ILLINOIS POLLUTION CONTROL BOARD
April 19, 2007

DES PLAINES RIVER WATERSHED ALLIANCE, LIVABLE COMMUNITIES ALLIANCE, PRAIRIE RIVERS NETWORK, and SIERRA CLUB,	)	
Petitioners,	)	
v.	)	PCB 04-88
	)	(Third-Party NPDES Permit Appeal – Water)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY and VILLAGE OF NEW LENOX,	)	
Respondents.	)	

ALBERT F. ETTINGER, ENVIRONMENTAL LAW & POLICY CENTER, APPEARED ON BEHALF OF PETITIONERS;

SANJAY K SOFAT, ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, APPEARED ON BEHALF OF RESPONDENT; AND

ROY M. HARSH, GARDNER, CARTON, & DOUGLAS, APPEARED ON BEHALF OF RESPONDENT, NEW LENOX.

OPINION AND ORDER OF THE BOARD (by G.T. Girard):

The petitioners in this case seek review of the Illinois Environmental Protection Agency's (IEPA) decision to issue a National Pollution Control Elimination System (NPDES) to New Lenox to expand a wastewater treatment facility located at 301 North Cedar Road, New Lenox, Will County. The facility discharges treated effluent to Hickory Creek, a tributary of the Des Plaines River. Petitioners argue that the IEPA failed to adequately consider the impact of the increased discharge on Hickory Creek and assert that this failure violates Board regulations on antidegradation and water quality. Des Plaines River Watershed Alliance, Livable Communities Alliance, Prairie Rivers Network, and Sierra Club (collectively petitioners) filed this appeal of the IEPA's decision granting a permit to the Village of New Lenox (New Lenox). The NPDES permit issued by the IEPA contains effluent limits and operational conditions that the New Lenox wastewater treatment facility must meet to discharge effluent to Hickory Creek.

The Board has reviewed the arguments from the parties concerning the burden of proof and standard of review, the responsiveness summary, the effect of the motion for summary judgment, and due process. The Board finds that none of these issues are dispositive of this proceeding. Clearly, petitioners bear the burden of proof and the Board reviews the record to determine if the issuance of the permit violates the Environmental Protection Act (Act) or Board

regulations. Further, the Board reviews the entire record and is not limited to the IEPA's reasoning or facts discussed by the IEPA in the responsiveness summary. The Board's prior decision denying a motion for summary judgment does not entitle respondents to a finding in their favor. And finally, New Lenox's due process rights have not been abridged by this proceeding. Therefore, the Board finds that none of the preliminary issues raised are dispositive of the proceeding.

After carefully reviewing the record and the parties' arguments on the permit issues, the Board finds that the IEPA failed to properly consider the effect of the increased discharge from the New Lenox plant on Hickory Creek. Specifically, the IEPA failed to properly review the increased discharge pursuant to 35 Ill. Adm. Code 302.105(c) and as a result the issuance of the permit violates 35 Ill. Adm. Code 302.105(c) and Section 39 of the Act (415 ILCS 5/39 (2004)). In particular the Board finds that the record establishes that the increased loading may degrade the stream and the IEPA did not consider the impact of increased loading of phosphorus and nitrogen on the receiving stream. Further, the record does not support the IEPA's determinations that the water quality standards for offensive conditions dissolved oxygen, pH, and copper will not be violated based on the increased loading to the stream. The Board also finds that the record does not demonstrate that existing uses will be protected given the increase in discharge to Hickory Creek. The Board therefore remands the permit to the IEPA for additional review pursuant to the antidegradation provisions of the Board rules and consistent with today's opinion.

The opinion that follows begins with a procedural history (page 2) followed by a presentation of facts (page 3) and a summary of the IEPA's responsiveness summary (page 7. Next, the parties' arguments and Board findings on preliminary issues are discussed: burden of proof and standard of review (page 9); responsiveness summary (page 12); summary judgment (page 15); and New Lenox's due process claim (page 17). Prior to a discussion of the permit issues, the Board includes the relevant regulatory provisions (page 20). The Board's discussion and findings on the permit appeal issues are organized into three major parts: arguments on the Earth Tech study (page 24); and specific arguments concerning phosphorus and nitrogen (page 26), existing uses (page 37), offensive conditions (page 39), dissolved oxygen and pH (page 45), copper (page 48). The conclusion appears on page 52 along with the Board order.

PROCEDURAL HISTORY

On December 2, 2003, petitioners filed a petition (Pet.) asking the Board to review an October 31, 2003 determination of the IEPA granting an NPDES permit to New Lenox for a wastewater treatment plant located at 301 North Cedar Road in New Lenox, Will County. On December 18, 2003, the Board accepted the petition for hearing, finding that the third-party petitioners fulfilled all requirements of Section 40(e) of the Act. 415 ILCS 5/40(e) (2004).

On January 5, 2004, the IEPA filed the record (R.). On January 26, 2004, and February 13, 2004, the IEPA filed two separate motions seeking leave to amend the record. Board Hearing Officer Bradley P. Halloran granted both those motions.

On February 4, 2005, petitioners filed a Motion for Summary Judgment (Mot. SJ), Memorandum in Support of Summary Judgment, and Statement of Relevant Facts from the

IEPA Record. On May 25, 2005, New Lenox timely filed a "Memorandum of Law in Opposition to Petitioner's Motion for Summary Judgment" (Vill. Memo.) and a response to "Petitioners' Statement of Relevant Facts From the IEPA Record" (Vill. Statement). Also on May 25, 2005, the IEPA filed a response to the petitioners' motion for summary judgment. On June 8, 2005, petitioners filed replies to the statement of relevant facts and the response to the motion for summary judgment.

On November 17, 2005, the Board denied petitioners' motion for summary judgment as to each of the grounds raised: nutrient loading, offensive conditions water quality standard, and copper water quality standard. In addition, the Board determined that neither the IEPA nor New Lenox had justified the discovery sought in their respective submissions and that discovery was unnecessary. The Board directed the hearing officer to proceed to hearing on terms consistent with the order.

On March 30, 2006, the Board held a hearing in this matter. No witnesses testified on behalf of any party, and no party offered any exhibits. On April 21, 2006, the Board received petitioners' Post-Hearing Memorandum (Pet. Br.). On June 29, 2006, the Board timely received a post-hearing brief[1] from New Lenox (Vill. Br.). On July 3, 2006, the Board received the IEPA's post-hearing Br. (Ag. Br.). On July 21, 2006, Petitioners filed their post-hearing reply memorandum (Reply).

FACTS

On June 10, 2002, the IEPA received New Lenox's application for expansion of its existing wastewater treatment plant. *See* R. at 424-81. New Lenox proposes to expand the plant's design average flow from 1.54 million gallons per day (MGD) to 2.516 MGD. R. at 1, 354, 430, 460. The proposed expansion would increase the plant's design maximum flow from 2.82 MGD to 5.103 MGD and is necessary based on projected growth in the community and because the plant is currently operating at 85% capacity. R. at 1, 354. The population of New Lenox is projected to increase from 17,700 in 2000 to 48,568 in 2024. R. at 6. New Lenox also operates a second treatment plant that discharges to the Jackson Branch of Jackson Creek and is constructing a third plant that will discharge to Spring Creek. R. at 354.

New Lenox's treatment plant is located at 301 North Cedar Road, New Lenox, Will County (R. at 1, 425) and was constructed in 1973. R. at 81. The plant discharges into Hickory Creek, which is classified as a general use stream and which ultimately discharges into the Des Plaines River. R. at 2. Hickory Creek has a flow of 2.4 cubic feet per second during critical 7Q10 flow and is rated a "C" stream under the IEPA's Biological Stream Characteristics (BSC) system. R. at 5. Hickory Creek's segment GG-02 appears on Illinois' draft 2002 list of impaired waters under Section 303(d) of the Clean Water Act. *Id., see* 33 U.S.C. § 1313(d). The sources associated with the impairment of the stream segment are municipal point sources, combined

[1] New Lenox requests in the post-hearing brief that the memorandum of law opposing petitioners' motion for summary judgment and the response to petitioners' statement of facts be incorporated into this post-hearing brief. Vill. Br. at 5. New Lenox also sought to incorporate the IEPA's response to petitioner's motion for summary judgment. *Id.*

sewer overflows, construction, land development, urban run-off/storm sewers, hydrologic/habitat modification, and flow regulation/modification. R. at 5. Hickory Creek segment GG02 is on the 2002 list of impaired waters on the basis of the creek's high levels of phosphorus and nitrogen, among other constituents. *Id*. Hickory Creek is not included as a biologically significant body of water in the Illinois Natural History Survey's publication *Biologically Significant Illinois Streams*. R. at 5. According to that publication there are not any endangered or threatened species supported by Hickory Creek. *Id*.

Beginning January 9, 2003, the IEPA provided public notice of the application and draft permit in the *Frankfort Star*. R. at 616-18. On March 6, 2003, the IEPA mailed notices of an April 24, 2003 public hearing to county and municipal officials, area legislators, environmental organizations, and interested citizens. R. at 41-45. On March 16, 2003, the *Frankfort Star* published notice of the April 24, 2003 hearing. R. at 628-29. The IEPA also provided notice of the hearing on its Web site. R. at 51-52.

The IEPA held the hearing on the permit application on the evening of April 24, 2003, as indicated in the various forms of notice provided. *See* R. at 61-104 (transcript). Approximately 25 persons attended the hearing. R. at 58, 354. Petitioners provided public comments at the hearing. R. at 61-104. Petitioners also submitted written comments to the IEPA. R. at 105-19, 122-308.

Jim Bland of Integrated Lakes Management states that Hickory Creek is one of the most highly studied streams in the Chicago area with over 100 years of records on fisheries and invertebrate for the watershed. R. at 107. Mr. Bland states that the stream has attracted attention because of Hickory Creek's "exceptional ecology, history and geology." *Id*. Mr. Bland notes that Hickory Creek sustains an active population of smallmouth bass and includes unique species. R. at 108. In addition, Mr. Bland indicates that 57 different species of fish have been collected historically from Hickory Creek and 35 are on file with the Illinois Natural History Survey. *Id*. Mr. Bland provided a list of fish collected in 1974-75 from Hickory Creek and its tributaries east of the Pilcher Park Dam. *See* R. at 116-18.

Mr. Bland expresses concern that the stream is endangered by the expansion of the wastewater treatment plant. R. at 108. More specifically, Mr. Bland expresses concerns that New Lenox's proposed increase in nutrients discharges would increase the amount of attached algae in Hickory Creek and may alter invertebrate communities downstream. R. at 110. Mr. Bland recommends speeding "up the analysis of nutrient loading influences and apply this analysis to the existing permit specifications" and to documenting "the direct influences of phosphorus which already exist at the stream." R. at 113.

Beth Wentzel of Prairie Rivers Network also has concerns about the potential impact of the new loading on Hickory Creek. R. at 124. Ms. Wentzel states that there are several problems associated with excess nutrients that are described in available scientific literature. R. at 124. Ms. Wentzel goes on to note that the literature "supports the claim that excess nutrients, nitrogen and phosphorus, can impair streams by affecting dissolved oxygen concentrations, causing nuisance algae blooms and causing other problems." R. at 125. Ms. Wentzel states that available United States Geological Survey (USGS) data indicates that Hickory Creek is regularly

supersaturated with dissolved oxygen and the absence of dams along Hickory Creek leaves photosynthetic activity as the only reasonable explanation for supersaturation. *Id*. Ms. Wentzel points out that the measurements were taken several miles downstream from the wastewater treatment plant; however, studies suggest that a reasonable conclusion is that the effluent from New Lenox's plant will impact the stream. *Id*. Ms. Wentzel believes that the occurrence of elevated pH in conjunction with supersaturation of dissolved oxygen is further evidence that nutrients are causing substantial algal activity. R. at 126.

A number of witnesses reported offensive algal blooms in Hickory Creek during the hearing before the IEPA. Kimberly Kowalski testified to seeing algae on the creek during bike rides and provided written comments reiterating her concerns. R. at 76; R. at 122-23. Brad Salamy testified that during the last summer before the hearing the creek was greener than he had ever seen Hickory Creek. R. at 82-83. Mr. Bland also reported offensive algal blooms in Hickory Creek. R. at 80.

Cynthia Skrukrud of the Illinois Chapter of the Sierra Club presented comments on several issues including sensitive species and nutrient impacts. *See generally*, R. at 264-308. Dr. Skrukrud notes that the Illinois Natural History Survey data shows the presence of pollution sensitive species in Hickory Creek. R. at 266. This data includes both fish and mussels. *See* R. at 276-83.

Concerning the nutrient loading of the effluent, Dr. Skrukrud indicates that the Sierra Club provided information to Professors David Jenkins and Michael Lemke from the University of Illinois at Springfield. R. at 267. The summary of Professors Jenkins and Lemke's findings is attached to the comment provided Dr. Skrukrud. *See* R. at 303-8.

Because New Lenox's facility has been expanded since the most recent facility-related stream survey in 1991, that survey "is not representative of the stream conditions that exist at this time." R. at 5, 564. The IEPA directed New Lenox to perform a survey of Hickory Creek. R. at 660.5; *see* R. at 673. New Lenox subsequently hired Earth Tech to sample macroinvertebrates in the vicinity of New Lenox's discharge on August 20, 2002. R. at 5, 513-20. Earth Tech reported there was no definitive difference in the macroinvertebrate biotic index (MBI) between points upstream and downstream of New Lenox's discharge. R. at 514. Earth Tech found that there are likely no significant adverse effects to Hickory Creek from New Lenox's expanded discharge. R. at 514. Earth Tech further concluded that the invertebrate community will likely not be significantly altered by the proposed treatment plant expansions and additional effluent. R. at 515.

Dr. Skrukrud questions the reliance by the IEPA and New Lenox on the Earth Tech study. R. at 264. Dr. Skrukrud points to concerns raised by IEPA's staff regarding the validity and applicability of the Earth Tech study. R. at 265. Dr. Skrukrud notes that the staff at IEPA indicated that they would "forget using the contractor's bug study" even though Bob Mosher of the IEPA testified that the study was relied upon. R. at 266, 265, citing R. at 84. Dr. Skrukrud indicated that use of the Earth Tech study for evidence that the wastewater treatment plant would not impact aquatic life was "disturbing" to her. R. at 266.

IEPA staff concerns about the Earth Tech study are reflected in several internal IEPA emails and memos. *See* R. at 537, 556-62. In an email from Roy Smogor to Gregg Good and Bob Mosher, Mr. Smogor expressed concerns with the sampling methods and the macroinvertebrate scores. R. at 537. Mr. Smogor also prepared a memorandum to Mr. Moser and Mr. Good indicating that "we find it difficult to judge the validity of the analyses and conclusions" due to the different collection methods and criteria used. R. at 559. Mr. Smogor recommends that Earth Tech perform the study again using different guidelines. *Id*. Another note addressed to "Bob" from "Mark" indicates that the presence of certain intolerant "taxa upstream and downstream of the facility would suggest no major adverse effects; however, the information may suggest a slight impact." R. at 561.

Mr. Howard Essig in an email to Mr. Smogor states that the macroinvertebrate memo prepared by Earth Tech "is one of the poorest studies I have seen in a while" and Earth Tech did not follow IEPA collection methodology. R. at 557. Mr. Essig indicated that Earth Tech used the wrong tolerance values and did not provide flow data to support Earth Tech's conclusion regarding current baseflow of Hickory Creek. *Id*. As a result of all the internal emails and memos, Mr. Good concluded that IEPA should "forget using the contractor's bug study." R. at 562.

In relation to copper, the IEPA used two samples for analysis of copper water quality standards. R. at 508. The samples establish a maximum effluent concentration of 20.5 µg/L of copper. The IEPA did not utilize the United States Environmental Protection Agency (USEPA) method for evaluating reasonable potential to exceed water quality because the IEPA took less than five samples. R. at 509. Although a table provided by the IEPA indicates that further analysis of copper may be necessary, IEPA concludes that all copper samples were less than the acute and chronic water quality standards and no regulation of copper is necessary. R. at 508, 509.

Dr. Skrukrud expresses concerns that IEPA did not properly perform the reasonable potential analysis to exceed the copper water quality standard. R. at 264. Dr. Skrukrud notes that the USEPA recommended method for reasonable potential analysis is to use a multiplier to determine the potential to exceed a water quality standard. *Id*. Dr. Skrukrud states that application of USEPA standards should lead the IEPA either to require more data regarding copper concentration in New Lenox's discharge or to place copper limits in the permit. R. at 70, R. at 264-65.

After holding the hearing and receiving comments, on October 31, 2003, the IEPA approved New Lenox's application and issued a permit. R. at 339-76.

IEPA'S RESPONSIVENESS SUMMARY

Pursuant to 35 Ill. Adm. Code 166.192, the IEPA issues a responsiveness summary with the issuance of a permit. Section 166.192 of the IEPA's permitting regulations provides:

a) A responsiveness summary shall be prepared by the Agency. The responsiveness summary shall include:

1) An identification of the public participation activity conducted;

2) Description of the matter on which the public was consulted;

3) An estimate of the number of persons present at the hearing;

4) A summary of all the views, significant comments, criticisms, and suggestions, whether written or oral, submitted at the hearing or during the time the hearing record was open;

5) The IEPA's specific response to all significant comments, criticisms, and suggestions; and

6) A statement of Agency action, including when applicable the issuance or denial of the permit or closure plan.

b) The responsiveness summary shall be available to the public upon request to the Agency. 35 Ill. Adm. Code 166.192.

In this proceeding, the IEPA's responsiveness summary is over 20 pages long and addresses many of the issues raised during the public comment and hearing periods before the IEPA. R. at 352-76. The following paragraphs summarize the IEPA's responsiveness summary.

The IEPA added a limit for dissolved oxygen to the final permit based on comments. R. at 356. The limit is based on the Board's rules at 35 Ill. Adm. Code 302.206 and is set at 6 mg/L. *Id*.

