1. Comments about the beneficial use
   1.1 The beneficial use should be expanded
   1.2 Wild rice should be a Class 2 beneficial use
   1.3 The beneficial use should not be limited to the use of the grain by humans and wildlife. (addressed under 1.1)
   1.4 The use as a food for wildlife is undefined
   1.5 Issues with 11/28/75 as the existing use
   1.6 Issues regarding the need for a use attainability analysis (UAA)
   1.7 Issues regarding a Use and Value Demonstration

2. Comments about sulfate and porewater sulfide
   2.1 Sulfate does not affect wild rice
   2.2 Comments regarding the research by Fort (FEL) Labs
   2.3 Stressors other than sulfate affect wild rice (climate change, water levels, invasive species, etc.)
   2.4 The proposed 120 microgram/L standard is incorrect/comparison to other sulfate levels (e.g. drinking water)
   2.5 Comments regarding the MPCA’s research on porewater sulfide (also addressed under Topic 3 and 4)
   2.6 Comments regarding the MPCA’s use of field data
   2.7 Dataset issues
   2.8 Comments regarding the difficulty of measuring sulfide/porewater

3. Comments about the equation
   3.1 Support for the existing 10 mg/L standard
   3.2 Support for a single standard instead of an equation
   3.3 Issues regarding an aspect of the equation (e.g. carbon and iron issues, the factors, etc...)
   3.4 Comments that the use of an equation is unproven/inconvenient/unreliable
   3.5 The use of $E_{10}$
   3.6 Comments that the equation assumes steady state in a water body
   3.7 Ground water issues
   3.8 Long-term effectiveness of the calculated sulfide levels
   3.9 Error rates
   3.10 Effect of sulfate on different parts of the wild rice plant

4. Comments about the MPCA’s research and data analysis
   4.1 Issues with the research basis for the standard
   4.2 Issues with peer review
   4.3 Issues with the MPCA’s data analysis/statistical procedures
   4.4 Issues with the structural equation model (SEM)

5. Comments stating that the standard is not protective of wild rice

6. Comments about the Alternate Standard

7. Comments about the Site-Specific Standard

8. Comments about the narrative standard
   8.1 Requests to apply the existing narrative standard to all wild rice waters
8.2 Issues with the MPCA’s interpretation of the narrative standard and the history of the narrative standard
8.3 Issues with how the narrative standard is phrased/deficiencies in the narrative standard
8.4 Requests to change the existing narrative standard to identify many factors that affect wild rice (addressed under Topic 2.3)

9. **Comments about the use of a Water Identification Number (WID)**
9.1 Issues with the use of a WID as the identifying unit
9.2 Comments relating to the variability of conditions within a WID
9.3 Issues about the relationship of downstream wild rice to upstream conditions in a WID

10. **Comments about the identification of wild rice waters**
10.1 Issues with the source materials - MPCA did not identify sufficient waters as wild rice waters
10.2 Issues about consistency of identifying wild rice waters
10.3 Issues about using two acres as a listing factor
10.4 Requests to eliminate listing criteria (e.g. single stem constitutes wild rice water)

11. **Comments about specific waters that are/are not proposed as wild rice waters**
11.1 Comments about identifying waters within tribal boundaries

12. **Comments about cultivated wild rice**

13. **Comments about the requirements for the future listing of wild rice waters**

14. **Comments about enforcement of the standard**
14.1 Enforcement will not happen until the standard is calculated
14.2 MPCA’s past enforcement history
14.3 The existing standard should remain in effect statewide until a revised standard is calculated for each wild rice water

15. **Comments about implementation of the standard**
15.1 Implementation of an equation is too complicated
15.2 Issues with the use of the 365 Q_{10}
15.3 Issues with the application of the annual average
15.4 Issues with the proposed duration/frequency

16. **Comments about the Sampling Procedures and Analytical Methods**
16.1 Issues with sediment sampling
16.2 Issues with the analytical methods

17. **Comments about "no effluent limit required" in 7053.0406**

18. **Comments about variances**
18.1 Variances should not be allowed
18.2 Cost of preparing a variance
18.3 Waiver of the variance fee
18.4 Incorporation by reference of the EPA Interim Economic Guidance
Attachment 3 – Topic List

19. Comments about costs
   19.1 Mining company responsibilities
   19.2 Costs associated with the existing standard
   19.3 Costs associated with the proposed standard
   19.4 Comments relating to the completing of the LCCMR report on sulfate treatment

