ILLINOIS POLLUTION CONTROL BOARD
November 15, 1989

CITY OF EAST MOLINE,	)	
	)	
Petitioner,	)	
	)	
v.	)	PCB 87-127
	)	(Variance)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,	)	
	)	
Respondent.	)	

MESSRS. ROY M. HARSCH AND JAMES J. DeNAPOLI, ATTORNEYS-AT-LAW, APPEARED ON BEHALF OF PETITIONER; AND

MESSRS. STEPHEN C. EWART AND JAMES MORRIS, ATTORNEYS-AT-LAW, APPEARED ON BEHALF OF RESPONDENT.

OPINION AND ORDER OF THE BOARD (by B. Forcade):

This matter comes before the Board on an August 14, 1987 petition filed by the City of East Moline ("East Moline") seeking variance from 35 Ill. Adm. Code 304.124 relating to the effluent standards for iron, manganese and total suspended solids ("TSS"), 35 Ill. Adm. Code 304.106 relating to offensive discharges, and 35 Ill. Adm. Code 309.102 requiring NPDES permits. Petitioner also seeks relief from the water quality standards of 35 Ill. Adm. Code 302.203 relating to unnatural sludge for East Moline's discharge to an unnamed tributary of the Mississippi River.

East Moline requests this variance in order to continue operation of its public water supply and distribution system and to allow the discharge from East Moline's water treatment plant to exceed the regulatory maximums for iron, manganese and TSS until East Moline may be able to obtain a site-specific limitation for such discharge (R87-35) or until 24 or 33 months after the date site-specific relief is denied.

Procedural History

East Moline's original petition for a variance was filed on August 14, 1987. At that time, East Moline requested a 5-year variance from iron, manganese, and total suspended solids, the conditions of its NPDES permit and unnatural sludge regulations. This five-year period would be the maximum allowable under the Illinois Environmental Protection Act ("Act") for a single variance. East Moline amended the petition on October 5, 1987 to include alternative compliance methods. The Illinois Environmental Protection Agency ("Agency") filed its

recommendation to deny the variance on November 16, 1987. A hearing was authorized by the Board on January 7, 1988. The hearing was held April 20, 1989. At hearing, attended by various members of the public, the Agency agreed to recommend the granting of a variance provided that East Moline comes into compliance by December of 1990. (R. 24) East Moline's brief was filed June 16, 1989 and the Agency's final comments were filed June 19, 1989.

On November 20, 1986, the Agency issued an NPDES permit, No. IL0037745, to East Moline establishing concentration limits for TSS of 15 mg/l for a 30-day average and 30 mg/l for the daily maximum. On December 19, 1986, East Moline appealed the condition in the permit establishing concentration limits for TSS to the Board. In PCB 86-218, the Board affirmed the Agency's decision and on appeal, the Third District Appellate Court of Illinois affirmed the Board's decision. City of East Moline v. IPCB, ___ Ill. App. 3d ___, 544 N.E.2d 82 (Third District, 1989).

Background

East Moline owns and operates a public water supply treatment plant located in Rock Island County, East Moline, Illinois. The plant provides clarified, filtered, softened, and disinfected water to approximately 22,000 residents and 100 businesses in the city.

East Moline's source of raw water is the Mississippi River, from which water is drawn through a 30-inch diameter intake line to the pumping station. Presently, the plant treats an annual average of 3.5 million gallons per day ("MGD"), with capacity to treat 10 MGD.

Water treatment begins at the pumping station. Powdered activated carbon is added to the raw water, which is then pumped to two separate rapid-mix units. Lime and alum are added to these units. The flow from each unit subsequently passes through paddle-wheel flocculation basins followed by rectangular settling basins. Chlorine is added at approximately the mid-point of the clarification units. The treated water from the settling units is combined and flows through rapid sand filtration units to storage in a "clearwell" before entering the distribution system. Post-chlorination occurs after filtration to maintain a chlorine residual in the distribution system. Backwash water from the filters and solids from the settling tanks and drain lines are discharged into the adjacent unnamed tributary, which flows into a storm sewer and then to the Mississippi River.

