ILLINOIS POLLUTION CONTROL BOARD
April 12, 1990

IN THE MATTER OF:	)	
	)	
PROPOSED AMENDMENT TO	)	R87-6
PHOSPHORUS EFFLUENT STANDARD,	)	(Rulemaking)
35 ILL. ADM. CODE 304.123	)	

ADOPTED RULE. FINAL ORDER.

OPINION AND ORDER OF THE BOARD (by J. Anderson):

This rulemaking was initiated by the Illinois Environmental Protection Agency (Agency) on March 20, 1987. The Agency filed an amended proposal on July 13, 1987. Merit hearings on the Agency's proposal were held in Chicago on May 18, 1987, and in Springfield on July 21, 1987. Beside the Agency, the Northeastern Illinois Planning Commission (NIPC), the Department of Energy and Natural Resources (DENR), the Urbana and Champaign Sanitary District (U-C Sanitary District), and members of the public participated in the hearings.

Following completion of the merit hearings, DENR, with the concurrence of the Economic Technical Advisory Committee (ETAC), determined that an Economic Impact Study (EcIS) was warranted in this proceeding. On March 31, 1988, an EcIS report prepared on behalf of DENR by Blaser, Zeni and Co., a management consulting firm, was filed with the Board (Exh. 40). On April 7, 1988, the Board adopted the Agency's proposal for First Notice. This First Notice appeared in the Illinois Register on April 29, 1988.

Upon receipt of the EcIS report, the Board scheduled and conducted two additional public hearings to consider the EcIS. Present at these hearings were DENR, the Agency, and William L. Blaser, President of Blaser, Zeni and Co. and the principal author of the EcIS report. Some other members of the EcIS drafting team were also present. Hearings were held on June 7, 1988, in Springfield, and on June 21, 1988, in Chicago.

On December 15, 1988, the Board adopted for Second Notice a Proposed Opinion and Order in this matter. Since the Second Notice proposal differed in certain respects from the Agency-drafted First Notice proposal, the Board deferred filing of the proposal to allow interested participants an opportunity to comment. On January 5, 1989, in order to correct a drafting error in the December 15, 1988 Order, the Board adopted a Correction of Proposed Order of the Board.

Five public comments (Nos. 12-16) were received in response to the Board's Second Notice Proposal. Public Comment 15 was

filed by the Agency. In response to questions from the Board's staff requesting clarification of the intent and effect of certain of the Agency's comments, the Agency filed Supplemental Agency Final Comments on March 9, 1989. (Public Comment 17).

Because no rule can be adopted more than one year after the date of publication of First Notice (Ill. Rev. Stat. 1987, Ch. 127, par. 1001 et seq., par. 1005.01(d)), it was necessary to return this proceeding to First Notice. On May 11, 1989, the Board adopted a Second First Notice proposed Opinion and Order, which was subsequently corrected on May 25, 1989. The Board also utilized the necessity for the Second First Notice period to afford the participants additional time to consider this rulemaking in light of the changes proposed by the Board (see following). Additionally, the Board concluded that at least one more hearing in this docket would be advisable in view of the continuing problems posed by the record.

The Second First Notice embodied the Agency's original proposal together with the modifications proposed by the Board in its deferred Second Notice proposal of December 15, 1988, as more fully set forth below. A merit hearing to consider the modified proposal was held in Chicago on June 23, 1989. Participants at this third merit hearing (fifth overall), besides the Agency, were DENR, the City of Charleston (Charleston), Dr. Harish Rao, Chief of the Board's Scientific and Technical Section (STS), and Mr. Robert Kirschner, Manager of the NIPC lakes program, who appeared on behalf of the Illinois Lake Management Association (ILMA) as its vice-president and the North American Lake Management Society (NALMS) as its secretary. At the hearing, ten additional exhibits (Exhs. 50-58 and 60) were received into evidence.*

The Board's Modified Proposal (Second First Notice)

