

ILLINOIS POLLUTION CONTROL BOARD

September 5, 2002

IN THE MATTER OF: )  
)  
PROPOSED AMENDMENTS TO ) R02-19  
AMMONIA NITROGEN STANDARDS ) (Rulemaking - Water)  
35 ILL. ADM. CODE 302.100, 302.212, )  
302.213, AND 304.122 )

Proposed Rule. Second Notice.

OPINION AND ORDER OF THE BOARD (by R.C. Flemal, G.T. Girard, M.E. Tristano):

Today the Board adopts for second notice a proposal to amend Illinois water quality regulations for ammonia to more closely track recent guidance published by the United States Environmental Protection Agency (USEPA).

Today's proposal follows substantially the proposal filed by the Illinois Association of Wastewater Agencies (IAWA) with the Illinois Environmental Protection Agency's (Agency) support, and adopted by the Board for first notice on June 6, 2002.<sup>1</sup>

**PROCEDURAL HISTORY**

The Board has held three hearings in this matter. The first hearing was held in Chicago on March 25, 2002, the second in Springfield on April 23, 2002, and the third in Chicago on July 25, 2002.<sup>2</sup> At the first hearing IAWA presented various testimony in support of its proposal. The Agency also offered testimony in support of the proposal. Questions were posed to both IAWA and the Agency regarding various aspects of the proposed rules.

At the second hearing IAWA offered additional testimony, and additional questions were asked of both IAWA and the Agency.

The third hearing was held in accordance with Section 27(b) of the Environmental Protection Act (Act) (415 ILCS 5/27(b) (2000) *amended by* P.A. 92-0574, eff. June 26, 2002), which requires the Board to request that the Department of Commerce and Community Affairs (DCCA) conduct a study of the economic impact of any proposed rules, and to conduct at least

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<sup>1</sup> Proposed Amendments to Ammonia Nitrogen Standards 35 Ill. Adm. Code 302.100, 302.212, 302.213, and 304.122, (June 6, 2002), R02-19. First notice publication occurred in the *Illinois Register*, June 21, 2001, at 8707 *et seq.* and 8722 *et seq.*

<sup>2</sup> Citations to the transcript for the first hearing will be cited at "Tr.1 at \_\_\_." Citations to the transcript for the second hearing will be cited as "Tr.2 at \_\_\_." Citations to the transcript for the third hearing will be cited as "Tr.3 at \_\_\_."

one public hearing on the economic impact of those proposed rules (415 ILCS 5/27(b) (2000) *amended by* P.A. 92-0574, eff. June 26, 2002). The Board requested that DCCA conduct such a study in a letter dated March 7, 2002. At the July 25, 2002 hearing the Hearing Officer Catherine Glenn stated that the Board would rely on a March 10, 2000 DCCA letter stating that DCCA would not conduct economic impact studies on rules pending before the Board. Tr.3 at 5.

### **Public Comments**

Three public comments have been filed in the period since the Board's adoption of the first notice proposal. The public comments are PC 5 filed by Michael Zima, District Manager of the DeKalb Sanitary District on June 14, 2002; PC 6 filed by IAWA on July 17, 2002; and PC 7 filed by the Agency on August 15, 2002. The substance of these public comments is discussed later in this opinion.

### **PROPOSAL DEVELOPMENT**

The Board most recently considered its ammonia water quality regulations in Triennial Water Quality Review Amendments to 35 Ill. Adm. Code 302.202, 302.212, 302.213, 304.122, and 304/301 (Ammonia Nitrogen), R94-1(B), (Dec. 19, 1996).<sup>3</sup> The amendments adopted in docket R94-1(B) were primarily based on the USEPA's then current National Criteria Document (NCD) for ammonia.<sup>4</sup> The principal features of the R94-1(B) action were the adoption of acute and chronic general use water quality standards for un-ionized ammonia, and the authorization of Effluent Modified Waters (EMW). An EMW is a management tool intended to allow ammonia National Pollutant Discharge Elimination System (NPDES) limits to be driven by effluent rather than water quality standards. *See* R94-1(B) final opinion.

In 1999 USEPA issued a significant update of the ammonia NCD.<sup>5</sup> In 2000 IAWA, with the support of the Agency, began reviewing the 1999 ammonia NCD towards the goal of proposing conforming amendments. Tr.1 at 29-31, 95. Today's proposal is the result of that process.

### **PROPOSAL OVERVIEW**

The proposed amendments involve changes to four sections of the Board's water quality regulations, plus the addition of an appendix. All proposed changes are to 35 Ill. Adm. Code 302 and 304.

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<sup>3</sup> An expedited correction issued February 20, 1997.

<sup>4</sup> Ambient Water Quality Criteria for Ammonia, United States Environmental Protection Agency Document - 1984. United States Environmental Protection Document EPA-440/5-85-001, 1995. National Technical Information Service, Springfield, VA.

<sup>5</sup> 1999 Update of Ambient Water Quality Criteria for Ammonia. United States Environmental Protection Agency Office of Water Document EPA-822-R-99-104, December 1999. This document is Exh. 5 in the instant docket.

### **Section 302.100 – Definitions**

Proposed at 35 Ill. Adm. Code 302.100 is a definition for “Early Life Stages.” This definition is intended to support the use of this term in Section 302.212(b)(2) and 302.212(e). The definition is taken from rules adopted by the Ohio River Valley Water Sanitation Commission to conform that agency’s rules with the 1999 ammonia NCD. Tr.2 at 9, 18. The Board has made no changes to this section since first notice.

### **Section 302.212 – Ammonia General Use Water Quality Standards**

#### **Revision of Numerical Standards**

Most of the proposed amendments occur within 35 Ill. Adm. Code 302.212, which contains the Board’s ammonia water quality standards applicable in general use waters of the State. The principal features of the amendments are: (1) replacement of current un-ionized ammonia nitrogen standards with total ammonia nitrogen standards; (2) recasting of the formulae for calculation of the acute and chronic water quality standards for total ammonia nitrogen; and (3) the addition of a new standard, the sub-chronic standard for total ammonia.

The purpose of the proposed amendments is to revise Illinois’ water quality standards for ammonia with the best current understanding of ammonia toxicity, as reflected in the 1999 ammonia NCD. Tr.1 at 30-31. Modifications of the formulae for calculating total ammonia acute standard (AS) and chronic standard (CS) values are based on reevaluation of the ammonia toxicity mechanism, as well as the existence of larger and more appropriate toxicity data sets than were available under the 1984 ammonia NCD. Tr.1 at 20-22, 48-52.

