

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of the Proposed
Revisions of Minnesota Rules
Chapter 7050, Relating to
Water Quality Standards and
Use Classifications for
Haters of the State.

REPORT OF THE
ADMINISTRATIVE LAW JUDGE

The above-entitled matter came on for hearing before Administrative Law Judge Richard C. Luis with hearings held in the following communities (approximate attendance, number signing hearing register):

Thursday, February 1, 1990 - St. Paul' (45, 28)
Monday, February 5, 1990 - Marshall (40, 31)
Tuesday, February 6, 1990 - Detroit Lakes (19, 10)
Wednesday, February 7, 1990 - Brainerd2 (40, 32)
Monday, February 12, 1990 - Duluth (26, 13)
Wednesday, February 14, 1990 - Rochester (29, 22)
Friday, March 2, 1990 - St. Paul (40, 27)
Friday, March 9, 1990 - St. Paul (20, 9)
Friday, March 16, 1990 - St. Paul (15)

This report is the result of a rule hearing proceeding held pursuant to Minn. Stat. § 14.131 and through 14.20 to determine whether the Agency has fulfilled all relevant substantive and procedural requirements, whether the proposed rules are needed and reasonable, and whether or not the rules, as modified, are substantially different from those originally proposed.

Members of the Agency panel appearing at the hearing were: Stephen Shakman, Special Assistant Attorney General, Suite 200, 520 Lafayette Road, St. Paul, Minnesota 55155; Curtis Sparks, Chief of the Program Development Section, David Maschwitz, Research Scientist, Carolyn Dindorf, Pollution Control Specialist and Gerald Blaha, Pollution Control Specialist, all from the Program Development Section in the Division of Water Quality, Pollution Control Agency (PCA).

This Report must be available for review to all affected individuals upon

request for at least five working days before the agency takes any further action on the rule(s). The agency may then adopt a final rule or modify or withdraw its proposed rule- If the Agency makes changes in the rule other than those recommended in this report, it must submit the rule with the complete hearing record to the Chief Administrative Law Judge for a review of the changes prior to final adoption. Upon adoption of a final rule, the agency must submit

1AII St. Paul hearings were held at the Agency's office, 520 Lafayette Road.

2Administrative Law Judge Allan Klein presided in Brainerd.

it to the Revisor of Statutes for a review of the form of the rule. The agency must also give notice to all persons who requested to be informed when the rule is adopted and filed with the Secretary of State.

Based upon all the testimony, exhibits, and written comments, the Administrative Law Judge makes the following:

FINDINGS OF FACT

Procedural Requirements

1. On December 26, 1988 and on June 5, 1989, the Agency published a notice entitled "Outside Opinion Sought Regarding Amendments of State Water Quality Standards" in the State Register. 13 State Register 1655, 2900. The written responses to those published notices were filed by the Agency with the Administrative Law Judge on January 8, 1990.

2. On December 12, 1989, the Agency filed the following documents with the Administrative Law Judge:

- (a) the Statement of Need and Reasonableness (SONAR).
- (b) the names of personnel who would represent the Agency at the hearing.

3. On December 19, 1989, the Agency filed the following documents with the Administrative Law Judge:

- (a) the Notice of Hearing.
- (b) the Order For Hearing.
- (c) the Certificate of the Agency's Authorizing Resolution.
- (d) a Statement of Additional Notice.

4. On December 20, 1989, the Agency filed a copy of the proposed rules certified by the Revisor of Statutes.

5. On December 28, 1989, the Agency mailed the Notice of Hearing to all persons and associations who had registered their names with the Agency for the purpose of receiving such notice.

6. On December 28, 1989, the Agency filed the following documents with

the Administrative Law Judge:

- (a) the Agency's certification that its mailing list was accurate and complete.
- (b) the Notice of Hearing as mailed.

7. On January 2, 1990, a Notice of Hearing and a copy of the proposed rules were published at 14 State Register pp. 1662-1717.

8. On January 8, 1990, the Agency filed the following documents with the Administrative Law Judge:

- (a) the Affidavit of Mailing of Notice to all persons on the Agency's list.
- (b) the Affidavit of Mailing of Discretionary Notice to all persons on the Agency's discretionary mailing list.
- (c) a copy of the State Register containing the proposed rules.

9. The documents noted in the preceding Findings were available for inspection at the Office of Administrative Hearings from the date of filing to the date of the last hearing.

10. In its Statement of Need and Reasonableness, the Agency frequently referenced Exhibit 21, entitled "Guidelines for the Development of Water Quality Criteria for Toxic Substances." This document contains important information supporting the proposed standards and is necessary to an understanding of the proposed rules. The completion of the document was delayed. First, there was a technical error in the data upon which a bioconcentration to bioaccumulation factor was based. Second, the document was revised to include final changes made to the proposed rules submitted to the MPCA Board in December 1989. Due to the delay the document was unavailable for public viewing until January 31, 1990.

At the initial public hearing on February 1, 1990, several parties requested that the rule proceeding be postponed or delayed in order that they have time to analyze the content of this document and to study further the standards proposed. The Agency asked the Administrative Law Judge to schedule an additional hearing on March 2, 1990 with the result that the Agency would meet its 30-day statutory notice requirement and the public would have sufficient time to view the document and the entire proposal. The Administrative Law Judge granted these requests and ordered a reconvening of the hearing on March 2, 1990. The public hearings in outstate locations were held as originally scheduled.

The number of persons wishing to comment at the March 2 hearing was too

great for all to be heard, so the hearing was reconvened on March 9, 1990, the next business day that the Administrative Law Judge, counsel for the Agency and counsel and representatives of interested persons or groups were mutually available. Testimony not heard on March 2 was heard on March 9, and some additional interested persons also appeared and made comments. On March 9, the Agency asked for another reconvening, this on March 16, 1990, in order to have time to respond to a letter to PCA Commissioner Willet from three state Senators (Lessard, Morse, Davis) who were concerned that the PCA's proposals went beyond authority granted to the Agency and conflicted with the 1989 Groundwater Protection Act. The Agency wanted time to respond to the legislators and to put its response on the record, and also to decide whether the proposed rule amendments should be withdrawn because of the Senators' concerns about whether the Agency's proposals infringed on authority granted to the Departments of Agriculture and/or Health (the proposals were not withdrawn). The Administrative Law Judge (ALJ) granted the Agency's request to reconvene, so the final hearing was held on March 16. As a result, interested persons had two and one-half months to analyze the rule as proposed originally (from the January 2, 1990 publication in the State Register) before the date of the last hearing.

11. The comment period was extended for 20 days following the date of the last hearing (March 16), to April 5, 1990. The record in this matter closed on

April 10, 1990, at the end of the response period (three working days after the close of the comment period). Minn. Stat. § 14.15, subd. 1.

Background and Nature of the Proposed Amendments

12. Water quality standards were first adopted by the State of Minnesota in 1967, and have been revised periodically since then. The most recent revisions occurred in October 1987.

13. Minn. Rule 7050 consists of two parts. One part classifies all waters of the state into different classifications depending on their use. The other major part of the rule sets forth water quality criteria and standards for each class.

14. The amendments proposed by the PCA primarily address that portion of Minn. Rule 7050 pertaining to water quality standards. The major amendments include: (1) the adoption of a detailed set of procedures to determine numerical standards and criteria for toxic pollutants for the protection of fish and other aquatic life, (2) criteria and standards for protection of people who eat fresh water fish, and (3) criteria and standards for protection of wildlife that eat aquatic life. In addition, numerical standards for 54 toxic pollutants are proposed. The present rule contains only six numerical standards.

The Agency also proposes several minor amendments to Minn. Rule 7050. These include addition of three calcareous fens as outstanding resource value waters and reclassification of two Class 2C water segments as limited resource value waters (Class 7).

15. Section 303(c)(1) of the Clean Water Act, 33 U.S.C. § 1313(c), requires every state to review and revise their water quality standards at least once every three years. In addition, Section 303(c)(2)(B) of the Clean Water Act Amendments of 1987, 33 U.S.C. § 1313(c)(2)(B), requires all states to adopt standards for toxic pollutants.

The Clean Water Act Amendments did not set a specific date by which time the states must have adopted standards for toxic pollutants. However, EPA headquarters and the EPA Region 5 office in Chicago, the region which includes Minnesota, has interpreted the deadline to be February 4, 1990, the three-year anniversary date of the 1987 Amendments. EPA Region 5 stated in a letter to PCA that if Minnesota missed the deadline, Region 5 would begin promulgating national criteria for Minnesota pursuant to their authority in 40 C.F.R. § 131.22. (PCA Ex. 17).

Statutory and Regulatory Authority

16. The authority of the Pollution Control Agency to revise or amend water quality standards and use classifications is derived from Chapter 115, Minnesota Statutes. Minn. Stat. § 115.03. subd. 1 (1988) provides:

The Agency is hereby given and charged with the following powers and duties:

- (a) to administer and enforce all laws relating to the pollution of any of the waters of the state;
- (b)..... to make such classification of the waters of the state as it may deem advisable;
- (c) to establish and alter such reasonable pollution standards for any waters of the state in relation to the public use to which they are or may be put . . . ;
- (e) to adopt, issue, reissue, modify, deny, or revoke, enter into or enforce reasonable orders, permits, variances, standards, rules

Minn. Stat. § 115.44, subd. 2 (1988) provides:

. . . the agency..... after conducting public hearing upon due notice, shall..... group the designated waters of the state into classes, and adopt classifications and standards of purity and quality therefor.

