STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of the Proposed Revision of 6 MCAR §§ 4.8014 and 4.8024 and Proposed Repeal of 6 MCAR §§ 4.8015 and 4.8025, Relating to the Standards and Classification of Waters of the State

STATEMENT OF NEED AND REASONABLENESS

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

TABLE OF CONTENTS (continued)

STATE OF MINNESOTA

COUNTY OF RAMSEY

MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of the Proposed Revision of 6 MCAR §§ 4.8014 and 4.8024 and Proposed Repeal of 6 MCAR §§ 4.8015 and 4.8025, Relating to the Standards and Classification of Waters of the State

STATEMENT OF NEED AND REASONABLENESS

I. INTRODUCTION

6 MCAR §§ 4.8014, 4.8015, 4.8024, and 4.8025 are the rules of the Minnesota Pollution Control Agency (hereinafter "Agency") that establish water quality standards and classifications and that classify all the waters in Minnesota. Generally, 6 MCAR §§ 4.8014 and 4.8024 establish standards and classify all the intrastate waters in the state and 6 MCAR § 4.8015 and 4.8025 establish standards and classify all the interstate waters in the state. The standards and classifications are essentially identical for both intrastate and interstate waters.

Minnesota's water quality rules form the foundation for the State's water quality management process. These rules define the goals for all water bodies consistent with the goal of the Clean Water Act to provide fishable-swimmable waters whenever attainable. Standards are established to protect other beneficial uses as well, such as water for drinking and industrial and agricultural use. Standards provide a measuring stick against which the Agency can assess the quality of the waters and the Agency's progress in cleaning up problem areas.

Water quality standards form the regulatory basis for water quality based treatment controls when technology based effluent limitations are not adequate to protect the receiving stream.

The subjects of this hearing are the proposed amendment of 6 MCAR §§ 4.8014 and 4.8024 and the proposed repeal of 6 MCAR §§ 4.8015 and 4.8025. (These rules are commonly referred to as WPC 14, 15, 24, and 25, and often in this Statement the rules will be referred to by their WPC numbers.) The amendments being proposed would eliminate the distinction between intrastate and interstate waters, change the use classification of certain waters, revise the nondegradation provision, change the five-day biochemical oxygen demand (BOD_5) effluent limitation from total BOD_5 to carbonaceous BOD_5, change the pH effluent limitation range from 6.5-8.5 to 6.0-9.0, and accomplish a number of minor changes and corrections.

The Agency's statutory authority to adopt water quality standards and classifications and to classify waters of the state is found in Minn. Stat. § 115.03, particularly subdivisions 1(b) and 1(c) of that statute, which authorize the Agency to make classifications of the waters of the state and to establish pollution standards, and Minn. Stat. § 115.44, which authorizes the Agency to "group the designated waters of the state into classes, and adopt classifications and standards of purity and quality therefor."

On January 24, 1984, the Minnesota Pollution Control Agency Board authorized a public hearing on proposed amendments to

6 MCAR §§ 4.8014 and 4.8024 and on the proposed repeal of 6 MCAR §§ 4.8015 and 4.8025. The hearing begins on April 23, 1984, and will be conducted by Hearing Examiner Allan Klein.

The State Revisor's Office is presently in the process of revising the existing MCAR system of rule codification. Under the new system, which will be called Minnesota Rules, all state rules will be codified under an eight digit numbering system. Under the new numbering system, 6 MCAR §§ 4.8014 and 4.8024 (intrastate waters) will be codified as Minnesota Rules Chapter 7050 and 6 MCAR §§ 4.8015 and 4.8025 (interstate waters) will be codified as Minnesota Rules Chapter 7055. Since 6 MCAR §§ 4.8015 and 4.8025 are proposed to be repealed, there will be no Minnesota Rules Chapter 7055 if the repeal takes place. Exhibit 15 compares the old numbering system with the new system. For this hearing the rules and the proposed amendments have been published in the State Register under the new numbering system, i.e., as Minnesota Rules Chapter 7050, because the new codification is scheduled to be in effect by the time these amendments are promulgated.

This statement contains the Agency's affirmative presentation of facts on the need for and reasonableness of the proposed amendments. The reasonableness of the major topic areas, specifically nondegradation, the classification changes, effluent limitation changes, and the elimination of the distinction between intra and interstate waters, are discussed separately. Other changes are discussed in the order they appear in the rules.

II. NEED FOR AMENDMENTS

The Agency has administered the water quality program under the existing rules since 1981 and many requirements have been in effect for a much longer period of time than that. The water quality standards were first adopted in 1967. It is unavoidable that periodically the rules have to be changed to reflect the present state of affairs. Technology changes, knowledge is gained, programs become obsolete, and all these indicate that rule revisions are needed.

For example, there no longer is any reason to maintain a distinction between intrastate and interstate waters. Also, present thinking is that carbonaceous BOD_5 is a better indicator of effluent quality with respect to organic matter than total BOD_5. Further, new information has been gathered on trout waters and waters that may fit the Class 7 category. In some cases, the Agency learns from its experience that certain provisions of its rules should be clarified. Here, revision of the nondegradation policy will be helpful.

The Clean Water Act requires the states to review and revise their water quality standards at least once every three years. 33 U.S.C. § 1313(c). Congress recognized that a periodic review of water quality standards was adviseable. The Agency last adopted amendments to its water quality rules in early 1981 so another review of the rules is appropriate.

On December 29, 1981, the "Municipal Wastewater Treatment Construction Grant Amendments of 1981" were enacted into law. P.L. 97-117 (Exhibit 17). Section 24 of the Amendments requires states to review and revise their water quality standards within three years of the date of enactment of the amendments, which will be December 29, 1984, or face the risk of having Title II grant funds cut off by EPA. Title II grant funds are federal monies for the construction of municipal wastewater treatment projects, so the sanction could be a severe one for states that fail to meet the deadline.

In an effort to meet the federal requirement, the Agency has over the past year or more, been reviewing its water quality standards, and for the reasons explained in this Statement, determined that the proposed revisions are warranted. In determining what revisions to propose, the Agency solicited outside opinion with a notice in the State Register to such effect on October 24, 1983. Exhibit 9. The public was asked to submit its views on proposed revisions to state water quality standards by December 2, 1983. Only one comment was received, that of Citizens for a Better Environment. Exhibit 10 The Metropolitan Waste Control Commission submitted comments on January 9, 1984. See Exhibit 11. The Agency accommodated the MWCC on one of the changes it proposed, recognized that some of the Commission's suggestions were already a part of this hearing, but determined that other more major requests by the Commission were not amendments the Agency would propose at this time.

On March 6, 1984, in response to a formal rulemaking petition from the MWCC, the MPCA Board passed a resolution declining to go to rulemaking on the MWCC's requests and more clearly specifying the scope of this hearing. A copy of the Board's March 6 resolution is in the record as Exhibit 14.

The EPA has not adopted any regulations or guidelines on just how states must solicit public opinion on proposed revisions to state water quality standards. The process followed here is similar to how Minnesota has reviewed its water quality standards in past years, with EPA approval. The MPCA staff has not received any objections from EPA on the procedures employed here. Moreover, water quality standard revision is a dynamic process. It is ongoing at all times. Just because a particular provision is not up for revision at this time does not mean that it can not be considered at a later time in another rulemaking hearing, or in another forum.

The Agency has determined the revisions to its rules that it thinks are needed at this time. These revisions will satisfy the federal requirement when they are submitted before December 29, 1984. In the section that follows the Agency discusses its reasons for proposing these revisions.

III. REASONABLENESS OF THE AMENDMENTS

This section describes the Agency's reasons for suggesting the changes in the rules the Agency is proposing to make. The major proposed changes in the rules -- nondegradation, reclassification of some waters, changes in certain effluent

limitations, elimination of intrastate/interstate distinction -- are discussed under major headings below, and then other more minor changes are discussed in the order they appear in the rules.

One general note should be mentioned here. While 6 MCAR § 4.8024 is shown in the State Register as being repealed and Minn. Rules Parts 7050.0400-7050.0480 are shown as all new material, the rule is not being changed as significantly as the repeal language might indicate. Most of 6 MCAR § 4.8024 is simply being recodified in Chapter 7050. It was easier to publish the new rule in the State Register with the new codification system as an entirely new rule. But most of the classification of state waters remains the same. Those changes in classification that are being proposed are discussed separately below.

Some formatting and editorial changes are the result of changes made by the Revisor's Office. In addition, some typographical errors in the current rules have been corrected.

A. Nondegradation Policy -- Part 7050.0180

1. Part 7050.0180 Subpart 1 -- Policy.

The Agency first adopted a nondegradation policy in 1973. See WPC 14 A.8. and WPC 15 A.8. That policy was based, as it was in other states with similar provisions in their water quality rules, on a federal nondegradation policy issued by Secretary of the Interior Stewart Udall in 1968. The federal policy is quoted below:

> Waters whose existing quality is better than the established standards as of the date on which such standards become effective will be maintained at their existing high quality. These and other waters of a State will not be lowered in quality unless and until it has been affirmatively demonstrated to the State water pollution control agency and the Department of the Interior that such change is justifiable as a result of necessary economic or social development and will not interfere with or become injurious to any assigned uses made of, or presently possible in, such water. This will require that any industrial, public or private project or development which would constitute a new source of pollution or an increased source of pollution to high quality waters will be required, as part of the initial project design, to provide the highest and best degree of waste treatment available under existing technology, and, since these are also Federal standards, these water treatment requirements will be developed cooperatively.

Exhibit 18 at p. 1. The nondegradation guidance established by EPA, 40 C.F.R. 35.1550(e) (1982), also follows the Udall declaration with the important addition of a statement on the protection of outstanding National resource waters.

The nondegradation policy provides that with high quality waters, it is not enough to just meet water quality standards; the high, natural quality of the water must be protected. The maintenance of water quality standards, non-point source controls, effluent limitations, and other discharge requirements still remains the primary means of protecting beneficial uses of surface waters in general. But there are waters for which this level of protection is not enough.

The Agency has administered a nondegradation policy for more than ten years now. The difficulties experienced with the policy are two: (1) identifying waters that are of such special or unique quality that their natural state must be protected; and (2) establishing restrictions on discharges to these waters such

that their quality is protected. The changes in the nondegradation policy proposed here are intended to address these two issues.

On November 8, 1983, the EPA promulgated a new water quality standards regulation that included new guidance on development of an antidegradation (same as nondegradation) policy by the states. 48 Fed. Reg. 51400-51413 (Exhibit 16). The new regulation will be codified as 40 C.F.R. § 131.12. The new federal regulation retains the language relating to special protection of outstanding National resource waters. 40 C.F.R. § 131.12(a)(3). Outstanding National Resource waters are defined as waters "such as waters of National and State Parks and wildlife refuges and waters of exceptional recreational or ecological significance". 40 C.F.R. § 131.12. This language was also in the old federal regulation on nondegradation. 40 C.F.R. § 35.1550(e)(2) (1982).