20. Comments about political influences in the rule development process
   20.1 Concerns about influences on the future listing of wild rice waters/sulfate standard levels/effluent limits and variances
   20.2 Political basis for the rulemaking/revision of the existing standard

21. Comments about cultural aspects of wild rice

22. Comments about the historic range of wild rice

23. Comments about Native American issues/treaty rights

24. Comments about mining/Polymet

25. Comments about the application of “sound science”

26. Comments about antidegradation

27. Comments about iron plaque formation

28. Comments about mercury and the relationship of mercury and sulfate (mercury methylation)

29. Comments about the relationship of nutrient pollution to sulfate

30. Comments about genetic diversity of wild rice

31. Comments about procedural issues
   31.1 Issues with inadequate notice
   31.2 Issues with MPCA responsiveness to comments
   31.3 Issues with the rulemaking hearings
   31.4 Issues with the requirement of Minn. Stat. §15.035 requiring peer review
   31.5 Issues with statutory requirements for cost analysis
   31.6 Issues with tribal consultations

32. Comments about the legislative requirements specific to wild rice

33. Comments supporting the proposed rules
   33.1 The 10 mg/L standard is not valid and should be repealed

34. Comments suggesting alternatives/rule changes

35. Comments that are out of scope
36. Comments about reverse osmosis/sulfate treatment

37. Comments stating that the proposed rules will not improve wild rice growth

38. Comments stating that wild rice is/is not in decline

39. Comments about the restoration of wild rice
Office of Administrative Hearings  
P.O. Box 64620  
Saint Paul, MN 55164-0620

RE: Docket 80-90030-34519

Dear Minnesota Pollution Control Agency (MPCA):

I am writing today to urge you to carefully review all the facts and the consequences before making any decision on a sulfate water quality standard.

The MPCA’s rulemaking should be science-based and inclusive of all available research. Failure to adjust the current standard to be reasonable and science-based will result in devastating financial impacts to cities and businesses throughout the state, and would result in major job losses on the Iron Range.

I support protecting wild rice. However, the proposed rule is not proven to be effective in protecting wild rice. An effective standard should use sound science that considers all of the environmental impacts to wild rice, such as water depth, water clarity, fluctuations in hydrology, invasive species, and shoreline development to determine appropriate sulfate levels.

Thousands of Iron Range residents and their families are counting on the MPCA to do the right thing and establish a water quality standard that is based on modern science. We are also counting on the MPCA to seriously reconsider its proposal to require our communities and important industries to spend hundreds of millions of dollars on wastewater treatment that might not have any significant impact on wild rice in northeast Minnesota.

Thank you for accepting my comments. Our community is counting on the MPCA to listen to us before making a final decision. There is too much at stake to get this wrong.

Sincerely,

Shelly Dincau

Full name (please print)
Office of Administrative Hearings  
P.O. Box 64620  
Saint Paul, MN 55164-0620  

RE: Docket 80-90030-34519  

To whom it may concern:  

I am a dedicated employee of Cleveland Cliffs, which employs over 1,700 people in Northeastern Minnesota, and am writing with concerns about the state’s proposed sulfate water quality standard.  

In 1973, the MPCA enacted a wild rice sulfate standard based on research from the 1940s with the goal of protecting wild rice. Today – nearly 45 years later – new research that applied modern experimental and analytical techniques has shown that sulfate in and of itself is not harmful to wild rice. Instead, the MPCA suggests that sulfide may have an effect on wild rice. However, instead of using this knowledge to conduct further research to understand how and to what extent sulfide may impact wild rice growth, the MPCA has moved forward with a draft wild rice sulfate standard based on an inaccurate equation to derive a sulfate water quality standard. This rule could financially devastate my community and has not been proven to protect wild rice.  

I believe wild rice is an important crop, and I want to maintain its vitality. However, this proposed standard does not appear to accomplish that goal. At a March 2017 meeting in Northeast Minnesota, an MPCA official was asked if the new standard and the investments made to comply with the standard would result in more abundant rice. The MPCA official said that based on the research there may be no benefit to the wild rice species. In fact, according to the Minnesota Cultivated Wild Rice Council, the crop is currently plentiful and our state is one of the world’s largest producers of cultivated wild rice, producing 5-10 million pounds annually. Nonetheless, the MPCA is moving forward with this misguided standard.  

According to the MPCA, the only viable treatment option to meet the proposed standard is reverse osmosis. Reverse osmosis is costly to install and maintain. If the standard is implemented, many businesses, communities, and families will have to cover the cost. I understand it may increase household sewer and water bills in some communities by nearly five times the current cost. This cost is burdensome and unacceptable given that the proposed standard has not been scientifically proven to protect wild rice.  