East Moline discharges wastewater from (1) backwashing the filters each day and (2) flushing the sedimentation basins every other day. (R. 29) Discharges are intermittent and last twenty minutes to one hour. The filters backwash discharged an average

of 268,600 gallons per day and the settling basin discharged an average of 26,900 gallons per day in 1988.

East Moline's average discharge during 1988 was 1,544 pounds per day suspended solids, (R. 30), a reduction of 79% compared to an average of 7,200 pounds per day discharged in earlier years. (Ex. 4 at p. 96). Of this amount, the settling basin discharge accounts for 87% of the total solids with 13% attributable to the filter backwash water. (Ex. 4 at p. 97). The solids discharged are composed of the following:

River Sediment	1,153 lbs/day (74.6%)
Aluminum Hydroxide	304 lbs/day (19.7%)
Powdered Activated Carbon	87 lbs/day (5.6%)
Total	1,544 lbs/day - 1988 average

(Ex. 4 at p. 96)

In addition, discharge from the plant has contained visible solids and exhibited turbidity.

In 1988, iron, manganese, and TSS concentrations were as noted below.

Six Month Concentrations - mg/l

	Settling Basin Discharge	Filter Backwash Discharge	Regulatory Limits*
Iron	8.1	1.46	2.0
Manganese	8.27	0.42	1.0
TSS - average	5,687	84	15.0
TSS - maximum	12,400	208	30.0

(R. 29-30 and Ex. 4 at pp. 136-137)

The total length of the unnamed tributary and storm sewer is 16,000 feet. (R. 30). The upper reaches are dry much of the year and travel through residential areas, a golf course and along a city park. (R. 31-32). Both upstream and downstream of the plant the tributary is channelized or flows through a storm

* 35 Ill. Adm. Code 304.124(a) establishes the maximum concentration limits for iron, manganese and TSS discharged into Illinois waters, subject to the averaging rules contained in Section 304.104(a). East Moline's NPDES permit was in fact based on average and maximum TSS levels of 15.0 mg/l and 30.0 mg/l, respectively.

sewer for a distance of 6,000 feet upstream and another 6,000 feet downstream. (R. 31) The channelized section passes through an industrialized section of town where it is used for urban drainage. (Ex. 4 at pp. 41, 97 and 122). 1,000 feet downstream from the plant's discharge, the ditch flows into an enclosed storm sewer which flows to the Mississippi River. (Ex. 4 at pp. 41, 97 and 122-124).

The Mississippi River is generally in compliance with the water quality standards for manganese and other metals except iron. Suspended solids loadings in the Mississippi River are relatively high, averaging 57 mg/l in 1983 upstream of East Moline. Fish are plentiful in the Mississippi River in the East Moline area, with the variety changing with bottom conditions.

Preliminary Issues

In this variance petition, the primary issue is whether "immediate" compliance would impose an arbitrary or unreasonable hardship. One consideration in this determination is the environmental impact on human, plant, and animal life in the affected area. The burden of proof is on the petitioner. See Section 37(a) of the Act. Under Section 35(a) of the Act, the Board is not required to find that an arbitrary or unreasonable hardship exists exclusively because the regulatory standard is under review and the costs of compliance are substantial and certain. East Moline must prove that the hardship warrants temporary relief until full compliance is achieved, and this proceeding is independent of its site-specific petition. Furthermore, the hardship must not be self-imposed by the petitioner's inactivity or decision making. EPA v. Lindgren Foundry Co., 1 PCB 11 (1970) and Ekco Glaco Corporation v. IEPA and IPCB, ___ Ill.App.3d ___, 542 N.E.2d 147 (First District, 1989).