The Agency's proposed new nondegradation provision is in harmony with the new federal regulation. Subpart 1 merely describes the State's nondegradation policy. The following subparts more specifically implement the policy.

2. Part 7050.0180 Subpart 2 -- Definitions

There are three terms defined in this Subpart -- "outstanding resource value waters", "new discharge", and "expanded discharge" -- which are important for use in the substantive provisions of the rule. We discuss each below.

a. 7050.0180 Subpart 2A -- Outstanding Resource Value Waters

At the outset in discussing the definition of "outstanding resource value waters," it should be mentioned that the Agency just recently adopted a definition for Outstanding Resource Value Waters in 6 MCAR § 4.8034, the state's construction grant rule. All the waters included in the construction grant rule definition are included in this definition, but the definition here also includes additional waters. Although the definitions are different, the Agency does not anticipate any difficulties in administering the two rules. And it is preferable to use the phrase "outstanding resource value waters" in the nondegradation provisions of this rule, even though it is already used in WPC 34, because that is the phrase used by EPA in its nondegradation regulations. 40 C.F.R. § 131.12.

The Agency has defined outstanding resource value waters to include the following:

1. Waters in the Boundary Waters Canoe Area Wilderness
2. Waters in Voyageur's National Park
3. Waters in Department of Natural Resources (MDNR) Scientific and Natural Areas
4. State or Federal Wild, Scenic, or Recreational River Segments
5. Mississippi River from Lake Itasca to the southerly Boundary of Morrison County
6. Lake Superior
7. Unlisted Waters of Special Quality

The reason(s) for including each of these waters or groups of waters will be briefly discussed.

WATERS WITHIN THE BOUNDARY WATERS CANOE AREA WILDERNESS

The Boundary Waters Canoe Area Wilderness (BWCAW) is a one million acre forest wilderness area within the Superior National Forest. Public law 95-495 protects and maintains the area for public enjoyment (Exhibit 20). Wilderness is by definition an area that is affected primarily by the forces of nature without permanent intrusion by man. Any lingering evidence of human presence detracts from the "wilderness" quality that people seek in the BWCAW. Even the campers in the Superior National Forest auto campgrounds (outside the BWCAW) interviewed in 1968 by U.S. Forest Service staff listed wilderness and peace and quiet, and lack of crowdedness as their second and third most important reasons (fishing was first) for camping in the Superior National Forest. Exhibit 21.

Much of the surface water in the BWCAW is not only pristine because of the lack of human development but is of very high quality because of the geology of the area. The glacial till soil is very thin or absent in many areas exposing a bedrock very resistent to weathering. Thus, the watersheds contribute only small quantities of dissolved materials and nutrients to the area's lakes and streams. Because maintenance of these waters in their natural, and usually very high quality, condition is vital to the wilderness characteristics, the waters in the BWCAW are being designated as outstanding resource value waters.

The borders of the BWCAW bisect some lakes. In general, if half or more of a border lake is inside the BWCAW, it is

designated an outstanding resource value water and is specifically listed in Part 7050.0470. The current BWCAW boundaries are shown in Exhibit 19.

WATERS WITHIN VOYAGEUR'S NATIONAL PARK

Voyageur's National Park is located northwest of the BWCAW along the U.S.-Canada border east of International Falls. The Park encompasses 219,400 acres; 80,182 acres (36.5%) of which is water. The landscape of the Park is similar to the BWCAW, i.e., miles of rock-shored interconnecting waterways and deep coniferous forests. The site is along the historic route of the voyageurs. Park development will be primitive in nature to maintain the fragile resources in this natural state. As with the BWCAW the waters in this national resource are only minimally impacted by man and are of a general high quality. The waters should be maintained in their natural condition because they are a major part of what gives the Park its national significance. Therefore, the waters within Voyageur's National Park are proposed outstanding resource value waters. See Exhibit 22.

Waters within National parks and wilderness areas are exactly the kind of waters that EPA would consider to be outstanding national resource value waters. 40 C.F.R. § 131.12. Therefore, that is an additional reason to include waters within Voyageur's National Park and the Boundary Waters are outstanding resource value waters for state purposes.

WATERS WITHIN DNR SCIENTIFIC AND NATURAL AREAS

In 1969 the legislature authorized the Minnesota Department of Natural Resources to acquire lands suitable for designation as

scientific and natural areas. Minn. Laws 1969, ch. 470. Minn. Stat. § 84.033 (1982). Scientific and natural areas (SNAs) are those areas that possess exceptional scientific or educational value with respect to various natural features. See Minn. Stat. § 86A.05, subd. 5(a) and (b) (1982). To be designated each site must possess outstanding natural features of statewide significance such as unusual landforms, rare and endangered plant and animal communities, or other features of scientific and educational value. Exhibit 23. Most SNAs are only a few hundred acres in size and many consist of tracks of virgin prairie or forests with no surface waters. The DNR is to manage these areas to preserve, perpetuate, and protect from unnatural influences the scientific and educational resources within them. Minn. Stat. § 86A.05, subd. 5(c) (1982).

The DNR has designated a number of scientific and natural areas, but only those that include or border significant surface waters that are an integral part of the area being preserved are listed in the rule. The restriction on discharges would apply in all scientific and natural areas but since some of these areas do not have significant water areas, the Agency did not think it was necessary to list them in the rule. The areas that are listed as outstanding resource value waters in Subpart 4 of Part 7050.0180 are listed below, with a citation to an exhibit that explains further about the area.

1. Boot Lake, Anoka County, Exhibit 24.

2. Kettle River in section 15, 22, 24, T 41 N, R 20, Pine County, Exhibit 25.

3. Pennington Bog, Beltrami County, Exhibit 26.

4. Purvis Lake-Ober Foundation, St. Louis County, Exhibit 27.

5. Waters within the borders of Itasca Wilderness Sanctuary, Clearwater County, Exhibit 28.

6. Iron Spring Bog, Clearwater County, Exhibit 29.

7. Wolsfeld Woods, Hennepin County, Exhibit 30.

8. Green Water Lake, Becker County, Exhibit 31.

We point out here that while the waters in some of these scientific and natural areas may not be of high quality in the traditional sense, they deserve nondegradation protection because it is the preservation of the waters' natural quality that is important. If the quality of the water were to be altered from its natural condition, the area could lose much of its scientific and educational value.

WILD, SCENIC, AND RECREATIONAL RIVERS

Both the federal and state governments have passed legislation to protect the character of certain outstanding rivers. The federal law was passed in 1968 and provides for the institution of a national wild and scenic rivers system. P.L. 90-542, 16 U.S.C. §§ 1271-1287.

The Minnesota legislature enacted the Wild and Scenic Rivers Act in 1973. Minn. Laws 1973, ch. 271. Minn. Stat. §§ 104.31-104.40 (1982). The purpose of this legislation is to preserve and protect certain Minnesota rivers and their adjacent lands because they possess "outstanding, scenic, recreational, natural, historical, scientific and similar values". The Act further directs all state and other governmental units to further

the purpose of this Act and the management plans adopted by the Commissioner of the MDNR. Minn. Stat. § 104.35 (1982). The Act established three categories of rivers: wild, scenic, and recreational, and provides criteria for each category. Wild rivers are those "that exist in a free-flowing state, with excellent water quality and with adjacent lands that are essentially primitive." Minn. Stat. § 104.33, subd. 2a (1982). Scenic rivers are defined as rivers "that exist in a free-flowing state and with adjacent lands that are largely undeveloped." Minn. Stat. § 104.33, subd. 2(b) (1982). Recreational rivers are defined as rivers "that may have undergone some impoundment or diversion in the past and may have adjacent lands that are considerably developed but that are still capable of being managed so as to further the purposes of the [Act]." Minn. Stat. § 104.33, subd. 2(c) (1982). Also see Exhibit 32.

The only Minnesota river to have received designation under the federal statute is the St. Croix River. In 1968 Congress designated the St. Croix River north of Taylors Falls as a National Scenic Riverway and in 1972 the lower St. Croix from near O'Brien State Park to its mouth was designated as a recreational river segment. The St. Croix is well known as a canoeing and kayaking river. Its upper reaches offer a near wilderness canoeing experience with little evidence of man's presence, and the reach between Taylors Falls and Stillwater offers ideal family canoeing and boating. The stretch from Stillwater to Hastings is a very popular recreational water. The water quality of the St. Croix is generally excellent. Because of its National recognition as an outstanding recreational

resource, the St. Croix is a proposed outstanding resource value water. The St. Croix is specifically listed as a scenic and recreational river in Subpart 6 of the rule.

To date two river segments have been designated as "wild" under the state statute. These are the Kettle River from the dam in Sandstone to its confluence with the St. Croix River, and the Rum River between lakes Ogechie and Onamia. These segments are proposed to be designated as outstanding resource value waters and are specifically listed in Subpart 4 of the rule.

The Agency has also proposed to identify in the rule the rivers that have been designated by the State as scenic or recreational rivers. There are presently six of these, and they are identified in Subpart 6B-6G of the rule. These six rivers or river segments are:

1. Cannon River -- from northern city limits of Faribault to its confluence with the Mississippi River
2. North Fork of the Crow River -- from Lake Koronis outlet to Meeker -- Wright county line
3. Kettle River -- from north Pine County line to dam at Sandstone
4. Minnesota River -- from Lac qui Parle dam to Redwood County state aid highway 11
5. Mississippi River -- from county state aid highway 7 Bridge in St. Cloud to northwestern city limits of Anoka
6. Rum River -- from state highway 27 bridge in Onamia to Madison and Rice Streets in Anoka

These segments have been selected for such designation by the DNR through a process that includes public input from any interested or affected party. The Agency proposes to designate these rivers or river segments as outstanding resource value

waters in recognition of their inclusion in the wild and scenic rivers program and to further the purposes of the Wild and Scenic Rivers Act.

LAKE SUPERIOR

Lake Superior is unique among the Lawrencian Great Lakes. The fact that it is at the headwaters of the St. Lawrence watershed and its shores are sparcely populated have resulted in the lake remaining in its original oligotrophic (nutrient poor) condition. However, in spite of its large size, Lake Superior is more vulnerable to anthropogenic pollution than most lakes. The water in Lake Superior has a very long retention time; it would take about 180 years to completely replace the water currently in the lake basin. For comparison, Lake Huron has a retention time of 22 years. More significant, however, is that about 400 years would be needed to replace or remove 90 percent of a dissolved substance from the lake. Thus, once contaminated, the lake will remain contaminated for a very long time. Exhibit 33.

Lake Superior is well known for its cool temperatures and generally excellent water quality. It is important to preserve this outstanding water resource in its present condition. Also, Minnesota has an obligation as one of the stewards of this large but fragile headwater lake not to degrade its waters for "downstream" users. This is consistent with the goals of the United States-Canada International Joint Commission for the Great Lakes. The Commission has recommended that "the governments

adopt as policy for Lake Huron and Lake Superior the philosophy of nondegradation proposed by the Commission" (Exhibit 33).