The IEPA declined to develop standards for nutrients indicating that development of water quality standards for nutrients is progressing "as fast as resources allow" and research is being conducted. R. at 356. IEPA indicated that standards for phosphorus will be adopted once the basic nature of phosphorus in various streams is understood and then Hickory Creek will be categorized and phosphorus standards will apply. *Id*. IEPA stated that in the future nutrient limits for the permit may be required. *Id.*

The IEPA further indicated that there are no existing water quality standards for nutrients that apply to Hickory Creek. R. at 357. IEPA notes that there is a narrative standard that prohibits plant and algal growth of other than natural origin, but this is a "very difficult standard to apply in a permit." *Id*. The IEPA states that the ongoing effort to adopt a water quality standard for nutrients will resolve this issue, but in the meantime the antidegradation assessment has concluded that the expansion "will not exacerbate the existing problems in Hickory Creek due to nutrients." *Id*.

The IEPA also addressed the issue of removal of phosphorus from the effluent and indicated that there is no current water quality standard for phosphorus. IEPA stated that standards for phosphorus sources could be another four or five years away. R. at 357. As to the

actual cost for removal of phosphorus, the IEPA relies on a study by the Illinois Association of Wastewater Agencies to determine that the capital costs could be in excess of $5.4 million for New Lenox's expansion. R. at 358.

The IEPA responded to comments concerning the impairment of Hickory Creek and stated that two decisions were made that allow expansion of the New Lenox plant. R. at 360. First, IEPA instructed New Lenox to sponsor a macroinvertebrate survey of Hickory Creek above and below the discharge point. *Id*. "The results of that survey, similar to studies conducted and utilized by the Agency in determining impairment, *i.e.*, whether a stream segment will be included in the 303(d) list of impaired waters, were that no discernable impact was exerted on the stream by the effluent." *Id*. The IEPA concluded that the stream segment may have improved since the previous study or that the studies were based on different segments. *Id*. Additionally, the IEPA's biologist now believe that only total dissolved solids can be implicated as a cause of whatever impairment may exist in this stream segment outside of the immediate area of the New Lenox effluent outfall. *Id*. The IEPA therefore included a permit limit for total dissolved solids. *Id*. The IEPA concedes that IEPA staff had different comments on the study; however, the "validity and acceptability" of the Earth Tech study was verified during the IEPA review. R. at 370.

Regarding antidegradation, the IEPA indicated that the antidegradation assessment followed the "requirements of the regulation 35 Ill. Adm. Code 302.102" and the IEPA believes all aspects of the regulation were covered. R. at 368. The IEPA notes that the overall conclusion of the evaluation was that the expansion of the wastewater treatment plant would not cause existing uses of Hickory Creek to be diminished. *Id*. The IEPA also relied on the Earth Tech study that indicated that the receiving stream as measured by macroinvertebrates was not significantly impaired. R. at 368, 369.

PRELIMINARY ISSUES

The parties have presented four areas for the Board to examine concerning legal issues in this proceeding. The first involves the burden of proof and the standard by which the Board reviews the IEPA's decision in this permit appeal. The second involves the responsiveness summary and whether that document is the sole basis for the IEPA's decision. Third, respondents argue that because the Board denied a motion for summary judgment and petitioners failed to present evidence at a hearing before the Board, the respondents must prevail. Fourth, New Lenox asserts that due process was violated by the Board's refusal to allow discovery in this permit appeal. The Board will address each of these issues below.

Burden of Proof and Standard of Review

The parties agree that the burden of proof is on the petitioners. However, the parties are at odds concerning the standard of review to be employed by the Board and how that standard is applied.

Petitioners' Arguments

Petitioners acknowledge that they bear the burden of proving that the permit as issued violated Act or the Board regulations. Pet. Br. at 18, citing Prairie Rivers Network v. PCB, 781 N.E.2d 372, 379 (4th Dist. 2002). Petitioners state that the IEPA's decision must be supportable by substantial evidence. Pet. Br. at 19, citing Des Plaines River Watershed Alliance, *et al*. v. IEPA and Village of New Lenox, PCB 04-88, slip op. at 7 (Nov. 17, 2005). Petitioners maintain that the "substantial evidence standard" requires more than a "mere scintilla of evidence" and demands relevant evidence such that a reasonable mind might accept the evidence as adequate to support a conclusion. *Id.* Petitioners argue that this "substantial evidence standard" is not as deferential to an IEPA's decision as the manifest weight of the evidence standard. Pet. Br. at 19, citing Finnerty v. Personnel Board of the City of Chicago, 303 Ill. App. 3d 1, 707 N.E.2d 600, 608 (1st Dist. 1999). Petitioners further claim that the Board reviews the IEPA's conclusions of law *de novo*. Pet. Br. at 19.

IEPA's Arguments

The IEPA agrees that petitioners bear the burden of proof pursuant to Section 40(e)(3) of the Act. Ag. Br. at 26; 415 ILCS 5/40(e)(3) (2004). The IEPA maintains that in this third-party appeal the question becomes whether the third party proves that the permit, as issued, will violate the Act or Board regulations. Ag. Br. at 27.

The IEPA notes that in the Board's November 17, 2005 order, the Board stated that the IEPA's decision to issue the permit must be supported by substantial evidence; however, the burden does not shift away from the petitioners, who alone bear the burden of proof in a permit appeal. Ag. Br. at 27, citing Des Plaines, PCB 04-88, slip op. at 7. Further, the IEPA argues that petitioners must point to evidence to establish that the permit, as issued by the IEPA, will cause a violation of the Act or Board regulations. Ag. Br. at 27-28. Finally, the IEPA suggests that allowing petitioners to meet their burden of proof "by simply asserting that the permit may or might cause a violation" will shift the burden of proof in a manner inconsistent with Section 40(e) of the Act. Ag. Br. at 28; *see* 415 ILCS 5/40(e) (2004).

The IEPA argues that, "[a]s long as there is substantial evidence in the record, the IEPA's decision to issue the permit must be upheld." Ag. Br. at 28. The IEPA asserts that petitioners must identify the lack of substantial evidence in the record to prove that the permit will violate the Act or Board regulations. *Id*. The IEPA points to two cases which "illustrate the kind of substantial evidence that must be missing from the record" and those cases are: *Ex Parte* Fowl River Protective Ass'n., Inc. v. Dept. of Env'tal Conservation, 572 So.2d 446, 461-62 (Ala. 1990), Miners Advocacy Council, Inc. v. Dept. of Env'tl. Conservation, 778 P. 2d 1126, 1139-40 (Alaska 1989). The IEPA argues that "[m]ere dislike of the permit conditions or mere allegations of noncompliance with the law without any proof to support those allegations or mere allegations that the additional permit limits could have been incorporated into the permit" will not meet the petitioners' burden of proof under the Act. Ag. Br. at 28-29, citing 415 ILCS 5/40(e)(3) (2004).

New Lenox's Arguments

New Lenox also agrees that petitioners bear the burden of proving that the permit, as issued to New Lenox, would violate the Act or Board regulations. Vill. Br. at 5, citing Prairie Rivers, 335 Ill. App. 3d 391, 400-01 (4th Dist. 2002). New Lenox argues that the IEPA's decision to issue the permit in must be supported by substantial evidence. This does not, however, shift the burden away from petitioners. Vill. Br. at 6, citing Prairie Rivers Network v. IEPA and Black Beauty Coal Co., PCB 01-112, slip op. at 9 (Aug. 9, 2001).

Petitioners' Reply

Petitioners accept that the burden of proving that the permit as issued would violate the Act or Board regulations rest on the petitioners. Reply at 4. However, petitioners argue that the burden of proof is not shifted by focusing on whether New Lenox and the IEPA have complied with regulatory requirements for issuing a permit. Reply at 5, citing IEPA v. PCB, 86 Ill. 2d 390, 404-05 (1981). Further, petitioners assert that respondents have incorrectly argued that this burden requires the petitioners to prove that the discharge allowed by the permit will cause water quality standard violations. Reply at 4. Petitioners suggest that respondents have confused this matter with an enforcement action filed against New Lenox. Reply at 4.

The petitioners take issue with the IEPA's attempts to rely on the facts of Fowl River Protective Ass'n, 572 So.2d 446 and Miners Advocacy Council, 778 P. 2d 1126 noting that in both those cases the courts remanded NPDES permits. Reply at 6 n.2. In both cases, argue petitioners, "the permitting agency failed to assess facts it needed to ascertain before issuing the NPDES permit." *Id.*

Petitioners point to Minnesota Center for Environmental Advocacy v. Minnesota Pollution Control Agency, 696 N.W.2d 95 (Minn. App. 2005), arguing that the case clarifies the distinction between the burdens on the IEPA and New Lenox to comply with applicable regulations and the burden on the petitioners to show that the IEPA did not follow those regulations. Reply at 6. Petitioners argue that Illinois and Minnesota law both provide that the "party challenging the decision of the IEPA has the burden of proof." Reply at 6, citing Minnesota Center for Environmental Advocacy, 696 N.W.2d at 102; *see* 415 ILCS 5/40(e)(3)(ii) (2004). Petitioners maintain that the court reviewed the agency's record using a "substantial evidence" standard. Reply at 6, citing Minnesota Center for Environmental Advocacy, 696 N.W.2d at 100. Petitioners assert that in Minnesota Center for Environmental Advocacy, the Minnesota agency claimed the agency did not have to show that the agency had assured that all feasible methods to avoid or minimize an increased discharge had been required. Reply at 6; *see* 35 Ill. Adm. Code 302.105(c)(2)(B)(iii). Petitioners further argue that the Minnesota agency claimed that the petitioners in that case had failed to prove that an alternative was feasible. Reply at 6. Petitioners assert that the court rejected that claim by stating that "the burden of demonstrating that there is no prudent and feasible alternative is on the permit applicant." Reply at 6, citing Minnesota Center for Environmental Advocacy, 696 N.W.2d at 102.

Petitioners agree that the IEPA's decision to issue the permit must be supported by substantial evidence. Reply at 7, citing Des Plaines, PCB 04-88, slip op. at 7. However, petitioners assert that this standard is less deferential than the arbitrary and capricious standard. Reply at 7, citing ESG Watts v. IEPA, PCB 94-243, slip op. at 5-6 (Mar. 21, 1996). Petitioners

argue that the Board has in many cases applied the "substantial evidence" standard to overturn IEPA decisions that were not supported by the record. Reply at 7-8. Petitioners argue that a permit applicant meets its burden of proof on appeal to the Board by showing that a "preponderance of the evidence" supported issuing the permit. Reply at 8, citing Noveon v. IEPA, PCB 91-17, slip op. at 2 (Nov. 4, 2004) (denying motion for reconsideration) and Moss American v. Illinois Fair Employment Practices Comm'n., 317 N.E.2d 343, 351 (5th Dist. 1974) (defining "preponderance of the evidence").

Applying that burden and standard to third-party appeals, petitioners claim that they need only show by a preponderance of the evidence that the record does not favor finding that the permit was properly issued under the Act or the Board regulations. Reply at 8. In taking issue with the IEPA's application of the "substantial evidence" standard, petitioners state that the IEPA would require them to "identify the lack of substantial evidence in the record to prove that the issued permit would violate the Act and/or applicable regulations." Reply at 8 n.5. Petitioners argue that the Board has rejected such an attempt to require parties to prove a negative proposition. Reply at 8 n.5, citing Dorothy v. Flex-N-Gate Co., PCB 05-49, slip op. at 15 (Oct. 20, 2005).

Board Analysis and Findings

As recently as January of 2007, the Board reiterated the long standing holding on who bears the burden of proof in a permit appeal proceeding and what the standard of review is in a permit appeal. *See* American Bottoms Conservancy v. IEPA and United States Steel Corporation Granite City Works, PCB 06-171 (Jan. 26, 2007). The Board's scope of review and standard of review are the same whether a permit applicant or a third party brings a petition for review of an NPDES permit. Prairie Rivers Network v. PCB *et al.*, 335 Ill. App. 3d 391, 401; 781 N.E.2d 372, 380 (4th Dist. 2002) and Joliet Sand & Gravel Co. v. PCB, 163 Ill. App. 3d 830, 833, 516 N.E.2d 955, 958 (3rd Dist. 1987), citing IEPA v. PCB, 118 Ill. App. 3d 772, 455 N.E. 2d 189 (1st Dist. 1983). The distinction between the two types of NPDES permit appeals is which party bears the burden of proof. Under Section 40(e)(3) of the Act, in a third party NPDES permit appeal, the burden of proof is on the third party. 415 ILCS 5/40(e)(3) (2002); Prairie Rivers, 335 Ill. App. 3d 391, 401; 781 N.E.2d 372, 380. Under Section 40(a)(1) of the Act, if the permit applicant appeals the permit, the burden of proof is on the permit applicant. 415 ILCS 5/40(a)(1) (2004). Thus, the Board agrees with the parties' recitation of the burden of proof in a permit appeal.

The question before the Board in permit appeal proceedings is: (1) whether the applicant proves that the application, as submitted to the IEPA, demonstrated that no violation of the Act would have occurred if the requested permit had been issued; or (2) whether the third party proves that the permit as issued will violate the Act or Board regulations. Joliet Sand & Gravel, 163 Ill. App. 3d 830, 833, 516 N.E.2d 955, 958; Prairie Rivers, 335 Ill. App. 3d at 401; 781 N.E.2d at 380. The IEPA's denial letter frames the issues on appeal and the burden of proof is on the petitioner. ESG Watts, Inc. v. PCB, 286 Ill. App. 3d 325, 676 N.E.2d 299 (3rd Dist. 1997).

The Board's review of permit appeals is limited to information before the IEPA during the IEPA's statutory review period, and is not based on information developed by the permit applicant, or the IEPA, after the IEPA's decision. Prairie Rivers Network v. IEPA and Black Beauty Coal Company, PCB 01-112 (Aug. 9, 2001) *aff'd* at 335 Ill. App. 3d 391, 401; 781 N.E.2d 372, 380 (4th Dist. 2002); Alton Packaging Corp. v. PCB, 162 Ill. App. 3d 731, 738, 516 N.E.2d 275, 280 (5th Dist. 1987). The record must contain evidence to support the issuance of the permit and the conditions attached to that permit. The Board reviews the entirety of the record to determine (1) if the record supports the IEPA's decision, and (2) that the procedures used by the IEPA are consistent with the Act and Board regulations. The Board does not affirm the IEPA's decision on the permit unless the record supports the decision. The IEPA's decision is not awarded any special deference by the Board. *See* IEPA v. PCB, 115 Ill. 2d 65, 70; 503 N.E.2d 343, 345 (1986). Therefore, the Board finds that the standard the Board employs in reviewing the IEPA's decision is whether the record demonstrates that the issuance of the permit violates the Act or Board regulations.

Responsiveness Summary

The petitioners have raised an issue concerning the responsiveness summary required by Section 166.192.[2] Specifically, petitioners maintain that the responsiveness summary must contain the theories and rationales for the IEPA's decision and only those theories and rationales may be used to support the IEPA's decision.

Petitioner's Arguments

Petitioners maintain that the Board's review of the IEPA's decision is limited and the IEPA's decision is subject to various laws and Board regulations specifying what the IEPA must do to issue a proper permit. Pet. Br. at 20. Petitioners argue that data not before the IEPA at the time the permit issued is not relevant and the permit appeal must be decided exclusively on the basis of the record before the IEPA. *Id*. Accordingly, the petitioners argue that evidence that was not before the IEPA cannot be presented before the Board. Pet. Br. at 20. Petitioners claim that, if the Board finds that New Lenox's permit is not supported by substantial evidence in the record, then the Board should remand the permit to the IEPA in order to obtain more evidence. *Id*.

Further, petitioners assert that "Board rules and basic principles of administrative law limit the rationales that may be advanced to uphold the permit decision." Pet. Br. at 20. Specifically, petitioners argue that the IEPA must rely on the responsiveness summary and the facts and documents cited in the responsiveness summary for support of the decision to issue New Lenox's permit. *Id*, citing R. at 352-74. Petitioners note that Section 166.192 addresses the required contents of the IEPA's responsiveness summary. Pet. Br. at 20-21, citing 35 Ill. Adm. Code 166.192. Petitioners rely on *In re* Washington Aqueduct Water Supply System, 11 E.A.D. 565, 2004 EPA App. LEXIS 28, 55-56 (EAB 2004) for support of this position. Petitioners state

[2] The Board notes that the rules found at 35 Ill. Adm. Code 166 are rules adopted by the IEPA, not the Board. Part 166 are rules the IEPA promulgated to set forth procedures for the IEPA's hearings on permits and closures.

that in that case, the Environmental Appeals Board remanded portions of an NPDES permit, stating that USEPA "must address the issues raised in a meaningful fashion" and "must articulate with reasonable clarity the reasons for its conclusions and the significance of crucial facts it relied upon in reaching those conclusions." Pet. Br. at 21; *In re* Washington Aqueduct Water Supply System, 11 E.A.D. 565, 2004 EPA App. LEXIS 28, 55-56 (EAB 2004)

Petitioners argue that New Lenox's permit "can be upheld only on the basis of theories clearly articulated in the responsiveness summary" and that the IEPA and New Lenox "cannot develop new rationales" in support of the IEPA's decision to issue the permit. Ag. Br. at 21. Petitioners claim that rationales for issuance of the permit that do not appear in the responsiveness summary may be considered by the IEPA after the Board remands the permit to the IEPA for reconsideration." Pet. Br. at 22.

Petitioners also argue that the Board cannot uphold the issuance of the permit based on statements in the responsiveness summary or documents to which the responsiveness summary refers, unless those statements are supported by facts or logic. Pet. Br. at 22. Petitioners assert that the issuance of the permit cannot rest on unsupported conclusions and must present a "reasoned analysis of the issues at hand." *Id*.

IEPA's Arguments

The IEPA dismisses petitioners' argument stating that petitioners cite no Board regulation in support of limiting the IEPA's decision to the materials and rational articulated in the responsiveness summary. Ag. Br. at 32. The IEPA argues that the Act requires the Board to review the IEPA's decision "based on the entire record, not based on a particular document." *Id*. The IEPA asserts that the regulations also do not limit the basis of the IEPA's decision to the rationale and facts referenced in the responsiveness summary document. Ag. Br. at 32. The IEPA maintains that "Part 166 simply requires that the responsiveness summary document must be made part of the hearing record." Ag. Br. at 32, citing 35 Ill. Adm. Code 166.180.