Under the 1984 ammonia NCD and the Board’s current ammonia regulations, ammonia general use water quality standards are expressed in terms of un-ionized ammonia with corrections for the effects of temperature and pH on ammonia toxicity. However in the 1999 ammonia NCD, USEPA concludes that a definitive, thorough theoretical approach for describing pH effects on ammonia toxicity is lacking, and that there is no adequate scientific understanding for specifying how temperature adjustments to the ammonia criterion should be made. Tr.1 at 50; Exh. 5 at 7. Accordingly, the 1999 ammonia NCD bases criteria for ammonia toxicity on empirical relationships between toxicity and total ammonia concentrations at various temperatures and pHs. Tr.1 at 50, 62-63. That approach underpins this proposal.

The proposed formulae for determining the total ammonia nitrogen acute, chronic, and sub-chronic standards at Section 302.212(b) mirror the standards recommended in the 1999 ammonia NCD. However, IAWA’s proposed attainment requirements at Section 302.212(c)(2) and (c)(3) deviated somewhat from the 1999 ammonia NCD. While the 1999 ammonia NCD recommends using a 30-day average ammonia concentration to show compliance with the ammonia CS, IAWA’s proposal requires a minimum of four consecutive samples collected over a period of at least 30 days. In case of the sub-chronic standard, while

the 1999 ammonia NCD recommends that the highest four-day average within the 30-day period be used for demonstrating attainment, IAWA's proposed Section 302.212(c)(3) requires daily samples collected over a period of any four consecutive days to show compliance.

When questioned at the second hearing, Mosher testified that proposed Section 302.212(c)(2) required at least four samples collected consecutively over a period of at least 30 days. Tr.2 at 32. Mosher explained that such a standard would allow the Agency to use its ambient monitoring network to collect a sample once every six weeks, and then take any four consecutive samples, and average them to assess attainment of the ammonia CS. Tr.2 at 32. Mosher clarified that the language did not mean that four samples would be collected within 30 days. Tr.2 at 30. Mosher maintained that the Agency wanted the proposed requirement to follow the its routine monitoring program, although the federal guidance recommends that the ammonia CS be evaluated on the basis of 30-day average due to its toxicity characteristics. Tr.2 at 31 and 37.

The 1999 ammonia NCD states that the averaging period for ammonia CS needs to be shorter than the length of the laboratory tests upon which it is based, because the concentrations in the field are typically much more variable than concentrations in the laboratory tests, and variable concentrations are more toxic than constant concentrations. Exh. 5 at 81. Further, the 1999 ammonia NCD recommends that the averaging time for showing attainment of the ammonia CS be increased from four days to 30 days. In this regard, the federal guidance states that the longer 30-day averaging period is justified with the restriction that the highest four-day average concentration within that 30-day span not exceed 2.5 times the ammonia CS, i.e. the sub-chronic standard. Exh. 5 at 82. The 1999 ammonia NCD maintains that the 30-day average period without the sub-chronic standard limitation would have substantial effects on certain aquatic species. Exh. 5 at 82. Therefore, the 1999 ammonia NCD recommends a 30-day average concentration of total ammonia be used to show compliance with the chronic ammonia standard with the restriction that the highest four-day average within the 30-day span should not exceed the sub-chronic standard, which is 2.5 times the ammonia CS.

The Board notes that although IAWA's proposal includes both the chronic and sub-chronic total ammonia standards recommended by the federal guidance, there is no linkage between the averaging periods of the two standards. IAWA's proposed language for Section 302.212(c)(2) requires attainment of the ammonia CS be demonstrated on the basis of four consecutive samples taken over a period of at least 30 days. As explained by Mosher, this will allow the Agency to obtain samples on a 6-week cycle. Under this scenario, the averaging time would be closer to 6 months instead of 30 days, as recommended in the 1999 ammonia document. The Board expressed concern regarding the proposed averaging period for demonstrating attainment at the second hearing in this matter, and asked the proponents and the Agency to provide additional clarification. Tr.2 at 30-33, 38-39.

At first notice, the Board was concerned by the substantial increase in the averaging period allowed by the IAWA proposal. The Board's concern was based on the fact that the

1999 ammonia NCD very clearly states that even the 30-day averaging period is only justified because of the restriction that the highest four-day average concentration of ammonia be less than or equal to the sub-chronic standard. Further, the Board notes that USEPA's "Water Quality Standards Handbook: Second Edition" defines "averaging period" as:

[t]he period of time over which the receiving water concentrations is averaged for comparison with criteria concentrations. The averaging period limits the duration of concentrations above the criteria.

Because of the Board's concern, at first notice the Board amended IAWA's proposal at Section 302.212(c)(2) to limit the averaging period for showing attainment of the ammonia CS to 30 days.

The proposed language at 302.212(c)(2) capped the time in which to average samples for the ammonia CS to 30 days. The proposed first notice language for 302.212 reflected the 1999 ammonia NCD, and did not require taking a particular number of samples during the 30 days.

In addition to revisions of the AS and ammonia CS standards, the 1999 ammonia NCD also supports a new type of standard, called a sub-chronic standard. The sub-chronic standard limits the magnitude and duration of otherwise allowable excursions above the ammonia CS standard. Tr.1 at 57-60. The proposed sub-chronic standard at first notice limited the total ammonia concentration to 2.5 times the ammonia CS. Compliance with the sub-chronic standard was proposed to be achieved by averaging the highest sample results collected over a four-day period within the 30-day averaging period. *See* 302.212(b)(3) and (c)(3).

### **Changes from First Notice.**

At first notice, the Board replaced portions of the proposal that used "shall" with "must". The Agency now recommends that the Board replace "must" in Sections 302.212(b)(3), 302.212(c)(2) and (3) with "is" to make those sections more grammatically accurate. PC 7 at 3. The Board agrees and makes the changes in today's order. The Board makes similar grammatical changes in 302.212(b), (b)(1), (b)(2), and 302.212(e).

At the Agency's suggestion the Board also inserts "30-day average concentration of" before "total ammonia nitrogen" at 302.212(c)(2), and "four-day average concentration of" before "total ammonia nitrogen" at 302.212(c)(3) to reflect the averaging periods associated with the chronic and sub-chronic ammonia standards. PC 7 at 4.

At first notice, Section 302.212(c)(2) limited the averaging period to 30 days and did not specify the number of samples that must be taken. The Board expected that the Agency or any other entity performing the sampling would determine the number of samples to be taken in accordance with the sampling protocols specified in 35 Ill. Adm. Code 301.104 and 301.106, which includes Standard Methods and USEPA's current manual of practice.