PORTION OF MISSISSIPPI RIVER

In 1981 the Minnesota legislature enacted legislation that established an eight county board to prepare, adopt, and implement a comprehensive land use plan for the Mississippi River headwaters. Minn. Laws 1981, ch. 246. Minn. Stat. ch. 114B (1982). In the Act the legislature found that "the Mississippi River from its outlet at Lake Itasca, Clearwater County, to the southerly boundary of Morrison County, Minnesota, possesses outstanding and unique natural, scientific, historical, recreational and cultural values deserving of protection and enhancement." Minn. Stat. § 114B.01(a) (1982). In this respect this legislation is similar in its intent to the Wild and Scenic Rivers Act except that the management plan is implemented by an eight county board rather than by the state. In fact, the Mississippi River Headwaters Act says that if any of the eight counties fail to comply with the terms of the Act, then the portion of the river in that county will be designated a wild, scenic, or recreational river under Minn. Stat. § 104.35, sub. 4 (1982). Minn. Laws 1981, ch. 246, § 8. The reach of the Mississippi River covered by this Act, the outlet of Lake Itasca to the southerly border of Morrison County, is a reach of about 420 river miles. Because the purpose and goals of the legislation covering this reach of river are similar to those of the Wild, Scenic, and Recreational Rivers Act, and because of the provisions of Section 8 of the Act, the Agency proposes this reach as an outstanding resource value water.

UNLISTED WATERS OF SPECIAL QUALITY

Minnesota is fortunate to have many high quality waters including many lakes and streams that provide excellent recreational opportunities. It would be impossible to evaluate all waters of the state as part of this rulemaking process to determine all those that possess outstanding resource value. But by including in the rule a general definition of the phrase "outstanding resource value waters", other waters that are at a later time determined to possess the characteristics of an outstanding resource value water, can still be afforded the extra protection such waters deserve. We discuss below under Subpart 7 of the rule, the procedure whereby such additional waters can be classified outstanding resource value waters.

b. Part 7050.0180 Subpart 2B -- New Discharge

The definition proposed for "new discharge" is self-explanatory. It is important to include this definition to clarify that discharges into outstanding resource value waters that are ongoing on the day this new nondegradation policy takes effect will be grandfathered in and will be permitted to continue.

c. Part 7050.0180 Subpart 2C -- Expanded Discharge

This definition, also, is self-explanatory. It is important to identify what an expanded discharge is because of the restrictions placed on expanded discharges to outstanding resource value waters. The definition clarifies that a discharge that changes in some way but results in a reduced loading of pollutants, is

not an expanded discharge. The Agency does not want to discourage reduced loadings of pollutants so this language is included.

3. Part 7050.0180 Subpart 3 -- Prohibited Discharges

Subpart 3 starts the substantive provisions of the state's nondegradation policy. What this subpart provides is that new and expanded discharges to certain outstanding resource value waters are absolutely prohibited. The Agency has determined that it is good public policy to declare that discharges of sewage or other wastes to certain waters of this state will not be allowed. Those waters are waters within the Boundary Waters Canoe Area Wilderness, waters within Voyageurs National Park, waters within DNR designated scientific and natural areas, and federal or state wild rivers, which presently include a stretch of the Kettle River and a stretch of the Rum River. We have already described in our discussion under Subpart 2 the pristine character of these areas and waters that merit this strict protection.

4. Part 7050.0180 Subpart 6 -- Restricted Discharges

Subpart 6 recognizes that for other identified outstanding resource value waters -- Lake Superior, the Mississippi River from Lake Itasca to the southerly border of Morrison County, and scenic and recreational rivers -- new or expanded discharges will be prohibited unless there is no feasible and prudent alternative to the discharge. If there is no feasible and prudent alternative, the discharge will be permitted but it will be restricted to protect the natural water quality of the receiving water to the extent possible.

The term "feasible and prudent" is one that is well known in environmental statutes. The phrase appears in both the Minnesota Environmental Rights Act, Minn. Stat. § 116B.09, subd. 2 (1982), and in the Minnesota Environmental Policy Act, Minn. Stat. § 116D.04, subd. 6 (1982).

The Metropolitan Waste Control Commission has requested that the following language be added to Subpart 6: "The fact that an alternative would be substantially more costly than a proposed discharge is evidence that the alternative is not prudent and feasible." Exhibit 11 at p. 4. The Commission is concerned that Subpart 6 of the rule will restrict expanded discharges from its Bayport and Stillwater treatment plants to the St. Croix River.

The Agency does not intend to include the Commission's suggested sentence in the rule. Costs will be a factor in evaluating alternatives to expanded discharges to the St. Croix River and other specified outstanding resource value waters, but costs are only one of many factors to be considered. Putting the Commission's language in the rule would elevate the cost factor above other important factors. Costs are not to be balanced against other factors. Protection of the outstanding resource value water will be of prime importance and it is only in unique and exceptional circumstances will a new or expanded discharge be allowed. The courts have already made that clear.

In Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402 (1971), a case involving the construction of a highway through a parkland, the U.S. Supreme Court directly rejected the argument

that a "feasible and prudent" test required a balancing of a wide range of competing interests. The Supreme Court said:

> But no such wide-ranging endeavor was intended. It is obvious that in most cases considerations of cost, directness of route, and community disruption will indicate that parkland should be used for highway construction whenever possible
> . . .
>
> Congress clearly did not intend that cost and disruption of the community were to be ignored by the Secretary. But the very existence of the statutes indicates that protection of parkland was to be given paramount importance. The few green havens that are public parks were not to be lost unless there were truly unusual factors present in a particular case or the cost of community disruption resulting from alternative routes reached extraordinary magnitudes. If the statutes are to have any meaning, the Secretary cannot approve the destruction of parkland unless he finds that alternative routes present unique problems.

401 U.S. at 411.

The Minnesota Supreme Court has specifically adopted the Overton Park language. In County of Freeborn v. Bryson, 243 N.W.2d. 316 (1976), the Minnesota Court said:

> The purpose and language of the Federal statute and our [Minnesota Environmental Rights] Act are substantially the same. Therefore, we follow the decision of the United States Supreme Court and give our statute a similar construction. [Citation omitted.]
>
> As here applied, this construction means that, in the absence of unusual or extraordinary factors, the trial court must enjoin environmentally destructive conduct if a feasible and prudent alternative is shown.

243 N.W. 2d at 321.

Moreover, both the Minnesota Environmental Policy Act and the Minnesota Environmental Rights Act provide that "economic considerations alone will not justify [pollution, impairment, or destruction of the State's natural resources.]." Minn. Stat. §§ 116D.04, subd. 6 and 116B.09, subd. 2 (1982).

Therefore, the Agency declines to include the Commission's suggested language in the rule. It is only in those situations where there are unusual or extraordinary factors will a discharge to Lake Superior, the upper reaches of the Mississippi, and scenic and recreational rivers be permitted.

5. Part 7050.0180 Subpart 7 -- Unlisted Outstanding Resource Value Waters

Minnesota is fortunate to have many high quality waters including many lakes and streams that provide excellent recreational opportunities. Some of these waters meet the criteria in the general definition of outstanding resource value water in Subpart 2 but are not listed by name in the rule. It would be impossible as part of this rulemaking hearing to conduct an investigation of every water in the State to determine if it is an outstanding resource value water. But as these waters are evaluated in the future, because a new discharge is proposed, or because it comes to the Agency's attention for some other reason, this Subpart 7 recognizes that the Agency will afford such waters the protection of nondegradation policy.

Discharges to newly identified outstanding resource value waters will be restricted, and prohibited if necessary, to preserve the high quality of the water and its other characteristics that make it of outstanding resource value. It is impossible to know whether and under what conditions a discharge will be permitted, when the water hasn't even been identified yet, but as is discussed under Subpart 8 below, there will be an opportunity for a public hearing before these

decisions are made. When considering a possible discharge to these waters, factors such as the types of pollutants to be discharged, the physical and biological characteristics of the receiving water, the range of natural background concentrations of the pollutants (if any), and the amount of dilution provided by the receiving water will be assessed. Ultimately the Agency and the affected parties (in a public hearing if necessary) must determine if a discharge and the resulting measured increment of degredation or change in water quality would adversely affect the reasons the particular water was designated an outstanding resource value water.

6. Part 7050.0180 Subpart 8 -- Public Hearing

This subpart is a procedural rule. It provides a mechanism for identifying and establishing additional outstanding resource value waters, for determining the existence or lack of feasible and prudent alternatives, and for determining effluent limits and other restrictions on new and expanded discharges that are permitted to outstanding resource value waters.

The mechanism to be used in making these decisions is the opportunity for a public hearing. Persons affected by Agency decisions regarding discharges to outstanding resource value waters will be afforded an opportunity for a public hearing. If a hearing is held, it could be a rulemaking hearing -- to amend the rule -- or a contested hearing -- to determine whether a permit should be granted, for example.

Subpart 7 is included in the rule to clarify that persons will have an opportunity to be heard on these important questions before the Agency reaches a decision.

7. Part 7050.0180 Subpart 9 -- Impact from Upstream Discharges

A discharge to a water that is not an outstanding resource value water could still have an impact on a downstream outstanding resource value water. For example, a discharge to a stream that runs into the Boundary Waters could have an impact on the quality of that water or other waters within the BWCAW. This provision of the rule is intended to provide that the Agency will evaluate the impact of a new or expanded discharge to a water that flows into a downstream outstanding resource value water. The discharge is not prohibited, but the Agency may restrict the discharge if necessary to assure that the quality of the downstream outstanding resource value water is not deteriorated.

8. Part 7050.0180 Subpart 10 -- Thermal Discharges

This subpart tracks the provision in the federal regulation that the antidegradation policy shall be consistent with section 316 of the Clean Water Act where water quality may be impaired by a thermal discharge. 40 C.F.R. § 131.12(a)(4). Section 316 relates to the setting of effluent limits to restrict the temperature of certain discharges. Subpart 10 of this rule clarifies that temperature restrictions for discharges to outstanding resource value waters will be set under Section 316 and not under the nondegradation provisions in 7050.0180. The Agency agrees with EPA that if a discharge is to be permitted to

an outstanding resource value water, that the provisions of Section 316 are adequate to address the question of temperature restriction.

9. Impact of Nondegradation Policy

The above discussion describes what the language in Part 7050.0180 means. This discussion addresses the issue of what the impact of the nondegradation policy will be.

There presently are no direct discharges to any of the waters listed in Subpart 3 to which new and expanded discharges are prohibited, although Sandstone discharges to a small creek just a short distance from the Kettle River which has been designated a wild river. It is impossible to estimate what the economic impacts of this provision will be because there is no way of knowing at this time who might propose a discharge to a prohibited water, or what the discharge might be, or what the increased costs of alternatives to the discharge would be. Since there are no existing discharges to any of these waters, and these waters have been afforded protection and special designation by federal and state governments, it is entirely possible that no discharges will be proposed to these waters. The adoption of this nondegradation policy and provisions is further notice that these waters have special characteristics that are to be preserved.

