

ILLINOIS POLLUTION CONTROL BOARD  
February 26, 1986

IN THE MATTER OF: )  
 )  
JOINT PETITION OF THE CITY OF ) PCB 85-211  
MARSEILLES AND THE ILLINOIS )  
ENVIRONMENTAL PROTECTION )  
AGENCY FOR EXCEPTION TO THE )  
COMBINED SEWER OVERFLOW )  
REGULATIONS )

MR. KEITH R. LEIGH APPEARED ON BEHALF OF THE CITY OF MARSEILLES.

MR. THOMAS DAVIS APPEARED ON BEHALF OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.

OPINION AND ORDER OF THE BOARD (by R. C. Flemal):

This matter comes before the Board upon a December 26, 1985, joint petition filed on behalf of the City of Marseilles ("City") and the Illinois Environmental Protection Agency ("Agency") for an exception to 35 Ill. Adm. Code 306.305(b) of the Board's combined sewer overflow (CSO) regulations as they apply to the City's existing CSO and sewage treatment facilities. Section 306.305(b) provides as follows:

Additional flows, as determined by the Agency but not less than ten times the average dry weather flow for the design year, shall receive a minimum of primary treatment and disinfection with adequate retention time.

The "additional flows" identified in this Section refer to discharges above and beyond all dry weather flows and the first flush of storm flows, as specified in Section 306.305(a).

Hearing was held on January 30, 1986, at the Marseilles City Hall. Testimony and exhibits were presented only by Petitioners; no members of the public were in attendance. There was no disagreement as to the facts.

Petitioners contend that existing overflows from the City's combined storm and sanitary sewer system have minimal impact on the water quality of, and do not restrict the use of, the Illinois River (the receiving stream). Petitioners also propose that Marseilles undertake a program which would enable the City to capture and treat first flush flows and to otherwise improve the capabilities of its sewage treatment system, and thus further minimize any impact of its CSO discharges.

In Board review of a joint petition, granting an exception to CSO rules based upon minimal discharge impact, as is the case here, is conditioned upon Petitioners providing justification according to the provisions of 35 Ill. Adm. Code 306.361(a):

An exception justification based upon minimal discharge impact shall include, as a minimum, an evaluation of receiving stream ratios, known stream uses, accessibility to stream and side land use activities (residential, commercial, agricultural, industrial, recreational), frequency and extent of overflow events, inspections of unnatural bottom deposits, odors, unnatural floating material or color, stream morphology and results of limited stream chemical analyses.

The Board finds that Petitioners have provided the information specified in Section 306.361(a), and that such information indicates that the granting of the requested exception would have a minimal discharge impact. Petitioners also contend that the alternative to granting of the requested exception would entail a costly, large-scale expansion of the sewage treatment plant. In view of these considerations the Board will grant the requested exception, subject to conditions as proposed by Petitioners.

#### DISCHARGE IMPACT

The City is located on the north bank of the Illinois River at approximately river mile 246 and approximately 25 miles below the confluence of the Des Plaines and Kankakee Rivers (head of the Illinois River). The City is served by approximately 12,000 L.F. of combined sewers and approximately 57,000 L.F. of separate sanitary sewers. The collection system drains through a single 27 inch sewer which has an estimated maximum capacity of 8.7 million gallons per day (MGD). This 27 inch sewer discharges to the Marseilles wastewater treatment plant. Overflows occur when flows in the 27 inch sanitary sewer exceed the pumping capacity of the primary treatment plant or primary flows exceed the capacity of the primary clarifier; this occurs at a flow rate between 2.30 and 2.48 MGD, depending upon the head in the system (R. at 87). Both sources of overflow are discharged to the Illinois River through a single 30 inch line which also carries the treated discharge from the plant. No other overflows exist in the Marseilles collection system.

At Marseilles the Illinois River consists of two channels, a north natural channel approximately 300 feet wide, and a narrow south channel modified for navigation. The two channels are separated by a forested island. The discharge point of the 30 inch bypass line is located on the north side of the north channel. The river bottom in the north channel is rocky (Ex 2) and has a normal 4 to 6 foot depth. This part of the river has no channelization or dredging for approximately one mile in each of the upstream and downstream directions. At the point of

discharge and for approximately one mile downstream the north bank of the north channel is bordered by a ten-foot wide forested belt, behind which is agricultural land. Petitioners contend that the near-stream land is not utilized nor accessible by children for recreational activities, nor is the river suitable for recreational activities other than fishing for at least one mile downstream due to rapid current and the shallow, rocky river bottom (Ex 7, p. 8); sport fishing is a popular activity (R. at 45).

Petitioners contend that the impact of the CSO overflow on the Illinois River is negligible, noting that the 7 day 10 year low flow of the Illinois River in the vicinity of Marseilles is 2086 MGD or 3228 cubic feet per second\*. The maximum peak hourly flow rate to the treatment plant is approximately 9.48 MGD. (Ex 4, p. 18; R. at 89). Assuming all of the sewage from the combined system in excess of plant capacity were dumped into the river, which it is not, the total discharge into the river would be 7.46 MGD. This provides a dilution ratio of 280 to 1 at low flow. At average flow rates, the dilution ratio would be considerably higher, making the impact on the Illinois River considerably less. Petitioners also note (Petition, p. 3):

The first flush analysis established a volume of 405,000 gallons. Even if the entire first flush is bypassed to the Illinois River, which it is not, it is approximately 0.019% of the low flow for the Illinois River.