Both IAWA and the Agency have expressed concerns regarding the proposed attainment requirements for chronic (CS) and sub-chronic ammonia standards set forth at Section 302.212(c) of the first notice proposal. PC 6 and PC 7 at 4-8. In order to avoid any confusion in implementing the chronic standard, the Board has added the language suggested by IAWA with minor clarifying changes at Section 302.212(c)(2). This revision requires attainment of ammonia CS to be determined by using at least 4 samples taken at weekly intervals, or at other sampling intervals that statistically represent a 30-day averaging period. However, the Board declines to include IAWA's suggestion of using a "weighted" average of the sample results to show attainment of chronic and sub-chronic standards. The Board agrees with the Agency that the averaging method addresses only a specific data set and does not address other data sets that have not yet been identified or considered.

Regarding the ammonia sub-chronic standard, the Board notes that the proposed attainment requirement at Section 302.212(c)(3) tracks the 1999 ammonia NCD, which recommends that the attainment of sub-chronic standard must be based on the highest four-day average within the 30-day averaging period of the chronic standard. However, to avoid any implementation concerns, the Board has made the Agency's suggested change at Section 302.212(c)(3) to require attainment of the sub-chronic standard to be determined by averaging daily sample results collected over a period of four consecutive days.

At the Agency's suggestion, the Board also adds language at Sections 302.212(c)(2) and (c)(3) of the instant regulations to add a requirement that samples must assure a representative sampling period.

### **Revision of Seasonal Applicability**

Today's second notice proposal provides, as it did at first notice, that everywhere in Illinois early stage life forms are deemed to be present, for the purpose of this regulation, from March to October, inclusive. *See* proposed Section 302.212(e). This is conservative in that there will be waters where, during some portion of this period, such forms are not actually present. However, the proponents accept and the Board agrees, that such conservatism is warranted to provide workable protection for the great majority of aquatic species. Tr.1 at 32; 139.

Additionally, this second notice proposal also provides, as it did at first notice, that the Agency has the authority to apply early life stages present standards outside the March - October period to specific waters of the State when such stages are present. *See* proposed Section 302.212(e). This provision provides an additional element in the ability of Illinois to assure protection against ammonia toxicity.

### **Section 302.213 - Effluent Modified Waters (EMWs)**

The Board proposed at first notice to repeal the provisions for EMWs found at 35 Ill. Adm. Code 302.213. As the Board discussed at first notice, the record in this proceeding demonstrates that EMWs have not been a useful construct. Tr.1 at 23-26, 119-120. Due to difficulties unforeseen at the time of promulgation of the EMW provisions, no dischargers have applied for EMWs, and the Agency has not established any EMWs. Tr.1 at 26-28, 121. Moreover, IAWA contends convincingly that EMWs are unnecessary if the Board adopts today's proposal. Tr.1 at 28-31.

### **Section 302.APPENDIX C**

Proposed 35 Ill. Adm. Code Section 302.APPENDIX C presents a table of values for the equations presented in 302.212(b). The purpose is to provide an easy alternative to calculation of values for the equations. There are three tables, one for the AS equation at 302.212(b)(1), and one each for the Early Life Stage Present and Early Life Stage Absent equations for the ammonia CS at 302.212(b)(2). Today the Board revises the table for the relationship between the AS and pH by removing that portion of the table in which the equation relating AS to pH produces a result greater than 15 mg/L. The AS may be less than 15.0 mg/L (which occurs at higher pHs), but pursuant to 302.212(a) may not exceed 15.0 mg/L; the 15.0 mg/L maximum controls at pHs less than 7.7.

### **Section 304.122 – EMW Provisions in the Effluent Regulations**

This proposal also includes proposed repeal of the EMW provisions that are found in the effluent portion of the Board's water quality regulations at 35 Ill. Adm. Code 304.122. Repeal of these provisions is a companion action to repeal of the provisions at 302.213.

### **ECONOMIC CONSIDERATIONS**

As discussed at first notice, impetus for the IAWA's proposal, aside from any considerations of having regulations reflect best available knowledge, is that adoption of the proposed amendments would have beneficial economic impact on many of IAWA's members. Effluent limits driven by the current ammonia water quality standards often result in NPDES permit limits that have pushed the limits of technical attainability of many wastewater treatment plants in Illinois, particularly in the winter season. Tr.1 at 19, 23-24, 70-81. This difficulty has arisen when the current un-ionized ammonia standard is back-calculated into winter NPDES permit limits. Tr.1 at 23-24. This procedure leads to significantly lower permit limits than the 1999 ammonia NCD procedure would provide, because this procedure assigns all of the ammonia toxicity to un-ionized ammonia, contrary to the assignment under the 1999 ammonia NCD. Tr.1 at 23. IAWA members believe, and the record provides supporting evidence, that adoption of the instant proposed amendments would maintain environmental integrity and also provide for attainable NPDES winter permit limits for ammonia. Additionally, the Agency believes today's proposal will meet federal requirements and continue to assure protection of State's the water resources. PC 4 at 1.

The record provides some examples of the difference in permit limits that exist under the current regulations, as compared to limits that are anticipated should the proposed amendments be adopted. For example, Michael Zima, District Manager of the DeKalb Sanitary District testified that for December 2000 through December 2003 from April to October, the NPDES permit requires a monthly average of 1.5 mg/L as a monthly ammonia-nitrogen average and 3.0 mg/L as a daily maximum ammonia nitrogen average. Exh. 8 at 4, Tr.1 at 99. For November through March, the NPDES permit requires a monthly average of 3.6 mg/L and a daily maximum of 7.2 mg/L. Exh. 8 at 4, Tr.1 at 99-100. Zima testified that if the proposal were adopted the permit limits would be: from March – October, a monthly average of 1.5 mg/L and a daily maximum of 6.7 mg/L; from November-February, a monthly average of 3.1 mg/L and a daily maximum of 6.7 mg/L. Exh. 8 at 11, Tr.1 at 108.

Tim Bachman, Director of Waste Treatment Operation at the Urbana and Champaign Sanitary District testified that if the proposal is adopted, the northeast plant for March – October will have a monthly average of 1.23 mg/L instead of a final monthly average of 0.9 mg/L and a daily maximum of 5.40 mg/L instead of a final daily maximum of 3.0 mg/L. From November – February, the monthly average will be 2.71 mg/L instead of a final monthly average of 1.0 mg/L and a daily maximum of 6.07 mg/L instead of a final daily average of 4.8 mg/L. Exh.7 at 2-3, Tr.1 at 87-88. The southwest plant will also have higher monthly averages and daily maximums, if the proposal is adopted. Exh.7 at 2-8; Tr.1 at 88-89.

