

ILLINOIS POLLUTION CONTROL BOARD
September 8, 1988

SONOCO PRODUCTS COMPANY,)
)
 Petitioner,)
)
 v.) PCB 88-60
)
 ILLINOIS ENVIRONMENTAL)
 PROTECTION AGENCY,)
)
 Respondent.)

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

This matter comes before the Board upon an April 4, 1988 petition for variance filed by Sonoco Products Company (Sonoco). Sonoco requests variance from the effluent standards for five-day biochemical oxygen demand (BOD₅) and total suspended solids (TSS) set forth at 35 Ill. Adm. Code 304.120. On April 25, 1988 a written objection to the variance was filed with the Board, thereby necessitating a public hearing. On May 23, 1988 Sonoco filed an amended petition responding to the Board's request for additional information. The Illinois Environmental Protection Agency (Agency) filed its recommendation on July 18, 1988, recommending denial of the variance. On July 28, 1988, hearing was held in Rockton, Illinois. Members of the public were present and testified. For the reasons set forth below, the Board today grants Sonoco a variance from 35 Ill. Adm. Code 304.120 subject to certain conditions.

BACKGROUND

The Sonoco Products Company Rockton Paper Mill (the Mill) was acquired by Sonoco in 1963. The Mill is approximately 120 years old and is located on the Rock River in Rockton, Illinois. The Mill produces paperboard from wastepaper and waste corrugated boxes. In 1987, the Mill recycled approximately 27,000 tons of wastepaper to produce 24,362 tons of specialty paperboard. The primary raw materials for the papermaking process are wastepaper, water and steam.

Sonoco's wastewater treatment system was designed in 1966 and construction was completed in 1967. The system utilizes the extended aeration variation of the activated sludge process. The system consists of 23 feet diameter primary clarifiers, followed by a 430 foot long oxidation ditch (loop design), and then a 28 feet diameter final clarifier. The system was designed for 0.345 million gallons per day (MGD) average flow with a 90 to 95%

treatment efficiency for BOD₅ and TSS. However, water usage and effluent flow have been reduced to the current 0.081 MGD* average as a result of in-plant process modifications and water/sludge recycling, i.e., "closing up." Nutrient addition of anhydrous ammonia and phosphorus pellets is used as necessary to enhance the activated sludge process. Treatment sufficiency is summarized below from the Discharge Monitoring Reports (DMRs) submitted to the Agency during the most recent twelve month period.

<u>Month</u>	<u>Average Flow (MGD)</u>	<u>Loadings lbs/day</u>		<u>Concentrations (mg/l)</u>	
		<u>BOD</u>	<u>TSS (Mo. Avg.)</u>	<u>BOD</u>	<u>TSS (Mo. Avg.)</u>
5/88	0.085	16.0	21.1	22.5	29.4
4/88	0.087	16.9	24.24	23.2	33.3
3/88	0.086	18	23.6	25.2	33.1
2/88	0.085	20	16.7	27.25	22.9
1/88	0.087	21	18.3	29	25.4
12/87	0.084	20	20.5	29	29
11/87	0.087	16.25	17.5	22.5	24.1
10/87	0.085	19.6	20.9	28.4	29.7
9/87	0.086	13	17.4	19	23.8
8/87	0.090	13	19.4	17.5	25.8
7/87	0.077	7.6	15.6	13.8	22
6/87	<u>0.082</u>	<u>9.5</u>	<u>15.3</u>	<u>13.5</u>	<u>23.3</u>
Average (Illinois standard)	0.085	15.9	19.2	22.6 30	26.7 30

Sonoco states that its operations are in full compliance with United States Environmental Protection Agency (USEPA) guidelines that require use of the best control technology for conventional pollutants in the "Paper from Wastepaper" subcategory of the pulp, paper and paperboard industry. However, Sonoco argues that the Illinois effluent standards for BOD₅ and TSS set forth at 35 Ill. Adm. Code 304.120 are "at best difficult, and often impossible, for the treatment system at the Rockton Mill to achieve," and that periodic excursions from the limits occur. Moreover, Sonoco argues that planned future production increases will almost certainly result in larger excursions from the effluent standards.