As more fully described in the Board's Opinion of May 11, 1989, the Board, after consideration of the record then available to it, found sufficient support for the Agency's proposal to the extent that it would impose a 1.0 mg/l effluent phosphorus as P standard upon all point sources of 2500 population equivalents (P.E.) or more located within 25 miles of a 20-acre or larger lake or reservoir. Current requirements impose this effluent standard upon somewhat smaller (1500 P.E. or larger) sources that discharge within the Fox River Basin or that (without utilizing a third-stage lagoon treatment system) discharge directly to a lake or reservoir that does not comply with the general use water quality standard for phosphorus (35 Ill. Adm. Code 302.205), and to somewhat larger (5000 P.E. or larger) sources elsewhere (separate standards for the Lake Michigan basin are not

* One other exhibit (Exh. 59), consisting of the Illinois Water Quality Report for 1980-1987 (also known as the 305B report) was to have been submitted, but was not received.

affected). The Board also accepted the Agency's proposal to the extent that the effluent phosphorus standard would not apply to sources tributary to so-called "riverine" lakes or reservoirs (e.g., Lake Decatur) whose very low retention times appear to limit growth of nuisance plants and algae regardless of phosphorus concentrations. The Board noted (on page 13 of its Opinion), however, that it was not satisified that the record supported the aspect of the Agency's proposal that removed control requirements from all point sources of phosphorus which happen to be located more than 25 miles from a lake. The Board noted that some of the lakes and reservoirs potentially impacted by the Agency's 25 mile cut-off were, according to the EcIS, in a transitional or balancing condition between mesotrophy and eutrophy. Finally, in this regard, the Board noted that the Agency, DENR, and other commentators agreed that internal regeneration of phosphorus into the dissolved form from lake sediments can be a "significant factor" in lake eutrophication (Id., citing Exh. 1, pgs. 6-8, 34-38 and 54).

The Board's Second First Notice proposal (which was identical to its December 15, 1988, deferred Second Notice proposal as corrected) attempted to supply the element it viewed as missing from the Agency's proposal, namely, a measure of control over those point sources of phosphorus located more than 25 miles upstream from the receiving lake or reservoir. The proposal approached the problem by, in effect, defining what constituted a "significant" source. Based on testimony and exhibits in the record, particularly the EcIS, the Board's proposal exempted from the effluent phosphorus standard only such point sources whose effluent, if untreated for removal of phosphorus, would contribute less than 3% of the point and non-point source phosphorus loading of all tributaries to the receiving lake or reservoir. Phosphorus loading was to be estimated utilizing the National Eutrophication Surveys, Working Paper Series, U.S. Environmental Protection Agency, June 1975 (NES).

At the June 23, 1989, hearing and in the comments and exhibits submitted by various participants, the Board's choice of the 3% cutoff, as well as the use of the NES, were attacked as unreliable and founded upon suspect dated methodology (R. 81-82, 85-87, 101-102, 151-152)*. The Agency submitted an exhibit (Exh. 57) suggesting that there was very little (3.3% on average) difference in sedimentary phosphorus levels as between lakes with, and lakes without, upstream point sources of phosphorus (R. 113-114). The Agency essentially urged the Board to ignore point sources of sedimentary phosphorus as being insignificant or negligible when compared to non-point sources (R. 82-83, 114-115 and 117). The Agency stated that the NES data was dated and unreliable (R. 152), that there was not enough data presently

* All references to transcript pages relate to the hearing of June 23, 1989, unless otherwise noted.

available upon which to base a statewide rule (R. 86-88), and that diagnosis of lake problems would be necessarily lake-specific (R. 90). Further, although the Agency and other participants indicated that specific studies are underway in some areas of the State (e.g., Lake Charleston - see R. 15, 25-26, 45-46, and Ex. 51), the Agency suggested that future research dollars would likely be directed at toxins rather than phosphorus (R. 90-91).

