ILLINOIS POLLUTION CONTROL BOARD
September 17, 1987

IN THE MATTER OF:	)	
	)	
THE JOINT PETITION OF THE CITY OF WOOD RIVER AND THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY FOR EXCEPTION TO THE COMBINED SEWER OVERFLOW REGULATIONS	)	PCB 86-6

MR. LON SMITH APPEARED ON BEHALF OF THE CITY OF WOOD RIVER;

MR. RICHARD WARRINGTON, JR. APPEARED ON BEHALF OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.

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

This matter comes before the Board upon a January 6, 1986, joint petition of the City of Wood River (Wood River) and the Illinois Environmental Protection Agency (Agency) for an exception to 35 Ill. Adm. Code 306.305(a) and (b) of the Board's combined sewer overflow (CSO) regulations based on minimal discharge impact. Hearing was held on June 12, 1986, at which exhibits and testimony were presented. The Hearing Officer issued Orders on February 6 and July 16, 1987, requesting additional information to which Wood River and the Agency responded on April 9, and August 17, 1987.

Wood River contends that the existing overflows from its combined storm and sanitary sewer system have minimal impact on the water quality of the Mississippi River (the receiving stream) and do not restrict stream use, and that construction of CSO treatment facilities at an estimated cost of $6.0 million would produce little benefit. For the reasons described below, the Board finds that Petitioners have made the showing requisite for granting a temporary exception. Relief will accordingly be granted, subject to conditions as stipulated to by Petitioners and time limitations deemed necessary by the Board.

BACKGROUND

Wood River, population 12,446 is located on the Mississippi River about seven miles north of Interstate 270. Wood River is served by 36.5 miles of combined storm and sanitary sewers and 6.5 miles of separate sanitary sewers. The combined sewer collection system outlets to the Mississippi River through a single 84-inch outfall sewer which has an estimated capacity of 168.5 million gallons per day (MGD). Upstream of the outfall

point, the outfall sewer is routed by gravity through a pumping station operated by the Wood River Drainage and Levee District. At high river stages, the gravity outlet is blocked by sluice gates, located in the pumping station, and the flow is pumped to the pumping station "head box" and then out through the pressurized 84-inch sewer into the river. The dry weather flow is treated by a primary plant constructed in 1962 with a design capacity of 1.73 MGD. The combined sewer overflow (CSO) is being discharged into the Mississippi River directly without treatment.

A 72-inch diameter sewer belonging to the major local industry, Amoco Oil Company (Amoco) provides for the collection of industrial wastes, storm water, and combined sewer overflows originating within the Amoco property. The 72-inch sewer acts as a supply sewer to the pumping station which pumps the normal flow to the soon to be completed Wood River Regional Treatment Facility (discussed below) and also as an outlet sewer to direct storm water flows into large storage lagoons owned by Amoco. The lagoons have a storage capacity of 150 million gallons. The storm water is then drawn back through the 72-inch sewer and treated at the Regional facility. The joint petitioners contend that these lagoons are used also as a storage area for untreated dry weather flows from Amoco and partially treated flows from the other Regional plant users during plant shutdown or malfunction.

In 1976, a State Step 1 grant was offered to Wood River to carry out a regional facilities plan study for the four communities of Wood River, Hartford, Roxana, and South Roxana. Wood River was designated the lead agency. As part of this study, an infiltration/inflow (I/I) analysis was conducted for Wood River's combined sewer system. It found that there were no significant I/I problems, and the I/I report had been completed and approved by the Agency. It was concluded that the most cost effective water pollution control strategy for Wood River would be to adopt a regional waste disposal plan which would include the upgrading of the existing primary treatment system to a 2.46 MGD secondary activated sludge plant. The new plant will provide treatment of the dry weather flows collected from Wood River, Hartford and South Roxana, and will consist of a 5.1 MGD design average flow second treatment plant with a peak flow of 9.8 MGD. The new regional facility will not be large enough to treat all of the combined sewer overflow from Wood River, but will have facilities for the interception of up to 4.8 MGD. The Agency, as a condition of the joint petition, has required that Wood River (a) intercept and provide full treatment for this 4.8 MGD of combined sewer overflow and (b) provide for screening of overflows in the 84-inch sewer prior to discharge. The Agency notes that Wood River has met condition (a) above by constructing intercepting and treatment facilities at a cost of $390,000, 75% of which was funded through an Agency grant. The Agency further notes that Wood River has proposed to meet condition (b) above by constructing a bar screen facility at the Wood River Drainage and

Levee District pumping station at a cost of approximately $85,000.