The IEPA discounts petitioners' emphasis on the responsiveness summary by claiming that that summary is intended merely to address public comments offered during the comment period. Ag. Br. at 34. The IEPA argues that, because the responsiveness summary depends solely on the number and nature of those comments, a responsiveness summary cannot constitute the IEPA's sole rationale to issue or not issue a permit. *Id*. The IEPA further argues that the IEPA has a statutory duty to support a final determination on a permit application, regardless of the extent of the comments and questions offered by the public. *Id*. The IEPA reiterates that the Board's review of the IEPA's determination must be based on the entire record and not solely on the responsiveness summary. Ag. Br. at 34-35.

The IEPA next addresses petitioners' suggestion that the IEPA's responsiveness summary and the documents to which the summary refers rely upon conclusions that are not supported by facts or logic. Ag. Br. at 35; *see* Pet. Br. at 22. The IEPA argues that, having received information from the applicant and from the general public including the petitioners, the IEPA has New Lenox established a record that meets its statutory burden of proof and requires issuance of a permit to. Ag. Br. at 36-37. The IEPA continues by distinguishing cases cited by

the petitioners in support of petitioners' view on the adequacy of the record. Ag. Br. at 35-36; *see* Pet. Br. at 22.

Petitioner's Reply

Petitioners disagree with the IEPA that the petitioners are coining a new requirement and assert that the Board can only uphold the IEPA's decision based on reasons offered in the responsiveness summary. Reply at 10-11. Petitioners claim that "the principle that an IEPA action can only be affirmed on the same bases articulated by the IEPA is one of the most well-established principles of administrative law." Reply at 11. Petitioners assert that the Act does not permit the IEPA "to now rumble through the whole record to try to find a basis for its decision that was not articulated in the responsiveness summary." *Id*. Petitioners dismiss as "groundless" the IEPA's concern that reliance on the responsiveness summary would provide no opportunity to state a basis for a decision in cases where there was no public hearing and no public comment as there would be no one seeking to appeal such a decision. Reply at 11 n.8.

Petitioners argue that the regulations requiring a responsiveness summary serve the function of requiring the IEPA to articulate the reasons for permit decisions. Reply at 11-12. Petitioners further argue that the regulations include a requirement that the IEPA provide a "specific response to all significant comments, criticisms, and suggestions." Reply at 12, citing 40 C.F.R. 124.17 and 35 Ill. Adm. Code 166.192. Consequently, petitioners claim that "the Board should examine only the reasons given by the IEPA in its responsiveness summary, and should not sift through the entire record to reconstruct a rationale that the IEPA did not rely on." Reply at 12, citing Motor Vehicle Manufacturers Ass'n. v. State Farm Mutual Auto. Ins. Co., 463 U.S. 29, 43 (1983).

Petitioners note that the IEPA can draw on the entire record in support of the responsiveness summary, but the IEPA cannot offer new rationales for a permit decision that were not accurately, clearly and completely set forth in the responsiveness summary. Reply at 12; *see* West Suburban Recycling and Energy Center v. IEPA, PCB 95-119, slip op. at 32 (Oct. 17, 1996). Petitioners argue that the IEPA did offer new rationales, including why the IEPA did not have to consider phosphorus or nitrogen removal at the plant and why the IEPA actually did seek to protect against violations of the offensive conditions standard. Reply at 12, citing Ag. Br. at 39-40 and R. at 357. The petitioners note that the responsiveness summary only offers that compliance with the "offensive conditions" standard is very difficult. *Id*. Finally, petitioners emphasize that the responsiveness summary may only be used to uphold the IEPA decision to the extent that the facts in the record support the responsiveness summary. Reply at 12.

Board Analysis and Findings

In a permit appeal, as discussed above, the Board reviews the record to determine if the record supports the issuance of the permit with the conditions. In the case of a permit denial, the IEPA's denial letter frames the issue on the appeal. ESG Watts, Inc. v. PCB, 286 Ill. App. 3d 325, 676 N.E.2d 299 (3rd Dist. 1997). However, in the case of a permit issued with conditions, the Board must determine that as a matter of law the application as submitted to the IEPA demonstrates that no violations of the Act or Board rules will occur if the requested permit is

issued. Jersey Sanitation v. IEPA, PCB 00-82 (June 21, 2002) *aff'd* IEPA v. Jersey Sanitation and PCB, 336 Ill. App. 3d 582, 784 N.E.2d 867 (4th Dist. 2003).

In the context of a third party appeal, the Board is reviewing the issuance of a permit. Thus, this review is similar to a review of contested conditions. Therefore, the Board will look at the language of the permit and the entire record to determine if the permit as issued violates the Act or Board regulations. The Board will not limit the review of the IEPA's decision to reasoning articulated in one document in the record. To limit the Board's review in such a manner ignores the substantial case law, which establishes that the Board reviews the IEPA's decision based on the record before the IEPA. *See e.g.*, Jersey Sanitation PCB 00-82; Browning-Ferris Industries of Illinois, Inc. v. PCB, 179 Ill. App. 3d 598, 534 N.E. 2d 616, (2nd Dist. 1989); John Sexton Contractors Company v. Illinois (Sexton), PCB 88-139 (Feb. 23, 1989). Further, petitioners would have the Board review be limited by the content of a document whose content is prescribed by the IEPA's rules and not the Board's rules. Thus the Board finds that the review of the IEPA's decision in a third party NPDES permit appeal is not limited by the reasoning or facts discussed by the IEPA in the responsiveness summary.

Summary Judgment

The respondents have raised an issue concerning the Board's prior decision denying a motion for summary judgment. *See* Des Plaines, PCB 04-88. Specifically, respondents assert that the failure of petitioners to offer testimony at a hearing, following a denial of summary judgment, results in petitioners failing to prevail on the appeal.

IEPA Arguments

The IEPA argues that petitioners failed at the Board's hearing in this proceeding to provide testimony purporting to show that issuance of New Lenox's permit lacked substantial support in the record. Ag. Br. at 29. The IEPA asserts that petitioners failed to avail themselves at that hearing of the opportunity to present a case-in-chief or cross-examine the IEPA staff responsible for making the permitting decision. *Id.* The IEPA maintains that petitioners chose not to present any expert witness or scientific evidence to establish how the alleged shortcomings in the permit would cause violation of the Act or the applicable Board regulations. *Id.* In the absence of this additional evidence, the IEPA claims that petitioners "must meet their burden of proof solely based on the record that is filed with the Board." *Id.* The IEPA argues that, because the Board found in its November 17, 2005 order that this record presents genuine issues of material fact, the petitioners cannot meet their burden of proof. Ag. Br. at 29-30, citing 415 ILCS 5/40(e) (2004); *see* Des Plaines, PCB 04-88, slip op. at 22, 29, 33.

The IEPA suggests that petitioners have misinterpreted the Board's November 17, 2005, opinion and order deciding petitioner's motion for summary judgment. Ag. Br. at 29 n.1; *see* Des Plaines, PCB 04-88, slip op. at 40. The IEPA claims that "[t]he Board decision does not speak to the issue of whether Section 40(e) limits the parties' ability to present witness at a third party NPDES permit Board hearing." *Id.*

New Lenox's Arguments

New Lenox claims that petitioner's failure to present a case before the Board in view of the Board's November 17, 2005 order denying petitioners' motion for summary judgment "should be dispositive of this appeal." Vill. Br. at 6. New Lenox argues that, although the order examined petitioners' arguments on an issue-by-issue basis, the Board found that there existed genuine issues of material fact and found that significant factual issues remained unresolved. Vill. Br. at 7; *see* Des Plaines, PCB 04-88, slip op. at 22, 29, 33. Thus, New Lenox claims that the Board found that there exist in the record facts that support the IEPA's decision to issue the permit with respect to each of the issues raised by petitioners in the appeal. Vill. Br. at 7. New Lenox further claims that, when the Board denied petitioners' motion for summary judgment, the Board "put petitioners on notice" that material facts supporting the issuance of the permit exist in the record. *Id*. New Lenox asserts that, by failing to bolster their case with additional testimony at a hearing, petitioners have failed to meet their burden of proof that the permit is unsupported. *Id*. Thus, New Lenox argues that "the Board should defer to the IEPA decision in issuing the NPDES permit and uphold the permit as issued on October 2003." *Id*.

Petitioners' Reply

Petitioners argue that the respondents have confused the standard applied by the Board in considering a motion for summary judgment and the standard applied in reaching a decision post-hearing. Reply at 9. Specifically, petitioners claim that the respondents have argued that petitioners must prove "undisputed facts" in order to prevail before the Board. *Id*., citing Ag. Br. at 43-45, 49. However, petitioners argue that the substantial evidence standard does not require petitioners to prove undisputed facts to prevail. Reply at 9. Petitioners assert that even an enforcement case does not require a showing of undisputed facts, as the complainant need only show by a preponderance of the evidence that the alleged violation occurred. Reply at 9 n.6, citing Dorothy v. Flex-N-Gate, PCB 05-49, slip op. at 15 (Oct. 20, 2005).

Petitioners argue that the Board denied their motion for summary judgment "because summary judgment is a 'drastic' means of disposing of litigation." Reply at 9; *see* Des Plaines, PCB 04-88, slip op. at 7. Petitioners further argue that summary judgment is appropriate only where "the movant's right to relief 'is clear and free from doubt.'" Reply at 9-10, citing Des Plaines, PCB 04-88, slip op. at 7. Petitioners claim that "[t]he Board only denied summary judgment because it was applying that very strict standard." Reply at 10.

Board Analysis and Findings

Under Section 40(a)(1) of the Act (415 ILCS 5/40(a)(1) (2004)), the Board is required to hold hearings on permit appeals and at the hearing the provisions of Section 32 and 33(a) of the Act (415 ILCS 5/32 and 33(a) (2004)) apply. Section 33(a) of the Act (415 ILCS 5/33(a) (2004)) requires the Board "after due consideration" to enter a final written opinion "stating the facts and reasons leading to the decision" of the Board. *Id*. The Board shall make the determinations the Board deems appropriate under the circumstances of the case. *Id*. Thus, the Board is required by the Act to review the facts and arguments and make a finding on those facts.

Respondents argue that the Board's decision not to enter a final order on the motion for summary judgment along with petitioners' failure to provide testimony at the Board hearing somehow equates to the Board being required to make a finding for respondents. The Board disagrees with this argument. As petitioners point out and as the Board stated in ruling on the motion for summary judgment, summary judgment "is a drastic means of disposing of litigation," and therefore it should be granted only when the movant's right to the relief "is clear and free from doubt." Dowd & Dowd, Ltd. v. Gleason, 181 Ill. 2d 460, 483, 693 N.E.2d 358, 370 (1998), citing Purtill v. Hess, 111 Ill. 2d 299, 240, 489 N.E.2d 867, 871 (1986). Further, a party opposing a motion for summary judgment may not rest on the pleadings, but must "present a factual basis which would arguably entitle [it] to a judgment." Gauthier v. Westfall, 266 Ill. App. 3d 213, 219, 639 N.E.2d 994, 999 (2nd Dist. 1994). Thus, when ruling on a motion for summary judgment the Board is reviewing the pleadings and facts to determine if there are facts that establish that the nonmoving party might prevail. When denying the motion for summary judgment, the Board is not finding that the moving party must lose, only that the nonmoving party *might* prevail.

The Board is not persuaded by the arguments of respondents that the petitioners' decision not to call witnesses to testify at the Board's hearing, in view of the Board's ruling on the motion for summary judgment, results in a finding for respondents. The Board will review the entire record to determine whether the facts support the IEPA's decision to issue the permit. Therefore, the Board finds that petitioners failure to prevail on the motion for summary judgment and petitioners decision not to present witnesses do not require that the Board enter a decision in favor of the respondents.

New Lenox's Due Process Claim

New Lenox argues that the Board erred in not allowing New Lenox to conduct discovery in this case and therefore New Lenox maintains that New Lenox's right to due process was violated.

New Lenox's Argument

New Lenox states that it "respectfully disagrees with the Board's November 17, 2005 decision to deny New Lenox's and IEPA's request for discovery." Vill. Br. at 8; *see* Des Plaines, PCB 04-88, slip op. at 38-40. New Lenox argues that discovery is both authorized by the Board's procedural rules and consistent with earlier third-party permit appeals. Vill. Br. at 8, citing Prairie Rivers Network v. IEPA and Black Beauty Coal Co., PCB 01-112 (Mar. 20, 2001) (hearing officer order) and 35 Ill. Adm. Code 105.100. New Lenox asserts that the IEPA and New Lenox presented arguments and examples of where discovery could be useful to resolve material issues. Vill. Br. at 8. Although New Lenox concedes that the appeal is based upon the record amassed before the IEPA, New Lenox suggests that the Board has misunderstood the arguments and examples raised with the IEPA on the issue of discovery. Vill. Br. at 8-9, citing 415 ILCS 5/40(e)(3) (2004).

New Lenox argues that the public hearing held by the IEPA on a proposed NPDES Permit is an informal legislative hearing to inform the public of the proposed IEPA decision and

to obtain public comments before the IEPA issues a final decision. Vill Br. at 9, citing Des Plaines, PCB 04-88 (Apr. 30, 2004) and 35 Ill. Adm. Code 166.120. Conceding that the Board reviews the record before the IEPA at the time the permit is issued, New Lenox asserts that "factual issues presented in the record may be, and should be, subject to discovery to assist the Board in making its determination." Vill Br. at 9. New Lenox argues that, by concluding that respondents had not persuasively identified any additional discoverable evidence, "the Board is in effect rewriting its procedural rules." *Id*.; *see* Des Plaines, PCB 04-88, slip op. at 40.

New Lenox argues that, because the Board did not allow respondents to proceed with their requested discovery and petitioners did not present witnesses at the Board hearing, there was no forum in which respondents could cross-examine those who spoke at the IEPA hearing. Vill. Br. at 10. New Lenox further argues that respondents could not respond to comments that petitioners placed in the record and on which the Board might rely in making a determination. *Id*. Accordingly, New Lenox suggests that the Board may mistakenly assign greater weight to those unsupported comments than to the supported facts in the IEPA's record. *See id*. New Lenox argues that, because the Appellate Court defers to the Board's findings of fact, the Board's action may leave New Lenox without any opportunity for meaningful review of those comments. *Id*.

New Lenox states that the Illinois Supreme Court has recognized that the due process safeguards are absent until the Board' hearing. Vill. Br. at 11, citing Lake Barrington v. IPEA and Wauconda, PCB 05-55, 05-58, 05-59, slip op. at 18 (Apr. 21, 2005); *see* IEPA v. PCB, 115 Ill. 2d 65, 70 (1986). New Lenox cites the Lake Barrington case in support of the proposition that, "when government agencies adjudicate or make binding determination which directly affect the legal rights of individuals, it is imperative that those agencies use procedures which have traditionally been associated with the judicial process." *Id*. New Lenox claims that the hearing before the IEPA in this case "is a fact-finding investigation, while the process before the Board is an adjudication." *Id*.

New Lenox argues that the Board hearing is also considered adjudicatory under the Illinois Administrative Procedure Act. Ag. Br. at 11; *see* 5 ILCS 100/1-1 *et seq*. (2004). New Lenox argues that, under Borg-Warner Corp. v. Mauzy, 100 Ill. App. 3d 862, 872 (3rd Dist. 1981), a permit applicant is afforded an adjudicatory hearing once the IEPA issues an NPDES permit. Vill. Br. at 11. New Lenox further argues that the Board conducts such hearings under Board rules for adjudicatory cases. Vill. Br. at 12, citing Borg-Warner, 100 Ill. App. 3d at 868. New Lenox claims that, while it was not entitled to an adjudicatory hearing before the IEPA issued its permit, New Lenox is now entitled to an adjudicatory hearing conducted according to the Board's rules for adjudicatory cases. Vill. Br. at 12.

New Lenox argues that petitioners relied upon statements made at the public hearing before the IEPA in order to make assertions in their post-hearing memorandum. Vill. Br. at 12. New Lenox claims that the Board must view these statements cautiously because the persons offering them were not placed under oath or cross-examined. *Id*. New Lenox further claims that the Board cited unresolved issues of material fact in denying petitioners' motion for summary judgment. New Lenox argues that, although its requested discovery would clarify and complete the record with regard to these statements, the Board did not allow the requested discovery to go

forward. *Id*. New Lenox thus argues that reliance upon these statements may impinge upon New Lenox's rights and deny it all of the protections afforded by an adjudicatory hearing. Vill. Br. at 12-13.

Petitioners' Reply

The petitioners assert that New Lenox's argument concerning due process and discovery appear to stem from a fundamental misunderstanding, which has "characterized the entirety" of the respondents arguments. Reply at 25. Specifically, petitioners argue that respondents attempt to treat this as an enforcement proceeding rather than a permit appeal. *Id*. Petitioners maintain that the distinction is an important one as New Lenox is not punished and will not lose anything tangible as a result of an adverse decision in a permit appeal. *Id*. Petitioners claim that they seek a remand to the IEPA for further proceedings. Reply at 25-26.

The petitioners note that neither New Lenox nor the IEPA identified anything that could possibly be found through discovery that would support or bolster the respondents' case. Reply at 26. And petitioners note that New Lenox did not cross-examine or ask questions during the IEPA's hearing of the witnesses; nor did New Lenox offer testimony at the IEPA's hearing. Therefore, petitioners opine that New Lenox is in "a poor position" to claim inadequacies in that process. *Id*.

As to the actual issue of whether or not New Lenox's due process right was abridged, petitioners assert that mere application for an NPDES permit does not convey property rights and, even if there were some property right, the Board's rules provide all the "process due" to New Lenox. Reply at 26. The petitioners cite extensively to cases to support these two propositions. *See* Reply at 27-29.