The foregoing Agency views were generally endorsed or accepted by other participants; however, no other participants were willing to accept the Agency's premise that point source contributions of sedimentary phosphorus were insignificant or negligible (R. 50, 123, 139-140). Mr. Kirschner of ILMA and NALMS, while stating that a case-by-case analysis would be required to confirm or refute the Agency's position (R. 143-145), pointedly disagreed with the concept of deregulation of point sources of sedimentary phosphorus (R. 147-149). Even the Agency conceded that the studies upon which it based its conclusions in this regard could be easily faulted or "ripped apart" (R. 98 and 120).

The other major point of contention at the June 23, 1989, hearing was whether the "riverine" exemption should be extended to sources tributary to Lake Charleston. Mr. Alan Alford, who testified on behalf of Charleston, stated that the basic difference between Lake Charleston and Lake Decatur (which is also a "riverine" lake) was that the former has a side channel reservoir having a hydraulic retention time approaching two years, in sharp contrast to Lake Charleston's retention time of a few days (R. 22). He expressed concern that an addition to the already "large amount" of phosphorus in Lake Charleston might detrimentally affect the side channel reservoir, which serves as Charleston's potable water supply. He also indicated that studies of the phosphorus/nitrogen ratios in the lake indicate that phosphorus may be a limiting factor in terms of causing or contributing to eutrophication in either the lake or the side channel reservoir and that tests are underway to determine whether phosphorus or nitrogen was the limiting factor (R. 25-26). Under questioning from the Agency, Mr. Alford agreed that his purpose regarding the side channel reservoir would be accomplished if the "riverine" exemption were amended to apply only "where the lake and any side channel reservoir on an annual basis exhibits a mean hydraulic retention time of 18 days or less" (R. 38).

Board Conclusions and Further Modifications (Second Notice)

On September 13, 1989, the Board adopted a revised proposed rule for Second Notice. The Board was persuaded that the "riverine" exemption should not be extended to lakes having side channel reservoirs where the side channel reservoirs do not otherwise qualify for the exemption. Specifically, the Board noted that Charleston made its point at the June 23, 1989,

hearing, that the side-channel reservoir, which receives some 70% of its influent from the lake, has a retention time approaching two years, rather than a few days. Accordingly, the Board amended subsections (b) and (c)(1) of Section 304.123 of the Second First Notice proposal for Second Notice purposes to include the phrase ",including any side channel reservoir or other portion thereof," immediately preceeding the words "on an annual basis". The additional reference to "or other portion thereof" was also inserted to make clear that the principle applies irrespective of whether a segment of a lake is denominated a "side channel reservoir".

As to the issue of point sources of phosphorus which are at least 25 miles upstream, the Board remained unpersuaded that the Agency made out a case for blanket deregulation. The Board specifically noted that no participant or commentator, including the Agency, argued that such phosphorus discharges would not eventually reach the receiving lake or reservoir or suggested that such phosphorus as reaches the receiving lake or reservoir, albeit in sedimentary form, could not be a significant factor in cultural eutrophication* of the receiving lake or reservoir by virtue of internal regeneration of the phosphorus into its dissolved form and subsequent return to the euphotic zone wherein it is again readily available for uptake by biota. Moreover, the Board stated that even if it were to accept the Agency's data suggesting that, for most Illinois lakes and reservoirs, internal regeneration of phosphorus is generally not a critical factor in cultural eutrophication, the record did not show that internal regeneration of phosphorus was not a critical factor for two of the lakes of concern identified in the EcIS, Lakes Shelbyville and Carlyle.

The Board recognized that the 3% cutoff figure could be irrelevant to a given lake and was based on dated information that could be of doubtful reliability and relevance. The Board was therefore faced with a dilemma: either it could fashion yet another attempt to deal with point sources of phosphorus 25 miles or more upstream of a receiving lake, or it could, as the Agency has proposed, rely on the presumed general nature of Illinois lakes and watersheds and provide regulatory relief generally for the more distant dischargers until the resource intensive data, gathered on a lake-by-lake basis, indicated a need for further point source controls.

