

ILLINOIS POLLUTION CONTROL BOARD
September 2 , 1976

ILLINOIS DEPARTMENT OF CORRECTIONS)
VANDALIA CORRECTIONAL CENTER,)
)
Petitioner,)
)
v.) PCB 76-172
)
ENVIRONMENTAL PROTECTION AGENCY,)
)
Respondent.)

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

This matter comes before the Board on the variance petition filed June 16, 1976 by the Illinois Department of Corrections for the Vandalia Correctional Center seeking relief from Rules 203(c) and 402 of Chapter 3: Water Pollution Rules and Regulations as regards phosphorus. The Agency filed a Recommendation on August 2, 1976; no hearing was held in this matter.

At the present time, Petitioner owns and operates a sewage treatment plant consisting of a comminutor, a primary settling tank, trickling filter, secondary settling tank and a heated digester with floating cover, and which treats approximately 150,000 GPD of domestic waste. The plant was installed in 1953 to treat sewage from a design population equivalent of 2,460 persons. The treatment plant's effluent, which contains 5.8 mg/l phosphorus, is discharged to the Kaskaskia River which is tributary to the Carlyle Lake Reservoir.

Rule 203(c) sets a standard of 0.05 mg/l for phosphorus as P in any reservoir or lake or in any stream at the point where it enters any reservoir or lake and Rule 402 requires that Petitioner's effluent not contribute to a violation of the Rule 203(c) water quality standard. Because the phosphorus concentration in the Kaskaskia River as it enters the Carlyle Reservoir presently exceeds 0.05 mg/l, the Petitioner's effluent is water quality limited to the Rule 203(c) standard of 0.05 mg/l phosphorus.

Petitioner plans to make some modifications to its treatment plant which include the construction of chlorination facilities as well as the addition of phosphorus removal facilities utilizing chemical precipitation with aluminum sulfate. With the use of

chemical precipitation, the effluent phosphorus concentration will be reduced to 1 mg/l. Because the treatment plant effluent is water quality limited to 0.05 mg/l phosphorus, Petitioner seeks this variance from that standard so that a construction permit can be obtained from the Agency for the phosphorus removal facilities.

Petitioner submits that there is no feasible method of attaining the 0.05 mg/l standard for its discharge. While the Petitioner did consider pumping the effluent into an adjacent watershed as well as land application, these alternatives were considered undesirable for economic reasons.

Based upon the USEPA National Eutrophication Report, the annual total phosphorus loading to Carlyle Reservoir is 316,630 Kg/yr. Assuming 5.8 mg/l phosphorus and an average flow rate of .150 MGD, the phosphorus loading from Petitioner's facility is presently about 7.25 lbs/day which represents approximately 0.3% of the total. With the addition of the new phosphorus removal facilities, the phosphorus loading will be reduced to about 1.25 lbs/day, or approximately 0.06% of the total.

On January 5, 1976, the Agency filed a Petition for Regulatory Change (R76-1) with the Board which would amend the Regulations by requiring point sources which have 1500 or more population equivalent to treat wastewater to a level not to exceed 1 mg/l prior to discharge. As justification for this proposal the Agency submits that eutrophication studies by both the United States Environmental Protection Agency and the Illinois State Water Survey reveal that the contribution of point source discharges to the total phosphorus problem of lakes and reservoirs is small compared to the non-point contribution. The Agency submits that non-point sources, such as run-off waters from farm lands fertilized with phosphate base fertilizers, account for the overwhelming majority of the phosphorus loading of most lakes and reservoirs.

After weighing the high costs associated with complying with the 0.05 mg/l phosphorus standard against the extremely small contribution that Petitioner's discharge will make to the Carlyle Reservoir phosphorus problem, the Board is disposed to grant the relief requested. Until the phosphorus removal facilities are completed, the discharge from the plant shall not exceed the present phosphorus concentration of 5.8 mg/l. Furthermore, upon the completion of treatment plant improvements in August, 1977, Petitioner will be required to produce an effluent which does not contain more than 1.0 mg/l phosphorus.

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

ORDER

The Vandalia Correctional Center is granted a variance for the operation of its sewage treatment plant from Rules 203(c) and 402 of Chapter 3: Water Pollution Regulations as regards phosphorus until September 1, 1981, subject to the following conditions:

1. Until the completion of the phosphorus removal facilities in August of 1977, the current phosphorus discharge concentration of 5.8 mg/l shall not be exceeded on a monthly average.

2. Upon the completion of the phosphorus removal facilities in August 1977, the plant's discharge shall not exceed 1.0 mg/l phosphorus.

3. This variance will terminate upon adoption by the Board of any modification of the existing phosphorus water quality standards or effluent limitations and the Petitioner shall comply with such revised regulations when adopted by the Board.

4. Within 35 days of the date of this Order, the Vandalia Correctional Center shall submit to the Manager, Variance Section, Division of Water Pollution Control, Illinois Environmental Protection Agency, 2200 Churchill Road, Springfield, Illinois, 62706, an executed Certification of Acceptance and agreement to be bound to all terms and conditions of the variance. The form of said certification shall be as follows:

CERTIFICATION

I, (We), _____ having read the Order of the Pollution Control Board in PCB 76-172, understand and accept said Order, realizing that such acceptance renders all terms and conditions thereto binding and enforceable.

SIGNED

TITLE

DATE

IT IS SO ORDERED.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Opinion and Order were adopted on the 2nd day of September, 1976 by a vote of 5-0.

Christan L. Moffett c/s
Christan L. Moffett, Clerk
Illinois Pollution Control Board