Board Analysis and Findings

New Lenox asserts that due process was not provided to New Lenox before the Board because discovery was not allowed in the proceedings before the Board. This assertion is simply incorrect. The Board's order denying the request for discovery indicated that the respondents did not persuasively identify any additional discoverable evidence. Des Plaines, PCB 04-88, slip op. at 38-40. Thus, New Lenox was unable to persuade the Board that discovery was necessary. Further, although the petitioner did not present witnesses at the hearing before the Board, neither did the respondents. Respondents could have called witnesses to clarify statements made during the IEPA hearings. Finally, the Board's review of a permit is based solely on the record before the IEPA. Therefore, the Board finds that New Lenox's due process rights were not abridged in this proceeding.

REGULATORY PROVISIONS

Section 302.105(c)(1) of the Board's water quality regulations provides that,

> [e]xcept as otherwise provided in subsection (d) of this Section [Activities Not Subject to a Further Antidegradation Assessment], waters of the State whose

existing quality is better than any of the established standards of this Part must be maintained in their present high quality, unless the lowering of water quality is necessary to accommodate important economic or social development. 35 Ill. Adm. Code 302.105(c)(1).

Section 302.105(c)(2)(B) of the Board's water quality regulations provides:

* * *

2) The Agency must assess any proposed increase in pollutant loading that necessitates a new, renewed or modified NPDES permit or any activity requiring a CWA Section 401 certification to determine compliance with this Section. The assessment to determine compliance with this Section must be made on a case-by-case basis. In making this assessment, the Agency must:

* * *

B) Assure the following:

i) The applicable numeric or narrative water quality standard will not be exceeded as a result of the proposed activity;

ii) All existing uses will be fully protected;

iii) All technically and economically reasonable measures to avoid or minimize the extent of the proposed increase in pollutant loading have been incorporated into the proposed activity . . . . 35 Ill. Adm. Code 302.105(c)(2)(B).

Section 302.203 of the Board's water quality regulations provides that "[w]aters of the State shall be free from sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, color or turbidity of other than natural origin. The allowed mixing provisions of Section 302.102 shall not be used to comply with the provisions of this Section." 35 Ill. Adm. Code 302.203.

Section 302.204 of the Board's water quality regulations provides that "ph (STORET number 00400) shall be within the range of 6.5 to 9.0 except for natural causes." 35 Ill. Adm. Code 302.204.

Section 302.206 of the Board's water quality regulations provides that "[d]issolved oxygen (STORET number 00300) shall not be less than 6.0 mg/1 during at least 16 hours of any 24 hour period, nor less than 5.0 mg/1 at any time." 35 Ill. Adm. Code 302.206.

Section 302.208 of the Board's water quality regulations provides that:

a) The acute standard (AS) for the chemical constituents listed in subsection (e) shall not be exceeded at any time except as provided in subsection (d) [waters in which mixing is allowed].

b) The chronic standard (CS) for the chemical constituents listed in subsection (e) shall not be exceeded by the arithmetic average of at least four consecutive samples collected over any period of at least four days, except as provided in subsection (d) [waters where mixing is allowed]. The samples used to demonstrate attainment or lack of attainment with a CS must be collected in a manner that assures an average representative of the sampling period. For the metals that have water quality based standards dependent upon hardness, the chronic water quality standard will be calculated according to subsection (e) using the hardness of the water body at the time the metals sample was collected. To calculate attainment status of chronic metals standards, the concentration of the metal in each sample is 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.

* * *

e) Numeric Water Quality Standards for the Protection of Aquatic Organisms

Constituent	STORET Number	AS (µg/L)	CS (µg/L)
		* * *	
Copper (dissolved)	01040	exp[A+Bln(H)] X 0.960*, where A=-1.464 and B=0.9422	exp[A+Bln(H)] X 0.960*, where A=-1.465 and B=0.8545
		* * *	
Where:	µg/L	= microgram per liter,	
	exp[x]	= base natural logarithms raised to the x-power,	
	ln(H)	= natural logarithm of Hardness (STORET 00900), and	
	*	= conversion factor multiplier for dissolved metals. 35 Ill. Adm. Code 302.208.	

Section 304.105 of the Board's water quality regulations provides that:

In addition to the other requirements of this Part, no effluent shall, alone or in combination with other sources, cause a violation of any applicable water quality standard. When the Agency finds that a discharge which would comply with effluent standards contained in this Part would cause or is causing a violation of water quality standards, the Agency shall take appropriate action under Section 31

[Notice; complaint; hearing] or Section 39 [Issuance of permits; procedures] of the Act to require the discharge to meet whatever effluent limits are necessary to ensure compliance with the water quality standards. When such a violation is caused by the cumulative effect of more than one source, several sources may be joined in an enforcement or variance proceeding, and measures for necessary effluent reductions will be determined on the basis of technical feasibility, economic reasonableness and fairness to all dischargers. 35 Ill. Adm. Code 304.105.

Section 309.141(d)(1) of the Board's water quality regulations provides:

In establishing the terms and conditions of each issued NPDES Permit, the Agency shall apply and ensure compliance with all of the following, whenever applicable:

* * *

d) Any more stringent limitation, including those:

1) necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any Illinois statute or regulation (under authority preserved by Section 510 of the CWA). 35 Ill. Adm. Code 309.141(d)(1).

Section 309.142 of the Board's water quality regulations provides:

[i]n any case in which an NPDES Permit includes as conditions the effluent standards and limitations described in Sections 309.141, 309.142, and 309.143, the Agency shall have determined and verified that the discharge authorized by the permit will not violate applicable water quality standards or a schedule of compliance to achieve applicable water quality standards contained in the NPDES Permit. In any case in which an NPDES Permit applies any more stringent effluent limitation based on applicable water quality standards, a waste load allocation shall be prepared to ensure that the discharge authorized by the permit is consistent with applicable water quality standards.

Section 122.4(d) of Title 40 of the Code of Federal Regulations provides that "[n]o permit may be issued . . .[w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States . . .."

Section 122.44(d)(1) of Title 40 of the Code of Federal Regulations provides:

In addition to the conditions established under §122.43(a) [Establishing permit conditions], each NPDES permit shall include conditions meeting the following requirements when applicable:

* * *

(d) Water quality standards and State requirements: any requirements in addition to or more stringent than promulgated effluent limitations

> guidelines or standards under sections 301, 304, 306, 307, 318 and 405 of CWA necessary to:
>
> (1) Achieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality. 40 C.F.R. 122.44(d)(1)(i).

PERMIT APPEAL ISSUES

The issues in this permit appeal center around the petitioners' claims that the IEPA failed to properly review the increased loading from New Lenox's plant pursuant to the Board's rules prohibiting the degradation of the waters of the State (*see* 35 Ill. Adm. Code 302.105). Further petitioners assert that the IEPA failed to ensure that water quality standards would be met in Hickory Creek given the new discharge allowed by the permit contrary to 35 Ill. Adm. Code 302.105. More specifically, the petitioners argue that phosphorus, nitrogen, copper, dissolved oxygen and pH all should have been limited in the discharge by the permit. In addition, the petitioners argue that the narrative standard for offensive conditions will be violated as a result of the increased discharge from the plant.

The Board will organize the discussion in three main parts. First, the Board will summarize arguments from the parties concerning the Earth Tech study. Next, the Board will discuss the specific arguments concerning phosphorus and nitrogen, then existing conditions, followed by offensive conditions. The last two areas will be a discussion of dissolved oxygen and pH and ending with copper.

New Lenox's Study of Hickory Creek

As discussed above, New Lenox contracted with Earth Tech for the performance of a study of macroinvertebrates in Hickory Creek. The results of this study were relied upon both by New Lenox in applying for the permit and the IEPA in the granting of the permit. R. at 360, 513, 564. Petitioners challenge the findings of the Earth Tech study and argue that the IEPA's reliance is misplaced. The Board presents these general arguments as background for the more specific challenges to the permit issuance and the Board will comment on these arguments where appropriate when addressing the more specific challenges to the permit issuance.

Petitioners' Arguments

Petitioners assert that the record contains extensive criticism of the Earth Tech study by IEPA staff and point to the memorandum summarizing the IEPA's review of the study questioning the results and the several e-mails by IEPA personnel for support of petitioners' position. Pet. Br. at 6. Petitioners argue that the e-mail dated November 26, 2002 from Greg Good of the IEPA indicates that the IEPA believed a proper biological study was only necessary if the water was listed on the impaired waters list because of prior biological studies. Pet. Br. at 7, citing R. at 562. Further, petitioners maintain that after determining that Hickory Creek was listed as partially impaired on the basis of violations of the standards for total dissolved solids, IEPA staff determined that they should not use the Earth Tech study. *Id*.

Petitioners argue that, despite this internal criticism of the study, the IEPA relied upon that study in the antidegradation assessment dated November 26, 2002. Pet. Br. at 8, citing R. at 5. Petitioners note the antidegradation analysis indicated that "the incremental nutrient loading anticipated to result from this project is not expected to increase algae or other noxious plant growth, diminish the present aquatic community or otherwise aggravate existing stream conditions." Pet. Br. at 8, citing R. at 6. Petitioners suggest that this finding lacks any support because the record lacks any scientific study or consideration of the potential effect of increased nutrient discharges from the plant on Hickory Creek or the Des Plaines River on algal growth, dissolved oxygen levels, or pH levels. Pet. Br. at 8. Petitioners also emphasize that, because the study had macroinvertebrate data from only five samples, the study did not discuss the potential effect of the existing or increased discharge on algal blooms, dissolved oxygen levels, or pH levels. *Id*.

IEPA's Response

In order to supplement information available about conditions in Hickory Creek and to conduct the required antidegradation analysis, the IEPA requested that New Lenox conduct a biological study of Hickory Creek. Ag. Br. at 5. The IEPA concedes that the record contains e-mails by IEPA staff discussing the study performed by Earth Tech; however, the IEPA claims that petitioners "mischaracterize the nature of discussion among the staff." *Id*. Specifically, the IEPA notes that petitioners refer to the views expressed by IEPA personnel that Earth Tech did not follow precisely the same procedures as those used by the IEPA. Ag. Br. at 7, citing R. at 370. The IEPA asserts that the staff discussion simply shows that there are alternative field sampling practices. *Id*. The IEPA requested Earth Tech to change the tolerance values assigned to several species and recalculated the MBI results and the IEPA argues that the differences were minor. Ag. Br. at 7, citing R. at 370, 562.

Furthermore, the IEPA claims that the staff review of Earth Tech's study was a narrower review than reviews of a studies assessing the waters of the State. Ag. Br. at 6. Specifically, the IEPA states the Earth Tech study was reviewed to determine whether the study was "adequate in determining the existing conditions of Hickory Creek below the plant's discharge and what the possible impact of the plant's existing discharge is on the aquatic life in the Hickory Creek segment below the discharge." *Id*. On the basis of this review, the IEPA "concluded that the study was valid and an acceptable way of characterizing the current conditions of Hickory Creek." *Id*., citing R. at 370, 562.

The IEPA states that, while it used the Earth Tech study as part of the antidegradation assessment, the IEPA did not rely solely on that study in making its final decision. The IEPA notes that Hickory Creek had been listed as partially impaired on the basis of violating standards for total dissolved solids and not on the basis of biological information. Ag. Br. at 7. Accordingly, the IEPA states that the final permit incorporated a limitation for total dissolved solids. *Id*.

New Lenox's Response

New Lenox also addresses the biological study performed by Earth Tech. To the extent that the record contains discussion of the study by IEPA staff (R. at 537, 556-58, 561, 661-98), New Lenox characterizes that as "appropriate internal IEPA deliberation about the information [the contractor] provided as well as general discussion about the manner in which these studies are performed." Vill. Statement at 13. New Lenox argues that the contractor revised the study to reflect the IEPA's methodology and that the IEPA properly relied upon the study. Vill. Statement at 14, citing R. at 370.

Phosphorus And Nitrogen

Petitioners assert that the permit as issued violates the Board's antidegradation regulations at 35 Ill. Adm. Code 302.105, and because the issuance of the permit is contrary to 35 Ill. Adm. Code 302.105, the issuance of the permit violates the Section 39 of the Act (415 ILCS 5/39). Specifically petitioners argue that because the IEPA failed to assure that all reasonable means be used to minimize new or increased pollution loading of phosphorus and nitrogen, the permit violates Section 302.105 of the Board's rules.

Petitioners' Arguments

Petitioners argue that by not limiting phosphorus discharges from New Lenox's plant, the IEPA violated the Board's antidegradation regulations at 35 Ill. Adm. Code 302.105(c)(1). Section 302.105(c)(1) requires waters of the State, whose existing quality is better than any of the established standards, to be maintained in their present quality; unless, the lowering of water quality is "necessary" to accommodate important economic or social development. Pet. Br. at 1, 29, citing 35 Ill. Adm. Code 302.105(c)(1). Petitioners point out that the term "necessary" is not defined in the Board's regulations and argue that "necessary" should be given the plain meaning. Pet. Br. at 30. Petitioners maintain that "necessary" means that something is absolutely essential, needed to achieve a certain result, or unavoidable or inevitable. *Id*. Petitioners argue that lowering water quality is necessary only where "development cannot practicably go forward without allowing lower water quality." Pet. Br. at 31.

Petitioners argue that the Board's antidegradation regulation reflects federal policies that "permit a lowering of water quality only if it is 'necessary to accommodate important economic or social development.'" Pet. Br. at 25, citing 40 C.F.R. 131.12(a)(2). Petitioners further cite USEPA guidance that states that "[w]hen performing an antidegradation review, the first question is whether the pollution controls needed to maintain the high-quality water will interfere with the proposed development. *If not, then the lowering of water quality is not warranted*." Pet. Br. at 31 (emphasis in original), citing *Interim Economic Guidance for Water Quality Standards*, USEPA (1995). The USEPA guidance also states that increased pollution loading is not normally necessary "if it can be avoided at an annual cost of less than 1.0 percent of the median household income of the region served." *Id*.

Petitioners argue that the record contains no discussion or evidence that New Lenox could not bear the cost of phosphorus treatment. Pet. Br. at 31. Petitioners assert that the IEPA "never discussed the cost of treating phosphorus," other than citing an IAWA study that is not contained in the record and that estimates capital costs of $5.4 million to treat phosphorus to a

level of 0.5 mg/L and nitrogen to an unspecified level. Pet. Br. at 14-15, citing R. at 358. Thus, petitioners opine that the IEPA never looked to see if phosphorus controls at the New Lenox plant would be economically reasonable. Pet. Br. at 31.

Petitioners maintain that the record also contains no evidence that increasing phosphorus pollution from New Lenox's plant is "unavoidable, absolutely essential, or needed." Pet. Br. at 30. Petitioners opine that other communities around Illinois have been able to support economic and population growth while also controlling phosphorus discharges. *Id*.

Petitioners assert that the IEPA also violated Board antidegradation regulations by failing to assure that New Lenox's permit contained provisions minimizing the effect of the new pollution loading. Pet. Br. at 1, 29, citing 35 Ill. Adm. Code 302.105(c)(2)(B)(iii). Petitioners characterize the language of Section 302.105(c)(2(B)(iii) as "clear and mandatory." Pet. Br. at 24. Specifically, the language requires that the "must assure" that all reasonable measures to "minimize" the extent of the pollution have been incorporated prior to issuance of the permit. *Id*. Petitioners argue that the Board's current antidegradation regulations reflect longstanding state policy. Pet. Br. at 24.

In order to comply with the Board's antidegradation regulations, petitioners claim that the IEPA "should have carefully considered the level of nutrient control that New Lenox could technically and economically provide." Pet. Br. at 30. Petitioners argue that New Lenox is required to minimize new pollution even when there is no potential affect on the receiving water. Pet. Br. at 30. Specifically, petitioners claim that the IEPA should at least have imposed on New Lenox's phosphorus discharge a limit of 1 mg/L, which "was found economically reasonable by the Board even given the technology in existence two decades ago." Pet. Br. at 31, citing, *inter alia*, Amendments to the Water Pollution Regulations, R76-1 (Feb. 15, 1979).

Petitioners note that the IEPA's responsiveness summary includes only one possible reason for failing to include phosphorus limits in New Lenox's permit: "that IEPA was working on numeric nutrient standards." Pet. Br. at 32. Petitioners assert that the IEPA's work on future standards is irrelevant to the failure to comply with existing antidegradation regulations. *Id*. Petitioners claim that the Board's chief purpose in adopting Section 302.105(c) was to identify and implement alternatives that reduce or eliminate the proposed increased loadings. Pet. Br. at 33, citing Revisions to Antidegradation Rules: 35 Ill. Adm. Code 302.105, 302.205, 302.206, and 102.800-102.830, R01-13 (June 21, 2001); *see* 35 Ill. Adm. Code 302.105(c). In this case, petitioners argue, the IEPA flouted this objective "by refusing to consider phosphorus removal at all." Pet. Br. at 33. Petitioners argue that the IEPA's rationale for that refusal is not supported by the record. Accordingly, the petitioners maintain that the IEPA's findings on this issue should be reversed. *Id*.

The petitioners liken the IEPA's consideration of nitrogen controls to consideration of phosphorus controls. However, with nitrogen, the petitioners assert that the responsiveness summary provides no hint at all as to why the IEPA did not require or even consider nitrogen treatment of New Lenox's discharge. Pet. Br. at 33. The petitioners thus argue that the IEPA violated 35 Ill. Adm. Code 166.192 by failing to respond to the request for nitrogen controls and violated 35 Ill. Adm. Code 302.105(c) by failing even to consider, much less assure, that feasible

nitrogen control was implemented. *Id*. In the absence of any explanation or support, the petitioners argue the IEPA's decision is not supportable by substantial evidence in the record. *Id*. at n.33.

