ILLINOIS POLLUTION CONTROL BOARD
November 3, 1983

MIDWEST SOLVENTS CO. OF ILLINOIS, Petitioner,	)	
V.	)	PCB 83-159
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, Respondent.	)	

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

This provisional variance request comes before the Board upon a November 3, 1983 Recommendation of the Illinois Environmental Protection Agency (Agency). The Agency recommends that a 45-day provisional variance be granted to Midwest Solvents Co. of Illinois (Midwest) to provide relief from 35 Ill. Adm. Code 304.120(b) as it relates to BOD and total suspended solids effluent limitations during a portion of the time period that Petitioner's wastewater treatment facilities (WWTP) are undergoing construction to allow the expansion of the existing wastewater treatment lagoons.

Midwest owns and operates a distillery plant in Pekin, Illinois which was purchased from the American Distilling Company in June, 1980. The Petitioner's distillery produces alcohol for beverage and nonbeverage uses and includes a feed mill and bottling operation. (Rec. 1).

Midwest's WWTP, which was constructed and put into operation in 1971, includes an extended aeration activated sludge process followed by chlorination. There are 3 activated sludge units having a 244,000 gallon capacity with a liquid depth of about 10 feet. Additionally, the 3 rectangular secondary clarifiers, which each measure approximately 45' x 10' have a side wall depth of 10 feet apiece. Flow from the aeration basins first enters separate clarifiers and then the flow from each clarifier is combined for chlorination and subsequently discharged to the Illinois River pursuant to NPDES Permit No. IL0002909.

The Petitioner's WWTP generates various wastewater streams which are treated at Midwest's WWTP before discharge into the Illinois River via Outfall 001. The discharge from Outfall 001, which includes process wastewater from the feed mill, process "wash down" wastes, sanitary wastewater, and wastewater from demineralizer regeneration, is the subject of the present provisional variance

request. Additionally, cooling water (from both contact and noncontact sources) is discharged untreated into the Illinois River via Outfalls 002, 003, and 004. (Rec. 2).

On June 13, 1979, the Petitioner was issued NPDES Permit No. Il002909 which authorized discharges from Outfalls 001, 002, 003, and 004. This NPDES Permit became effective on July 13, 1979, was subsequently modified on August 11, 1980, and then expired on October 31, 1983. On May 4, 1983, the Agency received the Petitioner's application which requested that the NPDES Permit be reissued. (Rec. 2).

The Petitioner's NPDES Permit establishes effluent limitations for Outfall 001 pertaining to BOD and total suspended solids. The 30-day average concentration limit for BOD is 20 mg/1, while the daily maximum concentration level for BOD is set at 50 mg/1. Similarly, the 30-day average concentration limit for total suspended solids (TSS) is 25 mg/1, while the daily maximum concentration level for TSS is 62 mg/1. The Agency has noted that discharge monitoring reports submitted by Midwest indicate that Petitioner's discharge from Outfall 001 has been in compliance with the previously mentioned BOD and TSS limitations for the past year. (Rec. 2-3).

Because of an anticipated increase in distillery production which is expected to occur within the next few years (and is expected to double the plant production capacity), Midwest has decided to expand its present wastewater treatment plant. (See: Exhibit A). It is contemplated that the existing WWTP will be initially expanded to handle a flow rate of 0.5 million gallons per day (MGD) and 5,000 pounds per day of BOD. Based on its experiences in its Atchison, Kansas plant, the company has estimated that future expansion could increase the capacity of the WWTF to an ultimate design capacity of a 0.7 MGD flow rate and 8,000 pounds per day of BOD.

The first step in the overall expansion plan is to expand the existing earthen aeration basins from the present total capacity of 0.72 MG (i.e., the 3 basins each have an effective volume of approximately 0.24 MG; thus 3 x 0.24 MG = 0.72 MG) to an effective volume capacity of 1.5 MG.

The company has considered various possible options for increasing aeration volume which include: (1) building new concrete basins on the existing basin site at a cost in excess of $1,000,000.00; (2) building extra basins on the existing sludge lagoon site at a cost of over $1,000,000.00; (3) modifying the existing basins by making the berms higher at a cost between $300,000.00 and $400,000.00; and (4) modifying the existing basins by making the basins deeper at a cost between $300,000.00 and $400,000.00. According to Scheible and Associates, the Petitioner's environmental management and engineer-

ing consultants, it was originally planned to make the 3 existing lagoons into 2 larger lagoons by raising the height of the berms. However, because of techinical engineering concerns over the stability of the berms if they are made higher, the engineering consultants have recommended making the lagoons deeper, instead of making the berms higher.