There are a number of municipalities and industries that discharge to Lake Superior and the upper reaches of the Mississippi River and to the scenic and recreational rivers

specified in Subpart 6. These municipalities and industries are listed in Exhibits 35 and 36 respectively. There are also a few municipalities that discharge to tributaries of some of these outstanding resource value waters. These are the municipalities listed in Exhibit 35 as having an indirect impact on an outstanding natural resource value water.

It is important to emphasize that all these existing discharges will be grandfathered in, and nothing in this nondegradation policy will require these municipalities and industries to improve, or move, or change in any way, their existing discharges. Also, it is the Agency's intent under the definition of "expanded discharge" to grandfather in these existing discharges at their design loadings, not just at their actual loadings. The design loading is determined by multiplying the design flow times the effluent limitations for biochemical oxygen demand and total suspended solids (30-day average) and for any other parameter restricted in the discharger's permit. These loadings are based on design plant flows that will accommodate projected population growth and possible industrial expansion to about the year 2000. The current loadings from many municipal discharges are considerably below their design loading levels because the 20-year design life of wastewater treatment plants allows for growth. This gives the communities considerable time to plan for treatment options if and when design loadings are exceeded.

Loadings from industrial dischargers will be grandfathered in as well. Industrial loadings will be determined from the

discharge flows and permitted effluent limitations in the respective National Pollutant Discharge Elimination System (NPDES) Permits in effect when these rule amendments are promulgated.

The Agency does not believe that grandfathering in these communities up to their design limits will jeopardize the quality or unique characteristics of the outstanding resource value water even if the discharge should increase up to design limits. The flows from many of the communities listed in Exhibit 35 are quite small compared to the flow of the river. The same is true with the industrial discharges, and moreover, the industrial discharges are for the most part noncontact cooling water and runoff.

It is difficult to estimate costs that could be incurred if one of these communities or industries in Exhibits 35 and 36 were to expand its discharge beyond its grandfathered in design limits. The costs are difficult to estimate because it is unknown whether the discharger would have to implement a feasible and prudent alternative to discharging to the outstanding resource value water, nor do we know what that alternative would be.

One method to estimate costs, however, is to assume that the discharger would attempt to avoid falling under the definition of "expanded discharge" by reducing the loading of pollutants in the new discharge. If loading is maintained below the grandfathered level, the discharge would not be an "expanded discharge" by definition, and the discharge could be permitted without the need to evaluate alternatives under Subpart 6.

The Agency has developed three hypothetical examples to illustrate how costs might be incurred in the future when additional treatment is needed to maintain loadings below the grandfathered in amount. The communities of Duluth (WLSSD), Sandstone, and Faribault are used in these examples. It should be noted that all three of these communities discharge upstream of the proposed outstanding resource value water. For these examples it is assumed that the discharges are large enough in volume relative to the available dilution of the receiving stream to impact the outstanding resource value water if loading increased above the grandfathered amount. Under Part 7050.0180, Subpart 9, their discharges would have to be restricted to protect the downstream outstanding resource value water.

DULUTH (WLSSD)

The Western Lake Superior Sanitary District (WLSSD) treatment facility in Duluth discharges to the lower St. Louis River which flows into Lake Superior, an outstanding resource value water. The design flow for the system is 43 million gallons per day (MGD). Their present standard is 25 mg/l BOD_5, 30 mg/l Total Suspended Solids (TSS), and 1 mg/l phosphorus. The monitoring reports for the first 10 months of 1982 indicate that the treatment plant is meeting approximately 6 mg/l of BOD_5 and 5 mg/l of TSS. Their overall phosphorus effluent is averaging approximately 0.84 mg/l.

Using a standard phosphorus level of 1 mg/l at a design flow of 43 MGD would result in a loading of 358.6 lbs/day (43 MGD x 8.34 x 1 mg/l). (The 8.34 is a conversion factor to convert to pounds per day.) Assume a new industry moves into Duluth with high hydraulic flow and average organic loading bringing the hydraulic flow up to 47.5 MGD. This would result in a phosphorus loading of 396.2 lbs/day (47.5 x 8.34 x 1). In an effort to maintain a required phosphorus loading of 358.6 lbs/day of phosphorus, the concentration would have to be reduced to 0.9 mg/l (358.6/396.2 x 1 mg/l). No evaluation is made of the BOD and TSS since WLSSD's present discharge is far below the required 25/30 respectively.

In evaluating this cost increase the following assumptions were made:

1. The present plant is capable of meeting its standards without any major plant revisions with the exception of providing additional alum for more effective phosphorus removal.

2. The infiltration and/or inflow problem with the existing plant will still remain controllable without any major upsets to the plant.

3. It is noted that at present the plant is providing something less than 1 mg/l phosphorus without using alum. It is assumed that this is due to the nature of the industrial contributions. For ease in cost calculations this is not used as a consideration. The additional phosphorus removal cost is calculated by estimating the need for additional alum and the additional Operation and Maintenance costs between a 43 MGD versus 47.5 MGD system.

Using the EPA "Innovative and Alternative Technology Assessment Manual" dated February, 1980, Exhibit 37, estimates can be made of the increased costs of treatment. Using the EPA

Manual, and revising the September, 1976 costs in the manual to December, 1983, and increasing capital costs by 66% based on the Engineering News Record Construction Cost Index, and increasing operating and maintenance costs by 75% based on the EPA OMR Index, all to reflect more recent costs, the cost to WLSSD to remove more phosphorus is shown in the following table. It is noted that the capital cost index was only used for Faribault and the O&M index was used for both Duluth and Faribault.

DULUTH (WLSSD)

Based on Present Plant Size of 43 MGD followed by Increased Flow to 47.5 MGD.

Annual O&M Costs		43 MGD	47.5 MGD
(1A Manual Pg. 5.1.1.)	Labor	$ 52,000	$ 60,000
	Chemicals	$800,000	$ 980,000
	Materials	$ 8,000	$ 10,000
	Power	$ 10,000	$ 12,000
	Sub total	$870,000	$1,062,000
			-$ 870,000
			$ 192,000
Inflation Index 9/76 to 12/83			1.75
		TOTAL	$ 336,000

Phosphorus effluent reports for many communities in the state using alum indicate that the average result is somewhat below the 1 mg/l standard. Therefore it appears that the estimated costs may be on the high side.

SANDSTONE

Sandstone discharges to a small creek tributary to the Kettle River reach that is a state designated wild river segment. The year 2000 design flow for Sandstone is .334 MGD and the city's existing 1983 average flows according to monitoring reports is

.279 MGD. Sandstone's BOD_5 loading is 69.6 lbs/day (0.334 MGD x 25 mg/l x 8.34). The TSS is 83.6 lbs/day (0.334 MGD x 30 mg/l x 8.34).

It is assumed a new industry moves into Sandstone with normal domestic organic loading and .154 MGD hydraulic flow. This results in a total flow of .154 + .279 = .433 MGD and in a BOD_5 loading to the Kettle River, after secondary treatment, of 90.3 lbs/day (0.433 x 25 x 8.34). This would exceed the fixed limitation by 20.7 lbs/day BOD_5.

In order to handle the additional flow above the capacity of the existing plant, the city could propose to build an addition to the stabilization pond. The cost of additional pond capacity is not a cost that can be attributed to the nondegradation policy since this change would be necessary just to meet the water quality standards with the additional flow. But we can assume that additional treatment with alum addition could be needed to meet the more restrictive effluent limits (69.6/90.3 x 25 mg/l = 19.3 mg/l BOD_5). A bigger pond to provide longer detention time was not considered a possible treatment technique because longer detention time could also increase solids content from increased algae growth.

In order to add the alum to the pond the city would have to buy a boat and motor and provide other facilities. The Agency projects that the costs to Sandstone in the hypothetical above would be about $120,000 in capital costs and about $5,600 in annual O&M costs. A table similar to the one for Duluth is shown in Exhibit 38. The costs used were taken from bids and estimates received from an

active project of comparable size. The costs were recent and therefore no Inflation Index was used.

Also, a review of the 1976-1977 Minnesota Stabilization Pond Discharge Summary indicates that 76% of stabilization pond discharges throughout the state (202 out of 265) for those two years were below 15 mg/l BOD_5. Based on this information it would be expected that the use of alum would be needed very seldom if at all. Thus, the projected costs are likely to be higher than actual costs.

FARIBAULT

Faribault discharges to the Straight River just above the confluence with the Cannon River. Under summer conditions of available dilution from both rivers, Faribault is on the border of needing an effluent limitation for total ammonia to maintain the 0.04 mg/l un-ionized ammonia standard downstream. Their summer total ammonia effluent limitation would be 7 mg/l under design conditions. Their present total ammonia is unknown because their effluent is not monitored for total ammonia. Before any non-degradation ammonia limitations can be imposed, a study will be required. For the sake of illustration, however, the following assumptions are made for the Faribault hypothetical.

Summer effluent total ammonia concentration at design capacity averages 7 mg/l resulting in a loading of 193 lbs/day (7 mg/l x 3.3 MGD x 8.34). An industry with a high strength ammonia waste moves into Faribault but plant flow increases to just 3.1 MGD. (3.1 MGD was used in this alternative to indicate the

possibility of exceeding the discharge limitation without reaching the design flow.) While plant flow remains below design, the effluent ammonia now averages 11 mg/l in the summer. Based on this, their new loading of 284 lbs/day (11 mg/l x 3.1 MGD x 8.34) exceeds their established limit of 193 lbs/day. Faribault must now reduce their ammonia to their summer ammonia limitation of 7 mg/l to maintain their loading limit of 193 lbs/day ammonia.

In evaluating possible costs for this change the addition of second stage nitrification with clarification was used. The total cost identified cannot be totally related to nondegradation requirements because achievement of the water quality standard would also require upgrading of the treatment facility.

The costs to Faribault for the increased discharge are projected to be $1,500,000 in capital costs and $70,000 in annual O&M. See Exhibit 38.

The Agency did not attempt to project any costs for hypothetical cases involving any of the industrial dischargers. Many of the industrial discharges contain only heat as a pollutant and cooling water discharges will be restricted under Section 316 of the Clean Water Act, as Subpart 10 of the rule provides.

There is another economic impact associated with adoption of the nondegradation policy which is even harder to quantify. That is the impact on Minnesota's tourist economy through the protection of these outstanding resource value waters, most of which have outstanding recreational value. But we do know that tourism is big business in Minnesota. Tourists spend three

billion dollars or more each year in Minnesota. A good portion of all tourism is involved with outdoor recreation and much of that involves fishing, boating, and swimming in Minnesota lakes. The Agency so found in the APC 1 air quality hearings. Minnesota Pollution Control Agency, Findings of Fact and Conclusions, Finding 319, PCA-81-003-HK, October 27, 1982.

While it cannot be quantified, it seems reasonable to assume that maintaining the State's highest quality and highly used recreational waters in their present condition is important to maintaining Minnesota as an important water oriented tourist attraction. It is nearly impossible to assess or even estimate any potential economic gains from the proposed nondegradation provision. But we can say that preserving and protecting the upper Mississippi, and Lake Superior, and the waters in the BWCA and in Voyageurs National Park, and the St. Croix River, is important to the Minnesota economy and to Minnesotans.