Regarding the additional nutrient loading on Hickory Creek, the petitioners state that the record includes published treatises showing that "elevated nutrient levels cause impairment of streams." Pet. Br. at 11, citing R. at 162-64 (*Stream Ecology: Structure and function of running waters*), R. at 177, 180, 184 (*Establishing nutrient criteria in streams*), R. at 187 (*Eutrophication of streams and river: dissolved nutrient chlorophyll relationships for benthic algae*), R. at 206 (*Phosphorus-chlorophyll relationship in temperate streams and its variation with stream catchment areas*), R. at 210, 216 (*Algal biomass in a disturbed Atlantic river: water quality relationships and environmental implications)*. Petitioners on the basis of these treatises further state that, "if nutrient levels are high, that algal blooms will occur on those days when flow, heat, and sunlight are adequate." Pet. Br. at 11. Petitioners argue that these algal blooms may have adverse effects on levels of pH and dissolved oxygen and on the aesthetic and recreational value of affected waters. *Id*. Petitioners emphasize that the IEPA "acknowledged that it was 'very possible' that supersaturated oxygen levels found during the daytime hours in Hickory Creek are due to algae saturation photosynthesis." Pet. Br. at 11-12, citing R. at 67 (testimony of Robert Mosher at hearing on April 23, 2003). Petitioners also emphasize a study purporting to show "how nutrients discharged by a sewerage treatment plant affected a reservoir miles downstream from the plant." Pet. Br. at 12, citing R. at 255-63 (*Effect of a Point Source Input on Stream Nutrient Reduction*).

Additionally, the petitioners cite to statements made by Professors David Jenkins and Michael Lemke of the Biology Department at the University of Illinois at Springfield. Pet. Br. at 12-13, citing R. at 304-05 (Summary of Hickory Creek Water Quality Information). According to petitioners, Professors Jenkins and Lemke "commented that it is likely that nutrient discharges from New Lenox are already adversely impacting Hickory Creek and reductions of nutrient discharges are needed to prevent further impact." Pet. Br. at 13. Professors Jenkins and Lemke conclude that the discharge from New Lenox's plant before its expansion accounted for 41% of Hickory Creek's total downstream phosphorus load. Pet. Br. at 12, citing R. at 304. Professors Jenkins and Lemke also conclude that, without a change in nutrient levels in the discharge or in the flow of Hickory Creek, discharge from New Lenox's expanded plant will account for "53.7% of stream phosphorus load on an average basis." Pet. Br. at 12, citing R. at 304. The professors further conclude that "the same-sized receiving stream will be bearing 170% [of] the levels of nitrate+nitrite upstream of the plant, and 216% of the total P[hosphorus] levels upstream of the plant. These levels of nutrient loading will have substantial effects on downstream water quality, not only in Hickory Creek, but also the Des Plaines River and the Illinois River." Pet. Br. at 12-13, citing R. at 304.

With regard to conditions in Hickory Creek, petitioners state a number of witnesses reported offensive algal blooms in Hickory Creek. Pet. Br. at 11, citing R. at 76 (testimony of Kimberly Kowalski at hearing on April 24, 2003), R. at 80 (testimony of Jim Bland at hearing on April 24, 2003), R. at 82-83 (testimony of Brad Salamy at hearing on April 24, 2003), R. at 210 (written comment filed by Jim Bland).

IEPA's Arguments

The IEPA asserts that the decision not to include phosphorus and nitrogen limits is supported by the record as neither the stream conditions regarding algal bloom nor concentration of dissolved oxygen and pH indicate that a limit is required by the Act or Board regulations. Ag. Br. at 14. The IEPA concedes that if the record indicated that offensive conditions exist in Hickory Creek below New Lenox's discharge that were caused by New Lenox's discharge, then parameters for nitrogen and phosphorus would have been appropriately incorporated in the permit. *Id*.

The IEPA further maintains that the legal reasoning for not including limits for phosphorus and nitrogen was not that the "narrative standards are difficult to apply in a permit" as the petitioners assert. Ag. Br. at 14. Rather, the statements made in the record by IEPA personnel merely reflect the fact that narrative standards are difficult to apply in the permit situation. Ag. Br. at 14-15.

Disputing petitioners' claim that the IEPA failed to limit New Lenox's discharge to a level that is "necessary," the IEPA states that the record reflects that expansion was necessary to accommodate the future growth of the area. Ag. Br. at 39; *see* 35 Ill. Adm. Code 302.105(c)(1). Specifically, the IEPA argues that New Lenox's "expanded plant would provide waste treatment services to a population equivalent of 25,000." Ag. Br. at 39, citing R. at 78-79. The IEPA states that in 2000 the IEPA approved a Water Quality Management Plan intended to provide planned expansion in the vicinity of New Lenox and that the Northern Illinois Planning Commission (NIPC) supported that plan. Ag. Br. at 39, citing R. at 601. The IEPA argues that "the lowering of water quality was necessary in this case to accommodate an important social need." Ag. Br. at 39, citing 35 Ill. Adm. Code 302.105(c)(1).

The IEPA also disputes the petitioners' claim that the IEPA "did not assure that the permit incorporated all reasonable measures to avoid or minimize the extent of the new pollution loading." Ag. Br. at 38. The IEPA specifically disputes that the IEPA failed reasonably to control nutrients. *Id*. The IEPA disagrees that, any time there is an increased pollutant loading, and a technology exists to treat that pollutant, then IEPA must incorporate such controls in the permit. Ag. Br. at 38; *see* 35 Ill. Adm. Core 302.105(c)(2)(B)(iii). The IEPA asserts that this interpretation is contrary to the meaning and intent of the rule. Ag. Br. at 38.

The IEPA argues that the real objective of antidegradation assessments is to reduce the pollutant loading from a proposed activity if it is reasonable to do so. Ag. Br. at 38. The IEPA further argues that the petitioners have ignored the case-by-case nature of this assessment: "[t]he basic directive of Section 302.105(c)(2) is that the IEPA must consider all non-degrading or less-degrading alternatives that are technically and economically available in a given situation." *Id*.; *see* 35 Ill. Adm. Code 302.105(c)(2). Although the IEPA acknowledges that water quality cannot be lowered below the level necessary to protect existing uses, the IEPA argues that maintaining water quality above a particular level is not always required and restates that "water quality *may be lowered if necessary to accomplish important economic or social development in the area in which the waters are located*. Ag. Br. at 38-39 (emphasis in original), citing Antidegradation Rules, R01-13, slip op. at 3.

The IEPA states that the record includes substantial evidence showing that the requirements of Section 302.105(c) were met. Ag. Br. at 40. First, the IEPA claims that the IEPA conducted assessment of alternatives to New Lenox's proposed increase in pollutant loading. Ag. Br. at 40, citing R. at 5-7, 372-74; *see* 35 Ill. Adm. Code 302.105(f)(1)(D). The IEPA states that the responsiveness summary discusses these alternatives in detail. Ag. Br. at 40; *see* R. at 372-74. For example, New Lenox evaluated land application as an alternative treatment. However, IEPA concludes that the alternative was not cost effective. R. at 373; *see* Ag. Br. at 40. The IEPA argues that all technically and economically reasonable alternatives to minimize the pollution loading from New Lenox's plant were considered. Ag. Br. at 40-41.

New Lenox's Arguments

New Lenox disputes petitioners' contention that the IEPA failed to comply with antidegradation regulations because the IEPA did not ensure that reasonable controls were put on nutrients. Vill. Memo. at 6. New Lenox argues that petitioners rely on antidegradation regulations pertaining to high quality waters and Hickory Creek is not a high quality water as that term is defined in the rules. *Id*. New Lenox states that "High Quality Waters" are those whose existing water quality exceeds the state's adopted water quality standards. *Id*. New Lenox argues that the antidegradation analysis should follow the minimum level of protection at Section 302.105(a) applicable to waters that meet existing uses rather than the high quality waters provisions. *Id*.; *see* 35 Ill. Adm. Code 302.105(a).

New Lenox stresses that Hickory Creek is not listed by the Illinois Department of Natural Resources (DNR) as a biologically significant stream, a designation New Lenox states is also relevant to antidegradation assessment. Vill. Memo. at 5. New Lenox further notes that the stream is not an Outstanding Resource Water and does not support threatened or endangered species in the vicinity of New Lenox's discharge. *Id*.; *see* R. at 5, 371. New Lenox states that the IEPA in reviewing the permit application examined the basis for including Hickory Creek on the 303(d) list of impaired waters. Vill. Memo. at 5. New Lenox notes that the IEPA concluded that "only total dissolved solids can be implicated as a cause of whatever impairment may exist in this stream segment outside the immediate area of the New Lenox effluent outfall." *Id*.; *see* R. at 360. New Lenox points out that the permit includes limits on total dissolved solids. Vill. Memo. at 5; *see* R. at 343.

New Lenox states that the IEPA considered nutrient data in performing its antidegradation analysis. Vill. Memo. at 6. In August 2002, when New Lenox sampled effluent, a total phosphorus concentration of 2.76 mg/L was indicated. *Id*.; R. at 525. New Lenox noted that four downstream samples revealed phosphorus concentrations of 1.60 mg/L (R. at 526), 1.63 mg/L (R. at 527), 1.47 mg/L (R. at 528), and 1.52 mg/L (R. at 529). New Lenox emphasizes that the IEPA concluded "there is nothing unusual about stream phosphorus values such as those reported for Hickory Creek." Vill. Memo. at 6; *see* R. at 365. Specifically, New Lenox points out that the IEPA determined that the incremental nutrient loading anticipated to result from the increased loading "is not expected to increase algae or other noxious plant growth, diminish the present aquatic community or otherwise aggravate existing stream conditions." Vill. Memo. at 6-7; R. at 6.

New Lenox asserts that the IEPA did fully consider the economic and technical feasibility of a range of alternatives. Vill. Memo. at 7. For example, New Lenox evaluated the alternative of treating the increased discharge at an off-site spray irrigation system. R. at 413-18. This alterative required 425 acres of land and resulted in estimated costs of $23.2 million. R. at 413. The same evaluation determined that the costs attributable to the increased discharge are $2.8 million. *Id*. Ultimately, the IEPA concluded that "[l]and application is not considered feasible because the land costs and the pumping and transmission costs would be prohibitive." R. at 565. New Lenox also examined using treated wastewater in the irrigation of a golf course, but the course declined to implement this alternative. R. at 634.

New Lenox points out that there are no numeric water quality standards for nutrients applicable to Hickory Creek. *See* R. at 357. New Lenox argues that the "science concerning nutrients and their effect on waterbodies is both complicated and uncertain." Vill. Memo. at 7. While the IEPA has ongoing effort to adopt water quality standards for nutrients, New Lenox argues that setting nutrient standards in the context of an NPDES permit is inappropriate. *Id*.

Petitioners' Reply

Petitioners assert that the IEPA "essentially admits" that the record lacks evidence that the IEPA considered phosphorus or nitrogen removal at the plant even though such removal is feasible. Reply at 13. Petitioners argue that the IEPA "offers a number of reformulations of the antidegradation regulation." *Id*. As one example, petitioners takes issue with the IEPA's position that "Section 302.105(c)(2)(B)(iii) does not require the IEPA to consider technology controls as reasonable measures to avoid or minimize the proposed increase in pollutant loading." *Id*., citing Ag. Br. at 39; *see* 35 Ill. Adm. Code 302.105(c)(2)(B)(iii). Petitioners state that the plain language of the regulation "almost precisely" requires the IEPA to consider such measures. Reply at 14-15. Petitioners opines that, in order to comply with the regulation, the IEPA "must demonstrate that it has considered alternatives and explain why those alternatives are not 'reasonable.'" Reply at 15, citing 35 Ill. Adm. Code 302.105(f)(1)(D)(i); *see* 35 Ill. Adm. Code 302.105(c)(2)(B)(iii).

Petitioners agree with the IEPA that "the basic directive of Section 302.105(c)(2) is that the IEPA must consider all non-degrading or less degrading alternatives that are technically and economically available in a given situation." Reply at 14. Petitioners also agree with the IEPA that treatment technologies must be incorporated if they are technologically and economically available and to do this consideration of technologies that will reduce degradation must be included. Reply at 14 n.10. However, in this case, petitioners argue, the IEPA did not consider whether nutrient removal was technically and economically available to reduce degradations, so "a remand is clearly mandatory." Reply at 14.

Petitioners disagree with the IEPA comments concerning the necessity of expanding New Lenox's plant. Reply at 15. Petitioners suggest that, in the IEPA's view, future growth in the vicinity of New Lenox necessitates the plant's expansion, and the plant's expansion necessitates lowering water quality in Hickory Creek. *Id*. Petitioners argue expansion may be necessary, however that does not mean that the lowering of water quality is necessary. Reply at 15. In

support of this argument, petitioners cite Hughey v. Gwinnett County, 609 S.E.2d 324 (Ga. 2004). Petitioners argues that the court agreed that a wastewater treatment plant expansion was necessary but reversed the issuance of a discharge permit where the IEPA failed to require the best available treatment practicable in violation of antidegradation requirements. Reply at 15, citing Hughey, 609 S.E.2nd at 328.

Petitioners also disagree with the IEPA's assertion that New Lenox's plant is not a major source of phosphorus to Hickory Creek and point out that even so the antidegradation rules do not exempt sources that are not "major" sources. Reply at 15-16. Further, petitioners argue that the IEPA's claim is erroneous because New Lenox's documents and the IEPA itself acknowledge that New Lenox will account for 25 percent of total phosphorus loading to Hickory Creek. Reply at 16, citing Ag. Br. at 9.

Petitioners argue that the lower stream flow at New Lenox supports the conclusion that New Lenox's discharge constitutes more than 11 percent of the stream flow and more than 25 percent of phosphorus loading to the creek. Reply at 16 n.11, citing R. at 304. Petitioners assert that there is no dispute that the New Lenox discharge is a substantial portion of the total stream flow and without phosphorus removal the discharge is discharging at a considerable multiple of both the Illinois figure for water bodies potentially affected by phosphorus and the USEPA suggested stream criteria for phosphorus in the region of Hickory Creek. Reply at 16. Petitioners assert that the Board has required phosphorus limits in cases where the discharger was only 7% of the loading to the water body. *Id.*, citing Site-Specific Phosphorus Limitation for the City of Shelbyville, R83-12, slip op. at 5 (Dec. 20, 1984).

Petitioners claim that that the IEPA has misrepresented petitioners' position regarding phosphorus discharges. Reply at 21. Petitioners maintain that petitioners are asking the IEPA to assure that new or increase phosphorus discharges are not allowed that can be avoided through means that are technologically and economically available. Reply at 21. Further, petitioners ask that the IEPA ensure that phosphorus discharges not be permitted that may cause or contribute to violations of the narrative 'offensive conditions' standard. *Id.*

Board Analysis and Findings

In reviewing the arguments concerning phosphorus and nitrogen, the Board sees four areas of concern. The first is an issue raised by New Lenox, concerning the applicability of 35 Ill. Adm. Code 302.105(c). The second is petitioners' concerns that the IEPA did not demonstrate that the lowering the water quality of Hickory Creek is necessary to accomplish important economic or social development in the area where the stream is located (*see* 35 Ill. Adm. Code 302.105(c)(1)). The third issue is whether or not the IEPA ensured that increased loading of phosphorus and nitrogen would not cause or contribute to violations of the water quality standards (*see* 35 Ill. Adm. Code 302.105(c)(2)(B)(i)). The fourth issue pertains to the petitioners' contention that the IEPA did not consider alternatives to the increased discharge of phosphorus and nitrogen (*see* 35 Ill. Adm. Code 302.105(c)(2)(B)(iii)). The Board will address each of these in turn.

Applicability of 35 Ill. Adm. Code 302.105(c). New Lenox argues that the provisions of Section 302.105(c) apply to high quality waters of the State and Hickory Creek is not a high quality water as that term is defined by the rules. Instead New Lenox asserts that the provisions of Section 302.105(a), which requires protection for existing uses, is the only provision which applies to Hickory Creek. The Board disagrees with this interpretation of the antidegradation rules. The language of Section 302.105(c)(1) provides that, with exceptions articulated in subsection (d), "waters of the State whose existing quality is better than *any* of the established" water quality standards must be maintained "in their present high quality." 35 Ill. Adm. Code 302.105(c)(1).

The plain language of the rule is clear that if the stream's water quality is better than *any* of the water quality standards in the Board's rules, then the stream's high water quality must be maintained. The rule does not state that Section 302.105(c) applies to only those waters that meet *all* water quality standards in the Board's rules. Thus, while a stream may be impaired with regard to one parameter, the clear intent of the antidegradation provisions is to maintain the existing high quality with respect to the other parameters. At a minimum, existing uses must be maintained and protected, pursuant to Section 302.105(a); however, for waters with quality better than established standard, any lowering of water quality should be based on an antidegradation assessment.

Rules have the force and effect of law and are construed according to the same standards that govern the construction of statutes. People v. Bonutti, 817 N.E.2d, 212 Ill.2d 182 (2004). The primary goal is to ascertain and give effect to the intent of the rule, "which is best evidenced by the clear and unambiguous language of the statute." People v Ward, 326 Ill. App. 3d 897, 762 N.E.2d 685, 689 (5th Dist. 2002). The best evidence of the rule's intent is the language of the rule, "which must be given its plain and ordinary meaning." Paris v. Feder, 179 Ill. 2d 173, 688 N.E.2d 137, 139 (1997). The courts have also held that prior to looking at legislative history, the court "must first look to the words" in the rule to ascertain the intent. City of East Peoria v. PCB, 117 Ill. App. 3d 673, 452 N.E.2d 1378, 1382 (3rd Dist. 1983). Thus, as stated above, the Board need look no further than the language of Section 302.105(c), which clearly articulates a definition of high quality waters that includes Hickory Creek.

However, the Board will look to the Board's opinion accompanying the proposed antidegradation rules and the underlying federal (USEPA) guidance to bolster the Board's interpretation of Section 302.105. *See* Revisions to Antidegradation Rules: 35 Ill. Adm. Code 302.105, 302.205, 302.206, and 102.800-102.830, R01-13 (June 21, 2001). The antidegradation rules were proposed by the IEPA and coincide with the federal regulations at 40 C.F.R. §131.12. Antidegradation Rules, R01-13, slip op. at 3. Section 302.105(a) coincides with the federal approach to protect Tier 1 waters and Section 302.105(c) coincides with protection of Tier 2 waters. *Id*. Tier 1 in the federal scheme is based on achieving and maintaining existing stream uses. *Id*. Tier 1 sets the minimum level of protection and is intended to be the absolute floor of water quality protection for all waters of the United States. *Id*. Tier 2 of the federal program addresses waters whose quality exceeds the levels necessary to support the propagation of fish, shellfish, and wildlife and recreation in and on the water. Water quality cannot be lowered below the level necessary to protect the "fishable/swimmable" uses and other existing uses. *Id*.