The Board chose the former. The Board stated that it was unwilling to provide regulatory relief, including the shutdown of several existing phosphorus control facilities and the termination of a number of phosphorus control construction projects, where the impact on the State's valuable water resources was speculative at best. It agreed with all

* Cultural eutrophication refers to those eutrophication processes accelerated by human activities.

participants that further research was needed on a lake and watershed-specific basis, such as was underway at Lake Charleston. Nevertheless, it recognized that regulatory relief for some point sources of phosphorus could be appropriate, particularly where the phosphorus arrives at the receiving lake or reservoir in the sedimentary form or where such phosphorus plays no material role in cultural eutrophication of that lake or reservoir.

On September 13, 1989, the Board, therefore, proposed for Second Notice a modified proposal which did not grant outright relief, but rather provided for adjusted standard (AS) relief pursuant to Section 28.1 of the Act. It conditioned regulatory relief for point sources of phosphorus on the specific dynamics of the affected watershed and the receiving lake or reservoir. Rather than resort to the 3% cutoff and the NES study, both of which had been questioned by commenters, the Board decided, in keeping with the tenor of the comments, to require that justification for relief from the 1.0 mg/l effluent phosphorus standard be predicated upon a demonstration that phosphorus is not the limiting nutrient for purposes of stimulating biological growth in the receiving lake or reservoir. However, for point sources at least 25 miles upstream of a eutrophic lake, the Board decided to only require that phosphorus from internal regeneration be ruled out as a limiting nutrient. The Board stated that recognized that the AS showing for the more distant point sources which are tributary to lakes which are already eutrophic have a somewhat reduced hurdle to overcome to qualify for relief from the standard, but that this reduction reflected the presumption that phosphorus from such sources arrives at the receiving lake or reservoir in sedimentary form, and is of negligible concern where internal regeneration of phosphorus plays no substantial role in keeping the lake or reservoir eutrophic. In addition, the Board added definitions of the key terms, such as "euphotic zone", "eutrophication", and "internal regeneration". Finally, the Board clarified its intent that distances between a point source and the receiving lake or reservoir are to be determined at the normal pool level, rather than at some seasonal extreme.

The Board directed that filing of the Second Notice proposal with the Joint Committee on Administrative Rules (JCAR) be deferred until at least September 29, 1989, to allow participants to comment on the several proposed changes made in the proposal during First Notice. Comments were to be received by the Board on September 25, 1989.

Board Conclusions and Further Modifications (Revised Second Notice)

The Board received the Agency's Second Notice Comments on September 26, 1989. It was the only comment filed. Although received tardily and unaccompanied by a motion to file instanter, the Board accepted the Agency's comments in view of the minimal

nature of the tardiness and the apparent lack of prejudice to any participants.

The Agency raised three points of contention in support of its original proposal and in opposition to the Board's proposed Second Notice. The Board addressed each contention in its October 18, 1989, Revised Second Notice Opinion and Order.

First, the Agency stated that the Board had mis-characterized its testimony in stating that the Agency's data suggested "that internal regeneration of phosphorus is generally not a critical factor in cultural eutrophication" or that, in any case, "the record has certainly not shown that internal regeneration of phosphorus is not a critical factor for two of the lakes of concern identified in the EcIS, Lakes Shelbyville and Carlyle" (Agency Second Notice Comments at p. 1, quoting the Board's Opinion and Order of September 13, 1989, p. 5). The Agency noted that it had on several occasions underscored the fact that internal regeneration also plays an important role. However, the Agency asserted, "there is no evidence that suggests that a point source's loading rate has any effect on a downstream lake's internal regeneration of phosphorus" (Id. at p. 2, referring to testimony of Toby Frevert at the June 23, 1989 hearing, R. at 80-103). The Agency concluded that whether internal regeneration of phosphorus was a critical factor for Lakes Shelbyville and Carlyle "should have absolutely no bearing on the question of whether distant dischargers should be subject to the 1.0 mg/l standard, if there is no evidence that suggests a relationship between upstream point source loadings and downstream internal regeneration" (Id.).

