

State of Minnesota
Minnesota Pollution Control Agency

In the Matter of Proposed Amendments to rules governing water quality: Minnesota Rules, Chapter 7050 (Water Quality Standards for Protection of Waters of the State); Addition of Minnesota Rules, Chapter 7053 (Effluent Limits and Treatment Requirements for Discharges to Waters of the State); Repeal of Minnesota Rules, Parts 7056.0010 to 7056.0040 (Classification for Use and Standards for Select Reaches of the Mississippi River and its Stream Tributaries); and Repeal of Minnesota Rules, Parts 7065.0010 to 7065.0260 (Specific Effluent Limits for Select Watersheds)

Staff Final Response
to Public Comments

October 10, 2007

I. Introduction

The Minnesota Pollution Control Agency (Agency or MPCA) published its notice of hearing and intent to adopt proposed amendments to Minn. R. ch. 7050, establish a new rule, Minn. Rule ch. 7053 and to repeal two rules, Minn. R. ch. 7056 and ch. 7065, in the Minnesota *State Register* on July 30, 2007, (32 SR 250). One week earlier, on July 23, 2007, the proposed amended and new rule language in Minn. R. ch. 7050 and Minn. Rule ch. 7053 respectively, was published in the *State Register* (32 SR 87).¹

The Agency has presented information to demonstrate that the proposed amendments are needed and reasonable, mostly in the Statement of Need and Reasonableness (SONAR) together with the supporting exhibits. Also, the Agency responded orally to public comments and questions during the public hearings in St. Paul and at the five Regional Offices, and in its Staff Post-Hearing Response to Public Comments (Response) submitted to the Administrative Law Judge (ALJ) on October 3, 2007.

This document, the Staff Final Response to Public Comments (Final Response) will address written comments submitted to the ALJ from September 27 through October 3, 2007 (Public Exhibits 17 through 45).² If the Agency did not specifically respond to any comments in the Response and this Final Response, it is because the response is covered in the SONAR and associated exhibits or in the Agency's oral response at the public hearings. The Final Response will be organized by major topic.

¹ Due to an oversight the hearing notice was not included with the publication of the proposed amended rules on July 23, 2007. Publication in the following issue of the *State Register* (July 30, 2007) met the minimum 30-day notice requirement.

² This Response to comments will use the following abbreviations for citations to the record: Ex. means Exhibit or Exhibits. For example, Ex.EU-1 at 20 means page 20 of SONAR exhibit EU-1; PH-Ex.-1 at 2 means page 2 of MPCA Public Hearing exhibit 1; and P-Ex.-1 at 10 means page 10 of Public exhibit 1. Tr. means the hearing transcript. Tr. 8/29 at 20 means page 20 of the hearing transcript for August 29, 2007. SONAR means the Agency's Statement of Need and Reasonableness. SONAR-I at 20 means page 20 of Book I of the SONAR.

II. Comments on Proposed Eutrophication Standards

A. General Comments

The Minnesota Soybean Growers Association (MSGA, P-Ex.-22) supports the Agency's ability to develop site-specific standards for lakes, and they urge the Agency to consider a standard for bio-available phosphorus for reservoirs. Some particulate-bound phosphorus may not be available to plants, at least in the short-term, however essentially all phosphorus monitoring in lakes and the historical data upon which the standards are based (plus the criteria developed by the U.S Environmental Protection Agency [EPA]), is for total phosphorus. Analysis of total, rather than bio-available, phosphorus (TP) is used for a variety of reasons (SONAR-II at 9). The site-specific approach to reservoirs can address MSGA's issue.

The Minnesota Department of Natural Resources (MDNR) generally supports the adoption of eutrophication standards but recommends that the Agency use a 30Q₁₀ instead of a 122Q₁₀ to differentiate reservoirs from rivers (P-Ex.-37a at 3). We do not dispute the impact of nutrients on rivers or that the estimate of reservoir residence time should take into account the "upstream" residence time (Ex.PL-8). The Agency plans to retain the 122Q₁₀ for the reasons outlined in the SONAR-I at 88 and 137 and in the Response at 13.

MDNR reminds the Agency not to dismiss nitrogen as a potential threat to Minnesota's and downstream surface waters (P-Ex.-37a at 2, see SONAR-II at 8).

B. Shallow Lakes and Wetlands

The Minnesota Department of Transportation (MDOT) expressed concern that the eutrophication standards for lakes, shallow lakes and reservoirs might be applied to wetlands because the definition for these terms "overlap" (P-Ex.-34). The definition for wetlands was added to Minn. R. ch. 7050 in 1994. We are proposing to move this definition into Minn. R. 7050.0186 but to make no changes to the definition itself. Definitions for shallow lake (>15 feet) and "deep" lakes are proposed to distinguish between lakes, shallow lakes and wetlands because the eutrophication standards do not apply to wetlands.