Our strongest industry in Northeast Minnesota is iron ore mining. For more than 130 years, this industry has worked in collaboration with many of our communities to build and grow the region. The proposed rule is predicted to cost over $1 billion in water treatment costs, a large portion of which would be borne by taconite mines. This is an investment that could alternatively be made to advance job growth and innovative new projects that will bring the industry to a brighter future. This cost could affect the mines’ ability to stay open, and in turn, could affect my job and the health of my community.
The Minnesota State Legislature is aware of these costs and granted the MPCA an extension on publishing the standard in order to complete an economic impact analysis. Instead, the agency chose to publish the rule before completing the study that would inform regulated entities the true cost of implementing the rule.

For these reasons, I respectfully ask the Administrative Law Judge to return the MPCA’s proposed rule; ask the agency to incorporate available sulfide science that applies good research practices and adopt the recommendations by the highly-respected scientific research firm, Ramboll ENVIRON. MPCA’s adoption of their findings will reduce the error rate of the sulfate equation to 4% and address scientific shortcomings identified by Fort Environmental Labs (FEL) and MPCA’s peer review panel. The two Ramboll ENVIRON recommendations are:

a. To increase the toxic sulfide threshold based on evidence from the MPCA and FEL research, and
b. To adjust the waterbodies included in the dataset used to develop the equation to only include those that are recommended as draft wild rice waters.

Your consideration of these two recommendations will improve the proposed rule and ensure longevity for the iron ore mines of Minnesota which help me provide for my family.

Sincerely,

Robert Pearson
2717 5th Ave E
Hibbing, MN 55746
Mail to:

Office of Administrative Hearings
P.O. Box 64620
Saint Paul, MN 55164-0620

RE: Wild Rice / Sulfate Water Standard (Docket 80-90030-34519)

Date:

To Whom It May Concern:

I am an employee of United States Steel and a member of United Steelworkers Union. I am writing to you with my concerns on the above referenced Wild Rice Water Standard.

It is my understanding that the Minnesota Pollution Control Agency (MPCA) is proposing changes to the 1973 sulfate standard of 10 mg/L - a standard based on field observations in the 1930s and 1940s and rarely applied in Minnesota. Minnesota is also the only state with a wild rice standard, although other states have wild rice. MPCA’s initial position was that sulfate was the cause of wild rice decline. However, further testing and analysis conducted by researchers for MPCA demonstrated that sulfate, in and of itself, does not impact wild rice. Therefore, a sulfate standard is unnecessary.

MPCA now suggests that sulfate may impede wild rice growth by converting to sulfide in low-oxygen conditions in the sediment. However, the laboratory conditions researchers simulated do not occur in nature. The part of the plant affected by sulfide in the lab was not in the sediment, but in the surface water. In nature, that surface water has enough oxygen that sulfide does not exist. When the research was repeated by Fort Environmental Labs using the MPCA’s Peer Review Panel recommendations the sulfide level of concern was in fact much higher than MPCA’s proposal of 120 ug/L, with no effect below 1,600 ug/L, and minimal effect up to 12,800 ug/L. This additional study, which was Peer Reviewed and rigorously evaluated before being published, is not being given proper weight in the proposed rule. Moreover, the current proposal does not account for impacts from other known wild rice stressors – such as water depth, water clarity, fluctuations in hydrology, invasive species, shoreland development, etc. The MPCA acknowledges these other stressors have an impact, but says that they lack the resources to evaluate them. It is irresponsible to propose a regulation where the agency selectively determines what to include in the analysis.

This proposed rule is a very serious matter for those of us who live and work on the Iron Range. Our families and communities rely on iron mining and all the related businesses and jobs. We also cherish and protect our environment, including wild rice. Based on the research a sulfate standard is not necessary and compliance costs would be staggering. However, if a standard is promulgated, at a minimum it needs to be based on the sulfide work by Fort Environmental Labs. The draft rule as proposed runs a risk of serious consequences for thousands of hardworking Steelworkers and their families, as well as, the future of mining on the Iron Range, and our communities without a clear benefit to wild rice. Please consider the future of my family and the Iron Range.

Sincerely,

(Name) Michael Dee
(Place) 408 S. 10th Ave
(Address) Virginia, MN
(Postal Code) 55792
ON WILD RICE & WATER QUALITY:
WE MUST GET THIS RIGHT.