Minn. Stat. § 115.44, subd. 4 (1988) provides:

The agency..... shall adopt and design standards of quality and purity for each such classification necessary for the public use or benefit contemplated by such classification.

17. Minn. Stat. § 115.03, subd. 1(i)-(1) empowers the PCA to carry out various functions related to water pollution control planning and prevention pursuant to the Federal Water Pollution Control Act. The Pollution Control Agency further derives its authority to establish standards for toxic pollutants from the Clean Water Act Amendments of 1987, 33 U.S.C. 1313 (c) (2) (B). See generally Finding 15.

18. The Administrative Law Judge finds the PCA has general statutory authority under federal and state law for amending state water quality rules and for adopting standards for toxic pollutants.

Economic Impact of the Proposed Amendment,

19. Minn. Stat. § 14.131 (1988) requires that an agency, as part of its showing of need and reasonableness, make available for public view, a fiscal

note, if required, under Minn. Stat. § 3.982. The requirement for a fiscal note in state rulemaking proceedings was eliminated by amendments to sections 3.981-3.983 which were adopted in 1989. Consequently, a fiscal note is not a requisite for the revision of these rules.

20. However, other statutory mandates require the PGA to consider the economic impact of a rule proceeding. Minn. Stat. § 115.43, subd. 1 (1988) provides:

In exercising all such powers the agency shall give due consideration to the establishment, maintenance,

operation and expansion of business, commerce, trade, industry, traffic, and other economic factors and other material matters affecting the feasibility and practicability of any proposed action, including, but not limited to, the burden on a municipality of any tax which may result therefrom and shall take or provide for such action as may be reasonable, feasible and practical under the circumstances.

21. In addition, the Minnesota Administrative Procedure Act, Minn. Stat.

14.11, subd. 1 (1988) requires that if an agency is proposing to adopt a rule for which the total cost of implementation to all local public bodies in the state in the two years immediately following adoption of the rule exceeds \$100,000 in either year, then the agency's notice of intent to adopt the rule must be accompanied by a written statement of the agency's reasonable estimate of the total cost. The Agency did not provide such a statement in this proceeding. The Administrative Law Judge finds that the Agency's position on this issue, that the cost of implementation of the proposed rule amendments to local public bodies in the state is less than \$100,000 for either year after the proposed date of adoption, is reasonable and supported on the record. SONAR, pp. 138-40.

The Agency contends, in the SONAR, that the incremental costs to municipal waste dischargers (the "local public bodies" affected herein) will not increase under the proposed statewide standards for treatment costs, capital expenditures or monitoring expenses, because all such facilities now operate under permits that already have imposed the relevant costs. Setting of statewide standards more restrictive than those in existing municipal permits (the Agency declares such situations are rare or nonexistent) can be addressed by issuance of a variance when undue financial hardship would result. The Judge is troubled by the Agency argument that total treatment costs for such facilities may increase but also may decrease, but the "cumulative impact" is under \$100,000. Such an argument means that some communities may have to spend millions of dollars, but because some others save millions (netting out below a positive \$100,000

statewide) there is no duty to give notice to the communities who will have to spend millions to comply. The Administrative Law Judge does not believe the Legislature intended such a result. However, it is found that the Agency, in its SONAR, has established that total monitoring and treatment costs for municipal dischargers will not exceed current costs by \$100,000 statewide, without considering a "set off" for communities who actually will save costs, as a result of the proposed rule amendments during either of the two years following adoption of the proposed rule amendments. See also, Tr. March 16, 1990, pp. 132-35.

22. The Agency's position throughout the proceeding has been that the proposed amendments will not have a significant economic impact on regulated parties. The Agency believes that while additional monitoring costs may be incurred, it is unlikely that treatment costs will change. The Agency has further stated that since setting these standards is the first of two steps in the regulatory process (the second step involving an actual determination of effluent limitations for site-specific water quality permits) it is impossible to determine the exact costs at this time. SONAR at 127 129,

23. A number of persons raised concerns that the PCA had inadequately assessed the economic impact of the proposed amendments and that failure to

specifically address potential changes in monitoring and treatment costs rendered the rule proceeding detective. These comments are addressed below.

24, Ms. Marianne Curry testified on behalf of the Minnesota Chamber of Commerce, of which she is Director of Environmental Regulatory Affairs. One thousand of the Chamber's 5,000 members are manufacturing concerns. Seventy percent of its membership consists of small businesses. The Chamber is concerned that its membership may incur significant increased costs for monitoring discharges that may contain toxic pollutants. It is also concerned about the financial impact arising from potential criminal and civil penalties under section 505 of the Clean Water Act, 33 U.S.C. § 1365. Public Exhibit I and Post-Hearing Comments.

25. Mr. Stan Peskar, General Counsel for the league of Minnesota Cities, expressed concern regarding the copper discharge standard. Mr. Peskar stated that if the PCA were to enforce the copper standard, municipalities would be caused to spend substantial sums of money to retrofit piping in municipal water supplies and city sewers.

The toxicity of copper increases in relation to the softness of the water. Copper is also more toxic to fish than to human health. Dr. David Maschwitz, PCA, pointed out that Minn. Rule 7050.0170 is specifically intended to accommodate certain natural characteristics in the waters of the state including the raw supply of water from the ground or wellhead. This provision has and is being used for that purpose in situations similar to that described by Mr. Peskar and has not been proposed for amendment in this proceeding.

26. Doherty, Rumble & Butler, P.A., a Twin Cities law firm, maintains an active practice in environmental law, By letter dated March 7, 1990, Mr. Dick Nowlin and Mr. Thomas M. Dailey expressed concern that If the PCA were to establish numerical criteria which were below detection limits, it would be extremely expensive to test for these substances.

27. Koch Refining Company, in post-hearing comments, stated that even if

a permittee was not subject to effluent limitations for certain substances under an NPDES (National Pollution Discharge Elimination System) permit, it would nevertheless be required to test for them to protect itself from future enforcement actions by the MPCA, citizens' suits, U.S. EPA, or neighboring states. Koch also cited increased regulatory tracking and exposure to risk of suits as added costs of the proposed rule.

28. In addition to its remarks in the Statement of Need and Reasonableness, the Agency addressed the issue of the economic impact of the proposed amendments in greater detail during the course of the proceeding and in the staff's Post Hearing Response to Public Comments.

In addition to three hypothetical examples contained in the SONAR, the Agency provided supplemental analysis at the reconvened hearing. The staff applied the standards in the proposed rules to nine additional NPDES permits. These were compared to the effluent limitations in the current permits. The permittees included four municipal wastewater treatment plants, two industrial discharges, and three groundwater remedial action site discharges. PCA Exhibits 145 and 152A through 152H. Of the nine permittees, it was found that only one of the industrial dischargers would incur additional treatment costs. Four of the permittees would incur additional monitoring costs ranging from \$128 to \$600 a year and one permittee would actually save up to \$1,000 annually in monitoring costs.

In its April 5 Post Hearing Response to Public Comments, the Agency further illustrated the existence of several factors which could support a variance in the case of the industrial discharger who might otherwise incur substantial increased treatment costs.

Minn. Stat. § 116.07, subd. 5 gives the PCA authority to grant variances from its rules for the explicit purpose of avoiding undue hardship and to promote the effective and reasonable application and enforcement of rules and standards for the prevention, abatement and control of water pollution. Minn. Rule 7000.0700, subps. 2E-2F specifically recognizes economic burden and lack of feasibility as grounds for granting a variance.

29. The Administrative Law Judge finds the argument that the new standards will subject permittees to greater risk of citizen suits to be speculative. And, the proposed standards do not place a higher obligation on permittees to monitor for pollutants not contained in their permit effluent limitation.

30. The Administrative Law Judge finds that the Pollution Control Agency has fairly and adequately assessed the economic impact of the proposed amendments on the regulated public.

Impact on Agricultural Lands

31. Minn. Stat. § 14.11, subd. 2 (1988) requires that an agency comply with Minn. Stat. § 17.80-.84 if the agency determines that a proposed rule may have a direct or substantial adverse impact on agricultural land in the state.

Minn. Stat. § 17.83 (1988) requires that an agency proposing to adopt a rule which it determines may have a direct and substantial adverse effect on agricultural land must include notice of the effects in the notice of the rule hearing and must also inform the Commissioner of Agriculture in writing.

The PCA does not believe that the amendments now under consideration will have an adverse impact on agricultural lands. The rules which are the subject

of these amendments are used to establish effluent limitations for entities who are required by state law to have a permit to discharge into the surface waters of the state. The PCA did acknowledge in its Statement of Need and Reasonableness that the procedures it now proposes will very likely be used in the future to develop standards for herbicides and insecticides.

32. The Administrative Law Judge finds that the Agency has properly determined that the proposed amendments will not have a direct or substantial adverse impact on agricultural lands in the state. Most agricultural land runoff comes from outletting of groundwater, and Ch. 7050 applies to surface waters only. Groundwater quality standards, when adopted, will be under the authority of the State Department of Agriculture.