MDOT urges the Agency to modify the definitions for shallow lake and wetlands to eliminate any overlap. If such foolproof definitions existed, the Agency would certainly propose their adoption, but we believe definitions that would eliminate any overlap do not exist. MDOT suggests that the Agency list characteristics of wetlands vs. shallow lakes that can be used to help make the distinction. Such a list is included in the Agency's water quality assessment guidance (Attachment 2 to the Response at 70). However, no list of criteria, no matter how long or detailed, will work in each and every instance to separate shallow lakes from wetlands, which is the reason for including the "case-by-case" language in the proposed definition of shallow lake (SONAR-I at 136). Borderline situations must be decided on a case-by-case basis probably after gathering data and information over a period of two or more years. In most instances, the Agency will make these decisions after receiving input from affected and interested parties,

consultants and stakeholder groups. Under the current use classification system, both wetlands and shallow lakes are Class 2 waters, protected for aquatic life and recreation, although their respective definitions emphasize somewhat different sub-uses under the Class 2 umbrella (see Minn. R. 7050.0186, subp.1a, item B and Minn. R. 7050.0150, subp.4, item U).

MDOT points out the imprecise nature of ecoregion boundaries (the fact that watershed boundaries can be better defined is irrelevant). The Agency recognizes that the ecoregion boundaries are not perfect, and that some lakes near or on an ecoregion boundary might share characteristics of more than one ecoregion, which is the reason for the site-specific language in Minn. R. 7050.0222, subp. 3a. In addition, MDOT believes that after the eutrophication standards are adopted, more impaired waterbodies will be identified. Adoption itself will not increase the number of impaired waterbodies (SONAR-II at 30).

The Agency believes the potential costs to MDOT due to the eutrophication standard were adequately addressed in SONAR-II at 207 given the uncertainties involved. The Agency believes that MDOT's concerns expressed in P-Ex.-34 are addressed either in the proposed rule language or in guidance. They are also "addressed" by the record the Agency has established over many years of monitoring and evaluating lake data, which shows a recognition that when special circumstances arise, additional case-by-case analyses are needed (e.g., see Attachments 2 [at 63] and 3 to the Response). The Agency is not proposing any changes to rule language in response to MDOT's recommendations.

C. MESERB Comments

The comments of Mr. David Lane, President of the Minnesota Environmental Science and Economic Review Board (MESERB, P-Ex. 39 including Appendix A), on the proposed eutrophication standards, for the most part, reiterate MESERB comments in P-Ex.1 and in testimony at the St. Paul hearing on August 30, 2007. The Agency responded to these comments in the Response at 7. We will only respond to a few points in this Final Response. It is worth noting that EPA found the Agency's decisions and justification regarding the proposed eutrophication standards to be "reasonable, defensible, and consistent with federal regulations and guidance" (P-Ex.-32 at 1).

MESERB emphasizes again the need to average lake data over more than one year (P-Ex. 39 at 2 and Appendix A at 4). SONAR-II at 88 provides a discussion of compliance goals for eutrophication standards related to this issue (also see Response at 9).

The status of a lake as a reference lake does not mean it is immune to impairment (P-Ex.-39, Appendix A at 1). Reference lakes were selected prior to the development of nutrient criteria; thus, there is no guarantee that all reference lakes will meet the proposed standards, especially in southern Minnesota.

As noted in the Response at 12, some shallow lakes used to set the proposed standards did not meet every criterion in the definition of shallow lake (P-Ex.-39, Appendix A at 2). Again, a range in shallow lake water quality was needed to determine the thresholds of TP that will protect shallow lake beneficial uses. Still the lakes selected met critical criteria for shallow

lakes. A review of Ex.EU-38 shows that of the six lakes selected with a “hole” deeper than 15 feet, four had submerged and emergent vegetation covering over 88 percent of their area; the other two had 77 and 78 percent coverage (the definition says 80 percent). Shallow lakes will be assessed using data for TP, chlorophyll-a (Chl-a), Secchi depth (SD), the presence or absence of indicator algae or plant species, the overall diversity of the plant community, etc., not just the floristic make-up (P-Ex.-39, Appendix A at 10).

MESERB is concerned that the proposed “must be maintained” nondegradation rule language, associated with protection of lakes with water quality better than standards, will establish more restrictive provisions than those that currently exist. The conditions that “must be maintained” are accomplished through existing nondegradation rules as well as other provisions of rules and local ordinances already in place. The proposed nondegradation language associated with high quality lakes adds no new regulatory authority beyond what the Agency already has.

MESERB’s item number 5 (P-Ex.-39 at 2 and Appendix A at 8) says the standards should specify that if a poor Secchi depth reading is caused by a non-algal related condition, a site-specific nutrient standard should be developed. This potential situation, while rare, is addressed by the proposed rule, which specifies that either the Chl-a or SD part of the standard must be exceeded along with the phosphorus standard for an exceedance to occur. In addition, the solution to this situation may not require development of a site-specific standard but simply a site-specific application of the standard using professional judgment.