A better way to preserve wild rice and Northeast Minnesota’s economy:
Use sound science.

Visit www.taconite.org/call2action for more information.

RE: Docket 80-90030-34519

I believe wild rice is an important crop. However, the proposed wild rice sulfate rule will not protect or enhance wild rice. What is clear is that the proposed standard could financially devastate my community, and the industries we rely on to make a living.

This proposal was not put forth using sound science. In 1973, the MPCA enacted a wild rice sulfate standard based on research from the 1940s. Today, 80 years later, new research using modern techniques shows that sulfate in and of itself is not harmful to wild rice. Instead, the MPCA suggests that sulfide may have an effect on wild rice. Despite this change, the MPCA has moved forward with a draft wild rice sulfate standard based on an inaccurate equation.

The proposed rule could cost Northern Minnesota’s municipal wastewater facilities AND Minnesota’s iron mining facilities billions of dollars to comply. This standard will increase municipal water bills exponentially and could close Minnesota’s iron mines.

Despite knowledge of these potential costs, the MPCA chose to publish their draft rule BEFORE completing an economic impact analysis to determine the true cost of compliance for Northeast Minnesota residents and businesses.

The proposed standard predicts the wrong outcome up to one in five times and would be incredibly burdensome to achieve compliance.

For these reasons, I respectfully ask that the Administrative Law Judge reject the MPCA’s proposed wild rice standard so Minnesotans can work together to find better wild rice conservation efforts.

Name: Christopher Knight
Address: 6538 Rehfeld Rd, Virginia, MN 55792
Dear USW Member,

The Minnesota Pollution Control Agency has proposed a wild rice sulfate standard that could have significant implications for Cleveland Cliffs’ operations, if approved into law.

The standard is currently in the rule-making phase, which means you have the ability to take action by submitting a comment to the Office of Administrative Hearings. Below you will find more details about the proposed rule, why it’s unacceptable in its current form and how it could impact Iron Range mines and communities.

- It is uncertain if wild rice will be more abundant if the proposed rule is implemented. In a March meeting in northeastern Minnesota, an MPCA official was asked if the new standard and the investments made to comply with the standard would result in more abundant rice. The MPCA official said that based on the research there may be no benefit to the wild rice species.

- There is only one real treatment option. Reverse osmosis is the only treatment solution currently available to comply with the proposed rule. Reverse osmosis systems are costly to install and operate.

- There are dramatic costs to local communities, households, and businesses. Indianapolis complied with new wastewater treatment standards by installing a reverse osmosis system in their wastewater treatment system. This installation resulted in a water bill increase of $160/month/home.

MPCA must adopt the recommendations by the highly-respected scientific firm, Ramboll ENVIRON, to reduce the error rate of the sulfate equation to 4% and to address scientific shortcomings identified by Fort Environmental Labs (FEL) and MPCA’s peer review panel. The two recommendations are:

- To increase the toxic sulfide threshold based on evidence from the MPCA and FEL research, and
- To adjust the waterbodies included in the dataset used to develop the equation to only include those that are recommended as draft wild rice waters.

There are several form letters available on this topic, but we ask that you either sign this one, which is specific to Cleveland Cliffs or type your own letter stating your opposition to the state’s proposed wild rice sulfate rule and urge the MPCA to adopt the recommendations of Ramboll ENVIRON. There are three ways to submit comments:

- **Online** (you will need to sign in) at https://mnesota.leg.granicusideas.com/discussions
- **Mail** to the Office of Administrative Hearings, P.O. Box 64620, Saint Paul, MN 55164-0620 (Docket 80-90030-34519). There are also stamped envelopes available in the Administration Building lobby or at the Local 2705 Union Hall.
- **Deliver** in person to the Office of Administrative Hearings (600 N Robert Street, Saint Paul)

The deadline to submit comments is **November 9, 2017**. If you have any questions, please contact Julie Lucas at 218-262-6856 or Sandy Karnaowski at 218-262-7966.

Frank Jenko
President USW Local 2705
10/23/2017

Office of Administrative Hearings
P.O. Box 64620
Saint Paul, MN 55164-0620

RE: Docket 80-90030-34519

To whom it may concern:

In 1973, the MPCA enacted a wild rice sulfate standard based on research from the 1940s with the goal of protecting wild rice. Today, nearly 45 years later, new research using modern experimental and analytical techniques has shown that sulfate in and of itself is not harmful to wild rice. Instead, the MPCA suggests that sulfide may have an effect on wild rice. However, instead of using this knowledge to conduct further research to understand how and to what extent sulfide may impact wild rice growth, the MPCA has moved forward with a draft wild rice sulfate standard based on an inaccurate equation to derive a sulfate water quality standard. This rule could financially devastate my community and is not yet proven to protect wild rice.

