

ILLINOIS POLLUTION CONTROL BOARD  
October 14, 1971

NATIONAL STARCH AND CHEMICAL )  
CORPORATION )  
 )  
V. ) PCB 71-83  
 )  
ENVIRONMENTAL PROTECTION AGENCY )

Mr. James W. Kissel, Sidley & Austin for National Starch and  
Chemical Corporation

Mr. Roger Ganobcik for the Environmental Protection Agency

Opinion of the Board (by Mr. Dumelle):

In this petition for variance National Starch and Chemical Corporation (National) sought to be allowed to discharge effluent from its chemical processing plant containing contaminants in concentrations in excess of those allowed by regulation for a period extending through 1972 during which they would be planning and installing treatment facilities.

National filed their petition for variance with the Board on April 22, 1971. A hearing was held on June 18 at which the Environmental Protection Agency (EPA) was not present. An order granting National a variance until October 1 and requiring a further hearing was issued by this Board on July 19. A second hearing was held on August 31. The variance request is granted for a limited period subject to the several conditions discussed in this opinion.

National is a multi-plant chemical producer. The plant which is the subject of this variance petition is located about one mile south of the town of Meredosia; about sixty miles west of Springfield. The plant is on the Illinois River and primarily produces polyvinyl acetate polymers in emulsion form and several specialty products used generally in the adhesive, paper, paint and textile industries (R.8-9). The plant employs approximately 110 employees and operates on a 3 shift, 7-day-a-week basis (R.7).

Water is obtained from 6 deep wells which provide a flow of approximately 2,000 gallons per minute. The plant processes the following types of major raw materials: Monomers (mostly vinyl acetate, about 5,000,000 lbs./mo.); solvents and plasticizers (about 400,000 lbs./mo.); inorganic chemicals (about 290,000 lbs./mo.); and organic chemicals (about 315,000 lbs./mo.) (R.10-12).

The waste water from the plant is composed of two streams, water from cooling processes which is discharged at about 2,000 gallons per minute and contaminated waste water which is discharged at approximately 130 gallons per minute (R.16-17). This latter waste stream is discharged into two stabilization lagoons for a total retention time of approximately 10 days. The combined effluent from both waste streams is then discharged to the Illinois River. In 1967, National engaged a consultant to study the plant's effluent. Certain major physical changes in the plant were made and the cooling water was separated from the contaminated waste water (R.46). With the changes the retention time in the stabilization lagoons was increased from approximately 1 day to more than 10 days (R.20). The changes were completed in October, 1969 (R.46).

Sometime thereafter, in September, 1970, National engaged Monsanto Biodize Systems, Inc. to act as its consultant, and Monsanto made studies and analyzed samples from the plant (R.47,85). Monsanto made the following conclusions regarding the untreated wastes: (1) The wastes from the plant can be biologically treated to remove 97% of the BOD with a retention time in the oxidation basin of 36 hours; (2) filtration probably will be required to reduce the effluent turbidity level to acceptable limits; and (3) an on-site study will be necessary to determine the effects of waste variation on the treatment system and the degree of treatment required to meet the effluent standards. (Petition p. 5).

Mr. P.H. Woodruff, one of National's present consulting engineers, outlined the program now proposed for the plant as follows:

- (1) Consultant to continue study and to begin on-site field studies to define the nature, character and volume of the discharge.
- (2) October, 1971, consultant to have completed field studies, analysis, and recommendations for treatment methods to improve effluent quality.

- (3) February, 1972, design plans and specifications for improved treatment process and procedures to be completed.
- (4) April, 1972, begin construction.
- (5) End of 1972, construction to be completed. Ready to start up (R.61-63, 71, Pet. Ex. 5).

The effluent standard for BOD in SWB-8 is 30 milligrams per liter (mg/l) and National's effluent before dilution calculates to be at 104 mg/l as an average (R.34, 75-76). EPA samples of the lagoon effluent showed BOD concentrations of 45 and 48 mg/l and combined effluent BOD concentrations of 52 and 54 mg/l.