MESERB says there is no process outlined to petition the Agency to withhold application of a standard to reservoirs. On the contrary, any interested or affected party can write or “petition” the Agency to request a site-specific review. Such a request could be in the context of an ongoing project on the reservoir of interest or a TMDL (total maximum daily load) study, for example, but it would not have to be.

MESERB attached a letter from the Association of State and Interstate Water Pollution Control Administrators (ASWIPCA, Appendix B to P-Ex.-39). The ASWIPCA letter was in response to a May 25, 2007, memorandum from Mr. Grumbles of EPA urging states to “pick up the pace” of adopting nutrient standards (Ex.EU-49). The thrust of the ASWIPCA’s comments is outlined in bullets on pages 1 and 2 of their letter. The only point among the seven with which the Agency strongly disagrees is ASWIPCA’s statement that many states are failing to find a strong linkage between the causal variables phosphorus (and nitrogen) and response variables such as Chl-a and SD. ASWIPCA does not identify the states and offers no support for this statement. It certainly is not the case for Minnesota lakes, nor is it consistent with the bulk of the published literature on these relationships for lakes in northern North America, which typically demonstrate very strong “cause/effect” relationships between phosphorus and the response variables (Figures II-3, II-4 and II-5, SONAR-II at 56).

The Agency agrees with ASWIPCA’s statements about EPA encouraging states to think beyond their borders and look at nutrient impacts in larger watersheds, citing as examples Chesapeake Bay and hypoxia in the Gulf of Mexico (P-Ex.-39, Appendix B).

III. Comments on Proposed Phosphorus Effluent Limit for New and Expanding Discharges

The MDNR strongly supports the extension of the 1 mg/L TP effluent to new and expanding discharges (P-Ex.-37a at 2), but they have reservations about the *de minimis* cutoff of 1,800 pounds per year. Facilities smaller than the *de minimis* size contribute relatively little TP to Minnesota's surface waters and treating for phosphorus at these facilities may not be the best use of wastewater treatment dollars (SONAR-II at 139 and see Table II-13 at 105). Also, MDNR opposes the proposed third off ramp (Minn. R. 7053.0255, subp.4, item C), which would allow a discharger to request a summer-only TP limit if they discharge in certain watersheds. The Agency appreciates MDNR's concern and does not disagree with their statements concerning potential winter and downstream impacts. However, at this time the Agency does not propose to remove or change this off ramp for the reasons outlined in SONAR-II at 160 (also see Response at 3 and 21).

Mr. David Reimer of Boise Cascade at International Falls (Boise) commented on the impact of the proposed extension of the 1 mg/L TP effluent limit to new and expanding discharges that discharge more than 1,800 pounds of TP per year (P-Ex.-36). Mr. Reimer points out that wastewater from a pulp and paper plant is different than municipal wastewater. Pulp and paper wastewater is nutrient poor and, to facilitate efficient biological treatment, nutrients (phosphorus and nitrogen) are added to the waste stream. Mr. Reimer says that a 1 mg/L TP limit is not appropriate for pulp and paper mills and that even at high water usage the mill could not meet a 1 mg/L limit (P-Ex.-36 at 3 and 4). He recommends that an alternative limit, based on mass per unit production, be included in Minn. R. ch. 7053.0255 (e.g., pounds of TP per ton of paper produced).

In its analysis of potential added costs to industries due to the proposed extension of the TP limit, the Agency estimated there would be no costs to the pulp and paper industry. This is because these facilities typically manage the rate at which nutrients are fed into the waste stream to maintain effluent TP concentrations below 1 mg/L (SONAR-II at 199 and 201). The Agency has typically not given industries (or any discharge to an unimpaired waterbody) a TP limit of 1 mg/L if their effluent concentration is consistently below 1 mg/L.

A review of TP data from Boise's discharge monitoring reports submitted by Boise show that this facility has been below 1 mg/L in six years out of the last nine on an annual average basis (Table 1).

Table 1. Effluent TP Data from Boise Cascade Pulp and Paper Mill from Discharge Monitoring Reports.

| Year | Annual Average TP mg/L | TP Range mg/L |
|-------|------------------------|---------------|
| 1999 | 0.44 | 0.379 – 0.5 |
| 2000 | 0.785 | 0.51 – 1.04 |
| 2001 | 0.53 | 0.14 – 1.0 |
| 2002 | 0.833 | <0.5 – 0.98 |
| 2003 | 1.065 | <0.5 – 1.5 |
| 2004 | 0.683 | <0.5 – 0.77 |
| 2005 | 0.52 | <0.5 – 0.67 |
| 2006 | 1.458 | 0.73 – 2.5 |
| 2007* | 1.04 | 0.66 – 1.42 |

*incomplete data

Given this record over the last nine years, the Agency believes that Boise can achieve effluent concentrations below 1 mg/L with reasonable consistency. Possibly closer monitoring and control of the nutrient feed rates would result in a reduction in effluent concentrations to levels more consistently below 1 mg/L. It is worth pointing out that Boise would need to undergo an expansion before the proposed effluent limit would impact them. The Agency prefers not to modify the language in proposed Minn. R. 7053.0255 in line with Boise’s recommendations. If, after expansion, achievement of 1 mg/L proves to be impossible in the future, Boise could request relief under one or more to the three off ramps, but we do not believe this will be necessary.