Impact on Small Businesses

33. Minn. Stat. § 14.115, subd. 2 (1988) requires an agency which is either proposing a new rule or an amendment to an existing rule, to consider specific methods for reducing the impact on small businesses. The agency must document how it considered these methods and the results in the Statement of Need and Reasonableness.

The PCA correctly stated in the Statement of Need and Reasonableness that the proposed procedures and numerical standards are generally applicable statewide. Consequently, the statutory methods for reducing costs to small businesses are best Implemented at the time the PCA applies the standards to establish a site-specific effluent limitation.

34. A large percent of the membership of the Minnesota Chamber of Commerce is comprised of small businesses. In response to the Chamber's concerns about potential increased costs, the Agency explained why these concerns are best addressed on a site-specific basis during the permitting process and further explained the Agency's statutory authority to grant variances. No evidence was presented that the Agency has failed to use this authority in the past to the detriment of small business considerations under Minn. Stat. § 14.115, subd. 2 (1988).

It is found that the PCA has given appropriate consideration to small businesses affected by its proposed rules in connection with this proceeding, within the meaning of Minn. Stat. § 14.115 (1988).

Removal of Standards from Section 7050.0218

35. During the hearings several parties questioned the Agency's use of the words "criteria" and "standard" on the grounds that these words were used indiscriminately and rendered the rule incomprehensible. The Administrative Law Judge requested clarification of these terms as used throughout the rule.

The issue was also raised in terms of the Agency's authority to derive standards, as the term is traditionally used, under Minn. Rule 7050.0218, subp. 4, in the absence of a rule hearing.

In response to these criticisms, the Agency redrafted and/or rearranged portions of §§ 7050.0218 and 7050.0220, and proposed a new part (7050.0217),

using the traditional meanings of the terms "standard" and "criterion". As the Agency explained in its Post Hearing Response (P. 8), a "standard" is the concentration of a pollutant below which an associated beneficial use will be protected, and the number has gone through the rulemaking process. A "criterion" is also meant to include the concentration of a pollutant established to protect a beneficial use; however, a "criterion" is issued by the EPA or developed by a state for site-specific application. Criteria, unlike standards, are not rules and, therefore, do not have statewide regulatory impact.

The Agency will, therefore, use the term "criteria" to replace the term "standard" where the term was originally used in § 7050.0218 on Methods for Determining Surface Water Standards for Toxic Substances. Language applicable to development of statewide standards has been moved to §§ 7050.0217 and 7050.0220.

36. The Administrative Law Judge observes that for nearly two decades the EPA, as part of its mandate under the Clean Water Act, has published a number of sets of criteria entitled "Quality Criteria for Water". The most recent version was published in 1986 and is commonly referred to as the "Yellow Book". The Yellow Book and the previous versions devote some discussion to the scientific meaning and legal impact of the words "standard" and "criteria".

The definitions which the Agency attaches to the terms "standard" and "criteria" have been commonly used in the environmental regulatory community for many years.

37. In the Post Hearing Comments and Final Comments of the Minnesota Chamber of Commerce, Ms. Curry and the Chamber's counsel, Mark Ten Eyck, argue that the removal of language relating to the development of statewide standards from the part applicable to criteria, although a laudable editorial change, constitutes a substantial change. In addition, they challenge the legality and need for and reasonableness of the surviving language in sec. 7050.0218. They maintain the Agency has effected a substantial change because opponents to the rules now must concentrate on whether the surviving criteria are needed and reasonable, rather than on whether 7050.0218 as originally published was illegal because it authorized rulemaking without a rule hearing and other Administrative Procedure Act safeguards. This line of argument is rejected.

The issue of whether the originally-proposed criteria are needed and reasonable was before the public from the moment the rule proposal was published in the State Register, and it still is. The fact that the rules have been physically rearranged to move standards to another rule part (with language changes) is not, of itself, a substantial change. The relocated specific language was reviewed for both need and reasonableness considerations and with a view to whether it is a substantial change from the original proposals), but that inquiry is distinct from ruling that the moving of the topic areas involved constitutes a substantial change. The legality of the surviving language in 7050.0218 is an issue dealt with below.

38. The Minnesota Chamber of Commerce (MCC) and Koch Refining Company object to the adoption of procedures for deriving site-specific water quality criteria, as proposed in the revised 7050.0218. The Chamber contends that there is no rational basis supporting the Agency's proposed derived criteria

processes and that the Agency has emergency rulemaking authority which could be used in lieu of proposed .0218. Koch acknowledges that publication of the derived criteria procedures is "good government" but urges that the Agency be required to conduct rulemaking on an annual basis on any substance for which criteria are adopted under the proposed methods.

It is found that the Agency's designed criteria procedures are a rational approach to limiting the problem they are designed to meet -- the discharge of over 100 toxic pollutants that have not, as yet, been assigned numerical (allowed dosage) limits but still constitute a threat to surface waters in Minnesota. And, because the limitations derived by application of the format for determining criteria under .0218 will be limited to the permit for which it is derived, i. e., be "site-specific", with an opportunity for a contested case hearing, Koch's concern that it will have to monitor all such hearings and permits (because they are developing "standards" which apply statewide to previously unlisted pollutants) is obviated. The hearings will be developing site-specific criteria, not statewide standards.

39. In determining whether part 7050.0218 is necessary and reasonable, the relevant inquiry is whether there is a rational connection between the problem identified and solutions proposed by the Agency. See Beck, Bakken Muck, Minnesota Administrative Practice, ¶ 23.3 (1987). In *Manufactured Housing Institute v. Pettersen*, 347 N.W.2d 238 (1984), the Minnesota Supreme Court rejected the argument that the Commissioner of Health had to sustain a rule under a "substantial evidence" test:

In attacking a statute or regulation on due process grounds, one bears a heavy burden; the statute or rule need only bear some rational relation to the accomplishment of a legitimate public purpose to be sustainable (citations omitted).

It appears, therefore, that the legislature intended the traditional "arbitrary and capricious" test, rather than the more rigorous "substantial evidence" test to apply in rulemaking proceedings.

Id. at 233. 244. The Pettersen court nonetheless cautioned that even under this less rigorous test, "the agency must explain on what evidence it is relying and how that evidence connects rationally with the agency's choice of action to be taken." Id. at 244.

40. In *Pettersen v. Manufactured Housing*, in language directly applicable to the present rulemaking proceeding, the Supreme Court recognized that state agencies addressing concerns of public health must often act even when they do not have all the data on a problem they would like. The Court stated that these less than ideal circumstances must be accepted and deference given to Agency expertise:

Respondents concede that the data is imperfect and also that the Department may not adopt an arbitrary rule. Nevertheless, they contend -- and we agree -- that in fulfilling their obligation to protect the public health, it may be necessary, as here, to make judgments and draw conclusions from "a suspected, but not completely substantiated, relationship between facts, from trends among facts, from theoretical projections, from imperfect data, from probative preliminary data not yet certifiable as 'fact', and the like." We also agree that deference is to be shown to agency expertise, "restricting judicial functions to a narrow area of responsibility, lest the court substitute its judgment for that of the agency."

Manufactured Housing v. Pettersen, supra, at 244 (citations omitted).

Applying the above-noted legal standard, the Administrative Law Judge concludes that the Agency's derived criteria methodology in proposed part 7050.0218 is needed and reasonable. The risk identified is that toxic chemicals may be discharged into Minnesota's surface waters in concentrations

which may be acutely or chronically toxic to aquatic life or which may present chronic toxicity dangers to wildlife and persons who consume fish and water from these lakes and rivers. SONAR at 14-19. Exhibits 20, 21 and 22

The Agency has identified well over 100 toxic chemicals having no EPA criteria which have been, or may be expected to be, discharged to surface waters in Minnesota. Forty of those 100 were selected as having the highest priority.

Exhibit 53. SONAR at 33-35. For 25 of these 40 toxics, adequate data was available for the Agency to propose numerical standards, which are found in

part 7050.0220. For the remaining toxics identified, as well as for other toxic chemicals whose danger is not presently recognized by the Agency, the derived criteria procedures of part 7050.0218 are proposed as the solution.

41, Having clearly identified that there is a need for protection against toxic pollutants in Minnesota's surface waters that are not listed in the subsequent numerical standards of subpart 7050.0220, It remains to decide whether the means chosen for identification and control of the "unlisted" toxic materials are rationally connected to the need addressed.

The methodology utilized to develop the numerical standards in proposed part 7050.0220 has not been challenged in these proceedings. That same methodology, developed by the United States Environmental Protection Agency (EPA) and modified for Minnesota conditions, is employed in the derived criteria procedures proposed for part 7050.0218. Adjustments (in the conservative direction) are made where less aquatic life species data are available. This methodology is a rational solution to the practical need to develop toxics criteria beyond those in the numerical standards.