### ORDER

The Board hereby proposes for second notice the following amendments to 35 Ill. Adm. Code 302 and 304. The Clerk of the Board is directed to file these proposed rules with the Joint Committee on Administrative Rules.

TITLE 35: ENVIRONMENTAL PROTECTION  
 SUBTITLE C: WATER POLLUTION  
 CHAPTER I: POLLUTION CONTROL BOARD  
 PART 302  
 WATER QUALITY STANDARDS

SUBPART A: GENERAL WATER QUALITY PROVISIONS

Section	
302.100	Definitions
302.101	Scope and Applicability
302.102	Allowed Mixing, Mixing Zones and ZIDS
302.103	Stream Flows
302.104	Main River Temperatures
302.105	Antidegradation



## SUBPART B: GENERAL USE WATER QUALITY STANDARDS

Section	
302.201	Scope and Applicability
302.202	Purpose
302.203	Offensive Conditions
302.204	pH
302.205	Phosphorus
302.206	Dissolved Oxygen
302.207	Radioactivity
302.208	Numeric Standards for Chemical Constituents
302.209	Fecal Coliform
302.210	Other Toxic Substances
302.211	Temperature
302.212	Ammonia Nitrogen and <del>Un-ionized Ammonia</del>
302.213	Effluent Modified Waters (Ammonia)( <u>Repealed</u> )

## SUBPART C: PUBLIC AND FOOD PROCESSING WATER SUPPLY STANDARDS

Section	
302.301	Scope and Applicability
302.302	Algicide Permits
302.303	Finished Water Standards
302.304	Chemical Constituents
302.305	Other Contaminants
302.306	Fecal Coliform

## SUBPART D: SECONDARY CONTACT AND INDIGENOUS AQUATIC LIFE STANDARDS

Section	
302.401	Scope and Applicability
302.402	Purpose
302.403	Unnatural Sludge
302.404	pH
302.405	Dissolved Oxygen
302.406	Fecal Coliform (Repealed)
302.407	Chemical Constituents
302.408	Temperature
302.409	Cyanide
302.410	Substances Toxic to Aquatic Life

SUBPART E: LAKE MICHIGAN BASIN WATER QUALITY STANDARDS

Section	
302.501	Scope, Applicability, and Definitions
302.502	Dissolved Oxygen
302.503	pH
302.504	Chemical Constituents
302.505	Fecal Coliform
302.506	Temperature
302.507	Thermal Standards for Existing Sources on January 1, 1971
302.508	Thermal Standards for Sources under Construction But Not in Operation on January 1, 1971
302.509	Other Sources
302.510	Incorporations by Reference
302.515	Offensive Conditions
302.520	Regulation and Designation of Bioaccumulative Chemicals of Concern (BCCs)
302.521	Supplemental Antidegradation Provisions for BCCs
302.525	Radioactivity
302.530	Supplemental Mixing Provisions for BCCs
302.535	Ammonia Nitrogen
302.540	Other Toxic Substances
302.545	Data Requirements
302.550	Analytical Testing
302.553	Determining the Lake Michigan Aquatic Toxicity Criteria or Values - General Procedures
302.555	Determining the Tier I Lake Michigan Basin Acute Aquatic Life Toxicity Criterion (LMAATC): Independent of Water Chemistry
302.560	Determining the Tier I Lake Michigan Basin Acute Aquatic Life Toxicity Criterion (LMAATC): Dependent on Water Chemistry
302.563	Determining the Tier II Lake Michigan Basin Acute Aquatic Life Toxicity Value (LMAATV)
302.565	Determining the Lake Michigan Basin Chronic Aquatic Life Toxicity Criterion (LMCATC) or the Lake Michigan Basin Chronic Aquatic Life Toxicity Value (LMCATV)
302.570	Procedures for Deriving Bioaccumulation Factors for the Lake Michigan Basin
302.575	Procedures for Deriving Tier I Water Quality Criteria in the Lake Michigan Basin to Protect Wildlife
302.580	Procedures for Deriving Water Quality Criteria and Values in the Lake Michigan Basin to Protect Human Health – General
302.585	Procedures for Determining the Lake Michigan Basin Human Health Threshold Criterion (LMHHTC) and the Lake Michigan Basin Human Health Threshold Value (LMHHTV)

- 302.590 Procedures for Determining the Lake Michigan Basin Human Health Nonthreshold Criterion (LMHHNC) or the Lake Michigan Basin Human Health Nonthreshold Value (LMHHNV)
- 302.595 Listing of Bioaccumulative Chemicals of Concern, Derived Criteria and Values

#### SUBPART F: PROCEDURES FOR DETERMINING WATER QUALITY CRITERIA

Section	
302.601	Scope and Applicability
302.603	Definitions
302.604	Mathematical Abbreviations
302.606	Data Requirements
302.612	Determining the Acute Aquatic Toxicity Criterion for an Individual Substance – General Procedures
302.615	Determining the Acute Aquatic Toxicity Criterion - Toxicity Independent of Water Chemistry
302.618	Determining the Acute Aquatic Toxicity Criterion - Toxicity Dependent on Water Chemistry
302.621	Determining the Acute Aquatic Toxicity Criterion - Procedures for Combinations of Substances
302.627	Determining the Chronic Aquatic Toxicity Criterion for an Individual Substance - General Procedures
302.630	Determining the Chronic Aquatic Toxicity Criterion - Procedure for Combination of Substances
302.633	The Wild and Domestic Animal Protection Criterion
302.642	The Human Threshold Criterion
302.645	Determining the Acceptable Daily Intake
302.648	Determining the Human Threshold Criterion
302.651	The Human Nonthreshold Criterion
302.654	Determining the Risk Associated Intake
302.657	Determining the Human Nonthreshold Criterion
302.658	Stream Flow for Application of Human Nonthreshold Criterion
302.660	Bioconcentration Factor
302.663	Determination of Bioconcentration Factor
302.666	Utilizing the Bioconcentration Factor
302.669	Listing of Derived Criteria
APPENDIX A	References to Previous Rules
APPENDIX B	Sources of Codified Sections
APPENDIX C	<u>Maximum total ammonia nitrogen concentrations allowable for certain combinations of pH and temperature</u>
TABLE A	<u>pH-Dependent Values of the AS (Acute Standard)</u>
TABLE B	<u>Temperature and pH-Dependent Values of the CS (Chronic Standard) for Fish Early Life Stages Absent</u>