Timely notice of the variance petition was effectuated by the Agency. The Agency states that two written objections were received, one from Ms. Ora Larson, who identified herself as a trustee of the Village of Rockton and a member of the Winnebago County Groundwater Advisory Committee, and the other from Mr. Richard Steward on behalf of the Rockton Boat Club. The Board

* The Agency states that the 1987 average flow was 0.085 MGD.

notes that only Ms. Larson's objection was filed with the Board. The Agency states that both letters expressed concern about dioxin from paper pulp industries in general and about maintaining the dissolved oxygen levels in the Rock River. As Sonoco waived its right to a hearing, Ms. Larson's timely filed objection served to trigger the hearing held on July 28, 1988.

The Agency states that Sonoco has neither previously requested variance relief nor been the subject of any enforcement action. However, Sonoco has filed a permit appeal (PCB 88-59) which is presently pending.

HARDSHIP

Sonoco believes that compliance with the effluent standards for BOD₅ and TSS would impose an arbitrary and unreasonable hardship on the Rockton Mill.

First, Sonoco argues that "it is economically unreasonable to require more stringent effluent standards beyond the Federal BCT limitations." (Amended Petition at 8.) Sonoco states that the Mill is classified by the USEPA as an existing point source within the "Paperboard from Wastepaper" subcategory of the pulp, paper, and paperboard industrial classification, thereby subjecting the Mill, pursuant to Section 301(b) of the Clean Water Act to the "best practicable control technology currently available" (BPT) as defined by USEPA pursuant to Section 304(b) of the Clean Water Act. Sonoco notes that in 1982, USEPA received information that mills processing corrugated material experience higher BOD₅ raw waste loads than other types of wastepaper mills. Thereafter, USEPA divided the paperboard from wastepaper subcategory into "noncorrugating" and "corrugating" medium subdivisions. USEPA then promulgated the present BPT mass-based BOD₅ and TSS effluent limitations for the corrugating medium subcategory, of which the Rockton Mill is one. That standard for BOD₅ is a maximum of 5.7 pounds per 1000 pounds production (lbs/1000 lbs production) for any one day and a 2.8 lbs/1000 lbs production average daily value for 30 consecutive days. For TSS, the standard is a maximum of 9.2 lbs/1000 lbs production for any one day and a 4.6 lbs/1000 lbs. production average daily value for 30 consecutive days. Sonoco states that in an attempt to comply with the Clean Water Act's requirement that all existing point source dischargers of conventional pollutants achieve effluent limitations equivalent to those achieved by dischargers employing best pollutant control technology (BCT), USEPA conducted a review of the control and treatment technologies available and applied the "two-part cost-reasonableness test" pursuant to Section 304(b)(4)(B) of the Clean Water Act. Sonoco's amended petition includes USEPA's findings with respect to the cost reasonableness of imposing BCT on this industry: none of the subcategories in the pulp, paper, and paperboard industry passed both parts of the cost-

reasonableness test with respect to any of the options analyzed. As a result, Sonoco states that USEPA has determined that for all subcategories within the industry the best pollution control technology available for conventional pollutants that is reasonable in cost and effluent reduction benefit is that provided by BPT.

Apparently, Sonoco's argument is as follows: (1) there exist three levels of control technology - BPT, BCT, and the Illinois limits, (2) BCT is more stringent than BPT, and the Illinois limits are more stringent than BCT, (3) USEPA has determined that the cost of imposing BCT on this industry is unreasonable, (resulting in the application of BPT on this industry), (4) the Illinois limits, being more stringent, are more costly than BCT, (5) therefore, the Illinois limits are also economically unreasonable. Unfortunately the Agency recommendation is not enlightening on this issue. Nor was this issue discussed at hearing. Thus the only source of information on the issue is the amended petition.