The comments of MESERB on the proposed extension of the 1 mg/L phosphorus (TP) effluent limit reiterate comments made in P-Ex.1 (P-Ex.-39, Appendix A at 10). These comments were responded to in the Agency’s Response beginning at 7.

The Coalition of Greater Minnesota Cities (CGMC) recommends rewording the TMDL and environmental harm outweighs the environmental gain “off ramps” so the Agency “must” not issue a TP limit if the conditions specified by the off ramp are met (Minn. R. 7053.0255, subp. 4, items A and B, P-Ex.-41). The Agency believes that including such “must” language would not have the result that CGMC is seeking, and it might work to their disadvantage. We assume CGMC’s intent is for the Agency to give future petitions a fair analysis, consistent with the statements made in the SONAR and statements made in response to Mr. Sullivan’s testimony at the Rochester hearing. With or without “must” language, the Agency will still have the responsibility to review each petition and make a determination to grant or deny. The review will be based on the merits and weight of evidence presented in the petition, and on information subsequently obtained, if necessary in order to reach a conclusion. Addition of “must” language does not alter the fact that the Agency will make this determination.

Also, the Agency believes that “must” language may not facilitate a fair and unbiased analysis of all the relevant case-by-case circumstances. As discussed in the Response at 20, nutrient related TMDLS can be complex; and, while we can only speculate at this time, “must” language might

bias the preliminary decision. The same problem could be true for the “environmental harm” off ramp. The Agency prefers not to reword the off ramps at this time, but wait to evaluate how the process works after we and dischargers have gained some experience with the petition process. That experience may show that some adjustments in the rule language are warranted. Options always available to the discharger are, the discharger or Agency staff can ask the Agency’s Citizens Board to review the staff decision, or the discharger can request a contested case hearing on the permit conditions if they disagree with an Agency decision.

MDOT mentions a meeting between a MDOT representative (Mr. Nick Tiedeken) on September 25, 2007, with Agency staff members, Mr. Maschwitz and Mr. Tomasek. The Agency told Mr. Tiedeken that the proposed extension of the 1 mg/L phosphorus effluent limit to new and expanding facilities would not apply to stormwater discharges. We did not say, nor mean to imply, that stormwater discharges might not be subject to **any** provision in Minn. R. ch. 7053 (P-Ex.-34).

IV. Comments on Proposed Acetochlor Standard

A. General Comments

Mr. Lance Peterson, President of the Minnesota Soybean Growers Association (MSGA, P-Ex.-22), Mr. Kevin Paap, President of the Minnesota Farm Bureau Federation (MFBF, P-Ex.-23), Mr. Daryn McBeth, President of the Agri-Growth Council (AGC, P-Ex.-33), and Mr. Roger Moore, President of the Minnesota Corn Growers Association (MCGA, P-Ex.-40), offered comments on the proposed standards for acetochlor and, in some cases, for herbicides in general.

The MSGA, MFBF, and MCGA urge the Agency, in the development of a standard, to consider all available data including the data provided by Monsanto, which the Agency has done. The MSGA, MFBF and MCGA also urge the Agency to base the standards on data for resident species and not on data for sensitive nonresident species. Data for nonresident species is included but that data does not “drive” the standard. The MFBF, in particular, feels there is a contradiction in including data in the analysis for the sensitive species *S. capricornutum* and *L. gibba*, which are not considered ecologically important in Minnesota, and the goal to meet a community level of protection. There is no contradiction here; data for these sensitive species are included to maximize the size of a limited database. But more importantly, the species that have been tested must represent the entire aquatic plant community, and only a small fraction of a typical plant community has been tested. It is possible that there are important resident species as sensitive as *S. capricornutum* and *L. gibba* that remain untested. The proposed standard (1.7 or 3.6 µg/L) will not provide complete protection to these very sensitive species. Monsanto’s consultant, Dr. Giddings included the sensitive species in his analysis. The MFBF says: “[w]e do not think it is the best scientific approach to base these standards on limited data” (P-Ex.-23 at 3); yet this is the same amount of data on which the EPA Office of Pesticide Programs based their decisions regarding registration and label restrictions that allows the herbicide to be applied to farm fields nation-wide.