The Board indicated that the requirements found in Section 302.105 are "a combination of prohibitions on uses and less sharply-defined policy to avoid or minimize effects of activities on a water source. [citations omitted] The prohibitions are no loss of existing use and no lowering of water quality in exceptionally high quality or outstanding resource waters." Antidegradation Rules, R01-13, slip op. at 4. The Board acknowledged that all increased loading would not require the same level of antidegradation assessment; however, the Board noted that the IEPA would do the antidegradation assessment on a case-by-case basis. Antidegradation Rules, R01-13, slip op. at 13. The Board also noted that language offered and rejected by the Board, would have required the IEPA to examine the increased loading on waterbodies as a whole and not on a parameter-by-parameter basis. *Id*. The Board concluded that the implementation procedures should allow the IEPA to decide compliance with antidegradation provisions on a case-specific basis and what level of review would be appropriate. *Id*.

Further, regarding Tier 2 waters (high quality waters), USEPA's guidance on implementation of antidegradation standards states "All parameters do not need to be better quality than the State's ambient criteria for the water to be deemed a 'high-quality water.'" USEPA believes that it is best to apply antidegradation on a parameter-by-parameter basis. Otherwise, there is potential for a large number of waters not to receive antidegradation protection, which is important to attaining the goals of the Clean Water Act to restore and maintain the integrity of the Nation's waters." *Water Quality Standards Handbook*, Chapter 4, Pg. 4-7.

Based on the plain reading of Section 302.105, as well as the intent of the antidegradation provisions articulated by the Board and USEPA's guidance, the Board finds that Hickory Creek does meet the definition of high quality waters. Thus, the Board further finds that the IEPA was required to review the increased loading of the New Lenox's plant under Section 302.105(c).

Necessary to Lower Water Quality(35 Ill. Adm. Code 302.105(c)(1)). Having determined that Section 302.105(c) does in fact apply in to the permit application filed by New Lenox, the Board will examine petitioners' arguments relating specifically to phosphorus and nitrogen. The first provision of Section 302.105(c) that petitioners challenge is under subsection (c)(1) and the petitioners argue that the IEPA did not demonstrate that increasing phosphorus loading is necessary to accommodate important economic or social development. The petitioners note that the federal guidance on antidegradation review requires that a determination be made that pollution controls needed to maintain high-quality water will interfere with the proposed development. The petitioners assert that IEPA's argument that expansion of the New Lenox plant is necessary to accommodate future growth of the area does not address the issue of how installation of pollution controls would affect future growth. Thus, according to Section 302.105(c), lowering water quality must be considered only if such lowering of water quality is "necessary" to accommodate future growth of the area. *See* 34 Ill. Adm. Code 302.105(c) and Antidegradation Rules, R01-13, slip op. at 3.

USEPA's *Water Quality Handbook* states in "high-quality waters", before any lowering of water quality occurs, there must be an antidegradation review consisting of a finding that lowering of water quality is necessary to accommodate important economical or social development in the area in which the waters are located. *Water Quality Standards Handbook*,

Chapter 4, Pg. 4-7. As noted by the petitioners, USEPA's interim economic guidance for water quality standards states:

> When performing an antidegradation review, the first question is whether the pollution controls needed to maintain the high-quality water will interfere with the proposed development. If not, then the lowering of water quality is not warranted. If, on the other hand, the pollution controls will interfere with development, then the review must show that the development would be an important economic and social one.

The interim guidance describes the various steps involved in performing an economic impact analysis as a part of the antidegradation review. These steps include: the calculation of annual pollution control project costs and the development of total annualized costs on per household basis; financial analysis to determine if lower water quality is "necessary"; and determination of whether economic and social development would be important. The interim guidance provides detailed discussion on each step specific to both public-sector developments and private-sector projects.

The record does not contain any analysis to assess the impact of installing phosphorus controls on the area's future growth. Other than a general cost estimate for removal of both nitrogen and phosphorus contained in the IEPA's responsiveness summary, there is no information in the record addressing the economic impact of installing phosphorus controls consistent with the USEPA guidance. Although IEPA asserts that the expansion was part of an approved Water Quality Management Plan supported by NIPC, it is not clear whether that plan included an economic analysis consistent with the USEPA guidance to demonstrate that lowering of water quality is necessary to accommodate growth in the area. Further, the Water Quality Management Plan is not included in the permit record. Therefore, the Board finds that the IEPA failed to follow the requirements of Section 302.105(c)(1) and determine that "important economic or social development" necessitated lowering of water quality in Hickory Creek.

Water Quality Standards (35 Ill. Adm. Code 302.105(c)(2)(B)(i)). The antidegradation provisions require the IEPA to assure that the applicable numeric or narrative water quality standard will not be exceed as a result of the proposed activity. The petitioners assert that the proposed increased loading of phosphorus would cause or contribute to violations of water quality standards for offensive conditions, dissolved oxygen, and pH. The IEPA and New Lenox argue that the increased loading of phosphorus will not impact Hickory Creek. A detailed discussion of the impact of increased loadings on specific water quality standards is presented later in this opinion.

However, the Board notes that neither New Lenox's permit application nor the IEPA's antidegradation assessment identify or quantify the potential impacts of the increased phosphorus loadings. The Earth Tech study of the stream offers little assistance in determining the impact of phosphorus on the stream, and the Agency's review of the study can only conclude that there will be "no major adverse impact . . . however, the information may suggest a slight impact." R. at 561.

The record establishes that there will be an increased loading of phosphorus. The evidence in the record also establishes that there are already algal blooms in Hickory Creek. Hickory Creek has historically supported a diverse assemblage of fish species (Bland, R. at 107-108, 116-118; Smith, R. at 115). The record does not support the IEPA's determination that the increased phosphorus levels will be protective of the diverse assemblage of fish species. In fact, there is no evidence of any study of the fish community in relation to the permitted increase in phosphorus loading. Therefore, the record does not support the IEPA's grant of a permit to increase phosphorus loading in Hickory Creek.

Alternatives Evaluation (35 Ill. Adm. Code 302.105(c)(2)(B)(iii). According to Section 302.105(c)(2)(B)(iii), IEPA's antidegradation assessment must assure that all technically and economically reasonable alternatives to avoid or minimize the extent of the proposed increase in pollutant loading have been incorporated into the proposed expansion. Petitioners argue that the IEPA considered only land application as an alternative and that alternative is not sufficient to meet the requirements of Section 302.105(c)(2). IEPA disagrees and maintains that the record establishes that the requirements of Section 302.105(c) have been met. IEPA asserts that Section 302.105(c)(2)(B)(iii) does not require IEPA to consider technology controls as a reasonable measure to avoid or minimize proposed increase in pollutant loading. Ag. Br. at 39. Thus, IEPA argues that no nutrient controls were incorporated in New Lenox's NPDES permit pursuant to Section 302.105(c)(2)(B)(iii). *Id.*

The Board disagrees with IEPA's position. Section 302.105(c)(2)(B)(iii) specifically requites that all technical and economically reasonable measures to avoid or minimize the extent of the increased loading be incorporated into the permit. The language does not preclude the consideration of technology controls as a reasonable measure to avoid or minimize the extent of proposed loading. IEPA did not include any technology controls in its evaluation of technically and economically reasonable alternatives for nutrients control. The record establishes that the New Lenox and the IEPA considered only limited alternatives to discharge. Although the record demonstrates that land application may be cost prohibitive (*see* R. at 413-18); as indicated above the record contain no analysis concerning treatment for phosphorus.

The Board notes that USEPA Region 8's guidance on antidegradation implementation, which was part of the record considered by the Board in adopting the antidegradation rules, addresses the issue of evaluation of alternatives to lowering water quality. This guidance sets forth that alternatives analysis must include substantive information pertaining to costs and environmental impacts associated with the alternatives considered for evaluation. Further, USEPA guidance sets forth that alternatives analysis must address pollution prevention measures, reduction of scale of the project, water recycling or reuse, process change, innovative treatment technology, advanced treatment technology, seasonal discharge options, improved operation and maintenance, and alternative discharge locations.

While all alternatives may not be applicable to a specific project, the Board believes that those alternatives that are technically feasible must be considered for evaluation. Regarding publicly owned treatment works (POTW), the Board notes that IEPA's expert, Mr. Frevert, testified in R01-13 that alternatives analysis for POTW include an evaluation of proven treatment technology, alternative discharge locations, and modified design criteria. R01-13,

November 17, 2000 Hearing Transcript at 191-92. Mr. Frevert noted that unless there is an extremely pressing environmental need or obvious ramifications, the IEPA stops short of requiring wholesale add-on additional technology. *Id.*

As noted above, USEPA's guidance contemplates advanced treatment technology. Further, IEPA's position during the antidegradation rulemaking suggests the consideration of add-on controls as a part of alternatives analysis if there are pressing environmental need or obvious ramifications. The record establishes that serious environmental concerns were raised during the permit process regarding the issue of increased nutrients loading, particularly phosphorus. R. at 66-68 and 357. In light of this, IEPA should have considered technology controls as a part of alternatives review. Therefore, the Board finds the IEPA did not meet the provisions of Section 302.105(c) relating to consideration of alternatives to the increased discharge.

Summary of Findings

Based on all of these factors, the Board finds that the increased loading may cause degradation of Hickory Creek. Therefore, the Board finds that pursuant to Section 302.105(c), the IEPA must determine that the increased loading is necessary for important economic or social development. As discussed above, New Lenox and the IEPA failed to do so. The Board also finds that pursuant to Section 302.105(c)(2)(B)(i), the IEPA must assure that increased phosphorus loading on Hickory Creek will not result in exceedances of the water quality standards. Thus, the Board finds that the issuance of the permit violates the provisions of the Board's antidegradation regulations (*see* 35 Ill. Adm. Code 302.105) and the permit must be remanded to the IEPA for further antidegradation assessment relating to phosphorus and nitrogen.

Existing Uses (35 Ill. Adm. Code 302.105(a) and (c)(2)(B)(ii))

In addition to the specific argument regarding antidegradation provisions concerning phosphorus and nitrogen, the petitioners also argue more generally that the record does not support the IEPA's determination that existing uses will be protected with the increased discharge allowed by the permit. And therefore, petitioners assert that, the issuance of the permit violates the Act and Board regulations.

Petitioners' Arguments

Petitioners argue that the Board's antidegradation regulations require that, before permitting an increased discharge, "the IEPA 'must assure . . . [that] all existing uses will be protected.'" Pet. Br. at 29, citing 35 Ill. Adm. Code 302.105(c)(2)(B)(ii). Petitioners further argue that "existing uses" include the existing aquatic community and species diversity. Pet. Br. at 29, citing 35 Ill. Adm. Code 302.105(a).

Petitioners argue that, although the IEPA concluded that New Lenox's increased discharge would not affect aquatic life or other uses of Hickory Creek, "there is nothing in the record to support that conclusion." Pet. Br. at 40. Petitioners acknowledge the Earth Tech study

concluding that the "invertebrate community will likely not be significantly altered by the proposed treatment plant expansion." *Id*., citing R. at 515. Petitioners argue, however, that Earth Tech could not reasonably reach conclusions about discharges from an expanded plant based on its operations in 2002. Petitioners dismiss Earth Tech's conclusion by comparing it to "saying that the fact that a man is not getting fat while eating 2500 calories a day means that he will not gain weight if he begins eating 3500 calories a day." Pet. Br. at 40. Petitioners conclude that the IEPA did not assure protection of existing uses simply "by relying uncritically on an unsupported conclusion about the future based on a methodologically unsound study of the present." *Id.*

IEPA's Arguments

The IEPA argues that, "[c]ontrary to Petitioners' belief, neither the Act nor the Board regulations require the IEPA to protect existing conditions" in Hickory Creek. Ag. Br. at 20. The IEPA claims that the Board's antidegradation regulations require that existing uses must be protected. *Id*., citing 35 Ill. Adm. Code 302.105(a). The IEPA further claims that "[t]he Board's water quality standards are considered protective of existing uses." Ag. Br. at 20, citing Antidegradation Rules, R01-13. The IEPA states that, "[a]s long as there is substantial evidence in the record to show that the final permit complies with all applicable water quality standards, the IEPA has ensured that the existing uses of Hickory Creek are fully protected." Ag. Br. at 20.

New Lenox's Arguments

New Lenox argues that the permit will protect existing uses and is in compliance with the antidegradation provisions of the Board's rules. Vill. Memo at 3, 5.

Petitioners' Reply

Petitioners argue that respondents have claimed it is sufficient to comply with applicable Board regulations if "there is substantial evidence in the record to show that the final permit complies with all water quality standards." Reply at 24, citing Ag. Br. at 20; *see* 35 Ill. Adm. Code 302.105(a), 302.105(c)(2)(B)(ii). Petitioners further argue that this effectively claims "that IEPA had no duty to protect existing uses of Hickory Creek except to limit discharges so as to prevent violations of standards other than the existing use standard." Reply at 24.

Petitioners argue that respondents' claim conflicts with the plain language of the Board's regulations. Reply at 24. Petitioners argue that those regulations provide that "[u]ses actually attained in a surface water body . . . *whether or not they are included in the water quality standards*, must be maintained and protected." *Id*. (emphasis in original); *see* 35 Ill. Adm. Code 302.105(a). Petitioners further argue that the lists of prohibited degradations, making clear that "the focus of the section is on protecting the *actual* existing uses in the water body, not a proxy for existing uses based on attainment of water quality standards." Reply at 24 (emphasis in original). Petitioners further argues that the IEPA's 2001 proposal to revise the Board's antidegradation regulations provided that "existing uses *actually attained* in the water body must be maintained and protected." *Id*. (emphasis added); *see* Revision to Antidegradation Rules, Antidegradation Rules, R01-13, slip op. at 13 (June 21, 2001) (first notice opinion). Noting that

the Board's regulations separately require permit limits "necessary to meet water quality standards" (35 Ill. Adm. Code 309.141(d)(1)), petitioners suggest that accepting the respondents' argument on existing uses would interpret the antidegradation section "out of existence." Reply at 24; *see* 35 Ill. Adm. Code 302.105(a).

Board Analysis and Findings

One of the most important tenets of the antidegradation regulations is the protection of existing uses of all waters of the State. As noted by the petitioners, the regulations at Section 302.105(a) sets forth that "uses actually attained in a surface water body or water body segment on or after November 28, 1975, whether or not they are included in the water quality standards, must be maintained and protected." Thus, while the Board's water quality standards provide a yard stick for assessing the protection of existing uses, an assessment to ensure the protection of existing uses in surface water body or water body segment is not limited to a determination of compliance with the existing water quality standards. This is particularly true in situations like the present case where the constituents of concern do not have an established water quality standard.

The record establishes that there will be an increased loading of phosphorus. The evidence in the record also establishes that there are already algal blooms in Hickory Creek. Hickory Creek has historically supported a diverse assemblage of fish species (Bland, R. at 107-8, 116-18; Smith, R. at 115). The record lacks evidence to establish that the increased phosphorus levels will be protective of the "existing uses" of Hickory Creek as a high quality stream habitat containing a diverse assemblage of fish species. In fact, there is no evidence of any study of the fish community in relation to the permitted increase in phosphorus loading. Further, as discussed below, the evidence in the record indicates that the IEPA failed to assure that the water quality standards for offensive conditions, dissolved oxygen, pH and copper will not be violated because of the increased discharge allowed under the permit. Therefore, the Board finds that record does not support IEPA's determination that the permit to increase phosphorus loading to Hickory Creek is protective of the stream's existing uses.

Offensive Conditions (35 Ill. Adm. Code 302.105(c))

Petitioners argue that the narrative water quality standard for offensive conditions will be violated because of the increased discharge allowed under the permit.

Petitioners' Arguments

Petitioners argue that pursuant to 35 Ill. Adm. Code 302.105(c), the IEPA was required to assure that the increased pollution allowed under New Lenox's permit would not result in a violation of the narrative standard regarding offensive conditions and algal blooms. Pet. Br. at 33-34. Petitioners claim that the IEPA "pronouncement" that the discharge will not violate the standards is not sufficient to meet either of these requirements. Pet. Br. at 34. Further, petitioners assert that the record contains evidence of excessive and offensive algal blooms; however, the IEPA failed to limit the discharge to prevent violation of the offensive standard. Pet. Br. at 15, citing R. at 357. Rather, the petitioners maintain that the IEPA's response to the

request for limits was that the narrative standard is very difficult to apply to a permit and that the future adoption of nutrient water quality standards will resolve this issue. Pet. Br. at 15, citing R. at 357.

Petitioners assert that the record is devoid of any evidence to support the IEPA's finding. Pet. Br. at 34. Further, the Earth Tech Study did not consider whether New Lenox's current discharge causes algal blooms; rather, petitioners argue, the study concluded only that New Lenox's current discharge does not significantly harm macroinvertebrates in Hickory Creek, according to the petitioners. *Id*. Petitioners assert that there is no explanation on how the conclusion regarding macroinvertebrates is extrapolated to the conclusion that the increased discharge would not cause offensive algal blooms. *Id*.

Petitioners argue that the IEPA also provided no assurances with regard to the offensive conditions standard except to state that New Lenox's increased discharge would not cause a violation of the standard. *Id*. Petitioners state that this can only be considered genuine assurance "if one can assure something simply by unilaterally declaring it to be so." *Id*., citing Illinois Ayers Oil Co. v. IEPA, PCB 03-214, slip op. at 16-17 (Apr. 1, 2004), Bradd v. IEPA, PCB 90-173, slip op. at 17 (May 9, 1991).

