

ILLINOIS POLLUTION CONTROL BOARD
June 5, 1986

IN THE MATTER OF:)
)
JOINT PETITION OF THE CITY)
OF PEKIN AND THE ILLINOIS)
ENVIRONMENTAL PROTECTION AGENCY) PCB 85-226
FOR EXCEPTION TO THE COMBINED)
SEWER OVERFLOW REGULATIONS)

MR. PATRICK OBERLE, CORPORATION COUNSEL, CITY OF PEKIN APPEARED ON BEHALF OF THE CITY OF PEKIN; AND

MR. E. WILLIAM HUTTON APPEARED ON BEHALF OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.

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

This matter comes before the Board upon the filing on December 31, 1985 of a joint petition for a combined sewer overflow ("CSO") exception from 35 Ill. Adm. Code 306.305 (a) and (b) by the City of Pekin ("Pekin") and the Illinois Environmental Protection Agency ("Agency"). A public hearing was held in Pekin, Illinois on March 11, 1986. Testimony on Pekin's behalf was presented by Mayor Willard E. Brinkmeier, and by Gregory A. Sherwood and Richard Helm of Randolph and Associates, Inc. No public testimony was presented and no public comments were received.

Decision in this matter is being expedited consistent with the City's need for a decision on or about June 1 to allow for coordination of CSO design with construction of various grant-funded wastewater system improvement projects.

CSO REGULATIONS

The CSO regulations are contained in 35 Ill. Adm. Code 306.302 et seq. They were amended in R81-17, 51 PCB 383, March 24, 1983. Section 306.305 provides as follows:

All combined sewer overflows and treatment plant bypasses shall be given sufficient treatment to prevent pollution, or the violation of applicable water standards unless an exception has been granted by the Board pursuant to Subpart D.

Sufficient treatment shall consist of the following:

- a) All dry weather flows, and the first flush of storm flows as determined by the Agency, shall meet the

- applicable effluent standards; and
- b) Additional flows, as determined by the Agency but not less than ten times to [sic] average dry weather flow for the design year, shall receive a minimum of primary treatment and disinfection with adequate retention time; and
 - c) Flows in excess of those described in subsection (b) shall be treated, in whole or in part, to the extent necessary to prevent accumulations of sludge deposits, floating debris and solids in accordance with 35 Ill. Adm. Code 302.203, and to prevent depression of oxygen levels; or
 - d) Compliance with a treatment program authorized by the Board in an exception granted pursuant to Subpart D.

Subpart D allows the discharger to file a petition for an exception either singly, or jointly with the Agency as the City had done. The joint petition seeks an exception based on minimal discharge impact as provided in Section 306.361(a).

COMBINED SEWER SYSTEM

Pekin, population 33,127, is located on the east bank of the Illinois River, approximately five miles downstream of the Peoria Lock and Dam. It is served by both sanitary and combined sewers, the latter having been originally constructed, as is typical for older communities, to collect only storm drainage; however, over time, the sewers began and continue to serve the dual function of conveying both wastewater and surface water runoff.

During the past 40 to 50 years, Pekin has endeavored to separate out the wastewater flow by constructing sanitary sewers that convey the flow directly to sewage treatment facilities. (In recent years, this sewer separation work has been performed in conjunction with street improvements and redevelopment projects, when, as, and if the City has been able to proceed with such projects.) Additionally, connections of newly constructed sanitary sewers to the old combined system are prohibited. Presently, about one-fourth of the City is served by combined sewers, which drain stormwater from about 1175 acres.

There are combined sewer overflows at four outfalls located above the plant and identified by their street location: State, Caroline, Court and Fayette Streets. CSO from the State and Caroline CSO's discharge to a common backwater slough of the Illinois River. The Court CSO discharges close to the bank of the Illinois River, and the Fayette CSO discharges about 250 feet back from the river bank into a channel created by the deterioration and washing away of the outfall pipe.

Overflows occur about 47 times a year at each location during rainfalls exceeding about 0.10 inches.

For a one-year design storm of 1.2 inches per hour, based on suspended solid concentrations, the peak first flush flow rates and volumes are as follows:

<u>Site</u>	<u>Peak First Flush Flow Rate (mgd)</u>	<u>First Flush Volume (ft³)</u>
State	16	19,000
Caroline	23	54,000
Court	47	155,000
Fayette	101	366,000

The BOD first flush volume is about 60% of that shown for suspended solids.

ENVIRONMENTAL IMPACTS AND PROPOSED CSO CONTROL STRATEGY

Uses of the river at Pekin are commercial, primarily grain loading and storage facilities, as well as recreational, including boating and fishing. There is a boat ramp upstream of Court Street and a private boat club near the Caroline CSO. A railroad runs along the riverbank, limiting accessibility except at Court Street.

The supporting justification for the proposed exception program is based on three studies. The first two, Phase I and Phase II (Ex. A) were performed by Randolph and Associates, Inc. Phase I covered the sewer system, treatment facilities, land use, and receiving stream characteristics, the latter having relied on an extensive water quality data base generated during a 1983 Peoria CSO study. Phase II included a six month CSO monitoring and sampling program, an evaluation of alternative CSO controls, and recommended improvements. The third study was performed by the State Water Survey Division of the Department of Energy and Natural Resources (ISWS). It focused on the benthic conditions and stream morphology in the outfall areas (Ex. B).