The AGC states that, if the Agency proceeds in establishing a standard, we should set it at a level that is reasonable and not overly precautionary, and that there is no history of harm to aquatic plant communities (P-Ex.-33). The MFBB, AGC and MCGA expressed similar views: the standard should be based on a demonstration of “harm” to the aquatic plant or animal community (see Section IV.B.1 below). The Agency has stated a goal of community level protection, which has been accepted as appropriate by two Monsanto consultants. Most toxicity-based standards are based on toxicity data for aquatic animals (except those for herbicides) and are designed to protect 95 percent of aquatic species 95 percent of the time (Ex.HH-3 at 7). The protection level goal for aquatic plants is more lenient than this goal as stated (SONAR-III at 45, Response at 30). Standards set to meet these goals will not prevent some harm to sensitive species. More lenient protection level goals would not provide protection consistent with the Agency’s responsibilities and the dictates of the Clean Water Act, in the opinion of the Agency.

The MCGA suggests that the Agency wait for EPA to develop national aquatic life criteria (304(a)) for acetochlor and metolachlor. Unfortunately, EPA’s pace of issuing new or updated criteria is excruciatingly slow; the Agency felt it could not wait. For example, the atrazine criterion has been out in draft form since 2001 (a new draft was issued in 2003). Six years later this criterion is still not final.³

The MFBB, AGC and MCGA emphasize the potential economic impact on farmers, and the MFBB and AGC indicate that voluntary best management practices (BMP) are being implemented without standards for herbicides. The Agency is aware of the economic implications of herbicide standards and has addressed them in the SONAR-III at 63. The availability of standards in rule will facilitate MDA’s promotion of voluntary BMPs **before** watersheds become impaired and help prevent the need for expensive TMDLs to restore impaired waterbodies to health.

Finally, the MFBB and MCGA indicate they are not opposed to the adoption of standards for herbicides.

B. Comments of the Acetochlor Registration Partnership

The Acetochlor Registration Partnership (ARP), represented by Ms. Tammera Diehm of Winthrop and Weinstine, claim that the Agency has not demonstrated the need and reasonableness of the proposed acetochlor standard (P-Ex.-38a). ARP also asked Dr. Robert Gensemer to provide a review of the Agency’s and Dr. Giddings’ analysis of the plant data for acetochlor (P-Ex.-38b, see Section IV.C below).

The assertions of Winthrop and Weinstine (ARP, P-Ex.-38a) are inaccurate and without merit. The Agency has more than adequately demonstrated both the need for and the reasonableness of the proposed acetochlor standard (SONAR-III beginning at 31, and Response at 26).

³ The Agency has been a leading voice among states urging EPA to issue more new and updated 304(a) criteria including giving presentations on this topic at professional meetings.

1. Need

To summarize the need:

- Acetochlor was considered a restricted use pesticide and EPA placed it in toxicity category I (the highest of four toxicity categories for human health and domestic animal exposure) as of November 7, 2005, Ex-H-4 at 2.⁴
- Acetochlor was determined to be a “surface water pesticide of concern” using criteria in the Minnesota Department of Agriculture’s (MDA) Minnesota Pesticide Management Plan (Ex-H-4 at 1), and input from a diverse stakeholder committee reporting to MDA.
- MDA sent several written requests asking the Agency to develop standards for herbicides including acetochlor and metolachlor (e.g., Ex. H-1, H-6 and H-7).
- Two to three million pounds of acetochlor are applied to farm fields in Minnesota.
- Acetochlor is detected in all the MDA automated river monitoring stations during the growing season and in almost half of the statewide survey sites (automated samples are triggered by rain events which increase the water level and flow in the river).
- Recent assessments of acetochlor concentrations measured over the last several years show **four-day average** concentrations in rivers and streams in southern Minnesota as high as 7.89 µg/L (LeSueur River, PH-Ex.-14).

These are real and current acetochlor measurements of environmental concern, not just the “fear of a future problem” (P-Ex.-38a at 1). The Agency and MDA have engaged in a logical and responsible sequence of actions that, not only clearly demonstrate the need for an acetochlor standard, but also demonstrate that the Agency has an obligation to take action because of its legal responsibility to protect surface waters from pollution. Again, the steps referred to are: 1) acetochlor is a widely used herbicide, the toxicity of which was characterized by EPA as category I; 2) MDA has measured concentrations in several surface waters that exceeded the Agency’s advisory value and proposed standard; and 3) MDA requested the development of the standards. The Agency cannot afford to wait until it has perfect data and information, a clear demonstration of environmental harm, or impacts on human health or animals, before it takes action.

2. Reasonableness

ARP provides further support for the analysis of plant toxicity data and the alternative acetochlor standard of 4.34 µg/L provided by Dr. Giddings in P-Ex.-21. In this supplement to P-Ex.6, ARP emphasizes the conservative aspects of Dr. Giddings analysis. In the end, however, Dr. Giddings uses a 20th percentile FAV calculation of the EC20s to arrive at his alternative standard. The 20th percentile of EC20s is not a conservative (potentially overly protective) approach. The proposed revised standard of 3.6 µg/L, for the reasons discussed in the Response at 31, represents a reasonable interpretation of all the plant data. In addition to the points listed in the Response at 32 and 33, it is worth noting that 3.6 µg/L is lower than the EC20 of 8.47 µg/L for *Scenedesmus*

⁴ These label restrictions and toxicity categories may have been relaxed following EPA’s reassessment of acetochlor’s carcinogenic properties (SONAR-III at 55).

vacuolatus only by a factor of 2.4 and is lower than the EC50 of 12.2 µg/L for this algae species by a factor of 3.4. This is a small margin of safety for this species.