The Agency believes that it is reasonable to adopt a protective nondegradation policy like the one that Agency has proposed and described here.

B. Classification of State Waters -- Parts 7050.0400-7050.0480

1. General Discussion

The designated uses of a water body along with the water quality criteria necessary to protect for these uses are the component elements that comprise this State's water quality standards. All waters defined as waters of the State of

Minnesota under Minn. Stat. § 115.01, subd. 9 (1982) have been assigned one or more of the following water use classifications.

1. Domestic Consumption

   Class 1A -- Suitable for use without treatment.

   1B -- Suitable for use after approved disinfection.

   1C -- Suitable for use after treatment.

   1D -- Suitable for use after treatment as required of Class 1C plus additional pre, post, or intermediate stage treatment.

2. Fisheries and Recreation

   Class 2A -- Cold or warm water sport or commercial fishes and suitable for aquatic recreation of all kinds.

   2B -- Cool or warm water sport or commercial fishes and suitable for aquatic recreation of all kinds.

   2C -- Rough fish and suitable for boating and other aquatic recreational uses where usable.

3. Industrial Consumption

   Class 3A -- Suitable for most industrial purposes except food processing without treatment.

   3B -- Suitable for general industrial purposes except food processing with only a moderate degree of treatment.

   3C -- Suitable for industrial cooling and materials transport.

4. Agriculture and Wildlife

   Class 4A -- Suitable for irrigation without significant damage or adverse effects upon crops or vegetation.

   4B -- Suitable for use by livestock and wildlife without inhibition or injurious effects.

5. Aesthetics and Navigation

6. Other uses

7. Limited resources value waters -- waters for which fishing and swimming are not attainable uses. These waters are protected for aesthetic qualities, secondary body contact use and ground water recharge for use as a potable water supply.

Before turning to a discussion of the specific classifications being proposed for amendment, a brief explanation of some of the general language in Parts 7050.0400-7050.0460, that replaces the language in 6 MCAR §§ 4.8024 A.-E. and 4.8025 A.-E., is in order.

2. Part 7050.0400 -- Purpose

This Part merely indicates that all surface waters within the state or bordering the state are classified in these rules. This language is new but, of course, all waters are already classified under 6 MCAR §§ 4.8024 and 4.8025. A discussion of why the distinction between intrastate waters and interstate waters is being abolished is discussed later.

3. Part 7050.0410 -- Listed Waters

This Part indicates that all waters of the state listed in Part 7050.0470, in addition to any classifications that may be assigned specifically to a water in Part 7050.0470, are also 3C, 4A, 4B, 5, and 6 class waters.

All interstate and intrastate waters are already classified in these classes by 6 MCAR §§ 4.8024B or 4.8025B so this language does not really change anything.

4. Part 7050.0430 -- Unlisted Waters

Many waters of the state are not specifically listed in Part 7050.0470. These waters will now be classified by Part 7050.0430

rather than by specific designation. These unlisted waters are classified by this Part 7050.0430 as 2B, 3B, 4A, 4B, 5 and 6 class waters. While this change is largely nonsubstantive, it does give this unlisted waters provision, Part 7050.0430, added importance because the vast majority of the waters of the state will be unlisted. Persons familiar with 6 MCAR §§ 4.8024 and 4.8025 and used to finding a given 2B water specifically listed therein will in the future not find these waters listed in Part 7050.0470.

There are two types of waters that will undergo classification changes because of Part 7050.0430. These are: 1) waters which are presently specifically named as Class 2B waters but which do not have a Class 3 use class specified; and 2) unlisted interstate waters. We discuss each of these changes in turn below.

In the existing intrastate rule, a water specifically named as a 2B water but which does not have a specific Class 3 use classification is assigned a Class 3C pursuant to 6 MCAR § 4.8024 B. Similarly, an interstate water specifically named as a 2B water but without a specific class 3 use class is assigned a Class 3C pursuant to 6 MCAR § 4.8025 B. There are 518 waters so classified in the existing rules. This new Part 7050.0430 will now also add a 3B classification to these waters. Since most waters of the state are presently assigned a Class 2B fisheries and Recreational use and a Class 3B Industrial Consumption use classification, and since it is the position of the MPCA that all waters of the state should be suitable for at least general industrial purposes, unless precluded by site specific

conditions, it is reasonable to assign these waters the Class 3B use classification specified in Part 7050.0430.

Presently all unlisted intrastate waters receive a 2B, 2C, 3B, 3C, 4A, 4B, 5, and 6 classification, pursuant to 6 MCAR § 4.8024 B. Interstate waters, on the other hand, that are not listed in WPC 25, receive only a 2C, 3C, 4A, 4B, 5, and 6 classification, pursuant to 6 MCAR § 4.8025 B. The use classifications noted for unlisted waters in Part 7050.0430 in effect constitutes an across the broad reclassification of these unlisted interstate waters, to classify them as 2B, 3B waters. However, this is a minor change because all major waters which form or cross the interstate boundaries were identified and assigned specific use classifications. Thus, the general classification provision for unlisted interstate waters in 6 MCAR § 4.8025 B generally only pertains to unnamed ditches crossing the State borders. Since all unlisted intrastate waters, including unlisted unnamed ditches, referenced in the present intrastate use classification rule are classed Class 2B, 3B, it seems appropriate to assign these same use classes to all unlisted waters in the merged rule since the only definable distinction between the intra and interstate waters as a generalized group is the fact that some do flow across the State's borders. There are no anticipated impacts to either municipal or industrial discharges as a result of the reclassification of these waters.

5. Part 7050.0440 - Other Classifications Superseded

This Part is intended to make specific that any other classifications of waters of the state are superseded by the adoption of these classifications. This would include classifications found in the old rules such as WPC-1.

6. Part 7050.0450 - Multi-Classifications

This Part makes clear that all the water quality standards for each different class that a water falls into, apply to the water, and that if the standards for a particular parameter differ between classes, the more stringent shall apply.

7. Part 7050.0460 - Waters Specifically Classified

This Part is just a preamble to the actual listing of the waters and describes what the various symbols in the listing mean.

8. Trout Waters

The waters presently classified Class 2A (waters suitable for the propagation and maintenance of warm or cold water sport or commercial fishes) were based primarily on previous MDNR Commissioner's Orders that designated Minnesota's trout streams and trout lakes. A need exists to update the list of Class 2A waters to reflect the current list of streams and lakes being managed for stream trout. To do this, the water use classification rule as proposed cites the latest MDNR Commissioner's Orders that designate trout streams and stream trout lakes Order Nos. 2089 and 2086 respectively. Exhibits 41 and 42. The waters included in these orders will not be

specifically named in the rule, but will be assigned the following use classifications: 1B, 2A, 3B, 3C, 4A, 4B, 5, 6 in accordance with part 7050.0420.

In addition to the lakes that appear in MDNR Commissioner's Order No. 2086, the MDNR maintains a list of lakes which are either currently or may potentially be managed as lake trout lakes. This list is Exhibit 43. It is proposed that the same water use classifications noted above also be assigned to these lakes listed in Exhibit 43. These lakes are specifically listed in the proposed rule part 7050.0470.

For the purpose of clarification, it should be noted that lakes throughout the state are assigned specific management classifications by the MDNR. These management classifications describe the most important species or combination of species on which management efforts are directed. For lakes with a trout management classification, management strategies specific to the trout species of interest are implemented. For example, lakes with a trout management classification which are managed for stream trout species, (such as rainbows, brooks, and browns) are generally small, cold, well-oxygenated lakes with no inlet and outlet. These lakes are usually treated with fish toxicants prior to stocking with the appropriate trout species and they are then subsequently managed only for trout. These are the designated trout lakes listed on Commissioner's Order No. 2086. There are other lakes in Minnesota with well-oxygenated, cold, hypolimnetic waters which can support trout in their depths in

addition to supporting warmwater species such as walleye, bass, or panfish in their shallower areas. These "two-story" condition lakes are those most generally selected for lake trout introduction and management. Lakes exhibiting these conditions and which are or appear to be suitable for lake trout management are listed in Exhibit 43 and are specifically named in Part 7050.0470 of the proposed rule.

Updating the list of Class 2A waters to correspond to those waters currently being managed by the MDNR as trout waters is a resonable proposal. Reasonable too, is the proposal to assign this use classification to lakes which have been identified by the MDNR as having the potential for lake trout management. Although not presently assigned a lake trout management classification, these lakes do have the necessary characteristics which can enable them to be managed as such and therefore warrant the same protection.

Copies of the Commissioner's Orders will be supplied upon request by the MPCA.

9. Class 2C Waters Reclassified as Class 2B

The MPCA is proposing classification changes for eight watercourses which would change their present fisheries and recreational use classification from Class 2C (rough fish) to a Class 2B (cool or warm water sport or commercial fishes) use class. These watercourses and the reaches proposed for Class 2B reclassification are as follows:

1. Ada Creek - entire length in the Boundary Waters Canoe Area Wilderness.

2. Boy River - outlet of Ten Mile Lake to Leech Lake.
3. Cedar River - Austin to the Iowa border.
4. Des Moines River, West Fork - Outlet of Lake Yankton to the Iowa border.
5. Red Eye River - Outlet of Wolf Lake to the Leaf River.
6. St. Louis River - Cloquet to Clough Island.
7. Yellow Medicine River - from the mouth of the North Fork Yellow Medicine River to its confluence with the Minnesota River.
8. Red River of the North-Breckenridge to the Canadian border.

The reasons for reclassifying each of these waters will be briefly discussed:

ADA CREEK

Ada Creek is a short watercourse located in the Lake Superior drainage basin of the Boundary Waters Canoe Area Wilderness. This creek connects Ada Lake with Sawbill Lake. Survey data collected on Ada Lake in 1975 indicated the presence of white suckers and northern pike. Sawbill Lake has a walleye-centrarchid management classification. So although there is no specific fisheries data on the creek itself, it is reasonable to assume that northern pike are present in this watercourse since it is a connecting link between these two lakes. The proposed reclassification of this creek was discussed with the MDNR Grand Marais Area Fisheries manager who stated that this assumption was valid and that the reclassification of this creek to a Class 2B is justified.

BOY RIVER

The Boy River originates as the outlet of Ten Mile Lake and flows through a series of several lakes before emptying into Leech Lake in Cass County. There is little fisheries information on the Boy River, but because it interconnects with several lakes, it probably provides habitat for northern pike and walleyes especially in the spring. The Boy River is occasionally used for fishing and canoeing according to the MDNR Area Fisheries Manager in Walker. This river is proposed for reclassification from 2C to 2B because of the probable presence of game fish, its use for fishing, and because it flows through or into several important recreational lakes (Pleasant, Big Deep, Woman, Boy, and Leech Lakes).