An important issue is whether East Moline has carried the burden of proof in establishing an arbitrary or unreasonable hardship. East Moline cites costs in excess of $300,000 per year; an increase in household user charges of $26 per year; and a cost of $485 per pound of solids discharged per day in its characterization of the hardship, alluding as well, without further explanation, to the economic slump experienced by the city and the competing demands for funds for other projects.

Since East Moline has not presented an argument that the cost to comply today would be more onerous than the cost to comply in 24-33 months, its economic argument is not relevant to the issue of "immediate compliance." East Moline argues that the cost should permanently excuse compliance. East Moline's arguments may be relevant to permanent relief in a site-specific proceeding but they are not relevant to temporary relief in a variance proceeding.

At issue also is the environmental impact of East Moline's activities. East Moline focuses primarily on the impact on the Mississippi River, which is not the point of discharge. East Moline claims that "the discharge ... either through the unnamed tributary or directly to the Mississippi will cause no adverse environmental impact on the Mississippi." (Pet. Br. at 2). It also asserts "no significant impact on the water quality of the ditch or the Mississippi." (Pet. Br. at 26). The Agency believes there is significant adverse impact from the point of discharge, which it estimates at 4,000 feet from the Mississippi. The Board's focus must be the unnamed tributary where the environmental impact begins.

East Moline raises several other arguments, such as (1) whether Section 304.103 might exempt it from complying with the effluent standard for iron and manganese since these originate in the Mississippi; (2) whether a mixing zone concept might be applied to grant relief from unnatural sludge or bottom deposit regulations in Section 302.203 and from settleable solids regulations of Section 304.106; (3) whether bypassing the unnamed tributary and discharging directly into the Mississipppi would justify granting a variance; and (4) whether relief previously granted to East St. Louis and Alton justifies the grant of a variance to East Moline.

In response to these arguments, respectively: (1) the Board finds the "effluent concentrations in excess of the standards" do not "result entirely from influent contamination" as Section 304.103 requires, but, rather, the treatment process creates the unacceptable, high concentrations of iron, manganese and TSS; (2) and (3) the Board is not persuaded by these arguments; and (4) the Board believes a grant of variance to other petitioners, who carry the burden of proof in their own cases, does not establish a right to a variance for East Moline. East Moline has not demonstrated identical factual circumstances. All petitioners are not identically situated and East Moline must prove its own case. City of Geneva v. IEPA, PCB 86-225, slip op. at p. 5, July 16, 1987.

Compliance Alternatives

In order to qualify for a variance, petitioner must submit a detailed compliance plan pursuant to 35 Ill. Adm. Code 104.121(f). In 1974, East Moline began investigating various compliance options. The construction of sediment lagoons was originally chosen as the least cost alternative. The 1974 study was updated in 1979. A further update was performed in August of 1979, which concluded that compliance could be achieved at a cost of $750,000.

In April of 1988, Greeley and Hansen submitted a preliminary report to East Moline which was updated with some further

explanation. (Ex. 8). Greeley and Hansen concluded that recycling at the water plant would be the preferred treatment option for the filter backwash at a total annual cost of $106,000. (R. 51). However, Greeley and Hansen has not yet recommended a preferred treatment option for the settling basin discharge. (R. 54-57). The total cost and total time requirements for each of the three options for settling basin discharges are as follows:

Treatment Option	Cost	Petitioner's Estimates of Time Required
Disposal at Wastewater Plant	$331,000	24 months
Lagooning at Water Plant	$308,000	24 months
Thickening and Belt Filter Dewatering	$349,000	33 months

As of this time, East Moline has not committed to a particular treatment option and continues to deliberate. It anticipates than an option will have been selected by the time the Board rules on R87-35.