In addition to the discussion of reasonableness in SONAR-III beginning at 39 and the discussion of the basis for the proposed revised acetochlor standard of 3.6 µg/L in the Response at 28, the following points should also be made specifically in response to the statements of ARP in P-Ex.-38a.

1. ARP says that the Agency has used inadequate data with a novel approach and a methodology that cannot and should not be used, and they say the Agency's "entire case is based on an **unidentified potential** threat to plant life" (ARP's emphasis, P-Ex.-38a at 8). The analyses conducted by both of Monsanto's and ARP's consultants, Dr. Giddings and Dr. Gensemer, clearly illustrate the lack of basis for this statement. Dr. Giddings used the same method the Agency used to determine his alternative standard and Dr. Gensemer supports the methodology. Furthermore, EPA Region 5 and Head Quarters staff says the methods are "defensible and consistent with federal regulations and guidance" (P-Ex.-32 at 7). The fact that, at the conclusion of his analysis, Dr. Giddings proposes an alternative standard also would seem to imply that there is more than an "unidentified potential threat." In addition, Dr. Gensemer writes (P-Ex.-38b):

"I am also pleased that MPCA has taken on the challenge to derive new guidance for derivation of WQS [water quality standard] specifically for protection of aquatic plants from chemicals for which they are uniquely sensitive. Aquatic plants clearly are important to the structure and function of all aquatic ecosystems, and regulatory criteria should ensure their protection at levels that ensure overall plant community integrity is maintained. Current USEPA guidance only evaluates this question at a general level with only minimal requirements for the number and type of plant data required for AWQC [ambient water quality criteria] derivation. Particularly for herbicides, I applaud regulatory approaches that favor generation of a plant toxicity dataset of similar size and quality to animal toxicity datasets, and I encourage the use of criteria derivation methods that derive specific and clearly quantifiable levels of protection."

(Further discussion of Dr. Gensemer's analysis follows in Section IV.C.)

2. ARP says the standard is not needed because impacts of a herbicide in rivers and streams may be "inconsequential" when compared to increased turbidity and other impacts occurring during a runoff event (P-Ex.-38a at 4). The fact that agricultural runoff potentially contains a wide range of pollutants is hardly a valid reason for not developing a standard for one toxic component of that runoff.

3. ARP says the agency does not provide any evidence that the standard is necessary to protect fish (P-Ex.-38a at 8). Toxicity data for fish indicate that fish (and human health impacts as well) are not as sensitive to acetochlor as aquatic plants (Ex.H-9) The Agency's mandate is to protect the integrity of the whole aquatic community, not just one component.

4. ARP says the Agency has failed to meet the requirements of the Administrative Procedures Act because it failed to consider alternatives to developing a numeric standard for acetochlor (P-Ex.-38a at 10). Far from ignoring “the value of advisory values as well as BMPs and other voluntary measures” as ARP claims (P-Ex.-38a at 10), the Agency’s advisory value for acetochlor of 1.4 µg/L has been used by the Agency and MDA to review monitoring data and characterize acetochlor in 2004 as a “surface water pesticide of concern.” It was the use of this advisory value that helped prompt MDA and the Agency to see the need for a fully researched standard. The alternative the Agency selected was to develop a proposed acetochlor standard. Promulgation of a numeric standard in Minn. R. ch. 7050 is the appropriate and responsible course of action. Also, the Agency and MDA actively promote and encourage the application of voluntary BMPs. Promulgation of a standard will not interfere with the continued application of voluntary BMPs.

C. Review of Proposed Acetochlor Standard by Parametrix

Monsanto and ARP asked Dr. Robert Gensemer of Parametrix (P-Ex.-38b) to review both Dr. Giddings’ and the Agency’s analysis of the plant toxicity data that led to the respective proposed standards. Dr. Gensemer concluded that 4.34 µg/L “is the most scientifically defensible value that can be derived from the available data.” As noted in the Response, the Agency does not dispute the merits of Dr. Giddings’ overall approach. The Agency concludes, however, that the refinements Dr. Giddings made (calculating EC20s, and standardizing the effect end points and test durations) have a relatively small impact on the overall analysis of the available plant data, and his use of a 20th percentile of EC20s is not overly protective. The addition of data for six species clearly has an important impact on the analysis.

Dr. Gensemer’s concerns about the absence of specifics about duration (averaging period) and frequency of allowed excursions are addressed in the Response at 30.

D. Conclusion

The Agency has demonstrated the need for promulgating standards for acetochlor and metolachlor, and the Agency has responded to valuable information provided by ARP and modified the original proposed standard accordingly. The proposed revised acetochlor chronic standard of 3.6 µg/L is reasonable.