TABLE C      Temperature and pH-Dependent Values of the CS (Chronic Standard) for Fish Early Life Stages Present

AUTHORITY: Implementing Section 13 and authorized by Sections 11(b) and 27 of the Environmental Protection Act [415 ILCS 5/13 11(b), and 27]

SOURCE: Filed with the Secretary of State January 1, 1978; amended at 2 Ill. Reg. 44, p. 151, effective November 2, 1978; amended at 3 Ill. Reg. 20, p. 95, effective May 17, 1979; amended at 3 Ill. Reg. 25, p. 190, effective June 21, 1979; codified at 6 Ill. Reg. 7818; amended at 6 Ill. Reg. 11161, effective September 7, 1982; amended at 6 Ill. Reg. 13750, effective October 26, 1982; amended at 8 Ill. Reg. 1629, effective January 18, 1984; peremptory amendments at 10 Ill. Reg. 461, effective December 23, 1985; amended at R87-27 at 12 Ill. Reg. 9911, effective May 27, 1988; amended at R85-29 at 12 Ill. Reg. 12082, effective July 11, 1988; amended in R88-1 at 13 Ill. Reg. 5998, effective April 18, 1989; amended in R88-21(A) at 14 Ill. Reg. 2899, effective February 13, 1990; amended in R88-21(B) at 14 Ill. Reg. 11974, effective July 9, 1990; amended in R94-1(A) at 20 Ill. Reg. 7682, effective May 24, 1996; amended in R94-1(B) at 21 Ill. Reg. 370, effective December 23, 1996; expedited correction at 21 Ill. Reg. 6273, effective December 23, 1996; amended in R97-25 at 22 Ill. Reg. 1356, effective December 24, 1997; amended in R99-8 at 23 Ill. Reg. 11249, effective August 26, 1999; amended in R01-13 at 26 Ill. Reg. 3505, effective February 22, 2002; amended in R02-19 at 26 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_.

SUBPART A: GENERAL USE WATER QUALITY PROVISIONS

Section 302.100      Definitions

Unless otherwise specified, the definitions of the Environmental Protection Act (Act) (~~Ill. Rev. Stat. 1987, ch. 111 1/2, par. 1001 et seq.~~) [415 ILCS 5] and 35 Ill. Adm. Code 301 apply to this Part. As used in this Part, each of the following definitions has the specified meaning.

"Acute Toxicity" means the capacity of any substance or combination of substances to cause mortality or other adverse effects in an organism resulting from a single or short-term exposure to the substance.

"Adverse Effect" means any gross or overt effect on an organism, including but not limited to reversible histopathological damage, severe convulsions, irreversible functional impairment and lethality, as well as any non-overt effect on an organism resulting in functional impairment or pathological lesions which may affect the performance of the whole organism, or which reduces an organism's ability to respond to an additional challenge.

"Chronic Toxicity" means the capacity of any substance or combination

of substances to cause injurious or debilitating effects in an organism which result from exposure for a time period representing a substantial portion of the natural life cycle of that organism, including but not limited to the growth phase, the reproductive phases or such critical portions of the natural life cycle of that organism.

"Criterion" means the numerical concentration of one or more toxic substances derived in accordance with the procedures in Subpart F of this Part which, if not exceeded, would assure compliance with the narrative toxicity standard of Section 302.210 of this Part.

"Hardness" means a water quality parameter or characteristic consisting of the sum of calcium and magnesium concentrations expressed in terms of equivalent milligrams per liter as calcium carbonate. Hardness is measured in accordance with methods specified in 40 CFR 136, incorporated by reference in 35 Ill. Adm. Code 301.106.

"Early Life Stages" of fish means the pre-hatch embryonic period, the post hatch free embryo or yolk-sac fry, and the larval period, during which the organism feeds. Juvenile fish, which are anatomically similar to adults, are not considered an early life stage.

"Mixing Zone" means a portion of the waters of the State identified as a region within which mixing is allowed pursuant to Section 302.102(d) of this Part.

"Total Residual Chlorine" or "TRC" means those substances which include combined and uncombined forms of both chlorine and bromine and which are expressed, by convention, as an equivalent concentration of molecular chlorine. TRC is measured in accordance with methods specified in 40 CFR 136, incorporated by reference in 35 Ill. Adm. Code 301.106.

"Toxic Substance" means a chemical substance ~~which~~ that causes adverse effects in humans, or in aquatic or terrestrial animal or plant life. Toxic substances include, but are not limited to those substances listed in 40 CFR 302.4, incorporated by reference in 35 Ill. Adm. Code 301.106, or any "chemical substance" as defined by the Illinois Chemical Safety Act (~~Ill. Rev. Stat. 1987, ch. 111 1/2, par. 951 et seq.~~) [430 ILCS 45 et seq.]

"ZID" or "Zone of Initial Dilution" means a portion of a mixing zone, identified pursuant to Section 302.102(e) of this Part, within which acute toxicity standards need not be met.

(Source: Amended at 26 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 302.212 Total Ammonia Nitrogen and ~~Un-ionized Ammonia~~

- a) Total ammonia nitrogen (as N: STORET Number 00610) ~~shall~~ must in no case exceed 15 mg/L.
- b) The total Un-ionized ammonia nitrogen (as N: STORET Number 00610 00612) shall not exceed the acute, and chronic, and sub-chronic standards are determined by the equations given below subject to the provisions of Section 302.208(a) and (b), and Section 302.213 of this Part. Attainment of each standard must be determined by subsections (c) and (d) of this Section in mg/L.

- 1) The acute standard (AS) is calculated using the following equation:

$$AS = \frac{0.411}{1 + 10^{7.204-pH}} + \frac{58.4}{1 + 10^{pH-7.204}}$$

~~From April through October, the Acute Standard (AS) shall be 0.33 mg/L and the Chronic Standard (CS) shall be 0.057 mg/L.~~

- 2) The chronic standard (CS) is calculated using the following equations:

- A) During the Early Life Stage Present period, as defined in subsection (e) of this Section:

- i) When water temperature is less than or equal to 14.51°C:

$$CS = \left\{ \frac{0.0577}{1 + 10^{7.688-pH}} + \frac{2.487}{1 + 10^{pH-7.688}} \right\} (2.85)$$

- ii) When water temperature is above 14.51°C:

$$CS = \left\{ \frac{0.0577}{1 + 10^{7.688-pH}} + \frac{2.487}{1 + 10^{pH-7.688}} \right\} (1.45 * 10^{0.028*(25-T)})$$