The primary use of the Mississippi River in the vicinity of the 84-inch CSO discharge point is barge transportation. Immediately upstream and downstream of the discharge point are barge loading, unloading, and repair facilities. The general area is alleged to be a general mooring area. These docking facilities and the movement of tows generally preclude other uses of the River within the discharge area. Further downstream numerous communities utilize the River for their potable water supplies. The first intake of River water for public water supplies purposes, downstream of Wood River's CSO discharge, is the Illinois American Water Company's intake, approximately seven miles below Wood River.

ENVIRONMENTAL IMPACT

The impact of the overflows on the Mississippi River prior to completion of the new treatment facilities was analyzed in the "Combined Sewer Overflow Study for Wood River, Illinois, October, 1981." The study indicated that the Wood River CSO has a negligible effect on the water quality in the Mississippi River, both on a worst condition basis and on an average annual basis, due primarily to the diluting effect of the river on the pollutants discharged from the CSO. During the worst conditions event, consisting of a 1-year frequency storm water overflow coincident with a 7 day 10 year low flow in the river, the effect on the Mississippi River is an increase of 0.21% in water volume, an increase of 0.9% in total suspended solids, and an increase of 3.5% in BOD. Using the average annual combined sewer overflow and the lowest recorded average annual river flow, (30,540 MGD in 1940) the effect on the river over an entire year is a negligible increase in water volume, an increase of 0.007% in total suspended solids, and an increase of 0.026% in BOD. The first flush analysis indicates a first flush volume of 2.2 MG. For comparative purposes the entire first flush is only approximately 0.016% of the one-day low flow volume of the river. The joint petitioners believe that the new treatment facilities will reduce these figures slightly, and that these effects probably could not be detected through field testing. The joint petitioners further assert that a visual inspection of the river bank in the area of the discharge point indicated that there was no effect on the river or the river bank. There were no visible signs of sludge deposits or floating debris, and no sewage related odors in the vicinity of the overflow.

The combined sewer overflow study analyzed five alternative methods of interception and treatment of the combined sewer flows so as to comply with the Board's CSO regulations. Alternative No. 1 constitutes the "no-action" alternative. The estimated amount of BOD in the overflow is 242,100 pounds per year on an

average annual basis. Alternative No. 2 would, upon completion of the new regional treatment facility, utilize the entire capacity of the new interceptor sewer and preliminary treatment structure rather than limit the flow in the interceptor to the present intercepting capacity of 2.5 MGD. Also, a manually cleaned bar screen would be added at the Levee District pumping station to remove trash and floatable material from the CSO. Alternative No. 3 would require the construction of facilities to convey and treat an additional 10 times the design dry weather flow beyond the 2.5 times dry weather flow being intercepted and given full treatment at the regional treatment facility, resulting in the interception and treatment of overflows of up to 24 MGD. The projected cost for this alternative is $2,171,000. Alternative No. 4 would provide full compliance with Board regulations by utilizing all the improvements specified in Alternatives Nos. 2 and 3, but would also intercept, store, and treat the entire first flush. The projected cost for this alternative is $4,768,000. Lastly, Alternative No. 5 considered the total separation of Wood River's sewer system to eliminate combined sewer overflows. It was determined that the $23,000,000 project would be prohibitive from a cost standpoint. Apparently, the joint petitioners have opted to employ alternative No. 2, as the Agency has required interception and treatment of the full 4.8 MGD capacity for the combined sewer overflow and the installation of the bar screen. The total projected cost (in 1981 dollars) for this alternative was $443,400. The $390,000 already spent on the regional facility and the proposed $85,000 for the bar screen result in a total expenditure of $475,000.

Based on the 1981 CSO study, the Board concludes that the impact from the Wood River CSO is minimal. While the study indicated that there was a coloration difference at the outfall point, this difference can be attributed to the clearer color of the effluent from the treatment plant in relation to the much browner color of the silt carried by the Mississippi. The Board notes, however, that none of the alternatives considered the utilization of the Amoco 150 MG treatment lagoons. These large lagoons offer space in which to store first flush and an additional 10 times dry weather flow for future treatment.