In order to expand the aeration basins by making the basins 4 feet deeper, the Petitioner plans to: (1) make a large lagoon with a volume of 1.07 MG and a small lagoon with a volume of 0.45 MG by removing the berm between the existing aeration basins #2 and #3 (thereby making 3 basins into 2 basins); (3) excavate the sides and bottoms of both lagoons while maintaining the flat bottom area; (3) increase the aeration capacity and provide an automatic dissolved oxygen monitoring system; and (4) modify the control and monitoring systems, the electrical feed lines, and the influent, effluent, and sludge recycle piping. (See: Exhibit A).

To accomplish this expansion, Midwest plans to take aeration basin #1 out of service first by pumping its contents into aeration basins #2 and #3. All process wastewater will be discharged into aeration basins #2 and #3 until construction work is completed on aeration basin #1.

After construction work on aeration basin #1 is completed, aeration basins #2 and #3 will then discharge their contents into aeration basin #1. All process wastewater will then be discharged into aeration basin #1 until construction work is completed on aeration basins #2 and #3.

The first step of this two-step sequence of construction work is expected to take a maximum of 4 weeks. During this first step in construction, one of the 3 existing lagoons will be out of service which will reduce the wastewater treatment capacity by approximately 33%.

The second step of the construction process is expected to take a maximum of 4 weeks, too. During this second stage of construction work, the expanded aeration basin #1 will be placed in service and the two other lagoons will be out of service for expansion, which will effect a reduction of the original treatment capacity by about 38%. (See: Exhibit A, Figures 3 & 4).

Thus, the total construction work on the aeration basin expansion is expected to be completed in less than 8 weeks so as to avoid the onslaught of inclement winter weather. During this construction period, effective treatment capacity is expected to be reduced by 33 to 38 percent.

To offset the loss of hydraulic capacity during the construction period, the Petitioner plans to "try to increase in mixed liquor suspended solids". (See: Exhibit A). However, during this construction period, Midwest estimates that BOD will average approximately 50 mg/1 with a daily maximum concentration of 100 mg/1 and TSS will also increase in the same proportion as BOD. (Rec. 4).

The Agency has concurred with the Petitioner that there is no other reasonable option for expanding the WWTP other than the proposal that Midwest has delineated. (Rec. 4).

Additionally, the Agency has concluded that the environmental impact on the Illinois River during the short period that the WWTF is undergoing expansion will be minimal. (Rec. 4).

Accordingly, the Agency has concluded that compliance on a short-term basis with the provisions of 35 Ill. Adm. Code 304.120(b) would impose an arbitrary or unreasonable hardship. Therefore, the Agency recommends that the Board grant Midwest a provisional variance from Section 304.120(b) for a period of 45 days, subject to certain conditions.

Pursuant to Section 35(b) of the Illinois Environmental Protection Act, the Board hereby grants the provisional variance as recommended.

ORDER

Midwest Solvents Co. of Illinois is hereby granted a provisional variance from 35 Ill. Adm. Code 304.120(b), subject to the following conditions:

1. This provisional variance shall terminate 45 days after the Petitioner begins construction by removing any of the three aeration basins from service, but in no event shall go beyond December 31, 1983.

2. During the term of this provisional variance, the Petitioner's effluent shall comply with the following concentration limitations:

Parameter	Average	Maximum
BOD	50 mg/l	100 mg/l
Total Suspended Solids	50 mg/l	100 mg/l

3. During the term of this provisional variance, the Petitioner shall continue to monitor and report its effluent according to the conditions set forth in its NPDES permit No. IL0002909.

4. The Petitioner shall notify Robert E. Broms, P.E., Manager, Compliance Assurance Section, Division of Water Pollution Control at 217/782-9720:

a. when the first basin is taken out of service;

b. when each of the other basins is subsequently taken out of service; and

c. when the WWTF is put back into operation.

5. The Petitioner shall obtain the necessary Agency permits prior to beginning construction.

6. Within 10 days of the date of the Board's Order, the Petitioner shall execute a Certificate of Acceptance and Agreement which shall be sent to:

Robert E. Broms, P.E., Manager
Compliance Assuance Section
Division of Water Pollution Control
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Ilinois 62706

This certification shall have the following form:

I, (We) _____,
having read the Order of the Illinois Pollution Control Board in PCB 83-159 dated November 3, 1983, understand and accept 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.

Chairman Dumelle concurs. Board Member J. Anderson dissents.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 30th day of November 1983 by a vote of 4-1.

Christan L. Moffett, Clerk
Illinois Pollution Control Board