Petitioners maintain that the IEPA offered no assurances that New Lenox's total discharge would not cause or contribute to violations of the offensive conditions standard. Pet. Br. at 35; *see* 35 Ill. Adm. Code 302.203. Petitioners claim that, although the IEPA acknowledged reports of algal blooms, the IEPA did not limit discharges because the offensive conditions standard is difficult to apply in a permit. Pet. Br. at 35, citing R. at 357. Petitioners opine that the IEPA's failure to limit the discharge to ensure that narrative standards will not be violated is contrary to the antidegradation rules. Pet. Br. at 35.

Petitioners argue that the Illinois Supreme Court has demonstrated a willingness to dismiss unsupported or conclusory claims by the IEPA. Pet. Br. at 35, citing IEPA v. PCB, 115 Ill. 2d 65, 71 (1986). Characterizing the IEPA record regarding the offensive conditions standard as a "conclusory and unsupported statement," petitioners argue that the Board should remand the permit because the record fails to show that the IEPA ensured that New Lenox's discharges would not violate that standard. *Id*., citing City of Marlborough, Massachusetts Easterly Water Treatment Facility, 2005 EPA App. LEXIS 14 (EAB Aug. 11, 2005).

IEPA's Arguments

The IEPA notes that petitioners commented that New Lenox's draft permit might lead to violations of the offensive conditions water quality standard and that nutrients are the likely cause of algal blooms in Hickory Creek. The IEPA states, however, that "[p]etitioners' comments are not supported by the facts present in the record." Ag. Br. at 10. The IEPA states that several factors other than nutrients can contribute to excessive algal growth: stream flows, dams, impoundments, turbidity, sunlight, and canopy cover. Ag. Br. at 11. The IEPA further states that "[i]t is possible to have excessive algal growth even if nutrients are not substantially elevated." *Id*. The IEPA claims "the record does not show that conditions cited by Petitioners existed because of New Lenox's discharge." *Id*. The IEPA further claims that its "review of the

record showed that Hickory Creek below the discharge point is supporting a balance aquatic life, typical levels of nutrients, high levels of dissolved oxygen, pH, and there were no sign[s] of algal bloom present due to excessive nutrient levels." Ag. Br. at 13-14.

The IEPA notes that, although petitioners claimed that Hydrodictyon and algae covered the surface of Hickory Creek, petitioners failed to note there is a dam located in Pilcher Park approximately 3.8 miles downstream from New Lenox's discharge. Ag. Br. at 11. The IEPA further notes that, although petitioners claimed that Hydrodictyon and algae covered Hickory Creek from Pilcher Park upstream nearly to Cedar Street, "[p]etitioners' comment does not indicate where the bloom stopped." *Id*. The IEPA notes that New Lenox's discharge occurs downstream from Cedar Street and that the bloom may have extended upstream beyond that discharge. *Id*. The IEPA claims that, if the bloom results from New Lenox's plant, then the bloom "would not extend upstream of the discharge." *Id*., citing R. at 361, 515, 639.

The IEPA argues that studying the local fish population is the best method for determining whether Hickory Creek has excessive algae. Ag. Br. at 11. Specifically, if oxygen concentration falls, the fish population suffers adverse effects. *Id*. The IEPA maintains that New Lenox's sampling in 2002 did not reveal visible signs of organic pollution or over-nitrification. Ag. Br. at 12. The IEPA argues that "[t]he record shows that Hickory Creek does not have an 'offensive conditions' situation, and that Hickory Creek is supporting a healthy and diverse aquatic life." *Id*. Accordingly, the IEPA claims "no permit limits are necessary with regard to offensive conditions." *Id*.

The IEPA acknowledges that petitioners have cited treatises stating "elevated levels of nutrients can cause impairment of streams." Ag. Br. at 12. While the IEPA is aware of this phenomenon, the IEPA states that these treatises are relevant only to developing nutrient criteria and not to developing effluent limits for a specific discharge. *Id*. The IEPA opines that these treatises do not actually "show that elevated levels of nutrients do exist in Hickory Creek below New Lenox's discharge point." *Id*. The IEPA asserts that the record also fails to "show that algal bloom in Hickory Creek below New Lenox's discharge point is causing adverse affects on dissolved oxygen levels and pH." *Id*. The IEPA points out that the permit contains dissolved oxygen limits that will contribute to improved dissolved oxygen concentrations. *Id*.

The IEPA notes that petitioners cite calculations performed by Professors Jenkins and Lemke in support of petitioners' claim that New Lenox's nutrient discharges have already affected Hickory Creek and that reduced discharges are needed to prevent further effects. Ag. Br. at 13. The IEPA asserts that the record "belies" this claim and that petitioners have inaccurately calculated these effects. *Id*. Specifically, the IEPA argues that petitioners compared a sample taken in 2000 with a sample taken at the same site in 2002. *Id*. The IEPA maintains that, "[i]nstead of using actual or estimated flow in Hickory Creek, [petitioners] used average August stream discharge from 1945 through 2001 and applied it to the August 20, 2002 [sample] for comparison purposes." *Id*. After noting that petitioners used a flow greater than an estimate based on drainage area or on actual flow measured by the USGS, the IEPA opines that application of the proper flow shows "no difference in the nutrient loading." *Id*.

The IEPA states that the decision not to incorporate permit limits for nutrients "is supported by facts in the record." Ag. Br. at 14. The IEPA concedes that nutrient limits would have been incorporated if the record showed offensive conditions attributable to New Lenox's effluent; however, the IEPA concluded that "[n]either the stream conditions regarding algal bloom nor concentrations of dissolved oxygen and pH indicate that that a limit is required under the Act or Board regulations." *Id*. The IEPA disputes petitioners' apparent claim that the IEPA "did not require limits for nutrients because narrative standards are difficult to apply to a permit." *Id*.; *see* R. at 357. The IEPA states that staff merely observed the difficulty in translating a narrative standard to the terms of a discharge permit and staff was not providing the legal basis for the decision not to incorporate those limits. Ag. Br. at 14-15.

The IEPA argues that a reasonable interpretation of the law and the facts in the record support the IEPA's determination. The IEPA notes that the Board regulation regarding offensive conditions provides that "[w]aters of the State shall be free from sludge or bottom deposits, floating debris, visible oil, odor, plant or algal growth, color or turbidity of other than natural origin." Ag. Br. at 42, citing 35 Ill. Adm. Code 302.203. The IEPA contends that "unnatural" is the operative word in determining the violation of Section 302.203. The IEPA argues that "[m]ere presence of algal growth that is of natural origin is not prohibited by Section 302.203." Ag. Br. at 44, citing 35 Ill. Adm. Code 302.203. The IEPA further argues that, because "[t]he record lacks any evidence to suggest that unnatural algal growth exists because of New Lenox's discharge," petitioners cannot demonstrate that New Lenox's permit would violate Section 302.203. Ag. Br. at 42; *see* 35 Ill. Adm. Code 302.203.

The IEPA argues that petitioners' interpretation of Section 302.203 is narrow and literal and lacks reasonableness. Ag. Br. at 42-43. The IEPA states that "[p]hosphorus is an essential nutrient for the health of aquatic life" and that is available both naturally and anthropogenically. *Id*. The IEPA argues that "[p]hosphorus is generally believed to be the nutrient in shortest supply in the freshwater ecosystems, and therefore, its concentrations may often limit plant growth." Ag. Br. at 42. The IEPA further argues that a body of water may contain algae that are limited by a nutrient other than phosphorus or by other factors. Ag. Br. at 42-43. The IEPA thus rejects any suggestion by the petitioners that the Board's regulation "*strictly prohibits* the discharge of any levels of phosphorus in the receiving waters." Ag. Br. at 42 (emphasis in original). The IEPA claims that this "interpretation must be rejected as it produces impractical and absurd results." Ag. Br. at 43, citing Village of Fox River Grove v. PCB, 702 N.E.2d 656, 664 (1998).

In support of this claim, the IEPA cites City of East Moline v. IEPA, PCB 87-127 (Nov. 15, 1989), in which the City sought a variance from the Board's offensive conditions regulation for the City's discharge. Ag. Br. at 43; *see* 35 Ill. Adm. Code 302.203. The IEPA states that the Board not only denied the requested variance but also found a violation of that regulation based upon findings that "the quality of the water changed from clear to brown and turbid; sludge was up to 14-20 inches deep; no fish were found below the discharge point in the tributary, but were found upstream; and benthic organisms were reduced substantially." Ag. Br. at 43, citing City of East Moline v. IEPA, PCB 87-127, slip op. at 8 (Nov. 15, 1989). The IEPA concludes that "[p]etitioners have failed to meet the burden of proof required under the *City of East Moline*." Ag. Br. at 43.

New Lenox's Arguments

New Lenox disputes petitioners' argument that algal growth in Hickory Creek constitutes an offensive condition requiring nutrient limits in New Lenox's permit. Vill. Memo. at 9. New Lenox argues that algae alone are not the problem, as algae are a vital part of aquatic life. *Id*.; Vill. Statement at 26-27; R. at 364. New Lenox opines that algae must be assessed in relation to levels of dissolved oxygen and fish populations. Vill. Memo at 9; Vill. Statement at 27. Specifically, algal activity can result in nighttime dissolved oxygen depletion, which in turn may adversely affect fish. R. at 361. However, New Lenox states that Hickory Creek has fish populations that are not indicative of low dissolved oxygen concentrations. Vill. Memo at 9; R. at 361. New Lenox points to the IEPA's conclusion that the incremental nutrient loading anticipated to result from this project is not expected to increase algae. Vill. Memo. at 9, citing R. at 565; Vill. Statement at 27. New Lenox argues that that the IEPA's permitting decision should be upheld where the IEPA has appropriately considered petitioners' arguments and assessed the water quality of Hickory Creek. Vill. Memo. at 9.

New Lenox further argues that, even if the IEPA had accepted petitioners' claims regarding algae, the IEPA still could reasonably have determined that nutrient limits are not appropriate. Vill. Memo. at 9. New Lenox first notes that the IEPA is aware that other entities discharge into the stream. *Id*.; *see* R. at 68. New Lenox argues that, under these circumstances, nutrient limitations should be applied to the entire stream and not to a single discharger. Vill. Memo. at 9, citing Communities for a Better Environment v. State Water Resources Control Board, 1 Cal. Rptr. 3d 76 (Cal. 1st Dist. 2003). New Lenox further notes that the IEPA has begun to consider nutrient standards and argues that standards should not now be applied through the Board's determination of a permit appeal. Vill. Memo. at 10.

Petitioners' Reply

Petitioners argue that the IEPA failed to comply with the IEPA's legal duty to assure that New Lenox's permit would not lead to violations of water quality standards regarding offensive conditions. Reply at 18. Petitioners argue that the IEPA "offers nothing" to meet the IEPA's legal standard of assuring that the new discharge combined with the existing discharge would not cause or contribute to violations of water quality standards in the future. Reply at 18.

Petitioners argue that the IEPA now admits that the Earth Tech study on which the IEPA relied to demonstrate compliance with the water quality standards is only valid for the limited purpose to show that the existing discharge is not adversely impacting Hickory Creek. Reply at 18, citing Ag. Br. at 7. Petitioners express certainty that the Earth Tech study does not support IEPA's conclusion that the "incremental nutrient loading" from New Lenox's expanded discharge is "not expected to increase algae or other noxious plant growth, diminish the present aquatic community or otherwise aggravate existing stream conditions." Reply at 18-19, citing R. at 6.

Petitioners dispute the IEPA's opinion that the algal growth observed in Hickory Creek may be attributable to natural causes. Pat. Reply at 20, citing Ag. Br. at 42. Petitioners respond

that the IEPA found numerous persons who have observed excessive and offensive algal blooms. Reply at 20, citing R. at 76, 80, 82-3, 110. Petitioners note that only one of those person is a freshwater scientist but stress that the IEPA has listed Hickory Creek as impaired by "excess algal growth." Reply at 20. Petitioners also claim that Hickory Creek "was known to experience wild dissolved oxygen swings that IEPA agreed were probably the result of algal activity." Reply at 20, citing R. at 67. Petitioners further claim that two scientists offered comment that "stream conditions caused by the discharges from New Lenox and other dischargers were conducive to algal blooms." Reply at 20, citing R. at 303-09.

Petitioners also dispute the IEPA's claim that "conditions immediately below the New Lenox plant are not worse that those above the plant and that the observed algal bloom may have extended above the plant." Pet. Replay at 20, citing Ag. Br. at 8, 11. Petitioners argue that some evidence collected downstream from New Lenox's plant shows degradation caused by the plant, although petitioners state that "Earth Tech did not think it was 'definitive.'" Reply at 20-21, citing R. at 514, 561. Although petitioners acknowledge that nutrients are discharged upstream from New Lenox, they stress scientific treatises recognizing that "nutrient pollution often has an effect well below the discharge point where flow and other conditions cause the excess nutrients to cause algal blooms. Reply at 21, citing R. at 125, 255-63. Petitioners argue that the Board recognized this phenomenon "years ago when it established limits for phosphorus discharges up to 25 miles above a lake." Reply at 21, citing 35. Ill Adm. Code 304.203; *see* Proposed Amendment to Phosphorus Effluent Standard, R87-6 (Apr. 12, 1990).

Petitioners discount testimony that the reported algal bloom extends upstream from New Lenox's plant. Reply at 21 n.13, citing Ag. Br. at 11. Petitioners claim that it is not necessary to address this testimony "both because nutrient pollution may have its effect miles below the discharge and, as everyone agrees, there are dischargers above New Lenox." Reply at 21 n.13. Petitioners suggest that the effect of New Lenox's discharge is felt most strongly downstream "where the algae have had time to use the phosphorus from New Lenox and there are suitable sunlight and flow conditions." *Id*. Petitioners argue that the issue in this proceeding is not whether they have proven that New Lenox is solely responsible for problems in Hickory Creek. *Id*. "The question is whether IEPA assured that New Lenox will not contribute to 'offensive conditions' in Pilcher Park and other sites perhaps many miles below the discharge point." *Id*.

Board Analysis and Findings

The Board finds that the record does establish the presence of algal blooms in Hickory Creek below New Lenox's discharge. However, the next question is whether those algal blooms are the result of New Lenox's discharge or natural causes. The Board has reviewed the record and finds that the evidence is not adequate to make a determination as to the cause of the algal blooms in Hickory Creek. However, since algal blooms are already present in the receiving stream, the Board believes that IEPA should have evaluated the impact of the increased nutrients loadings on stream algal activity to ensure that the permit as issued would not cause or contribute to a violation of the narrative standard.

The record indicates that Hickory Creek's water quality is affected by nutrients. IEPA listed Hickory Creek in its 2002 draft 303(d) list as impaired for nitrogen, phosphorus, and other

parameters. Although IEPA now asserts that the basis for partial impairment is only TDS, there is no evidence in the record to support this assertion other than an email communication from Gregg Good to Howard Essig and others. R. at 275. Given that Hickory Creek is listed as being impaired for nutrients and excess algal growth, the Board finds that IEPA failed to assure that the narrative standard for offensive conditions will not be violated because of the increased discharge allowed under the permit. Thus the issuance of the permit violates Section 302.105(c).

Dissolved Oxygen and pH (35 Ill. Adm. Code 302.105(c))

Petitioners argue that the increased discharge allowed under the permit will result in exceedances of the water quality standards for dissolved oxygen and pH in violation of Section 302.105(c).

Petitioners' Arguments

The petitioners assert that "IEPA failed to assure that the increased discharge would not cause algal blooms that would cause violations of dissolved oxygen standard or the pH standard." Pet. Br. at 36. Although petitioners recognize that the permit includes a pH standard, petitioners note that the IEPA has acknowledged that nutrients can generate algal activity that may result in high pH levels. Pet. Br. at 17, citing R. at 369. Petitioners state that the IEPA has not explained "how pH limits in the permit will prevent nutrient discharges allowed by the permit from causing algal blooms that will cause violations of the Illinois pH standard." Pet. Br. at 17. Petitioners also stress that dissolved oxygen readings taken in Hickory Creek in 2003 are consistent with high levels of algal activity and with the risk of violating the dissolved oxygen water quality standard. Pet. Br. at 16-17, citing R. at 161, 364.

Petitioners argues that the record contains evidence that nutrients in Hickory Creek already cause violation of the pH water quality standard and evidence of dissolved oxygen swings that would cause violation of that standard during the summer. Pet. Br. at 36, citing R. at 126, 161, 266, 364. However, petitioners claim that the IEPA failed to assure that increased discharges of nutrients would not cause or contribute to violations of the pH or dissolved oxygen standards. Pet. Br. at 36. Petitioners claim that this assurance would require careful monitoring of pH and dissolved oxygen levels. *Id*. Petitioners further claim that Hickory Creek has never been studied during pre-dawn summertime conditions when algal activity is most likely to cause violations of dissolved oxygen standards. *Id*. Petitioners further argue that the IEPA cannot rely on monitoring performed at other times of day. Pet. Br. at 36, citing Perma-Treat of Illinois v. IEPA, PCB 93-159, slip op. at 10 (Dec. 16, 1993).

Petitioners dismiss the Earth Tech study, arguing that the study failed to demonstrate that New Lenox's plant is not causing or contributing to dissolved oxygen or pH problems. Pet Br. at 36. Petitioners argue that if the study had been performed correctly, the study would merely have demonstrated that the dissolved oxygen and pH levels caused by the discharges from New Lenox's plant were not affecting macroinvertebrate life at the four sites studied below New Lenox any more than pollution sources upstream from New Lenox were affecting the one site studied above the New Lenox plant. Pet. Br. at 36-37. Arguing that discharges from waste water treatment plants can cause algal activity far downstream from those discharges (Pet. Br. at

37, citing R. at 125, 262), petitioners claim that discharges from New Lenox and other sources are causing algal blooms at sites downstream from New Lenox. Pet. Br. at 37, citing R. at 80.

IEPA's Arguments

The IEPA disagrees with petitioners that the IEPA failed to assure that New Lenox's plant discharges would not cause violations of the standards for dissolved oxygen and pH. Ag. Br. at 44. The IEPA argues that this claim is based on the "erroneous belief that extra loading of nutrients from New Lenox's plant would impair the existing uses and would cause violation of the water quality standards." *Id*. IEPA asserts that its argument regarding nutrients apply to this issue as well. Ag. Br. at 45, citing Des Plaines, PCB 04-88, slip op. at 8.