The first flush volume of 405,000 gallons cited above was calculated from analysis of an overflow event which occurred on June 14, 1983 (Ex 1, p. 17). At hearing the City noted that an earlier event, which occurred on May 1, 1983, but which had not been previously analyzed in this context, produced an estimated first flush of 651,300 gallons (Ex 1, p. 18), more than 50% larger than that cited in the Petition. As regards impact on the receiving stream, the Board notes that this larger first flush, if entirely bypassed, would still constitute significantly less than one percent of the low flow for the Illinois River.

Petitioners estimate that 4 to 8 events sufficient to cause overflow occur per year, depending upon rainfall conditions (Ex 1, p. 9). Actual numbers of events in the past ten years have varied from 17 in 1977 to none in 1981 (Ex 8, p. 1). Petitioners further contend that the expected number of events has decreased over the past several years due to effective removal of inflow and infiltration sources (R. at 38-40), which is supported by the

\*Flow figures for the Illinois River are for the combined discharge of the north and south channels. However, according to Petitioners (R. at 57, 94), flow is predominantly through the north channel; south channel flow is limited essentially to lockage.

observation that within the past five years the number of overflow events has averaged five per year versus 8.6 per year in the preceding five-year period (Ex 1, p. 9; Ex 8, p. 1). However, the City believes that inflow and infiltration removals have been or are in the process of being taken to their practical limits, and that therefore no further significant gains in this direction can be expected (R. at 30-31).

Actual inspection of the river bank and river bottom of the north channel indicate that there is no visual effect of the discharge on the river bank or river bottom (Ex 2; R. at 43). Included in this inspection was determination via dye discharge (Ex 2; Ex 5, p. 4) of the mixing zone, which was determined to be between 6 to 15 feet wide and 15 to 75 feet long (Ex 5, p. 4; R. at 44), depending on flow conditions in the river. Petitioners assert that sampling of stream bottom sediments within the mixing zone revealed no discoloration, abnormal textures, or odors (Ex 7, p. 3).

Analyses of instream water quality were undertaken, representing both dry and wet weather sampling (Ex 7, p. 9). Sampling included fecal coliform bacteria, dissolved oxygen, five-day biochemical oxygen demand, suspended solids, volatile suspended solids, and ammonia. Petitioners note that during each sampling from an overflow event the receiving water of the Illinois River was more turbid than water coming from the outfall (Ex 7, p. 9). Petitioners believe that these data show that the present bypassing has no effect on instream parameters, other than perhaps for fecal coliform bacteria. With capture and treatment of the full first flush Petitioners assert that the water quality impact will be further minimized.

#### PROPOSED CONDITIONS

If the exception is granted, the City proposes to change its influent pumping capacity to be compatible with a design maximum flow (DMF) of 2.016 MGD (Ex 1, p. 3) and to ensure that overflows occur only while the treatment plant is receiving its DMF. The City further proposes, if the exception is granted and as conditions to such action, to undertake a facilities construction program which, at an estimated cost of \$474,650, would provide, inter alia (R. at 92), for the following:

- 1) Capture, storage in a 0.65 million gallon storage tank or basin, and complete treatment of the entire first flush.
- 2) Screening of all flows received at the plant prior to discharge.
- 3) Increase in flood protection by raising the existing dikes around the treatment plant to an elevation of 481.1 feet, which is 1.5 feet above the highest recorded flood.
- 4) Elimination of river backup into the system.

The City intends to capture the first 650,000 gallons of overflow in its first flush storage system. This capacity Petitioners believe is adequate to insure treatment of the full first flush as well as to provide an adequate safety margin (R. at 53). Storage of some volume less than the actual first flush volume can be accommodated because that portion of the first flush which arrives at the plant between the time the dry weather flow is initially exceeded and the time the DMF is reached would enter the plant and be treated immediately; only the residual, not-immediately-treated first flush requires storage. This is illustrated by the May 1, 1983 event. Had the proposed plant then been in existence, 323,800 gallons of the 651,300 gallon first flush would have undergone immediate treatment and 327,500 gallons would have required storage and later treatment (Ex 1, p. 18). Thus, a 650,000 gallon storage facility would have provided a safety factor of approximately 2.

The City agrees to undertake the three additional facilities construction items (screening, dike modification, and backup elimination) as a good faith effort to assure that the plant operates in such a manner as to continue to minimize environmental impact.

In view of the evidence above, the Board finds that granting of a CSO exception to the City of Marseilles, based on minimal discharge impact, is justified. The Board therefore grants the exception, with conditions as specified by Joint Petitioners.

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

#### ORDER

The City of Marseilles (City) is hereby granted an exception from 35 Ill. Adm. Code 306.305(b), for combined sewer overflows into the Illinois River, subject to the following conditions:

- a) The City shall ensure that overflows occur only while the treatment plant is receiving and treating its design maximum flow.
- b) The City shall provide for capture and complete treatment of the entire first flush.
- c) The City shall provide for screening of all flows received at the plant prior to discharge.
- d) The City shall provide increased flood protection for the treatment plant by raising the existing dikes around the plant to an elevation of 481.2 feet.
- e) The City shall eliminate river backup into the system.

Within forty-five days of the date of this Order, the City shall execute a Certification of Acceptance and Agreement to be bound to all terms and conditions of this exception. Said Certification shall be submitted to the Board, as well as to the Agency at 2200 Churchill Road, Springfield, Illinois 62706. The forty-five day period shall be held in abeyance during any period that this matter is being appealed. The form of said Certification shall be as follows:

CERTIFICATION

I, (We), \_\_\_\_\_, having read the Order of the Illinois Pollution Control Board, in PCB 85-211, dated February 26, 1986, 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.

J. D. Dumelle and Joan Anderson concurred.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 26<sup>th</sup> day of February, 1986, by a vote of 7-0.

Dorothy M. Gunn  
Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board