

ILLINOIS POLLUTION CONTROL BOARD  
May 10, 1973

ENVIRONMENTAL PROTECTION AGENCY )  
 )  
 ) #72-152  
 v. )  
 )  
 THE FLINTKOTE COMPANY )

THOMAS J. IMMEL, ASSISTANT ATTORNEY GENERAL, APPEARED ON BEHALF  
OF ENVIRONMENTAL PROTECTION AGENCY  
EDWARD BENECKI, APPEARED ON BEHALF OF RESPONDENT

OPINION AND ORDER OF THE BOARD (BY SAMUEL T. LAWTON, JR.):

Complaint was filed by the Agency against The Flintkote Company alleging that Respondent, in the operation of its Mount Carmel felt mill, discharged oxygen-demanding solids and other contaminants into the Wabash River and two unnamed ditches tributary to the Wabash River, so as to cause water pollution, in violation of Section 12(a) of the Environmental Protection Act and in violation of specified provisions of SWB-9 and SWB-14 of the Sanitary Water Board Regulations, with respect to creation of objectionable sludge deposits, production of color, odor and other nuisance conditions, failure to meet specified effluent limits and failure to provide treatment facilities as required by said Regulations. The entry of a cease and desist order and penalties in the maximum statutory amount are sought.

A stipulation and proposed settlement have been submitted to the Board pursuant to which the Company and the Agency proposes a two-stage compliance program which, if implemented, would bring the Company's operation into compliance with applicable Regulations and statutory provisions. The stipulation recites that the Company operates a felt mill at Mount Carmel at which paper, wood and waste water are processed into felt for ultimate use in the manufacturing of roofing materials, which operation has generated waste waters discharged into the Wabash River by way of an unnamed ditch. The Company's discharge into the river has been between 500,000 and 700,000 gallons daily average flow containing an average of 3,600 pounds of BOD<sub>5</sub> effluent at between 500 and 1,000 ppm and 4,000 pounds of suspended solids ranging between 200 and 1,800 ppm in various grab samples. Allowable discharges into the Wabash River have been governed by SWB-9 during all periods pertinent to the proceeding. A pollution abatement study has been developed by the Rust Engineering Company, which study is attached as an exhibit to the Stipulation and incorporated therein, together with letter of modification dated November 30, 1972. The stipulation sets forth that the pollution control

program generated by Rust Engineering Company is designed in two phases to ultimately achieve a complete closed loop and eliminate all discharges of process water into the waters of the State.

Phase I of the Rust program, as described in the study, is designed to partially close the "loop" and achieve a 75% reduction in daily flow to the Wabash River, upon completion of which phase, the discharge of suspended solids would range between 50 and 250 pounds and the BOD discharge would be reduced to 2,800 pounds per day. Phase I would be operational in thirteen months from the date of the permit application submission to the Agency, which would occur within 10 days from the entry of an Order approving the proposed settlement.

Phase II of the program provides for recapture and recycle of the final 25% of the average daily flow to the Wabash River. Upon completion of Phase II, no processed water would be discharged to the waters of the State. Suspended solids previously uncaptured by Phase I would either be incorporated into Flintkote's product or removed from the process and disposed of in a manner approved by the Agency. The Stipulation recites that additional research is required to determine if the final 25% of suspended solids can be incorporated into the product. It is anticipated that approximately 16 months will be needed for research, design, obtaining of permits and construction of Phase II, which would be completed within 27 months from the date that permits are issued for construction of Phase I. The Board would retain continuing jurisdiction for the granting of variances, which would be necessary to enable completion within the Board's contemplated plan. If Flintkote shows satisfactory progress to the Agency, the Agency shall recommend that the petition for variance be granted. "Satisfactory progress" shall mean substantial compliance with all time tables set by the Board for completion of Phase I and submittal of a sound engineering program for implementation of Phase II.

Flintkote shall post a corporate bond in the amount of \$150,000 to assure compliance of all Board orders entered and that upon completion of all conditions of said Bond, the Agency will execute and deliver a bond release to Flintkote. During construction of Phase I, Flintkote will supply the Agency and the Board with periodic progress reports at 30-day intervals, which report shall include the status of all design and construction progress on Phase I and Phase II.

A fine in the amount of \$8,000 for past violations of the Environmental Protection Act and the Rules and Regulations of the Sanitary Water Board is stipulated. In the event a fine in excess of this amount is specified, the Company would have the right to appeal.