A major area of dispute is the time required to achieve compliance. Altering its initial recommendation to deny the variance, at hearing, the Agency agreed that a variance should be granted provided East Moline comes into compliance by December, 1990. In its final comments, the Agency conceded that some revision, "but certainly not a twelve-month revision" was possible. The petitioner requests 24 or 33 months after the possible denial of site-specific relief (R87-35) and the compliance plan for the settling basin has yet to be chosen from among three acceptable options.

Discussion

The issue before the Board is whether or not East Moline has demonstrated that immediate compliance imposes an arbitrary or unreasonable hardship, which is not self-imposed, and which outweighs the adverse environmental impact. The environmental impact and "immediacy" of compliance must be measured from the date at which compliance was required until the date East Moline expects to be in compliance. The iron, manganese and total suspended solids regulations at issue here remain unchanged from their original adoption as Rule 408 in R70-8, effective February 3, 1972, 3 PCB 401 (January 6, 1972). Pursuant to Rule 408(c)(ii)(B), East Moline was required to be in compliance with the effluent limitations not later than December 31, 1973, almost 16 years ago.

The time required to construct facilities to treat the discharge and achieve compliance does not in itself create arbitrary or unreasonable hardship associated with immediate compliance. To say that violations exist which cannot be cured immediately does not prove the hardship of immediate compliance for which a variance should be granted. This principle was articulated early in the Board's history in Decatur Sanitary District v. IEPA, 1 PCB 359, 360 (1971):

> The District alleges that the proposed time schedule is "reasonable." If the regulation had been adopted in 1971, we would agree; two years is an acceptable timetable for design and construction of tertiary facilities of this size. But the regulation was adopted in 1967, and no reasons are given for the District's inaction for nearly four years. One cannot qualify for a variance simply by ignoring the timetable and starting late. While compliance within the remaining time may be impossible, and hardship suffered as a result is, so far as is alleged, due to the District's own inaction. To allow a variance on the basis of the present allegations would establish the preposterous proposition that the very existence of a violation is a ground for excusing it. (Emphasis added.)

"The variance provisions of the Act are intended to afford some flexibility in regulating the speed of compliance. (Emphasis added.) The provisions are not intended, however, to allow for open-ended variances because this would be inconsistent with the Act's objectives." City of Mendota v. Pollution Control Board, 161 Ill.App.3d 203, 211, 514 N.E.2d 218 (Third District, 1987), citing Monsanto Company v. Pollution Control Board, 67 Ill.2d 276, 367 N.E.2d 684, 688 (1977).

East Moline has put forth hardship arguments which do not address immediate compliance, but which speak to the hardship of ever complying. The economic reasonableness arguments put forth by petitioners are not appropriate to the temporary relief contemplated in a variance petition. Cost figures on ultimate compliance alone do not allow the Board to make a determination of the degree of hardship imposed by immediate compliance. East Moline has presented no other arguments on hardship. Department of the Air Force (Chanute Air Force Base) v. IEPA, 58 PCB 239, (May 29, 1984). East Moline has not carried the burden of proving that hardship imposed would be arbitrary or unreasonable.

Furthermore, the hardship must not be self-imposed. In PCB 87-41, Ekco Glaco v. IEPA, the Board found that "Ekco Glaco's problems arise from the delay caused by decisions it has made in

attempting to secure compliance and its failure to commit to a particular compliance option. The Board cannot find that those problems constitute an arbitrary or unreasonable hardship." Ekco Glaco, PCB 87-41 at 4, affirmed in Ekco Glaco Corp. v. IEPA and IPCB, ___ Ill. App. 3d ___, 542 N.E.2d 147 (First District, 1989). Similarly, as the above compliance plan discussion notes, East Moline has considered treating its discharge since 1974, but, as yet, has not committed to a firm compliance plan. Instead, East Moline has engaged in a protracted study of compliance alternatives. The lagooning treatment option, for example, has been under consideration from 1974 through 1989. The Board finds that the alleged hardship is self-imposed.

