

ILLINOIS POLLUTION CONTROL BOARD  
September 8, 1983

CITY OF CHICAGO, )  
 )  
 ) Petitioner, )  
 ) )  
 ) v. ) PCB 82-139  
 ) )  
 ) ILLINOIS ENVIRONMENTAL )  
 ) PROTECTION AGENCY, )  
 ) )  
 ) Respondent. )

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

This matter comes before the Board on the petition for variance the City of Chicago (City), filed December 9, 1982, as amended April 5, July 22, and August 30, 1983. The Board construes the petition as seeking relief from the water quality standards of 35 Ill. Adm. Code Section 302.206, the 16-hour 6.0 mg/l 24 hour 5.0 mg/l dissolved oxygen standard; Section 302.212, the 15 mg/l ammonia nitrogen and 0.04 mg/l un-ionized ammonia standards; Section 304.120(c), the 10/12 mg/l BOD and TSS standards; and also the general effluent quality standard of Section 304.105, as it relates to the above-listed parameters. The City seeks variance to permit the draining and expansion of Lake O'Hare, located in the south half of O'Hare International Airport, Cook and DuPage Counties. The Recommendation of the IEPA (Agency) filed February 22, as amended May 11 and August 1, 1983 is that variance be granted for no longer than one year, subject to conditions. Hearing was waived, and none has been held. This matter is being given expedited consideration, pursuant to the City's motion of July 22, 1983.

Lake O'Hare is a 98 acre stormwater collection and detention basin collecting runoff from 1800 acres in the south half of O'Hare Field (Including the area of the Lake itself, as well as all the area which could ultimately be developed and drained to the Lake, the Lake could serve to drain 2722 acres). The Lake currently has a capacity to hold 34.2 million cubic feet of water.

Prior to 1976, discharge from the Lake was to Crystal Creek, which flows about 1.2 miles easterly from the Lake to the Des Plaines River. As a result of an enforcement action for pollution of the Creek, People v. City of Chicago, No. 70 CH 5357, the City consented to divert most of the flows from the Lake to an interceptor for treatment by the Metropolitan Sanitary District

of Greater Chicago (MSDGC). Pursuant to the agreement, the maximum rate of discharge to the MSDGC is 10 cubic feet/second when there is not high water in the Upper Des Plaines No. 5 interceptor sewer. That normal discharge from the Lake is estimated to be available about 50 percent of the time, and is generally adequate to handle the full year's discharge from the Lake.

However, under some circumstances there are occasional discharges to Crystal Creek through a gate structure at the Lake's southeast corner. Discharges into the Creek can occur when the liquid level in the No. 5 interceptor is high, and/or when large volumes of rain require rapid discharge of the Lake's accumulated stormwater to re-establish adequate holding capacity to provide for drainage of the runways.

The subject of this variance is the City's plan to enlarge Lake O'Hare, and the resulting necessity to drain the Lake and to send increased flows to Crystal Creek.

The City asserts that expansion of the Lake is necessary to solve various problems. The MSDGC pumping restrictions have resulted in a significant increase in the time to draw down the lake level, effectively reducing its retention capacity. This, of course, can cause drainage problems.

Another problem is that, in the spring, the Lake develops objectionable odors caused by the runway deicers entering it in the winter months (which subject is more fully explored infra). Finally, water fowl have been attracted to the Lake which have caused a danger to the safety of aircraft operating on nearby runways. In addition, due to a dry summer and low lake levels one particular year, inability to drain the lake caused development of shallow stagnant pools which promoted the spread among the waterfowl of a form of botulism.

To solve the retention capacity problem, the City seeks to enlarge the size of the Lake by excavating 268,000 cubic yards of material, increasing its capacity to 50.5 million cubic feet. The shallow, stagnant pools problem would be solved in part by recontouring the lake with about 125,000 cubic yards of this material, and steepening the existing 15' horizontal:1' vertical banks to 4:1. Odor problems, as well as water fowl attraction problems would be addressed by recontouring the lake bottom, so that water is channeled to a 300' X 175' X 8' sedimentation pond at a new pump section, to allow the lake to be pumped dry, or at least kept as low as possible at all times.

In order to accomplish the project, estimated to cost \$972,000, the City will need to dewater the Lake. During the approximately 65 day dewatering and construction operation the City seeks permission to divert all flows which it cannot lawfully send to the MSDGC for treatment, and to discharge partially treated effluent into Crystal Creek. During construction, the

City would propose to treat flows to be sent to Crystal Creek in a proposed sedimentation basin, and an oil separator.

Variance is needed for such activity, because the Lake's discharges to the Creek already, and consistently, 1) exceed the 10/12 mg/l BOD and TSS limits, 2) cause an average 1.17 mg/l per month DO decrease in the months in which such discharges occur, and 3) are likely in violation of ammonia nitrogen standards. The major cause of these problems are the aircraft and runway deicing chemicals used in wintertime. A yearly mean average of 348,500 gallons of runway deicers are used, as are 6,800,000 pounds of aircraft deicers. The primary constituents of these compounds are ethylene glycol, high glycol, and urea.

In support of its petition, the City asserts that denial of variance to allow it to complete needed Lake expansion would constitute an arbitrary or unreasonable hardship. Alternatives to achieve full compliance with Board rules other than the proposed expansion would require either cessation of airport operations, or installation of retention facilities sufficient for the airport to operate on a zero discharge basis. The first is alleged to be economically unreasonable, and the second technically infeasible given the "built-up" nature of the area surrounding the airport.

