeth	30008300	323	
Isanti	German	30010000	340	
Isanti	Grass	30014200	33	
Isanti	Krone	30014000	142	
Isanti	Lindgren	30014400	75	
Isanti	Little Stanchfield	30004400	155	
Isanti	Mud	30006500	300	
Isanti	Mud	30010600	81	
Isanti	Mud	30011700		

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Isanti	North Stanchfield	30014300	153	
Isanti	Rice	30001800		
Isanti	Section	30006000	130	
Isanti	South Stanchfield	30013800	433	
Isanti	Typo	30000900	273	
Isanti	Upper Rice	30005700	208	208
Itasca	Ann	31030500	94	5
Itasca	Aspen	31069000	86	5
Itasca	Bass	31057600	2,844	427
Itasca	Big Fork River	31r3		
Itasca	Birdseye	31083400	73	11
Itasca	Blackberry	31021000	240	50
Itasca	Blackwater	31056100	674	300
Itasca	Bluebill	31026500	144	14
Itasca	Bosley	31040300	41	10
Itasca	Bowstring (& Bowstring River)	31081300	8,900	1,335
Itasca	Bowstring River	31r4		
Itasca	Buckman	31027200	222	33
Itasca	Clearwater	31040200	67	10
Itasca	Clubhouse	3105400		
Itasca	Coddington	31088300	70	18
Itasca	Cophenhagen	31053900		
Itasca	Cresent	31029400	42	2
Itasca	Crooked	31020300	80	12
Itasca	Cut Foot Sioux	31085700	3,222	322
Itasca	Damon	31094400	53	20
Itasca	Decker	31093400	292	58
Itasca	Deer	31034400	1,854	
Itasca	Dishpan	31099200	15	15
Itasca	Dixon	31092100	666	67
Itasca	Dora	31088200	477	89
Itasca	Egg	31081700	118	11
Itasca	Farley	31090200	33	5
Itasca	First River	31081800	228	160
Itasca	Grass	31072700		
Itasca	Grass	31052700		
Itasca	Gunny Sack	31026700	81	8
Itasca	Hamrey	31091100	61	15
Itasca	Harrigan	31017400	27	3
Itasca	Hay	31003700		
Itasca	Helen	31084000	109	76
Itasca	Hunters	31045000	162	16

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Itasca	Ima	31063400		
Itasca	Irene	31087800	10	1
Itasca	Island	31075400	291	10
Itasca	Kelly	31029100	31	19
Itasca	Lawrence	31023100	382	19
Itasca	Leighton	31003200	242	12
Itasca	Lillian	31075000	90	14
Itasca	Little Ball Club	31082200	181	10
Itasca	Little Cut Foot	31085200	1,357	136
Itasca	Little Drum	31074100	89	22
Itasca	Little Island	31017900	26	3
Itasca	Little Moose	31061000	234	12
Itasca	Little Rice	31071600		
Itasca	Little Spring	31079700	121	3
Itasca	Little White Oak	31074000	493	25
Itasca	Lost	31028900		
Itasca	Lost	31090000	26	5
Itasca	Lower Pigeon	31089300	53	20
Itasca	Marble	31027100	155	20
Itasca	Marie	31093700	45	10
Itasca	Middle Pigeon	31089200	182	15
Itasca	Mississippi River	31r6		
Itasca	Morph	31092900	67	3
Itasca	Mosomo	31086100	47	5
Itasca	Mud	31020600	271	203
Itasca	Munzer	31036000	108	3
Itasca	Nagel	31037700	90	50
Itasca	Natures	31087700	2,885	2,499
Itasca	O'Donnell	31030300	47	10
Itasca	Otter	31030100		
Itasca	Pigeon Dam	31089400	511	500
Itasca	Pokegama	31053200	15,600	100
Itasca	Pothole	31099100		
Itasca	Prairie	31038400	1,167	45
Itasca	Prairie (& Prairie River)	31005300	29	1
Itasca	Rabbits	31092300	209	157
Itasca	Raven	31092500	97	70
Itasca	Rice	31031500	37	15
Itasca	Rice	31071700		
Itasca	Rice	31077700		
Itasca	Rice	31087600	911	729
Itasca	Rice	31020100	115	6

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Itasca	Rice	31070700		
Itasca	Rice	31094200	39	
Itasca	Rice Creek	31r5		
Itasca	Rice Creek	31r1		
Itasca	Rice River	31r2		
Itasca	Ruby	31042200	243	5
Itasca	Sand	31082600	3,391	50
Itasca	Shallow Pond	31091000	281	11
Itasca	Simpson	31086700	35	5
Itasca	Sioux	31090700	69	27
Itasca	Skimmerhorn	31093900	30	6
Itasca	Soneman	31027600	40	16
Itasca	Spruce	31034700	58	58
Itasca	Stevens	31071800	224	11
Itasca	Stone Axe	31082800	37	4
Itasca	Swan	31006700	2,472	50
Itasca	Tuttle	31082100	56	16
Itasca	Unnamed	31081500	109	5
Itasca	Unnamed	31096100	10	2
Itasca	Unnamed	31020400	28	3
Itasca	Unnamed	31032200	28	2
Itasca	Unnamed	31006600	23	3
Itasca	Unnamed	31086000	24	5
Itasca	Upper Pigeon	31090800	86	10
Itasca	Walters	31029800	120	18
Itasca	Wart	31085900	14	5
Itasca	White Fish	31014200	31	2
Itasca	White Oak	31077600	905	271
Itasca	Whitefish	31084300	493	10
Itasca	Wilderness	31090100	26	4
Kanabec	Ann	33004000	363	18
Kanabec	Grass	33001300		
Kanabec	Kent	33003500	34	
Kanabec	Knife	33002800		
Kanabec	Mud	33001500		
Kanabec	Pomroy	33000900	267	
Kanabec	Rice	33001100	172	
Kanabec	Rice	33003100		
Kanabec	Sells	33001800	64	
Kanabec	Twin or East	33001900	27	
Kanabec	Unnamed	33002900	21	
Kanabec	Unnamed	33011100	33	27

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Kanabec	Unnamed	33001400	30	
Kanabec	Unnamed	33007200	31	1
Kanabec	Unnamed	33001200	11	
Kandiyohi	Bear	34014800	128	
Kandiyohi	Blaamyhre	34034500	121	
Kandiyohi	Eight	34014600	89	
Kandiyohi	Glesne	34035200	205	
Kandiyohi	Monongalia	34IMP001	1,500	
Kandiyohi	Mud	34015800	2,516	
Kandiyohi	Ole	34034200	66	
Kandiyohi	Unnamed	34023600	117	
Koochiching	Nett	36000100	7,369	
Koochiching	Rainy Lake	36000100	7,301	2,000
Koochiching	Rat Root	36000600	734	
Koochiching	Tilson Creek	36r1		
Lake	Bald Eagle	38063700	1,243	
Lake	Basswood	38064500	14,610	485
Lake	Bluebill	38026100	44	11
Lake	Bonga	38076200	138	138
Lake	Cabin	38026000	71	55
Lake	Campers	38067900	56	56
Lake	Charity	38005500	26	
Lake	Christianson	38075000	158	
Lake	Clark	38067400		
Lake	Clark	38064700	49	
Lake	Cloquet	38053900	176	
Lake	Cloquet River	38r1		
Lake	Comfort	38029000	42	
Lake	Cougar	38076700	71	1
Lake	Cramer	38001400	69	55
Lake	Crooked	38002400		
Lake	Crooked	38081700		
Lake	Crown	38041900	69	
Lake	Driller	38065200	24	
Lake	Dumbbell	38039300	476	48
Lake	Ella Hall	38072700	372	1
Lake	Fall	38081100	2,322	23
Lake	Farm	38077900	1,292	
Lake	Flat Horn	38056800	52	
Lake	Fools	38076100	14	14
Lake	Gabbro	38070100	927	
Lake	Garden	38078200	4,236	212

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Lake	Gegoka	38057300	174	14
Lake	Greenwood	38065600	1,469	15
Lake	Harris	38073600	121	18
Lake	Hjalmer	38075800	109	2
Lake	Hoist	38025100	117	
Lake	Horse River	38r5		
Lake	Hula	38072800	121	121
Lake	Isabella	38039600	1,318	
Lake	Isabella River	38r4		
Lake	Island River	38084200	49	49
Lake	Kawishiwi	38008000	468	
Lake	Kawishiwi River	38r2		
Lake	Little Gabbro	38070300	151	
Lake	Little Wampus	38068400		
Lake	Lobo	38076600	132	99
Lake	Manomin	38061600	455	23
Lake	Middle McDougal	38065800	104	
Lake	Moose	38003600	201	
Lake	Mud	38074200	164	
Lake	Muskeg	38078800	178	71
Lake	Newton	38078400		
Lake	Nine A.M.	38044500	27	14
Lake	North McDougal	38068600	273	
Lake	Papoose	38081800	54	3
Lake	Phantom	38065300	70	
Lake	Railroad	38065500	11	1
Lake	Rice	38046500	206	206
Lake	Roe	38013900	76	
Lake	Round Island	38041700	58	58
Lake	Sand	38073500	506	51
Lake	Sand River	38r3		
Lake	Scott	38027100	52	
Lake	Silver Island	38021900	1,239	
Lake	Slate	38066600	293	
Lake	Snowbank	38052900	4,819	50
Lake	Source	38065400	35	1
Lake	Sourdough	38070800	17	17
Lake	South McDougal	38065900	277	3
Lake	Stony	38066000	409	245
Lake	Stony River	38r6		
Lake	Upland	38075600	74	1
Lake	Vera	38049100	262	

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Lake	Wampus	38068500	146	
Lake	Wind	38064200	952	10
Lake	Wood	38072900	587	125
Lake of the Woods	Baudette River	39r2		
Lake of the Woods	Bostick Creek	39r1		
Lake of the Woods	Lake of the Woods	39000200	950,400	225
Lake of the Woods	Rainy River	39r5		
Lake of the Woods	Roseau Flowage	39IMP001	200	100
Lake of the Woods	Silver Creek	39r3		
Lake of the Woods	Winter Road River	39r4		
Le Sueur	Rice	40wtld1		
Le Sueur	Rice	40011400		
Le Sueur	Rice	40003700		
Le Sueur	Rice	40001600		
Mahnomen	Grass	44004700	22	
Mahnomen	Long	44000200	117	
Mahnomen	Peabody	44-wetld		
Mahnomen	Rice	44002400	120	
Mahnomen	Roy	44000100	689	
Mahnomen	Sargent (Little Rice)	44010800	174	
McLeod	Grass	43001300		
McLeod	Rice	43004200		
McLeod	Schaefer Prairie	43r1		
Mille Lacs	Dewitt Marsh	48002000	110	131
Mille Lacs	Dewitt Pool	48IMP004	146	131
Mille Lacs	Ernst Pool	48003600	300	200
Mille Lacs	Korsness Pool 1	48003500	130	90
Mille Lacs	Mille Lacs WMA - Headquarters 2 Pool	W9004009	500	13
Mille Lacs	Mille Lacs WMA - Jones 1 Dk Pool	W9004008	520	3
Mille Lacs	Mille Lacs WMA - Korsness Pool 2	W9004002	33	30
Mille Lacs	Mille Lacs WMA - Korsness Pool 3	W9004003	18	5
Mille Lacs	Mille Lacs WMA - Olson Pool	W9004007	85	2
Mille Lacs	Mille Lacs WMA - Townhall Pool	W9004010	110	3
Mille Lacs	Ogechie	48001400	732	
Mille Lacs	Onamia	48000900	2,250	1,350
Mille Lacs	Rice	48001000	512	
Mille Lacs	Shakopee	48001200	771	
Mille Lacs	Unnamed	48004300	60	10
Mille Lacs	Unnamed	48004400	500	
Mille Lacs	Unnamed	48005400	32	25
Mille Lacs	W. brnch Groundhouse Riv	48IMP002	50	1
Morrison	Bernhart	49013500	39	

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Morrison	Coon	49002000	75	75
Morrison	Crookneck	49013300	200	
Morrison	Hannah	49001400	109	27
Morrison	Long	49001500	128	32
Morrison	Longs	49010400	60	
Morrison	Madaline	49010100	50	
Morrison	Miller	49005100	39	9
Morrison	Mud	49009500	105	
Morrison	Mud	49007200	83	5
Morrison	Mud	49002700	23	9
Morrison	Mud	49001800		
Morrison	Peavy	49000500	140	
Morrison	Pelkey	49003000	113	10
Morrison	Placid	49008000	537	
Morrison	Platte River	49r2		
Morrison	Popple	49003300	153	
Morrison	Rice	49002500	323	250
Morrison	Rice Creek	49r1		
Morrison	Round	49001900	134	14
Morrison	Skunk	49002600	320	256
Morrison	Skunk	49000700		
Morrison	Sullivan	49001600	1,199	20
Morrison	Twelve	49000600	159	80
Nicollet	Rice	52003300		
Otter Tail	Armor	56038100		
Otter Tail	Beauty Shore	56019500	233	
Otter Tail	Berger	56114900	190	
Otter Tail	Davies	56031100	69	
Otter Tail	Dead	56038300	7,827	
Otter Tail	Duck	56092500	41	
Otter Tail	East Red River	56057300	292	
Otter Tail	Emma	56019400	473	
Otter Tail	Gourd	56013900		
Otter Tail	Grass	56011500		
Otter Tail	Grass	56072300		
Otter Tail	Grass	56071700		
Otter Tail	Head	56021300	499	
Otter Tail	Little McDonald	56032800	1,506	
Otter Tail	Long	56021000		
Otter Tail	Mud	56021500	138	
Otter Tail	Mud	56022200	437	
Otter Tail	Mud	56013200	155	

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Otter Tail	Mud	56114800	134	
Otter Tail	North Maple	56001300	161	
Otter Tail	North Rice	56034900	103	
Otter Tail	Otter Tail River	56r1		
Otter Tail	Peterson	56047100	141	
Otter Tail	Rankle	56093500	57	
Otter Tail	Reed	56087600	155	
Otter Tail	Rice	56000600		
Otter Tail	Rice	56035200		
Otter Tail	Rice	56070200		
Otter Tail	Rice	56021100	263	
Otter Tail	Rice	56036300	350	
Otter Tail	Rush	56014100	5,340	
Otter Tail	Sharp	56048200	160	
Otter Tail	Sixteen	56010000	107	
Otter Tail	South Maple	56000400	160	
Otter Tail	Star	56038500	4,809	
Otter Tail	Tamarack	56019200	440	
Otter Tail	Tamarack	56043300	470	
Otter Tail	Unnamed	56127300	126	
Otter Tail	Unnamed	56151700	23	
Otter Tail	Unnamed	56155000	14	
Otter Tail	Unnamed	56157800	29	
Otter Tail	Unnamed	56019800	69	
Otter Tail	Unnamed	56028400	83	
Otter Tail	Unnamed	56108300	198	
Otter Tail	Unnamed	56092700	35	
Otter Tail	Unnamed	56125900	12	
Otter Tail	West Battle	56023900		
Otter Tail	West Lost	56048100	915	
Otter Tail	Wing River	56004300	138	
Pine	Big Pine	58013800		
Pine	Cedar	58008900	71	
Pine	Crooked	58002600	94	85
Pine	Fox	58010200		
Pine	Grass	58012500		
Pine	Hay Creek Flowage	58000500	66	40
Pine	Kettle River	58r2		
Pine	Little North Sturgeon	58006600	20	
Pine	McCormick	58005800		
Pine	Passenger	58007600	75	
Pine	Pokegama (& River)	58014200	1,621	16

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Pine	Rush	58007800	88	
Pine	Stanton	58011100	84	34
Pine	Willow River	58r1		
Polk	Unnamed (Round)	60072100	9	2
Pope	Rice	61006900		
Ramsey	Grass	62007400		
Redwood	Rice Creek	64r1		
Rice	Cedar	66005200	927	93
Rice	Dudley	66001400	83	
Rice	Hatch	66006300	102	10
Rice	Hunt	66004700	190	19
Rice	Kelly	66001500	62	
Rice	Mud	66005400	269	54
Rice	Pooles	66004600	182	
Rice	Rice	66004800		
Rice	Unnamed	66010300	26	
Rice	Weinberger	66004100	53	8
Rice	Willing	66005100	53	5
Roseau	Bednar Impoundment	68IMP002	240	40
Scott	Artic	70008500		
Scott	Blue	70008800	316	120
Scott	Fisher	70008700	396	190
Scott	Rice	70006000		
Scott	Rice	70002500	328	160
Scott	Rice	70000100		
Sherburne	Big Mud	71008500	263	100
Sherburne	Buck Lake	71IMP007	30	26
Sherburne	Clitty	71011600	56	
Sherburne	Fremont	71001600	466	
Sherburne	Jim	71011100	20	20
Sherburne	Johnson Slough	71IMP004	65	10
Sherburne	Johnson Slought	71008400		
Sherburne	Josephine	71006800	132	
Sherburne	Josephine Pool	71IMP008	143	72
Sherburne	Kliever Marsh	71000300	37	
Sherburne	Long Pond	71003600	82	
Sherburne	Lower Roadside	71IMP006	8	7
Sherburne	Lundberg Slough	71010900	50	
Sherburne	Muskrat Pool	71IMP003	299	15
Sherburne	Orrock Lake	71IMP010	215	162
Sherburne	Rice	71001500	11	
Sherburne	Rice	71007800	505	

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Sherburne	Rice	71014200	187	2
Sherburne	Schoolhouse Pool	71IMP009	225	90
Sherburne	Sherburne NWR - Pool 1	71IMP001	2	2
Sherburne	Sherburne NWR - Pool 2	71IMP002	30	15
Sherburne	Sherburne NWR - Pool 31	71IMP011		
Sherburne	Unnamed	71002500	31	
Sherburne	Upper Roadside	71IMP005		
Sibley	Titlow	72004200	924	
St. Louis	???	69IMP002		15
St. Louis	Alden	69013100	190	
St. Louis	Anchor	69064100	316	32
St. Louis	Angell Pool	W0889001	500	80
St. Louis	Artichoke	69062300	306	
St. Louis	Balkan	69086000	36	2
St. Louis	Bear	69011200	125	125
St. Louis	Bear Island River	69r8		
St. Louis	Bear Trap	69008900	131	
St. Louis	Big	69019000	2,049	20
St. Louis	Big Rice	69017800	416	416
St. Louis	Big Rice	69066900	2,072	1,700
St. Louis	Birch	69000300	7,628	381
St. Louis	Black	69074000	118	
St. Louis	Blueberry	69005400	130	13
St. Louis	Bootleg	69045200	352	
St. Louis	Breda	69003700	137	135
St. Louis	Burntside	69011800	7,314	
St. Louis	Canary	69005500	22	1
St. Louis	Caribou	69048900	569	3
St. Louis	Cloquet River	69r5		
St. Louis	Comet	69026700	28	
St. Louis	Cranberry	69014700	69	
St. Louis	Crane	69061600	3,396	600
St. Louis	Deadmans	69IMP001	5	
St. Louis	Dollar	69053400	51	51
St. Louis	Duck	69019100	126	
St. Louis	Eagles Nest #3	69028500	1,028	
St. Louis	East Stone	69063800	92	24
St. Louis	East Twin	69016300		
St. Louis	Echo	69061500		
St. Louis	Ed Shave	69019900	90	
St. Louis	Elliot	69064200	393	20
St. Louis	Embarrass River	69r3		

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
St. Louis	Five Mile	69028800	106	10
St. Louis	Four Mile	69028100	86	1
St. Louis	Gafvert	69028000	33	1
St. Louis	George	69004000	42	
St. Louis	Gill	69066700	18	
St. Louis	Grand	69051100	1,742	10
St. Louis	Grass	69077600	49	1
St. Louis	Grassey	69091300		
St. Louis	Grassy	69008200		
St. Louis	Grassy	69021600		
St. Louis	Gull	69009200	196	20
St. Louis	Hay	69044100	47	
St. Louis	Hay	69043500	78	78
St. Louis	Hay	69015000	32	1
St. Louis	Hay	69057900	114	114
St. Louis	Hay	69043900	42	1
St. Louis	Hay	69041700	82	45
St. Louis	Hockey	69084900	139	70
St. Louis	Hoodoo	69080200	252	252
St. Louis	Horseshoe	69025500	39	10
St. Louis	Indian	69002300	57	
St. Louis	Jeanette	69045600		
St. Louis	Johnson	69011700	473	24
St. Louis	Joker	69001500	46	5
St. Louis	King	69000800	320	39
St. Louis	Kylen	69003400	16	2
St. Louis	La Pond	69017700	176	176
St. Louis	Leeman	69087500	284	90
St. Louis	Lieung	69012300	476	10
St. Louis	Little Birch	69027100	58	
St. Louis	Little Cloquet River	69r6		
St. Louis	Little Indian Sioux River	69r7		
St. Louis	Little Mesaba	69043600		
St. Louis	Little Rice	69061200	266	266
St. Louis	Little Sandy	69072900	89	89
St. Louis	Little Stone	69002800	163	
St. Louis	Little Vermillion	69060800	558	
St. Louis	Long (Butterball)	69004400	442	400
St. Louis	Low	69007000	353	71
St. Louis	Lower Pauness	69046400	162	1
St. Louis	Martin	69076800	71	
St. Louis	Moose	69079800	82	62

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
St. Louis	Mud	69015100	51	
St. Louis	Mud	69080000	71	18
St. Louis	Mud	69004700		
St. Louis	Mud Hen	69049400	165	
St. Louis	Myrtle	69074900	876	
St. Louis	Nels	69008000	200	2
St. Louis	Nichols	69062700	444	22
St. Louis	One Pine	69006100	369	37
St. Louis	Oriniack	69058700	748	
St. Louis	Papoose	69002400	16	16
St. Louis	Pelican (& River)	69084100	11,944	119
St. Louis	Perch	69068800	79	32
St. Louis	Petrel Creek	69r4		
St. Louis	Picket	69007900	78	7
St. Louis	Pike River	69r1		
St. Louis	Prairie	69084800	807	16
St. Louis	Rainy	69069400	220,800	
St. Louis	Rainy (Grassy Narrows)	69064000		
St. Louis	Rat	69092200		
St. Louis	Rat	69073700		
St. Louis	Rice	69057800	41	41
St. Louis	Rice	69080300		
St. Louis	Round	69004800	336	
St. Louis	Ruth	69001400	47	9
St. Louis	Sandpoint	69061700		
St. Louis	Sandy	69073000	121	121
St. Louis	Seven Beaver	69000200	1,508	1,282
St. Louis	Shannon (& River)	69092500	135	108
St. Louis	Side	69069900	25	15
St. Louis	Simian Lake	69061900	81	5
St. Louis	Sioux River	69r9		
St. Louis	Six Mile	69028300	103	1
St. Louis	St. Louis River	69r2		
St. Louis	Stone	69004600	230	173
St. Louis	Stone	69068600	160	24
St. Louis	Sturgeon	69093900	2,050	243
St. Louis	Sunset	69076400	309	6
St. Louis	Susan	69074100	305	
St. Louis	Tommila	69003500	87	85
St. Louis	Trettel Pool	W0889002	30	3
St. Louis	Turpela	69042700	76	61
St. Louis	Twin	69050400	18	1

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
St. Louis	Twin	69069500		
St. Louis	Unnamed	69063400	101	20
St. Louis	Unnamed (Camp 97)	69059400	25	
St. Louis	Upper Bug	69040600	23	
St. Louis	Upper Pauness	69046500	215	1
St. Louis	Vang	69087600	126	3
St. Louis	Vermilion	69037800	49,110	250
St. Louis	Vermilion River	69061300	1,125	562
St. Louis	Wabuse	69040800	64	51
St. Louis	Washusk #1	69040900	51	40
St. Louis	Watercress	69079700	43	43
St. Louis	Watercress (Mud)	69079700	30	
St. Louis	Wheel	69073500	11	6
St. Louis	Whitchel	69053100	71	53
St. Louis	White Iron	69000400		
St. Louis	Wild Rice	69037100	2,133	1
St. Louis	Wolf	69014300	456	
Stearns	Anna	73012600	133	
Stearns	Big Rice	73016800	282	
Stearns	Cedar	73022600	152	
Stearns	Crow	73027900	461	
Stearns	Fifth	73018000	76	
Stearns	Fish	73028100	204	
Stearns	Grass	73029400	157	
Stearns	Gravel	73020400	55	
Stearns	Henry	73016000	62	
Stearns	Henry	73023700	191	
Stearns	Linneman	73012700	108	
Stearns	Little Rice	73016700	56	
Stearns	Lower Spunk	73012300	269	
Stearns	McCormic	73027300	211	
Stearns	Middle Spunk	73012800	242	
Stearns	Mud	73016100	55	
Stearns	Raymond	73028500	126	
Stearns	Rice	73019600	1,568	
Stearns	Sagatagan	73009200	170	
Stearns	Schultz Slough	73020100	29	
Stearns	Tamarack	73027800	470	235
Steele	Oak Glen	74000400	350	4
Steele	Rice	74000100	697	467
Todd	Beck	77005600	57	25
Todd	Cass County	77000400	25	18

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Todd	Hayden	77008000	253	1
Todd	Jacobson	77014300	40	
Todd	Jaeger	77007500	46	28
Todd	Lawrence	77008300	172	
Todd	Little Fishtrap	77007400		
Todd	Little Pine	77013400		
Todd	Long	77006900	356	338
Todd	Mud	77008700	398	318
Todd	Pine Island	77007700	156	
Todd	Rice	77006100	675	60
Todd	Robbinson Pond	77IMP001	60	30
Todd	Rogers	77007300	185	130
Todd	Sheets	77012200	100	
Todd	Stones	77008100	63	
Todd	Thunder	77006600		
Todd	Tucker	77013900	43	
Todd	Twin	77002100	317	159
Todd	Unnamed	77020200	70	
Todd	Unnamed	77017600	40	2
Todd	Unnamed	77019700	53	
Todd	Unnamed	77017800	42	23
Todd	Unnamed	77014000	61	
Todd	West Nelson	77000500	84	70
Wabasha	Pool 5	79IMP001	600	35
Wabasha	Unnamed	W0580001	160	25
Wadena	Blueberry	80003400	555	30
Wadena	Burgen	80001800	92	86
Wadena	Finn	80002800	148	30
Wadena	Granning	80001200	50	50
Wadena	Jim Cook	80002700	238	
Wadena	Lower Twin	80003000	267	5
Wadena	Rice	80002400	8	1
Wadena	Round	80001900	58	58
Wadena	Strike	80001300	76	76
Wadena	Unnamed	80000700	16	16
Wadena	Yaeger	80002200	384	346
Wright	Albion	86021200	238	
Wright	Beaver Dam	86029600	253	
Wright	Butler	86019800	131	
Wright	Butternut	86025300	203	
Wright	Carrigan	86009700	162	
Wright	Cedar	86003400	191	

County name	Location Name (i.e. Lake or River)	MN Lake ID	Location size (acres)	Estimated wild rice coverage (acres)
Wright	Gilchrist	86006400	388	
Wright	Gonz	86001900	152	
Wright	Henshaw	86021300	277	
Wright	Long	86019400	255	
Wright	Louisa	86028200	183	
Wright	Malardi	86011200	149	
Wright	Mallard Pass	86018500	51	
Wright	Maple	86019700	82	
Wright	Maple Unit	86015700	177	
Wright	Mary	86004900	331	
Wright	Millstone	86015200	221	
Wright	Mink	86022900	304	
Wright	Mud	86002600	128	
Wright	Mud	86021900	66	
Wright	Pelican	86003100	2,793	
Wright	Pooles	86010200	166	
Wright	Rice	86003200	246	
Wright	Rice	86000200	57	
Wright	Sandy	86022400	118	150
Wright	School	86002500	76	
Wright	School Section	86018000	266	
Wright	Shakopee	86025500	206	
Wright	Smith	86025000	330	
Wright	Spring	86020000	63	
Wright	Taylor	86020400	78	
Wright	White	86021400	145	
Wright	Willima	86020900	246	
	1,286 total locations			
	For the 777 locations that have coverage data		1,569,889	64,328

https://www.1854treatyauthority.org/management/biological-resources/fisheries/reports.html?id=189&task=document.viewdoc

Wild Rice List - 1854 Authority

Wild Rice Waters in 1854 Ceded Territory

Water Body Name	DNR ID#	Primary County	Township	Range
Alden Lake	69-0131 00	St. Louis	53N	13W
Alder Lake	16-0114 00	Cook	64N	1E
Anchor Lake	69-0641 00	St. Louis	56N	17W
Andy Lake	69-0618 00	St. Louis	50N	17W
Arrowhead (Auto) Lake	69-0731 00	St. Louis	60N	18W
Artichoke Lake	69-0623 00	St. Louis	52N	17W
Astrid Lake	69-0589 00	St. Louis	65N	16W
August Lake	38-0691 00	Lake	61N	10W
Baker Lake	16-0486 00	Cook	62N	4W
Bald Eagle Lake	38-0637 00	Lake	62N	10W
Ban Lake	69-0742 00	St. Louis	64N	18W
Bang Lake	09-0046 00	Carlton	48N	19W
Barker Lake	16-0358 00	Cook	60N	3W
Barrs Lake	69-0132 00	St. Louis	53N	13W
Bassett Lake	69-0041 00	St. Louis	57N	12W
Basswood L (Back Bay)	38-0645 00	Lake	64N	10W
Basswood L (Hoist Bay)	38-0645 00	Lake	64N	10W
Basswood L (Rice Bay)	38-0645 00	Lake	64-65N	9W
Basswood L (Wind Bay)	38-0645 00	Lake	64N	10W
Bear Island Lake	69-0115 00	St. Louis	61N	13W
Bear Island R.(CR 21)		St. Louis	61-62N	12W
Bear Island R.(1Pine)		St. Louis	62N	12W
Bear Lake (Mud)	69-0112 00	St. Louis	54N	13W
Bearskin Lake	16-0228 00	Cook	65N	1W
Beartrap Lake	69-0089 00	St. Louis	65N	12W
Beartrap River		St. Louis	66N	13W
Beaver Lake (Joker?)	69-0015 00	St. Louis	54N	12W
Bezhik Creek		St. Louis	65N	14W
Big Lake	69-0190 00	St. Louis	64-65N	13W
Big Rice Lake	69-0178 00	St. Louis	64N	13W
Big Rice Lake	69-0669 00	St. Louis	60N	17W
Bigsby Lake	16-0344 00	Cook	61N	2-3W
Bill Lake	38-0085 00	Lake	62N	6W
Birch Lake (Bob Bay)	69-0003 00	St. Louis	61N	12W
Birch Lake (Dunka Bay)	69-0003 00	St. Louis	61N	12W
Birch Lake (north)	69-0003 00	St. Louis	61N	11W
Birch Lake (Stony Bay)	69-0003 00	St. Louis	61N	11W
Birch Lake (west arm)	69-0003 00	St. Louis	61N	13W
Black Lake	69-0740 00	St. Louis	63N	18W
Black Mallard L. (Mud)	69-0047 00	St. Louis	58N	12W
Blackwood Lake	69-0850 00	St. Louis	50N	20W
Blueberry Lake	69-0054 00	St. Louis	61N	12W
Bluebill Lake	38-0261 00	Lake	59N	7W
Bob Lake	09-0026 00	Carlton	48N	18W

Wild Rice List - 1854 Authority

Boga Lake	38-0315 00	Lake	62N	7W
Bonga Lake	38-0762 00	Lake	59N	11W
Bootleg Lake	69-0452 00	St. Louis	64N	15W
Bower Trout Lake	16-0175 00	Cook	63N	1W
Breda Lake	69-0037 00	St. Louis	56N	12W
Brule River		Cook	63N	1-2E
Bug Creek		St. Louis	54N	16W
Bug Lake (Whitchel)	69-0531 00	St. Louis	54N	16W
Bunny Lake	38-0293 00	Lake	61N	7W
Burntside Lake	69-0118 00	St. Louis	63N	13W
Burntside River		St. Louis	63N	13W
Butterball Lake (Long)	69-0044 00	St. Louis	57-58N	12W
Cabin Lake	38-0260 00	Lake	59N	7W
Camp 97 Impoundment	69-0594 00	St. Louis	65-66N	16W
Camp East Creek		Lake	60N	10W
Camp Forty Creek		St. Louis	67N	17W
Campers Lake	38-0679 00	Lake	60N	10W
Canary Lake	69-0055 00	St. Louis	61N	12W
Canosia WMA (Angell Pool)	W0889001	St. Louis	51N	15W
Canosia WMA (Trettel Pool)	W0889002	St. Louis	51N	15W
Caribou Lake (a)	16-0360 00	Cook	61N	3W
Caribou Lake (b)	69-0489 00	St. Louis	51N	16W
Cedar Lake	09-0031 00	Carlton	49N	18W
Cedar Lake	38-0810 00	Lake	63N	11W
Cedar Island Lake	69-0568 00	St. Louis	58N	16W
Center Lake		Cook	63N	5E
Central (Augusta) Lake	69-0637 00	St. Louis	55-56N	17W
Charity Lake	38-0055 00	Lake	60N	6W
Chester Lake	16-0033 00	Cook	64N	3E
Chevan's Lake		Cook	64N	5E
Christianson Lake	38-0750 00	Lake	55N	11W
Christine Lake	16-0373 00	Cook	61N	3W
Clark Lake	38-0647 00	Lake	55N	10W
Cloquet Lake	38-0539 00	Lake	57N	9W
Cloquet River (Alden)		St. Louis	53N	13-14W
Cloquet River (Independence)		St. Louis	52N	16-17W
Close Lake	58-0071 00	Pine	45N	19W
Comet Lake	69-0267 00	St. Louis	61N	14W
Comfort Lake	38-0290 00	Lake	61N	7W
Cook Lake	38-0004 00	Lake	62N	6W
Cougar Lake	38-0767 00	Lake	59N	11W
Cramer Lake	38-0014 00	Lake	58N	6W
Cramer Homestead L.	38-0246 00	Lake	58N	7W
Cranberry Lake	69-0147 00	St. Louis	58N	13W
Crane Lake	69-0616 00	St. Louis	67N	17W
Crooked Lake	38-0024 00	Lake	59N	6W
Crooked Lake	38-0817 00	Lake, St. Louis	66N	11-12W

Cross Lake	09-0062 00	Carlton	49N	20W
Cross River Lake	38-0002 00	Lake	60N	6W
Crown Lake	38-0419 00	Lake	59N	8W
Cuffs Lake	16-0006 00	Cook	63N	5E
Dead Fish Lake	09-0051 00	Carlton	49N	19W
Deadmans Impoundment		St. Louis	62N	13W
Deer Yard Lake	16-0253 00	Cook	61N	2W
Denley Lake	38-0773 00	Cook	60N	11W
Diana Lake	38-0459 00	Lake	62N	8W
Dick Lake	16-0157 00	Cook	62N	1W
Dollar Lake	69-0534 00	St. Louis	55N	16W
Douglas Lake	01-0009 00	Aitkin	48N	22W
Dragon Lake	38-0552 00	Lake	60N	9W
Driller Lake	38-0652 00	Lake	57N	10W
Duck Lake	69-0191 00	St. Louis	65N	13W
Dumbbell Lake	38-0393 00	Lake	60N	8W
Dumbbell River		Lake	60N	7W
Dumbbell River (pool)	38-0270 00	Lake	60N	7W
Dunka River		St. Louis	59-60N	12W
Dunnigan Lake	38-0664 00	Lake	60N	10W
Dutchman Lake	16-0002 00	Cook	63N	6E
Eagle Lake	09-0057 00	Carlton	48N	20W
Eagle Lake	69-0238 00	St. Louis	52N	14W
Eagle Marsh		Cook	64N	5E
Eagles Nest Lake #3	69-0285 00	St. Louis	62N	14W
East Bearskin Lake	16-0146 00	Cook	64N	1W-1E
East Chub Lake	38-0674 00	Lake	60N	10W
East Pipe Lake	16-0386 00	Cook	62N	3W
East Stone Lake	69-0638 00	St. Louis	55N	17W
Echo Lake	69-0615 00	St. Louis	66N	16-17W
Echo River		St. Louis	66-67N	16-17W
Ed Shave Lake	69-0199 00	St. Louis	65N	13W
Eighteen Lake	38-0432 00	Lake	60N	8W
Elbow Lake	16-0096 00	Cook	62N	1E
Elbow Lake	69-0744 00	St. Louis	64N	18W
Ella Hall Lake	38-0727 00	Lake	64N	10W
Elliott Lake	69-0642 00	St. Louis	56N	17W
Ely Lake	69-0660 00	St. Louis	58N	17W
Embarrass Lake	69-0496 00	St. Louis	58N	16W
Embarrass River		St. Louis	58N	16W
Esquagama Lake	69-0565 00	St. Louis	58N	16W
Fall Lake	38-0811 00	Lake	63N	11W
Farm Lake	38-0779 00	Lake	62-63N	11W
Fente Lake	16-0741 00	Cook	64N	5W
Fish Lake (east)	69-0491 00	St. Louis	52N	15W
Fishing Lakes	69-0270 00	St. Louis	61N	14W
Fivemile Lake	69-0288 00	St. Louis	62N	14W