42. At the March 9, 1990 hearing, Mr. Ten Eyck sought the staff's agreement that there was really no difference between a 7050.0218 criterion and a 7050.0220 standard. Tr. March 9, 1990 at 185-88. If this point could be established, the Chamber argues that all toxics could presently go through the part 7050.0220 numerical standard setting. Alternatively, the Chamber argues that the Agency should do an emergency rulemaking each time a new toxic pollutant is addressed. Such approaches may arguably be other rational means to address the identified problem. However, the applicable legal standard is whether the procedure chosen by the Agency is rationally connected to the problem identified. In light of the great number of toxic chemicals to be evaluated, the limited and developing nature of the data on many of those chemicals, the small number of chemicals (less than one-fourth of all priority pollutants) for which the United States EPA has developed criteria, the practical limitations on PCA technical resources, and the EPA endorsement of the approach chosen by the PCA, it is found that the Agency has a rational basis for its proposed derived criteria procedures for toxic chemicals without

numerical standards. *Can Manufacturer's_ Institute v. State*, 289 N.W.2d 416 (1979).

43. The revisions to part 7050.0218 in Exhibit 149, Agency Comments at the March 9 and 16, 1990, hearings, and the Agency staff's Post-Hearing Response, at pp. 30-32, all clarify that the derived criteria numbers will be applied in a site-specific, case-by-case manner to point source discharges and remedial action cleanup activities.

44. It is further concluded that the proposed changes to part 7050.0218 made during the hearing process do not constitute a substantial change. The staff's Post-Hearing Responses at pp. 7-9 and 30-32, and the accompanying revised rule, constitute a revision which is intended to replace the originally proposed provision on undefined toxic substances (part 7050.0210, subp. 14). As explained in the SONAR at pp. 11-14, part 7050.0218 sets out in detail procedures very similar to those employed under current part 7050.0210, subp. 14.

The originally-proposed part 7050.0218 was drafted in a fashion that established a statewide standard through a single, site-specific determination.

As originally proposed, this gave support to the concerns of Mr. Ten Eyck. But the Agency has now made very clear that the revised part 7050.0218 is limited to developing criteria which apply only on a site-specific, case-by-case basis, like part 7050.0210, subp. 14.

The Chamber contends that the revision constitutes a substantial change requiring a new notice of hearing and a new rulemaking procedure. The Administrative Law Judge rejects the Chamber's argument because the public impacted by this part had notice that the current unspecified toxics provision dealt with discharges on a case-by-case basis and the change proposed in January could have been read to represent a shift to a "first case determines the standard" basis. Thus, the regulated public was informed of the two possible outcomes. The Agency, consistent with the requirements of the Minnesota Administrative Procedure Act, has returned to the case-by-case limitations on site-specific determinations, as they exist currently. Therefore, there has been no development beyond the scope evident to an informed member of the public at the outset of the hearing. Moreover, the public can be presumed to be aware that the procedural requirements of the APA govern rulemaking and that any modification of a proposed change required to conform with that statute is within the customary scope of a rulemaking process. Accordingly, there can be no finding of a substantial change on this basis.

45. The Chamber also argues that the PCA does not have statutory authority to adopt any health-based standards which protect both fish and persons who consume fish. The argument is that the standards conflict with authority granted to the Minnesota Department of Health. For over two decades, the PCA has adopted standards for surface waters both to protect aquatic life and to protect persons who eat fish caught in those waters and who drink those waters.

The derivation of such human health-based criteria are explained in detail in the SONAR at pp. 51-70. The authority for the PCA to adopt the human health-

based criteria is found in Minn. Stat. § 115.44, as well as in the Federal Clean Water Act and Minn. Stat. § 115.03. Section 115.44 generally requires the Agency to group the waters of the state into classes based on best usage and other considerations, and then to adopt standards of purity and quality for each classification. Among the considerations listed in the statute are domestic consumption, bathing, fishing and fish culture. Minn. Stat. § 115.44, subd. 3(c). Subdivision 4 of the statute expressly directs the Agency to prescribe standards protective of public health and welfare, aquatic life, and the designated uses:

Such standards shall prescribe what qualities and properties of water shall indicate a polluted condition of the waters of the state which is actually or potentially deleterious, harmful, detrimental or injurious to the public health, safety or welfare. to terrestrial or aquatic life or to the growth and propagation thereof, or to the use of such waters for domestic, commercial and industrial, agricultural, recreational or other reasonable purposes, with respect to the various classes established . . and may contain such other provisions as the agency deems proper.

The finally-proposed part 7050.0218, subp. 6 is part of the Agency's discharge of its mandatory obligations under the above-quoted statute. As is evident from the chronic numerical standards in part 7050,0220, the SONAR, and from Agency Exhibit 21, bioaccumulation of metals and certain other compounds In game fish have driven the human health-based criteria far lower than what would be required solely to protect drinking water consumption. Such health-based standards are a necessary and appropriate exercise of the Agency's rulemaking authority.

46. In its Post-Hearing Comments, the Chamber claims that the Agency's proposed human health-based standards and related criteria development procedures duplicate authority granted the Department of Health. Chamber Comments at pp. 13-15. The relevant statutory authority given the Department of Health is Minn. Stat. § 103H.201, subd. 1, which reads:

If groundwater quality monitoring results show that there is a degradation of groundwater, the Commissioner of Health may promulgate health risk limits under subdivision 2 for substances degrading the groundwater.

It is noted that the rules proposed by the PCA in this proceeding do not regulate groundwater, but surface waters. It is noted further that the Commissioner of Health's authority is conditioned upon a showing of groundwater degradation, is discretionary, and is confined to "substances degrading the groundwater". There is no conflict between Minn. Stat. § 103H.201 and the Agency's mandatory requirements under section 115.44. The PCA has unambiguous authority to adopt surface water standards for the State of Minnesota.

47. The Chamber argues that development of site-specific criteria as finally proposed In part 7050.0218 constitutes rulemaking. The Administrative Law Judge cannot agree because such development does not come within the definition of a rule, "(an) agency statement of general applicability and future effect." Minn. Stat. § 14.02, subd, 4. The net effect of the changes is that the criteria under part 7050.0218 are developed and applied on an as-needed basis, site by site, for purposes of establishing effluent

limitations for a specific point source discharge permit or for establishing remedial action cleanup criteria for nonpoint discharges of contaminants being addressed under state or federal Superfund laws, the Hazardous Waste Corrective Action rules, the Petroleum Tank Releases Cleanup Act (Minn. Stat. ch. 115C), the Solid Waste Land Disposal Facilities rules (Minn. Rules pt. 7035.2815E), or other environmental cleanup programs where the regulatory agency charged with enforcement chooses to apply such standards. Such site-specific application is not contrary to the rulemaking procedures of Minn. Stat. ch. 14. Each application is specific to the point source or contaminant cleanup at issue. Therefore, it does not constitute the development of a rule having statewide effect. What it establishes by rule is the methodology for the development of the site-specific criteria, which is clearly within the Agency's authority.

48, Minnesota rules are replete with examples of authority for an agency to develop specific numerical limits on case-by-case bases for protection of public health, welfare or the environment. Such a provision exists in the currently-existing chapter 7050, at part 7050.0210, subp. 14. As noted by Mr. Sparks at the March 16, 1990 hearing, this provision, or one substantially

similar, has been part of the Agency's water quality rules since 1972. Tr. March 16, at 81. Other examples in MPCA rules of case-by-case determinations to protect public health can be found at Minn. Rules pt. 7045.0129, subp. 4 (specific generator's wastes may be deemed hazardous waste if they contribute to significant illness or death or pose hazards to human health or the environment), and at Minn. Rule 7035.2815, subp. 4H(5) (Commissioner of Health can establish intervention limits for substances not listed in rules if it is determined that they are "potentially harmful to health").

General Issues

49. The Administrative Law Judge questioned certain choices of words and phrases as being too subjective, vague or overly-broad. These include "credible scientific evidence" and "substantial". Specifically, the concern with the phrase "credible scientific evidence" is that it has no commonly accepted meaning with the scientific or regulated communities. To correct this, the Agency has proposed to replace the phrase "credible scientific evidence" with "available scientific data" wherever the phrase appears in the rule. The phrase "available scientific data" will be defined so as to include examples of acceptable sources of scientific data. Minn. Rule 7050.0218, subp. 3, item C.

The Administrative Law Judge also questioned the use of the word "substantial" as a modifier of the quantum of site-specific data which might recommend the use of a site-specific application as opposed to a statewide standard. Minn. Rule 7050.0220, subp. 3a. The Agency proposes to delete the word "substantial" from the sentence.

50. It is found that the modifications made by the Agency in choice of language and additional definitions more clearly define the Agency's role in the process of setting standards, or criteria, as the case may be, and greatly clarify the rule for the regulated community. The changes are found to be needed and reasonable, and it is further found they do not constitute substantial changes.

51. In addition to the changes made in response to public commentary or at the urging of the Administrative Law Judge, the Agency staff made other changes to clarify language and improve consistency of terminology. Several of these changes, additions, and deletions are noted as follows:

(1) Part 7050.0130. Definitions. The Agency has added definitions of "Commissioner" and "Surface Waters" to the rule.

(2) The Agency has changed all occurrences of the words "substance" or "material" to the word "pollutants".

(3) Part 7050.0217. Objectives For Protection of Surface Waters From Toxic Pollutants. This is a new section proposed by the Agency at the March 9, 1990 hearing in St. Paul. While much of the language is similar to that in part 7050.0218, subs. I & 2 as proposed in the original amendments, this new section more clearly defines the Agency's purpose for establishing site-specific water quality criteria.

(4) Part 7050.0218 is now titled "Methods For Protection of Surface Waters From Toxic Pollutants For Which Numerical Standards Not Promulgated".