Where T = Water Temperature, degrees Celsius

- B) During the Early Life Stage Absent period, as defined in subsection (e) of this Section:

- i) When water temperature is less than or equal to 7°C:

$$CS = \left\{ \frac{0.0577}{1 + 10^{7.688 - \text{pH}}} + \frac{2.487}{1 + 10^{\text{pH} - 7.688}} \right\} (1.45 * 10^{0.504})$$

- ii) When water temperature is greater than 7°C:

$$CS = \left\{ \frac{0.0577}{1 + 10^{7.688 - \text{pH}}} + \frac{2.487}{1 + 10^{\text{pH} - 7.688}} \right\} (1.45 * 10^{0.028(25 - T)})$$

Where T = Water Temperature, degrees Celsius

- 2) From November through March, the AS shall be 0.14 mg/L and the CS shall be 0.025 mg/L.
- 3) The sub-chronic standard is equal to 2.5 times the chronic standard.

c) Attainment of the Total Ammonia Nitrogen Water Quality Standards

- 1) The acute standard of total ammonia nitrogen (in mg/L) must not be exceeded at any time except in those waters for which the Agency has approved a ZID pursuant to Section 302.102.
- 2) The 30-day average concentration of total ammonia nitrogen (in mg/L) must not exceed the chronic standard (CS) except in those waters in which mixing is allowed pursuant to Section 302.102 of this Part. Attainment of the chronic standard (CS) is evaluated pursuant to subsection (d) of this Section by averaging at least four samples collected at weekly intervals or at other sampling intervals that statistically represent a 30-day sampling period. The samples must be collected in a manner that assures a representative sampling period.
- 3) The 4-day average concentration of total ammonia nitrogen (in mg/L) must not exceed the sub-chronic standard except in those waters in which mixing is allowed pursuant to Section 302.102. Attainment of the sub-chronic standard is evaluated pursuant to subsection (d) of this Section by averaging daily sample results collected over a period of four consecutive days. The samples must be collected in a manner that assures a representative sampling period.

- e) For purposes of this Section, the concentration of un-ionized ammonia nitrogen as N and total ammonia nitrogen as N shall be computed according to the following equations:

$$U = \frac{N}{[0.94412(1 + 10^X) + 0.0559]}$$

$$\text{and } N = U [0.94412(1 + 10^X) + 0.0559]$$

$$\text{where: } X = 0.09018 + \frac{2729.92}{(T + 273.16)} \text{pH}$$

U = Concentration of un-ionized ammonia as N in mg/L

N = Concentration of ammonia nitrogen as N in mg/L

T = Temperature in degrees Celsius

- d) The water quality standard for each water body must be calculated based on the temperature and pH of the water body measured at the time of each ammonia sample. The concentration of total ammonia in each sample must be divided by the calculated water quality standard for the sample to determine a quotient. The water quality standard is attained if the mean of the sample quotients is less than or equal to one for the duration of the averaging period.

The following tables indicates the maximum total ammonia nitrogen concentrations (mg/L as N) allowable pursuant to subsections (a) and (b) of this Section for certain combinations of pH and temperature:

- 1) ~~Summer (April through October) Acute un-ionized ammonia 0.33 mg/L~~

PH		6.5	7.0	7.5	7.75	8.0	8.25	8.5	9.0
°F	°C								
55	12.8	15.0	15.0	15.0	15.0	13.8	7.9	4.6	1.7
60	15.6	15.0	15.0	15.0	15.0	11.2	6.5	3.8	1.4
65	18.3	15.0	15.0	15.0	15.0	9.8	5.3	3.1	1.2
70	21.1	15.0	15.0	15.0	13.2	7.6	4.4	2.6	1.1
75	23.9	15.0	15.0	15.0	10.9	6.3	3.7	2.2	0.9
80	26.7	15.0	15.0	15.0	9.0	5.2	3.1	1.9	0.8
85	29.4	15.0	15.0	13.1	7.5	4.4	2.6	1.6	0.7
90	32.2	15.0	15.0	10.9	6.3	3.7	2.2	1.4	0.7

- 2) ~~Summer (April through October) Chronic un-ionized ammonia 0.057 mg/L~~

PH	6.5	7.0	7.5	7.75	8.0	8.25	8.5	9.0
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°F	°C								
55	12.8	15.0	15.0	7.4	4.2	2.4	1.4	0.8	0.3
60	15.6	15.0	15.0	7.0	3.4	1.9	1.1	0.7	0.2
65	18.3	15.0	15.0	4.9	2.8	1.6	0.9	0.5	0.2
70	21.1	15.0	12.6	4.0	2.3	1.3	0.8	0.5	0.2
75	23.9	15.0	10.3	3.3	1.9	1.1	0.6	0.4	0.2
80	26.7	15.0	8.6	2.7	1.6	0.9	0.5	0.3	0.1
85	29.4	15.0	7.8	2.3	1.3	0.8	0.4	0.3	0.1
90	32.2	15.0	5.8	1.9	1.1	0.6	0.4	0.2	0.1

3) ~~Winter (November through March) Acute un-ionized ammonia 0.14 mg/L~~

	PH	6.5	7.0	7.5	7.75	8.0	8.25	8.5	9.0
°F	°C								
32	0.0	15.0	15.0	15.0	15.0	15.0	9.2	5.2	1.7
35	1.7	15.0	15.0	15.0	15.0	14.1	8.0	4.5	1.5
40	4.4	15.0	15.0	15.0	15.0	11.3	6.4	3.7	1.3
45	7.2	15.0	15.0	15.0	15.0	9.0	5.1	2.9	1.0
50	10.0	15.0	15.0	15.0	12.8	7.3	4.1	2.4	0.9
55	12.8	15.0	15.0	15.0	10.3	5.9	3.4	2.0	0.7
60	15.6	15.0	15.0	14.8	8.4	4.8	2.7	1.6	0.6

4) ~~Winter (November through March) Chronic un-ionized ammonia 0.025mg/L~~

	PH	6.5	7.0	7.5	7.75	8.0	8.25	8.5	9.0
°F	°C								
32	-0.0	15.0	15.0	9.1	5.1	2.9	1.6	0.9	0.3
35	-1.7	15.0	15.0	7.9	4.4	2.5	1.4	0.8	0.3
40	4.4	15.0	15.0	6.3	3.6	2.0	1.1	0.7	0.2
45	7.2	15.0	15.0	5.0	2.8	1.6	0.9	0.5	0.2
50	10.0	15.0	12.7	4.0	2.3	1.3	0.7	0.4	0.2
55	12.8	15.0	10.2	3.3	1.8	1.0	0.6	0.3	0.1
60	15.6	15.0	8.3	2.6	1.5	0.9	0.5	0.3	0.1

- e) The Early Life Stage Present period occurs from March through October. In addition, during any other period when early life stages are present, and where the water quality standard does not provide adequate protection for these organisms, the water body must meet the Early Life Stage Present water quality standard. All other periods are subject to the Early Life Stage Absent period.