Flat Horn Lake	38-0568 00	Lake	60N	9W
Flour Lake	16-0147 00	Cook	64N	1W-1E
Flower Lake	09-0064 00	Carlton	49N	20W
Folly Lake	38-0265 00	Lake	60N	7W
Fools Lake	38-0761 00	Lake	59N	11W
Fourmile Lake	69-0281 00	St. Louis	62N	14W
Fourmile Lake	16-0639 00	Cook	60N	5W
Fourth Lake		St. Louis	58N	16W
Fourth McDougal Lake	38-0657 00	Lake	59N	10W
Gabbro Lake	38-0701 00	Lake	62N	10W
Gafvert Lake	69-0280 00	St. Louis	62N	14W
Garden Lake	38-0782 00	Lake	63N	11W
Gegoka, Lake	38-0573 00	Lake	60N	9W
George Lake	69-0040 00	St. Louis	56N	12W
Gill Lake	69-0667 00	St. Louis	58N	17W
Good Lake	38-0726 00	Lake	64N	10W
Gordon Lake	16-0569 00	Cook	64N	4W
Grand Lake	69-0511 00	St. Louis	51N	16W
Grass Lake	69-0776 00	St. Louis	57N	19W
Grass Lake	38-0635 00	Lake	60N	9W
Grassy Lake	69-0082 00	St. Louis	64N	12W
Grassy Lake	69-0216 00	St. Louis	62N	13W
Grassy Lake	16-0390 00	Cook	63N	3W
Green Wing Lake	38-0264 00	Lake	60N	7W
Greenwood Lake	38-0656 00	Lake	58N	10W
Grouse Lake	38-0557 00	Lake	60N	9W
Gull Lake	69-0092 00	St. Louis	65N	12W
Gust Lake	16-0380 00	Cook	62N	3W
Hardwood Lake	09-0030 00	Carlton	49N	18W
Harriet Lake	38-0048 00	Lake	60N	6W
Harris Lake	38-0736 00	Lake	61N	11W
Hay Lake (a)	69-0579 00	St. Louis	59N	16W
Hay Lake (b)	09-0010 00	Carlton	48N	17W
Hay Lake (c)	69-0435 00	St. Louis	59N	15W
Hay Lake (d)	69-0441 00	St. Louis	61N	15W
Hay Lake (e)	69-0417 00	St. Louis	56N	15W
Hay Lake	69-0439 00	St. Louis	60N	15W
Hay Lake	69-0150 00	St. Louis	60N	13W
Headquarters Lake	69-0766 00	St. Louis	50N	19W
Helmer Nelson		Cook	63N	5E
Hide (Bearskin) Lake	38-0553 00	Lake	60N	9W
Hjalmer Lake	38-0758 00	Lake	57N	11W
Hockey Lake (Mud)	69-0849 00	St. Louis	50N	20W
Hoist Creek		Lake	59N	7W
Hoist Lake	38-0251 00	Lake	59N	7W
Holly Lake	16-0366 00	Cook	61N	3W
Homestead Lake	38-0269 00	Lake	60N	7W

Horse River		Lake	65N	11W
Horseshoe Lake	69-0232 00	St. Louis	52N	14W
Horseshoe Lake	69-0255 00	St. Louis	61N	14W
Hula Lake	38-0728 00	Lake	64N	10W
Hush Lake	69-0988 00	St. Louis	58N	14W
Indian Lake	69-0023 00	St. Louis	55N	12W
Iron Lake	16-0328 00	Cook	65N	2W
Isabella Lake	38-0396 00	Lake	62N	8W
Isabella River		Lake	61, 62N	8, 9W
Island Lake (Lower/South)	09-0060 02	Carlton	48, 49N	20W
Island Lake (Upper/North)	09-0060 01	Carlton	48, 49N	20W
Island Lake Reservoir	69-0372 00	St. Louis	53N	14W
Island River Lake	38-0289 00	Lake	61N	7W
Island River (FR 379)	38-0842 00	Lake	61N	7-8W
Island River (FR 377)	38-0842 00	Lake	61N	8W
Jack Lake (a)	16-0521 00	Cook	63N	4W
Jack Lake (b)	38-0441 00	Lake	60-61N	8W
James (Jammer) Lake	69-0734 00	St. Louis	60N	18W
Jaskari Lake	09-0050 00	Carlton	48-49N	19W
Jeanette, Lake	69-0456 00	St. Louis	65N	15W
John Lake	16-0035 00	Cook	65N	3E
Johnson Lake	69-0117 00	St. Louis	62N	12W
Jouppi Lake	38-0909 00	Lake	59N	8W
Kabustasa Lake (Rice)	69-0679 00	St. Louis	66N	17W
Kangas Lake	69-0057 00	St. Louis	61N	12W
Katherine Lake	38-0538 00	Lake	57N	9W
Kawishiwi Lake	38-0080 00	Lake	62N	6W
Kawishiwi River		Lake	63N	10-11W
Kelly Lake	16-0476 00	Cook	62N	4W
Kelso Lake	16-0706 00	Cook	63N	5W
Kettle Lake (a)	09-0049 00	Carlton	48N	19W
Kettle Lake (b)	09-0074 00	Carlton	48N	21W
Kettle River		Carlton	48N	19W
King Lake	69-0008 00	St. Louis	54N	12W
Kingburg Lake	69-0771 00	St. Louis	51N	19W
Kitigan Lake	38-0559 00	Lake	60N	9W
Knight Lake	16-0807 00	Cook	62N	5W
Kookoosh	69-0009 00	St. Louis	54N	12W
Kowalski Lake	38-0016 00	Lake	58N	6W
Kylen Lake	69-0034 00	St. Louis	56N	12W
Langley Lake	38-0648 00	Lake	56N	10W
Lapond Lake	69-0177 00	St. Louis	64N	13W
Lax Lake	38-0406 00	Lake	56N	8W
Leeman Lake	69-0875 00	St. Louis	50N	21W
Legler Lake	38-0649 00	Lake	56N	10W
Leora (Elora) Lake	69-0521 00	St. Louis	53N	16W
Lieung Lake	69-0123 00	St. Louis	53N	13W

Little Lake		Cook	63N	6E
Little Birch Lake	69-0271 00	St. Louis	61N	14W
Little Cloquet River		St. Louis	53N	13W
Little Gabbro Lake	38-0703 00	Lake	62N	10W
Little Indian Sioux River		St. Louis	65N	15W
Little Iron Lake	16-0355 00	Cook	65N	3W
Little Island Lake	58-0061 00	Pine	45N	19W
Little John Lake	16-0026 00	Cook	64N	3E
Little Kettle Lake	09-0077 00	Carlton	48N	19W
Little Mesaba Lake	69-0436 00	St. Louis	59N	15W
Little North Sturgeon	58-0066 00	Pine	45N	19W
Little Rice Lake	69-0612 00	St. Louis	60N	17W
Little Sandy Lake	69-0729 00	St. Louis	59N	18W
Little Stone Lake	69-0028 00	St. Louis	55N	12W
Little Vermilion Lake	69-0608 00	St. Louis	67N	16W
Little Wampus Lake	38-0684 00	Lake	60N	10W
Lobo Lake	38-0766 00	Lake	59N	11W
Long Lake	09-0066 00	Carlton	48N	21W
Long Lake	69-0495 00	St. Louis	56N	16W
Long Lake	69-0653 00	St. Louis	57N	17W
Loon Lake	16-0448 00	Cook	65N	3W
Loon Lake		Cook	63N	5E
Low Lake	69-0070 00	St. Louis	63-64N	12W
Lower Pauness Lake	69-0464 00	St. Louis	66N	15W
Manomin Lake	38-0616 00	Lake	64N	9W
Mark Lake	16-0250 00	Cook	61N	2W
Marsh Lake	16-0488 00	Cook	62N	4W
Marsh Lake	16-0048 00	Cook	62N	2E
Martin Lake	69-0768 00	St. Louis	50N	19W
McDougal lakes channel		Lake	59-60N	10W
Meadow Lake	69-0165 00	St. Louis	62N	13W
Merganser Lake	16-0107 00	Cook	63N	1E
Merwin Lake	09-0058 00	Carlton	48N	20W
Micmac Lake	38-0233 00	Lake	56N	7W
Middle McDougal Lake	38-0658 00	Lake	59N	10W
Miller Lake	09-0053 00	Carlton	49N	19W
Mistletoe Lake	16-0368 00	Cook	61N	3W
Mitawan Lake	38-0561 00	Lake	60N	9W
Mogie Lake	69-0391 00	St. Louis	50N	15W
Moore Lake	16-0489 00	Cook	62N	4W
Moose Horn River		Carlton	46N	19W
Moose Lake (a)	69-0798 00	St. Louis	60N	19W
Moose Lake (b)	38-0036 00	Lake	59N	6W
Moose Lake (c)	69-0442 00	St. Louis	61N	15W
Moose Lake (Little)	09-0043 00	Carlton	46N	19W
Moose Lake	38-0644 00	Lake	64N	9W
Moose Lake	16-0043 00	Cook	65N	3E

Moose River		St. Louis	65N	14W
Moosehead Lake	09-0041 00	Carlton	46N	19W
Mount Maud		Cook	63N	5E
Mud Hen Lake	69-0494 00	St. Louis	56N	16W
Mud Lake (Watercress)	69-0797 00	St. Louis	60N	19W
Mud Lake	69-0151 00	St. Louis	60N	13W
Mud Lake	38-0742 00	Lake	64N	11W
Mud Lake	69-0652 00	St. Louis	57N	17W
Murphy Lake	69-0646 00	St. Louis	56N	17W
Muskeg Lake	38-0788 00	Lake	64N	11W
Myrtle Lake	69-0749 00	St. Louis	65N	18W
Nels Lake	69-0080 00	St. Louis	64N	12W
Nelson Lake	01-0010 00	Aitkin	48N	22W
Net Lake	58-0038 00	Pine	45-46N	17W
Newfound Lake	38-0619 00	Lake	64N	9W
Newton Lake	38-0784 00	Lake	64N	11W
Nichols Lake	69-0627 00	St. Louis	53N	17W
Nina Moose River		St. Louis	66N	14W
Nine A M Lake	38-0445 00	Lake	61N	8W
North Lake	16-0331 00	Cook	65N	2W
North Lake		Cook	63N	5E
North McDougal Lake	38-0686 00	Lake	60N	10W
North Fowl Lake	16-0036 00	Cook	65N	3E
North Twin Lake	69-0419 00	St. Louis	57N	15W
North Wigwam Lake		Lake	60N	5-6W
Northern Light Lake	16-0089 00	Cook	63N	2E
Oak Lake	58-0048 00	Pine	45N	18W
One Pine Lake	69-0061 00	St. Louis	62N	12W
Oriniack	69-0587 00	St. Louis	64N	16W
Osier Lake	38-0420 00	Lake	59N	8W
Otter Lake	16-0032 00	Cook	64N	3E
Papoose Lake	69-0024 00	St. Louis	55N	12W
Papoose Lake	38-0818 00	Lake	66N	11W
Partridge River (lower)		St. Louis	58N	14-15W
Partridge River (upper)		St. Louis	58-59N	13-14W
Pea Soup Lake	38-0739 00	Lake	63N	10-11W
Pelican River		St. Louis	65-66N	18W
Perch Lake	09-0036 00	Carlton	49N	18W
Perch Lake	69-0688 00	St. Louis	56N	18W
Perent Lake	38-0220 00	Lake	61-62N	6-7W
Peterson Lake	16-0478 00	Cook	62N	4W
Petrel Creek		St. Louis	56N	12W
Phantom Lake		Lake	57-58N	10W
Phoebe Lake	16-0808 00	Cook	62N	5W
Picket Lake	69-0079 00	St. Louis	64N	12W
Pigeon River		Cook	64N	4-5E
Pigeon River (Grand Portage)		Cook	64N	5E

Pike Lake	16-0252 00	Cook	61N	2W
Pike River		St. Louis	61N	16W
Pine Lake	69-0001 00	St. Louis	57-58N	11-12W
Pleasant Lake	69-0655 00	St. Louis	57N	17W
Polly Lake	38-0104 00	Lake	63N	6W
Pose Lake	38-0455 00	Lake	62N	8W
Prairie Lake	69-0848 00	St. Louis	50N	20W
Prairie River		St. Louis	50N	20W
Prout Lake	16-0013 00	Cook	64N	4E
Railroad Lake	09-0174 00	Carlton	48N	21W
Railroad Lake	38-0655 00	Lake	58N	10W
Rat Lake (a)	69-0735 00	St. Louis	60N	18W
Rat Lake (b)	38-0567 00	Lake	60N	9W
Redskin Lake	38-0440 00	Lake	60N	8W
Rib Lake	16-0544 00	Cook	64N	4W
Rice Lake (a)	69-0578 00	St. Louis	59N	16W
Rice Lake (b)	38-0465 00	Lake	62N	8W
Rice Lake (c)	16-0453 00	Cook	61N	4W
Rice Lake (d) (Little Rice)	69-0180 00	St. Louis	64N	13W
Rice Portage Lake	09-0037 00	Carlton	49N	19W
Rice River		St. Louis	61N	18W
Richey Lake	16-0643 00	Cook	60N	5W
Roe Lake	38-0139 00	Lake	64N	6W
Round Lake	69-0048 00	St. Louis	58N	12W
Round Lake (b)	69-0649 00	St. Louis	56N	17W
Round Island Lake	38-0417 00	Lake	59N	8W
Royal Lake	16-0025 00	Cook	64N	3E
Royal River		Cook	64N	3E
Rush Lake	58-0078 00	Pine	45N	19W
Ruth Lake	69-0014 00	St. Louis	54N	12W
Sabin Lake	69-0434 01	St. Louis	59N	15W
Salo Marsh WMA	W0488001	Aitkin	48N	22W
Sand Lake (a)	38-0735 00	Lake	59N	11W
Sand Lake (b)	58-0081 00	Pine	45-46N	19W
Sand Lake	69-0736 00	St. Louis	60N	18W
Sand River		St. Louis	60N	16W
Sandy Lake	69-0730 00	St. Louis	59N	18W
Sapphire Lake	38-0446 00	Lake	61N	8W
Sawyer WMA(Sawyer P)	09-0145 00	Carlton	48N	18W
Sawyer WMA(Sterle P.)	W0854002	Carlton	48N	18W
Scarp Lake	38-0058 00	Lake	60N	6W
Schelin Lake	69-0624 00	St. Louis	52N	17W
Scott Lake	38-0271 00	Lake	60N	7W
Second Creek		St. Louis	58N	15W
Section 29 Lake	38-0292 00	Lake	61N	7W
Seven Beaver Lake	69-0002 00	St. Louis	58N	12W
Shiver Creek Impound		St. Louis	57N	13W

Side Lake	69-0699 00	St. Louis	50N	18W
Silver Island Lake	38-0219 00	Lake	61N	6W
Simian Lake	69-0619 00	St. Louis	50N	17W
Sink Lake	38-0540 00	Lake	57N	9W
Sixmile Lake	69-0283 00	St. Louis	62N	14W
Slate Lake	38-0666 00	Lake	60N	10W
Smith (Little Pequaywan)	69-0111 00	St. Louis	54N	12-13W
Snowbank Lake	38-0529 00	Lake	64N	9W
Sonju Lake	38-0248 00	Lake	58N	7W
Source Lake	38-0654 00	Lake	58N	10W
Sourdough Lake	38-0708 00	Lake	63N	10W
South Farm Lake	38-0778 00	Lake	62-63N	11W
South Fowl Lake	16-0034 00	Cook	64N	3E
South Kawishiwi River		Lake	62N	11W
South McDougal Lake	38-0659 00	Lake	59N	10W
South Wigwam Lake	38-0001 00	Lake	60N	6W
Split Rock Lake	01-0002 00	Aitkin	45N	22W
Square Lake	38-0074 00	Lake	62N	6W
Star Lake	16-0405 00	Cook	63N	3W
St.Louis River (hdwtrs)		St. Louis	58N	12-13W
St.Louis R.(FR 1060)		St. Louis	58N	14W
St.Louis R.(Norway Pt)		St. Louis	57N	14W
St.Louis R.(FR 790)		St. Louis	58N	14W
St.Louis R.(FR 791)		St. Louis	58N	14W
St.Louis R.(Rask Bay)	69-1291 00	St. Louis	48N	15W
St.Louis R.(Perch Lake)	69-1291 00	St. Louis	48N	15W
St.Louis R.(Walleye Alley)		Douglas, WI	48N	15W
St.Louis R.(Landslide Bay)		Douglas, WI	48N	15W
St.Louis R.(Duck Hunter N)		Douglas, WI	48N	15W
St.Louis R.(Duck Hunter S)		Douglas, WI	48N	15W
St.Louis R.(North Bay)	69-1291 00	St. Louis	48N	15W
St.Louis R.(Foundation)		Douglas, WI	48N	15W
St.Louis R.(Radio Tower)	69-1291 00	St. Louis	48N	15W
St.Louis R. (Bear Island)	69-1291 00	St. Louis	48N	15W
St.Louis R.(Oliver Landing)		Douglas, WI	48N	15W
St.Louis R.(Mud Lake)	69-1291 00	St. Louis	48N	15W
St.Louis R.(Mud Lake NE)	69-1291 00	St. Louis	48N	15W
St.Louis R.(Oliver Bay)		Douglas, WI	48N	15W
St.Louis R.(Little Pokegama)		Douglas, WI	48N	14-15W
St.Louis R.(Clough Island)		Douglas, WI	49N	14-15W
St.Louis R.(Pokegama Bay)		Douglas, WI	48-49N	14W
St.Louis R.(Smithville)	69-1291 00	St. Louis	49N	15W
St.Louis R.(Tallas Island)	69-1291 00	St. Louis	49N	15W
St.Louis R.(Kingsbury)	69-1291 00	St. Louis	49N	15W
St.Louis R.(Allouez Bay)		Douglas, WI	49N	13W
St. Mary's Lake	69-0651 00	St. Louis	57N	17W
Stone Lake (a)	69-0046 00	St. Louis	58N	12W

Stone Lake (b)	69-0686 00	St. Louis	56N	18W
Stone Lake (c)	69-0027 00	St. Louis	55N	12W
Stony Lake	38-0660 00	Lake	59N	10W
Stony River (Hwy 1)		Lake	60N	10W
Stony River (inlet N.McDougal)		Lake	60N	9-10W
Strobus Lake	16-0370 00	Cook	61N	3W
Sturgeon Lake	58-0067 00	Pine	45N	19W
Sullivan Lake (a)	69-0246 00	St. Louis	55N	14W
Sullivan Lake (b)	38-0755 00	Lake	57N	11W
Sunset Lake	69-0764 00	St. Louis	63N	18W
Surprise Lake	38-0550 00	Lake	60N	9W
Susan Lake	69-0741 00	St. Louis	64N	18W
Swallow L(Shallow,Deep)	38-0668 00	Lake	60N	10W
Swamp Lake	16-0256 00	Cook	62N	2W
Swamp Lake	16-0009 00	Cook	63N	4-5E
Swamp River	16-0901 00	Cook	63N	4E
Swamp Lake	38-0285 00	Lake	61N	7W
Sylvania Lake	38-0395 00	Lake	61N	7-8W
Tait Lake	16-0384 00	Cook	62N	3W
Tamarack Lake	09-0067 00	Carlton	48N	21W
Tamarack River		Carlton	48N	21W
Taylor Lake		Cook	63N	5E
Teal Lake	16-0003 00	Cook	64N	6E
Temperance River		Cook	62N	4W
Thirty-Six Lake (Kytola)	69-0854 00	St. Louis	50N	20W
Tommila Lake (Stone)	69-0035 00	St. Louis	56N	12W
Tommy Lake	38-0425 00	Lake	60N	8W
Toohey Lake	16-0645 00	Cook	61N	5W
Trout Lake	69-0498 00	St. Louis	63-64N	15-16W
Tucker Lake	16-0417 00	Cook	64N	3W
Turpela Lake	69-0427 00	St. Louis	58N	15W
Turtle Lake	16-0251 00	Cook	61N	2W
Twentythree, Lake	38-0247 00	Lake	58N	7W
Twin Lakes	69-0163 00	St. Louis	62N	13W
Twin Lakes (north)	69-0504 00	St. Louis	50N	16W
Twin Lakes (south)	69-0505 00	St. Louis	50N	16W
Twin Lakes	69-0695 00	St. Louis	50N	18W
Twin Lakes (East Twin)	69-0174 00	St. Louis	63-64N	13
Two Island Lake	16-0156 00	Cook	62N	1W
unnamed (FDL1)	09-0178 00	Carlton	49N	18W
unnamed (FDL2)	69-1454 00	St. Louis	50N	18W
unnamed (HWY 53)	69-0640 00	St. Louis	56N	17W
unnamed (Paleface)	69-0634 00	St. Louis	55N	17W
unnamed (Scott)		Lake	59N	7W
unnamed (SWTorchlight)	09-0027 00	Carlton	48N	18W
unnamed (Tucker)	16-0416 00	Cook	64N	3W
unnamed (Two Fifty Four)	38-0254 00	Lake	59N	7W

Upland Lake	38-0756 00	Lake	57N	11W
Upper Bug Lake	69-0406 00	St. Louis	54N	15W
Upper Pauness Lake	69-0465 00	St. Louis	66N	15W
Upper Twin (Golf Course) Pond	69-1345 00	St. Louis	50N	14W
Vang	69-0876 00	St. Louis	51N	20W
Venoah Lake	09-0009 00	Carlton	48N	17W
Vera Lake	38-0491 00	Lake	64N	8W
Vermilion, L.(Frazer Bay)	69-0378 00	St. Louis	62N	17W
Vermilon, L.(Greenwood)	69-0378 00	St. Louis	62N	16W
Vermilion, L.(Rice Bay)	69-0378 00	St. Louis	63N	15W
Vermilion, L.(Pike Bay)	69-0378 00	St. Louis	61-62N	15-16W
Vermilion River (dam)	69-0613 00	St. Louis	64N	16-17W
Vermilion River (buyck)	69-0613 00	St. Louis	65N	17W
Vermilion River (lakes)	69-0613 00	St. Louis	66-67N	18W
Vermilion River (gldmn)	69-0613 00	St. Louis	67N	17-18W
Vermilion River (falls)	69-0613 00	St. Louis	67N	17W
Vern Lake	16-0409 00	Cook	63N	3W
Vern River		Cook	63N	3W
Wabuse Lake	69-0408 00	St. Louis	55N	15W
Wager Lake	38-0458 00	Lake	62N	8W
Walli Lake	09-0071 00	Carlton	48N	21W
Wampus Lake	16-0196 00	Cook	64N	1W
Wampus Lake	38-0685 00	Lake	60N	10W
Wanless Lake	38-0049 00	Lake	60N	6W
Warren Lake		St. Louis	54N	12W
Washusk Lake #1	69-0409 00	St. Louis	55N	15W
Washusk Lake #2	69-0410 00	St. Louis	55N	15W
Watonwan Lake	38-0079 00	Lake	62N	6W
(Wagon) Wheel Lake	69-0735 00	St. Louis	60N	18W
West Chub Lake	38-0675 00	Lake	60N	10W
White Lake (a)	69-0571 00	St. Louis	58N	16W
White Lake (b)	69-0030 00	St. Louis	55N	12W
White Iron Lake	69-0004 00	St. Louis	62-63N	11-12W
White Pine Lake	16-0369 00	Cook	61N	3W
Whiteface Reservoir	69-0375 00	St. Louis	55-56N	14-15W
Whitewater Lake	69-0376 00	St. Louis	58N	14-15W
Wild Rice Lake	09-0023 00	Carlton	48N	18W
Wild Rice Reservoir	69-0371 00	St. Louis	51N	14-15W
Wilson Lake	38-0047 00	Lake	60N	6W
Wind Lake	38-0642 00	Lake	64N	9W
Wolf Lake (a)	69-0143 00	St. Louis	55N	13W
Wolf Lake (b)	69-0161 00	St. Louis	62N	13W
Wolf Lake	69-0582 00	St. Louis	63N	16W
Wonder Lake	16-0664 00	Cook	62N	5W
Wood Lake	38-0729 00	Lake	64N	10W
Woodbury Lake	09-0063 00	Carlton	49N	20W
Wye Lake	38-0042 00	Lake	60N	6W

Wynne Lake	69-0434 02	St. Louis	59N	15W

515 waters (lakes, portions of lakes, rivers, river segments)

list updated 3/18/2020

NorthMet Mining Project and Land Exchange

Final Environmental Impact Statement

November 2015

Prepared by

Minnesota Department of Natural Resources
United States Army Corps of Engineers
United States Forest Service

MNDNR

US Army Corps of Engineers
St. Paul District

FOREST SERVICE
U S
DEPARTMENT OF AGRICULTURE

Regulations Applying to Waters that Contain Wild Rice

Minnesota Rules part 7050.0224 identifies a Class 4A water quality standard of 10 mg/L for sulfate concentrations "…applicable to water used for the production of wild rice during periods when the rice may be susceptible to damage by high sulfate levels." The MPCA has developed a draft staff recommendation that the 10 mg/L sulfate standard is applicable to portions of the Partridge River and Embarrass River used for the production of wild rice (MPCA 2012a). The MPCA is overseeing a variety of studies relating to sulfate and wild rice, with the goal of informing decisions about state water quality standards. All information provided was considered when the MPCA made their recommendation. Should the application of the standard change, it would be addressed at that time.

Presence of Wild Rice within the NorthMet Project Area

Prior to the NorthMet Project Proposed Action, the existing number, location, extent, and health of wild rice stands within the Partridge River and Embarrass River were unknown. As part of development of the EIS, PolyMet conducted a review of available historic and cultural information, including the report *Natural Wild Rice in Minnesota* (MDNR 2008c), United States Geological Survey (USGS) topographic maps, and a wild rice list provided by the 1854 Treaty Authority. PolyMet also analyzed historic (2004 to 2008) infrared aerial photographs and consulted with persons and groups knowledgeable about wild rice to identify potential wild rice locations along the Partridge River and Embarrass River, including: Wyman Creek, a tributary of the Partridge River; Spring Mine Creek, a tributary of the Embarrass River; and downstream on the St. Louis River. They also surveyed Hay Lake and Little Rice Lake, which are not in the Embarrass River or Partridge River watersheds, but were included as potential control sites for future monitoring of wild rice presence and health. Based on this analysis, field surveys were conducted in potential wild rice areas during August and September 2009 using a protocol adapted from the 1854 Treaty Authority. The location and both qualitative and quantitative estimates of density and crop acreage were recorded. Qualitative estimates recorded approximate stand density using a density factor with a scale of 1 (low density) to 5 (high density), similar to a method used by the 1854 Treaty Authority. Quantitative estimates of wild rice density and coverage were determined by sampling representative grids. Sulfate monitoring was also conducted during the wild rice survey (Barr 2011a; Barr 2012a; Barr 2013l). The 2009 survey was followed by surveys in 2010, 2011, 2012, 2013, and 2014.

Results of the 2009, 2010, and 2011 sulfate monitoring are shown in Figure 4.2.2-3. Wild rice survey and water quality monitoring results for each waterbody are provided in Table 4.2.2-3 for survey years 2009 to 2012 (Barr 2010a; Barr 2011a; Barr 2012a; Barr 2013l; Barr 2013p).

Waterbodies at least partially surveyed during these surveys include the upper Embarrass River and its tributaries (Spring Mine, Trimble, and Unnamed creeks), the Embarrass River chain of lakes (including Sabin, Wynne, Embarrass, Lower Embarrass, Unnamed, Cedar Island, Fourth and Esquagama lakes), the lower Embarrass River, the upper Partridge River, Colby Lake, the lower Partridge River and tributaries to the Partridge River (including Wyman and Second Creeks). The results over the years of the surveys indicate some variability in the location and density of observed wild rice and in associated water column sulfate concentrations between survey years. The 2012 survey showed generally fewer and less dense stands of wild rice than were observed in the 2009 to 2011 surveys.

To identify which of these waters within the NorthMet Project area were to be considered as water used for production of wild rice to which the current 10 mg/L wild rice sulfate water quality standard applies, MPCA had previously developed a draft staff recommendation (MPCA 2012b) that specified the following waters:

- Embarrass Lake;
- The northernmost tip of Wynne Lake (Embarrass River inlet);
- The segment of the Embarrass River from MN Highway 135 bridge to the inlet of Sabin Lake;
- The portion of Upper Partridge River from river mile approximately 22 just upstream of the railroad bridge near Allen Junction to the inlet to Colby Lake;
- The portion of Lower Partridge River from the outlet of Colby Lake to its confluence with the St. Louis River; and
- The portion of Second Creek from First Creek to the confluence with Partridge River.

This draft MPCA staff recommendation was developed in anticipation of eventual NPDES/SDS permitting. Since the development of the draft staff recommendations, the MPCA has conducted preliminary evaluations of data collected as part of its legislatively mandated wild rice study and has identified conceptual approaches to revising both the numeric sulfate water quality standard of 10 mg/L and the identification of what waters would be subject to any revised standard (for wild rice waters). These conceptual approaches will continue to evolve, eventually resulting in a proposed rule. The proposed rule will also likely evolve during the rulemaking process. Because the final outcome of the evaluations and rulemaking is uncertain, this FEIS relies on the current sulfate water quality standard of 10 mg/L that is being applied to the waters specifically identified in the previously developed draft MPCA staff recommendations for its analysis of potential impacts in this FEIS.

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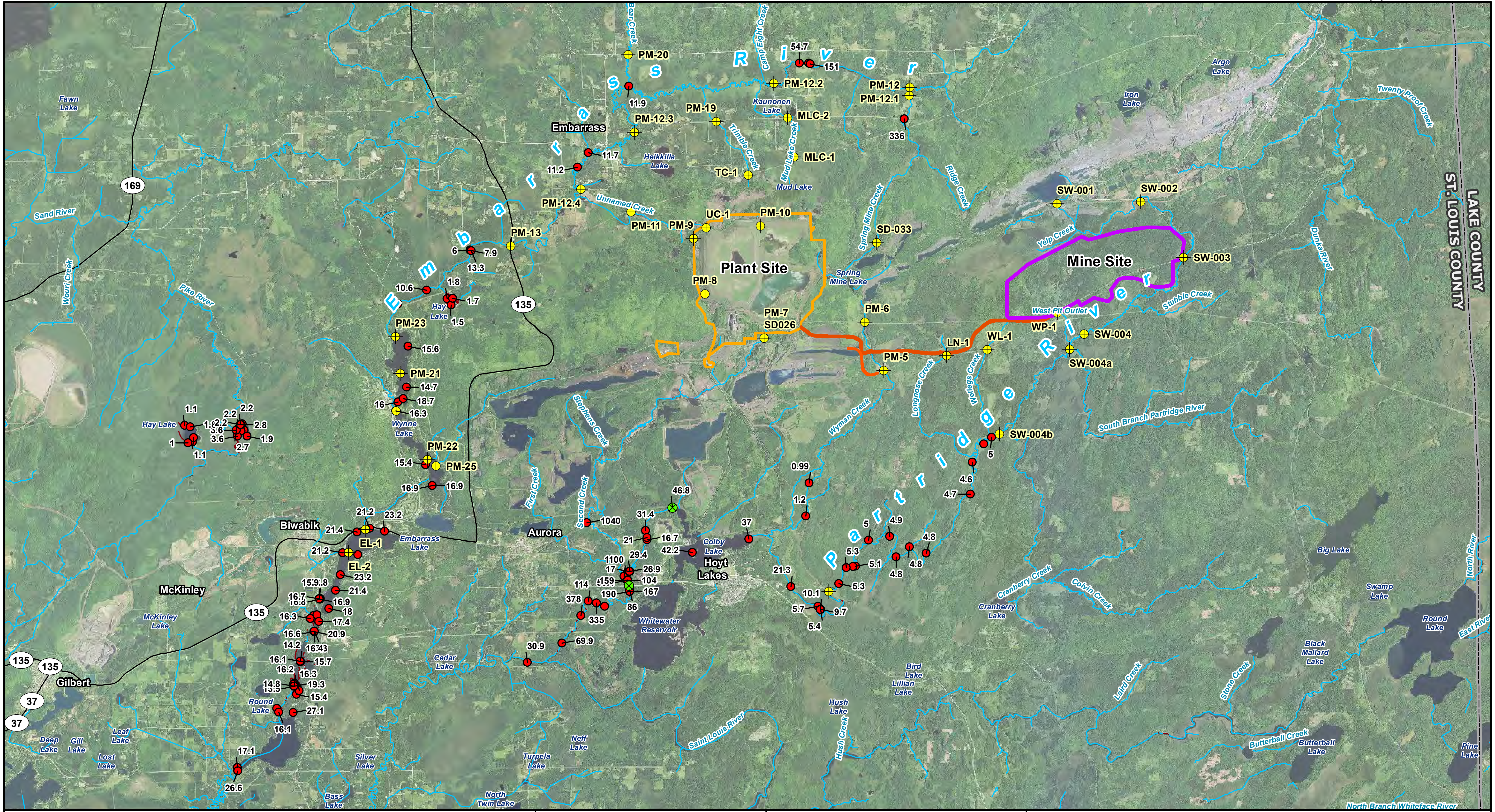

Mine Site

Plant Site

Transportation and Utility Corridor

Stream/River

Surface Water Monitoring Station

Mesabi Nugget Surface Water Monitoring Data - Aug. 19, 2009 (values are for sulfate concentration in mg/L)

2009-2013 Wild Rice Surveys Sulfate Sampling Locations with Sulfate Listed in mg/L

MNDNR

US Army Corps of Engineers St. Paul District

Forest Service U.S. Department of Agriculture

N E S W

0 0.5 1 2 3 4 Miles

Figure 4.2.2-3

Sulfate Sampling Locations

NorthMet Mining Project and Land Exchange FEIS

Minnesota

November 2015

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Table 4.2.2-3 Wild Rice Survey and Water Quality Monitoring Results

Locations Surveyed	Survey Year	Wild Rice Found?[1]	Density Factor[2] (Scale 1-5)	Sulfate Range[3] (mg/L)
Partridge River Watershed				
Upper Partridge River (above Colby Lake, portions)	09, 10, 11, 12	Yes (isolated)	1–3	5–21
Colby Lake	09, 10	No	---	37–42
Lower Partridge River (below Colby Lake)	09, 10, 11, 12	Yes	1–5	17–411
Wyman Creek	11, 12	No	---	---
Second Creek (portions)	09, 10, 11, 12	Yes (near mouth)	1–4	1,100
Embarrass River Watershed				
Upper Embarrass River (Spring Mine Creek to Sabin Lake)	09, 10, 11, 12	Yes (isolated)	1	6–151
Sabin - Wynne Lakes	09, 10, 11, 12	Yes (isolated)	1	15–16
Chain of Lakes (including Embarrass, Lower Embarrass, Cedar Island, Esquagama, Unnamed, and Fourth)	09, 10, 11, 12	Yes	1–5	14–27
Lower Embarrass River (Esquagama Lake to CR 95)	09, 10	No	---	---
Spring Mine Creek (portions)	09, 10, 11, 12	No	---	---
Trimble and Unnamed Creeks (portions)	10, 11, 12	No	---	---

Sources: Barr 2010c; Barr 2011a; 2012a; Barr 2013l; Barr 2013p.