As for suspended solids, regulation SWB-8 limits effluents to 35 mg/l. Mr. Peck, the plant manager testified that the plant's suspended solids discharge was in the area of 80 mg/l, as an average, or approximately twice that permitted by regulation (R.36, 77-78). EPA samples showed a suspended solids concentration of 43 mg/l in the combined effluent and concentrations of 59 and 79 mg/l in the lagoon effluent.

National had an independent testing laboratory study made of the effect of its discharge on two different types of fish. The only effect noted was that the fish were more quiescent after exposure to the effluent (R.25-27). Mr. Peck expressed the opinion that the effluent had no detrimental effect on the fish life in the area (R.35). Additionally, a statement from Mr. H. Edlen, a long-time local fisherman, was put into the record and he expressed the opinion that National's discharges had had no adverse effect on the availability of fish in the river (R.49-40).

In each variance case which comes before us we must weigh the asserted arbitrary or unreasonable hardship on the petitioner against the harm to the citizenry as a whole; that is, the harm to the environment. In this case we must consider whether the harm done to the Illinois River is so great as to outweigh the hardship which the petitioner would suffer should the variance be denied. We find that the harm to the River in this case is not of such magnitude as to prevent our granting a license to pollute in this case. However, we cannot be as sanguine about the effect on the River as petitioner's witnesses. The company president testified as to the monthly usage of 400,000 pounds of plasticizers and solvents. We do not know the identity or exact quantity of the

plasticizers and can only wonder if among them are any of the persistent and environmentally ubiquitous polychlorinated biphenyls (PCBs). If PCBs are being used and discharged - are they being controlled, or monitored? We know not and can comment no further with the present state of the record.

The Environmental Protection Act states that any variance granted under the Act is limited to one year and then may be extended only if satisfactory progress has been shown. We grant this variance to terminate on October 1, 1972. If the petitioner will need a further exemption from prosecution beyond that time, it should take the precaution of filing a further petition some 90 days before the date of termination of the instant grant. The statute explicitly authorizes the Board to impose such conditions as the policies of this Act may require when granting a variance (Section 36(a)). Several conditions are required here to further the purposes of the statute. First, we shall require National to submit quarterly progress reports. Periodic progress reports are necessary as a means of checking compliance with program schedules. The reports should detail progress to date and fully document and explain significant deviations from the program as originally planned. The first report shall cover the period from the present through December 31, 1971. National should submit such reports to the Environmental Protection Agency and the Board a reasonable time after the expiration of the calendar quarter but in no case shall this period extend beyond three weeks. We do not wish to be in the position a year from now of discovering for the first time that there have been further delays. For the same reason, we shall insist not only that the company aim toward ultimate compliance by the end of 1972, but that it meet several interim deadlines, in accord with its proof at the hearing, in order to give us intermediate checkpoints against which to measure progress. We shall require that the engineering design be complete by February 18, 1972, and that construction be commenced by April 14, 1972.

The primary cell of the lagoon is presently about one-third full (R.124, EPA Ex. 1) and the separating dike between the primary and secondary cell is almost completely submerged (R.128). As of the date of the second hearing, National did not know if the two-celled lagoon would be part of the proposed treatment system (R.132-133). However, their consultant's concept engineering design was due to be submitted to National within a few days after the hearing (Pet. Ex. 5). We are thus uninformed as to whether or not the lagoons will constitute an integral part of the

proposed treatment system. Nonetheless, the fact that the new system will not be operational for well over a year, the fact that the present effluent contains suspended solids and BOD greatly in excess of the regulation's limits, the fact that presently dredging the lagoons will increase the retention time very substantially, and the fact that the separation between the two treatment cells is perilously close to no separation compel us, as a further condition of this variance grant, to require National to proceed with all practicable haste to dredge the primary lagoon and thus improve the present waste treatment. National shall commence the work within sixty (60) days of the date of this opinion and order.