The Board disagreed with the Agency's reasoning. The Board reasoned that if it was true, that there was no evidence suggesting that a point source's loading has any effect on a downstream lake's internal regeneration of phosphorus, it was at least equally true that there was also no evidence suggesting that a point source's loading does not have an effect on a downstream lake's internal regeneration of phosphorus. The Board then stated that it stood to reason that incremental contributions of phosphorus to lake sediments from any source correspondingly increase the amount of phosphorus potentially available for conversion to orthophosphorus during internal regeneration and that it was thus anomalous for the Agency to suggest, on the one hand, that internal regeneration of phosphorus plays an "important role" in eutrophication and, on the other hand, to discount the potential role of one type of phosphorus source, particularly in close cases. The Board recognized it may well be true that the predominant sources of sedimentary phosphorus in most Illinois lakes are non-point discharges and native soils, but concluded that it could not base a rule which would apply to virtually all Illinois lakes upon such assumptions. Rather than "obscuring the realities of lake dynamics" as the Agency asserted (Id.), the Board, by its

proposal, recognized those realities, not subsuming potentially vital distinctions within generalities.

As its second argument, the Agency disagreed with the Board's characterization of its (the Agency's) support for an Agency study entitled "Analysis of Sediment Phosphorus Levels in Illinois Lakes" (Ex. 57). The Agency contended that the Board "twisted" the Agency's remarks about that study into a "concession" that the study was "essentially flawed" (Id., p. 3). The Board considered the following statements made by the Agency's two witnesses regarding this study, but stated that it had some difficulty visualizing how the comments were misconstrued:

> That exhibit is clearly not being offered as the ultimate in desirable scientific analysis... If someone decided to be critical and find reasons why it wouldn't meet a scientific methodology or protocol, that would be an easy thing to do. (Testimony of Toby Frevert, R. 6/23/89, p. 98).
>
> [Y]ou could probably from a statistical standpoint rip it apart, if I can quote [Mr. Frevert's] words or if that is what he said. (Testimony of Gregg Good, R. 6/23/89, p. 120).

In any event, the Board found the study inadequate as a basis for concluding that there was no discernible difference between the phosphorus content of lake sediments that received point sources and those which do not. The Board listed several reasons for its conclusion. First, the study in fact did show a slightly (3.3%) higher average sediment total phosphorus level in lakes with tributary point sources of phosphorus (Exh. 57, Table 4) than in lakes without such point sources. Second, the study by its nature did not purport to examine scientifically the effect of a given point source or sources upon a given receiving lake. Third, the trophic status of the lakes surveyed was not examined, although some morphometric data was provided; the lakes' relative sensitivity to changes in phosphorus levels was not revealed. Fourth, the lakes surveyed were not characterized as to whether they were representative of Illinois lakes as a whole. In this respect, the Board also noted that the study indicated without qualification or explanation that the Agency had sediment total phosphorus data on only 66 of the approximately 412 Illinois lakes and reservoirs which equaled or exceeded 20 acres of surface area. Fifth, the study did not indicate whether the sampling results reported remained valid: fewer than one-third of the reported sediment samples were less than 10 years old and data on Lakes Shelbyville and Carlyle were 12 years old.

In noting the foregoing deficiencies, the Board stated that it was in no manner denigrating the Agency's efforts. The Board emphasized that the study did not support the Agency's thesis but that it suggested a general correlation between watershed area to surface area ratio (WA:SA) and average lake sediment levels of phosphorus. The Board also stated that the study also suggested a general correlation between other factors, including morphometric characteristics, and sediment phosphorus levels. The Board concluded that, taken as a whole, the study lent strong support to comments made earlier by the Agency and others to the effect that the impact of upstream phosphorus discharges on a lake or reservoir cannot be gauged without a thorough understanding of the particular eutrophication dynamics of that lake or reservoir (see, e.g., Exh. 1, pp. 33, 38, 41 and 53-54; Exh. 40, pp. 12, 18 and 128-130; R. 7/21/87, p. 47; and R. 6/23/89, pp. 144-145).