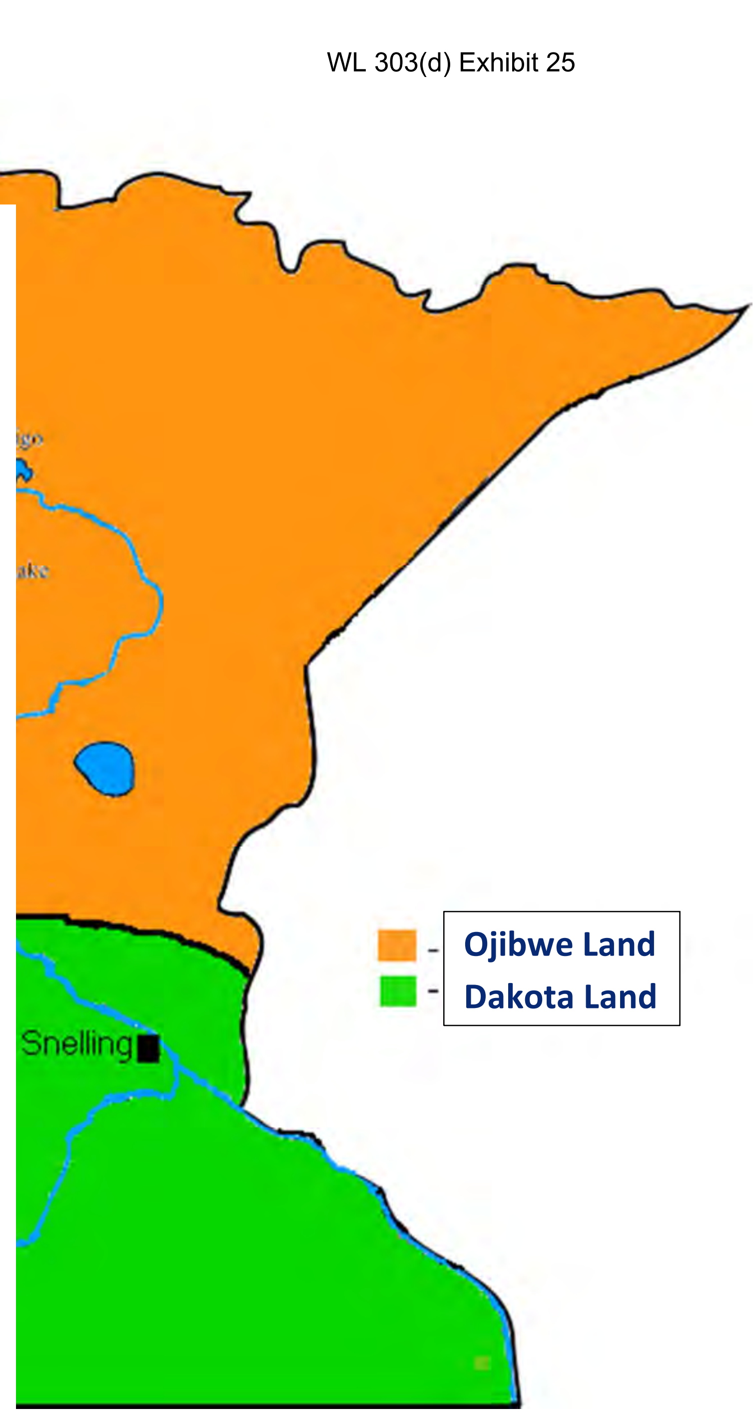
Notes:
1 "Yes" indicates that wild rice was observed in at least one of the survey years. Simply finding wild rice in a survey is not the same as being designated a water used for the production of wild rice.
2 Informal observational scale of relative wild rice density (1 – low density to 5 – high density)
3 Range of water column sulfate concentration taken at time of wild rice survey. Samples were only taken when and where wild rice was observed. Values rounded to nearest 1 mg/L. Sample sizes were low resulting in relatively large variability within some individual waterbodies.

Surveys of the St. Louis River from Brookston to Lake Superior were conducted in 2009 and from the NorthMet Project area to the St. Louis Estuary in 2010. Wild rice was identified on the St. Louis River for a short distance downstream from its confluence with the Partridge River. The most dense stand (density factor of 2) was located just upstream of Highway 100, and a few sparse stands were also located approximately 500 and 1,000 ft further downstream (see Figure 4.2.2-3). Sulfate concentrations in 2010 in the St. Louis River near Highway 100 averaged 17.7 mg/L.

4.2.2.1.4 Mercury

Based on sampling done for the NorthMet Project Proposed Action from 2004 to 2013, total mercury concentrations in the Upper Partridge River average about 3.3 ng/L (Barr 2014m). At monitoring station SW-005, total mercury concentrations range from below the analytical detection limit to a maximum of 18.4 ng/L, with an average concentration of 4.3 ng/L. In Colby

2018 Tribal Wild Rice Task Force Report



DECEMBER 15TH, 2018

Prepared by the:

MINNESOTA TRIBAL WILD RICE TASK FORCE

"You will know the chosen ground has been reached when you come to a land where food grows out of the water."

SEVEN FIRES PROPHECY

CONTENTS

EXECUTIVE SUMMARY

This report, and the creation of a Minnesota Tribal Wild Rice Task Force, serves as a response to the 40th Governor of the State of Minnesota creating a "Wild Rice Task Force" that is *disrespectful and contrary to Executive Order 13-10 …* and *directly relegates the Tribes to the status of special interest groups and industry rather than honoring Tribal sovereignty* (*Minnesota Chippewa Tribe Resolution 107-18*).

On May 30th, 2018, Governor Mark Dayton filed Executive Order 18-08 which provided for the establishment of the Governor's Task Force on Wild Rice. The Governor's Task Force on Wild Rice was charged with reviewing scientific literature to identify information related to the impacts of sulfate or other sulfur compounds or habitat conditions on wild rice, and preparing comments that addressed environmental conditions that contribute to wild rice population declines. The proposed composition of the Governor's Task Force on Wild Rice does not respect the sovereignty of the eleven federally-recognized Native American Tribes, Bands, and Communities in the State of Minnesota or the unique status of federally-recognized Tribes that have guaranteed usufructuary rights by Treaties. The proposed Governor's Task Force on Wild Rice composition does not acknowledge that Minnesota's Native American Tribes will be disproportionately affected by the loss of a usufructuary property right directly related to legislation prohibiting enforcement of existing water quality standards and the composition of the task force minimizes the technical expertise, knowledge, and interests of the Tribes.

On May 31st, 2018, the Minnesota Chippewa Tribe (MCT) responded to Executive Order 18-08 by passing resolution 82-18 and sending a correspondence to Governor Dayton informing him that the MCT would support the creation of a wild rice task force provided that each of the member reservations of the MCT be provided a separate seat on the Governor's Task Force on Wild Rice.

On June 28th, 2018, Governor Mark Dayton filed Executive Order 18-09 which amended Executive Order 18-08 and changed the composition of the task force from a representative appointed by the Minnesota Indian Affairs Council to adding a representative nominated by the four Minnesota Dakota Tribes and a representative nominated by the Red Lake Nation, but maintained only one seat available for a nomination by the six Bands of the Minnesota Chippewa Tribe. Furthermore, the proposed composition of the Governor's Task Force on Wild Rice was similar to the Minnesota Pollution Control Agency (MPCA) Wild Rice Advisory Board where during the process and through consultation, the comprehensive comments provided on behalf of the Tribes to the MPCA were generally disregarded and not incorporated into the then proposed wild rice rule.

This resulted in the Tribal Executive Committee of the MCT, comprised of the top two elected officials from each of the MCT Bands, to find that it was in the Tribes' best interest to decline/reject the Governor's offer to participate in the Governor's Task Force on Wild Rice and instead form the Minnesota Tribal Wild Rice Task Force (TWRTF). MCT Resolution 107-18 established the TWRTF which was to be comprised of, provided that such other federally-recognized tribes in Minnesota chose to participate, two representatives from each of the eleven federally-recognized tribes of Minnesota. It also served as an invitation for the other federally-recognized Native American Tribes in Minnesota to participate in gathering and reviewing information, preparing documents, and making recommendations utilizing their own expertise.

The purpose of the TWRTF is to review existing literature, including literature and information based on tradition, culture, and science, that is available to inform the understanding of the impacts of sulfate or other sulfur compounds on habitat conditions on wild rice, identify information gaps, make recommendations on priorities for wild rice research, and prepare a report with recommendations in a similar fashion to that included in Executive Orders 18-08 and 18-09, providing a report to the Governor by December 15th, 2018.

INTRODUCTION

An existing water quality standard for wild rice (10 mg/L sulfate) has been a USEPA federally recognized standard in: Minnesota since 1973, Fond du Lac Reservation since 2001, and Grand Portage Reservation since 2005. The original 1973 rule was promulgated following Minnesota's assumption of Clean Water Act authority and was based upon extensive biological surveys done by state biologist John Moyle in the 1940s. However, while this standard has largely been unenforced by state or federal agencies, the Tribes have fully implemented it. Fond du Lac and Grand Portage have both sponsored basic ecological research and research into the effects of sulfate on wild rice, beginning in 2003 and continuing today. With the concern over the impact discharges with elevated sulfate may have on impact wild rice, Tribes and environmental groups began pushing the Minnesota Pollution Control Agency (MPCA) about 15 years ago to enforce the standard. Concern was also raised from the dischargers (i.e., it would be too expensive to meet standard; is the standard the appropriate number?) who would potentially be regulated.

In 2010 the MPCA was directed by the state legislature to further evaluate the impacts of sulfate and sulfide, and determine if changes to the current standard are needed. MPCA had three goals: to revise the numeric standard to incorporate the latest scientific understanding of the impacts of sulfate; to clarify the beneficial use and which waters support the beneficial use; and to clarify what it means to meet or exceed the standard. The timeline of the process is as follows:

- **Wild Rice Advisory Committee (2011-2017)** – A group of a variety of interests (agencies, tribes, researchers, harvesters, environmental groups, industry, etc.) provided input to MPCA on the standard and scientific studies.

- **Studies (2011-2013)** – State sponsored research programs were completed including field surveys, controlled laboratory experiments, and outdoor container experiments. Results indicated that sulfate (when converted to sulfide) impacts wild rice.

- **Peer Review Committee (2014)** – Group of independent scientists provided feedback to the MPCA on research projects and results.

- **Minnesota Chippewa Tribe letter to Governor Dayton (2014)** – The letter addressed concerns regarding the definition of "waters used for the production of wild rice" and water quality standards pertinent to wild rice.

- **Legislative Rules (2015, 2016, 2017)** – Rules were passed prohibiting MPCA from identifying impaired wild rice waters and enforcing the existing 10 mg/L wild rice sulfate standard, until a revised rule would take effect. These actions unduly restricted MPCA's regulatory authority, leaving them vulnerable to losing their delegated National Pollutant Discharge Elimination System (NPDES) authority according to the USEPA.

- **MPCA issues proposed rule (2017)** – Instead of the current standard of 10 mg/L sulfate, the proposal was for an equation-based standard (depending on the amount of sulfate, iron, and organic carbon in a system). A unique sulfate standard would be calculated and developed for each system where it applies. A partial list of known wild rice waters, to which the standard would apply, was also published in the revised rule.

- **Minnesota Indian Affairs Council letter to MPCA Commissioner Stine (2017)** – The letter highlighted the deficiencies of MPCA's proposed rule revisions for Minnesota's sulfate standard to protect wild rice.

- **Administrative Law Rudge rulings (2018)** – In January 2018, a report from the Administrative Law Judge was issued disapproving MPCA's repeal of the existing standard and replacing it with the agency's proposed rule revisions. The MPCA asked the judge to reconsider, but the Chief Administrative Law Judge's Order on Review issued in April 2018 confirmed the earlier decision to disapprove MPCA's approach to changing the standard. Some key points of the decision were:

    1) MPCA failed to establish the reasonableness of the repeal of the existing 10 mg/L sulfate standard, and the repeal conflicted with state and federal

statute; 2) the proposed equation-based standard failed to meet the definition of a rule under Minnesota statute, was not rationally related to the MPCA's objective, and was unconstitutionally void for vagueness; 3) the proposed list of wild rice waters was deficient, as it violated federal statutes; 4) the Agency failed to establish need or reasonableness, specifically related to the limited list of wild rice waters that are provided additional protection under narrative standard, in violation of state statute.

- **MPCA withdraws rule (2018)** – Proposed changes to the wild rice sulfate standard were withdrawn by MPCA in May 2018. The existing standard of 10 mg/L sulfate remains in place with legislative restrictions of 2015, 2016 and 2017.

- **Proposed legislation, vetoes, and executive order (2018)** – Attempts were made in the legislature to pass bills removing the existing standard, but the governor vetoed the proposed legislation twice (May 9th letter to Speaker of the House and May 30th letter to Speaker of the House). In May 2018, the governor issued Executive Order 18-08 which established a task force to further evaluate the standard and issue a report by December 15th, 2018. The order also states that no existing permitted facility will be required to install unaffordable equipment to meet existing sulfate standard.

- **Minnesota Chippewa Tribe Resolution 82-18 and letter to Governor Dayton (2018)** – The letter supported the creation of the wild rice task force provided that each member reservation of the Minnesota Chippewa Tribe be provided a seat on the Governor's task force.

- **Letter from Governor Dayton to Minnesota Tribal Leaders (2018)** – Amendments to be made to Executive Order 18-08 were outlined, which included adding one seat for the four Minnesota Dakota Tribes and one seat for the Red Lake Nation, but maintained the one seat for the six Bands of the Minnesota Chippewa Tribe.

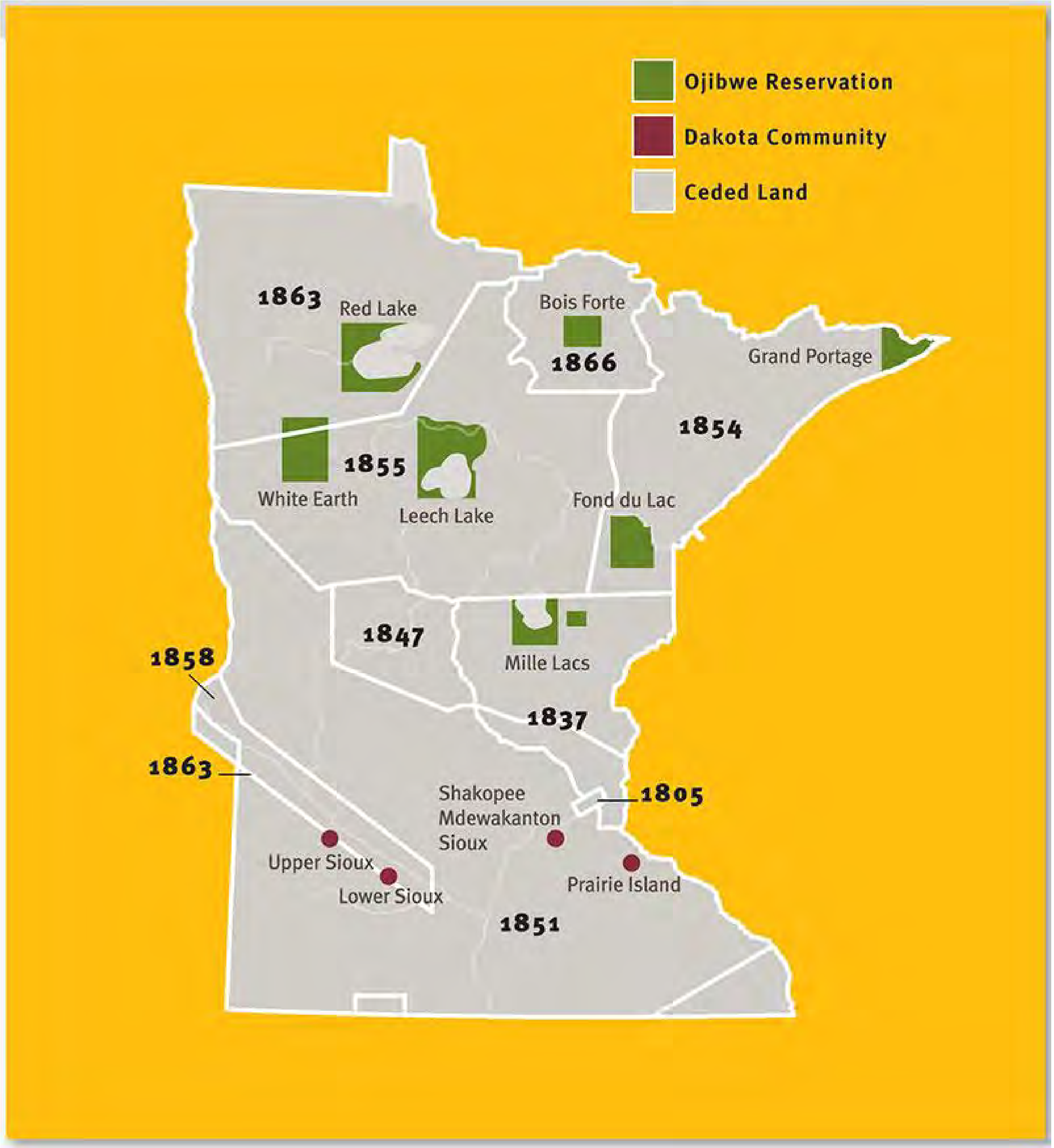
- **Governor Dayton issues Executive Order 18-09 (2018)** – This amended Executive Order 18-08 as described in the governor's letter to the Minnesota Tribal Leaders.

- **Minnesota Chippewa Tribe letter to Governor Dayton (2018)** – This letter respectfully explained the reason for declining the offer to serve on the Governor's Task Force on Wild Rice and subsequently the creation of the Tribal Wild Rice Task Force by the federally-recognized sovereign nations of Minnesota. Furthermore, it stated that the Minnesota Chippewa Tribe will only participate in government-to-government consultation in order to strengthen the relationship between the State and the Tribe, and to ensure that Executive Order 13-10 is implemented properly.
- **Tribal Wild Rice Task Force (2018)** – The formation of the Governor's Task Force on Wild Rice did not allow representation by all tribes in Minnesota. Tribes found this unacceptable as each is a sovereign government and must necessarily represent themselves. In August 2018, the Minnesota Chippewa Tribe passed resolution 107-18 creating a Tribal Wild Rice Task Force charged with developing its own report and recommendations, and communicated its intent by letter to the Governor of Minnesota.
- **Fond du Lac Revised Water Quality Standards (2018)** – In September 2018, Fond du Lac published notice of their revised water quality standards for public comment under their federal Clean Water Act authority. The Band is proposing to maintain their 10 mg/L sulfate standard, as recent research has confirmed it is scientifically defensible, and adding protective narrative standards for wild rice waters.

Tribes did remain engaged with the MPCA throughout the process outlined above. Staff representing some, but not all, Minnesota tribes participated as members of the Wild Rice Advisory Committee. In addition, the MPCA did make efforts to hold additional consultation with all tribes indicating interest, including several Ojibwe Bands from Wisconsin. This consultation did include formal government-to-government meetings and more informal staff-to-staff communications. But despite this involvement and consultation, tribal expertise has not been reflected in the state's policies or rulemaking for wild rice. Tribes have put forth considerable effort in information sharing and commenting, yet most key thoughts and concerns have not been addressed to date. This report reiterates many of the previous concerns. We ask that state and federal regulating agencies meet their responsibilities and work with tribes to protect and maintain natural stands of wild rice for future generations.

IMPORTANCE OF WILD RICE

Ojibwe Reservations/Dakota Communities and Treaty-Ceded Territories



Cultural Context

The third of seven prophets came to the Anishinaabe people more than one thousand years ago and told them to head west to their chosen land. When they found “the food that grows out of the water,” they would know they were home, and this sacred food would feed their families’ bodies and souls for generations to come. This journey is at the core of the Ojibwe migration story, and the sacred food at the center of their cultural identity, spiritual traditions, and physical well-being is manoomin (Ojibwe word for wild rice). To the many bands of Ojibwe people who have made their homes for centuries around the lakes of Minnesota, manoomin is far more than a crop or a staple food. It is a sacred symbol that represents their journey, their relationship to the land that sustains them, and their very identity as Ojibwe people. Anishinaabe people live by the philosophy “that if we care for the nibi (Ojibwe word for water) and manoomin, the manoomin will care for us”.

While Ojibwe or Anishinaabeg historic and cultural connections to wild rice have been communicated to the public through various media, many people are surprised to learn that ricing also has deep roots in Dakota history. Dakota people used to travel without boundaries around the land which is now the state of Minnesota. Psiŋ (Dakota word for wild rice) was abundant across the state, including in southern Minnesota. Lakes and rivers were clean enough for psiŋ growth then, with unaltered hydrology.

Dakota people were ricing long before the Ojibwe’s prophecy relocated them to the Dakota homelands. Dakota people shared their ricing traditions with the Ojibwe, and these traditional harvest and parching methods are those still used by the native communities today. The settlement era influenced the placement of Dakota people in the southern reaches of Minnesota along the Minnesota and Mississippi Rivers. Dakota people have harvested psiŋ both when it was in the territory they occupied, and when it was in “contested territory” or the middle section of Minnesota that was then a war zone where people weren’t allowed to camp. That territory was often hunted and harvested by both peoples’ groups.

Four Dakota communities now reside in the southern half of Minnesota, with Prairie Island Indian Community lands located along the Mississippi River near Red Wing, Shakopee Mdewakanton Sioux Community located just off the Mississippi River near Prior Lake in Shakopee, and Lower Sioux Indian Community & Upper Sioux Indian Community residing in the Minnesota River valley.

According to Jenks (1901) and many oral history accounts, manoomin/psiŋ used to grow along the reaches of the Mississippi and Minnesota Rivers, as well as the St. Louis river basin. Deloria (1967) gives an account of people in the Red Wing area gathering psiŋ, along with places specifically near Sakpe (now Shakopee) and St. Paul. Oral history tells us Dakota people gathered psiŋ for sustenance along the Mississippi River and backwater lakes on down to Lake Pepin. Psiŋ sustains the Dakota culture to this day, but there is hardship being that psiŋ no longer grows with the same abundance it once did along these rivers.

The Dakota custom of harvesting psiŋ has never stopped since a time immemorial. However, Dakota people now have to travel much farther to reach areas where psiŋ is appropriately abundant for harvest. For many, this means traveling to another Tribe up north because psiŋ has been removed for so long from Dakota people's current place of residence that the tradition surrounding an annual harvest has been lost. Psiŋ is still deeply embedded in Dakota culture as is evident in ceremonies, gifts, diet, and traditions carried down for generations. The Dakota communities today are working to restore the rice that was once there, and bring back this nutritious resource to their own lands.

This very brief history of the Dakota people tells of a broken connection with something that was abundant in their homelands and is no longer. The Dakota nations must rely on their relatives in the northern half of the state to supply manoomin/psiŋ for restoration seeding, for consumption, and for ceremonies. May this history show us clearly that Minnesotans need to prevent the loss of any more rice in northern regions of Minnesota where manoomin/psiŋ still grows in its native range. Manoomin/Psiŋ is health and life to tribal culture both for the Ojibwe and Dakota people.

Minnesota tribes entered into treaties with the United States in the 1800's to reserve hunting, fishing, and gathering rights in the lands and waters ceded to the United States. The exercise of these rights is fundamental to tribes' cultures and ways of life and maintains religious, ceremonial, medicinal, subsistence, and economic needs.

Every federal agency has a responsibility to these tribes and their treaty rights, and this extends to the protection of the habitats and environmental quality that sustain manoomin/psiŋ. The recognition of sovereign rights is part of any given tribes' ongoing struggle to preserve a culture that is best understood in terms of their relationship with the natural environment. Tribal members continue to harvest and rely upon manoomin/psiŋ for religious purposes including naming ceremonies, funerals, Midewiwin ceremonies, and various seasonal feasts.

These activities are critical components in perpetuating Anishinaabeg/Dakota lifeways and cultural practices. Anishinaabeg/Dakota spiritual beliefs mandate the use of certain plants, animals, and fish in ceremonies attendant to hunting, fishing, and gathering activities. These ceremonies ensure the perpetuation of the resources and the physical, mental, and spiritual well-being of the person. Tribal leaders have noted that elders in their communities reaffirmed the position that traditional foods, including manoomin/psiŋ, are medicine for Anishinaabe and Dakota people. Today, tribes experience higher than average rates of diseases such as diabetes and heart disease. Much of the current state of Native American health can be traced back to historical practices that have displaced tribes and limited access to healthy and traditional foods, such as manoomin/psiŋ. Many tribes are dependent upon manoomin/psiŋ for subsistence needs.

Many Native Americans eat manoomin/psiŋ at least once a month, though historically this rate was much higher. Survey results show that manoomin/psiŋ is the most commonly consumed traditional food, and Native Americans wish to eat it more often. The annual hand-harvest on Minnesota lakes and rivers is a cherished ritual that preserves time-honored traditions and builds tribal community.

Harvesting rice by hand is part of a deeply held belief that this wild gift from the Creator, and the land that sustains it, should be treated with respect and gratitude rather than cultivated and exploited. Hand-harvested rice is frequently offered as gifts and is used as an offering in spiritual ceremonies and funerals.

Health and Subsistence

Despite its cultural significance, Minnesota tribes have experienced challenges in documenting and publicizing the impacts to community health, social cohesion, and access to healthy food that they bear as wild rice resources are being degraded and diminished. The Fond du Lac Band attempted to bring these health and cultural inequities to light in a Health Impact Assessment or HIA, and to clearly and simply articulate the importance of manoomin to the health of the Ojibwe people. This HIA explored historical trauma, grave disparities in health outcomes and access to health care, and socioeconomic inequities (social determinants of health) that shape the lives of traditional people in a modern world. It highlighted the need to protect and support resilient cultural and spiritual practices that connect people to their ancestors, their identity, and future generations. The practices of harvesting, processing, eating, sharing and gifting manoomin; the language associated with these practices and ceremonies that celebrate manoomin are central to the health of tribal communities.

From *Expanding the Narrative of Tribal Health: The Effects of Wild Rice Water Quality Rule Changes on Tribal Health* (Fond du Lac Health Impact Assessment 2018):

> "Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and the right to define their own food and agricultural systems… Harvesting what is naturally occurring and compatible with one's own environment is a key component. When people harvest, process, prepare and serve native foods, they build strong relationships with the land and with each other… The establishment of reservations limited access to traditional foods and replaced them with less nutritious, more expensive store-bought foods, leading to nutritional deficiencies and food insecurity that Native Americans experience today…

> A history of displacing tribes and limiting access to traditional foods like manoomin has had profoundly negative and persistent impacts to Native American health and well-being."

To address these health disparities, Prairie Island Indian Community (PIIC) has initiated a movement of food sovereignty in the community. In 2017, PIIC conducted a Food Sovereignty Assessment which strongly revealed a desire by the community to increase the availability, harvesting opportunities and consumption of local psiŋ. PIIC community members classified psiŋ as one of the top five "food(s) that you need or would like to eat that are difficult to get, or are not available, in your community" (Community Assessment Report, 2017). In addition, out of the 75 respondents, 88% felt that "health issues (such as diabetes, heart disease, and obesity) in our community are related to food and diet" and 82% felt that "health issues would improve with access to traditional foods" (Community Assessment Report 2017). This puts a high importance on increasing access to indigenous foods like psiŋ for the health of the community.

Also in the 2017 Food Sovereignty Assessment, the following comments relating to psiŋ were provided in response to the question "if you could tell your tribal or community leaders anything about food and hunger issues in your community, what would you tell them?"

- We need to utilize our land to grow our own foods
- Food is healthcare
- Reconnecting with our land is important to food issues
- Increasing access to traditional foods in order to teach about them
- Providing better access to healthier, fresher food in order to provide people with options
- Becoming as self-sufficient as possible would benefit our community greatly
- More people would eat healthier if they had better access to healthier food
- We need to introduce more traditional foods into community events

A movement in bringing back cultural traditions surrounding wild rice is also taking place at PIIC as multiple educational community events have been happening each year since 2015.
These events, in addition to continued tribal community involvement in psiŋ restoration efforts, include harvesting field-trips, parching, push-poling, and cooking classes.

Similarly to PIIC, the Lower Sioux Indian Community is addressing concerns on food sovereignty. The 'Honoring Little Crow through Healthy and Indigenous Foods Initiative' resolution was adopted by the Lower Sioux Tribal Council in 2016. This policy was developed to implement a system change to increase visibility of and access to healthier indigenous food and beverage choices to support a healthy Lower Sioux Community. Results from the Community's 2018 Food Sovereignty Assessment found that almost half of the respondents considered wild rice the top choice of traditional foods. However, nearly 75% of the respondents stated that they are not able to eat traditional foods as often as they would like. The Lower Sioux Office of the Environment is working on wild rice restoration efforts at four trial sites within the Community (initial seeding in 2015). During the same time, Lower Sioux Recreation department has provided trips during wild rice harvesting season so the Dakota Youth are able to experience ricing "Up North".

Ecology

Wild rice (genus Zizania) is an annual grass that grows in shallow water and slow-flowing streams and produces an edible grain. It is native to Minnesota and can be found in 55 counties in the northern region of the state and few in the southern region, though its range once covered the entire state. Current coverage of wild rice has declined to at least 64,000 acres when growing conditions are favorable.

A fast-growing, aquatic grass, it sustains both migratory and local wildlife, providing critical food and shelter at every stage of its growth and throughout all four seasons. Migrating and resident species alike rely on the plant's nutritious and abundant seeds. In the fall, many species of duck rely on wild rice as a staple food source.

Plant stems provide brood cover for waterfowl and nesting material for species such as common loons, red-necked grebes, and muskrats. Insect larvae that feed on wild rice serve as a rich food source for blackbirds, bobolinks, rails, and wrens. In the spring, decaying rice straw supports a diverse community of invertebrates that in turn supports birds, fish, and amphibians. In the summer, the whole plant provides food for herbivores like Canada geese, trumpeter swans, muskrats, beavers, white-tailed deer, and moose. In the late summer, wild rice provides cover for molting waterfowl and their young. Due to the plant's diverse ecological value, wild rice lakes and streams serve as breeding and nesting areas for at least 17 species listed as "species of greatest conservation need" on MNDNR's Comprehensive Wildlife Conservation Strategy. As an aquatic plant, it also provides habitat for fish. Wild rice provides additional ecological values by improving the quality of ecosystems, allowing for increased ecosystem function. By sequestering nutrients such as phosphorous and nitrogen, wild rice enriches soils while countering the negative effects of nutrient loading in water bodies that can cause algal growth and turbidity. Stands of wild rice form windbreaks and slow water velocity, limiting the mixing of soil nutrients into the water column. They also prevent erosion by stabilizing loose soils.

Management and Restoration

The Stoney Brook watershed encompasses over half of the Fond du Lac Reservation in northeastern Minnesota, at 59,248 acres, and its headwaters include the Reservation's premier wild rice lakes, designated as "Outstanding Reservation Resource Waters" in the Band's federally-approved Water Quality Standards. The watershed was extensively ditched under judicial order in the early 1900's to drain wetlands and open up acreage for crop agriculture, facilitate development, and encourage non-tribal settlement on tribal lands. But the substantial hydro-modification of this ditch system persists, and has resulted in detrimental fluctuating water levels in the wild rice lakes and significant stream and riparian habitat impairment throughout the watershed.

Because of the altered drainage, water level fluctuations in the wild rice lakes, perhaps the single most critical factor affecting natural wild rice productivity, are difficult to moderate during storm events.

Wetlands have been fragmented, and while the direction and flow of shallow ground water between the wild rice lakes is not well understood, it has likely been impacted by the ditch system. The ditch system, which was excavated between 1916 and 1921, lowered the lake levels on Perch, Jaskari, Rice Portage, Miller, and Deadfish Lakes. The total area of these five wild rice lakes prior to the excavation of the drainage ditches was 1,617 acres. The partial drainage of the lakes resulted in the loss of 850 acres of wild rice habitat to competing vegetation such as cattail, pickerel weed, water lily, sedge and horsetail.

The Fond du Lac Band is very committed to protecting, managing and restoring their wild rice lakes. Tribal leadership has expended considerable resources on the restoration of critical habitat on these wild rice lakes, and has directed the Fond du Lac Natural Resources Program (NRP) to manage and restore the wild rice lakes. Over the past twenty years the NRP has planned and implemented projects to accomplish this goal. A series of four water control structures were built to manage water levels for optimizing wild rice growth, and to restore the lakes to their historical size. Restoring lake levels and proper water level management will help the remnant wild rice stands thrive, but lake level management alone cannot restore wild rice in the areas choked with competing vegetation. The restoration of open water habitat favorable for wild rice requires the mechanical removal of many acres of vegetation with a large sedge mat cutter and two aquatic weed harvesters. The benefits from restoring the wild rice lakes include improved wildlife habitat, especially for waterfowl, in addition to providing wild rice for harvesting.

The topography of the White Earth Reservation varies greatly throughout its boundaries and ranges from prairie pothole, transition zones to forests. The landscape supports over sixty-eight thousand acres of surface waters and over three hundred miles of rivers and streams across three watersheds. The soils also range from loam, heavy clay to sandy. Within these zones a multitude of land uses occur, including agriculture. As agriculture practices increase so does the use of fertilizers, pesticides and herbicides, resulting in negative impacts to surface waters and aquatic life including wild rice.

With the added stress of runoff, sedimentation, lack of adequate surface water buffers and accumulation of sulfate, aquatic life is in dire need of protections.

In 1938 the U.S. Army Corps of Engineers built Lock and Dam 3, located in Red Wing, MN, creating Pool 3 of the Mississippi where the Prairie Island Indian Community (PIIC) now resides. The desire to create better shipping lanes along the Mississippi brought about the installation of lock and dams and a 9 foot deep shipping channel along the length of the river. Pool 3 contains both Sturgeon and North Lake, where psiŋ originally grew. The implementation of the lock and dam system drastically changed the function of the river. It created better shipping lanes, but also flooded much of PIIC land. The flooding from the dam increased the size of Sturgeon Lake and North Lake, greatly expanding the backwater areas of the Mississippi. Many isolated lakes and large expanses of marshland important to fish, waterfowl, plants, and other native wildlife were lost. These hydrology changes are thought to be a large reason why psiŋ beds shrank or were extirpated on the Mississippi in the years following the installment of the dams.

PIIC has been working to re-establish psiŋ since 2003 in the Mississippi backwaters and wetlands of Tribal land with a goal to restore 30 acres of wild rice beds. PIIC land sits on about 2,200 acres of backwater lakes, with a band of emergent plants and wetlands encompassing large portions of the Island. PIIC's restoration process includes planting psiŋ in areas of potential growth. Psiŋ is an annual plant, so if flooding prevents growth one year it is not able to re-seed itself for the following year – creating a challenge in the growth cycle. Stocking up a seed bank aids the rice in adapting to its environment, as some rice seed will remain dormant for a number of years before growing. The Land & Environment Department organizes follow-up aquatic plant surveys and appropriate seeding each year to document this re-establishment effort for the Tribe. There have been several years of psiŋ growth on PIIC; 2013, 2015, 2017 being three recent years marking dense rice beds and full growth. Even so, the restored psiŋ beds have totaled just over 7 acres in size and continue to struggle due to extreme spring flooding events. Clearly, there is still more work to be done in restoration on PIIC lands.

Economic Importance, Past and Present

In assessing the importance of manoomin/psiŋ to tribal economies, it is important not to limit the benefit metrics to job and income measures. In regard to tribal manoomin harvests, sales of a portion of the harvest are often used to supplement subsistence (i.e. selling a portion of the manoomin harvest to cover costs for gasoline and other expenses enables tribal members to participate in subsistence activities and provide food for their extended families). Because tribes were forced to participate in a western cash economy by European settlement, and manoomin has been appropriated as a commodity, it has since become a source of material wealth and economic survival for the Ojibwe as well. However, the traditional role of manoomin/psiŋ is still clear today.

Historically, wild rice was the most important grain in Minnesota's economy. Because it was a dietary staple, easily stored for long periods of time, and easy to use, it held considerable economic value for native people and early explorers and settlers. Although other grains became common over time as they were introduced to Minnesota by immigrants, wild rice continued to be popular. Records of state license sales going back to the 1950s clearly show the enduring popularity and value of wild rice. More than 300,000 licenses have been sold since 1957.

Prior to 1970, Minnesota provided half of the global market supply of wild rice; most of which was from hand-harvested natural stands. As cultivation of wild rice increased, by 1990, natural hand-harvested wild rice in Minnesota accounted for less than 10% of the global supply of wild rice. Yet, hand-harvested wild rice remains a vital part of the state's tribal and local economies. In fact, the largest part of the economy revolving around wild rice is the "underground" economy. Much of people's manoomin harvest is gifted or traded and is never tracked in any organized fashion. There is very little accounting or tracking related to wild rice sales, spending, or harvest. Yet, aside from the cultural importance of the activities, this barter and trade system is also important to the economic wellbeing of harvesters by reducing food costs and improving food security.

As part of the Health Impact Assessment, Fond du Lac worked with Earth Economics to develop an economic benefits analysis describing the impact of seasonal manoomin harvest to the tribal and state economies. This analysis estimated impacts on economic activity, food security, and public health, and then estimated changes in those impacts as a result of potential decreases in wild rice productivity and abundance. While the report was not intended to establish any monetary value to the cultural significance of manoomin, recognizing that these values are beyond economic measure, it did make a strong economic case for protecting manoomin and thereby preserving these benefits for future generations.