I believe wild rice is an important crop, and I want to maintain its vitality. However, this proposed standard does not appear to accomplish that. At a March 2017 meeting in Northeast Minnesota, an MPCA official was asked if the new standard and the investments made to comply with the standard would result in more abundant rice and responded that based on the research there may be no benefit to the wild rice species. In fact, according to the Minnesota Cultivated Wild Rice Council, the crop is currently plentiful, and our state is one of the world's largest producers of cultivated wild rice, producing 5-10 million pounds annually. Nonetheless, the MPCA is moving forward with this unnecessary standard.

According to the MPCA, the only viable treatment option to meet the proposed standard is reverse osmosis. Reverse osmosis is costly to install and maintain. If the standard is implemented, many businesses, communities, and families will have to cover the cost. I understand it may increase household sewer and water bills in some communities by nearly five times the current cost. This cost is burdensome and unacceptable given that the proposed standard has not been scientifically proven to protect wild rice.

Our strongest industry in Northeast Minnesota is iron ore mining. For more than 130 years, this industry has worked in collaboration with many of our communities to build and grow the region. The proposed rule is predicted to cost over $1 billion in wastewater infrastructure. This is an investment that could alternatively be made to advance job growth and innovative new projects that will bring the industry to a brighter future. This cost would affect the mines' ability to stay open, and in turn, could affect my job and the health of my community.

The Minnesota State Legislature is aware of these costs and granted the MPCA an extension on publishing the standard in order to complete an economic impact analysis. Instead, the agency chose to publish the rule before completing the study that would inform regulated entities the true cost of implementing the rule.

For these reasons, I respectfully ask that the Administrative Law Judge reject the MPCA's proposed wild rice standard so Minnesotans can work together to find better wild rice conservation efforts.

Sincerely,

[Signature]

Tom Stender
220 Misquah Road
Duluth, MN 55804
Requests to Define “Wild Rice Waters” Broadly in rulemaking

TO: Shannon Lotthammer, Section Manager,
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

Dear Ms. Lotthammer: I appreciate the efforts of MPCA staff to uphold water quality standards that protect natural wild rice (manoomin). I understand that the Minnesota Pollution Control Agency (MPCA) is now considering an amendment of Minnesota Rule 7050.0224, the wild rice sulfate standard, to more precisely define "waters used for the production of wild rice" protected from sulfate levels above 10 mg/L. The proposed changes would both list additional specific wild rice waters where the standard applies and establish criteria that would allow application of the standard to unlisted wild rice waters. I would strongly request that the MPCA, in considering this rule change: 1) list additional lakes, streams, creeks, rivers and wetlands on which natural wild rice grows and has grown within the Lake Superior Basin and in all other Minnesota watersheds; 2) protect natural wild rice for wildlife uses and preservation of genetic diversity as well as for protecting larger and more accessible stands used for human harvest; 3) protect waters where wild rice has grown since the November 28, 1975 Clean Water Act "existing use" date and protect waters where wild rice was harvested by tribes, whose right to harvest is protected by treaties. Thank you for your commitment to protecting Minnesota’s state grain -- natural stands of wild rice.

Gail Matthews
1130 103rd ave W
Duluth, MN 55808

Dear Ms. Lotthammer: I appreciate the efforts of MPCA staff to uphold water quality standards that protect natural wild rice (manoomin). I understand that the Minnesota Pollution Control Agency (MPCA) is now considering an amendment of Minnesota Rule 7050.0224, the wild rice sulfate standard, to more precisely define "waters used for the production of wild rice" protected from sulfate levels above 10 mg/L. The proposed changes would both list additional specific wild rice waters where the standard applies and establish criteria that would allow application of the standard to unlisted wild rice waters. I would strongly request that the MPCA, in considering this rule change: 1) list additional lakes, streams, creeks, rivers and wetlands on which natural wild rice grows and has grown within the Lake Superior Basin and in all other Minnesota watersheds; 2) protect natural wild rice for wildlife uses and preservation of genetic diversity as well as for protecting larger and more accessible stands used for human harvest; 3) protect waters where wild rice has grown since the November 28, 1975 Clean Water Act "existing use" date and protect waters where wild rice was harvested by tribes, whose right to