In investigating this petition, the Agency has been commendably diligent in its "back and forth" efforts to elicit additional, necessary information. The Agency agrees with the City's assessment of hardship. As to environmental harm, it believes that after improvement of the Lake compliance is "much more assured than it is now". The Agency believes temporary environmental harm, in the nature of DO depletion, could well occur to the Creek during the construction period. The Agency believes, however, that such harm can be minimized by careful timing of the project.

It suggests that the concern over adverse environmental impact can be minimized as much as possible during the term of the variance by the condition that draining and subsequent construction dewatering be scheduled to occur between October 1 through December 15, 1983 or between May 1 through September 1, 1984. First, this would allow draining to occur during a time of improved water quality in the Creek. Second, construction would hopefully occur during a period when deicing pollutants are not being used, thus protecting the receiving waters from the high strength wastewater that could be discharged. If construction delays occur and Petitioner must wait until May, 1984 to begin draining Lake O'Hare, there most likely will be high levels of pollutants being discharged during the winter of 1983-1984 and early spring of 1984 in the same manner as in the past and reflected in the City's DMR summary of past discharges. However, the Agency argues, this would be environmentally better than attempting construction during the winter and early spring since Lake O'Hare should provide some buffering and reduction in

pollutants prior to discharging. The Agency suggests that the City should not begin draining in 1983 if it appears draining and construction dewatering could not be completed by December 15, 1983, because said buffering and reduction in pollutants would not be available if the drainage and construction dewatering occurred during the winter when the use of deicers would be at its peak.

Other conditions suggested by the Agency include sampling, monitoring, and reporting requirements. The Agency notes that the City's "Operating Policy for Lake O'Hare", to be followed upon completion of the improvement plan, seems sufficient at least in the context of a variance proceeding.

On balance, the Board finds that denial of variance would impose an arbitrary or unreasonable hardship. The Board believes that any temporary environmental harm to Crystal Creek would be outweighed by the benefit of solving the other specified environmental problems. Variance from 35 Ill. Adm. Code 302.206, 302.212, 304.120(c) and 304.105 is granted for a one-year period, subject to the conditions outlined in the attached Order.

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

#### ORDER

1. Petitioner, the City of Chicago is hereby granted variance until September 8, 1984, from 35 Ill. Adm. Code, Sections 302.206, 302.212, 304.120(c) and 304.105 (as the latter relates to the former sections) subject to the following conditions:

A. The variance period shall commence with the initial drainage and construction dewatering of Lake O'Hare done in accordance with the plans of the Lake O'Hare Improvements construction project as described in Petitioner's Response to Recommendation filed on April 11, 1983. The variance period shall cease on September 8, 1984 or when the construction project is completed, whichever occurs first.

B. The City shall attempt to begin draining Lake O'Hare pursuant to said construction project no later than October 1, 1983 and complete construction no later than December 15, 1983; but if draining cannot begin by October 15, draining shall then begin no sooner than May 1, 1984 and construction shall be completed by September 8, 1984.

C. If draining pursuant to said construction project cannot begin until after May 1, 1984, Petitioner shall, from the date deicers are first used after the variance is granted, but in any case after December 21, 1983, and until draining begins pursuant to said construction project:

i) discharge as much wastewater to the Metropolitan Sanitary District of Greater Chicago (MSDGC) as is possible;

ii) only discharge to Crystal Creek when levels meet the BOD<sub>5</sub>, TSS and ammonia nitrogen limitations or to prevent imminent flooding of airport buildings that would disrupt airport operations;

iii) continue to report to the Agency pursuant to Petitioner's NPDES permit;

iv) submit to the Agency, Compliance Assurance Section, copies of all reports Petitioner provides to the MSDGC relevant to discharges from Lake O'Hare to the MSDGC.

D. During construction pursuant to said construction project, all flows to Crystal Creek shall receive treatment in the proposed sedimentation basin and API oil separator.

E. During draining pursuant to said construction project, as much water as allowable will be discharged to MSDGC.

F. During draining pursuant to said construction project, the City shall sample its discharge to Crystal Creek three times per week for BOD, TSS, ammonia nitrogen, and oil and grease and submit the results to the Agency, Compliance Assurance Section, within 10 days of the last day of each month.

G. During construction pursuant to said construction project, the City shall sample each day a discharge occurs to Crystal Creek for the parameters listed in subparagraph (F), above, and report in the same manner.

H. Within ten days of the intended day of beginning the draining Lake O'Hare, pursuant to said construction project, the City shall sample Lake O'Hare for BOD, TSS, and ammonia nitrogen and immediately upon receiving the results, forward them to the Agency, Compliance Assurance Section.

2. Within forty-five days of the date of this Order, Petitioner shall execute and forward to Wayne L. Wiemerslage, Enforcement Programs, Illinois Environmental Protection Agency, 2200 Churchill Road, Springfield, IL 62706, a Certificate of Acceptance agreeing to be bound to all terms and conditions of this variance. This forty-five day period shall be held in abeyance for any period this matter is being appealed. The form of the certificate shall be as follows:

CERTIFICATE

I, (We), \_\_\_\_\_, having read the Order of the Illinois Pollution Control Board in PCB 82-139 dated \_\_\_\_\_, understand and accept the said Order, realizing that such acceptance renders all terms and conditions thereto binding and enforceable.

\_\_\_\_\_  
Petitioner

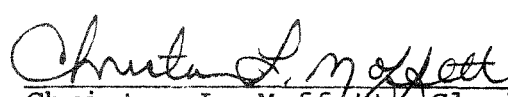
\_\_\_\_\_  
By: Authorized Agent

\_\_\_\_\_  
Title

\_\_\_\_\_  
Date

IT IS SO ORDERED.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 8<sup>th</sup> day of September, 1983 by a vote of 5-0.

  
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Christan L. Moffett, Clerk  
Illinois Pollution Control Board