The Board is unable to make a finding of arbitrary or unreasonable hardship on this basis. First, there is no information to indicate what the expected cost of compliance is with the Illinois effluent limitations, i.e., the limitations in issue. Thus, the Board cannot conclude that compliance with 35 Ill. Adm. Code 304.120 would impose a hardship on this basis alone. Moreover, the Board notes that Tables 1 and 3 of the amended petition set forth effluent limitations imposed by BPT and BCT. These effluent limitations are alleged to be exactly the same. The Board questions whether this is correct. Finally, although Table 4 presents BCT limitations invalidated by the Court in American Paper Institute v. EPA, 660 F 2d 954 (4th Cir. 1981), the record does not indicate what BCT limitations were achieved in the various options tested for economic reasonableness. Thus, the Board cannot determine how stringent the BCT limits were in the alternatives found to be economically unreasonable as compared to the Illinois limits. In short, the Board is not persuaded to find arbitrary or unreasonable hardship based upon this rationale.

Sonoco next argues that the technical feasibility of attaining the Illinois BOD₅ and TSS effluent standards has not been demonstrated to be effective for the corrugating subdivision of the paperboard from wastepaper subcategory. Sonoco states that substantial evidence demonstrates that biologically treated recycled board mill effluent cannot consistently meet the Illinois monthly average effluent limitations. Sonoco points to a study conducted by the National Council of the Paper Industry to Air and Stream Improvement (NCASI), which determined that the long-term average effluent quality must be 18.5 mg BOD₅/l to consistently meet a 30 mg/l monthly average. Further, the NCASI study demonstrated that only nine of the twenty-nine mills

affected achieve the 18.5 mg BOD₅/l level. A similar analysis of TSS discharges indicate that three of the other twenty-nine mills would consistently meet the Illinois TSS limit of 30 mg/l.

On this point, too, the Agency recommendation is not very enlightening. The Agency states that the unreasonable or arbitrary hardship imposed by compliance with the load limits must be viewed in the context of the Rockton Mill. "While the treatment facilities are able to achieve a BOD removal efficiency of 99%, the Mill itself is old and small with a daily production of approximately 75 tons of specialty cardboard." (Agency Rec. p.6).

The Board is not inclined to find that it is not technically feasible to comply with the Illinois limits for BOD₅ and TSS where the Rockton Mill has, for the most part, been in compliance. In fact, at the present level of operation, the monthly averages (from June 1987 to May 1988) of the BOD and TSS concentration limits are 22.6 mg/l and 26.7 mg/l respectively, according to the statistics submitted by the Agency. These monthly averages demonstrate that it is not technically infeasible to comply with the requirements of 35 Ill. Adm. Code 304.120, notwithstanding the fact that the concentration limit for TSS was violated twice in 1988.

Finally, Sonoco argues that the Rockton facility cannot comply with the Illinois BOD₅ and TSS monthly average concentration-based effluent standards because the facility decreased its water consumption pursuant to a water conservation program. Although the wastewater treatment system was designed as a 0.345 MGD system, Sonoco notes that effluent flow has been reduced to an average flow of 0.081 MGD using both in-plant process modification and water/sludge recycling from the waste treatment plant. Sonoco states that this decrease in water consumption has significant environmental benefits which Sonoco articulates as follows:

- (1) The recycling of in-plant water increases BOD₅ and TSS concentrations in the paper stock; consequently more of these pollutants are contained in the manufactured paper and less are released to the receiving stream, (2) the reduction of flow increases the retention time of the wastewater in the treatment facility, thereby resulting in smaller amounts of BOD₅ and TSS being released to the receiving stream since the facility has more time to treat the wastewater, and (3) the reduction in water usage results in substantial water conservation, a result widely recognized as beneficial to the environment. (Amended Pet. pp. 19-20).

However, Sonoco states that TSS and BOD₅ concentrations are inversely related to wastewater flow. As wastewater decreases, the concentration of the pollutants released to the environment increases. Thus, Sonoco argues that for it to decrease the concentration of TSS and BOD₅ to meet the Illinois requirements, it would have to increase wastewater flow, thereby losing the benefits articulated above.

Here, too, the Board is not persuaded to find arbitrary or unreasonable hardship. The Agency's recommendation sets forth the Mill's discharge statistics as submitted in the Discharge Monitoring Report (DMRs) during the most recent year, i.e., June 1987 to May 1988. Average flows have ranged from 0.077 MGD in July of 1987 to 0.090 in August of 1987. All other months had average flows somewhere in between those amounts. Yet the standards were violated only twice; which indicates that the plant can operate in compliance. Although these violations rendered the plant out of compliance for enforcement purposes, the Board cannot find arbitrary or unreasonable hardship on this basis.