BOARD NOTE: Acute and chronic standard concentrations for total ammonia nitrogen (in mg/L) for different combinations of pH and temperature are shown in Appendix C.

(Source: Amended at 26 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 302.213 Effluent Modified Waters (Ammonia) (Repealed)

- a) ~~Effluent modified waters are those waters or portions of waters that the Agency has determined, pursuant to 35 Ill. Adm. Code 309: Subpart A, to have the potential to exceed, and are therefore not subject to, the chronic ammonia standards of Section 302.212(b) downstream of an effluent outfall and outside of any allowable mixing zone. The Agency shall not identify a waterbody as an effluent modified water if it:~~
- 1) ~~has uses known to be adversely impacted by ammonia as designated under 35 Ill. Adm. Code 303.201 outside of any allowable mixing zone;~~  
or
  - 2) ~~exceeds the acute standard of Section 302.212(b) of this Part.~~
- b) ~~All effluent discharges to an effluent modified water must meet the requirements of 35 Ill. Adm. Code 304.122(d) prior to dilution with the receiving water.~~

(Source: Repealed at 26 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 302.APPENDIX C Maximum total ammonia nitrogen concentrations allowable for certain combinations of pH and temperature

Section 302.TABLE A pH-Dependent Values of the AS (Acute Standard)

<u>pH</u>	<u>Acute Standard (mg/L)</u>
<u>≤7.6</u>	<u>15.0</u>
<u>7.7</u>	<u>14.4</u>
<u>7.8</u>	<u>12.1</u>
<u>7.9</u>	<u>10.1</u>
<u>8.0</u>	<u>8.41</u>
<u>8.1</u>	<u>6.95</u>
<u>8.2</u>	<u>5.73</u>
<u>8.3</u>	<u>4.71</u>
<u>8.4</u>	<u>3.88</u>
<u>8.5</u>	<u>3.20</u>

<u>8.6</u>	<u>2.65</u>
<u>8.7</u>	<u>2.20</u>
<u>8.8</u>	<u>1.84</u>
<u>8.9</u>	<u>1.56</u>
<u>9.0</u>	<u>1.32</u>

(Source: Added at 26 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 302. TABLE B Temperature and pH-Dependent Values of the CS (Chronic Standard) for Fish Early Life Stages Absent

pH	Temperature, °Celsius									
	0-7	8	9	10	11	12	13	14	15	16
6	11.3	10.6	9.92	9.30	8.72	8.17	7.66	7.19	6.74	6.32
6.1	11.2	10.5	9.87	9.25	8.67	8.13	7.62	7.15	6.70	6.28
6.2	11.2	10.5	9.81	9.19	8.62	8.08	7.58	7.10	6.66	6.24
6.3	11.1	10.4	9.73	9.12	8.55	8.02	7.52	7.05	6.61	6.19
6.4	11.0	10.3	9.63	9.03	8.47	7.94	7.44	6.98	6.54	6.13
6.5	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46	6.06
6.6	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36	5.97
6.7	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25	5.86
6.8	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10	5.72
6.9	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93	5.56
7	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73	5.37
7.1	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15
7.2	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22	4.90
7.3	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92	4.61
7.4	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59	4.30
7.5	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23	3.97
7.6	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85	3.61
7.7	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47	3.25
7.8	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89
7.9	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71	2.54
8	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21
8.1	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03	1.91
8.2	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74	1.63
8.3	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39
8.4	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17
8.5	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06	0.99
8.6	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.95	0.89	0.84
8.7	1.26	1.18	1.11	1.04	0.98	0.92	0.86	0.80	0.75	0.71
8.8	1.07	1.01	0.94	0.88	0.83	0.78	0.73	0.68	0.64	0.60
8.9	0.92	0.86	0.81	0.76	0.71	0.66	0.62	0.58	0.55	0.51
9.0	0.79	0.74	0.69	0.65	0.61	0.57	0.54	0.50	0.47	0.44

\* At 15 °C and above, the criterion for fish ELS absent is the same as the criterion for fish ELS present.

(Source: Added at 26 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

Section 302. TABLE C Temperature and pH-Dependent Values of the CS (Chronic Standard) for Fish Early Life Stages Present

pH	Temperature, °Celsius									
	0	14	16	18	20	22	24	26	28	30
6	6.95	6.95	6.32	5.55	4.88	4.29	3.77	3.31	2.91	2.56
6.1	6.91	6.91	6.28	5.52	4.86	4.27	3.75	3.30	2.90	2.55
6.2	6.87	6.87	6.24	5.49	4.82	4.24	3.73	3.28	2.88	2.53
6.3	6.82	6.82	6.19	5.45	4.79	4.21	3.70	3.25	2.86	2.51
6.4	6.75	6.75	6.13	5.39	4.74	4.17	3.66	3.22	2.83	2.49
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25
7	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03
8	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.90
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.88	0.77
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.97	0.86	0.75	0.66
8.3	1.52	1.52	1.39	1.22	1.07	0.94	0.83	0.73	0.64	0.56
8.4	1.29	1.29	1.17	1.03	0.91	0.80	0.70	0.62	0.54	0.48
8.5	1.09	1.09	0.99	0.87	0.76	0.67	0.59	0.52	0.46	0.40
8.6	0.92	0.92	0.84	0.73	0.65	0.57	0.50	0.44	0.39	0.34
8.7	0.78	0.78	0.71	0.62	0.55	0.48	0.42	0.37	0.33	0.29
8.8	0.66	0.66	0.60	0.53	0.46	0.41	0.36	0.32	0.28	0.24
8.9	0.56	0.56	0.51	0.45	0.40	0.35	0.31	0.27	0.24	0.21
9	0.49	0.49	0.44	0.39	0.34	0.30	0.26	0.23	0.20	0.18

(Source: Added at 26 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

TITLE 35: ENVIRONMENTAL PROTECTION  
 SUBTITLE C: WATER POLLUTION  
 CHAPTER I: POLLUTION CONTROL BOARD  
 PART 304  
 EFFLUENT STANDARDS

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##### Appendix A References to Previous Rules

**AUTHORITY:** Implementing Section 13 and authorized by Section 27 of the Environmental Protection Act [415 ILCS 5/13 and 27].