Environmental Impact

East Moline makes several arguments for the proposition that the environmental impact is minimal: (1) East Moline submits that the discharge of solids from the plant will not have an adverse impact on the water quality upon the tributary or the Mississippi River, in part, because the tributary already receives runoff from an urban area; (2) East Moline asserts that its discharge would have an insignificant impact on the water quality of the Mississippi River, and that the discharge may be beneficial for the growth of certain organisms. East Moline claims that its discharge will cause only a minimal impact within 200 feet downstream and 50 feet across from the discharge point to the Mississippi; (3) East Moline asserts that its discharge of an average of 1,544 pounds of treatment plant solids per day to the Mississippi is insignificant when compared to the present sediment loading in the Mississippi. The average suspended solids concentration in the Mississippi is 57 mg/l, based on 1983 sampling.

In contrast, in its recommendation, the Agency strongly disagrees with East Moline's characterization of the environmental impact. It properly redirects attention to the unnamed tributary into which East Moline discharges. As noted below, the Agency found 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. The Agency's data is not in dispute, being generally consistent with the findings of Mr. James Huff, East Moline's expert, who performed various environmental impact analyses.

Mr. James Kammueller, Region III Manager, Illinois Environmental Protection Agency, Division of Water Pollution Control, Field Operations, testified at hearing on his inspections conducted on June 6, 1986; September 8, 1986; and September 22, 1987. The Board examined photographs made at the time of these various inspections, which were the only

inspections made by the Agency during that period. The facts strongly suggest that the reports are typical of past and ongoing conditions.

In June of 1986, the inspection revealed that 1,000 feet upstream of the discharge point, the receiving stream was steady, low in volume and clear in color. Downstream, sludge banks were 14 to 20 inches deep below the filter backwash outfall and above the sedimentation basin outfall (which is 300 feet downstream of the first outfall). 1,100 feet downstream, sludge banks were at least 12 inches deep. The filter backwash outfall was "very brown, turbid and heavily laden with solids: "it increased the water elevation several inches and "the receiving stream flow became muddy, brown, turbid and filled with solid particles." (R. 80.)

On September 8, 1986, Mr. Kammueller visited the site with Agency aquatic biologists, Bill Ettinger and Mark Joseph, who sampled the stream at 300 yards upstream and at two downstream stations. Mr. Kammueller noted that upstream the stream was "low in volume, clear in color and the stream contained algae growth," while "[b]eginning at the public water supply filter backwash outfall, the receiving stream bed and lower bank areas were covered with thick gravy-like light-brown sludge deposits." (R. 80, 81.)

The biologists' findings presented as Exhibit 15, were as follows:

Location	Benthic Organisms	Sludge
300 yards Upstream	183 organisms from 10 taxa	No sludge
100 yards Downstream	13 organisms from 8 taxa	White sludge-like material on most of instream substrates and both banks
450 yards Downstream	4 organisms from 2 taxa	Same white sludge-like deposits.

Bill Ettinger concluded in his January 19, 1989 memorandum (Exhibit 15):

> In all, approximately 450 yards of the unnamed tributary to the Mississippi River were severely impacted by the sludge-like deposits discharged from the East Moline water filtration plant. The deleterious effects of sediment on aquatic macroinvertebrates have been

> well documented in the scientific literature with numerous sources such as Hart and Fuller (1974), Mackenthun (1969), McKee and Wolf (1963), Resh and Rosenburg (1984) and USEPA (1976) indicating that sediment causes a substantial reduction in insect species diversity and productivity.

On September 22, 1987, Mr. Kammueller observed the same upstream conditions and noted that "quite a bit of algae was present as were small minnows." (R. 81 and Ex. 13.) At the outfall, the muddy-brown sludge deposits were 1-3 inches thick. At the point 1,100 feet downstream, sludge deposits were 16 inches thick. Downstream the flow was slightly brown and turbid. "No minnows were observed at any point below the public water supply discharges." (R. 82 and Ex. 13.) During the discharge of the filter backwash, the stream became turbid brown with visible brown solids.