The effects of wild rice harvesting ripple throughout the economy in obvious and less obvious ways. Some harvesters sell a portion of the wild rice they gather for obvious economic gain. But additional contributions stem from the costs to undertake harvesting, such as gas, drying tarps, or canoes. Those expenditures support other sectors in the Minnesota economy, like retail and service. Wild rice also supports the Minnesota economy in other, less obvious ways. Conservation agencies, tribes, and other groups and organizations invest enormous amounts of money in ecosystem restoration projects that rely on native wild rice as an important plant; and due to their magnetism for waterfowl, wild rice waters serve as popular hunting grounds.

According to the 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, waterfowl hunters contributed more than 43 million dollars ($43,000,000) to the Minnesota economy. Although hunting numbers on wild rice waters are currently unknown, Ducks Unlimited suggests that no other habitat sees such high concentrations of waterfowl. The shared value that so many Minnesotans place on wild rice habitat is reflected by the widespread efforts of hunting clubs, private citizens, and conservation groups to seed and expand it.

SUPPORTING EVIDENCE OF SULFATE/SULFIDE IMPACTS AND THE NEED TO PROTECT WILD RICE

Hydroponic studies – John Pastor

Dr. Pastor investigated the effects of sulfate and sulfide on the life cycle of wild rice in hydroponic solutions. Sulfate itself had no effect on seed germination or juvenile seedling growth and development, but sulfide greatly reduced juvenile seedling growth and development. The hydroponic experiments demonstrated that the adverse effects to wild rice are an indirect result from sulfide (formed in the low oxygen sediments of mesocosms and natural wild rice ecosystems), not a direct effect of the sulfate.

Mesocosm studies – John Pastor

In outdoor mesocosms (experimental systems that mimic natural ecosystems under controlled conditions), sulfate additions to the water increased sulfide production in the sediments. Wild rice seedling emergence, seedling survival, biomass growth, viable seed production, and seed mass all declined with increasing sulfate concentrations. These adverse effects are a result of the toxicity of the sulfide formed, and the decline in wild rice survival and growth grew steeper over the course of this multi-year experiment. Wild rice grown in mesocosms with higher sulfate concentrations went extinct, at progressively lower concentrations over time. After eight growing seasons of experimental sulfate additions, only the mesocosms with sulfate concentrations of 50 mg/L and the control (no sulfate additions) mesocosms still have wild rice growing and reproducing. This line of research essentially confirms the earlier research by a state biologist, who originally observed that no large populations of wild rice occurs in waters that exceed 10 mg/L sulfate, and wild rice stands are uncommon or absent where sulfate exceeds 50 mg/L.

Iron sulfide formation on roots – Sophia LaFond-Hudson

During the onset of seed production, wild rice root surfaces grown under experimental sulfate-amended treatments developed black iron sulfide plaques on their root surfaces, replacing the typical orange iron hydroxide plaques seen in natural ecosystems and control mesocosms (without sulfate amendments). Iron hydroxides are thought to protect aquatic plants from toxic substances such as sulfide by providing an oxidized barrier around the roots. After these iron sulfide plaques formed on the roots, the wild rice plants ceased uptake of nitrogen, during a point in their life cycle where nitrogen is needed to form seeds. This observed phenomenon may explain the mechanism by which sulfate reduction to sulfide affects seed production and seed biomass, contributing to the decline and extinction of wild rice populations exposed to higher sulfate over time.

Field studies – Amy Myrbo

Comprehensive field surveys led by Dr. Amy Myrbo as part of the state's research program characterized 64 chemical and physical variables over 100 sites across Minnesota. Analysis of the data concluded that, while water temperature and water transparency controlled the suitability of habitat for wild rice, the sulfide in sediment pore water, generated by microbial reduction of sulfate, is the primary control of wild rice occurrence. Anaerobic microbes in lake and river sediments make sulfide from sulfate in the overlying water, and waterbodies that have high concentrations of dissolved sulfide in the sediment have a low probability of hosting wild rice. This research confirms the earlier research by a state biologist, who originally observed that no large populations of wild rice occur in waters that exceed 10 mg/L sulfate, and wild rice stands are uncommon or absent where sulfate exceeds 50 mg/L.

Rooting zone geochemistry – Nate Johnson

Dr. Johnson collected and analyzed rooting zone depth profiles in the experimental mesocosms (Pastor studies) and field sites (Myrbo surveys) to characterize sulfate, sulfide and iron in the rooting zone of wild rice plants. In the mesocosms, a portion of each tank was isolated from plant roots with a sheet of Plexiglass in order to assess the effect of wild rice roots on porewater chemistry (oxidation or reduction). "Peepers" (porewater sensors) were deployed in the plant-free and planted sections of selected mesocosms, and in two field sites where sulfate was elevated (Second Creek, Sandy Lake). He observed a consistent reduction in porewater sulfate as summer progressed, while sulfide increased and was highest just below the sediment-water interface. Lower sulfide concentrations deeper in the sediment layer are likely a result of precipitation with ferrous iron, which had higher concentrations in the deeper sediments, but decreased over the summer season. There was no consistent difference in the porewater of the plant and plant-free portions of the mesocosms, although there were clear differences among the sulfate treatment concentrations.

Temperature dependent diffusion rates of sulfate – Nate Johnson

Dr. Johnson conducted a sediment incubation study to explore the effect that ambient air temperature has on the rate that elevated sulfate concentrations in the water column are converted in the underlying sediment to sulfide, and later release sulfate back into the overlying water. This study was intended to inform whether the seasonal application of the existing sulfate standard was protective (only control sulfate discharges during the growing season). Porewater sulfate decreased over time, as it was reduced to solid-phase sulfide, in both temperature treatments (4.5^{o} C and 23^{o} C), although at a slower rate in the cold treatment; that sulfate reduction rate was calculated, and consistent with observed rates in other studies.

Twin Lakes Monitoring Case Study

A monitoring program has been completed in 2010-2018 at Sandy Lake and Little Sandy Lake. The 1854 Treaty Authority completed the work in support of the Bois Forte Band, and in some years also in cooperation with the United States Steel Corporation. Sandy Lake and Little Sandy Lake, also known locally as the Twin Lakes, historically have produced good stands of wild rice. Wild rice harvesters utilized the lakes when suitable beds for harvest were present, including a history of use by tribal members.

A lake survey in 1966 indicated moderately dense to dense stands covering both lakes. Rice production generally declined through the 1970s and 1980s, with little or no rice found in the lakes during a 1987 survey. Rice production has since remained poor to nearly non-existent. The lakes are located downstream of the tailings basin at the U.S. Steel Minntac iron ore operation. Construction of the tailings basin began in 1966, and the resulting changes to the system have impacted wild rice in the Twin Lakes. Monitoring activities were completed in 2010-2018 to document conditions in the lakes and have included water depth recording, inlet and outlet field surveys, water sampling, vegetation surveys, and aerial surveys.

Under another initiative in 2013, lake sediment cores were collected by University of Minnesota researchers to investigate the historical sulfur inputs to Little Sandy Lake. Their analysis found a significant increase in sulfur counts in only the uppermost 10cm of the sediment core which corresponds with the development and operation of the Minntac mine and tailings basin. This increase in sulfur corresponds with the decline in manoomin. The report “Reconstructing Past Sulfur Loading and Wild Rice Abundance in Little Sandy Lake” summarizes the techniques and findings of their investigation.

Four water sampling locations have been established at the Twin Lakes in a downstream order: at the inlet to Little Sandy Lake, near the center of Little Sandy Lake, near the center of Sandy Lake, and at the outlet of Sandy Lake.
If focusing at water quality entering the lakes from the tailings basin at the inlet to Little Sandy Lake, sulfate has remained well elevated beyond the current standard of 10 mg/L.

Sulfate Concentration at Inlet to Twin Lakes

	Average Sulfate (mg/L)	Sulfate Range (mg/L)
2010	**483**	**360-661**
2011	**357**	**208-561**
2012	**207**	**137-275**
2013	**355**	**215-650**
2014	**301**	**180-419**
2015	**460**	**386-590**
2016	**289**	**217-347**
2017	**379**	**251-589**
2018	**300**	**198-489**

During the monitoring time period of 2010-2018, natural wild rice presence in the lakes has been limited. In general, wild rice has not been observed or a few individual stalks in Little Sandy Lake. In Sandy Lake, sparse stalks of rice have been observed in a few locations. The report *"Sandy Lake and Little Sandy Lake Monitoring (2010-2017)"* referenced in the Appendix summarizes information from the monitoring program. A summary report including information from 2018 has not been completed to date.

Lists of Wild Rice Waters

A piece of the wild rice water quality standard includes a definition of what is a wild rice water. A list of wild rice waters is critical to understand where a numeric water quality standard would apply and be implemented by the state of Minnesota. This list is necessary for treaty areas, but it does not include waters within tribal boundaries. Waters within tribal boundaries are up to the individual Tribes to manage and regulate.

In addition to scientifically determining what is the numeric wild rice water quality standard, it is critical to understand where it would apply. The MPCA was directed by the legislature to answer an important question: what is a wild rice water? From a tribal view, all waters are connected and have importance. Colonization of Minnesota has changed the hydrology of the area with dams and culverts and what once were "rice waters" have changed and new areas now hold wild rice. With the continued exacerbation of climate change it is difficult to predict what waters will continue to hold rice, or what water will need to hold rice for culture and customs to continue. With that in mind, if a lake or river supports, has supported, or could support any wild rice, it is a wild rice water. We do not see any other way to define it.

White Earth continues to express concern regarding how outside agencies define a wild rice water. White Earth contends all surface waters are wild rice waters and therefore no limit(s) should be applied to what constitutes or defines them. Many surface waters were harmed prior to the protections of the Clean Water Act. Numerous historical rice beds have been lost or displaced and these waters also need protection. Due to these reasons, White Earth feels the state's wild rice producing water inventory is incomplete and needs further updating.

Because Minnesota's wild rice waters have not been systematically inventoried, monitored, assessed or protected through regulatory controls for sulfate under the existing standards, many more once-harvestable stands have been degraded or destroyed since the effective date of the Clean Water Act. It is our understanding that the MPCA has utilized a two-acre threshold to initially identify waters where the wild rice sulfate standard would apply. We do not agree with the basis or justification for this criterion to define a wild rice water.

Any wild rice is important and worth protecting. Furthermore, wild rice acreage information is not available for most waters in the state. Monitoring data for waters across the state does not exist for that type of detailed information on wild rice presence. Wild rice is a variable resource throughout the years, and it takes multiple years (and even historic consideration) to understand the potential density and acreage of wild rice in each water. Data collected over an extended period of time may be needed to determine if a water meets the proposed acreage. The MPCA utilized judgement to include or exclude waters, but the acreage criterion they proposed is based on information that largely does not exist, because the state has never invested the resources necessary to establish a baseline inventory of wild rice waters.

The MPCA also proposed to apply an existing narrative standard (Minn. R. 7050.0224), protective of wild rice and the habitat and environmental quality needed to maintain it, *only* to the arbitrary list of 24 wild rice waters identified in Minnesota Rules (Minn. R. 7050.0470) through rulemaking in 1997-98 for waters in the Lake Superior Basin. Tribes had urged the agency to apply that aquatic life use-protective narrative standard to all wild rice waters in the state, but the agency did not do so despite the administrative record that clearly includes commitments by the state to move beyond that initial step.

In the Statement of Need and Reasonableness (SONAR) from 1997, the agency said:

> Finally, the proposed amendments specifically listing the wild rice waters in Minn. R. 7050.0470 and the inclusion of the wild rice narrative language in Minn. R. 7050.0224 are needed because: 1) they are viewed as initial steps in a broader process intended to provide greater public awareness as to the ecological importance of this unique plant species; 2) they provide further support for the study of the physical, chemical and biological factors that are needed to support wild rice development; and 3) the proposed wild rice amendments represent an affirmation of the MPCA's commitment to work in concert with the American Indian Bands on environmental issues of mutual concern.
>
> … The proposed listing of the 24 wild rice waters in Chapter 7050 is specific to a select number of waterbodies within the Lake Superior Basin that have current and/or historic stands of wild rice. No additional numerical standards for wild rice protection purposes are being proposed during the present rulemaking effort. It is the current intent of the MPCA to participate in ongoing studies and assessments of the wild rice plant and wild rice habitat protection issues. MPCA staff also plan to continue to work with the MNDNR and the various Bands to identify additional wild rice waters on a statewide basis.
>
> … The listing of these waters and the proposed narrative wild rice waters standard in Minn. R. 7050, in and of themselves, will not automatically translate into greater protection levels that are afforded to this plant species. Rather, increased protection of natural wild rice stands will happen as a result of a continued dialogue and information exchange between interested and affected parties.

The MPCA has not honored or fulfilled the specific commitments they made with the Tribes in that rulemaking process twenty years ago, to address the overall decline in the number and distribution of wild rice waters in the state, and to continue research and develop best management practices and standards.

A report entitled *"Natural Wild Rice in Minnesota"* was completed in February 2008 by the Minnesota Department of Natural Resources (MNDNR). As part of this report directed by the state legislature, the MNDNR compiled a list of wild rice waters. Although no statewide inventory of wild rice waters can likely be perfect, this MNDNR led effort was well done and completed with input from many partners including tribes and tribal organizations. The MNDNR continues to refine and update this statewide inventory, with additional waters identified and shared with MPCA in 2013.

The 1854 Treaty Authority has developed and maintains with annual updates a list of wild rice waters in the 1854 Ceded Territory. The MPCA proposed list where the standard would apply largely includes the waters from the 2016 updated list (dated 3/24/2016 – 393 locations), but not for most additions made for the current list (dated 3/28/2018 – 512 locations). The procedure for developing and updating the 1854 Treaty Authority inventory of wild rice waters has not changed over time, and reports are utilized from other partners (such as MNDNR) or field observations are recorded. However, the MPCA did not recognize the latest updates in their proposed rule. Analysis shows that the wild rice sulfate standard would not apply at over 100 wild rice locations in the 1854 Ceded Territory.

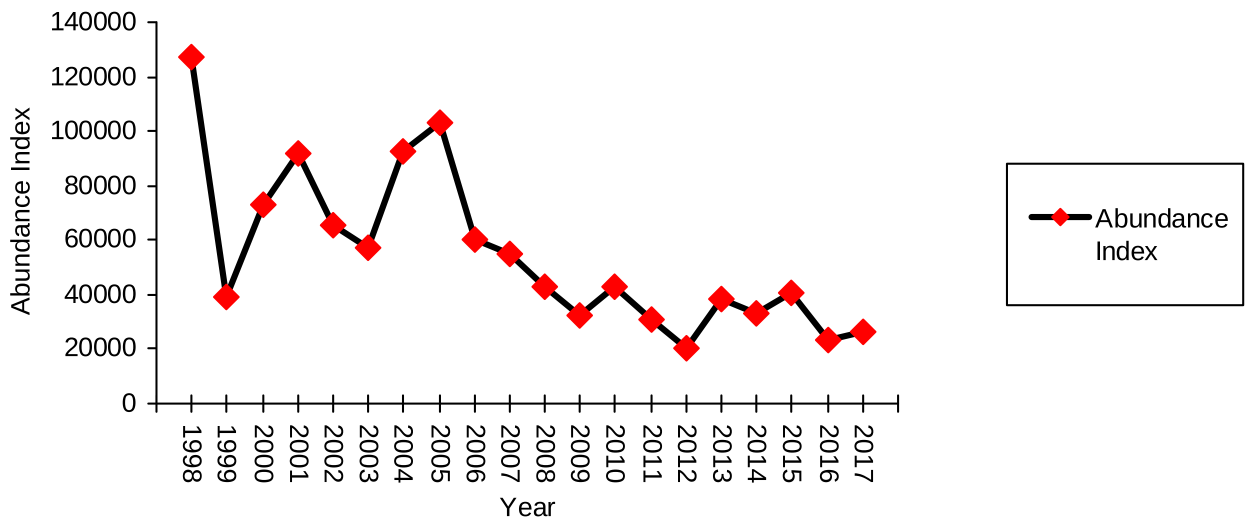
Utilizing available information (2008 MNDNR report, MNDNR updates, 1854 Treaty Authority, other sources) the MPCA compiled a list of wild rice waters in Minnesota. This list included waters with any record or report of wild rice presence. This was a comprehensive exercise, and the best effort to date at compiling wild rice locations across the state. The entire list of wild rice waters developed by the MPCA contains 2,347 locations. This full list is the best statewide inventory that currently exists. However, the MPCA has listed 998 locations as having "insufficient information" where the wild rice water quality standard would not apply. Again, no relevant criteria or long-term monitoring data exists to exclude these waters. The MPCA approach of identifying waters where the wild rice sulfate standard applies is exclusive instead of inclusive, and concern exists over this omission of wild rice waters.

Long-Term Wild Rice Monitoring

In 1998, the 1854 Treaty Authority initiated a wild rice monitoring program on numerous lakes and rivers within the 1854 Ceded Territory in northeastern Minnesota. The 1854 Treaty Authority's monitoring program documents wild rice abundance and identifies trends in production on this group of waters. Monitoring activities have been completed with some variation across years. Seven lakes have been included each year from 1998 to 2018. The monitoring program in 2002-2018 has included the same 10 lakes and rivers.

The focus of the program is to document wild rice biomass each season on a water. This gives a gauge on density, acreage, and plant height each year and ultimately shows changes across time. Protocol has been standardized in the "*Wild Rice Monitoring Handbook"* and "*Wild Rice Monitoring Field Guide"* completed in 2015. In addition to calculating biomass, other activities such as water level monitoring, water sampling, and photography are included in the program. The report *"Wild Rice Monitoring and Abundance in the 1854 Ceded Territory (1998-2017)"* referenced in the Appendix summarizes information from the monitoring program. A summary report including information from 2018 has not been completed to date.

One point to note is the potential long-term decline in wild rice. The summary graph below shows the abundance index (combination of wild rice acreage and density) from 1998-2017 on waters in the 1854 Treaty Authority program. Although it is difficult to determine an exact cause (perhaps climate change and related impacts), this highlights the need to protect a resource that is potentially declining. This decline in "natural" waters is on top of the likely immense amount of wild rice lost statewide due to development, water level changes, water quality issues, etc. since Minnesota statehood.



Total Abundance Index on all Waters in 1854 Treaty Authority Monitoring Program (1998-2017)

This type of monitoring also demonstrates the long-term data needed to begin to understand wild rice presence on a water. This information, along with other sources (oral histories, photographs, etc.) could inform lists of wild rice waters. However, given that long-term monitoring data does not exist on many waters across the state, it is impossible for the MPCA to make a determination to omit wild rice waters where the sulfate standard would apply.

Potentially Affected Dischargers

National Pollution Discharge Elimination System (NPDES) permits are required to include limitations consistent with effluent limitation guidelines for discharges that are causing or contributing to a violation of water quality standards. These limits are not water quality standards themselves, but are calculated so that the permitted discharge effluent will meet water quality standards in the receiving water, and if applicable, must conform to any Total Maximum Daily Load requirement that sets pollutant limits in order to meet water quality standard. 40 C.F.R. § 122.44. Unless end-of-the-pipe discharge concentrations cause or contribute to an exceedance of water quality standards in the *receiving or downstream* water bodies, permit limitations and additional treatment are not required.

In development of the proposed revised wild rice sulfate standard, the MPCA conducted a preliminary analysis on which facilities the new standard might apply. These potentially affected dischargers could adversely impact wild rice waters and if so, would need to comply with the standard. Further analysis of potentially affected dischargers in this section indicates that the wild rice standard would not generally be applied to domestic wastewater treatment plants. Industrial operations upstream of wild rice waters that discharge a much larger effluent volume with higher sulfate concentrations than most domestic discharges would need to add treatment technology to comply with the wild rice sulfate standard.

Water Body Sulfate Concentrations

Water column sulfate concentrations were analyzed to determine which water bodies or water body segments were exceeding the existing 10 milligrams per liter (mg/L) water quality standard. Results from this analysis were then used to identify dischargers to those waters.

Methods

Water column sulfate data was compiled from State and Tribal Agencies. Each dataset was sorted by unique locations. Data from each location was evaluated to determine the average and range of sulfate concentrations. An individual map was then generated for each dataset using the sulfate average or single measurement concentration for every location. The locations of large industrial dischargers were identified on the St. Louis and Itasca County map and the Mississippi River map.

GIS Methods

The maps were created using ESRI's ArcGIS 10.3 software. The power plant locational data was obtained from www.eia.gov, the Reservation boundaries from www.data.gov, and the watershed data from www.usgs.gov. All of the other base data layers came from https://gisdata.mn.gov. The monitoring data and associated locations were brought into ArcMap via Excel spreadsheets and converted to shapefiles. Differently colored and sized symbols were used to display the points based on their average sulfate concentration, with the break values of 5, 10, 30, 50, 100 and 200 mg/L.

As shown on the maps provided below, all of the waters exceeding the existing 10 mg/L sulfate wild rice water quality standard are downstream of mining operations and/or electrical generation power plants in St Louis and Itasca Counties and the Mississippi River.

An additional map was added to the analysis: "Mean Sulfate Concentrations Downstream of Mine Point Discharges", created by Scott Cardiff (working with the Great Lakes Indian Fish and Wildlife Commission), for the PolyMet Supplemental Draft Environmental Impact Statement, Appendix C, Tribal Cooperating Agencies Cumulative Effects Analysis, 2013.

Eight data sets were used for this analysis. A summary of the agencies that provided data, when the data was collected, the number of locations where measurements were taken, and the number of individual sulfate measurements are listed in the table below.

Table 1. Summary of Datasets Used to Analyze Average Water Body Sulfate Concentrations

Agency	Area of Data Collection	Number of Sulfate Measurements	Number of Discrete Locations	Years of Collection
Minnesota Pollution Control Agency	St. Louis and Itasca Counties	7,198	906	1974-2016
1854 Treaty Authority	1854 Ceded Territories	309	43	2007 - 2017
Fond du Lac Band of Lake Superior Chippewa	Fond du Lac Reservation	741	39	1998 - 2017
Leech Lake Band of Ojibwe	Leech Lake Reservation	644	80	2012 - 2018
Mille Lacs Band of Ojibwe	Mille Lacs Reservation	55	12	2010 - 2017
Grand Portage Band of Ojibwe	Grand Portage Reservation	1,547	32	2000 - 2018
Minnesota Pollution Control Agency	Mississippi River in Minnesota	1,808	87	1973 - 2017
Prairie Island Indian Community	Lower Mississippi River and backwater pools	325	8	2014 - 2017

Approximately seventy-five percent of the of the MPCA data sites in St. Louis and Itasca Counties were below the 10 milligram per liter (10 mg/L) sulfate water quality standard.

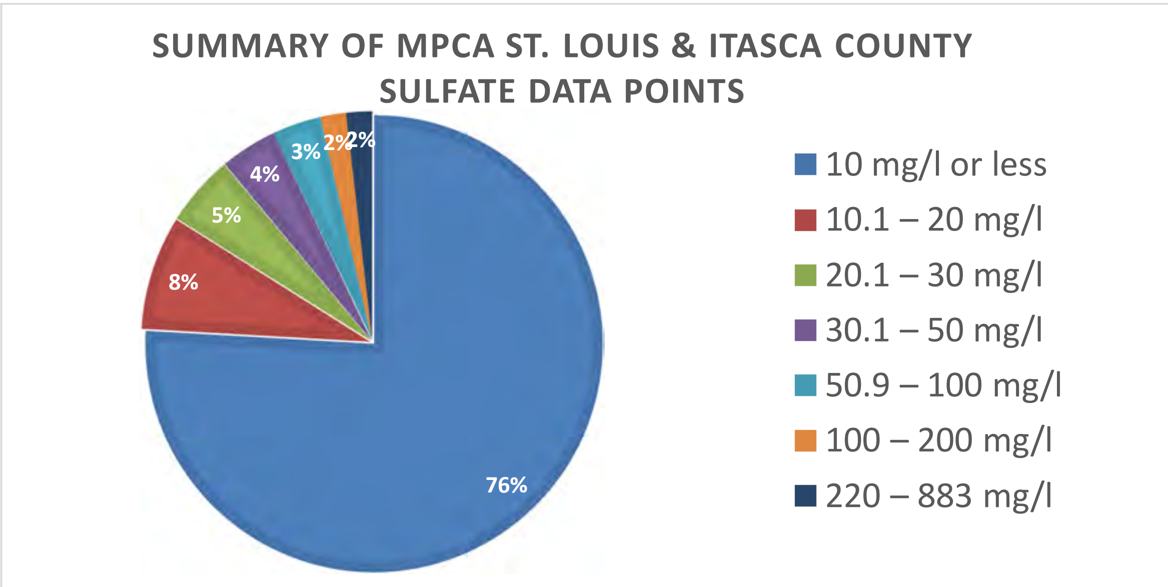


Figure 1. St. Louis and Itasca Counties Average Water Column Sulfate Concentrations

An analysis of sulfate concentrations below 10 mg/L from water column data collected in St. Louis and Itasca Counties demonstrates more than half of the data sites had concentrations of 2.5 mg/L or less.

Table 2. Breakdown of sulfate concentrations 10 mg/L or less (MPCA St. Louis & Itasca County Sulfate Data Points)	
Below Detection	5 %
2.5 mg/L	48 %
2.6 - 5 mg/L	32 %
5.1 - 10 mg/L	15%

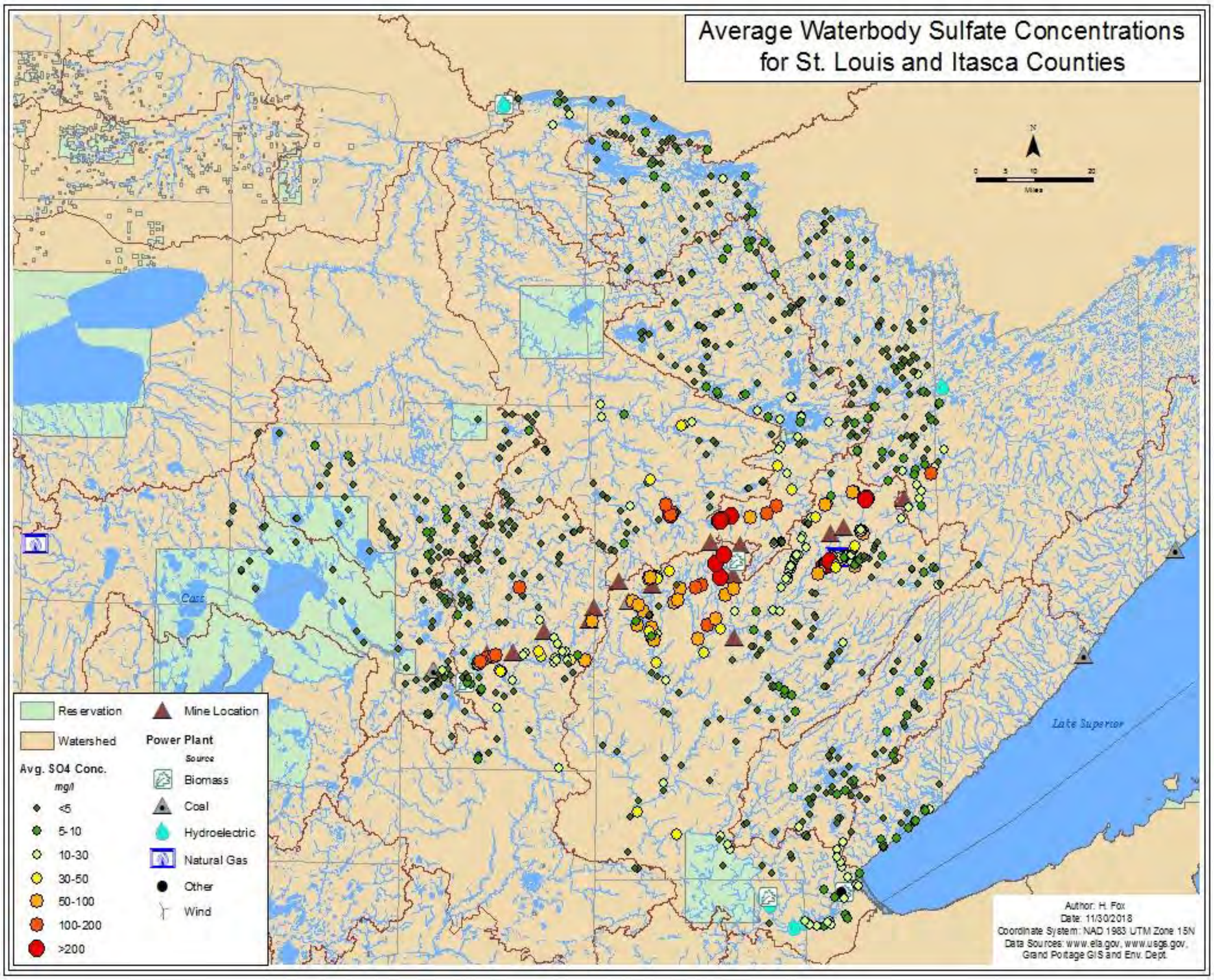


Figure 2. St. Louis and Itasca Counties Average Sulfate Water Column Concentrations

Water column sulfate concentrations are elevated in waters measured downstream of taconite mining operations and natural gas electrical generation facilities. In waters without mining and electrical facility discharges, sulfate concentrations are below 5 mg/L.

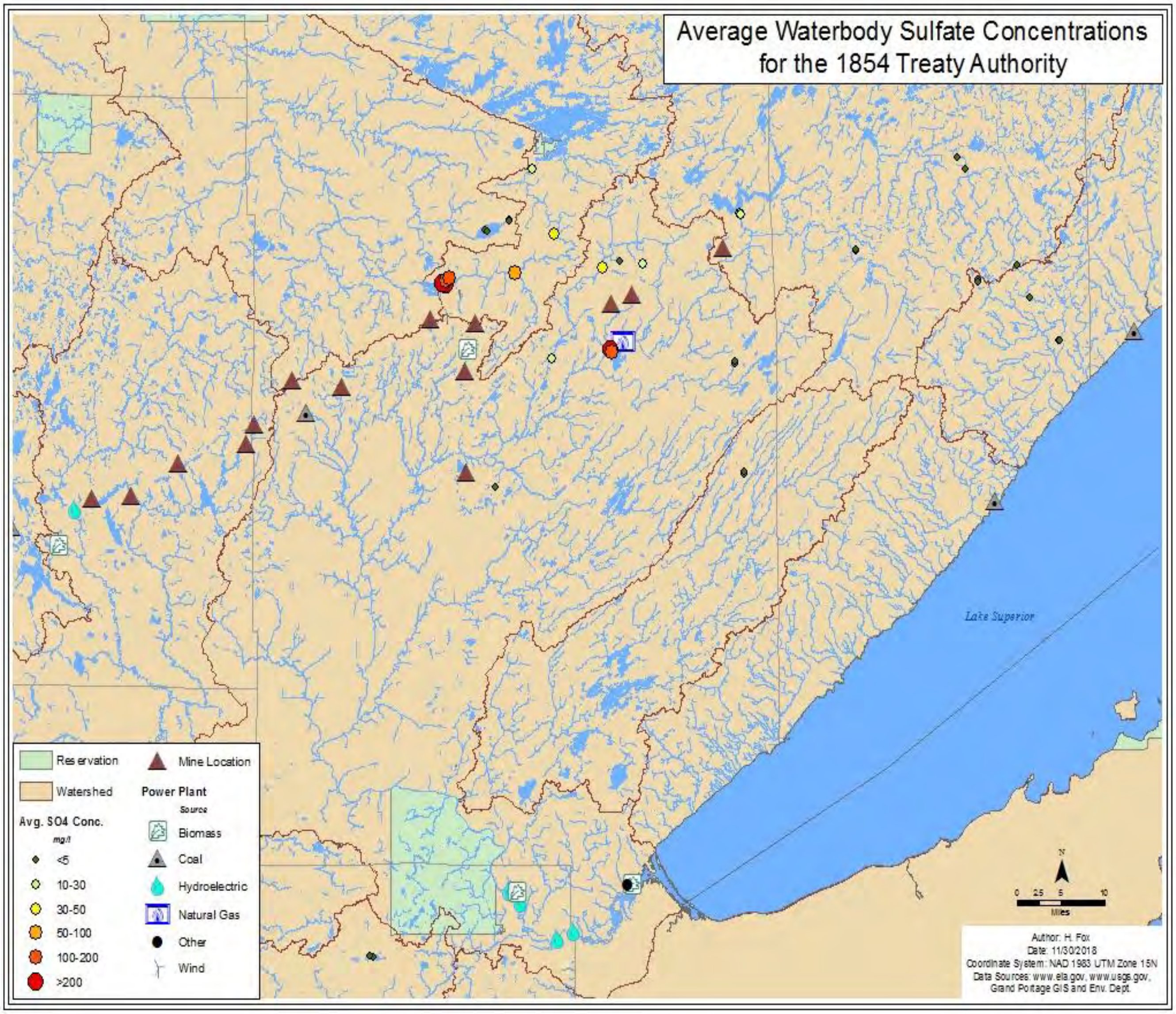


Figure 3. Average Water Column Sulfate Concentrations Measured in the 1854 Ceded Territory by the 1854 Treaty Authority.

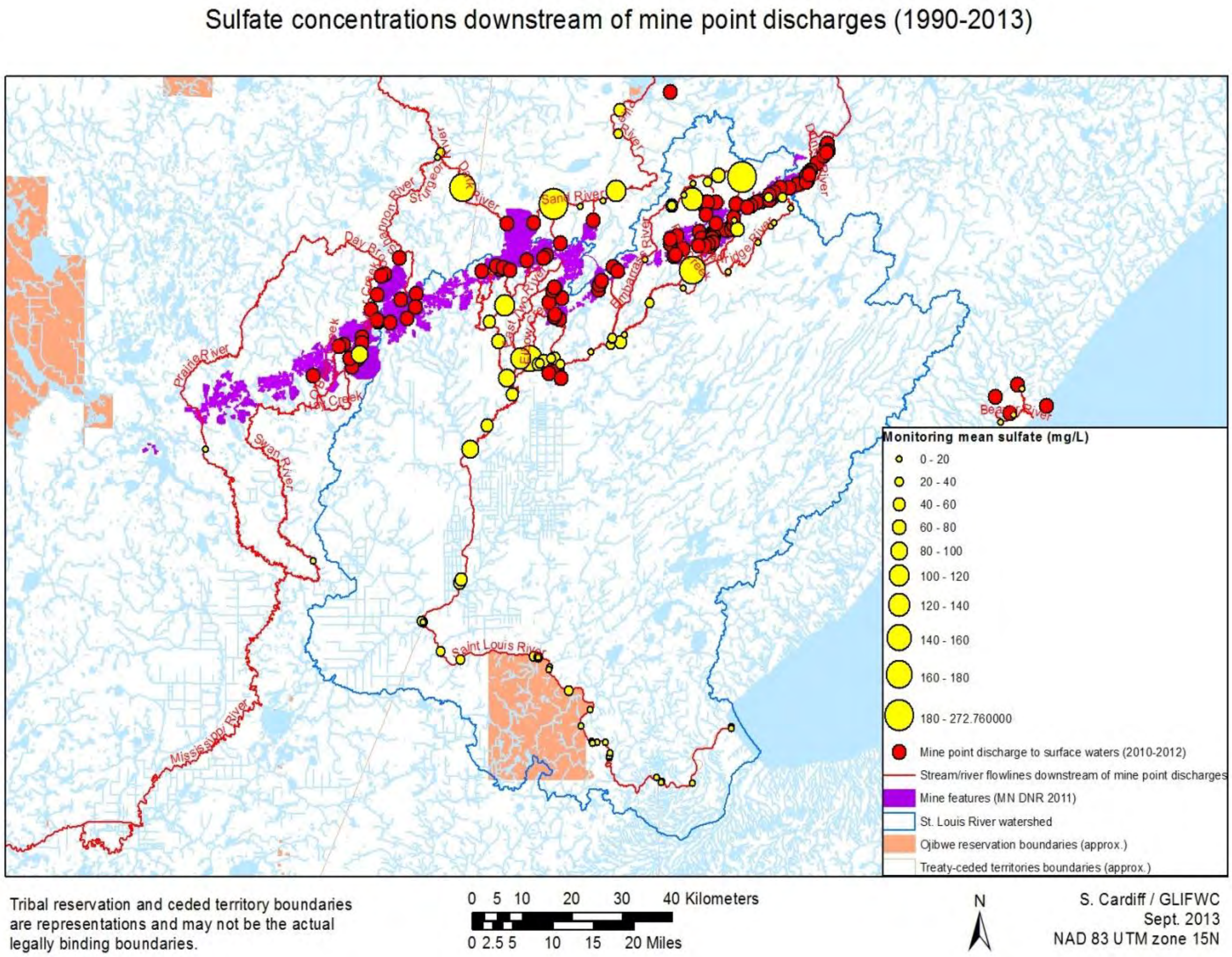


Figure 4. Mean Water Column Sulfate Concentrations Measured Downstream of Taconite Mining Facilities in Northern Minnesota.