Notwithstanding all of the above discussion, Sonoco's request must be viewed in context. Sonoco has attempted to demonstrate arbitrary or unreasonable hardship based on present levels of operation, and the Board has declined to find such hardship on the present levels of operation. In other words, the Board agrees with the Agency that at the present level of operations a variance is not necessary. However, Sonoco has stated its desire to increase operations and wishes to do so in an environmentally conscientious manner. Sonoco has submitted evidence which indicates that increased operations would result in exceedances of the BOD₅ and TSS standards. The Agency admits that "anticipated noncompliance appears to be likely although infrequent" and "it is foreseeable that any proposed increase in production might be hindered by the load limitations." Thus, it appears that the Agency recognizes the need for a variance at an increased level of operation, although it does not specifically so state. Therefore, the Board believes that the record establishes that Sonoco would suffer arbitrary and unreasonable hardship if it were required to comply with 35 Ill. Adm. Code 304.120 at an increased level of operations.

ENVIRONMENTAL IMPACT

Sonoco believes that its current discharge causes no adverse environmental impact. Sonoco quantified the effect of the Rockton Mill's BOD₅ discharge on the Rock River by calculating the oxygen demand placed on the river from the BOD₅ discharged from the Mill. The performance data at the Mill demonstrate that the average daily quantity of BOD₅ discharged for thirty consecutive days in 6,123.6 grams BOD₅ contributed to the River

is 0.00061 mg. BOD₅ per liter of Rock River Water. The maximum daily BOD₅ discharge places "an oxygen demand of 0.00163 mg/l on the Rock River at average flow and a 0.013 mg/l demand on the river at its lowest flow in fifty-four years." (Amended Pet. p. 22.) Sonoco argues that these calculations strongly indicate that the Rockton Mill's BOD₅ discharge has a "de minimus" effect on the Rock River. Sonoco also calculated the amount of TSS contributed by the Mill to the Rock River. The average daily amount of TSS discharged for thirty consecutive days is 9,525.6 grams, and the maximum daily amount of TSS discharged is 133,358.4 grams. Based on an average flow of 4,283 cubic feet per second and the average daily TSS load, Sonoco determined that the Mill adds 0.00095 mg. of TSS to a liter of Rock River water. The maximum daily load of TSS to an average Rock River flow was calculated to add 0.0133 mg. of TSS to a liter of Rock River water.

In its recommendation, the Agency states that it has no information to refute the representations made by Sonoco as to either the condition of the receiving stream or the impact upon such stream from Sonoco's discharge. According to the "Illinois Water Quality Report 1986-1987" (IPEA/WPC/88-002), dated April, 1988, the entire length of the Rock River

was classified as having partial aquatic life use support with minor impairment. Phosphorus was the major cause of less than full support due to MWWTP (municipal wastewater treatment plant) discharges and agricultural runoff (crop land and pasture land). (Agency Rec. p.4).

Further, the Agency collected certain data at a site located at the Route 75 bridge at Rockton in 1986. The numerical value assigned to the Rock River at this location as to the Water Quality index (WQI) was 39.7. As the WQI value exceeds 20, the water quality of the Rock River at this point was considered to be limited to a certain extent. The Agency determined that the cause of this limitation in terms of use impairment was excess nutrients, found to be in municipal discharges, nonirrigated crops production and pasture land use. The Agency states therefore that there is no indication that Sonoco's discharge has any adverse impact on the Rock River. In fact, the Agency states that the receiving stream has excellent dissolved oxygen content, due in large part to the physical conditions of the stream itself, and can therefore easily assimilate the discharge flows.

The Board is persuaded that current discharges from the Mill cause no significant adverse environmental impact. However, the Board is uncertain as to the impact of discharges resulting from an increased level of operation. The record does not specify what impact will result. Nonetheless, it appears that, because

of the excellent dissolved oxygen content in the River and because of the relatively small amount of discharge per day, discharges resulting from increased operations will have no significant adverse impact upon the River during the limited period of this variance.