Subpart I clarifies the need for establishing methods by which the Agency can address the discharge of a toxic pollutant into surface waters when there is no existing standard.

(5) Part 7050.0218, subp. 2, Item A. has been added to define a site-specific criterion and to clarify that such a criterion may only be required after a discharger has had notice and an opportunity for a hearing.

(6) Part 7050.0218, subp. 3. The Agency has made a technical modification to the definitions of "cancer potency factor" and has added definitions of the terms "chronic standard", "duration", "maximum standard", "standard", and "whole effluent toxicity test".

(7) Exhibit 126, dated February 1, 1990 contains approximately 20 changes which the Agency proposes to incorporate in the rule, The changes consist of errors, omissions and typographical errors in the amendments as approved by the PCA Board on December 19, 1989. These changes were made available to the public at the February 1, 1990 hearing and all subsequent hearings.

(8) Part 7050.0220, subp. 3a. This is a new addition and a modification of Part 7050.0218, subp. 13 as proposed on January 2, 1990. The new language clarifies how and when the Agency will utilize site-specific information to modify standards on a site-specific basis and explains the rights of a discharger when the Agency determines the effluent limitation for that discharger must be modified.

The Administrative Law Judge finds that the changes noted above, as proposed by the Agency, clarify the rule. The modifications focus the scope of the rule and represent an overall improvement in the organization of the rule. The Administrative Law Judge finds no substantial change.

52. The Chamber raises a good argument with respect to the effect of the existing "antibacksliding" provision (part 7050.0212, subp. 3), which is not proposed for change. The issue is whether a permit setting effluent limits based on site-specific criteria derived under part 7050.0218 could be modified if a numerical standard is later developed for the pollutant under part

7050.0220 which is less strict than the criterion level in the permit. The antibacksliding rule implies that the limits in the permit could not be modified. The rule was not proposed for change in this proceeding, and no proposal to modify it has been offered by the Agency since the hearing was convened. While this is a valid concern, it is the opinion of the ALJ that any affected discharger of effluent can find relief in the rule's variance provisions, should substantial financial harm result.

53. Any portion of the rule amendments as finally proposed by the Agency in this proceeding not commented upon in this Report are found to be needed and reasonable. Any finally-proposed amendments which are changes from the amendments originally published in the State Register on January 2, 1990, and are not commented upon in this Report. are found not to constitute substantial changes.

Technical Issues

54. From the time of publication in the State Register on January 2, 1990, and continuing through the end of the response period, on April 10, 1990, the Agency staff, on its own initiative and in response to public comments and the comments of the Administrative Law Judge, made numerous changes in the criteria (.0218), standards (.0220) and other rule subjects originally proposed. Any such technical, clerical or organizational changes not specifically commented upon in this Report are found to be necessary and reasonable. They are further found not to constitute substantial changes.

55. Minnesota has seven classes of waters based upon uses. These classes of water are explained in Part 7050.0220 of the proposed rule. Each class has certain standards applied to it so that the quality level of the class may be retained.

56. Class 1 waters are broken down into four specific subclasses. Class 1, A waters will now be referred to as Class 1A waters. This Class of water meets all mandatory and recommended requirements for drinking water. Class 1, B waters will now be referred to as Class 1B waters also meet drinking standards, though approved disinfection (simple chlorination) may exist in the water. Class 1, C waters will now be referred to as Class 1C waters. Class 1C waters are treated so that they will reach mandatory and recommended standards for drinking water. Class 1, D waters will now be referred to as Class 1D waters. Class 1D waters are also treated to meet recommended requirements for drinking water.

57. Class 2 waters are broken down into four specific subclasses. Class 2, A waters will now be referred to as Class 2A waters. This Class of water shall allow cold and warm water sport and commercial fish to remain in their habitats, be usable for recreational activities, and be protected as a drinking source. Class 2Bd waters shall also allow cold and warm sport and commercial fish to remain in their habitats, be usable for recreational activities and be protected as a drinking source. Standards applied to

Class 2Bd waters are less stringent than Class 2A waters. Class 2, B waters will now be referred to as Class 2B waters. Class 2B waters are comparable to 2Bd waters except they are not protected as a drinking source. Class 2, C waters will now be referred to as Class 2C waters. Class 2C waters allow rough fish or species that survive under natural conditions to remain in their habitats. Class 2C waters are also suitable for boating and other forms of recreation.

58. Class 3 waters are broken into three specific subclasses. Class 3, A waters will now be referred to as Class 3A waters. This Class of water is acceptable for industrial purposes other than food processing where high quality standards are specified. Class 3, B waters will now be referred to as Class 3B waters. Class 3B waters are also acceptable for industrial uses, and may be used for food processing with a moderate amount of treatment applied. Class 3, C waters will now be referred to as Class 3C waters. Class 3C waters shall be used for industrial cooling and materials transport without applying much treatment.

59. Class 4 waters are broken into two specific subclasses. Class 4, A waters will now be referred to as Class 4A waters. This Class of waters shall be used for irrigation when it is not harmful to crops. Class 4, B waters will

now be referred to a Class 4B waters. Class 4B waters shall be used for livestock and wildlife when it is shown to cause no harmful effects.

60. Class 5 waters are suitable for aesthetic enjoyment and safe navigation.

61. Class 6 waters are areas in which state waters are tributary. The MPCA reserves the power to set standards on Class 6 waters as the Agency deems necessary.

62. Class 7 waters are considered limited resource value waters. This Class shall be suitable for its aesthetic qualities and secondary body contact (wading) .

63. There was concern raised at the hearing that there are a large number of Class 7 waters in Minnesota. The National Wildlife Federation and the Minnesota Conservation Federation maintain that Class 7 waters interfere with groundwater and downstream waters. Since this interference downgrades other water sources, they suggest that the category of Class 7 waters be abolished.

On the other hand, Cleveland Cliffs, Inc. contends that it is reasonable to classify waters of poor quality as Class 7 waters. They further conclude that applying sensitive species standards to Class 7 waters is impractical. Cleveland Cliffs, Inc. believe such a standard would be impractical since sensitive species would not be able to survive in Class 7 waters.

64. The MPCA contends that there is not a large number of Class 7 waters in Minnesota. The Agency maintains there are 214 waters classified as Class 7 waters and that the length of these waters is 815 miles. Agency's Final Comments at 43. It is estimated that Class 7 waters represent less than .1 percent (river miles) of Minnesota's water resources. Agency's Final Comments at 43. The MPCA believes that Minn. Rules part 7050.0200, part 7 and part 7050.0220, subpart 8 address the National Wildlife Federation and Minnesota Conservation Foundation's concern about groundwater and downstream waters. Those provisions provide that Class 7 waters that affect groundwater shall

preserve the groundwater's potable water supply. Class 7 waters are given other use classifications throughout 7050. Examples of these uses are part 7050.0185 (nondegradation), part 7050.0211, 7050.0212 and 7050.0214 (discharge requirements), 7050.0218 and 7050.0220, subpart 8 (applicable standards). The MPCA reasoned that these other use classifications make it essential that the applicable standards for the uses be applied to Class 7 waters.

65. It is found that the proposed system for classification of waters advanced by the PCA in this proceeding is needed and reasonable.

66. Questions were raised at the hearings regarding the water quality standards for nonpoint sources of toxics. An example of nonpoint sources of toxics is surface water runoff or groundwater. There was a belief that the MPCA should make it clear that the standards for toxic substances do not apply to nonpoint sources of groundwater.

67. The MPCA responded that the possibility of surface water being polluted by contaminated groundwater will be evaluated on a case-by-case basis. Exhibit 138. The MPCA maintained that many factors should be taken into consideration. Some examples of these considerations are degradation of

pollutants, dilution by clean groundwater and soil absorption. The MPCA also contended that it is clear that once groundwater or run off reaches the point in a river where water quality standards apply, at no point in the mixing zone will an acutely toxic condition be allowed to exist. In other words, the standards for toxic substances sometimes do apply to nonpoint sources depending on the circumstances.

68. Although Minn. Rules pt. 7050.1070 (Natural Water Quality) is not proposed for amendment, there is concern on how it will affect background concentrations which may have an increased toxicant level due to an upstream discharger. Cleveland Cliffs, Inc. argues that the MPCA is penalizing industries and municipalities who receive water with background concentrations that have been elevated by upstream dischargers. That is, if background concentrations are above proposed limits, then no more pollutants will be allowed by downstream industries and municipalities, Cleveland Cliffs, Inc. also argues that if background levels are usually below the proposed standard limits, the Agency may choose to keep the waters at those limits to the detriment of area dischargers. In essence, since background concentrations are lower, industries and municipalities in that area will be forced to follow stricter standards than the state proposed standards. Northern States Power Company (NSP) contends that it is possible for a discharger's pollutants from a point source to be within the limits of the permit, yet due to background concentrations from other dischargers, standards for the receiving water are exceeded.

69. The MPCA reasons that if upstream dischargers are within their permit limitations, standards should be met in receiving streams below those dischargers. The MPCA maintains that "[b]ackground concentrations generally include both the completely natural background plus any anthropogenic background added by a permitted facility in compliance with its permit." Agency's Final Comments at 41. The Agency contends that industries and municipalities that are downstream from facilities must be subject to the same conditions. The MPCA also contends that background concentrations, which may have an increased

concentration level due to upstream dischargers (depending on the distance between the two dischargers), should not be largely increased at downstream locations. Agency's Final Comments at 41. In essence, the MPCA's position is that permits take into account possible upstream dischargers' pollutants. The PCA's decision to propose no changes or exceptions for background concentration levels at part 7050.0170 is found to be reasonable.