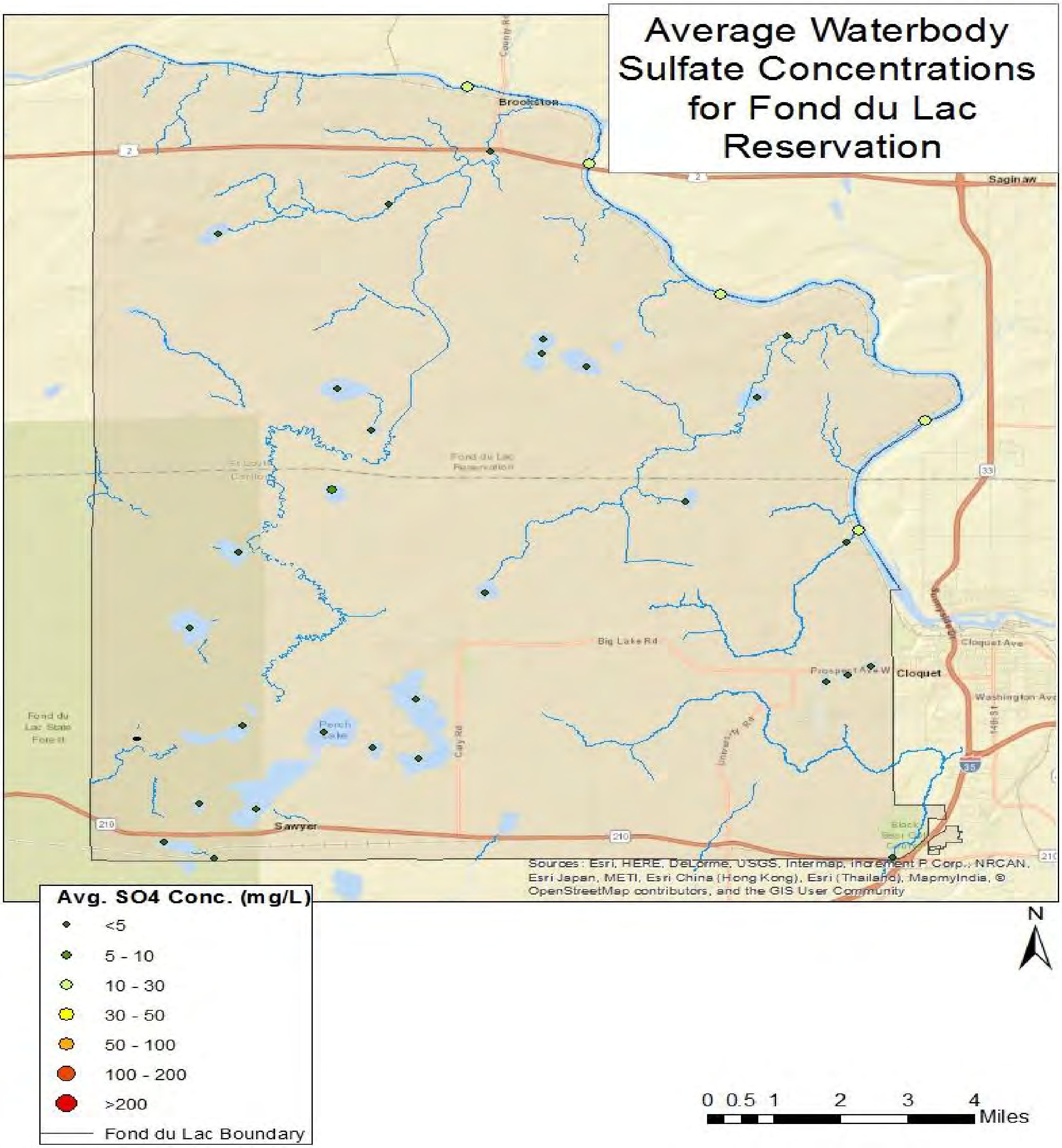


Figure 5. Fond du Lac Reservation Average Waterbody Sulfate Concentrations.

Average sulfate concentrations in reservation lakes and streams are all below 5 mg/L, with the exception of the St. Louis River. The higher sulfate concentrations in the St. Louis River are not naturally occurring; they are a result of high sulfate loadings from upstream facilities. Historic sulfate concentrations in this watershed were consistently below 10 mg/L.

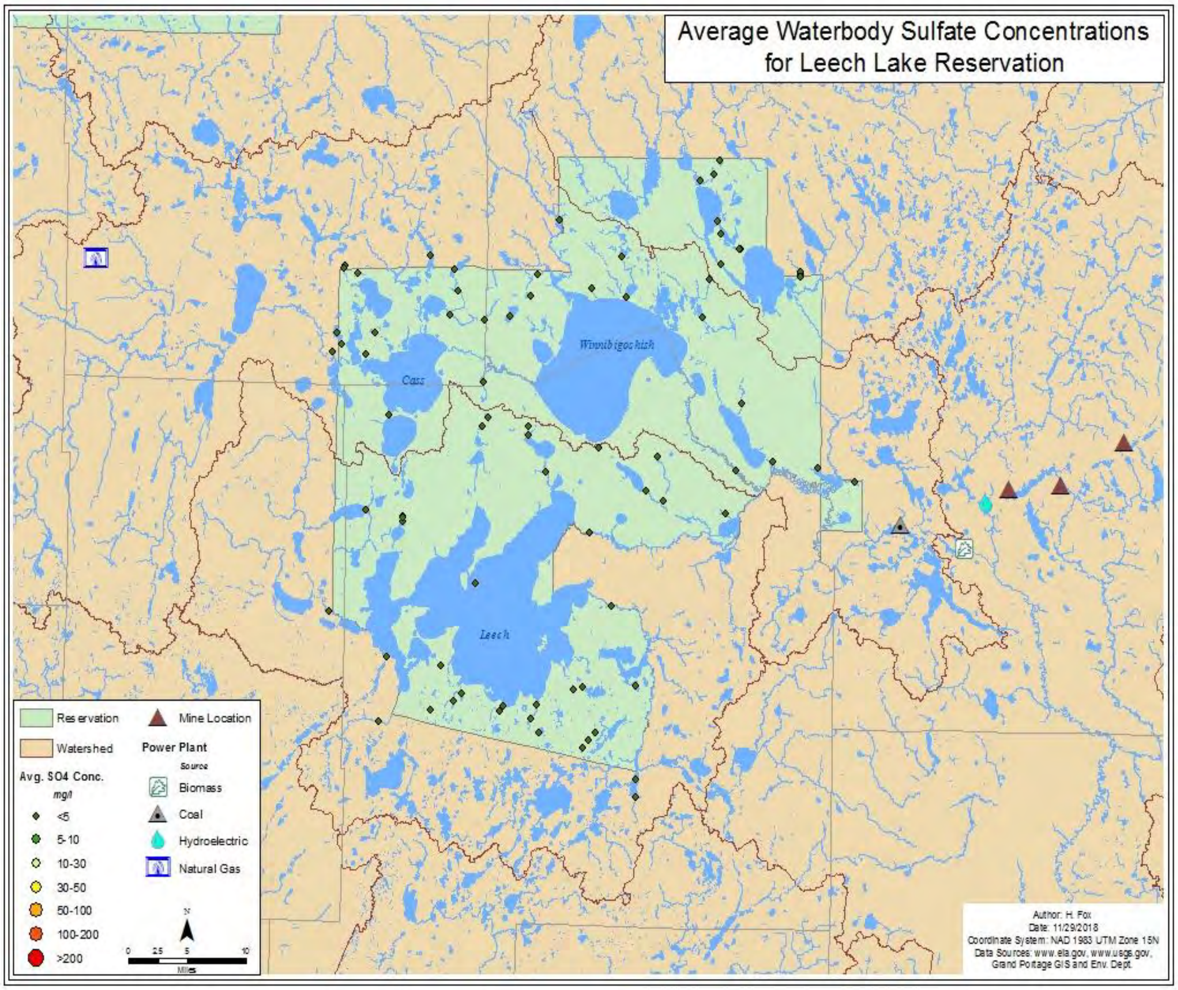


Figure 6. Leech Lake Reservation Average Waterbody Sulfate Concentrations.

All of the average sulfate concentrations measured within Leech Lake Reservation waters are below 5 mg/L.

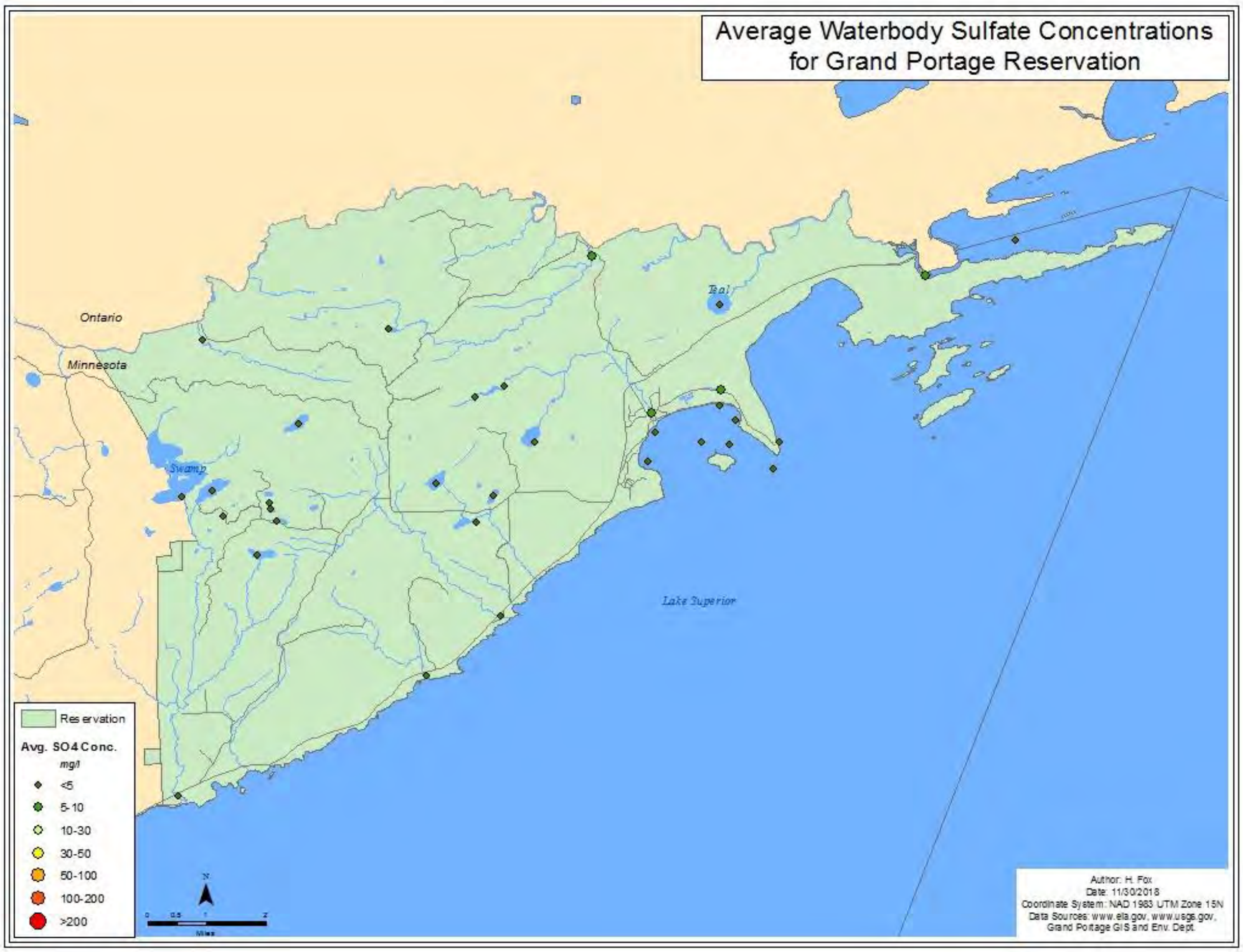


Figure 7. Grand Portage Reservation Average Waterbody Sulfate Concentrations.

The average sulfate concentration in all water bodies within the Grand Portage Reservation are below the federally approved 10 mg/L Grand Portage wild rice sulfate standard. Most waters within the Reservation have an average sulfate concentration below 5 mg/L.

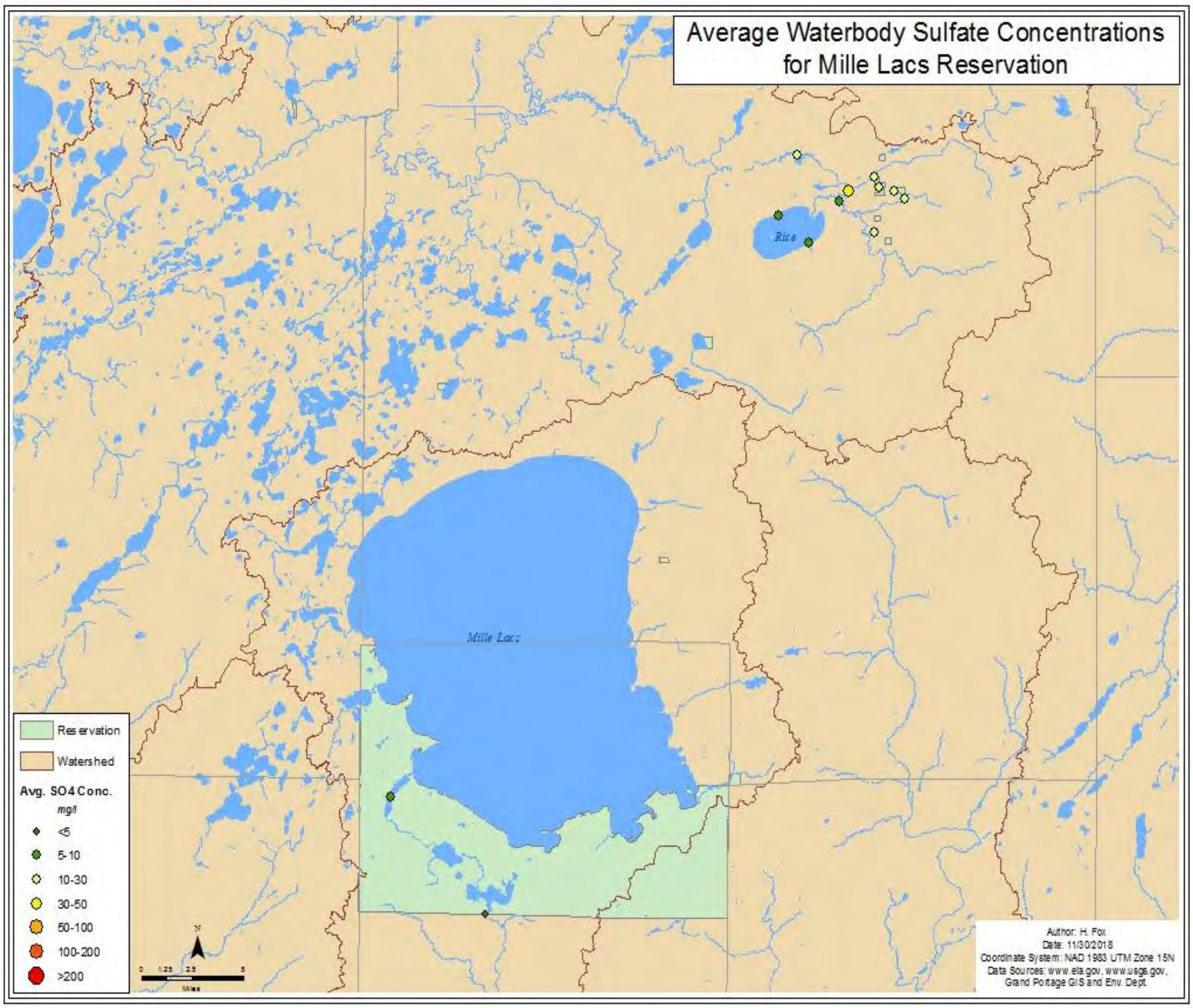
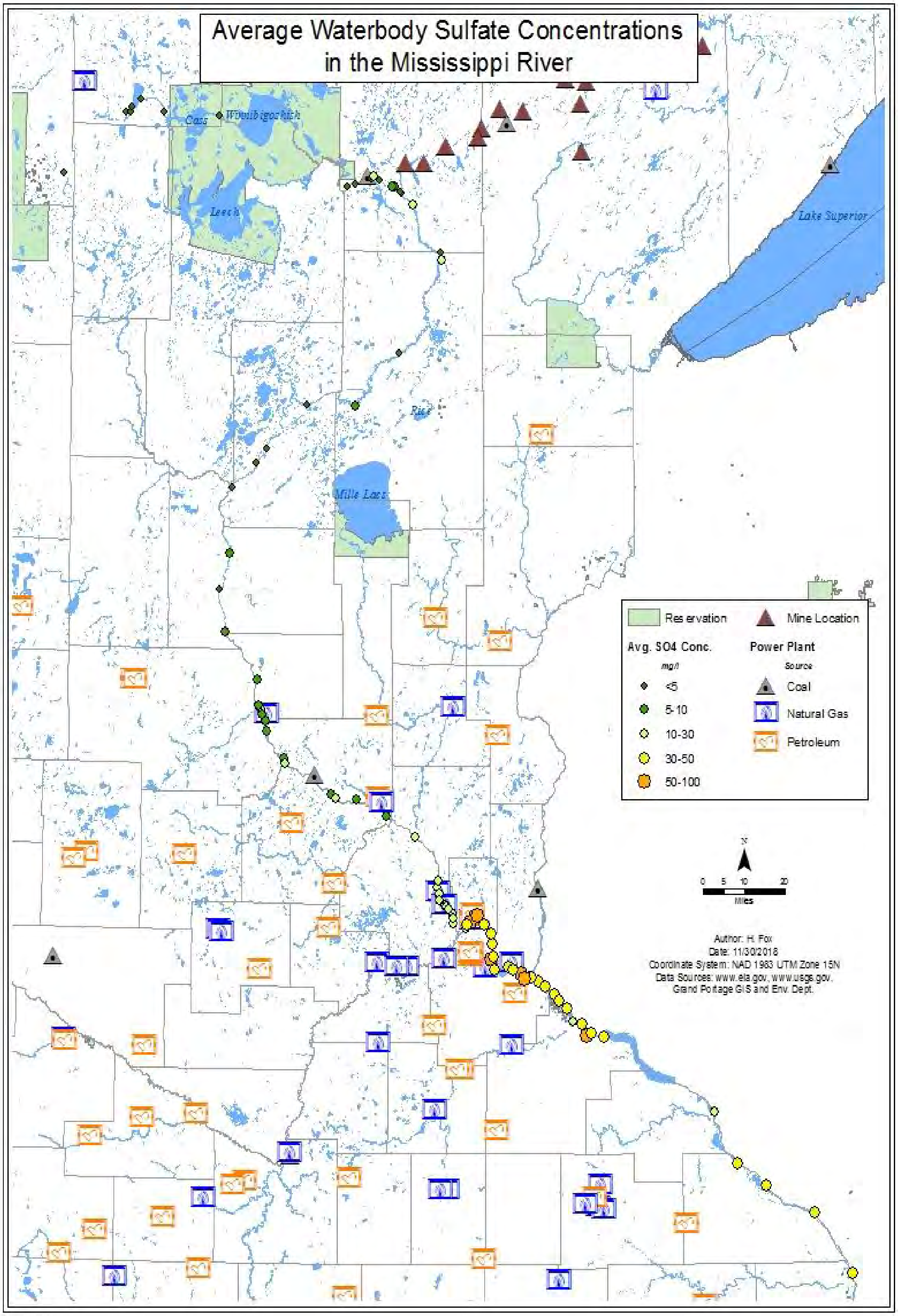


Figure 8. Mille Lacs Reservation Average Waterbody Sulfate Concentrations.

Sulfate concentrations range from less than 5 mg/L to 50 mg/L in waters within Mille Lacs Reservation. Wild rice waters do not exceed the 10 mg/L standard and therefore no treatment would be required for compliance.



Mississippi River sulfate concentrations are below 5 mg/l in the headwaters near the Leech Lake Reservation, and rise to concentrations between 10-30 mg/l as the river passes mine features and a coal-fired electrical generation plant. Sulfate concentrations fall back below 10 mg/l downstream of Grand Rapids. Average sulfate concentrations rise as the river passes inflows from industrial natural gas, coal and petroleum electrical plants between St. Cloud and Otsego to a range between 10-30 mg/l. Near Minneapolis, sulfate increases to concentrations between 30-100 mg/l as the river passes six natural gas and petroleum electrical generation power plants. Downstream of Minneapolis, sulfate concentrations remain between 10-50 mg/l to the southern border of Minnesota.

Figure 9. Mississippi River Average Sulfate Concentrations

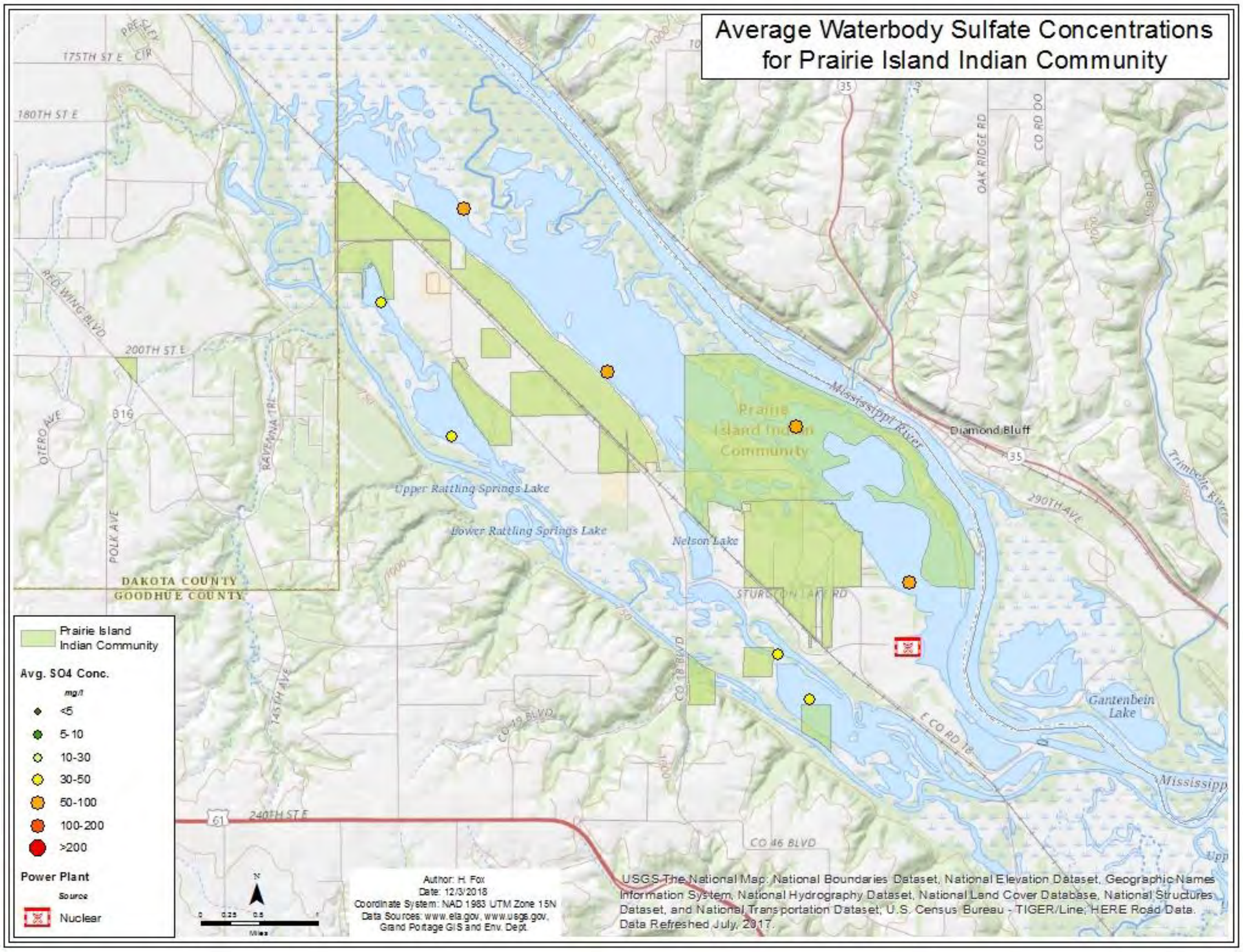


Figure 10. Prairie Island Indian Community Average Waterbody Sulfate Concentrations.

Utilizing multi-year data from reference sites and more disturbed sites seeks to provide a means by which to determine if water quality is different at locations within the lakes as distance from main channels increase. Much of the initial work over the past 10 years has produced data that describes baseline chemical conditions for these ecosystems. Prairie Island started its water quality monitoring program in 2007 which involved monitoring for sulfate annually. In 2014 the program was modified to include bi-weekly sampling for a total of 10 sulfate samples per year at each of the sample sites. This resulted in a more robust data set for sulfate in our backwater areas, providing additional information useful to our wild rice restoration work.

Sturgeon Lake and North Lake are direct backwater lakes of the Mississippi River. Direct flow comes from the Mississippi River into Sturgeon Lake through Brewers Lake inlet, with about 40% of the river flow coming through that inlet during normal water levels, and 60% of the river flow coming into Sturgeon Lake through Brewers Inlet during high water levels. Flow from the Mississippi River also comes directly into North Lake through Jackson Run and Miley Run. This is likely contributing to the higher sulfate levels found on those Mississippi backwaters, since the sulfate levels are comparative to those in the main channel of the river. On the Vermillion River backwaters, sulfate is shown to have higher levels than expected according to the averages of natural occurring sulfate levels in the region. Vermillion River receives surficial groundwater flow from the Mississippi River in a southwesterly direction across the island. This may be contributing to higher sulfate levels in the Vermillion River, in addition to the flashy nature of the river which leads to lower water levels in late summer.

Domestic and Industrial Discharger Assessment

This analysis is used to identify potentially affected dischargers categorized on the MPCA's SONAR list that would likely be affected by enforcement of the wild rice sulfate standard, identify those entities that would not be affected, and identify data gaps.

MPCA's list of "potentially affected dischargers" from the Statement of Need and Reasonableness ("SONAR") was developed solely by calculating which domestic and industrial facilities were within 25 miles of wild rice waters. For this analysis, MPCA provided the NPDES permits for each discharger from the SONAR list along with a spreadsheet that indicates the distance from a facility to wild rice waters, and the wild rice water body names. Some permits were listed two or three times on the MPCA list possibly due to discharges that flow into more than one water body. Therefore, a new spreadsheet tab was created that did not include duplicate permit numbers. Facilities were sorted into three categories based on the distance to wild rice waters: 25 miles; 10 miles; and 5 miles or less.

For each discharger the permitted average wet weather effluent volume was converted to millions of gallons per day and cubic feet per second. When sulfate discharge data was available in an electronic format from MPCA, the average and range of concentrations was calculated. If sulfate data was available from the water body that an entity discharged to, or if there was an average sulfate concentration for the closest wild rice waterbody, that data was also added to the spreadsheet. A column of permit issuance dates were added to the list of potentially affected dischargers.

Notes were taken from each permit regarding the type of discharge. Dischargers were eliminated from the list if the only pollutant added was heat, or if the permit specified that discharges were for pipeline and tank testing and the discharge was to take place in an upland vegetated area. Some potentially affected dischargers were removed from the list based upon GIS analysis, because water would have to flow uphill from the discharge to reach the specified wild rice water. Dischargers were eliminated from the list if the receiving or downstream water bodies were not exceeding the wild rice sulfate of standard of 10 mg/L.

Results

According to MPCA's potentially affected discharger list, thirteen of the top sixteen biggest discharges by volume and sulfate concentration are industrial. These sixteen dischargers are within ten miles of wild rice waters. The remaining three facilities that are not industrial include one facility that treats both industrial and domestic wastewater, and two facilities that appear to treat only domestic wastewater. No sulfate data is available for either of the domestic dischargers or the facility that treats both domestic and industrial wastewater. The range of volume of discharge is 7.29 – 161.8 million gallons per day. The range of average sulfate concentrations is 22.7 – 1054 mg/L.

Table 3. Top 16 Dischargers by Volume from MPCA SONAR

Permit Number	Facility Name	Facility Type	Discharge MGD	Discharge CFS	Average Discharge Sulfate Concentration (mg/l)	Distance to Wild Rice (miles)	Draft Wild Rice Water Name
MN0001007	Minnesota Power – Boswell Energy Center	Industrial	161.80	250.34	**586**	0	Blackwater Lake
MN0000990	Minnesota Power – Laskin Energy Center	Industrial	125.4	194.02	**489**	6	Partridge River
MN0049760	Hibbing Taconite Co – Tails Basin Area	Industrial	4.41 - 65	6.82 - 100.57	**62.6** (Little Fork River) **35** (Mississippi River at Grand Rapids)	2	Shannon Lake
MN0069078	Mesabi Mining Area	Industrial	58.4	90.36	**176**	1	Partridge River
MN0029882	Met Council – Blue Lake WWTP	Domestic	42	64.98		0	Blue Lake
MN0055948	Keewatin Taconite Operations – Tailings	Industrial	32.4	50.13	**177**	10	Hay Lake
MN0042536	Cliffs Erie – Hoyt Lakes Mining Area	Industrial	27.45	42.47	**269**	4	Second Creek
MN0044946	United Taconite LLC - Thunderbird Mine	Industrial	27.37	42.35			St. Louis River
MN0046981	Northshore Mining Co – Peter Mitchell	Industrial	24.11	37.3	**112.3** (Rainy River) **22.7** (St. Louis River)	3	Dunka River
MN0057207	US Steel Corp – Minntac Tailings Basin Area	Industrial	17.11	26.47	**1054**	2	Little Sandy Lake
MN0022080	Grand Rapids WWTP	87% Industrial 13% Domestic	15.2	23.52		1	Mississippi River - Grand Rapids
MN0031879	US Steel Corp – Keetac	Industrial	10.17	15.74	**64.8**	9	Leighton Lake
MN0030147	Winona WWTP	Domestic	9.6	17.84		6	Blue lake
MN0001465	Hibbing Taconite Co	Industrial	1.44 - 7.92	2.28 - 12.25		8	St. Louis River Mississippi River-Brainerd
MN0059633	ArcelorMittal Minorca Mine Inc - Laurentian	Industrial	7.9	12.22	**62.8** (Vermillion River), **274** (St. Louis River)	0	St. Louis River
MN0067687	Mesabi Nugget Delaware LLC	Industrial	7.29	11.28	**437**	7	Partridge River

Twelve major industrial dischargers identified through mapping sulfate concentrations in the Mississippi River between St. Cloud and Otsego and south of Minneapolis were not specified on the MPCA list of potentially affected dischargers. The table above that indicates the largest dischargers by volume and sulfate concentration are electrical utilities. Therefore, it is likely that some, if not all of these dischargers are major contributors to the excursions from the wild rice sulfate water quality standard and are potentially adversely impacting downstream wild rice waters.

Table 4. Major Industrial Dischargers on the Mississippi River between St. Cloud and Otsego Not Included in SONAR List of Potentially Affected Dischargers

Plant Name	Electric Utility Name	City	County	Primary Source	Source Description	Technical Description
Granite City	Northern States Power Co - Minnesota	St. Cloud	Benton	natural gas	Natural Gas = 52 MW	Natural Gas Fired Combustion Turbine
Elk River City of	City of Elk River	Elk River	Sherburne	petroleum	Biomass = 3.2 MW, Petroleum = 9 MW	Landfill Gas; Petroleum Liquids
Elk River	Great River Energy	Elk River	Sherburne	natural gas	Biomass = 34.8 MW, Natural Gas = 190.5 MW	Municipal Solid Waste; Natural Gas Fired Combustion Turbine
Sherburne County	Northern States Power Co - Minnesota	Becker	Sherburne	coal	Coal = 2238 MW	Conventional Steam Coal

Table 5. Major Industrial Dischargers South of Minneapolis on the Mississippi River Not Included in SONAR List of Potentially Affected Dischargers.

Utility Name	Sector Name	City	County	Primary Source	Source Description	Technical Description
Northern States Power Co - Minnesota	Electric Utility	St. Paul	Ramsey	natural gas	Natural Gas = 530 MW	Natural Gas Fired Combined Cycle
Northern States Power Co - Minnesota	Electric Utility	Inver Grove Heights	Dakota	natural gas	Natural Gas = 282 MW, Petroleum = 3.6 MW	Natural Gas Fired Combustion Turbine; Petroleum Liquids;
Northern States Power Co - Minnesota	Electric Utility	Minneapolis	Hennepin	natural gas	Natural Gas = 454 MW	Natural Gas Fired Combined Cycle
Northern States Power Co - Minnesota	Commercial Non-CHP*	St. Paul	Ramsey	petroleum	Petroleum = 4.8 MW	Petroleum Liquids
Cottage Grove Operating Services LLC	IPP CHP*	Cottage Grove	Washington	natural gas	Natural Gas = 251 MW	Natural Gas Fired Combined Cycle
Ziegler Power Systems	Commercial Non-CHP*	St. Paul	Ramsey	petroleum	Petroleum = 1.9 MW	Petroleum Liquids
Veolia Energy	Commercial CHP*	Minneapolis	Hennepin	natural gas	Natural Gas = 0.1 MW	Natural Gas Steam Turbine
Veolia Energy	IPP* CHP**	Minneapolis	Hennepin	natural gas	Natural Gas = 17 MW	Natural Gas Fired Combustion Turbine

*An independent **power** producer (**IPP**) or non-utility generator (NUG) is an entity, which is not a public utility, but which owns facilities to generate electric **power** for sale to utilities and end users.

Combined Heat and Power (CHP**) Combined heat and power (**CHP**) **systems**, also known as cogeneration, generate electricity and useful thermal energy in a single, integrated **system**. **CHP** is not a technology, but an approach to applying technologies.

Community wastewater treatment plants, or domestic dischargers, generally account for the smallest discharges by volume and sulfate concentrations. In fact, on average the volume of discharge water is six times less than industrial discharges and the concentration of sulfate from community waste water discharges are twenty times less concentrated than industrial discharges. The range of the volume of domestic discharges is 0.008 – 42 million gallons per day with an average discharge volume of 2.26 million gallons per day.

The average sulfate concentration of domestic discharges is 15.87 mg/L, with a range of 6.97 – 29.6 mg/L. Where data is available, it appears that domestic dischargers would not be required to provide sulfate treatment unless they discharge effluent to waters already exceeding the wild rice sulfate standard due to industrial discharges.