CEDAR RIVER

The Cedar River from Austin to the Iowa Border is proposed to be changed from Class 2C to Class 2B. The Austin wastewater treatment plant has undergone recent improvement to its facilities and is currently meeting secondary effluent limitations. Austin will be required to meet an ammonia limitiation by 1988. The Cedar River was recently surveyed by the MDNR Area Fisheries staff from Lanesboro. The survey shows that the Cedar River is heavily fished near Austin and sustains good gamefish populations below Austin. The Area Fisheries Manager indicates that the Cedar River provides better fishing than many rivers in the area around Austin, and that canoeing and fishing are encouraged in the reach below Austin by a private campground on the river.

DES MOINES RIVER, WEST FORK

The West Fork of the Des Moines River is a MDNR designated canoeing and boating river. The most popular reach for canoeing, from Windom to Jackson, provides several campgrounds and Kilen Woods State Park. This river was surveyed by the MDNR in 1977 (Exhibit 52). They reported the presence of several game fish species and considerable fishing pressure. The Agency proposes to change the classification to 2B because of the known presence of game fish and because of its designation as a canoeing and boating river.

RED EYE RIVER

The Red Eye River is a tributary of the Leaf River which is in turn a tributary of the Crow Wing River. The Red Eye River orginates in northeastern Ottertail County but most of it flows through Wadena County. The MDNR Area Fisheries Manager in Brainerd indicated that game fish would be expected in the Red Eye River (northern pike and walleyes) especially in the spring.

ST. LOUIS RIVER

The St. Louis River from Cloquet to Clough Island in Spirit Lake flows through one of the most spectacular valleys in Minnesota. This valley, in spite of the presence of many dams, offers visitors to Jay Cook State Park a panorama of jagged rocks, water falls, and rapids. Fishing in this reach of the river has suffered in the past from pollution. In 1978 the Regional Western Lake Superior Sanitary District (WLSSD) plant in Duluth went into operation. This plant treats wastewater from

Cloquet's wood products industry in addition to domestic wastewater from Cloquet and Duluth. Within a few years of this plants start-up, reports of vastly improved fishing in the St. Louis River below Cloquet began to appear in local newspapers. Because the new WLSSD plant has led to the improvement of the quality of this reach of the river and because of the return of recreational fishing, the Agency proposes to reclassify this reach of the St. Louis River to Class 2B.

YELLOW MEDICINE RIVER

The Yellow Medicine River from the Minnesota border to its confluence with the North Fork of the Yellow Medicine River is classified 2B in WPC 24. From this point to its confluence with the Minnesota River the Yellow Medicine is classified 2C in WPC 25. A preliminary survey by MDNR Regional staff revealed a channel catfish fishery in the Yellow Medicine River especially near the mouth. Thus, the Agency is proposing to reclassify the Yellow Medicine River below the confluence with the North Fork to Class 2B to correct the inconsistency between the current WPC 24 and 25 classifications and because of the presence of game fish.

RED RIVER OF THE NORTH

The Agency proposes to reclassify the Red River of the North from 2C to 2B. Recent fisheries surveys by MDNR staff have shown the Red River to contain "unusually high numbers of walleye and channel catfish" in the reach between Breckenridge and Kent (Exhibit 53). Electrofishing by Dr. John Peterka of North Dakota State University in the Red River in the Fargo area also showed

the presence of several game fish species including northern pike, channel catfish, walleyes, and panfish (Exhibit 53). The City of Moorhead and the sugar beet industries have upgraded their treatment systems in recent years resulting in better water quality in the Red River.

The North Dakota Department of Health has adopted water quality standards and classifications for their surface waters (Exhibit 54). In the North Dakota classification scheme their Class I streams are protected for the same uses as Minnesota's 2B streams (fisheries and recreation). North Dakota has classified the Red River as a Class I stream. The proposed change will make Minnesota's classification consistent with North Dakota's and it will recognize the presence of game fish, and the improved quality of the Red River.

In summary, these reclassifications are reasonable based on additional fisheries and recreational data and information that has been gathered since these waters were previously classified in 1973. Improvements or removal of wastewater point source loadings to segments on the Cedar, Red River of the North and St. Louis rivers have resulted in improved instream water quality that has contributed to their greater value as a fishery resource. Fishery information provided by the MDNR on the Boy River, West Fork Des Moines River, Red Eye River, and the Yellow Medicine River indicates the presence of game fish in these rivers. These data, coupled with the recreation potential of

whole body contact use afforded by these rivers, serve to justify the Class 2B reclassification. The MDNR is in support of these proposed classification changes (Exhibit 55).

There will be no impact on any current discharger from these reclassifications. The 2B and 2C water quality standards are nearly identical. The standards that impact most municipal dischargers - dissolved oxygen, un-ionized ammonia, and total residual chlorine - are the same. The water quality standards for maximum temperature, oil, and phenols are more stringent for Class 2B waters than for Class 2C waters, but no impact on current discharges is expected because of this change.

10. Reclassification of St. Paul Chain of Lakes to Drinking Water Classification

The present water supply for the City of St. Paul comes from the Mississippi River at Fridley and from a chain of lakes and their watersheds which are located from 4.5 to 20 miles north of the city. The present use classification of the Mississippi River at the point of withdrawal is 1C, 2B, 3B. The present use classification for the lakes in the chain is 2B, 3B based on the general classification provision listed in Part 7050.0320 (6 MCAR § 4.8024B). In Part 7050.0470 of the rule as proposed, the waters in the lake chain will be classified as Class 1C, 2B, 3B (Exhibit 44 lists these lakes). The assignment of the Class 1C domestic consumption use classification to these waters is a reasonable proposal in that their present use as drinking water will be more properly recognized and protected.

11. Class 7 Limited Resource Value Use Reclassifications

The identified needs leading to the establishment of the Class 7 Limited Resource Value use classification in 1981 remain the same and are applicable to the waters proposed for reclassification. That is, certain waters of the State will not attain the water quality goal of being fishable and swimmable (Class 2A, 2B, or 2C under Minnesota's classification scheme). These uses are essentially precluded in these waters due to natural limiting conditions or irreversible person-induced impacts or modifications. To continue designating these waters as being capable of meeting this goal is not only unrealistic but it diverts funds away from needed projects discharging to waters where these goals are attainable.

The waters included in the Class 7 use classification include surface waters of the State which are of limited value as a water resource and where water quantities are intermittent or less than one cubic feet per second at the once in ten year, seven day low flow. These waters will be protected so as to allow secondary body contact use, to preserve the ground water for use as a potable water supply and to protect aesthetic qualities of the water. Discharges to Class 7 waters are regulated so that downstream recreational waters are protected for their designated uses.

In conjunction with those factors listed in Minn. Stat. § 115.44, subds. 2 and subd. 3 (1982), the MPCA in cooperation and agreement with the MDNR with respect to determination of fisheries values and potential, determines the extent to which

the waters of the State demonstrate the Class 7 criteria conditions in 6 MCAR §§ 4.8014 B.7. and 4.8015 B.7. (now Minn. Rule Part 7050.0200 subpart 7), which are set forth below:

a. The existing fishery and potential fishery are severely limited by natural conditions as exhibited by poor water quality characteristics, lack of habitat or lack of water;

b. The quality of the resource has been significantly altered by human activity and the effect is essentially irreversible; and

c. There are limited recreational opportunities (such as fishing, swimming, wading, or boating) in and on the water resource.

Conditions "a" and "c" or "b" and "c" must be established by the MPCA water assessment procedure before a water can be classified as limited resource value.

The Agency assessed ten watercourses for potential reclassification as Class 7 Limited Resource Value Waters. These ten watercourses, and the ones proposed for reclassification to Class7, are shown in the table below.

Existing or Potential Discharger	Assessed Watercourse	Present Use Classification	MPCA Recommended Use Classification
Boise Cascade (Int'l Falls)	Moonlight Creek	2B	No change (Class 2B)
Grove City	Unnamed Creek	2B	Class 7
	Grove Creek	2B	No change (Class 2B)
Litchfield	Jewett Creek	2C	No change (Class 2C)

Owatonna Canning Co. (Bricelyn)	Unnamed ditch	2B	Class 7
	County Ditch No. 44	2B	Class 7
Steen	Unnamed ditch	2B	Class 7
Virginia	Manganika Creek	2B	Class 7
Waseca	County Ditch No. 12	2B	Class 7
	Unnamed ditch	2B	Class 7

Based on: 1) information gathered during the field assessments; 2) comments provided by local residents living near the assessed watercourses; and 3) comments from the MDNR Area Fisheries managers, seven of the 10 waters listed above which were assessed for reclassification are recommended for Class 7 reclassification. Moonlight Creek at International Falls was assessed as a result of a request from Mr. Russell Summer, Midwest Regional Environmental Engineer, Boise Cascade Corporation. Jewitts Creek at Litchfield was reassessed in response to a request from Mr. Charles DeWolf, Litchfield Wastewater Treatment Superintendent. Information gathered in conjunction with these water assessments indicate existing or potential fisheries and recreational uses for both these waters. Therefore, they are not being proposed for reclassification as Class 7 waters.

The water assessments performed on the waters proposed for reclassification (Exhibits 45-51) serve to document that segments of these waters do meet the criteria established for Class 7 waters. These criteria are not really a separate test for limited recreational opportunities but instead are the factors that lead to the conclusion that these opportunities are limited. Therefore, based on the conclusions drawn from the evaluation of

the assessment data, and the MDNR and public comments, it is reasonable to propose that the waters meeting the Class 7 criteria be reclassified as Class 7 Limited Resource Value waters.

Fisheries biologists from the Waterville MDNR Area Fisheries Office have indicated to the MPCA that additional survey work will be performed on County Ditch No. 44 near Bricelyn and the unnamed ditch and County Ditch No. 12 near Waseca. They plan to present their survey findings prior to the close of the hearing record for this proposed rule. Information gathered during these surveys may result in a reconsideration of the proposed reclassification of these ditches.

12. Impact of Proposed Class 7 Classifications

The proposed reclassification of these waters will mean that three dischargers - the communities of Grove City and Virginia, and Owatonna Canning Company of Bricelyn - will save on treatment costs. The Agency has estimated these cost savings to be $427,000 in capital costs and $39,000 annual O&M for Grove City, $2,007,000 in capital costs and $82,000 annual O&M for Virginia, and $147,000 in capital costs and $10,000 O&M annually for Owatonna Canning Company. See Exhibit 39.

If the receiving streams for the two communities and industry remain Class 2B these dischargers would have effluent limitations of 5 mg/l BOD_5, 30 mg/l total suspended solids (TSS) and 1 mg/l total ammonia (summer). With the proposed Class 7

designation, their effluent limitations will be 15 mg/l BOD_5 and 30 mg/l TSS and there will be no ammonia limitation. Evaluation of the 1983 monitoring reports indicates that the Grove City and Virginia systems are meeting the 15 mg/l BOD_5, 30 mg/l TSS and therefore would not need revisions to their present treatment plants if the standards revisions were approved. Owatonna Canning Company at Bricelyn would also be able to meet 15 mg/l BOD_5 and 30 mg/l TSS effluent limitations. In addition, Virginia has a 1 mg/l total phosphorus limitation, but this is so regardless of the classification of Manganika Creek.