The Agency took considerable umbrage at the Board's assertion that other participants in the proceeding were not willing to accept the Agency's premise that distant point source contributions of phosphorus are insignificant or negligible. The Agency asserted that no participants were willing to refute that premise (Agency Second Notice Comments, p. 4). It further asserted that "a scientific study conducted pursuant to a sound methodology is worth any number of people who pointedly disagree" (Id.). In response, the Board noted that it did not have before it such a scientific study in Exh. 57 and that because the individual commenter in question was an officer of the Illinois Lake Management Association as well as the North American Lake Management Society, he was entitled to a measure of deference.

In this connection, the Agency repeatedly discounted the consequences of its lack of scientific data. It accused the Board of "attempting to use the inadequacy of our present knowledge of phosphorus behavior as a pretext for disregarding what little knowledge we do possess" (Id.). In response, the Board stated that the charge was, at best, incongruous. The Board also noted that, in any event, the Agency in a certain sense put its finger on the basic problem with this rulemaking. The Board pointed out that it hardly trivialized the Agency's proposal; it struggled with the "inadequacy" and "little knowledge" problems and concluded that it could not strip away the existing environmental controls based on the inapposite inferences and over-generalized conclusions contained in the record. The Board also noted, however, that the record was essentially devoid of substantive testimony endorsing the Agency's view of the underlying science in support of its proposed relief even though some commentators endorsed the Agency's proposal. This was because the commentators primarily focused on the added-on expense of phosphorus controls to justify their endorsement. Moreover, it concluded that, contrary to the Agency's assertion, it provided significant relief, even beyond that proposed by the Agency, as regards the riverine exemption.

Despite its sizeable effort, the Agency was simply unable to supply sufficient data to demonstrate that harm to Illinois lakes, at least some of them, would not result from the wholesale deregulation of those point sources of phosphorus more than 25 miles upstream. The Board stated that it was aware that, as the Agency suggested, some point sources of phosphorus are, and will continue to be, required to construct and operate phosphorus controls which may ultimately prove unnecessary. Faced with this dilemma, the Board decided to err on the side of the environment and that it must trust that aggrieved dischargers will come forward to demonstrate that, in their particular circumstances, such controls are not warranted. Finally, the Board noted that use of the adjusted standard approach contained in these rules would serve as a more efficient method for resolution on a lake by lake basis.

In its third argument, the Agency contended that proposed Section 304.123(c) provided imperfect and incomplete guidance for administering the adjusted standards relief mechanism. Although the Board recognized that this could be true, it also noted that section was not intended to be prescriptive in detail. Moreover, the Board noted that, pursuant to Section 28.1 of the Act, the adjusted standard relief mechanism was available even without specifying justification requirements in the general rule and that the provisions of Section 304.123(c) provided needed additional requirements (i.e., additional to the requirements set forth in Section 28.1(c) of the Act) for the adjusted standard process in the form of narrative standards and specific types of proofs required. Hence, the Board concluded that the Agency was at least placed in a better position than if there were no such standards provided. For the sake of clarity, however, the Board amended proposed rule Section 304.123(c) to state that the new requirements are additional to those set forth in Section 28.1(c) of the Act. It then gave the Agency the opportunity to propose additional rules to the Board should it wish the Board to promulgate more specific requirements.

For the reasons stated above, the Board concluded that it would not change the September 13, 1989, Second Notice proposed amendments to 35 Ill. Adm. Code 304.123 except for clarification of Section 304.123(c). It also stated that the proposal would be filed as soon as possible with the JCAR.

Final Adoption

After filing the proposal with JCAR and in response to JCAR concerns, the Board made further revisions to the text of its revised Second Notice Order. Those revisions were limited to format changes of a typographical nature and therefore were not substantive in nature. Because the Board indicated these revisions to JCAR in submitting the revised Second Notice package, it will not discuss those revisions in this Order. JCAR issued a certification of no objection to the rules on April 3, 1990.