In its recommendation, the Agency cited the following passage from the McKee and Wolfe text, Water Quality Criteria, which the Board referred to in developing the original water quality and effluent limits:

> Disregarding any possible toxic effects attributable to substances leached out by water, suspended solids may kill fish and shellfish by causing abrasive injuries; by clogging the gills and respiratory passages of various aquatic funa; and by blanketing the stream bottom, killing eggs, young, and food organisms, and destroying spawning beds. Indirectly, suspended solids are inimical to aquatic life because they screen out light and because, by carrying down, they promote and maintain in the development of noxious conditions and oxygen depletion, killing fish, shellfish and fish food organisms, and reducing the recreational value of the water. (References omitted.) (Water Quality Criteria, 2nd edition, pg. 280.)

The Board is persuaded that the suspended solids discharged by East Moline do, in fact, present a serious environmental risk to the receiving stream. Further, as indicated by two other studies cited by the Agency, intermittent streams are a valuable resource of the State, important to the biotic community of downstream permanent waters. The unnamed tributary is of ecological significance as a source of water, food and shelter for invertebrate and vertebrate animals. The Board has previously held that such waters, even when characterized as a drainage ditch, are entitled to the protection of the general use

water quality standards. In re: Site-Specific Rulemaking for the City of East Peoria, R84-30, May 28, 1987 Order.

The Board is persuaded that there is significant environmental harm in the altered character of the tributary, in the loss of fish and benthic organisms, and the violations of unnatural sludge (Section 302.203) and offensive discharges (Section 304.106) regulations as detailed above. The Board cannot conclude that the hardship alleged by East Moline outweighs this adverse environmental impact.

In evaluating any potential environmental impact, the Board must consider the time from which petitioner was required to be in compliance until the time when compliance will actually be achieved. East Moline anticipates complying with the 1972 regulations not sooner than late 1991 or mid-1992, if at all.

Conclusion

The Agency, in its final comments, did not retract the arguments, stated in its recommendation, that arbitrary or unreasonable hardship and minimal environmental impact had not been proved by East Moline. It reiterated that East Moline inappropriately argued that economic unreasonableness justified granting a variance and that it has yet to choose a course of action to achieve compliance. The Agency then conceded that "[o]bviously, the City of East Moline could not come into immediate compliance should variance relief be denied." (Agency Final Comments at 3.) It then recommended granting relief "provided that the City of East Moline comes into compliance with applicable regulations by December of 1990" (Id.) and entreated the Board "to set a schedule that will provide incentive to the City of East Moline to finally get to work." (Id. at 4.) The Board disagrees.

The Board must conclude that East Moline failed to prove that immediate compliance would impose an arbitrary and unreasonable hardship, which is not self-imposed, and which outweighs the adverse environmental impact of the variance requested. The Board finds that the immediacy of compliance is not truly an issue since the regulations dated back to 1972 and compliance is not contemplated until 1991 or 1992. Arbitrary or unreasonable hardship was not proved by East Moline's assertions that the costs of compliance are high. Economical reasonableness speaks to the standards for permanent, not temporary relief. The economic hardship was not shown to outweigh the significant adverse environmental harm to benthic, aquatic, and other life dependent on the waters in question. The Board will not shield East Moline's continuing non-compliance. East Moline remains subject to an enforcement action.

The request for variance is denied.

This Opinion constitutes the Board's findings of facts and conclusions of law in this matter.

ORDER

The August 14, 1987 petition for variance filed by the City of East Moline is hereby denied.

Section 41 of the Environmental Protection Act, Ill. Rev. Stat. 1987, ch. 111-1/2, par. 1041, provides for appeal of final Orders of the Board within 35 days. The Rules of the Supreme Court of Illinois establish filing requirements.

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 15th day of November, 1989, by a vote of 7-0.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board