The one industry affected by the reclassification, Owatonna Canning Company at Bricelyn, discharges can cooling water and would also have a temperature restriction change from 90°F to 104°F.

The City of Steen is presently proposing a pond system with a controlled discharge. Their existing system consists of septic tanks discharging to an unacceptable tile line. Controlled limitations of 25 mg/l BOD_5 and 30 mg/l TSS and therefore this system will not be affected by the Limited Resource Value classification change.

The City of Waseca discharges to receiving waters other than those being proposed for reclassification. There are no permitted discharges to County Ditch No. 12 and the unnamed ditch near Waseca, and therefore the reclassification will have no cost impacts on any dischargers.

As with the hypothetical future costs estimated due to the nondegradation proposal, the cost estimation methods used in these estimates were taken from the EPA "Innovative and

Alternative Technology Assessment Manual" dated February, 1980, with costs revised by fourth quarter of December, 1983 (Exhibit 37). The prices in the February 1980 manual were increased by 66% based on the Engineering News Record Construction Cost Index. Operating Maintenance Costs were increased by 75% based on the EPA OMR Index.

In calculating the costs of ammonia removal, it was assumed that two stage biological treatment would be a selected unit process for cities with ammonia effluent limitations of less than 10 mg/l. Two stage biological wastewater treatment (first stage for carbonaceous removal, second stage for nitrogenous removal) has the advantage of greater reliability and efficiency compared to single stage biological treatment designed for nitrification. It is true that lower cost methods of treatment such as single stage with filtration and revised plant operation may meet the 5 mg/l $CBOD_5$ and 30 mg/l TSS standards. However, the ability to consistently meet this standard with these alternatives is more doubtful.

A summary of the cost savings are shown in the following table.

Estimated Cost Savings Resulting from
Propose Classification Changes to Limited
Resource Value Waters

Community/Industry Affected	Cost Savings (1983 dollars) Capital	Operation & Maintenance
Steen	None	None
Grove City	427,000	39,000
Virginia	2,007,000	82,000
Owatonna Canning Co. at Bricelyn	147,000	10,000

C. Effluent Limitations

1. Carbonaceous Biochemical Oxygen Demand

Currently, most wastewater treatment plants in Minnesota are monitored and regulated by an analytical test referred to as five day biochemical oxygen demand or simply BOD_5. A BOD analysis is a laboratory test intended to measure the organic matter in wastewater which can be decomposed and utilized for food by living organisms such as bacteria. For wastewater, the test is usually run for a five day period thereby accounting for the subscript five.

The conventional analytical procedure measures the oxygen required for the biochemical degradation of organic, thereby by definition carbonaceous, material and the oxygen used to oxidize inorganic (noncarbonaceous) materials such as sulfide and iron. Furthermore, the conventional BOD test may measure the oxygen used to oxidize reduced forms of nitrogen such as ammonia unless the exertion of this nitrogenous demand is prevented by an inhibitor. Thus, the conventional BOD_5 test may reflect the summation of three distinct components:

1. Carbonaceous BOD_5 ($CBOD_5$)
2. Oxygen demand of certain inorganic non-nitrogenous materials, and
3. Nitrogenous BOD_5 ($NBOD_5$).

Since typical municipal wastewater effluents do not contain relatively large loadings of readily oxidizable inorganic materials, that component will be eliminated from further discussion.

That leaves two distinct components of total BOD_5-$CBOD_5$ and $NBOD_5$. It is proposed in this rule revision to clarify the intent that only the carbonaceous component of BOD_5 need be measured in this analysis. Heretofore, accepted analytical procedures did not allow differentiation of these two distinct components and as a result regulatory compliance was interpreted as total BOD_5. However, a reliable and proven analytical procedure has now been developed to inhibit nitrification in the BOD test.

The need for adopting a $CBOD_5$ test has become particularly acute since many municipal treatment plants have now been upgraded or expanded in Minnesota. Some of these upgraded treatment facilities with secondary treatment consistently produce an effluent containing more than 30 mg/l total BOD_5. The apparent reason for this high level of BOD_5 at many newer facilities is that sufficient numbers of nitrifying organisms are present in their effluents to allow nitrification in the 5 day BOD test. Newer secondary treatment facilities often provide for reserve capacity and thus are more likely to have detention times sufficient to develop large numbers of nitrifying bacteria. The following table provides a hypothetical example of the impact of nitrification in the BOD_5 test.

Hypothetical Example Showing
Effluent Characteristics*
(all values in milligrams per liter)

	Percent Design Flow	Nitrifer Population in Sample	$CBOD_5$	Ammonia	BOD_5
Plant A	100	Insignificant	25	18	30
Plant B	80	Moderate	25	18	35
Plant C	50	Very Large	10	10	45

* Source: Federal Register/Volume 48, No. 222 dated November 16, 1983, page 52276. Exhibit 56.

This "problem" of not meeting permit requirements due to nitrification in the BOD_5 bottle has prompted certain permittees to restrict nitrification within the treatment system by means of disinfection (chlorination). This practice is environmentally objectionable due to the potential increased formation of chlorinated organic compounds (including some potential carcinogens) and the larger quantities of toxic residual chlorine discharged to the receiving stream. Also, the suppression of nitrification in the treatment plant means more ammonia will be discharged to the receiving stream.

The U.S. Environmental Protection Agency (EPA) has also recognized the need for this change and has proposed the adoption of $CBOD_5$ effluent limitations in the Federal Register dated November 16, 1983. (Exhibit 56).

The use of $CBOD_5$ rather than total BOD_5 will allow regulatory agencies and wastewater treatment operators to determine the specific performance of a facility without regard to the irregularities caused by nitrogenous BOD being exerted in the BOD bottle in the first five days. Plant performance will

also be much more comparable between different facilities, thereby providing more equitable compliance requirements.

Traditionally, secondary treatment plants have been designed to remove CBOD rather than total BOD. Therefore, by adopting $CBOD_5$ effluent limitations, secondary treatment plants will be monitored with respect to their design parameter, CBOD, and not by a test that may include significant levels of NBOD.

With the use of $CBOD_5$ plant operators will no longer have an incentive to discourage inplant nitrification. As a result, the effluents of such facilities may actually improve due to lower ammonia levels and the reduced use of potentially harmful chlorine.

In those cases where nitrification may be a major cause of dissolved oxygen depletion downstream or if ammonia (N) water quality standards are being violated, the treatment facility can still be regulated by limiting its discharge of ammonia. It is more reasonable and effective to control NBOD and ammonia (N) loadings directly rather than by controlling both CBOD and NBOD in terms of total BOD.

The present BOD_5 secondary treatment standard is 25 milligrams per liter. 6 MCAR § 4.8014 C.6. and now Minnesota Rule Part 7050.0210 subpart 6. The Agency is not proposing to change that standard even though it will now be carbonaceous BOD_5 rather than total BOD_5 that will be monitored and tested for. The 25 mg/l standard is consistent with the $CBOD_5$ standard begin

proposed by the EPA in the Federal Register dated November 16, 1983 (Exhibit 56). The Agency believes a 25 mg/l standard is reasonable, even with a switch to a carbonaceous standard, and is not proposing to change it.

In summary, the impact of this change should be the following:

1. No change in the design of secondary treatment plants.
2. No additional costs.
3. A possible reduction in the use of chlorine resulting in a corresponding reduction in the formation of chlorinated organic compounds.
4. A possible improvement in the level of compliance with $CBOD_5$ effluent limitations.
5. Reduced discharge of ammonia at those facilities which may currently be inhibiting inplant nitrification.
6. Improved water quality below those facilities which increase inplant nitrification and/or reduce chlorination.

2. pH Range

Currently all dischargers in the State are assigned a pH effluent limitation of 6.5-8.5. See 6 MCAR §§ 4.8014 C.6. and 4.8015 C.6. (now Part 7050.0210, Subpart 6). This means that the pH of the effluent from a treatment plant must be between 6.5 and 8.5. The Metropolitan Waste Control Commission requested in its January 9, 1984, comments (Exhibit 11) that the Agency amend its rule to a pH range of 6.0-9.0. The Agency has determined that it would be appropriate to do this and has proposed to amend its pH effluent limitation to 6.0-9.0.

One reason for doing this is to make the Minnesota requirement consistent with the federal requirement for secondary treatment, which is a pH standard of 6.0-9.0. 40 C.F.R. § 133.102(c) (1982).

Another reason for expanding the pH range is that the proposed expansion will not jeopardize compliance with the pH water quality standard for the receiving water. All water classifications have a pH requirement that must be maintained in the water in order to protect it for the specified use. The use classifications and the corresponding pH water quality standards are listed below.

Use Classification	pH Water Quality Standard
Domestic Consumption (Class 1)	None Specified
Fisheries and Recreation (Class 2A)	6.5 - 8.5
Fisheries and Recreation (Class 2B and 2C)	6.5 - 9.0
Industrial Consumption (Class 3A)	6.5 - 8.5
Industrial Consumption (Class 3B and 3C)	6.0 - 9.0
Agriculture and Wildlife (Class 4A)	6.0 - 8.5
Agriculture and Wildlife (Class 4B)	6.0 - 9.0
Navigation and Aesthetics (Class 5)	6.0 - 9.0
Other Uses (Class 6)	None Specified
Limited Resource Value (Class 7)	6.0 - 9.0

Because all waters of the state have multiple use classifications, however, the applicable pH water quality standard for all waters (except Class 7 waters) is 6.5-8.5 (6.0-8.5 for Class 7 waters). Since the water quality standard

is so close to the proposed effluent limit, a half a part on either end of the range, the water quality standard will not be jeopardized by a discharge that is slightly more acidic or basic than the standard. With most water bodies, the pH is largely dependent on the natural characteristics of the watershed and not affected greatly by the pH of a point source discharger. Of course, if a point source discharger were to cause the standard to be exceeded, more restrictive pH control of the effluent would be required.

There may be a few dischargers who are presently adjusting the pH of their effluents chemically who will no longer be required to do that. If so, these dischargers would realize a cost savings. There are no additional costs, in any event, that dischargers will incur as a result of this change.

D. Merger of Interstate and Intrastate Rules

Minnesota currently has two nearly identical sets of water quality standards and water use classifications; one for intrastate waters (WPC 14 and WPC 24) and one for interstate waters (WPC 15 and WPC 25). The Agency is proposing to merge WPC 14 and 15 into one rule and merge WPC 24 and 25 into one rule. WPC 15 and 25 will be repealed and, because WPC 24 is being completely rewritten, the current WPC 24 is also proposed to be repealed. This merger is largely a nonsubstantive change, but one that will make the rules considerably shorter and easier for all to use.