70. Both the North American Water Office (NAWO) and Mr. Bennett Davis argue that protecting only 95% of the species in any aquatic community is not enough protection. Mr. Davis specifically maintains that the 95% protection rate becomes less protective as time goes on. That is, five percent of the species die today, then another five percent and another, until the species is extinct. He also argues that the 95% figure will not protect the wildlife who eat the five percent of the species that die.

71. The MPCA reasoned that the goal to protect aquatic life from being seriously hurt or endangered could be accomplished by protecting less than 100% of all species of aquatic life, all the time. SONAR at 16- The MPCA accepted the EPA's position that aquatic life can accept some stress and still be able to restabilize without deteriorating any further. SONAR at 17. It is further maintained that aquatic communities have been subjected to natural stresses such as droughts, temperature changes and floods, yet they still have evolved throughout the centuries. SONAR at 17.

72. The Administrative Law Judge finds the MPCA's decision to protect 95% of all species in any aquatic community is needed and reasonable

7050.0218- METHODS FOR PROTECTION OF SURFACE WATERS FROM TOXIC POLLUTANTS FOR WHICH NUMERICAL STANDARDS ARE NOT PROMULGATED

73. This rule part is developed on the presumption that the MPCA will retain the power to adopt additional numerical standards as warranted in accordance with the Administrative Procedure Act. The MPCA believes this flexibility in the rule is the best way to protect the public, aquatic life and Minnesota's water sources. This proposed part also allows the MPCA to apply criteria in the proposed rule for new toxic substances that may be discovered. Comments were made about the methodologies in the rule. They are addressed below.

Toxicity-based Criteria

74. The MPCA plans to use the EPA national method of using at least eight species in a specified group when data is available. SONAR at 32 and 37. When data is not available, the MPCA proposes to make data requirements less strict by using salt water species. SONAR at 37-38. The EPA accepts the use of salt water species as an adequate procedure when data is scarce. Exhibit 28. The MPCA also proposes to use the EPA advisory method when data is unavailable. The advisory method uses at least three acute values in its experiments, and the lowest acute value is chosen. SONAR at 43. The MPCA reasons the public will be protected by the advisory method (though less information is used), since the approach used in this method becomes more conservative and protective. SONAR at 41-43, The methodology proposed for development of toxicity-based criteria is found to be needed and reasonable.

Human Health-based Criteria

75. Human health-based criteria are divided into three main elements.

The first element is the acceptable risk level.

76. The Minnesota Chamber of Commerce accepts the 10⁻⁵ risk level (one in 100 000) as appropriate, but the NAWO (North American Water Office) considers a 10⁻⁶ (one in a million) risk factor as more appropriate.

77. The MDH (Minnesota Department of Health) selected the risk level of 10⁻⁵ and documented its rationale in Exhibit 34. A number of other states in EPA Region 5 have also adopted the risk level of 10⁻⁵. SONAR at 55. The MPCA accepts the MDH's rationale in the selection of risk factor for carcinogens. Agency's Final Comments at 28.

78. The Administrative Law-judge finds the MPCA's position of using a risk level of one in 100,000 (10⁻⁵) for chemicals that have a potential to cause cancer in human beings is needed and reasonable

79. The second element in development of human health-based criteria includes exposure assumptions by the MPCA. The exposure assumptions not addressed in the following discussion are found to be needed and reasonable.

80. Mr. Bennett Davis argued in his written comments that the Agency should assume that the life span is 105 because 70 years is still considered relatively young.

81. The MPCA responded that the life span of 70 years old is accepted nearly universally. The EPA and the MDH accept the number as being adequately protective. SONAR at 57-60.

82. The Administrative Law Judge finds the MPCA's position that exposure to a chemical will occur over a lifetime of 70 years to be needed and reasonable.

83. Koch and the Minnesota Chamber of Commerce argue that the fish consumption survey the MPCA used included only anglers, who would eat more fish than the average population, and that the MPCA should follow other states' limit of 20 grams per day.

84. On the other hand, the National Wildlife Federation supports the Agency's use of 30 grams per day. They also maintain that the MPCA's reliance on the angler survey is good since a large number of Minnesotans are anglers and sport-fishing is an important reason tourists visit Minnesota.

85. Yet another view is that 30 grams of fish each day equals half a pound of fish per week, and many people eat more than that. The NAWO recommended that special language address the habits of the Native American and among populations in Minnesota, since their diets consist mainly of fish.

86. The MPCA reasoned that since two million of the 4.2 million people in Minnesota are anglers, this large portion of the population should be protected. SONAR at 61. Another reason the MPCA cites for using the 30 grams per day factor is that many tourists come to Minnesota for sport-fishing, and Minnesota should let nonresidents know that Minnesota's fish is safe to eat. SONAR at 61. Yet another reason cited by the Agency is that a high level of protection will be given to the population as a whole. SONAR at 63. The surveys the MPCA relied on from Wisconsin and Ontario had various percentile consumption ranges. Minnesota took the average of the two ranges and came up with an 80th percentile, which computes to 30 grams per day of fish. SONAR at

62. The MPCA also chose not to use the EPA's calculation of 6.5 grams per day because the EPA based their number on surveys from the general population nationwide. SONAR at 63.

The MPCA staff noted that there is language in the proposed rule that allows standards to be fixed for special local conditions, such as the eating habits of Native Americans and Hmong populations in Minnesota. SONAR at 91-92. The MPCA also maintains it is mainly the Department of Health's responsibility to identify the communities with these special conditions. Agency's Final Comments at 26-27. The MPCA will use sufficient information from any source to tailor special standards to the community. SONAR at 91.

87. The MPCA's conclusion that Minnesotans will be protected by assuming people will eat 30 grams of fish each day is found to be needed and reasonable.

88. The third element considered in development of human health-based criteria is relative source. The "K value" is defined as "the fraction of the total allowable daily dose of a toxic substance that 's attributed to drinking water and fish consumption relative to other sources of the substance to humans, such as air or food, in the calculation of criteria." The assumption made in a "K value" of .2 is that 20% of the dosage of a toxic or carcinogenic pollutant a human can tolerate will be ingested by drinking water or eating fresh water fish.

89. Pace Laboratory argued at the hearings in Brainerd and St. Paul that the "K value" arbitrarily reduces water quality standards for a chemical by a factor of 4, that no scientific data supports the "K value" of 0.2 and therefore the value is overly and unjustifiably conservative, Koch Refining Company and the Minnesota Chamber of Commerce believe the standard of 0.2 is overprotective and that Minnesota should use a 0.8 "K value" like Wisconsin. Alexandria Lake Area Sanitary District maintains that Minnesota's nondegradation and antibacksliding provisions make it unlikely that a permit established with a 0.2 "K value" will ever be less stringent, even though later scientific data may show 0.2 "K value" was not needed. The District suggests that the "K value" of 0.8 should be used on permits and then a lowered "K value" be applied in the future if there is supporting scientific data.

90. The National Wildlife Federation supports the Agency's use of a 0.2 "I value".

91. The MPCA recognizes that sources other than water affect human exposure to toxics, but specific exposure information is lacking for many chemicals. Exhibit 46. The MPCA chose to use the 0.2 "K value" for many reasons. The EPA assumes water represents 0.2 of a person's daily exposure to a chemical. Exhibits 25 and 40. The proposed "K value" will mean a consistent level of protection for all drinking water in Minnesota. SONAR at 67. Studies on this question have shown that a small "K value" for many chemicals is appropriate. Exhibits 45 and 46. The Toxics Technical Advisory Committee recommended a 0.2 "K value". SONAR at 68. The level proposed represents a reasonable exposure factor for the broad range of chemicals concerned. Agency's Final Comments at 25.

92. The Administrative Law Judge finds as needed and reasonable the MPCA's position that the "K value" should be 0.2 absent sufficient data to establish a chemical-specific "K value".

Bioaccumulation

93. Bioaccumulation factor or BAF is defined as: "the concentration of a substance in one or more tissues of an aquatic organism, exposed from the diet and bottom sediments in addition to the water column divided by the average concentration in the solution in which the organism has been living." Samples for testing are collected in the field.

Bioconcentration factor or BCF is defined as: "the concentration of a substance in one or more tissues of an aquatic organism, exposed only to the water as the source of substance, divided by the average concentration in the solution in which the organism had been living." The samples are produced in a laboratory setting.

The issues are whether estimated BCFs should be used to calculate BAFs, and whether the equation used to convert a BCF to a BAF is valid. These considerations apply when BAFs cannot be measured directly.