Table 6. SONAR Listed Domestic Dischargers With Sulfate Water Body Data Indicating Non-Compliance

Permit Number	Facility Name	Facility Type	Discharge MGD	Discharge CFS	Discharge waters	Distance to Wild Rice (miles)	Draft Wild Rice Name	Average Water Body Sulfate Concentration mg/l
MN0051381	Belgrade WWTP	Domestic	0.167	0.26	unnamed creek Middle Fork Crow River	3	Monongalia Lake	16.5 - Middle Fork Crow River @ Lake Monongalia
MN0053279	Biwabik WWTP	Domestic	0.212	0.33	Embarrass Unnamed wetland River	1	Cedar Island Lake	20.6 - Cedar Island Lake
MN0053562	Brownsville WWTP	Domestic	0.055	0.09	Mississippi River	1	Pool 8 at Reno Bottoms	18.1 - Pool 8 @ Reno
MN0022012	Keewatin WWTP	Domestic	0.18	0.28	Welcome Creek	11	Hay Lake	32.9 - Hay Lake
MNG580027	Kellogg WWTP	Domestic	0.06	0.09	Zumbro River	3	Mississippi Pool 5/Spring	32.5 - Mississippi Pool 5/spring
MN0020664	Lake City WWTP	Domestic	1.52	2.35	Lake Pepin	10	Mississippi Pool 4 Robinson Lake	29.6 - Pool 4 Robinson Lake
MN0029904	Met Council – Eagles Point WWTP	Domestic	10	15.47	Mississippi River	19	Sturgeon Lake	58.2 - Sturgeon Lake
MN0045845	Met Council – Empire WWTP	Domestic	28.61	44.27	Mississippi River	25	Sturgeon Lake	58.2 - Sturgeon Lake
MN0029955	Met Council – Hastings WWTP	Domestic	2.69	4.16	Mississippi River	14	Sturgeon Lake	58.2 - Sturgeon Lake
MNG580184	Nashwauk WWTP	Domestic	0.353	0.55	Hanna Reservoir #2	8	Hay Lake	28.4 - Hay Lake
MNG580215	Serpent Lake WWTP	Domestic	0.672	1.04	Rabbit Creek	6	Mississippi River	19 - Mahnomen Lake
MN0025143	Wabasha WWTP	Domestic	0.604	0.94	Mississippi Pool 4 Robinson Lake	0	Mississippi Pool 4 Robinson Lake	29.6 - Pool 4 Robinson Lake
MN0030147	Winona WWTP	Domestic	9.6	17.84	Mississippi River	6	Blue lake	36 above Winona 34 below Winona in Mississippi River

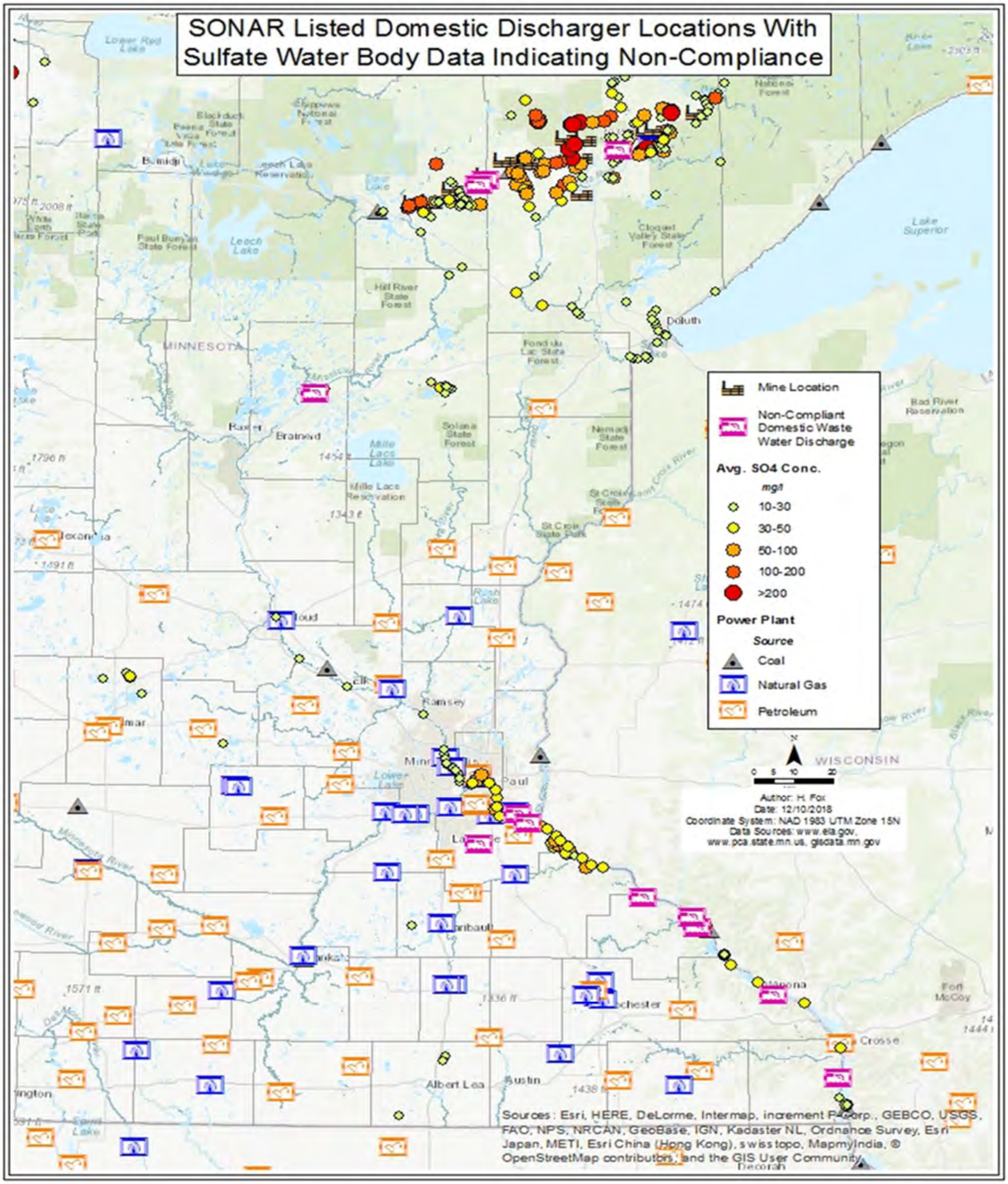


Figure 11. Sulfate Waterbody Data Indicating Non-compliance for SONAR Listed Domestic Dischargers

Table 7. SONAR Listed Domestic Dischargers With Sulfate Water Body Data Indicating Compliance

Permit Number	Facility Name	Facility Type	Discharge MGD	Discharge CFS	Discharge waters	Distance to Wild Rice (miles)	Draft Wild Rice Name	Average Water Body Sulfate Concentration mg/l
MN0020656	Babbitt WWTP	Domestic	0.5	0.77	Hay Lake	0	Hay Lake	6 - Hay Lake
MN0022691	Bagley WWTP	Domestic	0.26	0.41	unnamed wetland Walker Brook Clearwater River	16	Clearwater River	1.5 - Clearwater River
MN0022462	Bemidji WWTP	Domestic	2.5	3.87	Mississippi River	19	Andrusia Lake	2.6 - Ose Lake (3 mi. upstream of Andrusia Lake)
MN0023019	Carlos WWTP	Domestic	0.064	010	unnamed wetland	8	Long Prairie River	7.71 - Long Prairie Rv
MN0066371	Crane Lake WWTP	Domestic	0.053	0.08	Crane Lake	0	Crane Lake	6.1 avg - Crane Lake
MNG580181	Deer River WWTP	Domestic	0.17	0.26	unnamed wetlands	5	White Oak Lake	0.93 - White Oak Lake
MN0020508	Ely WWTP	Domestic	1.5	2.32	Shagawa Lake	5	Fall Lake	4.5 - Shagawa Lake
MN0022080	Grand Rapids WWTP	Domestic	15.2	23.52	Mississippi River	1	Mississippi River - Grand Rapids	Avg. 6 - Mississippi River @ Grand Rapids
MN0023566	Grey Eagle WWTP	Domestic	0.09	0.14	Trace Lake	4	Little Birch Lake	Avg. 5.3 - Little Birch Lake
MN0020869	Jordan WWTP	Domestic	1.29	1.99	Sand Creek	22	Blue Lake	6.9 - Fisher Lake (Blue Lake flows into Fischer Lake) 20+ miles downstream from Jordan
MNG580027	Kellogg WWTP	Domestic	0.06	0.09	Zumbro River	3	Mississippi Pool 5/Spring	Avg. 32.5 - Pool 5/spring
MN0024023	McGregor WWTP	Domestic	0.073	0.11	County ditch #42 Rice Lake Sandy River Steamboat Lake	2	Steamboat Lake	Avg 0.7 - Sandy River Lake (~5 mi N of Steamboat Lake)
MN0064777	Met Council – Blue Lake GW Relief System	Domestic	5.44	8.42	Blue Lake	0	Blue Lake	6.9 - Fisher Lake (Blue Lake flows into Fischer Lake)
MN0029882	Met Council – Blue Lake WWTP	Domestic	42	64.98	Minnesota River	0	Blue Lake	6.9 - Fisher Lake (Blue Lake flows into Fischer Lake)
MN0024155	Miltona WWTP	Domestic	0.008	0.12	unnamed wetland	8	Long Prairie River	7.71 Long Prairie River
MN0024422	Orr WWTP	Domestic	0.099	0.15	unnamed ditch Pelican River Pelican Lake	0	Vermilion River	5.68 - Vermillion River
MNG580187	Winton WWTP	Domestic	0.024	0.37	Shagawa River	2	Fall Lake	3.7 – Shagawa River 1.3 mi SW Winton

No sulfate data is available from MPCA for many of the domestic wastewater dischargers and some of the industrial facilities found on the SONAR list. MPCA was also not able to provide sulfate data for many of the wild rice waters found on the SONAR list.

Table 8. SONAR Listed Domestic Dischargers Without Sulfate Water Body Data Available

Permit Number	Facility Name	Discharge MGD	Discharge CFS	Discharge waters	Distance to Wild Rice (miles)	Draft Wild Rice Name
MNG580148	Audubon WWTP	0.14	0.22	unnamed ditch	No data	Buffalo River
MN0046213	Anchor Bay Mobile Home Park	0.01	0.01	unnamed ditch Rainy River	11	Rainy River
MN0029599	Baudette WWTP	0.24	0.45	Unnamed Stream to Rainy River	14	Rainy River
MNT022985	Callaway WWTP	0.042	0.065	unnamed ditch	No data	Buffalo River
MNG580098	Clearbrook WWTP	0.13	0.19	unnamed tributary	9	Clearwater River
MN0051101	Cromwell WWTP	0.052	0.08	Flower Lake via ditch	0	Flower Lake
MN0020192	Detroit Lakes WWTP	1.64	2.54	unnumbered wetland to peat bog St Clair Lake	12	Pelican Lake
MN0059871	East Gull Lake WWTP	0.14	0.22	Gull River	4	Gull River
MN0023451	Foley WWTP	0.16	0.25	unnamed marsh to Stoney Brook	13	Rice Lake
MN0023515	Garfield WWTP	0.05	0.08	County Ditch #23	2	Ida Lake
MN0025691	Grasston WWTP	0.04	0.06	Snake River	11	Snake River Bay
MN0023701	Hinckley WWTP	0.68	1.06	Grindstone River	4	Kettle River
MN0021458	Hokah WWTP	0.10	0.19	Root River	6	Miss. River Backwater
MN0023736	Houston WWTP	0.25	0.39	Root River	19	Miss. River Backwater
MNG580208	Longville WWTP	0.06	0.09	Unnamed wetland	3	Rice Lake
MNG580032	Menahga WWTP	0.11	0.17	Unnamed stream	7	Yaeger Lake
MN0020699	Moose Lake WWTP	0.50	0.77	Unnamed ditch to Moosehorn River	0	Moose Horn River
MN0021156	Mora WWTP	0.8	1.24	Snake River	2	Rice Creek
MN0024244	Motley WWTP	0.43	0.67	Crow Wing River	1	Placid Lake
MNG580209	Pillager WWTP	0.07	0.11	Crow Wing River	6	Crow Wing River
MN0046388	Pine River Area Sanitary District	0.25	0.38	Pine River Upper White Fish Lake	0	Pine River
MNG580211	Rich Prairie Sewer Treatment Facility	0.23	0.35	Skunk Creek	10	Rice Lake
MNG580213	Sandstone WWTP	0.335	0.5183	unnamed creek	7	Kettle River
MN0024988	Staples WWTP	0.68	1.05	unnamed swamp	16	Placid Lake
MN0064564	Tamarack WWTP	0.01	0.01	Unnamed wetland	12	Flowage Lake

Table 9. Rationale for Domestic Dischargers Removed from SONAR List

Permit Number	Facility Name	Facility Type	Discharge MGD	List Removal Rationale
MN0051381	Belgrade WWTP	Domestic	0.17	Discharge is used as spray irrigation on 3 sites: 130 acres, 39 acres, and 30 acres.
MN0020192	Detroit Lakes WWTP	Domestic	1.64	Discharge is used as spray irrigation over a total of 54 acres
MN0057410	Kettle Falls Hotel & Guest Villas	Domestic	0.01	Spray discharge to 0.63 acre wooded area.
MN0022811	Bigfork WWTP	Domestic	0.08	Rice Creek flows into the Bigfork River and therefore water from the Bigfork would have to flow upstream to impact Rice Creek.
MN0020206	Hoyt Lakes WWTP	Domestic	0.68	Water would have to flow uphill to get to the Partridge River from Whitewater Lake.
MN0020869	Jordan WWTP	Domestic	1.29	Water would have to flow uphill to get to Blue Lake from Sand Creek at Jordan.

Twenty-one industrial facilities were removed from the SONAR list for various reasons listed in the table below.

Table 10. Rationale for Industrial Dischargers Removed from SONAR List

Permit Number	Facility Name	Discharge MGD	Discharge waters	Draft Wild Rice Name	NPDES Permit Removal Rationale
MN0001309	Aggregate Industries – Nelson Plant	13	Mooers Lake (backwaters of Mississippi), Baldwin Lake (backwaters of Mississippi)	Sturgeon Lake	Water is pumped to a sedimentation basin where it percolates into the ground or evaporates. No discharge since 2008. Discharge would only be used as an emergency overflow. Process water is from Mississippi and no chemical additives are used. (permit pg. 3)
MNG250004	Alexandria Light & Power	0.012	Lake Winona	Long Prairie River	This discharge consists solely of once through non-contact cooling water to which the only pollutant added to it is heat. (permit pg. 6)
MN0001431	Sappi Cloquet LLC	0.464	St. Louis River	St Louis River	Authorized discharge consists of non-contact cooling water/industrial stormwater/treated Lake Superior water for St. Louis River augmentation. Does not authorize discharge of process water.(permit pg.12)
MNG255070	Tate & Lyle Ingredients Americas LLC	0.928	Unnamed ditch to St. Louis River	St Louis Estuary (2)	The discharge consists solely of once-through non-contact cooling water to which the only pollutants added are heat and chemical additives consistent with a municipal potable water supply. (permit pg. 6)
MNG250102	USG Interiors LLC – Cloquet	0.13	St. Louis River	St Louis River	The discharge consists solely of once-through non-contact cooling water to which the only pollutant is heat. (permit pg. 6)
MN0070564	Jordan Aggregates LLC	no quantity listed	Sand Creek	Blue Lake	Facility crushes, screens, and washes unconsolidated sand and gravel. The wastewater is routed to a recycling basin. No wastewater expected to leave facility. Stormwater will only leave the site after a two year flood event. (permit pg. 3)
MNG490140	St Louis County Highway Dept	no quantity listed	Various gravel pits and stone quarries	St. Louis River	Stormwater discharges from gravel pits, stone quarries, chrushed rock, concrete mixing, asphalt production. Permit also authorized non-stormwater discharges that do not discharge to surface water. (permit pg. 5)
MNG490177	St Louis County Land Department	no quantity listed	Various gravel pits and stone quarries	Vermilion River	Stormwater discharges from gravel pits, stone quarries, crushed rock, concrete mixing, asphalt production. Permit also authorizes non-stormwater discharges that do not discharge to surface water. (permit pg. 5)

MNG490069	Ulland Brothers Inc	no quantity listed	Various gravel pits and stone quarries	Cloquet River St. Louis River	Stormwater discharges from gravel pits, stone quarries, crushed rock, concrete mixing, asphalt production. Permit also authorized non-stormwater discharges that do not discharge to surface water. (permit pg. 10-11)
MN0000361	Wisconsin Central Ltd – Proctor Railroad Yard	no quantity listed	Kingsbury Creek	St Louis Estuary (2)	Authorized to discharge stormwater associated with industrial activities. (permit pg. 12)
MNG790128	Becker County Sanitary Landfill – Closed	no quantity listed	Unnamed wetland	Big Floyd Lake	Authorized to discharge VOC contaminated groundwater general permit requiring removal of 95% of VOC contamination or greater. (permit pg. 7)
MN0067024	Farmington City of GW Discharges	9	Vermillion River	Fisher Lake	Authorized for short-term seasonal discharge of contaminated groundwater. (permit pg. 2-3) Fischer Lake average sulfate concentration is below the 10 mg/l criteria.
MNG790199	Former Morris Oil Bulk Plant	no quantity listed	Shagawa Lake	Fall Lake	Authorized to discharge VOC contaminated groundwater general permit requiring removal of 95% of VOC contamination or greater. (permit pg. 8) Shagawa Lake average sulfate concentration is below the 10 mg/l criteria.
MN0041556	Calumet Superior LLC – Duluth Petroleum	no quantity listed	unnamed ditch to Mission Creek tributary	St Louis River Estuary	Authorized to discharge stormwater & water used for hydrotesting fuel storage tanks to secondary containment basins. Containment basins are discharged to a grassy area which *could* flow overland eventually reaching unnamed ditch. (permit pg. 3)
MN0052540	Great Lakes Gas Transmission LP	no quantity listed	various locations	Grant Creek	Authorized to discharge waters used to hydrotest pipelines and to dewater pipeline trenches within the permittees right-of-way to upland vegetated areas where possible. Occasional discharges to surface waters with BMPs to control sediment, suspended solids, and erosion. (permit pg. 3-4)
MN0056472	Minnesota Pipe Line Co	no quantity listed	various locations	Sturgeon Lake	Authorized to discharge waters used to hydrotest pipelines and crude oil tanks to well vegetated uplands using BMPs to prevent erosion, sediment transport, and bottom scouring. (permit pg. 3-4)
MN0050041	Northern Natural Gas Co	no quantity listed	various locations	St Louis River Estuary	Permit is for pipeline trench dewatering & to *request* authorization to discharge waters used to test new or existing pipeline structural integrity. (permit pg. 6-7)
MN0060755	Viking Gas Transmission	no quantity listed	various locations	Pelican Lake	Authorized to discharge waters used to hydrotest pipelines and to dewater pipeline trenches within the permittees right-of-way to upland vegetated areas where possible. Occasional discharges to surface waters with BMPs to control sediment, suspended solids, and erosion. (permit pg. 3-4)
MN0067377	Prior Lake Spring Lake Ferric Chloride WTP	no quantity listed	Unnamed Creek to Spring Lake	Blue Lake	This permit authorizes the facility to inject ferric chloride into unnamed creek for the purpose of reducing the phosphorus load reaching Spring Lake. As water passes through the desiltation basin, solid waste by-product (phosphorus flocculent) settles out. The iron flocculent and fine particles are land applied. (permit pg. 3)
MN0068241	Essar Steel Minnesota LLC	5.6	Ann pit Sullivan pit Drapper Annex pit Snowball lake Oxhide lake Pickerel creek	Ox Hide Lake	This project hasn't been fully built yet. Original MN Steel plans included Reverse Osmosis treatment so the facility would not be impacted by wild rice rule.
MN0001007	Minnesota Power – Boswell Energy Center	161.80	Pokegama Reservoir on Mississippi River	Blackwater Lake	Boswell Energy has court-ordered site specific criteria to protect wild rice.

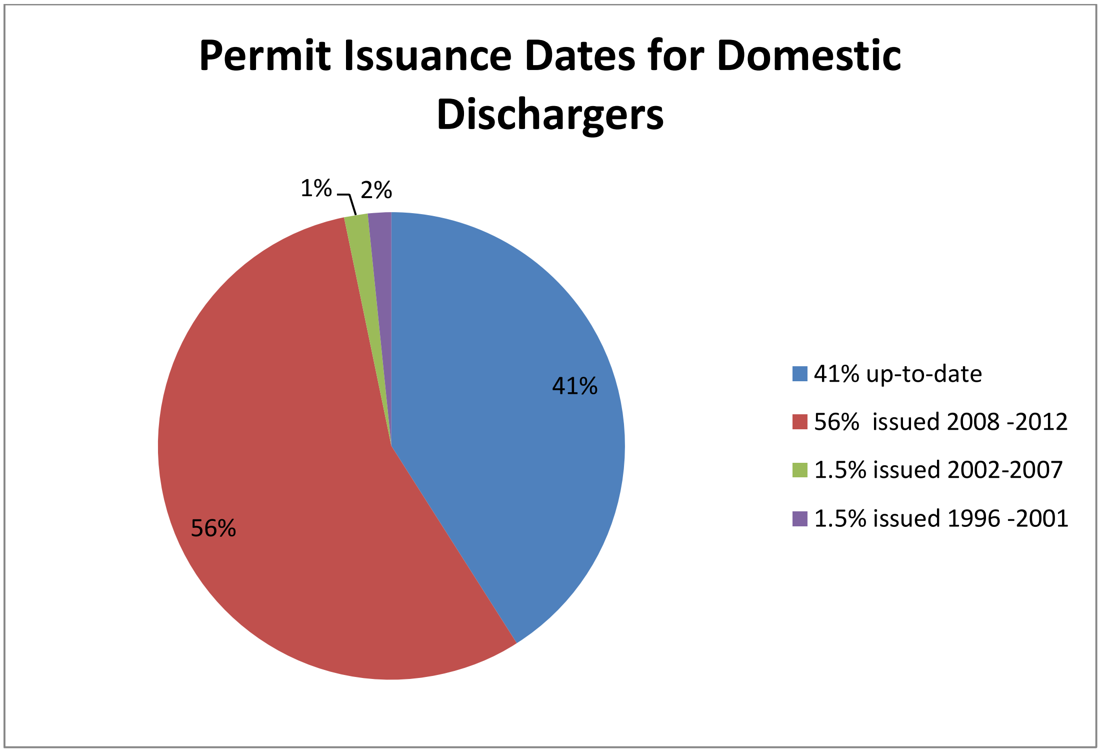


Figure 12. Domestic Dischargers NPDES Permit Issuance Dates

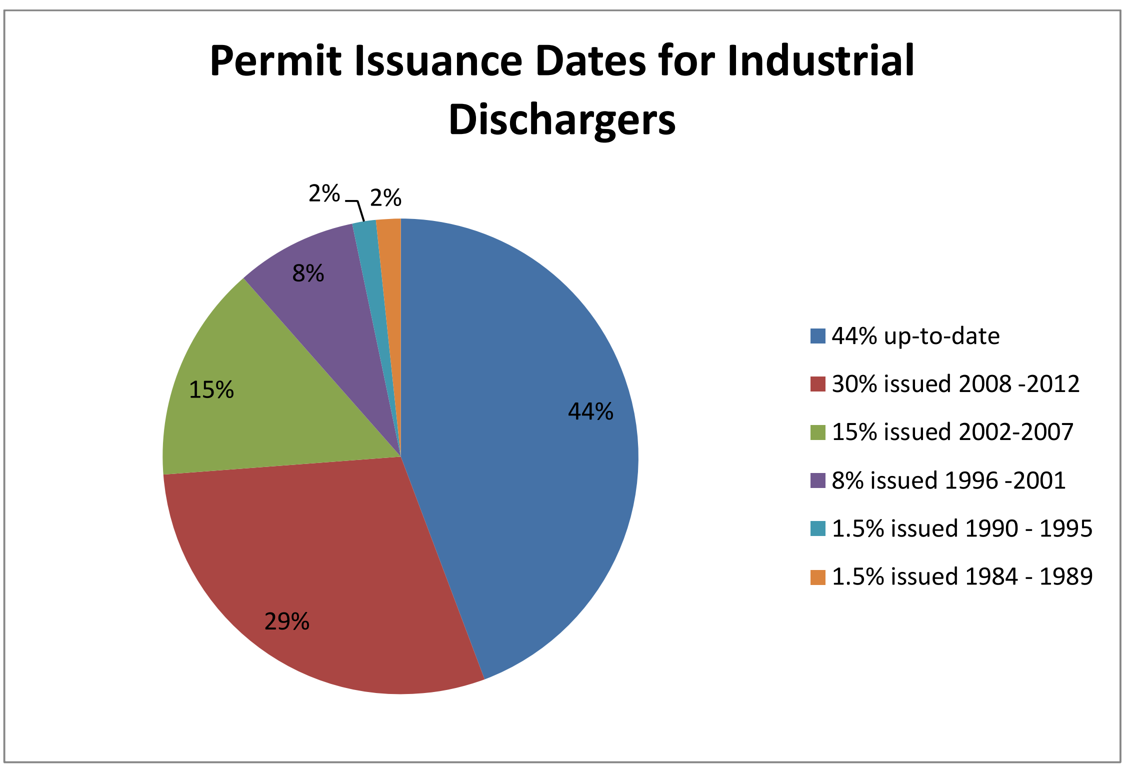


Figure 13. Industrial Dischargers NPDES Permit Issuance Dates

Comparing the proportion of up-to-date permits and those permits issued between 2008 -2012, domestic dischargers' permits comprise ninety-seven percent, demonstrating they are up-to-date or only a few years out of date. Reviewing the oldest two time categories for domestic dischargers indicate that only three percent were issued from 1984 - 2007. Reviewing industrial dischargers' up-to-date permits and those permits issued between 2008 -2012, seventy-three percent are up-to-date or only a few years out of date. Twenty-seven percent of industrial dischargers' permits were issued from 1984 - 2007. This demonstrates that domestic dischargers' are being held to higher permit compliance and/or oversight expectations by the MPCA.

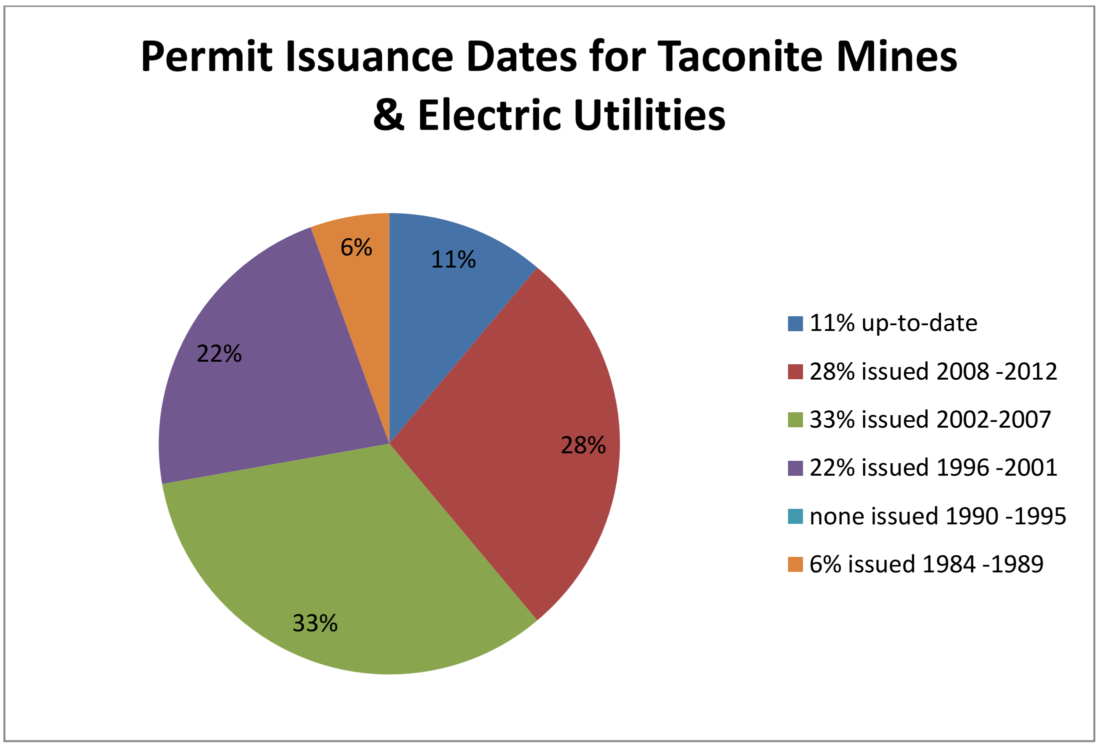


Figure 14. Taconite Mines and Electric Utility NPDES Permit Issuance Dates

By assessing the permit issuance dates for a subset of the industrial facilities, taconite mines and electric utilities included on the SONAR list, only thirty-nine percent are up-to-date or only a few years out of date. However, permits issued from 1984 – 2007 comprise sixty-one percent. This further demonstrates that even amongst industrial dischargers a reduced standard of oversight is applied to taconite and electrical utilities by MPCA. Yet, these are the largest by volume of industrial wastewater discharges and their discharges have the highest concentrations of sulfate.

Conclusions

Domestic dischargers receive more permitting oversight than much larger industrial dischargers. Where data is available, industrial facilities on average discharge six times more wastewater than domestic discharges. Average sulfate concentrations from industrial discharges are at least twenty times more concentrated than domestic discharges.

Table 11. Comparison of Industrial and Domestic Discharge Volumes and Sulfate Concentrations

Type of Facility	Discharge Volume Range (Million Gallons Per Day)	Average Discharge Volume (Million Gallons Per Day)	Average Sulfate Concentration Range (Milligrams per Liter)	Average Sulfate Concentration (Milligrams per Liter)
Industrial	0.0012 - 161.8	12.93	22.7 -1054	301.66
Domestic	0.0008 - 42	2.26	6.97 – 29.6	15.87

Virtually all of Minnesota waters that are not impacted by industrial discharges have sulfate concentrations below the 10 mg/L wild rice sulfate standard. Therefore, if industrial discharges were controlled in accordance with the law to meet Minnesota water quality standards, most domestic wastewater discharges would not require additional treatment to comply with the wild rice sulfate standard. Domestic dischargers that draw drinking water from source water where sulfate concentrations are elevated from industrial activities (e.g. mine pit lakes) could reduce the costs by treating potable water to reduce sulfate instead of adding treatment for wastewater. In addition to reducing costs, treating potable water would have community health benefits.

Comparison of Concentrations between southern and northern Minnesota

Sulfate is naturally higher in the SW part of the state, due to the history of glaciation in Minnesota. Glaciers moved from what are now parts of Canada and upper Minnesota, down and across Minnesota, scraping away large amounts of surface material and leaving behind this higher sulfate glacial till in the areas of SW MN. According to USGS & MNDNR, "*The high concentrations of sulfate in ground water in the west part of the State are probably caused by leaching of sulfate-rich minerals, such as gypsum and iron sulfide, from the drift. These were assimilated and later deposited here by glaciers that moved over Cretaceous [period]…sediments containing sulfate-rich minerals.*" PIIC resides on the edge of the driftless region, an area of MN where the last period of glaciers never touched. Areas in MN where glaciers never reached during the last period still have naturally higher sulfate levels from pre-glaciation, such as the parts of SE MN where PIIC resides. USGS reports state in reference to both the St. Peter and Mount Simon-Hinckley aquifers that sulfate in the southwestern potions of the aquifer are naturally higher in sulfate because of the leakage from overlying Cretaceous deposits. This means that the SW portion of Minnesota has naturally higher sulfate levels in the groundwater. It is further important to note that groundwater concentrations of salts may be much higher and get diluted when mixed with surface water.

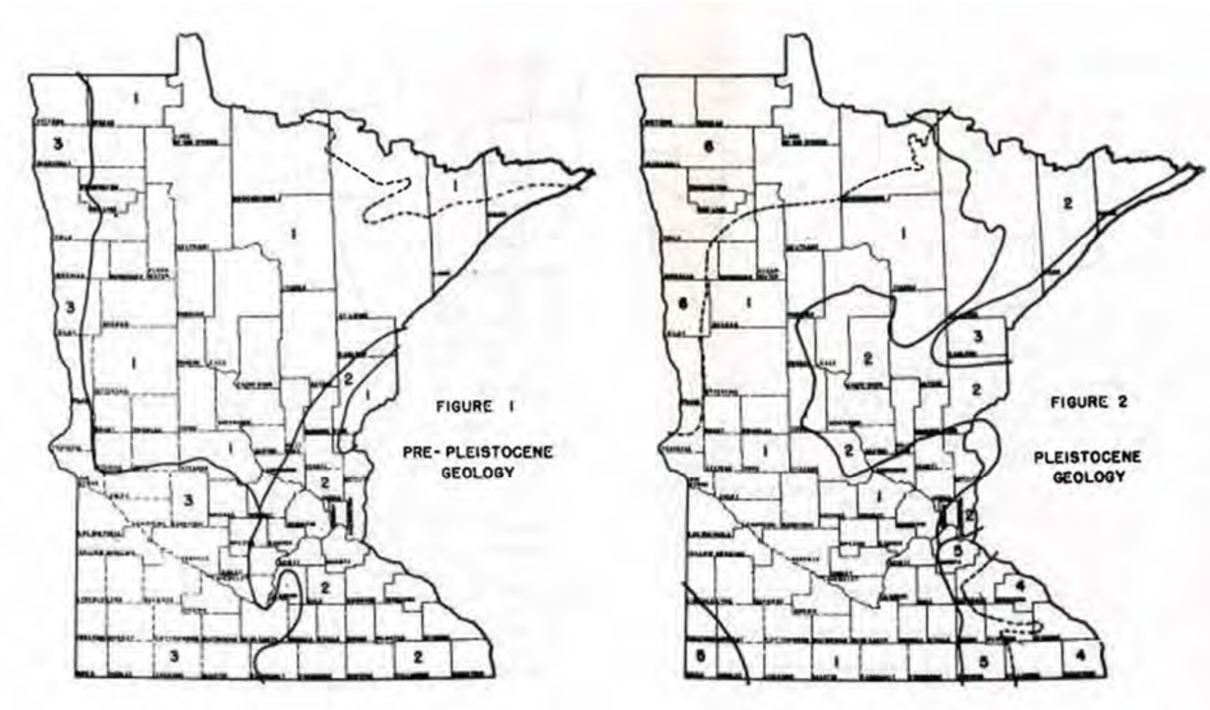


Figure above: Maps depicting geology of MN after last glaciation (Moyle, pg. 32)

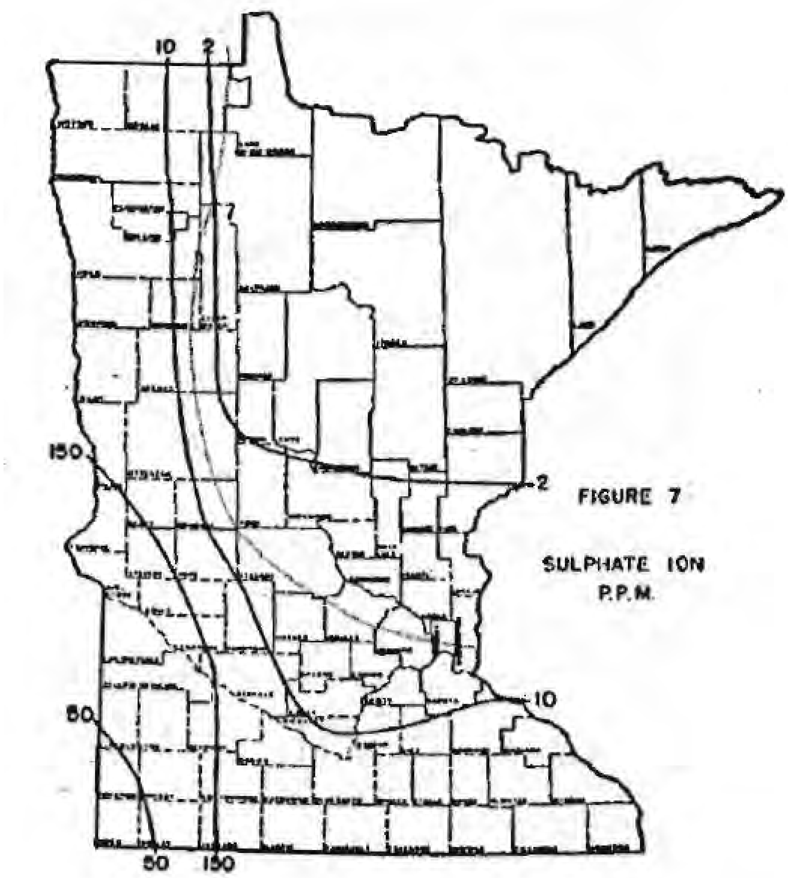


Figure above: Map depicting contours of surface water types in MN based on field measurements (Moyle, pg. 36).

The average surface water sulfate levels of Minnesota were mapped by Myrbo (2017) in a report using MPCA and DNR databases from current research on sulfate concentrations. The map below shows contours of predicted sulfate concentration in surface water using both actual and predicted measurements. Higher sulfate concentrations in southwest Minnesota are attributed to the glacial till deposits discussed previously.

However, in comparison with the map on pg. 44 depicting data from the Mississippi River, predicted sulfate concentrations don't entirely correspond to measured sulfate concentrations. The Mississippi River data shows higher sulfate concentrations in the range 30-50 mg/L in the area just north of, and running through, the Twin Cities. The predicted sulfate concentrations on the Myrbo map estimate this area should be between the 10-30 mg/L range. Records show wild rice grew, and in some places still grows, along the length of the Mississippi River.

However in comparison with the map on pg. 51 of this report depicting dischargers on or near the Mississippi River, there are some concerns about the high sulfate levels seen above and below the Twin Cities area where there are few remaining wild rice waters. Wild rice is not found to grow in the southwest portions of the state where sulfate concentrations are several hundred mg/L due to the naturally higher sulfate content in soils and surface water in that region.

Additionally, in looking at northern Minnesota on the Myrbo map evidence is seen of higher sulfate concentrations in the surface water in the iron range region. This region has sulfate bound along with the iron deposits. Undisturbed watersheds, with sulfate still bound in the glacial and bedrock geology, have low ambient sulfate concentrations. The disturbance of sulfate-rich lobes will cause higher sulfate concentrations to be evident in the surface water. Confirmation of this is shown in the following Myrbo map, where northern Minnesota with naturally low sulfate concentrations has a plume of higher sulfate concentration waters in areas surrounding industrial facilities that disturb the bedrock, releasing the sulfate trapped there.