Furthermore, promulgation of a numeric standard for acetochlor (and metolachlor) in rule is the appropriate and responsible course of action on the part of the Agency. Development and promulgation of a new standard is not a burden the Agency takes on lightly. The unpromulgated advisory value for acetochlor, which was used by MDA as a guide to assess surface water data from their monitoring network, is probably somewhat overly protective.⁵ A promulgated standard requires a much more exhaustive analysis of the toxicity data plus an assessment of its impact (including economic) on regulated parties, other units of government, environmental organizations, and the public at large. A promulgated standard must meet all the public

⁵ Aquatic life “advisory values” are developed by the Agency based on a limited review of toxicity data in response to a need such as monitoring results or emergency or spill situations. In general, advisory values tend to be conservative because of the limited data analysis.

notification and other requirements of the Administrative Procedures Act, which the Agency has done. As the record of this rulemaking clearly shows, the Agency's original proposed standard of 1.7 µg/L received considerable scrutiny from ARP and their consultants. In our opinion the public process has resulted in an improved acetochlor standard. This is the way the rulemaking process is designed to work in Minnesota, the results of which produce rules that contain standards based on the best available science.

V. Comments on Proposed Definition of Natural Causes and Nondegradation

The Minnesota Soybean Growers Association (P-Ex.-22) and the Minnesota Farm Bureau Federation (P-Ex.-23 at 3) suggest that the Agency use the definition for "natural background" in the Clean Water Legacy Act. The Agency believes that, while the wording is somewhat different, the meaning of the two definitions is the same. The Agency's definition is more succinct but contains the same important elements as the statutory definition. Both address physical, chemical or biological conditions, both address impacts (pollution) from human activity and both say the impacts must be "measurable." The statutory definition includes examples of natural factors, climate and ecosystem dynamics that, in our opinion, add little to the definition. The Agency prefers to retain its proposed definition of "natural causes" (Minn. R. 7050.0150, subp. 4, item N).

MDNR comments with regard to nondegradation seem to pertain more to the implementation of the current nondegradation to all waters provisions (Minn. R. 7050.0185) than to the Agency's limited proposed changes (P-Ex.-37a at 7). The Agency will be working with the MDNR as it continues its review of all the nondegradation provisions (Response at 25).

VI. Comments on Proposed *E. coli* Standards

The Minnesota Farm Bureau Federation (P-Ex.-23) and the Minnesota Soybean Growers Association (P-Ex.-22) expressed concern that *E. coli* can survive and multiply outside the digestive systems of animals. The Agency is aware of these new studies (SONAR-III at 114), but the Agency believes that *E. coli* is the best indicator currently available to represent the overall risk to swimmers of getting sick if they ingest water contaminated with fecal bacteria. *E. coli* is also inexpensive to monitor. The Agency will consider better indicators or methods to measure pathogens directly in surface waters when such criteria and methods become available in the future.

VII. Comments on Proposal Mercury Standard and Other Standards

MESERB provided new comments on the proposed fish tissue standard for mercury (P-Ex.-39). MESERB correctly states that the mercury TMDL study (Ex-M-2) found that the contribution of mercury from municipal point sources, relative to air sources, is a small fraction of the total loading to Minnesota. It is the intent of the Agency to implement the fish tissue standard in concert with the existing water column standards following both the recommendations of a

stakeholder group (now holding meetings) and the EPA final guidance on implementation of a fish tissue standard.

The Minnesota Center for Environmental Advocacy (MCEA) says the Agency has failed to meet federal requirements by not adopting EPA 304(a) aquatic life criteria for chemicals that the discharge or presence of could reasonably be expected to interfere with designated uses (P-Ex.-35). MCEA provides a list of chemicals which they believe fall into this category. Table 2 lists the chemicals in P-Ex.-35 and shows which of the 11 (alpha and beta endosulfan are considered one) currently have a standard, criterion, advisory value or no value and the Agency's plans for the chemical at this time.⁶

Table 2. MCEA List of Chemicals in P-Ex.-35 Showing Those for which MPCA has a Standard, Criterion, Advisory Value or No Value and Future Plans.

| Chemical | Class 2 standard (S), criterion (C), advisory value (AV), or no value (N) | Notes and MPCA Plans |
|-------------------|---|--|
| | | |
| Benzo-a-pyrene | AV | Also a Class 1, drinking water S |
| Diazinon | N | No plans at present |
| Nonylphenol | N | Plans to adopt as part of investigations into endocrine disruptive chemicals |
| Tributyltin | N | No plans at present, we have an AV for tin |
| Aldrin | N | No plans at present |
| Alpha-endosulfan | S | Endosulfan standard includes both alpha and beta |
| Beta-endosulfan | S | |
| Demeton | N | No plans at present |
| Iron | C | Also a Class 1, drinking water S |
| Methoxychlor | N | Class 1, drinking water S |
| Mirex | N | No plans at present |
| Pentachlorophenol | S | Also a Class 1 drinking water S |