94. ChemRisk addressed the use of a BAF/BCF conversion factor approach with respect to dioxin. They argue the BAF and BCF approaches are dissimilar. The BCF approach assumes that fish accumulate dioxin primarily through the gills. Public Exhibit 15 at 11. The BAF approach assumes that fish accumulate dioxin through the ingestion route (not just the gills). They contend such different techniques should not be combined to predict BAFs, as the MPCA proposes to do in its equation. ChemRisk also suggests that the use of the

parameters Log Kow and parachor is problematic. Public Exhibit 14, It argues the Kow level and use of parachor was highly variable and that to Improve the experiment data, data which rejected the equation's chance of likelihood were deleted. Public Exhibit 15, p. 15. The National Council of the Paper Industry for Air and Stream Improvement (NCASI) embraced most of the same positions as ChemRisk on these issues. NCASI also argued that the Agency would be using overestimated BCF values. The Minnesota Chamber of Commerce and Koch Refining Company recommended in their comments that the MPCA use only edible tissue for BAF/BCFs and not the whole fish.

95. Octanol to water partition coefficient or Kow is proposed for definition as: "the ratio of the concentration of a substance in the octanol phase to its concentration in the aqueous phase of a two-phase octanol to water system after equilibrium of the substance between the two phases has been achieved- The log₁₀ Kow has been shown to be proportional to the bioconcentration potential of lipophilic organic chemicals."

Parachor is proposed for definition as: "the surface tension adjusted molar volume, and specifically is the molecular weight of a liquid times the fourth root of its surface tension, divided by the difference between the density of the liquid and the density of the vapor in equilibrium with it; essentially constant over wide ranges of temperature. Parachor relates to the physical properties of a molecule that affect its potential to bioaccumulate in aquatic organisms."

96. The MPCA's position is that BAFs are preferred over BCFs because BAFs better represent the actual amount the organisms have been exposed to certain chemicals in the water. The MPCA also believes that measured BAFs or BCFs are preferred over estimated BCFs. Exhibit 22. When chemicals have no measurable BCFs or BAFs available, BCFs are estimated using an equation by Veith and Kosian (1983). Exhibit 49. Since many compounds have no available BAFs, the MPCA has proposed a BAF/BCF conversion factor in the rule using the properties

of Log Kow and parachor. SONAR at 76. The MPCA maintains that the EPA and the Ontario Ministry of the Environment have proposed factors to estimate BAFs and BCFs, and the BAF/BCF conversion factor approach has been accepted by several researchers. SONAR at 78. The MPCA also responded to the comment that the BAF/BCF conversion factor test should only use the edible tissue of the fish. The Agency believes the recommendation deserves investigation but that it is too late to incorporate it into the rule. Agency's Final Comments at 27.

It is found that the Agency has established by an affirmative presentation of facts that values of Log Kow and parachor coordinate in a statistically significant manner with changes in the BAF/BCF ratio.

97. The finally-proposed conversion factor equation for converting the bioconcentration factor (BCF) to a bioaccumulation factor (BAF), proposed by Carolyn Dindorf of the Agency staff, is found to be needed and reasonable. The final proposal is found at part 7050.0218, subp. 7B(8). The equation was criticized because Dindorf's paper detailing its development has not been "refereed" by the scientific community. However, the paper was sent to six independent researchers with expertise in bioaccumulation, and has not been criticized by them. In the absence of specific BAF data, the Agency's BAF adjustment factor is a rational method for use in setting concentration levels for bioaccumulative pollutants.

98. The Administrative Law Judge finds as needed and reasonable the MPCA's position of using BAFs based on laboratory measured or estimated BCFs.

The proposed methodology for converting BCF values to BAF values is also found to be needed and reasonable.

Taste and Odor Criteria

99. The MPCA intends to use the EPA's criteria to impose specific standards that create acceptable tastes or odors in fish. SONAR at 78. This approach is found to be needed and reasonable. The EPA's criteria apply to 20 chemicals which cause odor and taste problems at lower concentration levels than would cause direct toxic or harmful effects to people Exhibit 21. Use of the EPA criteria in developing taste and odor standards in Minnesota is found to be necessary and reasonable.

Wildlife-based Criteria

100. The MPCA intends emulate Wisconsin's water quality rule NR 105 to protect wildlife who depend on aquatic life as a food source. The Minnesota Toxic Technical Advisory Committee approved Wisconsin's approach in its entirety. Exhibits 8 and 21. Wisconsin's approach is similar to health-based standards described in 7050.0218. One main difference is the lifetime exposure to wildlife, since wildlife have a lower life expectancy than humans. SONAR at 80. The MPCA also takes into account species sensitivity to certain toxics. The species sensitivity factor ranges from I to .1. SONAR at 81. The methodology advanced by the PCA for development of wildlife-based criteria is found to be needed and reasonable.

Applicable Criteria

101. The criteria proposed for application to surface waters include three parts -- chronic criteria (CC), maximum criteria (MC) and final acute values (FAV). SONAR at 83. The CC and MC coincide with the EPA's standards CCC and CMC. Exhibits at 20 and 22. The FAV, which provides effluent limitations, is referenced in subpart 7050.0220.

102. Chronic criterion or CC is proposed for definition as: "the highest

water concentration of a toxicant to which organisms can be exposed indefinitely without causing chronic toxicity."

Maximum criterion or MC is proposed for definition as: "the highest concentration of a toxicant in water to which aquatic organisms can be exposed for a brief time with zero to slight mortality. The MC equals the FAV divided by two."

Final acute value or FAV is proposed for definition as: "an estimate of the concentration of a pollutant corresponding to the cumulative probability of 0.05 in the distribution of all the acute toxicity values for the genera or species from the acceptable acute toxicity tests conducted on a pollutant."

103. It is found that the interrelationship of CC, MC and FAV as proposed by the Agency, and the methodology for their development, as used in the rule finally proposed, is needed and reasonable.

Additivity and Duration

104. Part 7050.0220, subp. 3G specifies when the linear additivity equation is used to calculate the effects of chemicals having a human health-based standard combined with a cancer potency factor. The MPCA's decision to use the linear additivity equation in the absence of data supporting an alternative model is found to be needed and reasonable.

105. Cleveland Cliffs argues that toxicant additivity effects happen only in rare circumstances and there are at least as many examples of toxicants which when combined negate the effects of each other. Therefore, they reason the additivity effect on possible toxicants should be deleted from the proposed rule because it is just a theoretical model. The Minnesota Chamber of Commerce brought up two concerns during the comment period. The first concern was that additivity occurs only with some groups of chemicals and that the use of synthetic water in laboratory tests for determining additivity is unrealistic. The second concern was that additivity may force a discharger to reduce every pollutant in the effluent to eliminate toxicity. They propose that a discharger be allowed to install equipment that can reduce one or two of the pollutants instead of all the pollutants, until acute toxicity levels are no longer present.

106. A single toxicant that is not acutely toxic alone, when combined with other toxicants, may produce an acutely toxic effluent. The MPCA's solution to this problem is to apply a linear additivity model. SONAR at 84-85. Throughout the hearings, a number of questions from the Minnesota Chamber of Commerce, the Metropolitan Waste Control Commission (MWCC), NSP, NCASI and Cleveland Cliffs, Inc. have been asked and answered regarding this methodology. Post Hearing Response at 65-66, Attachment 31, and Minn. Rules pt. 7050.0220, subp. 3,

item E. NSP specifically felt that Exhibits 149 and 157 dealt adequately with their questions and they support the proposed changes.

The MPCA maintains that the use of synthetic water (deionized and then filtered) in toxicology tests is a widely accepted practice because a clean water supply reduces the chances of unknown variables being brought into the results of the experiment. Agency's Final Comments at 35. The MPCA reasoned that if the Minnesota Chamber of Commerce's approach would rectify the discharger's toxicity problem in the effluent, the Agency staff would support the approach in granting of subsequent permits. Agency's Final Comments at 36.

107. With respect to the averaging period for standards, the amount of time over which the ambient concentration is averaged and then compared against the standard, the MPCA proposes to follow the EPA's four-day duration test period when measuring toxicity-based chronic criteria for protection of aquatic life. Exhibit 22. The MPCA believes four days is a reasonable amount of time since it is based on the assumption that an aquatic animal has sensitive stages in its development which can be affected permanently in a relatively short period of time. They also propose a 30-day duration test for human health-based criteria. The Agency feels a 30-day averaging period is practical because it matches the duration of most permit limitations. SONAR at 87. The MPCA proposes to use a one-day averaging period for maximum criterion (MC) and final acute value (FAV). Although the EPA has recommended a one-hour duration, they also concede that it may be impractical and have accepted the MPCA's position in most cases, Exhibit 24. The MPCA's proposed durations for averaging periods are found to be needed and reasonable.

7050.0220 Numerical Standards

108. A number of concerns were raised at the hearing concerning the MPCA's use of standards that are set below present day detection limits. Most of these concerns are addressed in Koch Refining Company's comments. Koch argues that using standards that are below the best analytical methodologies currently available causes a number of problems. One problem is that complying with the Agency's standards becomes more difficult. Another problem is that the permittee will now be required to measure the 17 substances more often. Yet another problem is that samples that show a substance is present beyond the proposed limits may produce "false positives". That is, the sample may really not have the substance present, but the permittee has the burden of proving the sample was wrong. After a number of false positive readings, this burden becomes expensive.

109. The Agency's response to these concerns is that the 17 substances that are below detection limits are highly bioaccumulative and are considered carcinogenic, SONAR at 104. The MPCA contends that these standards do not make compliance more difficult, since the Agency monitors these concentrations in the fish tissue or the effluent before it is diluted in the receiving stream. SONAR at 105.