On July 16, 1987, the Board requested more information as to the ownership and usage of these large lagoons. The joint petitioners responded on August 17, 1987, with a copy of the 1982 Operating Agreement, by and between Wood River and Amoco, which determines the rights and responsibilities of Wood River as to the storage lagoons and with estimated costs for the construction of attendant facilities. The joint petitioners reiterated that the lagoons function as a storage area for the 72-inch combined sewer, which is the outlet for surface drainage for the majority of the Amoco Refinery complex, and for untreated dry weather flows from Amoco and partially treated flows from other Regional plant users. In support of this position, the joint petitioners

pointed to paragraph 8 on pages 17, 18 and 19 of the Operating Agreement, which specifically addresses the storage lagoons.

The Board recognizes that Wood River is presently precluded from employing the treatment lagoons in its CSO operations under the terms of the Operating Agreement. However, the Board is not inclined to assume that this Operating Agreement cannot be changed. Perhaps with further negotiation, Wood River may acquire access to the lagoons for CSO storage and treatment.

The Board also recognizes that the cost of facilities to employ the lagoons, estimated by the joint petitioners to be $2,830,000 may be high. The Board notes that the joint petitioner's August 17, 1987, response provides the only indication of what facilities would be required to implement the lagoons and at what cost. The Board does not understand why all of the facilities listed in the joint petitioner's response are deemed necessary when it appears that some of the facilities are already in place. Because the joint petitioners have preferred to not consider this as an alternative, the record is insufficient for the Board to determine that the Amoco lagoons cannot be used to alleviate Wood River's combined sewer overflow problems. Nor can the Board determine that the costs would be unreasonable. Thus, the Board is not persuaded to grant a permanent exception, resulting in the permanent discharge to untreated sewage into the Mississippi River, at this time. However, the Board will grant Wood River a temporary exception for five years, in which time Wood River is to seriously consider using the lagoons as an alternative and to devise a cost-effective method of implementation. If on September 30, 1991, it wishes to pursue the matter, Wood River may submit an amended petition for exception which details: (1) Wood River's attempts to acquire usage of the lagoons; (2) if the lagoons cannot be employed, the specific reason(s) those attempts were unsuccessful; (3) if the lagoons can be employed, a plan for the implementation of the lagoons into the sewer system, with supporting economical and technical data; and (4) continued justification for the granting of exception (the Board notes that the record in this proceeding may be incorporated by reference into that docket).

In examining the alternatives considered by the joint petitioners, the Board concludes that alternative Nos. 4-5 are not justified economically. While these alternatives may result in discharge that complies with applicable effluent standards, it would be unreasonable to impose the burden of the costs (No. 4 - $4,768,000, and No. 5 - $23,000,000) on a city the size of Wood River (pop. 12,446) in relation to the benefit realized in the receiving stream. The joint petitioners allege that Alternative No. 3 ($2,171,000) is also not justified economically. The Board reserves judgment on the reasonableness of this amount until Wood River submits the amended petition described above. At that

time, the Board will know whether the lagoons can be used as an alternative and will know actual statistics with respect to the new regional facility's operations (i.e., actual interception of Wood River's combined sewer overflow rather than predicted amounts). The Board can make a more reasoned determination once it possesses such information. Alternative No. 1, the "no-action" alternative is not justified in light of the Agency's recommendation (Alternative No. 2), which the Agency believes will solve Wood River's CSO problem at a savings of several million dollars. The Board concurs. Interception and treatment of up to 4.8 MGD of flow, in addition to screening of the overflows prior to discharge, will significantly reduce the impact on the Mississippi River. Further, the cost is reasonable.

In conclusion, the Board finds that the evidence in the record supports granting Wood River a temporary exception to 35 Ill. Adm. Code 306.305(a) and (b), subject to conditions. The Board notes that the impact of Wood River's CSO discharge on the water quality of the Mississippi River will be minimal. In addition, the Board notes that the cost of alternative controls, such as they have been considered, are high.

ORDER

The City of Wood River is hereby granted a temporary exception from 35 Ill. Adm. Code 306.305(a) as such provision relates to first flush of storm flows and 306.305(b) for its combined sewer overflows into the Mississippi River, subject to the following conditions:

1. This grant of temporary exception shall terminate on September 30, 1992.

2. During this temporary exception period, Wood River shall, as a minimum:

   a) Intercept and provide full treatment for up to 4.8 MGD flow in the 84-inch combined sewer;

   b) Provide for screening of the overflows in the 84-inch sewer prior to discharge;

   c) Demonstrate a good faith attempt to acquire the usage of the Amoco Lagoon for storage and treatment of excess flows and report on an annual basis such demonstrations to the Board and the Agency;

   d) Submit the reports described in Subsection (c) not later than 30 days after the end of a calendar year.

3. 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.

4. 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.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 17th day of September, 1987 by a vote of 6-0.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board