COMPLIANCE PLAN

Sonoco has identified several possible methods for achieving compliance with 35 Ill. Adm. Code 304.120. Specifically, Sonoco's compliance alternatives fall within three distinct groups: (1) additional treatment technologies, (2) further modifications to recycle more process water and increase efficiency, and (3) additional compliance options. The group (1) alternatives include (a) chemically assisted clarification, (b) filters without chemical addition, and (c) filters with chemical addition. The group (2) alternatives include (a) partial close-up, and (b) total close-up. The group (3) alternatives include (a) discharge to a local publicly owned treatment works, (b) land application of effluent, and (c) a combination of other identified alternatives. Sonoco states that all of the above activities will be conducted as concurrently as possible, and submits the following schedule for compliance.

<u>ACTIVITY</u>	<u>BEGIN DATE</u>	<u>END DATE</u>
1. Group I - Pilot Studies		
Phase I (fall/winter)	09/01/88	12/01/88
Phase II (spring/summer)	04/01/89	07/01/89
2. Group 2 - Process		
Modifications	06/01/88	05/01/89
3. Group 3 - Additional		
Compliance Options	06/01/88	05/01/89
4. Data Analysis & Selection		
of Compliance Alternative	07/01/89	11/01/89
5. Equipment Purchases; Permit		
Application and Approval	11/01/89	04/01/90

- | | | |
|--|---------------|----------|
| 6. Construction | 04/01/90 | 12/01/90 |
| 7. Operational Testing,
Training & Modification | 12/01/90 | 09/01/91 |
| 8. Compliance Achieved | No later than | 09/01/91 |

Sonoco states that the study period is based upon the amount of time that will be required to test the compliance options during the seasonal periods when TSS and BOD₅ levels are most variable. The highest amount of strain, and apparently the most valid test of treatment technologies, process modification, and total waste volume, occurs during the change of seasons. Thus, Sonoco states that the reliability of its studies depends on its ability to conduct tests through the fall of 1988 and spring of 1989. Sonoco also notes that after it analyzes its test results, if it concludes that no compliance alternative is technically feasible and economically reasonable, it will promptly seek site specific rulemaking relief. If Sonoco concludes that an alternative is feasible and reasonable at that time, Sonoco will implement it according to the schedule above. Finally, Sonoco states that is it willing to submit progress reports to the Board and Agency during the variance period.

The Agency states that it believes Sonoco has set forth an adequate exploration of the compliance options and a sufficiently detailed plan for investigating and implementing further control measures. The Agency also believes that the schedule set forth by Sonoco is acceptable.

The Board, too, believes that Sonoco has set forth adequate compliance alternatives. However, the Board has a concern with respect to the schedule proposed. In the event that Sonoco determines that no compliance alternative is technically feasible and economically reasonable, Sonoco states that it will seek site specific relief. This appears to be a conditional compliance plan. The Board will only grant a variance for a period in which the facility is actively working toward attaining compliance. The Board is not persuaded to grant a variance for a period conditioned upon Sonoco determining that a compliance option is technically feasible and economically reasonable. That is a determination that the Board is authorized to make. Thus, the Board will grant the variance to cover the period of testing and analysis of results, i.e., through the data analysis and selection of compliance alternative section ending November 1, 1989. Upon reaching its determination on or before November 1, 1989, Sonoco may petition for a variance extension. At that time, Sonoco may be in a better position to commit to a definite compliance plan. Finally, so as not to subject Sonoco to

enforcement during the period it seeks the variance extension after November 1, 1989, the Board will add 120 days such that the variance will expire on March 1, 1990.

INTERIM STANDARDS

Although the Agency recommends denial, it acknowledges that "the Board may well grant variance relief," and it suggests interim limits for the discharge of BOD₅ and TSS during the period of the variance. The Agency states that Sonoco could easily comply with interim limits of 32 mg/l BOD₅ and 36 mg/l TSS. The Agency further states that load limits could be set at 30 lbs/day for both parameters.

Sonoco objects to the Agency's suggested interim limits. Sonoco points out that the Agency offers no explanation for its belief that Sonoco can meet these interim limits. Sonoco believes that no interim limits should apply during the period of the variance because the threat of enforcement will hamper testing flexibility. Sonoco states that its commitment to conservation and its compliance record show that it will not abuse its variance privileges by relaxing its environmental standards. Sonoco believes that the most practical way to address the Agency's concerns is to notify the Agency of its testing plans and allow Agency representative to be present during testing.