Since this is a case in which the hardship is temporary and the sole reason for the variance is the need for time in which to install treatment facilities, the Act (Section 36(a)) requires the posting of security to assure that the company meets the dates it has set. We have required security in comparable past cases (see Ozark-Mahoning v. EPA, PCB 70-19), and statutory bond requirements are in fact quite common and accepted in other fields. The purpose of the bond requirement is to provide an additional incentive to the variance holder to meet its deadlines, by imposing the threat of forfeiture if it does not. The amount must be high enough to make it more unattractive to default than to spend the money for control facilities. We think a security in the amount of \$75,000 will be adequate in this case, to be forfeited pro rata if the interim deadlines of (1) February 8, 1972, by which engineering design is to be complete and (2) April 14, 1972, by which construction is to have commenced, are not met.

There is a period in the recent past in which at least eleven months went by with no significant activity by National in cleaning up its contaminated discharges (R.47). We deem this lapse to be inexcusable and, as a further condition to the grant of this variance, we will require National to pay the sum of Two Thousand Dollars (\$2,000) as a money penalty for the inordinate delay in complying with an abatement program whose deadline was July, 1969. From October of 1969 to September of 1970, the company did virtually nothing to further its clean-up program. In September of 1970, it retained a consultant and several months later, perhaps eight or nine, it dropped that consultant and retained their present consulting engineers, all the while seemingly oblivious to the firm requirement of SWB-8 to be in compliance by July, 1969. There is no testimony of any departures asked for and permitted from compliance with the July, 1969 date by which construction of treatment facilities was to be complete. We are now two years beyond

the date by which construction was to be complete. National is contemplating December, 1972 as the date by which the treatment facilities are finally to be installed. Some may consider this Two Thousand Dollar money penalty for missing a treatment deadline by three and one half years an inadequate way of dealing with such a delay. We devoutly hope, however, that it will serve to impress the company of this Board's commitment to hastening compliance with this state's pollution regulations.

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

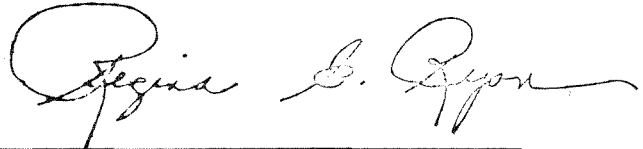
#### O R D E R

The Board having considered the transcript and exhibits in this proceeding hereby grants a variance to the National Starch and Chemical Corporation (National) subject to the following conditions:

1. Variance from the regulations in SWB-8 relating to effluent quality as regards BOD and suspended solids is granted until October 1, 1972. In no instance shall the suspended solids concentration discharge leaving the lagoon exceed 150 mg/l.
2. National shall meet the following schedule deadlines put forth at the hearing:
  - (a) February 18, 1972 - complete engineering design; and
  - (b) April 14, 1972 - commence construction of treatment facilities.
3. National shall dredge the primary settling lagoon and restore it to full capacity. The work shall commence within sixty (60) days.
4. National shall submit to the Environmental Protection Agency and the Board quarterly reports on the progress of their program to bring their plant effluent into compliance with the regulations. The first report shall cover the period from the present through December 31, 1971, with each subsequent report covering the calendar quarter. The reports shall be submitted a reasonable time, not to exceed three weeks after the last date reported.

5. National shall post with the Environmental Protection Agency, on or before November 1, 1971, and in such form as the Agency may find satisfactory, a bond or other adequate security in the amount of \$75,000, which sum shall be forfeited to the State of Illinois pro rata in the event that the interim deadlines of February 18, 1972 and April 14, 1972 are not met.
6. National shall pay within 30 days of date, to the State of Illinois general revenue fund the sum of Two Thousand Dollars (\$2,000) as a money penalty for the undue delay incurred to date in complying with the regulations of SWB-8.
7. During the period that this variance is in effect National shall not increase the polluttional nature of its discharges either in strength or in volume.
8. Failure to adhere to any of the conditions of this variance shall be grounds for revocation of the variance.

I, Regina E. Ryan, Clerk of the Illinois Pollution Control Board, hereby certify that the Board adopted the above Opinion and Order on the 14 day of October, 1971.



---

Regina E. Ryan, Clerk