Regarding existing conditions, the ISWS study was summarized as follows:

1. "The State, Court and Fayette Street outfall channels exhibit some pollutional effects due to combined sewer overflows: the Caroline Street outfall channel does not. The State and Caroline outfall channels discharge into a common outlet channel to the river. Sediment degradation and potential public health and aesthetic problems exist in the State and

Fayette Street outfall channels and in the State-Caroline outlet channel. Only public health and aesthetic problems exist at Court Street. Problems in the State-Caroline outlet channel appear attributable only to State Street sewer overflows.

2. The sediments in the riverine areas around the State-Caroline Street outlet and the Fayette Street outlet show no signs of polluttional degradation: but several samples in the area of the Court Street outlet showed evidence of chronic organic contamination. The limited contamination in the Court Street area sediments can probably be attributed to grain spillage during barge loading operations which regularly take place immediately below the outfall. Frequent spillage was observed during the course of this study." (Ex. B, p. 27, 28 emphasis in original)

The ISWS Peoria study, assumed to be applicable to Pekin, noted that the only significant CSO impacts were "substantial increases in fecal coliform densities and the transitory occurrences of floating debris..." (Ex. C, p. 113). The dilution factor is 26 to 1 between the river's minimum seven-day, ten-year flow and Pekin's total one-year first flush peak flow discharge. (R.24)

In lieu of construction which would achieve full compliance with the CSO regulations, Pekin and the Agency propose the following CSO control strategy:

- 1) Construct underground storage for complete treatment of first flush volume (19,000 cu. ft.) at State Street. This will reduce overflow frequency by 36% and volume by 52%, up to approximately a 0.40 inch rainfall. An overflow baffle will prevent floating debris from entering the slough. The storage will also alleviate basement flooding.

- 2) Connect existing regulators at the Caroline, Court and Fayette CSO's to a new interceptor sewer, which, with other improvements of the treatment plant and use of the existing interceptor, will allow full operation of the system up to a 25 year flood, and completely treat 14 times dry weather flow, capture about 18% of the first flush volume on an annual basis, and reduce the number of overflows by about 9%.

- 3) Modify the Court Street CSO to provide a self-cleaning outfall channel to the river, thus eliminating the occurrence of trash and debris which is caught in the course (sic) riprap presently below the outfall.

4) Extend the Fayette CSO outfall about 180 feet to its original discharge point, this eliminating sewage contamination in the outfall channel.

Pekin has also agreed to monitor the four CSOs outfalls for up to three years to assure that the CSO effects are adequately mitigated or, alternatively, to determine whether additional improvements are necessary.

Pekin anticipates that its proposal will "substantially eliminate all significant water quality and aesthetic impacts..." (R.25). Pekin expects to complete design by October 30, 1986, to begin construction by March 31, 1987, and to have these facilities operational by April, 1988.

The cost is estimated to be \$1.2 million. Alternatively, Pekin asserts that the most cost-effective method of full compliance with Sections 306.305(a) and (b), providing storage for first flush volumes at each CSO outfall and increasing transport capacity to at least 12.5 times dry weather flow, is estimated to be \$10 million.

Mayor Willard Brinkmeier testified that local dollars have funded about \$800,000 in sewage treatment system upgrading in the past 12 years. Presently, the projected costs of necessary major improvements to the wastewater treatment plant and sewer system, including the proposed CSO improvements, are estimated at \$7 million, of which \$2.5 million is available through grant funds, although more grant funding is expected. However, the Mayor also stated that the \$1.2 million needed to finance the proposed CSO improvements would be "funded entirely by our own community" by means of general revenue bonds. (R.5-8, 12).

CONCLUSION

Having considered the factors enumerated in Section 306.361(a) and the evidence presented by Pekin jointly with the Agency, the Board finds that the proposal for exception will have minimal impact.

The Board grants the exception with language similar to that recommended in the petition. However, the Board, in Condition 2 and 3, has substituted language for proposed Condition 1(f) addressing monitoring, and added language to clarify that relief is not granted from water quality standards.

ORDER

1) The City of Pekin (Pekin) is hereby granted an exception from 35 Ill. Adm. Code 306.305(a) as such provision relates to first flush of storms flows, and from 35 Ill. Adm. Code

306.305(b), subject to the following conditions:

- a) Pekin shall connect the existing regulators at Caroline, Court, and Fayette Street CSO's to the new interceptor that will extend from Plant 2 to Plant 1.
- b) Pekin shall construct facilities to provide that the entire first flush volume from the State Street CSO will be captured and fully treated.
- c) Pekin shall extend the Fayette Street outfall so that the CSO discharges directly into the main river channel.
- d) Pekin shall provide a self-cleaning outfall channel to the river for the Court Street CSO.
- e) Overflows shall only occur while the treatment plant is receiving and treating its design maximum flow.

2) This grant of exception does not preclude the Agency from exercising its authority to require as a permit condition a) a CSO monitoring program sufficient to assess compliance with this exception and any other Board regulations, including Section 306.305(c); and b) other controls if needed for compliance, including compliance with water quality standards.

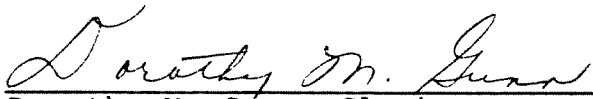
3) This grant of exception is not to be construed as affecting the enforceability of any provisions of this exception, other Board regulations, or the Act.

IT IS SO ORDERED.

J. D. Dumelle concurred.

B. Forcade dissented.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 5th day of June, 1986, by a vote of 6-1.


Dorothy M. Gunn, Clerk
Illinois Pollution Control Board