The Board recognizes that the near-term effect of these regulatory changes may be small. Some very small sources (certain of those between 1500 P.E. and 2500 P.E.) may obtain relief. Some others sources (certain of those between 2500 P.E. and 5000 P.E.) will be made subject to the standard for the first time. Many sources will be unaffected. Yet the possibility of relief first raised by the Agency remains and the incentive to truly understand the location-specific dynamics of eutrophication is, in many cases, enhanced. The Board expects that owners and operators of point sources of phosphorus, particularly those which are more distant from the receiving lake or reservoir, may wish to enter into cooperative efforts to study the receiving lake and watershed system as a necessary prerequisite to regulatory relief.

It should be remembered that when the Agency's proposal was first filed, the adjusted standards mechanism in Section 28.1 was in its infancy. Also, in 1988, there were major revisions and additions to the Section, and only recently (in 1989) has the Board adopted general procedural rules to implement it. We believe that this more efficient mechanism is particularly appropriate for providing situation-specific relief from the phosphorus regulatory requirements. The Board's revised proposal invokes this relatively new mechanism and specifies the level of justification required of a petitioner pursuant to Section 28.1(b). Absent such specification, there would be no criteria provided in the rule by which to determine the appropriate level of justification for an adjusted standard. There would also be no distinction between near point sources and more distant point sources.

Most importantly, this proposal will protect the environment and the public welfare by assuring that any relief from the phosphorus effluent standard will not result in the cultural eutrophication of Illinois lakes and reservoirs. As a related benefit, this proposal places a premium on possessing knowledge of the specific dynamics of eutrophication of a given lake or reservoir. If nothing else, the record of this protracted proceeding has abundantly demonstrated the need for such knowledge.

ORDER

The Clerk of the Pollution Control Board is directed to submit the following adopted rule to the Secondary of State for Final Notice:

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE C: WATER POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD

PART 304
EFFLUENT STANDARDS

SUBPART A: GENERAL EFFLUENT STANDARDS

SUBPART B: SITE SPECIFIC RULES AND EXCEPTIONS NOT OF GENERAL APPLICABILITY

SUBPART C: TEMPORARY EFFLUENT STANDARDS

AUTHORITY: Implementing Section 13 and authorized by Section 27 of the Environmental Protection Act (Ill. Rev. Stat. 1987, ch. 111 1/2 pars. 1013 and 1027).

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 R86-17B 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. , effective

SUBPART A: GENERAL EFFLUENT STANDARDS

Section 304.123 Phosphorus (STORET number 00665)

a) No effluent discharge within the Lake Michigan Basin shall contain more than 1.0 mg/l of phosphorus as P.

~~b) No effluent from any source which discharges within the Fox River Basin above and including Pistakee Lake and whose untreated waste load is 1500 or more population equivalents shall contain more than 1.0 mg/l of phosphorus as P.~~

~~c) No effluent from any source which discharges to a lake or reservoir with a surface area of 8.1 ha (20 acres) or more or to any tributary to such a lake or reservoir and whose untreated waste load is 5000 or more population equivalents shall contain more than 1.0 mg/l of phosphorus as P.~~

~~d) No effluent from any source which discharges to a lake or reservoir with a surface area of 8.1 ha (20 acres) or more which does not comply with Section 302.205 or to any tributary to such a lake or reservoir and whose untreated waste load is 1500 or more population equivalents and which is not governed by Sections 304.120(a) or 304.120(c) shall contain more than 1.0 mg/l of phosphorus as P.~~

b) No effluent from any source which discharges to a lake or reservoir with a surface area of 8.1 hectares (20 acres) or more, or to any tributary of such a lake or reservoir whose untreated waste load is 2500 or more population equivalents, and which does not utilize a third-stage lagoon treatment system as specified in Section 304.120(a) and (c), shall exceed 1.0 mg/l of phosphorus as P; however, this subsection shall not apply where the lake or reservoir, including any side channel reservoir or other portion thereof, on an annual basis exhibits a mean hydraulic retention time of 0.05 years (18 days) or less.