110. It is found that the PCA's decision to set certain numerical standards below detection limits of present-day technology is needed and reasonable.

Water quality standards are established to protect the beneficial uses for which the waters are classified. Minn. Stat. ch. 115.44, subd. 4. In setting standards to protect fish and other aquatic life or humans and wildlife that eat fish, unavoidably, some standards will be below detection limits. To set standards arbitrarily at the level of detection would not be consistent with the Agency's obligation to protect those beneficial uses. Methods are available to ameliorate the problems caused by standards set below detection limits. Many of these standards are for bioaccumulative pollutants. Thus, the

Agency can analyze fish tissue directly to ascertain pollution levels. The Agency currently monitors fish tissue for PCBs and mercury, both of which have standards proposed which are below detection levels. Also, analytical methods are improving constantly. In the future, the number of standards set below detection levels should be reduced.

When setting effluent limitations based upon a standard below detection limits, the effluent limitation will be set above analytical detection limits, if at all possible, for compliance purposes. These issues are addressed as part of the permit process.

111. Part 7050.0220 amendments consist of some new standards and some changes in the existing standards, as well as subparts moved from originally-proposed subpart .0218. One of the new standards is for oils. Koch Refining Company does not support the proposed standard for oils in Class 2B waters. Koch maintains that the MPCA's contention that the Agency has been using an FAV of 10 mg/l is not true.

112. The MPCA considers the change an improvement in that it will protect aquatic communities from being affected by petroleum products and helps prevent visible oil films over the water. SONAR at 107. The Agency has been using an FAV of 10 mg/l for years. Agency's April 10 Comments at 30. The MPCA further

explains that Koch's Permit is based on mass limitations (pounds per day) that are converted to concentrations of mg/I. April 10 Comments, at 31.

113. It is found that the numerical standards proposed for oil are needed and reasonable.

114. Koch Refining Company suggested that the MPCA should change its position of using metal standards that are specified as total metals. Koch believes that the MPCA should use dissolved metals in their standards.

115. The MPCA stands by its position to use total metals. Its decision in this regard is found to be needed and reasonable. Although the MPCA recognizes that the EPA has advocated an acid soluble analytical procedure for metals, the EPA has not approved that procedure in its entirety. SONAR at 109. The MPCA also maintains that it is reasonable to keep the existing standard since all the Agency's historical data for metals is in the form of total metals. SONAR at 109. The Agency also contends that the EPA has never advocated the dissolved method (to their knowledge) suggested by Koch Refining Company. April 10 Comments, at 28.

Additional Technical Issues

116. The Agency staff proposed in its April 5 comments to withdraw the proposed numerical statewide standard for 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin. The lack of a statewide standard will have little or no effect on the Agency's ability to regulate dioxin. The Agency has now, and will have under the proposed amendments, the ability to control the discharge of dioxin on a site-specific basis. To date, every situation involving dioxin has been evaluated on a site-specific basis. Delay in the adoption of a statewide standard will allow time for the scientific community to sort out all the new information concerning the potency and bioaccumulation factors for this toxin. The decision to withdraw the dioxin standard is found to be needed and reasonable and does not constitute a substantial change.

117. In order to provide further protection against toxic effluent discharges, the NAWO suggested amending part 7050.0210, subp. 7 (which the PCA

has not proposed to amend) to reflect the fact that at times, such as during the drought period of the late 1980s, the Agency's assumptions regarding normal water current flows may be too high. It is noted that, in rulemaking proceedings under the Administrative Procedure Act, an agency does not have to justify retaining an existing rule.

The subpart provides that discharges of wastes shall be controlled so that the water quality standards will be maintained at all stream flows which are equal to or exceeded by 90% of the seven consecutive daily average flows of record (the lowest weekly flow with a once in ten-year recurrence interval) for critical months.

In response, the PCA staff pointed out that the Agency is obligated to maintain water quality standards at or above "7Q10" flows. 7Q10 flows are infrequent occurrences. Flow data for the Mississippi River in St. Paul indicate that, in the summer months, there is about a three percent chance the flows will reach the 7Q10 on any given day. However, when droughts occur, they often occur for extended periods of time as recently demonstrated by the protracted drought in 1987. During that summer, the flow of the Mississippi

River in St. Paul was at or below the 7Q10 for many consecutive weeks. The 7Q10 requirement offers the aquatic community no margin of safety during drought conditions, but the PCA staff is proposing no change in the underlying assumption at this time. PCA Response to Comments, April 10, 1990, at 36. Their decision is found to be reasonable.

118. The ALJ expressed concern at the hearing over the Agency's proposed usage in the rules of "the literature" and "credible scientific evidence" to ascertain changes in scientific research. The proposed phrases were reasoned to be too vague or overly-broad. In response, the PCA proposes to add a definition, at part 7050-0218, subp. 3C, of "available scientific data", and to insert the phrase accordingly throughout the rule. Such an approach is found to be necessary, reasonable and not a substantial change. The proposed definition of "available scientific data" is to find as meaning "information derived from scientific literature, including, but not limited to . . . (examples listed)." (Emphasis supplied.)

It is appropriate to comment upon the phrase "including, but not limited to", as used in this context. The phrase is often found to be a grant of impermissibly broad discretion to an agency, thus violative of substantive requirements of law. It is noted that the Agency's comments list several other examples of sources of "available scientific data" beyond those listed in the proposed definition. Since the entire description is modified by its title, "available scientific data", and the phrase "scientific literature" narrows the scope of what is included to sources generally understood by the regulated community, it is found that inclusion of the phrase "including, but not limited to" in this context is not an overly broad grant of discretion to the Agency.

It is suggested, however, that the words "but not limited to" tend to confuse the reader and add nothing to the content of the definition. Simple use of the word "including" would suffice. The Administrative Law Judge recommends that the Agency delete the words "but not limited to" from the

proposed definition. If the Agency makes that grammatical change in its adoption of the rule proposals, it is found that the change is necessary and reasonable and not a substantial change.

119, In its April 5 comments, the PCA proposed to insert language, in the proposed numerical standards for cadmium, trivalent chromium, copper, lead, nickel, silver and zinc, noting that for hardness values greater than 400 mg/l, that 400 mg/l shall be used in calculating the standard, rather than the actual concentration. This change is found to be necessary and reasonable and not a substantial change.

120. One of the clerical changes proposed by the Agency on April 5 was to correct the spelling of tetrachloroethane as used in the rule. It is noted that the "Rule as Proposed" filed on that date still misspells the word at one location (in part 7050.0220, subp. 3B). Correction of this clerical error in the rules finally adopted is found to be necessary, reasonable and not a substantial change.

121. Exhibit 126, submitted by the Agency at the hearing on February 1, 1990, is a list of changes and corrections to the rule amendments as noticed on January 2, 1990. Page 3 of Exhibit 126 is a tabulated summary showing the changes to the numerical standards in proposed part 7050.0220 versus what had originally been proposed in the January 2, 1990 notice. The PCA has made the

at the end of the first line of item C should be changed to "part 7050.0217".

It is found that this change is necessary and reasonable because of the modifications proposed to part 7050.0218 and the inclusion of a new part, part 7050.0217, in the rules proposed for final adoption. The organizational change is found to be insubstantial.

At part 7050.0218, subp. 5C, the Agency proposes to change the reference to subpart 6 to a reference to subpart 4. This change reflects the editorial renumbering of part 7050.0218, and is found to be a clerical change that is necessary, reasonable and not a substantial change.

Based upon the foregoing Findings of Fact, the Administrative Law Judge makes the following:

CONCLUSIONS

1. That the Minnesota Pollution Control Agency gave proper notice of the hearing in this matter.

2. That the Minnesota Pollution Control Agency has fulfilled the procedural requirements of Minn. Stat. §§ 14.14, and all other procedural requirements of law or rule.

3. That the Minnesota Pollution Control Agency has documented its statutory authority to adopt the proposed rules, and has fulfilled all other substantive requirements of law or rule within the meaning of Minn. Stat. §§ 14.05, subd. 1, 14.15, subd. 3 and 14.50 (i) and (ii).

4. That the Minnesota Pollution Control Agency has demonstrated the need for and reasonableness of the proposed rules by an affirmative presentation of facts in the record within the meaning of Minn. Stat. §§ 14.14, subd. 2 and 14.50 (iii).

5. That the additions and amendments to the proposed rules which were suggested by the Minnesota Pollution Control Agency after publication of the proposed rules in the State Register do not result in rules which are substantially different from the proposed rules as published in the State Register within the meaning of Minn. Stat. § 14.15, subd. 3, Minn. Rule

1400.1000, subp. I and 1400.1100.

6. That any Findings which might properly be termed Conclusions are hereby adopted as such.

7. That a finding or conclusion of need and reasonableness in regard to any particular rule subsection does not preclude and should not discourage the Minnesota Pollution Control Agency from further modification of the rules based upon an examination of the public comments, provided that no substantial change is made from the proposed rules as originally published, and provided that the rule finally adopted is based upon facts appearing in this rule hearing record.

Based upon the foregoing Conclusions, the Administrative Law Judge makes the following:

RECOMMENDATION

It is hereby recommended that the proposed rules be adopted consistent with the Findings and Conclusions made above.

Dated this 10th day of May, 1990.

RICHARD C. LUIS
Administrative Law Judge

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