The details of Phase I and Phase II are set forth in the Rust Engineering Company pollution abatement study, which is incorporated in its entirety by reference in this Opinion and Order. Phase I is designated as in-plant changes specified on flow sheets 22-1039-FS1 and FS2. The program contemplates the installation of new side hill screens, white water storage tank, filter, shower water tank, centrifugal separators, seal tank and four pumps. The purpose of the new equipment is to collect the white water now being discharged into the river, to screen

and filter it, and then return it to the process for reuse. Existing sump pumps will pump the white water effluent to the new side hill screens which will flow by gravity to the existing shower water chest, which will be converted to a surge chest. A new pump will be installed on the existing shower water chest which will be converted to a surge chest. Clarified white water will be returned to the process and excess white water from the cylinder vat will be pumped to the stock preparation white water chest by an existing pump. The demand for white water at the hydropulper will be met from the screen white water tank by a new pump (P-3) as determined by the level in the stock preparation white water chest. Existing wash-down pumps will be re-piped to use white water from new pump P-3 for wash-down.

The existing No. 4 shower water pump will be relocated to supply clarified white water from the North filter to the machine showers. The new North filter will remove suspended solids that might adversely affect the operation of the machine showers. These showers will be replaced with white water type showers to assure minimum disruption of machine operation.

Centrifugal separators will be installed on the suction sides of three vacuum pumps to remove the water pulled from the sheet and felt in the machine press section. This water will be collected in a new seal tank and be pumped to the effluent ditch. Since this water has been screened by the felts, the suspended solids content should meet the initial requirements of the state.

A Parshall flume will be installed in the existing effluent ditch to measure the effluent flowing to the river.

Under Phase I, all cooling water will be picked up in the white water system. In the future, with a completely closed system, the cooling waters would be collected and discharged directly to the river.

The Phase II operation is described in the report as follows, reference being made to flow sheets FS1, FS2 and FS3:

The mill presently discharges from 500,000 to 700,000 gallons per day to an effluent ditch that eventually flows to the Wabash River. Prior to discharge, the mill effluent is collected and pumped to a flat screen. This screen removes large solids and some fiber prior to discharging to the effluent ditch. This ditch has an effluent weir to furnish manual flow measurements.

The intent of the proposed system as shown on FS2 and FS3 is to reduce the mill effluent by screening and settling waste white water and reusing this water in the process of producing roofing felt.

The system recommended for Phase I is shown on Flowsheets 22-1059A-FS2 and FS3--"Recommended Water Reuse Flowsheet". The system

includes the following equipment to reduce the effluent to the river to 125,000 gallons per day and to reduce suspended solids to 1,000 pounds per day:

The mill effluent will be pumped by the existing sump pumps to two side-hill gravity screens sized to handle 500 gpm each. These screens will be located in the beater room. They will discharge through the floor into the existing shower water chest located in the basement below.

Screened white water from the side hill screens will be pumped to a 30 ft. diameter by 14 ft. high straight side, clarifier tank. The clarifier rake mechanism and mixing zone are not included but can be installed at a later date if required.

The screened white water storage tank will be used to store the screened white water, thus providing surge capacity for the high water demand for the hydrapulper operation. It will also provide sufficient retention time for gravity separation of much of the suspended solids in the white water. Flocculating aids may be added to improve the settleability of the suspended solids.

The tank bottom will be conical in shape to receive the possible future rake mechanism. The suction piping of the new white water transfer pump (P-3) will be connected to the center of the conical bottom, thus providing a means for removing settled solids. The settled solids will be returned to the process with white water. It is anticipated that pumping the white water containing the solids from the cone will prevent excessive build-up of solids in the storage tank.

Since the white water from the press section of the paper machine will be collected and discharged to the effluent ditch, it is anticipated that there will be no overflow from the storage tank.

The table below shows the design conditions and process efficiency predicted:

<u>DESIGN CRITERIA</u>	<u>FLOW RATE</u>	
	<u>Average</u>	<u>Maximum</u>
Flow (gpm)	465	1000
Suspended solids to side-hill screens (lb/1000 gal)	6 lb	126 lb
Percent removal for screens	0-10%	90%
Suspended solids to screened water storage tank (lb/1000 gal)	6 lb	13 lb
Predicted suspended solids in press water to effluent ditch (lb/1000 gal)	.5 lb	3 lb

New pump (P-2) will supply white water from the screened white water storage tank to a new North-type gravity filter that will be installed to remove suspended solids from the paper machine shower water. The rotating drum of the North filter will be equipped with a fine mesh stainless steel filter screen to filter out the suspended solids contained in the shower water.