**SOURCE:** Filed with the Secretary of State January 1, 1978; amended at 2 Ill. Reg. 30, p. 343, effective July 27, 1978; amended at 2 Ill. Reg. 44, p. 151, effective November 2, 1978; amended at 3 Ill. Reg. 20, p. 95, effective May 17, 1979; amended at 3 Ill. Reg. 25, p. 190, effective June 21, 1979; amended at 4 Ill. Reg. 20, p. 53 effective May 7, 1980; amended at 6 Ill. Reg. 563, effective December 24, 1981; codified at 6 Ill. Reg. 7818; amended at 6 Ill. Reg. 11161, effective September 7, 1982; amended at 6 Ill. Reg. 13750, effective October 26, 1982; amended at 7 Ill. Reg. 3020, effective March 4, 1983; amended at 7 Ill. Reg. 8111, effective June 23, 1983; amended at 7 Ill. Reg. 14515, effective October 14, 1983; amended at 7 Ill. Reg. 14910, effective November 14, 1983; amended at 8 Ill. Reg. 1600, effective January 18, 1984; amended at 8 Ill. Reg. 3687, effective March 14, 1984; amended at 8 Ill. Reg. 8237, effective June 8, 1984; amended at 9 Ill. Reg. 1379, effective January 21, 1985; amended at 9 Ill. Reg. 4510, effective March 22, 1985; peremptory amendment at 10 Ill. Reg. 456, effective December 23, 1985; amended at 11 Ill. Reg. 3117, effective January 28, 1987; amended in R84-13 at 11 Ill. Reg. 7291 effective April 3, 1987; amended in R86-17(A) at 11 Ill. Reg. 14748, effective August 24, 1987; amended in R84-16 at 12 Ill. Reg. 2445, effective January 15, 1988; amended in R83-23 at 12 Ill. Reg. 8658, effective May 10, 1988; amended in R87-27 at 12 Ill. Reg. 9905, effective May 27, 1988; amended in R82-7 at 12 Ill. Reg. 10712, effective June 9, 1988; amended in R85-29 at 12 Ill. Reg. 12064, effective July 12, 1988; amended in R87-22 at 12 Ill. Reg. 13966, effective August 23, 1988; amended in R86-3 at 12 Ill. Reg. 20126, effective November 16, 1988; amended in R84-20 at 13 Ill. Reg. 851, effective January 9, 1989; amended in R85-11 at 13 Ill. Reg. 2060, effective February 6, 1989; amended in R88-1 at 13 Ill. Reg. 5976, effective April 18, 1989; amended in R86-17(B)

at 13 Ill. Reg. 7754, effective May 4, 1989; amended in R88-22 at 13 Ill. Reg. 8880, effective May 26, 1989; amended in R87-6 at 14 Ill. Reg. 6777, effective April 24, 1990; amended in R87-36 at 14 Ill. Reg. 9437, effective May 31, 1990; amended in R88-21(B) at 14 Ill. Reg. 12538, effective July 18, 1990; amended in R84-44 at 14 Ill. Reg. 20719, effective December 11, 1990; amended in R86-14 at 15 Ill. Reg. 241, effective December 18, 1990; amended in R93-8 at 18 Ill. Reg. 267, effective December 23, 1993; amended in R87-33 at 18 Ill. Reg. 11574, effective July 7, 1994; amended in R95-14 at 20 Ill. Reg. 3528, effective February 8, 1996; amended in R94-1(B) at 21 Ill. Reg. 364, effective December 23, 1996; expedited correction in R94-1(B) at 21 Ill. Reg. 6269, effective December 23, 1996; amended in R97-25 at 22 Ill. Reg. 1351, effective December 24, 1997; amended in R97-28 at 23 Ill. Reg. 3512, effective February 3, 1998; amended in R98-14 at 23 Ill. Reg. 687, effective December 31, 1998; amended in R02-19 at 26 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_.

~~BOARD NOTE: This Part implements the Illinois Environmental Protection Act of July 1, 1994.~~

#### SUBPART A: GENERAL EFFLUENT STANDARDS

##### Section 304.122 Total Ammonia Nitrogen (as N: STORET number 00610)

- a) No effluent from any source which discharges to the Illinois River, the Des Plaines River downstream of its confluence with the Chicago River System or the Calumet River System, and whose untreated waste load is 50,000 or more population equivalents shall contain more than 2.5 mg/L of total ammonia nitrogen as N during the months of April through October, or 4 mg/L at other times.
- b) Sources discharging to any of the above waters and whose untreated waste load cannot be computed on a population equivalent basis comparable to that used for municipal waste treatment plants and whose total ammonia nitrogen as N discharge exceeds 45.4 kg/day (100 pounds per day) shall not discharge an effluent of more than 3.0 mg/L of total ammonia nitrogen as N.
- c) In addition to the effluent standards set forth in subsections (a) and (b) of this Section, all sources are subject to Section 304.105 ~~unless the Agency determines as part of the NPDES Permit Program under 35 Ill. Adm. Code 309: Subpart A that alternate effluent standards are applicable pursuant to subsection (d) of this Section.~~
- d) ~~All dischargers to effluent modified waters as defined at 35 Ill. Adm. Code 302.213, except for treatment works qualifying under Section 304.120(c), shall have an effective NPDES permit with monthly average effluent limits of 1.5 mg/L total ammonia as N during the months of April through October, and 4.0 mg/L total ammonia as N at other times, as well as the following restrictions:~~

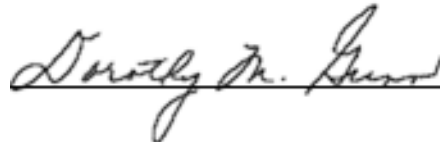


- 1) ~~Dischargers achieving lower ammonia concentrations than given above, yet not meeting the chronic water quality standards of 35 Ill. Adm. Code 302.212(b), shall maintain their existing level of performance consistent with the facility's expected organic and hydraulic loadings for the duration of their NPDES permit.~~
  
- 2) ~~New or expanded discharges that increase ammonia loading to general use waters and/or create effluent modified waters or portions of waters must demonstrate compliance to the Agency with the nondegradation requirements at 35 Ill. Adm. Code 302.105.~~

(Source: Amended at 26 Ill. Reg. \_\_\_\_\_, effective \_\_\_\_\_)

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the Board adopted the above opinion and order on September 5, 2002, by a vote of 6-0.

A handwritten signature in cursive script, reading "Dorothy M. Gunn", is written over a horizontal line.

Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board