The Board is persuaded by Sonoco that the Agency's suggestions lack justification. Further, the Board believes that Sonoco's notification of the Agency of its testing plans along with an invitation to observe will help alleviate the Agency's concerns. Therefore, the Board will require Agency notification. However, the Board is concerned about what impact unlimited discharges may have upon the Rock River in light of this summer's "drought" conditions. The record does not disclose what impact the drought has had upon the Rock River, and, as a result, the Board is hesitant to permit unlimited discharges at all times. The Board believes that interim concentration limits of 45 mg/l and load limits of 40 lbs/day for both BOD and TSS during the periods that testing is not conducted provide Sonoco the flexibility it requires to test its compliance options while not adversely impacting the Rock River during the summer's drought. However, so as to provide Sonoco the flexibility it requires to adequately test compliance methods, no interim limits shall apply during actual testing, provided that the Agency is notified in advance.

CONCLUSION

In summary, the Board finds that compliance with the effluent limits for BOD₅ and TSS would impose an arbitrary or unreasonable hardship upon Sonoco if it were to increase its

level of operation. The Board finds that the grant of a variance would result in no significant adverse impact, if any, on the environment. The Board accepts the compliance plan and schedule proposed by Sonoco and will incorporate it into the Board's Order below. Finally, the Board finds that interim concentration limits of 45 mg/l and load limits of 40 lbs/day for both BOD₅ and TSS during non-testing periods and no limits during testing periods provide Sonoco with reasonable flexibility to conduct its tests while not adversely impacting the Rock River. Sonoco's variance request is therefore granted.

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

ORDER

Sonoco Products Company (Sonoco) is hereby granted a variance until March 1, 1990 from 35 Ill. Adm. Code 304.120(a) and from its NPDES Permit conditions relating to limitations for five-day Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS), subject to the following conditions:

1. Sonoco shall commence an investigation and testing program on September 8, 1988 to explore the technical feasibility and economic reasonableness of the compliance alternatives described in Sonoco's Amended Petition for Variance, filed with the Board May 23, 1988. Such investigation and testing program shall extend to and conclude on June 30, 1989.
2. During the course of this investigation and testing program, Sonoco will notify the Illinois Environmental Protection Agency (Agency) at the address below no later than fourteen (14) days in advance of any test to be conducted with respect to Sonoco's wastewater discharge.
3. From July 1, 1989, to October 31, 1989, Sonoco shall review the results of the investigation and testing program to determine which compliance method it will implement.
4. This variance shall end on March 1, 1990.
5. During the period of the variance, Sonoco's effluent shall not exceed 45 mg/l of five day biological oxygen demand (BOD₅) and 45 mg/l of total suspended solids nor shall Sonoco's load limits exceed 40 lbs/day, except that no limitations shall apply during any test conducted in accordance with Condition No. 2 above.
6. Sonoco shall submit quarterly progress reports to the Agency at the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
2200 Churchill Road
Springfield, IL 62708

- 7. Within 45 days of the date of the Board's Order, Petitioner shall execute a Certificate of Acceptance and Agreement which shall be sent to Mark T. Books at the address indicated above.

This variance shall be void if Petitioner fails to execute and forward the certificate within the forty-five day period. 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), Sonoco Products Company, having read the Order of the Illinois Pollution Control Board, in PCB 88-60, dated September 8, 1988, understand and accept the said Order, realizing that such acceptance renders all terms and conditions thereto binding and enforceable.

Petitioner

By: Authorized Agent

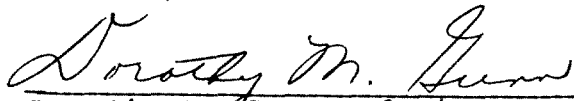
Title

Date

Section 41 of the Environmental Protection Act, Ill. Rev. Stat. 1985 ch. 111 1/2 par. 1041, provides for appeal of final Orders of the Board within 35 days. The Rules of the Supreme Court of Illinois establish filing requirements.

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 8th day of September, 1988 by a vote of 7-0.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board