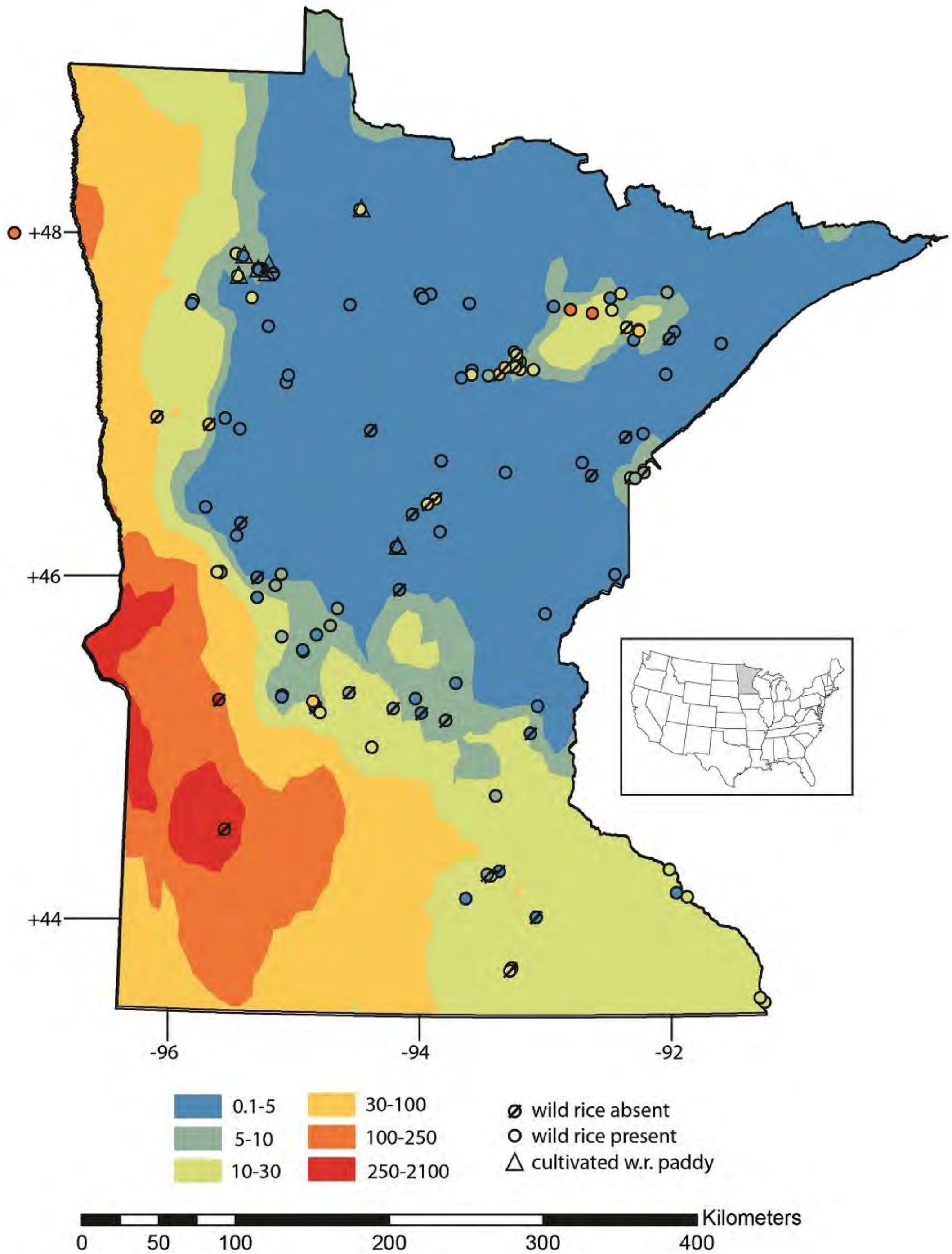


Figure above: Myrbo (2017) "Map of Minnesota showing field sites overlain on kriged contours of average surface water SO4 concentrations from 4,998 waterbodies (data from MPCA and DNR databases). The symbols are filled with the color corresponding to the site's surface water sulfate concentration. Site to the northwest of the Minnesota map is within the state of North Dakota, 40 km west of the border with Minnesota. Sites where wild rice was not found have a diagonal line through the symbol."

RECOMMENDATIONS

Per Minnesota Chippewa Tribe Resolution 107-18, *"the Tribal Wild Rice Task Force will review existing literature, including literature and information based on tradition, culture, and science, that is available to inform the understanding of the impacts of sulfate and other sulfur compounds on habitat conditions on wild rice, identify information gaps, make recommendations on priorities in a similar fashion to that included in Executive Order 18-08, and provide such report to the Governor by December 15, 2018."*

Recommendations are listed in bold, followed by description detailing the recommendation.

Widen the beneficial use of wild rice to include cultural and ecological values. Supporting materials such as the Statement of Need and Reasonableness (SONAR) and the Technical Support Document describe the beneficial use of wild rice as "the harvest and use of grains from wild rice as a food source for wildlife and humans." The scope of this beneficial use is too narrow. Wild rice provides a broad spectrum of services including cultural (importance to tribes and others) and ecological (fishery habitat, water quality, etc.) functions. The way that this can be accomplished for each agency is through MPCA including the wild rice designated use in Class 2 "aquatic life use" and the MNDNR providing a special designation for wild rice, similar to protections for trout streams and calcareous fens.

Include all waters identified by the Tribes, MNDNR, and MPCA as wild rice waters where the standard would apply. The MPCA has done a great job utilizing all information sources to compile a list of wild rice waters. However, the rule it proposed chose to omit approximately 1,000 wild rice waters out of the 2,300 on the list. Unless long-term monitoring data indicates otherwise, all waters on this list should be considered a wild rice water where the wild rice water quality standard applies. The list of wild rice waters should be inclusive instead of exclusive.[1]

[1] This recommendation addresses EO 18-08 question a)

Adopt a more comprehensive wild rice monitoring, assessment, and mapping strategy. Regulatory agencies should promote and advocate for a comprehensive and protective regulatory framework specifically for wild rice waters. A concerted and coordinated effort should be implemented among state, tribal and federal agencies to inventory all existing Minnesota wild rice waters. A coordinated and standardized approach for assessing the condition of wild rice water in Minnesota should also be implemented. Wild rice waters suffer from many risks including hydrological alterations, runoff, fragmentation, lakeshore development, and infrastructure development. These risks need to be quantified and explored so we are proactive in protecting wild rice waters. We recommend using the MN Sea Grant and University of MN "Wild Rice Monitoring Handbook" protocol among state and Tribal agencies.[2] (http://www.seagrant.umn.edu/downloads/sh016.pdf)

Adopt process for adding wild rice waters to list. No effort at identifying wild rice waters is perfect, and new information will feed into this effort. A straight forward and scheduled process for adding waters must be developed and implemented. This should be a collaborative process between tribal and state agencies. At a minimum, additions to the list could be made during the MPCA triennial review process.[3]

Communicate directly with each affected Tribal Government to determine their decision on listing wild rice waters within reservation boundaries. The MPCA has stated that it will not list waters within reservation boundaries if specifically requested by a tribe. Given the sovereignty of each tribe and their jurisdiction over reservation waters, a formal consultation process is required.[4]

Implement and enforce wild rice water quality standard. The current wild rice standard of 10 mg/L sulfate remains in place, but has not been enforced as required by the Clean Water Act. Existing water quality standards must be met and enforced. Regardless of what standard is in place, implementation is the key to preserve and protect wild rice. Previous state legislation that restricts state implementation of upholding the wild rice water quality standard should be rescinded.

[2] This recommendation addresses EO 18-08 question a) and b)
[3] This recommendation addresses EO 18-08 question a)
[4] This recommendation addresses EO 18-08 question a)

Examine and invest in sulfate reduction research and treatment technologies. Progress towards and ultimately compliance with the water quality standard must be accomplished. We are not opposed to economic development, but environmental standards must be met and enforced.[5]

Establish long-term funding. To accomplish long-term monitoring of wild rice waters, it is necessary to secure adequate long-term funding from general funds for both the MPCA and MNDNR. Additionally, a list of existing funding sources pertaining to wild rice should be created in order to draw from these sources if necessary. However, long-term funding should not rely on grants, as a steady funding stream is necessary to prioritize wild rice protection, management, and restoration.[6]

Seasonal or "flushing" discharges of sulfate should not occur. We agree with the MPCA proposed approach of allowing no seasonal discharge of elevated sulfate, as is allowed in the existing standard. Science has demonstrated that a seasonal application of the standard is not protective. However, the proposed approach that the calculated numeric standard be implemented as an annual average raises concerns. Dischargers could potentially "flush" their systems and release high concentrations of sulfate during certain times of the year, and attempt to reduce or stop discharges during other times. This essentially could function as a seasonal discharge. Annual average sulfate concentrations and permit requirements may be met, but concerns would exist about whether the spirit of the standard is being met and if wild rice and other resources are being adequately protected.

Recognize the value of wild rice and a healthy environment. The state's economic analysis only looks at one side of the equation, namely the economic costs to the regulated community. It does not assign value (or gives a value of zero) to clean water, healthy wild rice, reduced mercury in fish, and health and cultural benefits. These values are immeasurable and can be hard to quantify, but must be considered in regulatory decisions. Documents referenced in this report can be utilized to inform these decisions.

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[5] **This recommendation addresses EO 18-08 question e)**
[6] **This recommendation addresses EO 18-08 question e)**

Address impaired waters of Minnesota. The MPCA maintains a list of impaired waters that do not meet water quality standards in the state. This list is updated and submitted to the USEPA every two years. Wild rice waters impaired from the sulfate standard have not been included to date. Impacted wild rice waters should be added to the Minnesota's impaired waters list, and activities should be implemented to remove impairments. Addressing other impairments will also improve other water quality issues that may be impacting wild rice waters.[7]

Recognize and support tribal sovereignty, culture, and treaty rights. Tribal sovereignty must be recognized, and proper consultation needs to occur on issues impacting natural resources and tribal populations. Tribal culture, and the importance of resources such as wild rice, must be appreciated and respected. Many Bands have signed treaties with the United States retaining rights to hunt, fish, and gather. Treaty rights are the supreme law of the land, and must be recognized and upheld.
For these rights to be exercised, wild rice and other resources must be available (protected and enhanced) to be utilized.

PRESERVE AND PROTECT MANOOMIN/PSIŊ/WILD RICE FOR FUTURE GENERATIONS.

[7] This recommendation addresses EO 18-08 question b)

APPENDIX

Appointed members of the Tribal Wild Rice Task Force (by their respective governments):

Deb Dirlam, Director of Environmental Programs, Lower Sioux Indian Community
Justice Wabasha, Environmental Technician, Lower Sioux Indian Community
Margaret Watkins, Water Quality Specialist, Grand Portage Band of Lake Superior Chippewa
John Morrin, Tribal Council Representative, Grand Portage Band of Lake Superior Chippewa
Tara Geshick, DNR Director, Bois Forte Band of Chippewa
Darren Vogt, Resource Management Division Director, 1854 Treaty Authority (representative for Bois Forte Band of Chippewa)
Nancy Schuldt, Water Projects Coordinator, Fond du Lac Band of Lake Superior Chippewa
Thomas Howes, Natural Resources Manager, Fond du Lac Band of Lake Superior Chippewa
Richard Robinson, DRM Director, Leech Lake Band of Ojibwe
Ben Benoit, Environmental Director, Leech Lake Band of Ojibwe
Bradley Harrington, Commissioner of Natural Resources, Mille Lacs Band of Ojibwe
Kelly Applegate, Wildlife Biologist, Mille Lacs Band of Ojibwe
Monica Hedstrom, Natural Resources Director, White Earth Nation
William Bement, Water Division Manager, White Earth Nation
Leya Charles, Water Resources Specialist, Prairie Island Indian Community

Other contributors:

Brandy Toft, Environmental Deputy-Director, Leech Lake Band of Ojibwe
Natalie Boyd, Environmental Technician, Mille Lacs Band of Ojibwe
Tony Swader, Trust Land Administrator, Grand Portage Band of Lake Superior Chippewa
Richard Jackson, GAP Coordinator, White Earth Nation
Michael Northbird, Environmental Program Manager, Minnesota Chippewa Tribe

Arthur Lockwood, Dakota Language Instructor, Prairie Island Indian Community
Franky Jackson, Tribal Historic Preservation Officer, Prairie Island Indian Community
Lars Lidahl, Environmental Technician, Prairie Island Indian Community
Heather Fox, GIS Specialist, Grand Portage Band of Lake Superior Chippewa

REFERENCES

Pastor, J. (2013). Effects of enhanced sulfate and sulfide concentrations on wild rice germination and growth: results from a hydroponics experiment ftp://files.pca.state.mn.us/pub/tmp/wildRice/Hydroponic_experiments/Pastor_Hydroponics_Experiment_Report.pdf

Pastor, J. (2013). Effects of enhanced sulfate concentrations on wild rice populations: results from a mesocosm experiment ftp://files.pca.state.mn.us/pub/tmp/wildRice/Mesocosm_experiment/Pastor_Mesocosm_report.pdf

LaFond-Hudson, S. (2017). Iron sulfide formation on root surfaces controlled by the life cycle of wild rice (Zizania palustris) https://link.springer.com/article/10.1007/s10533-018-0491-5

Myrbo, A. (2013). Wild rice sulfate standard field surveys 2011, 2012, 2013: final report ftp://files.pca.state.mn.us/pub/tmp/wildRice/Wild_rice_field_survey/Myrbo_Final_Report_%20on_2011_2012_2013_Field_Surveys_20131231.pdf

Johnson, N. (2013). Response of rooting zone geochemistry to experimental manipulation of sulfate levels in wild rice mesocosms ftp://files.pca.state.mn.us/pub/wild_rice/Johnson_rooting_zone_depth_profiles_report/Sulfate_Manipulation_Rooting_Zone_Geochemistry_final.pdf

DeRocher, W. & Johnson, N. (2013) Temperature Dependent Diffusion Rates of Sulfate in Aquatic Sediments
ftp://files.pca.state.mn.us/pub/wild_rice/Johnson_Sediment_Incubation_Experiment/Temperature_Dependent_Diffusion_Rates_of_Sulfate_in_Aquatic_Sediments_final.pdf

Vogt, D. (2018). Sandy Lake and Little Sandy Lake Monitoring (2010-2017)
http://www.1854treatyauthority.org/management/biological-resources/fisheries/reports.html?id=122&task=document.viewdoc

MPCA (Oct. 2017). Various lists of Wild Rice Waters and MPCA's List of Potentially Affected Dischargers
http://www.1854treatyauthority.org/management/biological-resources/fisheries/reports.html?id=133&task=document.viewdoc
http://files.dnr.state.mn.us/fish_wildlife/wildlife/shallowlakes/natural-wild-rice-in-minnesota.pdf
https://www.pca.state.mn.us/sites/default/files/wq-rule4-15j.pdf
Complete list of Wild Rice Waters developed by MPCA is ***Attachment 5*** in this report

Fond du Lac Band of Lake Superior Chippewa (2018). Health Impact Assessment. *Expanding the Narrative of Tribal Health: The Effects of Wild Rice Water Quality Rule Changes on Tribal Health*
http://www.fdlrez.com/RM/downloads/WQSHIA.pdf

Fond du Lac Band of Lake Superior Chippewa (2018). *The Food That Grows Out of the Water: The Economic Benefits of Wild Rice in Minnesota*
http://www.fdlrez.com/RM/downloads/WQSWildRiceBenefits.pdf

Vogt, D. (2018). Wild Rice Monitoring and Abundance in the 1854 Ceded Territory (1998-2017)
http://www.1854treatyauthority.org/management/biological-resources/fisheries/reports.html?id=124&task=document.viewdoc

Jenks, Albert Ernest. The wild rice gatherers of the upper lakes: a study in American primitive economics. (Washington: Government Printing Office, 1900). (Annual report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution; v. 19, pt. 2, pp. 1013-1137). Online facsimile at http://www.wisconsinhistory.org/turningpoints/search.asp?id=1065 Pages 1028, 1036, 1047, 1116, 1118

MPCA (2014). Analysis of the Wild Rice Sulfate Standard Study: Draft for Scientific Peer Review. Online at https://www.pca.state.mn.us/sites/default/files/wq-s6-42z.pdf Pages 9-12

Moyle, J. (1956). Relationships between the Chemistry of Minnesota Surface Waters and Wildlife Management. The Journal of Wildlife Management. Vol. 20, No. 3, pg. 306 https://www.jstor.org/stable/3796967?seq=1#page_scan_tab_contents

Administrative Law Judge (ALJ) Ruling, MPCA Proposed Rulemaking (Jan. 2018) https://www.pca.state.mn.us/sites/default/files/wq-rule4-15mm.pdf

Chief Administrative Law Judge Ruling, affirming Jan. 2018 ALJ decision (April 2018) https://mn.gov/oah/assets/9003-34519-pca-sulfate-water-quality-wild-rice-rules-chief-judge-reconsideration-order_tcm19-335811.pdf

USGS & MNDNR (1974). Winter, T. *The Natural Quality of Groundwater in Minnesota.* Bulletin 26. Pg. 10

USGS (1983). Hydrogeologic and water-quality characteristics of the St. Peter aquifer & Mt. Simon-Hinkley aquifer, Southeast Minnesota
https://pubs.er.usgs.gov/publication/wri834200
https://pubs.er.usgs.gov/publication/wri834031

Pertinent Tribal and State Correspondences with the Governor (2014-2018) ***Attachment 1A***

Community Assessment Report (2017). Food Sovereignty Assessment. *Prairie Island Indian Community*. ***Attachment 2A***

Deloria, E. (1967). Museum News: The W. H. Over Dakota Museum. *University of South Dakota*, pg. 10-12 ***Attachment 3A***

Legislative Rules (2015, 2016, 2017) ***Attachment 4A***

Complete list of Wild Rice Waters developed by MPCA (Oct. 2017) ***Attachment 5A***

PUBLIC COMMENTS

Nancy Beaulieu, Leech Lake Band - when task forces get together we need to protect the issue from all threats. The TWRTF should be considering other pollutants and threats that affect our sacred wild rice. The TWRTF should expand the focus of their task at hand. Reports regarding wild rice should be inclusive and considerate of the importance of protecting it. Effects of climate change should be a part of the overall report. (11/28/18 Open meeting, Mille Lacs Grand Casino)

Michael Connor, Bois Forte - wild rice is not just a substance to eat, it builds relationships within different age group of a community. It's educational, we learn from each other, and all people can relate to the importance of maintaining protections of our culture and history. The diversity of the natural world that depends on this important issue as a long-standing relationship that we all have, from macro-invertebrates to all other species. (11/28/18 Open meeting, Mille Lacs Grand Casino)

Perry Bunting, Mille Lacs - the TWRTF should clarify what the 10mg/L standard really means. That it relates to the sulfate levels of water bodies and not the "end of the pipe". (11/28/18 Open meeting, Mille Lacs Grand Casino)

Debra Topping, Fond du Lac - a baseline, in regards to all pollutants in the lakes within our reservations and treaty-ceded territories, should be included in the report. (11/28/18 Open meeting, Mille Lacs Grand Casino)

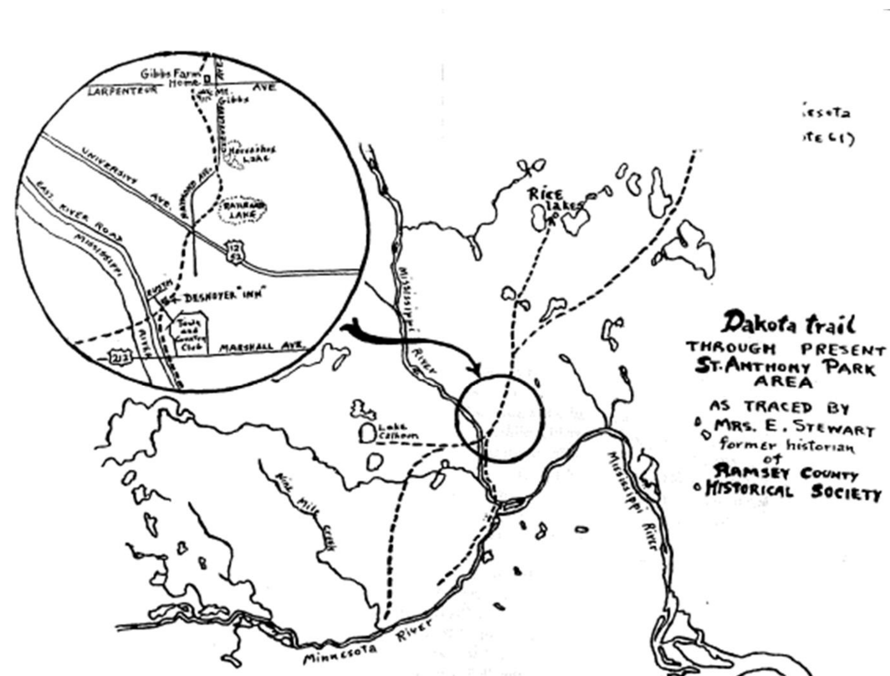
Nicole Buck, Prairie Island Indian Community - I work in land and environment as tribal garden assistant and work with our food sovereignty. Today I'm writing a letter in regards to the growth and production of protecting our wild rice. Wild rice is not only a huge part of my diet but many of our people as well. Wild rice plays many spiritual and physical roles to the Dakota people. From high nutrition for the nourishment of our bodies to the spiritual essence of our ceremonies. Wild rice has been a huge part of our diet prior to colonization, it connects to the land and water ways. Currently as we speak Prairie Island does not have viable wild rice for harvest for our people we have to get it from other tribes in the Northern Territory. Being able to grow and harvest our own wild rice for our people would help us strive with our food sovereignty. My health depends on sustainable wild rice so I hope this letter of support helps us, the people of Prairie Island get a voice in this crucial matter on wild rice. (11/26/18 Email received)

Tina Jefferson, Prairie Island Indian Community - I hope this letter finds its way to a greater cause in protecting our natural resources. In keeping with our traditions and understanding the dilemmas that the dams have created on our waterways on the Mississippi River bottom, we once had a population of wild rice. Since flooding has been prevalent on Prairie Island and decimates our abilities to grow a sustainable crop of wild rice and control of water quality! We have been forced to rely on our other Minnesota Native communities in northern Minnesota to supply our demand for our traditional wild rice and fresh walleye! I am in total support of our communities working together to make this a sustainable food source to our people and our traditions! Though we are not there physically there are many of us that use rice as a staple in our homes and it would be a shame not to have this resource available to us as a people! My father Joseph Campbell worked with and headed many organizations for the condition of our mighty Mississippi and down river alliance! (11/27/18 Email Received)

Cheyanne St. John, Lower Sioux Indian Community -

The Bdewakantunwan Dakota have long been known for their knowledge of harvesting and depending on wild rice. The food source is a staple in a long-existing traditional lifeway, many Dakota elders still make annual pilgrimages to the northern lakes of Minnesota to harvest wild rice, or *pśin*.

As stated by both Prairie Island Dakota Community and Lower Sioux's Office of Environment, numerous historic accounts detail the utility and significance wild rice has to Dakota people as early on as 1600. The image below identifies the Minnesota trails Santee Dakota took to access ricing areas, both Cloudman and Wabasha's Village sites were once situated in areas near present day Minneapolis. Dakota's from both villages actively harvested wild rice in lakes as near as the reclaimed Bde Maka Ska.



The Indian Trail that led from Fort Snelling to the rice lakes near Forest Lake, as traced by Mrs. Ethel Stewart, former historian of the Ramsey County Historical Society. Encircled is the portion of the trail that passed near the present Town and Country Club and continued on to the Gibbs Farm Home on today's Larpenteur Avenue. Ramsey County Historical Society archives.

A Study of Wildrice in Minnesota. Edman, Robert F. Minnesota Resource Commission (1969)

Lower Sioux's Tribal Historic Preservation Office has conducted numerous interviews will Dakota elders and spiritual leaders over the past decades capturing oral interviews, community histories and landscape/site knowledge. After assessing the responses pertaining specifically to where Lower Sioux/Mdewakanton harvested wild rice most elders replied, "historically, the Dakota of Lower Sioux went north until they reached the furthest south lake and harvested from there."

Overtime the advancement and progression of industry and agriculture resulted in many southern MN waterbodies being drained or tiled, presumably destroying historic-Dakota ricing areas.

Lower Sioux Indian Community is concerned about the potential impact of infrastructure development on the natural resources we depend on for medicinal, cultural, and economic purposes. These concerns extend to proposals and/or permits that might have long-lasting impacts on LSIC's resources.

LSIC wants to prevent environmental degradation and environmental harm in all areas of our ancestral homelands. We do not support projects or policy that risk traditional foods being demolished, poisoned or altered. Wild rice areas (water tributaries, water bodies and adjacent streams) should remain protected and pristine for future access, harvest and establishment.

The State of Minnesota is responsible for issuing many of the permits necessary for infrastructure development to proceed, such as the crude oil Line 3 pipeline. LSIC needs this task force to advocate and evaluate the potential impacts on Treaty rights and our natural resources to ensure the sustainability of pśin for future generations.

On behalf of Lower Sioux Indian Community of Minnesota, we appreciate the opportunity to provide these comments.

Pidamaya ye,

Cheyanne St. John

Cheyanne St. John, THPO/Cultural Dept. Director
Lower Sioux Indian Community
(12/04/2018 Email Received)

Janice Erickson, Prairie Island Indian Community – My name is Janice Erickson. I am an enrolled Tribal member. My husband and my 5 children are all Tribal members too. Our family, friends, & community are connected to Wild Rice for many reasons. The most important reason is we regularly eat wild rice as a part of our natural diet. Our ancestors have been doing the same for countless generations! We also use our wild rice by culture and ceremonies. It is a part of who we are as a people. I am writing this to voice my concern that we need ensure our water is kept clean. The wild rice is dependent on it. It cannot grow or thrive in dirty water. People in general cannot grow or thrive in dirty water! It's really awful that mines aren't cleaning up their waste. Their pollution is deadly & hurting us all. Please make sure your report will fight for what is right! Our future, & future generations are counting on you!
(12/12/2018 Email Received)

Wild Rice Impaired Waters in 1854 Ceded Territory
MPCA Sulfate Data

WL 303(d) Exhibit 26

	A	B	C	D	E	F	G	H	I
1	**OBJECTID**	**SYS_LOC_CODE**	**MAX_PPM**	**Min_PPM**	**MEDIAN_PPM**	**AVG_PPM**	**WATER BODY NAME/DESCRIPTION**	**TYPE**	**COUNTY**
2	54	03-0411-00-201	85.0	85.0	85.0	85.000	BEAN	Lake	Becker
3	55	03-0411-00-202	77.2	77.2	77.2	77.200	Bean	Lake	Becker
4	104	14-0103-00-201	41.2	41.2	41.2	41.200	Cromwell	Lake	Clay
5	105	14-0103-00-202	37.3	37.3	37.3	37.300	Cromwell	Lake	Clay
6	106	14-0103-00-203	48.5	48.5	48.5	48.500	Cromwell	Lake	Clay
7	173	18-0126-00-201	38.3	38.3	38.3	38.300	Mahnomen	Lake	Crow Wing
8	193	24-0028-00-201	42.4	24.9	31.2	33.500	BEAR	Lake	Freeborn
9	217	31-0037-00-201	78.0	10.2	49.0	49.749	HAY	Lake	Itasca
10	220	31-0067-01-204	51.0	23.0	31.5	34.000	SWAN (WEST BAY)	Lake	Itasca
11	249	34-0158-01-101	45.4	22.5	35.1	33.480	MUD	Lake	Kandiyohi
12	251	34-0158-01-203	34.7	22.6	34.1	31.375	Lake Monongalia - main basin	Lake	Kandiyohi
13	469	69-0376-00-201	38.6	38.6	38.6	38.600	WHITEWATER	Lake	St Louis
14	579	69-0729-00-201	475.0	87.0	194.5	220.222	LITTLE SANDY	Lake	St Louis
15	580	69-0730-00-201	310.0	72.6	110.0	164.606	SANDY	Lake	St Louis
16	581	69-0730-00-203	122.0	3.1	39.5	50.988	Sandy	Lake	St Louis
17	582	69-0730-00-204	250.0	118.0	128.0	147.000	Sandy	Lake	St Louis
18	583	69-0730-00-205	122.0	122.0	122.0	122.000	Sandy	Lake	St Louis
19	607	72-0042-00-201	31.0	31.0	31.0	31.000	TITLOW	Lake	Sibley
20	610	73-0196-00-203	36.6	33.0	33.2	34.080	RICE	Lake	Stearns
21	611	73-0196-00-209	36.2	32.7	33.5	34.200	RICE	Lake	Stearns
22	633	S000-068	126.0	24.0	49.5	56.361	MISSISSIPPI RIVER AT LOCK AND DAM #2 AT HASTINGS	River/Stream	Dakota
23	646	S001-238	92.4	6.3	41.0	44.766	MISSISSIPPI R DNST OF HASTINGS RR BR	River/Stream	Dakota
24	650	S001-676	60.0	12.0	36.0	36.000	PIKE RIVER AT HWY 169 BRIDGE, 12 MILES SW OF TOWER, MN	River/Stream	St Louis
25	652	S001-681	107.0	12.0	63.0	63.240	SAND RIVER AT CR 303 BRIDGE, 2 MI SE OF BRITT, MN	River/Stream	St Louis
26	654	S002-594	123.0	3.5	31.6	48.246	EMBARRASS R ON CO RD-362 AT EMBARRASS	River/Stream	St Louis
27	657	S002-599	260.0	36.3	70.0	86.300	PARTRIDGE R IN T58N R15W S12 1.5 MI E OF AURORA	River/Stream	St Louis
28	690	S005-752	434.0	10.7	109.0	130.298	PARTRIDGE R DWNSTRM OF CSAH-110, 2.5 MI E OF AURORA	River/Stream Peren	
29	696	S006-524	98.8	36.1	65.7	67.722	MISSISSIPPI RIVER DOWNSTREAM OF THE US-61 BRIDGE IN HASTINGS, MN	River/Stream	Dakota
30	700	S007-023	804.0	219.0	437.0	472.400	SECOND CK .5 MI N OF MN-110 / W 5TH AVE S, 2 MI E OF AURORA, MN	River/Stream Peren	St Louis
31	703	S007-220	1100.0	303.0	820.0	697.429	SECOND CK AT CONFLUENCE WITH PARTRIDGE R, .2 MI UPSTR OF W 5TH AVE S BRG, 1.5 MI E OF AURORA, MN	River/Stream Peren	St Louis
32	704	S007-222	44.2	18.0	31.3	31.200	MISSISSIPPI R, .38 MI UPSTR OF LOCK & DAM #8 RENO, MN/GENEO, WI	River/Stream Peren	Houston
33	708	S007-462	84.0	42.0	52.0	56.667	HAY CK JUST UPSTR OF HAY LAKE, 1.5 MI W OF CSAH 16, 7.5 MI S OF KEEWATIN, MN T56N/R22W/S35	River/Stream Peren	Itasca
34	711	S007-471	661.0	137.0	315.0	348.667	UNN STR INLET TO LITTLE SANDY JUST N OF SAND LK RD, 4.9 MI NW OF WUORI, MN. T59N R18W S11	River/Stream Peren	St Louis

	A	B	C	D	E	F	G	H	I
35	712	S007-472	81.0	30.0	55.5	55.500	SAND R AT MNTH-169 DSTR SIDE OF BRG, 4.5 MI E OF BRITT, MN	River/Stream Peren	St Louis
36	713	S007-473	252.0	38.0	90.7	127.989	SAND R, OUTLT FROM SANDY LK, S OF REID RD, 4.9 MI NW OF WUORI, MN	River/Stream Peren	St Louis
37	714	S007-474	43.0	13.0	40.0	32.000	PIKE R AT W SAARI RD, 2.25 MI NE OF PIKE, MN	River/Stream Peren	St Louis
38	717	S007-478	883.0	883.0	883.0	883.000	PARTRIDGE R AT CONFLUENCE WITH FIRST CK, .2 MI UPSTR OF W 5TH AVE S BRG, 1.5 MI E OF AURORA, MN	River/Stream Peren	St Louis
39	729	S007-502	160.0	10.6	71.4	78.350	PARTRIDGE R, 530 FT UPSTR OF W 5TH AVE S, 2.5 MI E OF AURORA, MN	River/Stream Peren	St Louis
40	730	S007-504	411.0	411.0	411.0	411.000	PARTRIDGE R, .5 MI S OF W 5TH AVE. S., 2.5 MI SE OF AURORA, MN	River/Stream Peren	St Louis
41	731	S007-505	335.0	335.0	335.0	335.000	PARTRIDGE R, .5 MI S OF W 5TH AVE. S., ~400 FT DWNSTR OF S007-504, 2.5 MI SE OF AURORA, MN	River/Stream Peren	St Louis
42	732	S007-506	378.0	378.0	378.0	378.000	PARTRIDGE R, .2 MI E OF LANE 51 AND .5 MI S OF W 5TH AVE S, 2 MI SE OF AURORA, MN	River/Stream Peren	St Louis
43	733	S007-509	151.0	17.0	43.4	70.467	EMBARRASS R, .25 MI DWNSTR OF KAUNONEN LAKE RD, 12.7 MI NE OF AURORA, MN	River/Stream Peren	St Louis
44	737	S007-513	167.0	6.0	54.6	83.138	PARTRIDGE R, JUST DWNSTR OF W 5TH AVE. S., 2.5 MI SE OF AURORA, MN	River/Stream Peren	St Louis
45	743	S007-527	104.0	29.4	66.7	66.700	PARTRIDGE R (SITE WITHIN SMALL BAY ON RIVER), 1/3 MI E OF SUIBO RD, 2 MI SE OF HOYT LAKES, MN.	River/Stream Peren	St Louis
46	745	S007-532	56.4	56.4	56.4	56.400	EMBARRASS R, JUST SO OF CSAH-21, AT EMBARRASS, MN	River/Stream Peren	St Louis
47	747	S007-534	86.0	86.0	86.0	86.000	EMBARRASS R, 1 MI W OF KAUNONEN LK RD (CR-796), 4 MI NE OF EMBARRASS, MN	River/Stream Peren	St Louis
48	761	S008-996	44.6	26.8	37.3	36.233	MISSISSIPPI RIVER 3.4 MILES EAST OF WELCH, MN (RIVER MILE 801)	River/Stream Peren	Goodhue
49	762	S008-997	45.9	24.7	34.7	35.100	MISSISSIPPI RIVER 7 MILES NORTHEAST OF RED WING, MN (RIVER MILE 805)	River/Stream Peren	Goodhue
50	763	S008-998	41.5	27.1	35.0	34.533	MISSISSIPPI RIVER SOUTH OF TRUEDALE SLOUGH, 5.2 MI EAST OF HASTINGS, MN (RIVER MILE 808)	River/Stream Peren	Dakota
51	765	S009-009	45.0	27.4	44.5	38.967	MISSISSIPPI RIVER 3.3 MILES EAST OF RAVENNA, MN (RIVER MILE 805)	River/Stream Peren	Goodhue

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

Ms. Paula Maccabee
Advocacy Director and Counsel
WaterLegacy
1961 Selby Ave
St. Paul, Minnesota 55104

Dear Ms. Maccabee:

Thank you for your October 22, 2020 letter to the U.S. Environmental Protection Agency regarding the development of the State of Minnesota's 2020 Clean Water Act (CWA) Section 303(d) impaired waters list.

As you are aware, EPA does not have a public comment period regarding its review of state impaired waters lists, and EPA is not yet in receipt of Minnesota's final 2020 impaired waters list ("2020 list"). Accordingly, EPA strongly encourages you to continue to work directly with the State of Minnesota to address the comments and concerns that you have about the State's 2020 list.

The CWA assigns primary responsibility to states and approved tribes to develop impaired waters lists and to submit them to EPA. The federal regulations require a state or approved tribe to "assemble and evaluate all existing and readily available water quality-related data and information" [40 CFR 130.7(b)(5)] and "identify those waters within its boundaries for which the effluent limitations required by section 1311(b)(1)(A) and section 1311(b)(1)(B) of this title are not stringent enough to implement any water quality standard applicable to such waters" [CWA, 303(d)(1)].

EPA's role in the process is specified in the CWA at section 303(d)(2):

> The Administrator shall either approve or disapprove such identification and load not later than thirty days after the date of submission. If the Administrator approves such identification and load, such State shall incorporate them into its current plan under subsection (e) of this section. If the Administrator disapproves such identification and load, he shall not later than thirty days after the date of such disapproval identify such waters in such State and establish such loads for such waters as he determines necessary to implement the water quality standards applicable to such waters and upon such identification and establishment the State shall incorporate them into its current plan under subsection (e) of this section.