c) Pursuant to Section 28.1 of the Act, the owner or operator of any source subject to subsection (b) may apply for an adjusted standard. In addition to the proofs specified in Section 28.1(c) of the Act, such application shall, at a minimum, contain adequate proof that the effluent resulting from grant of the adjusted standard will not contribute to cultural eutrophication, unnatural plant or algal growth or dissolved oxygen deficiencies in the receiving lake or reservoir. For purposes of this subsection, such effluent shall be deemed to contribute to such conditions if phosphorus is the limiting nutrient for biological growth in the lake or reservoir, taking into account the lake or reservoir limnology, morphological, physical and chemical characteristics, and sediment transport. However, if the effluent discharge enters a tributary at least 40.25 kilometers (25 miles) upstream of the point at which the tributary enters the lake or reservoir at normal pool level, such effluent shall not be deemed to contribute to such conditions if the receiving lake or reservoir is eutrophic and phosphorus from internal regeneration is not a limiting nutrient.

ed) For the purposes of this Section the term "lake or reservoir" shall not include low level pools constructed

in free flowing streams or any body of water which is an integral part of an operation which includes the application of sludge on land.

~~f) Compliance with the limitations of paragraph (c) shall be achieved by the following dates:~~

~~1) New sources shall comply on the effective date of this regulation; and~~

~~2) Existing sources shall comply by December 31, 1980, or such other date as required by NPDES permit, or as ordered by the Board under Title VIII or Title IX of the Act.~~

~~g) Compliance with the limitations of paragraph (d) shall be achieved by December 31, 1985, or such other date as required by NPDES permit, or as ordered by the Board under Title VIII or Title IX of the Act.~~

e) Compliance with the limitations of subsection (b) shall be achieved by the following dates:

1) Sources with the present capability to comply shall do so on the effective date of this Section;

2) All other sources shall comply as required by NPDES permit.

f) For purposes of this Section, the following terms shall have the meanings specified:

1) "Dissolved oxygen deficiencies" means the occurrence of a violation of the dissolved oxygen standard applicable to a lake or reservoir.

(BOARD NOTE: Dissolved Oxygen standards for general use waters are set forth at 35 Ill. Adm. Code 302.206; Dissolved Oxygen standards for secondary contact or indigenous aquatic life waters are set forth at 35 Ill. Adm. Code 302.405.)

2) "Euphotic zone" means that region of a lake or reservoir extending from the water surface to a depth at which 99% of the surface light has disappeared or such lesser depth below which photosynthesis does not occur.

3) "Eutrophic" means a condition of a lake or reservoir in which there is an abundant supply of nutrients, including phosphorus, accounting for a high concentration of Biomass.

4) "Eutrophication" means the process of increasing or accumulating plant nutrients in the water of a lake or reservoir. Cultural eutrophication is eutrophication attributable to human activities.

5) "Internal regeneration" means the process of conversion of phosphorus or other nutrients in sediments of a lake or reservoir from the particulate to the dissolved form and the subsequent return of such dissolved forms to the eutrophic zone.

6) "Limiting nutrient" means a substance which is limiting to biological growth in a lake or reservoir due to its short supply or unavailability with respect to other substances necessary for the growth of organisms.

7) "Unnatural plant or algal growth" means the occurrence of a violation of the unnatural sludge standard applicable to a lake or reservoir with respect to such growth.

(BOARD NOTE: Unnatural sludge standards for general use waters are set forth at 35 Ill. Adm. Code 302.203; unnatural sludge standards for secondary and indigenous aquatic life waters are set forth at 35 Ill. Adm. Code 302.403.)

(Source: Amended in R87-6 at 14 Ill. Reg. effective)

IT IS SO ORDERED.

B. Forcade dissented.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 12th day of April, 1990, by a vote of 6-1.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board