Three white water type shower pipes will be installed on the paper machine. These shower pipes will be equipped with nozzles especially designed for white water.

A chemical feed package as shown on FS3, consisting of a 300-gallon tank, a metering pump, and an agitator would be capable of adding coagulant aids or other clarification aids if necessary. It also can add chemical slimicides to control the growths that will tend to develop in the white water system.

A chlorination system as shown on FS3, will be provided. The effluent during Phase I (125,000 gpd) will require chlorination to insure disinfection of this discharge. The control of microorganisms will depend on the ability of the chlorination system to feed sufficient quantities of chlorine and to maintain a chlorine residual throughout the white water system. For design purposes, a feed rate of 6 parts per million (ppm) is anticipated to maintain a residual of 2 to 3 ppm. The chlorinator is sized to be capable of providing shock doses of chlorine (10 to 20 ppm) to each chlorination point. This shock dosing would last for 10 to 15 minutes, probably not more frequently than once a shift.

Four chlorine meters have been provided. Three of these are proposed to eject chlorine into the new supply pumps, P-1 and P-3 as well as new effluent pump P-4. One additional chlorine meter has been included for ejection at a slime problem location after start-up. If extremely tenacious slimes develop, slimicides would have to be used to penetrate the slime envelope that protects the organisms. However, if chlorine is used properly and dosed frequently enough, slimicides will not be required.

We believe the stipulation and proposed settlement to be a good solution to a difficult problem and, accordingly, approve it. We grant a variance for one-year, subject to extension upon satisfactory showing of progress for completion of Phase I and Phase II.

Penalty in the amount of \$8,000 is assessed for violation of Section 12(a) of the Environmental Protection Act and SWB-9, as alleged in the complaint, which we find appropriate in the circumstances.

This opinion constitutes the findings of fact and conclusions of law of the Board.

IT IS THE ORDER of the Pollution Control Board:

1. Stipulation entered into between The Flintkote Company and the Environmental Protection Agency, incorporating therein document captioned "Pollution Abatement Study for The Flintkote Company" by Rust Engineering Company is approved and incorporated therein.
2. Variance is granted to the Flintkote Company until May 10, 1974 from the provisions of SWB-9 and the Water Regulations of the Illinois Pollution Control Board, as applicable, to enable implementation of Phase I and Phase II of the compliance program herein provided. Permits for construction of the abatement system shall be applied for within ten days from the date of this order. Phase I shall be completed within 13 months and 10 days from the date of this Order and Phase II shall be completed within 27 months from the date the permits are issued for construction of Phase I. Variance herein granted may be extended upon application submitted to the Board no less than 90 days before the expiration of any variance herein allowed, which shall be extended only upon a demonstration that Flintkote is making satisfactory progress toward the completion of its abatement program as defined herein, requiring substantial compliance with all time tables for completion of Phase I and the submission of a sound engineering program for implementation of Phase II.
3. Corporate bond in the amount of \$150,000 in form satisfactory to the Agency shall be posted within 35 days of the date of this Order, to guarantee compliance with all of the provisions of this Order and the Stipulation entered into between the parties. Upon completion of all conditions of the bond, the Agency will execute and deliver a bond release to Flintkote.
4. Flintkote, during construction of Phase I, shall submit to the Agency and the Board, periodic progress reports at 30-day intervals which shall indicate the status of all design and construction progress with respect to Phases I and II.

5. Penalty in the amount of \$8,000 is assessed against the Flintkote Company for violation of Section 12(a) of the Environmental Protection Act and SWB-9, as alleged in the complaint. Penalty payment, by certified check or money order payable to the State of Illinois, shall be made within 35 days and sent to: Fiscal Services Division, Illinois Environmental Protection Agency, 2200 Churchill Drive, Springfield, Illinois 62706.

I, Christan Moffett, Clerk of the Illinois Pollution Control Board, certify that the above Opinion and Order was adopted on the 10<sup>th</sup> day of May, 1973, by a vote of 4 to 0.

Christan L. Moffett