IEPA also points to the two whole effluent toxicity (WET) tests performed to evaluate the existing conditions in Hickory Creek below New Lenox's discharge and the quality of the effluent and the likely effect on aquatic life. Ag. Br. at 15, citing R. at 377-401, 484-507. While the purpose of the WET tests is to detect toxicity caused by any toxicant that may be present in the effluent, IEPA relied on the tests to evaluate the effects of New Lenox's discharge on dissolved oxygen and pH. Ag. Br. at 16. IEPA states that during the tests effluent biochemical oxygen demand (BOD) can reduce dissolved oxygen in the beakers used in the toxicity tests. Ag. Br. at 16. The IEPA further states that a laboratory will aerate the beakers if it is necessary to preserve organisms for the duration of the testing. *Id*. Although the laboratory must report this aeration, two rounds of testing for New Lenox show no aeration. *Id*. "Dissolved oxygen was naturally maintained at least 8 mg/L throughout the tests for both effluent samples, indicating the effluent BOD was very low." *Id*. Because protective dissolved oxygen levels continued in the laboratory for the duration of the WET testing, the IEPA concluded that Hickory Creek would maintain dissolved oxygen despite the presence of BOD in the effluent. *Id*.

Regarding pH, IEPA states "[e]ffluent pH was also normal throughout the tests, which last 48 hours for *Ceriodaphnia* and 96 hours for fathead minnow." Ag. Br. at 16. Based on its observation that "nothing intrinsic to the effluent exists to make pH higher or lower than normal levels," the IEPA inferred that that New Lenox's effluent would have no direct impact on Hickory Creek. Ag. Br. at 16-17. Further, IEPA points out that New Lenox's permit includes a water quality-based effluent limit for both dissolved oxygen and pH. Ag. Br. at 45. Thus, IEPA concludes that petitioners have failed to meet their burden of showing that, "because of New Lenox's plant there is a violation of pH and dissolved oxygen water quality standards in Hickory Creek." Ag. Br. at 45.

New Lenox's Arguments

New Lenox asserts that Hickory Creek meets the water quality standard for dissolved oxygen. Vill. Memo at 8. Nonetheless, New Lenox agreed to the inclusion of a dissolved oxygen limit in the permit. *Id*. However, no limit for pH was required. *Id*. New Lenox points out that sampling performed by the IEPA for pH did detect a handful of limits above 9.0; however, a pH of over 9.0 may not be an unnatural condition. Vill. Memo at 10.

Petitioners' Reply

As noted above, the petitioners' position regarding dissolved oxygen and pH is that the additional nutrient discharge can generate excess algal activity, which may cause or contribute to a violation of the dissolved oxygen or pH water quality standard in Hickory Creek. Since petitioners' reply primarily dealt with effect of nutrients discharge on algal blooms, the petitioners' response is summarized under the discussion of offensive conditions. *Supra* at 40.

Board Analysis and Findings

As noted by the petitioners', the issue of dissolved oxygen and pH is directly linked with whether or not IEPA should have required nutrient control as a part of the permit. The petitioners' position is that the increased discharge of nutrients from New Lenox' WTP would result in excessive algal growth in Hickory Creek down stream of New Lenox's discharge and excess algal activity may cause or contribute to a violation of dissolved oxygen or pH water quality standard. The fact that IEPA did include effluent standards for dissolved oxygen and pH provides some assurance that New Lenox's discharge will not violate the water quality standards. However, it is not clear from the record as to whether the effluent standards are sufficiently protective to address the effects of increased nutrient loading on the stream's dissolved oxygen and pH.

Based on the two WET testing reports, IEPA concludes that New Lenox's effluent would have no "direct" adverse effects on the receiving stream dissolved oxygen or pH. Ag. Br. at 16-17. However, the WET tests do not address the effect of increased nutrients loading on receiving stream dissolved oxygen or pH. The record does not support a finding that the increased nutrient discharge would not cause or contribute to a violation of dissolved oxygen or pH water quality standard. Therefore, the Board finds that the permit as granted does not assure that the increased discharge would not result in violations of the dissolved oxygen or pH standards and the issuance of the permit violates Section 302.105(c).

Copper (35 Ill. Adm. Code 302.105(c))

Petitioners assert that the IEPA failed to ensure that the water quality standard for copper will not be violated due to the increased discharge allowed by the permit in violation of 35 Ill. Adm. Code 302.105(c).

Petitioners' Arguments

Petitioners argue that the permit does not comply with Board regulations because the IEPA failed to assure that the permitted discharge would not cause or contribute to a violation of the copper water quality standard. Pet. Br. at 37. Petitioners concede that the IEPA "purported to consider" limits that were necessary to prevent violations of numeric water quality standards; however, petitioners maintain that the IEPA's efforts did not assure that the copper limit would not be exceeded. Pet. Br. at 37. Specifically, petitioners argue that the IEPA generally followed USEPA guidance in performing a "reasonable potential to exceed" analysis." Pet. Br. at 38. Petitioners assert that the IEPA relied on two samples, and the analysis showed that the highest concentration of copper of two samples was 20.5 micrograms per liter (µg/L) "while the chronic

[water quality] standard for copper at the hardness level found in Hickory Creek is 20.6 µg/L." Pet. Br. at 9, citing R. at 508. The petitioners assert that based on these results, the IEPA found a potential to exceed the acute and chronic standards for copper." Pet. Br. at 37. Petitioners maintain that the IEPA then "threw federal guidance out the window and decided not to impose any copper limits in the permit or even establish a monitoring requirement. *Id*.

Petitioners argue that if the IEPA had applied the federal guidance, the permit would have had to include limitations, because the calculations showed that there was a reasonable potential for violating standards. Pet. Br. at 38. Petitioners assert that the IEPA's limited data of two samples showed a reasonable potential for New Lenox's discharge to exceed the acute water quality standard for copper by more than 200 percent. *Id*., citing R. at 508. Petitioners maintain that this record does not include "substantial evidence" that the IEPA ensured compliance with the acute copper standard and that the permit should be remanded to the IEPA on that basis. Pet. Br. at 38.

With regard to the chronic standard, petitioners claim that the IEPA ignored the federal guidance in favor of the IEPA's rule that allows permits to be issued based on an average of two samples. Pet. Br. at 38, citing R. at 363. Petitioners argue that the IEPA's average of two or more samples to determine a reasonable potential to exceed "has never been approved by the Board or U.S. EPA and clearly is not protective." Pet. Br. at 39. Petitioners opine that the IEPA's use of only two samples as the basis to issue New Lenox's permit is "inherently unreliable." Pet. Br. at 38-39. Petitioners argue that the IEPA's conclusion with regard to copper lacks a reliable basis in the record and that the Board should remand the permit for consideration whether a copper limit is necessary. *Id*.

IEPA's Arguments

The IEPA notes that two copper samples collected by New Lenox showed concentrations of 0.0141 mg/L and 0.0205 mg/L, with an average concentration of 0.0173 mg/L. Ag. Br. at 9. The IEPA argues that, because this average value is less than the chronic water quality standard for copper of 0.0206 mg/L, the IEPA determined that permit limits for copper were not necessary. *Id*. The IEPA states that two additional considerations reinforced this conclusion: New Lenox's plant has been identified as having a low risk for high levels of metals, and there is no known source discharging copper into the plant. *Id*.

The IEPA uses USEPA's *Technical Support Document for Water Quality Based Toxics Control* (TSD) as a screening tool to determine if further analysis of water quality is necessary. Ag. Br. at 10. The IEPA maintains that, where there exists only a small number of samples, "the USEPA procedure does not give a valid result." *Id*. In those case, the IEPA decides whether to seek additional information before determining whether a contaminant has a reasonable potential to exceed its water quality standard. *Id*. Because the IEPA viewed New Lenox's plant as a low risk for high levels of metals and because New Lenox has no known source of copper, the IEPA did not require additional information. *Id*.

If the average of the two samples had exceeded the chronic standards, the IEPA would have incorporated copper limits into the permit or required six months of monitoring. *Id*. And if

either of the two samples had exceeded the chronic standard, the IEPA would also have incorporated copper limits into the permit or required six months of monitoring. *Id*. Further, if more data had appeared to be necessary or if one of the samples appeared to be an outlier, then the IEPA would have required additional sampling. *Id*.

The IEPA also maintains that if the IEPA believed that New Lenox might exceed the chronic cooper water quality standard, the IEPA would have expected a site-specific metals translator study to demonstrate that only about half of the copper is present in the dissolved form. Ag. Br. at 48. The IEPA argues that adjusting the allowable effluent concentrations to reflect this demonstration would result in an effluent limit of 0.0394 as "protective of the chronic dissolved standard at the end of the pipe." *Id*. The IEPA also stresses that Hickory Creek's dilution "would ensure that the New Lenox effluent would have no potential to exceed [the] water quality standard for copper." *Id*. The IEPA further stresses that the data does not show a significant amount of metals in Hickory Creek. Ag. Br. at 49. Finally, the IEPA states that neither "the land use in the area or the effluent itself are significant sources of copper." *Id*., citing R. at 361. Accordingly, the IEPA argues that it "did not include copper limits in New Lenox's permit as it has no reasonable potential to exceed the chronic water quality standard." *Id*. The IEPA further argues "that there is substantial evidence in the record to support the IEPA's finding that the permit as issued does not violate the copper water quality [standard]." Pet. Br. at 50

The IEPA states that USEPA experiments with aquatic life in the laboratory showed that the dissolved form of metals is toxic but also showed that the undissolved or suspended form of copper is not harmful. Ag. Br. at 46. The IEPA further states that the Board responded to this showing by adopting changes to General Use water quality standards on December 19, 2002. *Id*.; *see* Water Quality Triennial Review, R02-11. Specifically, the IEPA amended standards for most metals including copper by changing the basis for those standards from total metal, including suspended and dissolved forms, to dissolved metal alone. Ag. Br. at 46. For copper, this amendment included the addition of a "default conversion factor" to the previous hardness-based formula for determining the acute and chronic copper standards. *Id*.

The IEPA argues that "[a]ll municipal sewage treatment plants are expected to discharge measurable concentration of copper given the presence of copper in food and other domestic substances." Ag. Br. at 46. The IEPA states its opinion that the varying chemistry of communities' drinking water will determine whether and the extent to which copper pipes erode. Ag. Br. at 47. The IEPA further states that it considers copper concentration of 10 to 20 parts per billion (ppb) to be "average." Ag. Br. at 46-47. The IEPA further states that "copper levels over 30 ppb are what may be considered 'elevated' levels, and depending upon local stream hardness, may or may not exceed water quality standards." Ag. Br. at 47. The IEPA characterizes the copper levels in New Lenox's discharge as "low." *Id*. The IEPA argues that those levels do not compare to the levels at plants for which permits include a copper limits in their NPDES permits. *Id*. Accordingly, the IEPA states that "Petitioners' argument is flawed in that it assumes that [a] copper limit was necessary in this case." Ag. Br. at 46.

New Lenox's Arguments

New Lenox also disputes petitioners' argument that the permit may violate applicable numeric copper water quality standards. *See* Vill. Memo. at 11; Mot. SJ at 6. New Lenox argues that the IEPA considered whether the proposed discharge had the reasonable potential to violate water quality standards for copper. Vill. Memo. at 11. New Lenox notes that the IEPA considered whether to use USEPA methods to determine reasonable potential to exceed standards. *Id.*; R. at 509. The IEPA concluded that the USEPA method using a high multiplier did not provide valid results with a small number of samples. Vill. Memo. at 11; R. at 508-09. New Lenox points out that the IEPA noted that "[a]ll copper samples were reported less than the acute and chronic water quality standards." R. at 509. New Lenox argues that the IEPA correctly considered the reasonable potential to exceed copper water quality standards on the basis of sample results, the type of New Lenox's facility, and the nature of its discharge. New Lenox further argues that petitioners insist upon application of a USEPA analysis that is not appropriate in this case and would produce "artificially high results." Vill. Memo. at 11. New Lenox concludes by arguing that the effluent would not violate the chronic standard for copper and that no permit limit was necessary for copper. *Id.*

Petitioners' Reply

Petitioners argue that the IEPA relied on only two samples to determine whether New Lenox's discharge might violate the copper water quality standard. Reply at 22; *see* R. at 363. Petitioners further argue that one of those two samples effectively equaled the chronic standard and the USEPA's "technical guidance showed a reasonable potential for violation of both acute and chronic standards." Reply at 22. Petitioners claim that the IEPA concedes that the IEPA did not follow USEPA technical guidance and the IEPA declined to take more samples to determine whether New Lenox's discharge had a 'reasonable potential' to violate copper standards. *Id.*

Petitioners claim that the IEPA simply has argued that neither of the two samples shows a violation of the acute or chronic water quality standards for copper. Reply at 22, citing Ag. Br. at 47-48. Petitioners agree that neither sample exceeded the chronic standard but dispute the IEPA's conclusion from those results. Petitioners suggest that the IEPA has misunderstood the USEPA guidance that "when only a few tests are taken, it is statistically necessary to multiply the pollutant figures found in order to take into account uncertainty and assure that there will not be a violation." Reply at 22; *see* R. at 508. Petitioners argue that the IEPA did not refute this mathematical truth in the responsiveness summary and does not offer one in the IEPA's brief. Reply at 22.

Petitioners claim that the IEPA has professed "that it just knows that the copper levels found in the tests of New Lenox's discharge are not a problem based on its experience that copper levels over 30 ppb are what may be considered elevated levels." Reply at 22. Petitioners discount this profession on the basis that any facts supporting the IEPA's experience "do not appear in the permit record." *Id.* In addition, petitioners argue that, even if it had been well supported in the record, that experience would not override the standard of 0.0206 mg/L established by the Board. *Id.* Petitioners also claim that the IEPA has professed that the results of testing for copper are attributable to "erosion of pipes within homes and houses." Reply at 23, citing Ag. Br. at 47. Acknowledging that this may be "reasonable speculation," petitioners respond that Board regulations contain no exemption "for violations caused by pipe erosion."

Reply at 23. Petitioners also note the IEPA's claim that, "had it developed a site specific metal translator or allowed for dilution in a mixing zone[,] it might well have come to the conclusion that no copper limit was necessary." *Id*., citing Ag. Br. at 48. Also acknowledging that this claim may also be true, petitioners respond that the IEPA "cannot just assume the results of studies that it has not bothered to do and then claim that it has assured that there will be no problem." Reply at 23. Petitioners also stress that the IEPA cannot rely on the metal translator or dilution rationales because they are not included in the responsiveness summary. *Id.*

Board Analysis and Findings

The Board is concerned with the IEPA's reliance on limited copper sampling data to decide that permit limit was not warranted for New Lenox's discharge. Particularly, since one of the two data points available for copper in the record approximately equals the chronic standard. While IEPA contends that USEPA's TSD is not valid for small sample sizes because the TSD recommends a higher multiplier, it is not clear how taking an average of two sample results taken six months apart would account for any uncertainty associated with the samples. Given that the analysis in accordance with USEPA's TSD indicated a reasonable potential to exceed the standard, IEPA, at a minimum, should have required New Lenox to provide additional monitoring data before deciding on whether to incorporate copper limits into the permit. In light of this, the Board finds that IEPA failed to assure that discharge would not cause violations of the acute or chronic standard and the issuance of the permit violates Section 302.105(c).

CONCLUSION

The Board has reviewed the arguments from the parties concerning the burden of proof and standard of review, the responsiveness summary, the effect of the motion for summary judgment, and due process. The Board finds that none of these issues are dispositive of this proceeding. Clearly, petitioners bear the burden of proof and the Board reviews the record to determine if the issuance of the permit violates the Act or Board regulations. Further, the Board reviews the entire record and is not limited to the IEPA's reasoning or facts discussed by the IEPA in the responsiveness summary. The Board's prior decision denying a motion for summary judgment does not entitle respondents to a finding in their favor. And finally, New Lenox's due process rights have not been abridged by this proceeding. Therefore, the Board finds that none of the preliminary issues raised are dispositive of the proceeding.

After carefully reviewing the record and the parties' arguments on the permit issues, the Board finds that the IEPA failed to properly consider the effect of the increased discharge from the New Lenox plant on Hickory Creek. Specifically, the IEPA failed to properly review the increased discharge pursuant to 35 Ill. Adm. Code 302.105(c) and as a result the issuance of the permit violates 35 Ill. Adm. Code 302.105(c) and Section 39 of the Act (415 ILCS 5/39 (2004)). In particular the Board finds that the record establishes that the increased loading may degrade the stream and the IEPA did not consider the impact of increased loading of phosphorus and nitrogen on the receiving stream. Further, the record does not support the IEPA's determinations that the water quality standards for offensive conditions dissolved oxygen, pH, and copper will not be violated based on the increased loading to the stream. The Board also finds that the record does not demonstrate that existing uses will be protected given the increase in discharge

to Hickory Creek. The Board therefore remands the permit to the IEPA for additional review pursuant to the antidegradation provisions of the Board rules and consistent with today's opinion.

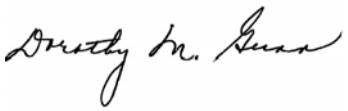
ORDER

The Board hereby remands to the Illinois Environmental Protection Agency the permit issued to New Lenox for the expansion of the wastewater treatment plant for additional review consistent with this opinion an order.

IT IS SO ORDERED.

Section 41(a) of the Environmental Protection Act provides that final Board orders may be appealed directly to the Illinois Appellate Court within 35 days after the Board serves the order. 415 ILCS 5/41(a) (2004); *see also* 35 Ill. Adm. Code 101.300(d)(2), 101.906, 102.706. Illinois Supreme Court Rule 335 establishes filing requirements that apply when the Illinois Appellate Court, by statute, directly reviews administrative orders. 172 Ill. 2d R. 335. The Board's procedural rules provide that motions for the Board to reconsider or modify its final orders may be filed with the Board within 35 days after the order is received. 35 Ill. Adm. Code 101.520; *see also* 35 Ill. Adm. Code 101.902, 102.700, 102.702.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on April 19, 2007, by a vote of 3-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board