

ILLINOIS POLLUTION CONTROL BOARD
October 9, 1975

GRANITE CITY STEEL, division of)
National Steel Corporation,)
Petitioner,)
)
v.) PCB 75-58
)
ENVIRONMENTAL PROTECTION AGENCY,)
Respondent.)

Mrs. Leah Hamilton and Mr. Douglas C. Nohlgren, Jenner & Block, appeared on behalf of Petitioner.
Mr. James Burngarner appeared on behalf of the Respondent.

OPINION AND ORDER OF THE BOARD (by Mr. Goodman):

This matter comes before the Pollution Control Board (Board) upon Granite City Steel's (Granite) August 1, 1975, Amended Petition for Variance from Rule 203(c) and Rule 402, with respect to Rule 203(c) for phosphorus, of the Water Regulations. An unsigned stipulation was admitted at the August 18, 1975, hearing.

Granite employs 5000 persons in producing flat rolled steel at its Madison County plant. The Petitioner's 3.5 million dollar wastewater plant is located adjacent to Horseshoe Lake in Nameoki Township. The treatment system includes three oil-water separation units (1.75 acres), one isolation basin (9 acres), and a two-cell biological oxidation stabilization basin (350 acres).

Most of the water used by Granite is drawn from the Mississippi River. After several recyclings and treatment, this water is discharged through an outfall into Horseshoe Lake at a rate of 62 mgd. Horseshoe Lake discharges to the Cahokia Canal, the water eventually returning to the Mississippi. Horseshoe Lake is an "ox bow" with a surface area of 2107 acres, a shoreline of 11.2 miles and a volume of 8429.2 acre feet. It has a naturally high turbidity due to wind conditions and the lake's shallowness. This turbidity limits available light and thereby limits algae growth (R37-8).

Although Granite uses no phosphorus in its manufacturing processes, its intake from the Mississippi River does contain phosphorus. The phosphorus content of Petitioner's effluent is lower than that of its intake. The difference in phosphorus concentration levels is due to natural chemical and biological precipitates. The average phosphorus level of Granite's effluent is .07 mg/l or 37 pounds per day. Rule 203(c) requires effluent to contain no more than .05 mg/l.

The testimony at the hearing confirmed that, practically, neither biological nor chemical treatment would result in lowering the phosphorus level to .05 mg/l (R.83-87). Indeed, the biological treatment would raise BOD from less than 10 to 250 mg/l (R.87). The parties also explored the use of ion exchange, selective ion exchange, and reverse osmosis methods. These methods are not only impractically expensive, but also have never been shown to be operable at 62 mgd. They also create a concentrated effluent which must be disposed separately. In addition, it is not thought that these methods would reduce the phosphorus level to 0.05 (R.88-98). The cost of operation of a facility using reverse osmosis or ion exchange would be anywhere from \$5,000,000 to \$11,000,000. The Board finds that, at present, the necessary technology needed to reduce the phosphorus to 0.05 mg/l is not practically available.

The purpose of the Water Quality Standard as it pertains to phosphorus is to reduce the possibility of algae blooms. No nuisance algal growth was found by Dr. Covich in Horseshoe Lake (R.37). His testimony would have been supported by various Agency witnesses (Stip. par. 27 through 32).

The cost of treatment being prohibitive and resulting in negligible difference in phosphorus content coupled with the fact that the water returns to the Mississippi with a lower phosphorus content than when it was removed, leads the Board to the opinion that Petitioner has met its burden and has shown that it would be arbitrary and unreasonable to deny its variance petition. This is especially true, here, where the reason for the water quality standard is to prevent algae blooms and such blooms do not exist in Horseshoe Lake. Therefore, the board will grant Petitioner's Variance from Rules 203(c) and 402 of the Water Regulations until October 1, 1976.

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

ORDER

It is the Order of the Pollution Control Board that:

1) Petitioner Granite City Steel be, and hereby is, granted Variance from Rule 203(c) phosphorus and Rule 402 as applied to 203(c) of the Water Regulations for its effluent into Horseshoe Lake until October 1, 1976; and

2) That during the period of the Variance, Granite City Steel shall not discharge concentrations of phosphorus into Horseshoe Lake in excess of the phosphorus concentration of Granite City Steel's intake water as it is withdrawn from its reservoir; and

3) That within 28 days of the adoption of this Order, the Petitioner shall execute and forward to both the Illinois Environmental Protection Agency, Manager, Variance Section, Division of Water Pollution Control, 2200 Churchill Road, Springfield, Illinois 62706 and the Pollution Control Board a Certification of Acceptance and agreement to be bound to all terms and conditions of this Variance. The form of said certification shall be as follows:

CERTIFICATION

I (We), _____ having read and fully understanding the Order of the Illinois Pollution Control Board in PCB 75-58 hereby accept said Order and agree to be bound by all of the terms and conditions thereof.

Signed _____

Title _____

Date _____

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Opinion and Order were adopted on the 9th day of October, 1975 by a vote of 3-0.



Christan L. Moffett, Clerk
Illinois Pollution Control Board