In determining whether applicable water quality standards are or are not attained, federal regulations require that states and approved tribes assemble all readily available data and information to make such determinations, and to provide a rationale for any decision not to use such information. MPCA is best positioned to make these determinations for Minnesota waters.

Moreover, the Minnesota Pollution Control Agency (MPCA) has informed EPA that it is currently evaluating and responding to the comments raised by Minnesota tribes and other stakeholders during the public comment period and will submit its final 2020 list to EPA once this is completed. EPA expects that states and approved tribes will engage the public during the development of the CWA Section 303(d) lists, consistent with CWA Section 101(e), and will prepare responses to all comments received during the public notice period. In particular, Minnesota has stated that it is working to consider comments from the Minnesota tribes and other commenters regarding the inclusion and assessment of additional waters as "waters used for the production of wild rice." EPA believes that allowing MPCA to complete this process provides an important opportunity for the State to address these concerns and, as MPCA determines is appropriate, incorporate any updates to its final 2020 list submittal.

Upon receipt of Minnesota's final 2020 CWA Section 303(d) list, EPA will conduct a complete review of the State's submittal and supporting documentation, including comments and Minnesota's responses to comments submitted during the public comment period.

EPA is committed to our core mission of protecting the environment and public health, in a transparent and fair manner. If you have further questions, you may contact Barbara Wester, Associate Regional Counsel, at wester.barbara@epa.gov or 312-353-8514.

Sincerely,

Kurt A. Thiede
Regional Administrator

Subject: Agency submits 2020 Impaired Waters List to EPA for approval
Date: Thursday, February 25, 2021 at 1:52:06 PM Central Standard Time
From: Minnesota Pollution Control Agency
To: pmaccabee@justchangelaw.com

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MINNESOTA POLLUTION CONTROL AGENCY

Agency submits 2020 Impaired Waters List to EPA for approval

You are receiving this message because you have subscribed to the notification list for Minnesota's Impaired Waters List.

The Minnesota Pollution Control Agency (MPCA) submitted Minnesota's 2020 proposed Impaired Waters List to the U.S. Environmental Protection Agency (EPA) for approval on February 25, 2021.

The MPCA posted a draft version of the list for public viewing in November 2019. After a series of public meetings and a formal comment period, the agency made a few changes to the draft list based on public input. These changes included removing two impairments because the lakes - North Center and South Center in Chisago County - are now meeting nutrient standards.

This modified list was submitted to the EPA for its approval. This process of posting, revising, and submitting the Impaired Waters List occurs every two years, as required by the federal Clean Water Act.

As part of the public participation for the 2020 Impaired Waters List:

- The agency held four meetings across Minnesota to talk about the listing process and the waterbodies impaired in the regions.
- During the formal comment period, the agency received public comments from 19 individuals or organizations, and responded to each one.
- Some comments warranted changes to the 2020 draft Impaired Waters List or the 2020 Guidance Manual (the document that explains how assessments are conducted).

Contents of the public meetings, the public comments, the MPCA responses to comments, and the 2020 Guidance Manual were all sent to EPA along with the 2020 proposed list for review.

To view public comments, responses to comments, the Guidance Manual, or the 2020 proposed Impaired Waters List go to the Impaired Waters List webpage. For questions, contact Miranda Nichols at miranda.nichols@state.mn.us.

The mission of the MPCA is to protect and improve the environment and enhance human health.

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Minnesota Pollution Control Agency
Responses to the 2020 Draft Impaired Waters List Public Notice Comments
February 25, 2021

The 2020 Draft Impaired Waters List comment period began on November 12, 2019, and ended on January 14, 2020. The Minnesota Pollution Control Agency (MPCA) appreciates the public's engagement on the impaired waters list and all the comments provided.

The comments received are summarized below, along with the MPCA's responses. The unabridged comments are posted online on the MPCA Impaired Waters List website. See the same website for the 2020 Proposed Impaired Waters List and the 2020 Guidance Manual for Assessing the Quality of Minnesota's Surface Waters for Determination of Impairment: 305(b) Report and 303(d) List, referenced in this document.

Comment 1: Minnesota and Wisconsin need to protect the St. Croix River; concerned about hog farms and manure spills in Wisconsin.

The states of Minnesota and Wisconsin work collaboratively on issues related to the St. Croix River. The states collaborated to develop the Total Maximum Daily Load (TMDL) for Lake St. Croix, which determines the reductions needed to help the lake achieve water quality goals. We also collaborated to develop the implementation plan to guide work to meet the goals of the TMDL. However, each state is required to enforce their own rules and laws pertaining to permitted facilities and spills. Because the spill referenced in the comment was not on a shared water, Minnesota does not have jurisdiction.

Comment 2: Minnesota and Wisconsin need to protect the St. Croix River; concerned about manure spills and different standards/practices in the states.

The states of Minnesota and Wisconsin work collaboratively on issues related to the St. Croix River. The states collaborated to develop the Total Maximum Daily Load (TMDL) for Lake St. Croix, which determines the reductions needed to help the lake achieve water quality goals. We also collaborated to develop the implementation plan to guide work to meet the goals of the TMDL. While that work has not yet been completed for the specific river impairment, the lake TMDL and implementation plan cover the entire watershed and include actions needed from areas within and upstream of the impaired river reach. Those actions will help the river reach come into compliance with standards.

Each state develops, approves, and submits to EPA their own water quality standards. On border waters, we work collaboratively to ensure that there is awareness of the water quality assessment decisions being made. Ultimately, each state determines impairments according to their own rules and standards. The Environmental Protection Agency oversees water programs for the states. They approve our rules, water quality standards, oversee our permitting programs, and approve our impaired waters lists and TMDLs. The National Park Service does not play a role in approving water quality standards for states. We did coordinate with them and use National Park Service data as a part of our water quality assessment.

The states continue to work together as a part of the St. Croix Interagency Basin Planning Team. This team has been in existence since 1993 and includes members from state, local, and federal governments on both sides of the river. You can find more information on the coordinated effort to meet phosphorus reduction goals here: https://www.pca.state.mn.us/water/st-croix-river-basin-interagency-water-resource-management-planning-effort.

Comment 3: Statewide moratoriums on expansions of CAFOS are needed to protect the St. Croix River.

The states of Minnesota and Wisconsin each have their own state rules and statues to follow for CAFO operations in addition to enforcement of the National Pollutant Discharge Elimination System (NPDES) rules.

All CAFOs (NPDES permitted, State Disposal System permitted and CAFOs not required to be permitted) are inspected by the Minnesota Pollution Control Agency on a routine basis with an appropriate mix of field inspections, offsite monitoring and compliance assistance. MPCA staff conduct the inspections in accordance with our EPA-approved NPDES Compliance Monitoring Strategy. CAFOs do not self-monitor in Minnesota.

Comment 4: Speed up protection of the unimpaired waters. Keep the Enbridge Line 3 out.

As part of the Legacy Amendment, the MPCA tracks progress on protection strategies. That tracking can be viewed here: https://www.pca.state.mn.us/water/watershed-restoration-and-protection-strategy-status. To view the specifics of these Watershed Restoration and Protection Strategies (WRAPS), choose the watershed of interest on this webpage: https://www.pca.state.mn.us/water/watersheds.

The MPCA issued a 401 certification for Line 3 which included consideration of requirements to protect unimpaired waters through antidegradation analyses.

Comments 5, 6, 8, 10, 11, 13, 15, 19: State and federal regulatory agencies plainly have the ability to identify water quality impairments in wild rice waters throughout the state. The impaired waters identified here must be included on the Draft List before it is sent to US EPA for approval, along with all impaired wild rice waters.

The MPCA’s analysis of the eight waters suggested in the comments from Tribal leaders show that sulfate in seven of the waters exceed the 10 mg/L sulfate wild rice standard. However, in 2015 the Minnesota Legislature adopted wild rice legislation (1st Special Session, Chapter 4, Article 4, Section 136) which says that the agency shall not list waters as impaired for the wild rice sulfate water quality standard. Therefore these waters were not included in the final impaired waters list submission.

Comments 7: The St. Croix River is impaired due to a natural scientific ongoing event.

Thank you for your comment. The river is considered impaired because excess phosphorus and excess algae were found in that portion of the river. Due to the work from the Lake St. Croix Total Maximum Daily Load, it was determined that excess phosphorus occurred from multiple locations, including the Kettle, Sunrise and Snake river watersheds in Minnesota and Apple, Kinnickinnic, and Willow river watersheds in Wisconsin. https://www.pca.state.mn.us/sites/default/files/wq-b6-12.pdf A number of these tributaries discharge into the river upstream of the impaired location. There are also a number of permitted facilities upstream of the reach that has been listed. While the geology of the streambed is different, and different soils have different levels of phosphorus, we are unable to call an impairment naturally occurring if sources of phosphorus have been found that are human induced (wastewater and stormwater, logging, agricultural and urban land use, etc.).

Comments 8 and 19: Failure of the MPCA to engage in meaningful tribal consultation with Indian tribes is contrary to Executive Order 19-24 and disrespectful to original inhabitants.

Shakopee Mdewakanton Sioux Community and the Minnesota Indian Affairs Council provided comments relating to the need to improve government-to-government relations through effective tribal consultation. The comments specifically speak to the need for consultation to be timely and “provide adequate opportunities for Indian tribes to raise their concerns prior to and outside of the traditional notice and comment periods made available to the general citizenry of the state.”

The comment seems to speak specifically to a lack of consultation regarding listing waters as impaired for the wild rice sulfate standard. As noted above, comments specific to wild rice and sulfate are discussed separately. However, the MPCA engaged in consultation with Minnesota’s eleven federally recognized Tribes about a holistic path forward for the protection and restoration of wild rice in Minnesota. The MPCA also participated in the July 16, 2020 consultation between Governor Walz and Tribal leaders on this topic. The MPCA takes the need for consultation seriously, and is working to improve engagement and consultation.

Specifically, the MPCA increased our engagement with Tribal environmental staff during preparation of the 2020 impaired waters list. The Commissioner and several MPCA staff attended a meeting with Tribal environmental program staff on August 26, 2019 and discussed the impaired waters list. MPCA followed up with an invitation to discussion and request for specific areas of discussion. MPCA also provided a copy of Appendix E, the approach to listing Tribal waters, and information on the public notice plan for Impaired Waters list. The MPCA’s impaired waters coordinator and water assessment section manager attended the Minnesota Tribal Environmental Council meeting held on October 10, 2019 to share further information about the impaired waters list, the public notice period, and the process for commenting. We specifically called out areas where we wanted comments, including how tribal waters are described on the list. Tribal environmental staff were provided with an early copy of the list and public notice in mid-October, two weeks prior to the publication of the general public notice.

We understand that engagement is not consultation, but do appreciate our engagement with tribal environmental staff in reviewing data and making determinations about impaired waters. We have heard concerns about MPCA’s engagement and consultation on the impaired waters list and will continue to work to improve. To that end the MPCA has committed to working with the Minnesota Indian Affairs Council to revise the MPCA’s existing water Tribal consultation/coordination policy.

Comment 9: AUID 07010206-814 expanded existing impairments and relisted delisted waters where such actions are not supported by data.

The Metropolitan Council provided comments that included a detailed chronology of impaired waters listings and refinements through time leading to the current proposal. It appears that the primary concern is that the shape (or length) of the AUID will predetermine or constrain management actions, such that unnecessary limits would be required of one or more facilities that you operate. This concern is expressed most concisely on page 5 of the letter:

> *“If the impairments in the chart above were expanded to cover all of AUID 814, there is a potential for significant impacts on the Council and its ratepayers though the data show that the portions of the waterbody where the Council is discharging are not impaired and additional regulation of the Council will likely not materially improve water quality.”*

MPCA values our partners' ongoing programs to monitor and protect our waters.

The longstanding PFOS impairment in the lower segment of Pool 2 of the Mississippi River is not expanded by the AUID consolation of seven previous segments into one single segment (814). AUID 814 is simply a different sized bucket in which to catalog this segment. MPCA has flexibility in how it uses the impaired waters list, and the underlying data, to restore and protect waters. Federal regulations do not prescribe the exact means through which TMDLs are developed or NPDES permits are evaluated. Guidance on both TMDL development and the reasonable potential analysis for NPDES permits provides ample flexibility for reasonable implementation. In short, MPCA does not believe that the exact size or shape of an AUID pre-determines the specific actions needed to restore that water.

If the data used to document an impairment were collected within a very small section of a large AUID, as is the case with this situation, MPCA has the flexibility to investigate pollutant load sources and determine the reductions necessary to restore that water, regardless of whether the sources are located within or outside of the AUID of interest. If data demonstrate that conditions above a specific source within that AUID, like a wastewater outfall, are better than in the region of the excursion, these upstream data may be taken into consideration when making a reasonable potential determination. Conversely, if an impairment is documented in a small AUID, and the reductions necessary to remediate the impairment cannot be found from within that small location, we have the flexibility to investigate pollutant load reductions far upstream of that AUID. A good example of the latter would be Lake Pepin. We have implemented limits in hundreds of facilities upstream of Lake Pepin, including the innovative "umbrella" permit for five MetCouncil facilities. In short, the size of the AUID does not predetermine or constrain the methods MPCA may use to determine limits or develop TMDLs to remediate the impairment. In this way, consolidating AUIDs does not materially "expand" the impairment, it just changes the container in which the impairment is documented.

Comment 12: Biochemical oxygen demand and diel dissolved oxygen flux response variables leads to erroneous listings.

In EPA's approval letter, dated 1/23/2015, EPA approved Minnesota's Water Quality Standards for River Eutrophication, which include the causative variable Total Phosphorus and the response variables of Chlorophyll-a, Biochemical oxygen demand, diel dissolved oxygen flux, and pH. The accompanying decision document notes that "MPCA followed a process consistent with the four-step process set forth in EPA's Stressor-response Guidance to derive our eutrophication criteria," and that the response variables included were consistent with those provided in the EPA Stressor-response Guidance.

The standards, as promulgated in rule and approved by EPA, state that biochemical oxygen demand and diel dissolved oxygen flux are independent response variables. The Guidance Manual aligns with the rule and standards and includes steps to evaluate the data to ensure that waters determine to be impaired, based on any response variable, are not listed inappropriately. MPCA does not agree that the use of the biochemical oxygen demand and diel dissolved oxygen flux response variables leads to erroneous listings.

Comment 14: South Center and North Center Lakes in Chisago County meet standards and should be removed from the Impaired Waters List.

South Center Lake (13-0027-00)

Documentation of the original listing is described below.

From 2008 Assessment: "13-0027 (South Center) – TP, chlorophyll-a, and Secchi all exceeded the threshold for fully supporting aquatic recreation use and the proposed nutrient criteria (55 µg/L, 48.5 µg/L, and 1.1 m, respectively). A DNR fishery survey was completed in 2005 and lake maps are available online. Based on the assessed data the lake should be listed."

The original listing data compared to data collected after implementation of BMPs beginning in 2010 is displayed in Table 1.

Table 1. Lake Eutrophication Standards

Ecoregion	TP	Chl-a	Secchi
	µg/L	µg/L	meters
NCHF – Trophic State Thresholds for impairment (pre-2010 cycle)	< 45	< 18	> 1.1
NCHF – Aquatic Rec. Use (Class 2B)	<40	< 14	> 1.4
1994-2005 South Center Data (Original Listing Dataset)	55	48.5	1.1
2011-2019 South Center Data	32	21	1.6

After listing South Center Lake as impaired, BMP activities to improve water quality were conducted as described below:

"Since 2010, there have been hundreds of water quality Best Management Practices installed throughout the watershed on both the urban and rural sectors. These BMPs have collectively reduced hundreds of pounds of phosphorus from reaching the lakes within the Chisago Lakes Chain of Lakes Watershed. South Center Lake is at the "top" of the watershed and the targeting efforts have been on this side of the watershed directly affecting South Center Lake. BMP projects include: iron enhanced sand filters, water and sediment control basins, rain gardens, vegetated swales, grassed waterways, etc."

From 2011 Assessment: "Current data agrees with existing impairment."

From 2018 Assessment: South Center Lake has been monitored intensively over the past 10 years, since the original listing in 2008. The data shows a gradual shift from an impaired state because of BMPs implemented in the watershed beginning in 2010. By 2013, TP concentrations met the lake eutrophication standard and have continued to meet though 2017. The response variable Chl-a has shown improvements since implementation of BMPs and has a slight decreasing trend. However, Chl-a concentration have remained above the standard. Annual Secchi transparency means are at or greater than the 1.4m standard. Slight fluctuations occur on an annual basis but do not indicate degrading water quality. A summary of annual water quality for the past 10-year assessment window is displayed in Table 2 for South Center Lake. Chisago County collects water quality data annually on South Center and new data from 2018 and 2019 would be available prior to delisting on the 2020 impaired waters list. Discussions with Casey Thiel (Chisago SWCD), Chris Klucas (MPCA Project Manager), Rachel Olmanson (MPCA Project Manager), and Barb Peichel (BWSR) agree that another year of data could provide additional evidence that South Center is meeting water quality standards.

2020 Response to Public Comment

South Center does not exhibit a trend; the water quality based on Secchi is holding steady. Long-term phosphorus average meets the criteria and long term Secchi meets the criteria. Chlorophyll-a does exceed the standard. Phosphorus concentrations and Secchi transparency have met the standard since 2013. Guidance allows for total phosphorus and a single response variable to meet in order to delist the waterbody. BMPs have yielded improvements in all parameters since the original listing. Ongoing work continues in the watershed through the Chisago Lakes Lake Improvement District and Chisago County through the Lake Improvement District Water Resource Management Plan. MPCA recommends that South Center Lake be removed from the 2020 Impaired Waters List.

Table 2. South Center Lake Annual Water Quality Statistics.

Year	TP	SE (+/-)	Chl-a	SE (+/-)	Secchi	SE (+/-)
2008	**39.4**	4.0	**18.8**	6.7	**1.6**	0.5
2009	One Data Point					
2010	One Data Point					
2011	**46.3**	5.9	**24.9**	5.9	**1.0**	0.1
2012	**44.3**	4.3	**44.0**	10.7	**0.7**	0.3
2013	**27.1**	3.4	**19.5**	4.1	**1.6**	0.4
2014	**38.3**	2.3	**14.5**	3.3	**1.2**	0.1
2015	**22.8**	1.8	**20.5**	3.9	**1.7**	0.3
2016	**25.8**	1.9	**18.3**	3.6	**1.9**	0.3
2017	**32.3**	2.8	**22.6**	4.6	**1.4**	0.2
2018	**25**	4.3	**12.1**	2.9	**2.3**	0.2
2019	**36.5**	3.4	**16.8**	4.0	**1.6**	0.4

North Center Lake (13-0032-01)

Documentation of the original listing is described below.

From 2008 Assessment: "13-0032-01 (North Center) – TP, chlorophyll-a, and Secchi greatly exceed the current listing thresholds and the proposed nutrient criteria (67 µg/L, 60.2 µg/L, and 0.9 m, respectively). A DNR fishery survey was completed in 2005; results and lake maps are available online. Based on the assessed data the lake should be listed."

The original listing data compared to data collected after implementation of BMPs beginning in 2010 is displayed in Table 1.

Table 1. Lake Eutrophication Standards

Ecoregion	TP	Chl-a	Secchi
	µg/L	µg/L	meters
NCHF – Trophic State Thresholds for impairment (pre-2010 cycle)	< 45	< 18	> 1.1
NCHF – Aquatic Rec. Use (Class 2B) shallow lakes	<60	< 20	> 1.0
1994-2005 South Center Data (Original Listing Dataset)	67	60.2	0.9
2011-2019 South Center Data	57	29	1.4
2013-2019 South Center Data	46	21	1.3

After listing North Center Lake as impaired, BMP activities to improve water quality were conducted as described below:

"Since 2010, there have been hundreds of water quality Best Management Practices installed throughout the watershed on both the urban and rural sectors. These BMPs have collectively reduced hundreds of pounds of phosphorus from reaching the lakes within the Chisago Lakes Chain of Lakes Watershed. North Center Lake is at the "top" of the watershed and the targeting efforts have been on this side of the watershed directly affecting North Center Lake. BMP projects include: iron enhanced sand filters, water and sediment control basins, rain gardens, vegetated swales, grassed waterways, etc."

From 2011 Assessment: "Current data agrees with existing impairment."

From 2018 Assessment: North Center Lake has been monitored intensively over the past 10 years, since the original listing in 2008. The data shows a gradual shift from an impaired state because of BMPs implemented in the watershed beginning in 2010. By 2013, TP concentrations met the lake eutrophication standard and have continued to meet though 2017. The response variable Chl-a has shown improvements since implementation of BMPs. However, Chl-a concentration have remained above the standard. Annual Secchi transparency means are at or greater than the 1.4m standard. Slight fluctuations occur on an annual basis but do not indicate degrading water quality. A summary of annual water quality for the past 10-year assessment window is displayed in Table 2 for North Center Lake. Chisago County collects water quality data annually on North Center and new data from 2018 and 2019 would be available prior to delisting on the 2020 impaired waters list. Discussions with Casey Thiel (Chisago SWCD), Chris Klucas (MPCA Project Manager), Rachel Olmanson (MPCA Project Manager), and Barb Peichel (BWSR) agree that another year of data could provide additional evidence that North Center is meeting water quality standards.

2020 Response to Public Comment:

Since 2013, phosphorus and Secchi transparency have meet thresholds for shallow lakes in the ecoregion. There is a statistically significant improving trend in Secchi transparency, indicating improving conditions present on the lake. Chlorophyll-a conditions have improved since the original listing; however, concentrations still exceed the standard. Guidance allows for total phosphorus and a single response variable to meet in order to delist the waterbody. BMPs have yielded improvements in all parameters since the original listing. Ongoing work continues in the watershed through the Chisago Lakes Lake Improvement District and Chisago County through the Lake Improvement District Water Resource Management Plan. MPCA recommends that South Center Lake be removed from the 2020 Impaired Waters List.

Table 2. North Center Lake Annual Water Quality Statistics.

Year	TP	SE (+/-)	Chl-a	SE (+/-)	Secchi	SE (+/-)
2008					**1.2**	0.3
2009	**81.4**	10.0	**48.7**	16.8	**1.0**	0.2
2010	**69.5**	5.6	**28.8**	5.1	**1.1**	0.1
2011	**59.1**	1.9	**26.1**	3.9	**1.0**	0.1
2012	**63.6**	4.9	**48.9**	11.5	**1.0**	0.1
2013	**45.1**	1.8	**17.8**	4.8	**1.2**	0.1
2014	**52.4**	2.1	**16.1**	5.6	**1.5**	0.3
2015	**48.9**	5.4	**28.9**	6.7	**1.0**	0.1
2016	**44.9**	4.0	**20.5**	2.2	**1.2**	0.1
2017	**51.4**	9.5	**25.8**	8.3	**1.2**	0.4
2018	**35.8**	5.0	**23.6**	11.1	**1.6**	0.3
2019	**43.3**	5.0	**15.1**	6.4	**1.4**	0.3

Comment 15: The timeline for addressing mercury impairments still on the TMDL List is unacceptably prolonged; MPCA does not have a plan to address these; MPCA needs to make these a priority; MPCA needs to resume the St. Louis River watershed mercury TMDL.

The MPCA agrees that that there is a need for additional research; mercury in the environment is a complex issue. MPCA continues to conduct and support research to better understand the watershed processes that convert inorganic mercury to methylmercury.

With that said, the MPCA has renewed efforts to complete mercury impairments in the St. Louis River and Cloquet River Watersheds. The timing of this renewed effort will build upon completion of the St. Louis River and pending approval of the Cloquet River WRAPS, and will be coordinated with the WRAPS update for the St. Louis River. Also in development is the St. Louis River One Watershed, One Plan (1W1P), which began in summer 2020 and encompasses the St. Louis River and Cloquet River Watersheds. So, as a general rule future mercury TMDLs will be completed in a process separate from WRAPS. For the TMDLs in the St. Louis River & Cloquet River Watersheds, this process will capitalize on ongoing planning efforts, including the St. Louis River WRAPS to the extent practical.

The MPCA will be providing more details about the plan for these TMDLS over the next few months, including via web pages and at the annual mercury TMDL stakeholder meeting. The WRAPS report will be updated with current information about that plan before being finalized.

Comment 16: Faille Lake (77-0195-00) original nutrient listing was in error.

MPCA does not agree with the commenter that the original listing of Faille Lake was in error. The original lake listing occurred on the 2006 Impaired Waters List. Data supporting the 2006 listing was complete and accurate. Data used met the criteria as those criteria are described in MPCA's *Guidance Manual For Assessing the Quality of Minnesota Surface Waters for the Determination of Impairment 305(b) Report and 303(d) List*, October 2005, doc. wq-iw104d. Data used showed total phosphorus of 166 ug/L, chlorophyll-a of 22.5 ug/L, and 1.1 meters Secchi clarity. The listing was consistent with the narrative rules in place in 2006 (Minn Rules 7050.0150, subp. 3), and with the water quality thresholds in place at that time (Minn. Rules 7050.0150, subp. 5). The thresholds at the time of the 2006 listing were total phosphorus less than 45 ug/L, chlorophyll-a less than 18 ug/L, and/or Secchi greater than 1.1 meters. The data met minimum data requirements (count and parameter) and exceeded the thresholds in place to support the narrative standard.

MPCA does not agree with the commenter that restoration activities did not contribute to the reduction of total phosphorus in Faille Lake. Improvements in nutrients and clarity coincided with changes to the operation of the Osakis wastewater treatment facility resulting in reductions of total phosphorus discharges such that the facility met or nearly met its final limit of 121 kg/year for total phosphorus. Facility operational improvements are the only changes observed in the watershed.

Comment 17: Questions about the assessment of Long Lake Creek, 04010201-A25.

Question 1 – Timeliness: Is it still appropriate for MPCA to propose the 303(d) listing and subsequent development of a TMDL based on data from a single sampling event from over ten years ago?

Response: The benthic macroinvertebrate impairment decision from AUID 04010201-A25 is appropriate given the poor macroinvertebrate index of biological integrity (M-IBI) score from 09LS083. MPCA Guidance (*Guidance Manual for Assessing Quality of Minnesota Surface Water for Determination of Impairment: 305(b) Report and 3030(d) List*) states that, "*a stream reach or lake is considered to be not supporting if: IBI scores for at least one biological assemblage indicate impairment."* As stated in section A (only biological indicator data available) of the "Data requirements and determination of impaired condition" section of the guidance manual, "*a not supporting decision may be reached when all fish and/or invertebrate IBI scores fall below the lower 90% confidence limit. A not supporting determination does not require agreement between the indicator assemblages; one assemblage indicating severe impairment is sufficient for a not supporting determination."* The macroinvertebrate index of biological integrity score (M-IBI) from 09LS083 is 28.2; the general use threshold for Northern Forest Glide-Pool Streams is 51, with a confidence interval of ± 13.6. The M-IBI score is 9.2 points below the lower confidence limit indicating severe impairment.

Regarding the data being almost ten years old at time of assessment, the MPCA uses a ten-year assessment window. The Watershed Assessment Team's (WAT) comment from 03/19/2019 notes that this stream was opted-in to the 2019 surface water assessment process to evaluate data from Cycle 1 of the Watershed Approach now that tiered aquatic life uses (TALU) have been adopted in rule. At the time of the Cycle 1 assessment of the St. Louis River Watershed (2011), biological indicators were not used to evaluate aquatic life use support of channelized streams. This policy recognized that a TALU framework was needed to accurately assess some channelized waterbodies, and that such a framework was in development and would be implemented before most Cycle 1 data became more than ten years old. Opt-in assessments of Cycle 1 biological data are the means by which MPCA is completing a statewide evaluation of water quality for Cycle 1 of the Watershed Approach. In the case of Long Lake Creek (04010202-A25), a use attainability analysis (UAA) determined that habitat is not limiting the biology and therefore a general warm water use designation is appropriate. Had this data been assessed in 2011 during the Cycle 1 assessment of the St. Louis River Watershed, the outcome would have been the same.

Question 2 – Representativeness: Mr. Beranek (Cleveland-Cliffs Inc.) has expressed concern with the sampling location, indicating that the sampling location is not representative of the entirety of Long Lake Creek and that sedimentation may be the primary cause of the low M-IBI score. Mr. Beranek suggests that the sampling site is located in a farm field where cattle are "allowed to freely roam and cross the stream at multiple sites."

Response: MPCA's biomonitoring program utilized a systematic site selection methodology during Cycle 1 of the Watershed Approach. All minor watersheds (HUC-14) greater than 10 square miles were sampled at the lowest accessible point in the watershed. Proximity to large streams was also a factor in selection of a site location; if one stream enters another stream/river more than 2 Strahler stream orders larger, the station should be placed at least 1 river mile upstream of the confluence. The MPCA's monitoring station on Long Lake Creek (09LS083) is approximately 1.5 miles upstream of the confluence with the St. Louis River, and approximately 1 river mile downstream of Long Lake (69-0653-00), consistent with site selection protocols.

Regarding cattle access to the creek, neither fish nor aquatic macroinvertebrate monitoring crews that visited 09LS083 in 2009 noted stressors associated with cattle access. The "Surrounding Land Use" and "Riparian Zone" components of the Minnesota Stream Habitat Assessment (MSHA) indicate an extensive (>100m) riparian zone composed of forest, wetland, prairie, or shrubs. The overall MSHA score is 56 which may be narratively characterized as "good." Observations from the aquatic macroinvertebrate visit (08/18/2009) suggest the site is within an inactive and recovering pasture. At this time we do not know the stressor(s) that may be contributing to the aquatic invertebrate impairment. A stressor identification may be completed within the next few years.

Question 3 – Appropriateness: Mr. Beranek is inquiring as to whether or not the 303(d) listing of Long Lake Creek (04010201-A25) for aquatic life will result in more stringent effluent limitations.

A 303(d) listing, alone, does not require MPCA to make a limit determination. But the underlying data, from which the impaired waters determination was made, may inform the critical effluent limit review test, referred to as reasonable potential. Federal NPDES regulations require that effluent limits be included in permits where discharges are found to have the reasonable potential to cause or contribution to an exceedance of a state water quality standard (40 CFR 122.44(d)). The 303(d) impaired waters list prompts development of a total maximum daily load (TMDL), which in turn, may contain wasteload allocations (WLAs) for permitted wastewater dischargers. Effluent limits must be consistent with the assumptions of a TMDL WLA, but TMDL WLAs do not, in all circumstances, result in new effluent limits (40 CFR 130.7). The critical test is whether the discharger is found to have reasonable potential to cause or contribute to an exceedance of a state water quality standard.

In this circumstance, with an impairment listing based on biological data, a stressor identification study would need to be completed to determine the pollutant specific or habitat factor(s) responsible for the low IBI score. If the issue is attributed to a pollutant parameter, a TMDL study would then be completed to determine the pollutant-specific reduction necessary to restore the water. This reduction may be reflected in load and/or WLAs. An effluent limit could be derived from this wasteload allocation, only if the discharge is also found to have the reasonable potential to cause or contribute to the exceedance of the standard, as translated through the TMDL process.

Comment 18: Comments regarding assessment methodology for IBIs in the 2020 *Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment 305(b) Report and 303(d) List.*

Question 1: How should the resulting M-IBI (Macroinvertebrate – Index of Biological Integrity) and F-IBI (Fish – Index of Biological Integrity) scores be handled when multiple scores are calculating in the same watercourse?

1a: Should all M-IBI scores (all stations, all years) be averaged together for that watercourse?

1b: Should the median M-IBI score be used when comparing to M-IBI biocriteria thresholds?

Response: This response will cover both questions (1A & 1B). As part of the water quality assessment process, MPCA staff review all M-IBI scores within a given assessment unit. When multiple index of biological integrity (IBI) scores are available from an assessment unit, and are within the 10 year assessment window, each score should be considered individually. Individual sample characteristics (year/location of data collection, conditions during data collection, etc.) need to be evaluated and factored into the decision-making process when making an overall parameter-level assessment for each biological indicator. While an average or median IBI score is not computed or compared to the impairment threshold to determine its status, multiple scores are considered together to get a sense of the general condition of the stream. For instance, if a stream has IBI scores greatly surpassing criteria in two years, but is slightly failing in another, then we typically would not deem that stream impaired for biology. Again, additional considerations regarding the representativeness of each score also factors into that decision.

Question 2: Mr. Sutherland (U.S. Steel Corp.) would like the presentation of a hypothetical example in the guidance document such as a watercourse (*a northern headwater stream, for example*) that has multiple biological survey stations and has been surveyed for benthic macroinvertebrates and fish for multiple years.

Response: Here is a dataset that was used in aquatic life assessments from the Lake of the Woods Watershed (09030009 | Rainy River Basin) for the East Branch of the Warroad River (09030009-504).

There are multiple invertebrate samples from multiple stations, invertebrate classes (Class 3 = Northern Forest Streams RR (05RN115 & 12RN010) | Class 4 = Northern Forest Streams GP (10EM017)).

WID	FieldNum	WBName	VisitYear	InvertClass	MIBI	Biocriteria
09030009-504	05RN115	Warroad River, East Branch	2005	3	50.62	53
09030009-504	05RN115	Warroad River, East Branch	2014	3	52.14	53
09030009-504	10EM017	Warroad River, East Branch	2010	4	40.96	51
09030009-504	10EM017	Warroad River, East Branch	2012	4	44.33	51
09030009-504	12RN010	Warroad River, East Branch	2012	3	50.54	53
09030009-504	12RN010	Warroad River, East Branch	2012	3	55.94	53

There are multiple fish samples from multiple stations, fish classes (Class 6 = Northern Headwaters (10EM017 & 12RN010) | Class 7 = Low Gradient Streams (05RN115)).

WID	FieldNum	WBName	VisitYear	FishClass	FIBI	Biocriteria
09030009-504	05RN115	Warroad River, East Branch	2005	7	86.22	53
09030009-504	05RN115	Warroad River, East Branch	2014	7	86.77	53
09030009-504	10EM017	Warroad River, East Branch	2010	6	72.82	51
09030009-504	10EM017	Warroad River, East Branch	2012	6	58.21	51
09030009-504	12RN010	Warroad River, East Branch	2012	6	48.90	53
09030009-504	12RN010	Warroad River, East Branch	2012	6	56.89	53

These data lead to an aquatic life use impairment based on the results of the benthic macroinvertebrate bioassessment. Given the current level of detail in guidance manual (*2020 Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment 305(b) Report and 303(d) List (wq-iw1-04k)*) we do not feel it would be appropriate to present such an example in that publication.

<u>Question 3</u>: Mr. Sutherland would like the M-IBI stream groups to account for the same watercourse having the potential for both Riffle/Run and Glide/Pool reaches.

<u>Response</u>: We account for streams having multiple macroinvertebrate index of biological integrity (M-IBI) classes by evaluating each sample reach individually and that the same watercourse could have stations along it that vary between these two M-IBI classes and are assessed accordingly.

<u>Question 4</u>: Mr. Sutherland would like a citation to a publication that includes the 90% upper and lower confidence interval data for M-IBI and F-IBI score benchmarks.

<u>Response</u>: The table below is being added to Appendix F of the *2020 Guidance Manual for Assessing the Quality of Minnesota Surface Waters for Determination of Impairment 305(b) Report and 303(d) List* that is posted on our web site.

	Class	Class Name	Use Class	General (g) Use IBI Threshold	Exceptional (e) Use IBI Threshold	Modified (m) Use IBI Threshold	90% Confidence Limit (±)
Fish IBI Classes	1	Southern Rivers	2B	49	71		11
	2	Southern Streams	2B	50	66	35	9
	3	Southern Headwaters	2B	55	74	33	7
	4	Northern Rivers	2B	38	67		9
	5	Northern Streams	2B	47	61	35	9
	6	Northern Headwaters	2B	42	68	23	16
	7	Low Gradient	2B	42	70	15	10
	10	Southern Coldwater	2A	50	82		13
	11	Northern Coldwater	2A	35	60		10
Macroinvertebrate IBI Classes	1	Northern Forest Rivers	2B	49	77		10.8
	2	Prairie Forest Rivers	2B	31	63		10.8
	3	Northern Forest Streams RR	2B	53	82		12.6
	4	Northern Forest Streams GP	2B	51	76	37	13.6
	5	Southern Streams RR	2B	37	62	24	12.6
	6	Southern Forest Streams GP	2B	43	66	30	13.6
	7	Prairie Streams GP	2B	41	69	22	13.6
	8	Northern Coldwater	2A	32	52		12.4
	9	Southern Coldwater	2A	43	72		13.8