The Agency has adopted an aquatic life and recreation (Class 2) standard, developed a criterion or advisory value for four of the 11 chemicals on the list. Of the chemicals for which the Agency has no value at this time, nonylphenol is of most interest because of its suspected role in the interference of endocrine function. The other six chemicals for which there is no value are considered a much lower priority. The Agency has no evidence that the concentrations of these six chemicals (the discharge or presence) pose a threat to beneficial uses, or to aquatic life and the health of wildlife or humans. The demonstration of a reasonable expectation of a threat is a key part of the federal requirement for adoption of criteria. However, it is likely that we have relatively little monitoring data for most (or the data we do have may be old and of suspect quality). Like all governmental agencies, this Agency must prioritize where it directs its

⁶ Standards are adopted in rules, criteria are thoroughly researched values but not promulgated, and advisory values are based on a less thorough data analysis and would not be considered suitable for promulgation.

resources. The chemicals for which no value exists at the present have not become a priority. For example, the Agency believes it was far more prudent to devote its resources to the development and promulgation of standards for two highly used herbicides, acetochlor and metolachlor.

VIII. Comments on Proposed Classification Changes

A. Introduction

There were a number of comment letters on the proposed classification changes. The Agency responses to these comment letters will follow the four major categories as outlined in Section X of the Agency's Response.

B. Proposed Class 3B to Class 3C Industrial Use Protection Changes

A number of comment letters were submitted expressing support of the proposed Class 3B to Class 3C industrial use classification changes (P-Ex.-17-20, 24-31d, 42-45). Most of these letters contained similar content, and a large number were sent from mining interests and their associated vendors and suppliers in northern Minnesota.

C. Proposed Class 7 Limited Resource Value Waters

Twelve surface water reaches were proposed for Class 7 reclassification. In addition, the lower reach of County Ditch No. 45 in Renville County (an existing Class 7 water) is proposed for Class 2B reclassification. Lastly, an unnamed creek that flows to Cedar Creek in Isanti County was assessed for potential reclassification but it is the recommendation of Agency staff that this watercourse retain its current Class 2B use classification.

A post-hearing comment letter from the Minnesota Farm Bureau Federation (P-Ex.-23) offered support for the proposed Class 7 amendments. See also pages 41- 45 of the Response for additional comments and discussions regarding the proposed Class 7 reclassifications.

D. Proposed Update to Class 2A (Trout Waters) List

Two related post-hearing submissions from the Minnesota Department of Natural Resources (MDNR) stated their support for the proposed Class 2A use classification for the reach of the Vermillion River in Dakota County that extends east of the City of Farmington to a point just beyond the Highway 52 bridge crossing of this river (P-Ex-37a and P-Ex.-37b). An October 8, 2007 rebuttal letter to P.Ex.37b was submitted by the Vermillion River Watershed Joint Powers Organization (VRWJO). This was followed by an October 9, 2007 email response from Mr. Brian Nerbonne (MDNR), a copy of which is being entered into the hearing record.

The Agency recognizes that there will be a significant change in the overall hydrology of the Vermillion River once the Metropolitan Council Empire Wastewater Treatment Facility discharge is removed from the Vermillion River and re-directed to the Mississippi River

(SONAR-III at 178). Whether or not the removal of this discharge has any bearing on potential TMDL listings of this river remains to be seen. VRWJPO in their October 8, 2007 letter advocates for “*one of the following scenarios: 1) a 2A use classification with site specific standards for some parameters that currently don’t meet the definition of 2A, or 2) a 2B use classification with more stringent site specific standards for selected parameters to increase the level of protection.*” While VRWJPO does not indicate which Class 2A standards [parameters] present an issue of concern, it should be noted that there are provisions in the rule that allows for the application of site-specific standards for a given waterbody (Minn. R. 7050.0220, subp. 7 rule as proposed, or in the existing rule Minn. R. 7050.0222, subp. 8). It should also be noted, however, that there can be a number of factors affecting attainment of certain ambient water quality standards, and under certain circumstances a site-specific modification of standards may not be the appropriate administrative process that would apply.

In summary, it is the common opinion of both the Agency and the MDNR that the Class 2A use classification is the appropriate use classification for this segment of the Vermillion River. The Agency maintains that the Class 2A use classification of the Vermillion River as proposed in Minn. R. 7050.0470, subp. 7, item A., subitem 194 is needed and reasonable and that this is the appropriate rulemaking proceeding to make this change.

E. Other Proposed Classification Changes

No additional comments were received or offered on the proposed changes to use classification listings in Minn. R. 7050.0470 aside from those proposed and outlined in MPCA Public Hearing Ex. 12 and Attachment 1 to the Response.

IX. Conclusion

The Agency has, through the SONAR, exhibits, oral testimony, Response and this Final Response, demonstrated that the proposed amendments are needed and reasonable.