The present separation of inter and intrastate waters stems from the Federal Water Quality Act of 1965 which only authorized the states to establish standards for interstate waters. The federal authority did not extend to intrastate waters until the Clean Water Act (P.L. 92-500) was passed in 1972. See 33 U.S.C. § 1313. Minnesota promulgated interstate standards in April of 1967. In March of 1973 the interstate rules were updated and nearly identical intrastate rules were promulgated at the same time. The dual sets of rules have been carried along ever since.

A merger of the rules dealing with inter and intrastate waters will be to the advantage of all users of the water quality rules. Confusion over the dichotomy between inter and intrastate waters will be eliminated. The rules covering all waters of the state will be about half the length they are now. Other Agency rules will not be adversely impacted by the repeal of the interstate rules WPC 15 and 25.

There are a couple of changes that have to be made in the rules to coincide with the elimination of the distinction between intrastate and interstate rules. One change, of course, is to eliminate the phrases "intrastate waters" and "interstate waters" and replace them with simply "waters of the state." This has been done in several places in Part 7050. See e.g. Part 7050.0200. Similarly, there is no reason to define "interstate waters" and "intrastate waters" so those phrases are deleted from the definition section in Part 7050.0130. A definition of "waters of the state" is all that is required, and the rule

incorporates the statutory definition from Minn. Stat. § 115.01, subd. 9 (1982).

Another change has to do with the dissolved oxygen standard for the Mississippi River from the outlet of the Metro plant to Lock and Dam No. 2 at Hastings. During the last round of hearings in 1980, a separate dissolved oxygen standard was adopted for this stretch of the Mississippi River. Since the Mississippi is an interstate water, this standard was shown in WPC 15 (6 MCAR § 4.8015 D.2.B. and D.2.C. (footnote ****). Since interstate waters are now in Chapter 7050, and this special dissolved oxygen standard still applies to that stretch of the Mississippi, the footnote from WPC 15 had to be moved into Chapter 7050. There are no changes in the language but the footnote is now found in Part 7050.0220, Subparts 2B and 2C, footnote *.

There is one substantive change in the water quality standards that the Agency is proposing as part of the merger of the intrastate and interstate rules. That change is the deletion of weekly average temperature restrictions for each month of the year for the Mississippi River, which are found in 6 MCAR § 4.8015 D.2.B. and D.2.C. (footnote *).

These special temperature restrictions for the Mississippi River came out of a joint state and federal conference on Mississippi River temperature standards held in St. Louis in 1971. The Agency has determined now, however, that these special temperature restrictions, applicable to only the one river, are no longer necessary. The underlying temperature standard, which

is no more than 5°F above the natural temperature, as a monthly mean of the daily maximum, applicable to all Class 2B and 2C rivers in the state, which includes the vast majority of all rivers, is adequate to protect game and rough fish in the Mississippi.

The Agency made a comparison of the two standards -- a 5°F above natural standard and the weekly average standard -- to determine which standard would be controlling in restricting heat additions from point sources discharging to the Mississippi River. The comparison was made by collecting temperature data from four continuous monitoring stations in the Metro area and performing the following computation with the data.

1. The monthly mean of the daily maximum temperatures was listed for each month for the years 1981 and 1982.

2. Five degrees Fahrenheit was added to each monthly mean to simulate the standard.

3. The monthly mean value plus 5°F was compared to the weekly mean temperature standard for the same month.

The results of this comparison show that of the 48 data points for 1981 (4 stations for 12 months), 38 of the results show that the general standard of 5°F above natural as a monthly average was more restrictive than the special temperature restriction imposed for each particular month. In 1982, in all but two of the months, the 5°F increment standard was more restrictive.

We understand that the special standard is measured as a weekly average while the general standard is measured as a monthly average. If this difference does bias the above

comparison, it would tend to make the special weekly average standards more stringent. Even with a weekly average tending to give more importance to the standard, the data show the 5°F above natural standard to be controlling most of the time.

Currently, there are four industries that have weekly average temperature restrictions imposed on their discharges to the Mississippi River. The four are:

1. Northern States Power Company
   Highbridge Generating Plant, St. Paul
   Permit No. MN 0000884, expires 12/31/84

2. Northern States Power Company
   Red Wing Generating Plant, Red Wing
   Permit No. MN 0000850, expires 4/30/87

3. Blandin Paper Company
   Grand Rapids
   Permit No. MN 0000345, expires 9/30/86

4. Minnesota Power and Light Company
   Clay Boswell Generating Plant
   Permit No. MN 0001007, being reissued,
   will expire 12/31/87

These permits all contain monthly mean and daily maximum temperature limitations that will control the heated discharges if the weekly mean standards are deleted. The elimination of these standards should not affect the discharges listed above. The Agency does not anticipate that elimination of the special standards for the Mississippi River will cost any of these dischargers any money, but nor will it save them any. These discharges have a history of meeting their temperature limitations and deletion of the standard will not result in an increase in heat being discharged. If the standards are deleted, the permittees would be notified that the weekly mean standards

in their permits would not be enforced and the standards could be deleted the next time the permit is issued.

There is one final point to clarify about the merger of the two rules and the elimination of the distinction between intrastate and interstate waters. Presently, the intrastate waters are organized in WPC 24 under 39 different drainage basins. The boundary deliniations of these basins are based on Bulletin No. 10, Hydrologic Atlas of Minnesota, produced by the Minnesota Department of Conservation. Waters specifically named in WPC 25, on the other hand, are organized by 10 major drainage basins.

In the proposed rule, waters specifically named are organized into nine major drainage basins. The watershed boundaries of these major drainage basins and the basin map accompanying the proposed rule, part 7050.0480, correspond to the boundaries established by the MDNR, Office of Planning and Research, Water Policy Planning Program as part of the Minnesota Watershed Mapping Project. Exhibit 40. This mapping project was initiated through a Legislative Commission on Minnesota Resources (LCMR) mandate which assigned the MDNR the responsibility of determining the complete and standard deliniation of watershed boundaries for the state and preparing an appropriate map for official use. Since the major drainage basin boundaries defined as a result of this mapping project are considered the official state watershed deliniations, it is reasonable to pattern the organization of the proposed water use classification rule using these same boundaries. This reorganization will not only make the geographical grouping of the classified waters consistent and

compatible to other water information systems, it will, with the aid of the accompanying basin map, make the rule easier to access by both frequent and occasional users interested in the assigned use classifications.

E. Other Proposed Changes

The Agency is proposing a number of nonsubstantive changes to the rules that will update, clarify, and correct the rules. These changes are described below in the order they appear in the rules.

In addition to the changes initiated by the Agency, the Revisor's Office has made some nonsubstantive changes so that the rules will conform to their formatting and editorial style to which all administrative rules must now conform. The changes made by the Revisor's Office are not discussed in this statement.

1. Change in the Title for Part 7050.0110 - 7050.0220.

It is proposed to shorten the title of this rule (WPC 14) to "Standards for the Protection of the Quality and Purity of the Waters of the State". This is a relatively short title that reflects the content of the rule without attempting to list out the major elements of the rule in the title as the current title does.

Unfortunately, the title got deleted in the revision of the rule that was sent to the State Register, and thus no title appears in the State Register publication of the rule. Nonetheless, the Agency does intend to include the above title when the rule is finally adopted.

2. Deletion of Statutory References

Both WPC 14 and WPC 15 repeat a number of the statutes at the beginning of the rule. These quotations are unnecessary and are proposed to be deleted.

3. Reworded Scope -- Part 7050.0110

WPC 14A.1. and WPC15A.1. contain a general provision called "Scope." The provision is intended to describe what is contained in the rule. The proposed scope provides a more explicit and accurate description of the contents of the rule. The clause that preserves any other more stringent water quality or effluent limitations is retained in the proposed scope language.

4. Deletion of Severability Section

WPC 14A.2 and WPC 15A.2 are severability provisions that are proposed to be deleted. The rules are severable without a specific provision saying so. Deletion of the section helps to shorten the rule.

5. Deletion of Unclassified Waters Section -- Part 7050.0160

WPC 14 A.6 provides for those intrastate waters that have not been classified. Since all waters are now classified under the new rules, this provision has no application and is proposed to be deleted.

6. Change in Title of Use Classification -- Parts 7050.0200(5) and 7050.0220(5)

The Class 5 classification is presently called Navigation and Waste Disposal. The Agency proposes to change the use

classification name to Aesthetic Enjoyment and Navigation. Waste disposal as a use of waters of the state has negative connotations in the context of beneficial uses such as drinking water, swimming, and fishing. In fact, the new U.S. EPA Water Quality Standards Regulation says "In no case shall a State adopt waste transport or waste assimilation as a designated use for any waters of the United States." 48 Fed. Reg. 51406, Exhibit 16. 40 C.F.R. § 131.10(a). Therefore the Agency proposes to change use classification 5 from Navigation and Waste Disposal to Aesthetic Enjoyment and Navigation. The name change more accurately reflects the uses described for Class 5 waters in Part 7050.0220.

7. Change to Calendar Month and Calendar Week -- Part 7050.0210, Subpart 6

The Agency proposes to change the manner in which compliance with the 30-day and 7-day effluent limitations for BOD_5 and Total Suspended Solids are determined. See Part 7050.0210, Subpart 6. It is proposed to change "30 consecutive days" to "any calendar month" and "7 consecutive days" to "any calendar week." This will make the rule consistent with the federal regulations. See 48 Fed. Reg. 14171. Exhibit 57.

Compliance with 30-day permit limitations is determined on a calendar basis now by the Agency because, administratively, it is vastly less complex than determining compliance on a 30 consecutive day basis. Thus, this change is being proposed to comply with the federal regulation and bring the rule into

agreement with the compliance methods actually in practice. This change will have no impact on any currently permitted discharger.

8. Addition of "Arithmetic Mean" Statement -- Part 7050.0210, Subparts 8 and 16

The statement "arithmetic mean of all samples taken during any calendar month" is being added to the 5-day carbonaceous BOD_5 effluent limitation in part 7050.0210, subparts 8 and 16. This or similar statements appear with the other BOD_5 effluent limitations that are in other parts of the rule. See discussion above. The statement defines how compliance with the limitation is to be determined. It is reasonable to define compliance determination for all BOD_5 effluent limitations the same way.

9. Spelling Out of "Hexavalent" -- Part 7050.0220, Subpart 1D

The word "hexavalent" that is a part of the drinking water standard for hexavalent chromium in part 7050.0220 was spelled out in the list of Class 1.A. standards but written in symbol (+6) form in the Class 1.D. standards. The Agency proposes to spell out hexavalent in the 1.D. standards to make the two listings consistent. The hexavalent chromium standard of 0.05 mg/l is not being changed.

IV. CONCLUSION

This document, together with the Agency's exhibits, constitutes the Agency's Statement of Need and Reasonableness for

the amendments proposed to WPC 14 and 24 and for the repeal of WPC 15 and 25. The Agency believes that it has made a presentation establishing the need for and reasonableness of the amendments and proposed repeal.

Respectfully submitted,

for Jay M. Heffern

SANDRA S. GARDEBRING
Executive Director
Minnesota Pollution
Control Agency

Dated: March 29, 1984