

ILLINOIS POLLUTION CONTROL BOARD  
October 11, 1973

VILLAGE OF AUGUSTA )  
 )  
 v. ) PCB 73-327  
 )  
 ENVIRONMENTAL PROTECTION AGENCY)

VILLAGE OF COULTERVILLE )  
 )  
 v. ) PCB 73-370  
 )  
 ENVIRONMENTAL PROTECTION AGENCY)

OPINION AND ORDER OF THE BOARD (BY MR. DUMELLE)

Both petitions request variance from Rule 203 (f) of The Water Pollution Regulations (which sets maximum values of 0.02 mg/l of copper) in order that treatment of water supply reservoirs with copper sulfate may be performed to reduce algae growth.

No hearings were held in either case. The Agency has recommended granting the variances which we do subject to certain conditions.

One major reason for being prudent about the use of copper sulfate in water reservoirs is the fear that toxic amounts of copper may build up over time in the bottom muds and inhibit a well-balanced aquatic life. Dr. Charles B. Muchmore of Southern Illinois University has completed a study for the Institute for Environmental Quality titled "Algae Control in Water Supply Reservoirs" (July, 1973). In his study, Dr. Muchmore cites a level of 9000 ppm. ppm (dry basis) found in a 1952 Wisconsin study as being the copper content necessary to affect bottom dwelling organisms. But no data are given as to the present copper content of Illinois reservoir bottoms.

Since the passage of the Water Pollution Regulations in March, 1972, we have had the question of copper sulfate algae control before us for two years. It would seem that even now we do not know what is happening in Illinois water supply reservoirs over the years so far as toxic copper accumulations are concerned. We urge the Institute and the Agency to accomplish bottom sampling yet this year, before winter, so that by next spring, we will have long-needed answers.

The Muchmore Report deals with alternative algicides including chlorine, lime, potassium permanganate and Hydrothol-47. If no problem exists from the use of copper sulfate then these or any other alternatives need not be considered at all. The basic question remains "Is there a problem in using  $\text{CuSO}_4$  for algae control?"

Another concern in using copper sulfate is its effect upon fish. Dr. Muchmore gives one reference (Wilbur, 1969) who suggests that levels used may kill fingerling trout or bass fry. Again, no experience in Illinois is given and we do not know if a problem to fish exists in our waters.

In conclusion, as we complete another algae "season", we seem to know only that copper sulfate used to control algae probably does not create a short term problem and we do not know the answer to the long term question. More and prompt field research is needed.

ORDER

1. Variance is granted from Rule 203 (f) of the Water Pollution Regulations to the Village of Augusta and the Village of Coulterville to use copper sulfate to prevent algae growths during September and October of 1973 for Augusta and during August through and including October, 1973 for Coulterville.

2. Treatments shall be once monthly and shall not exceed 600 lbs. of copper sulfate for Augusta and 400 lbs. of copper sulfate for Coulterville.

3. Copper concentrations in the raw water intake to the water treatment plant shall not exceed 1.0 mg/l as copper at any time.

4. The copper concentration in the reservoir shall be measured before and after each copper sulfate treatment and the results submitted monthly to the Agency.

IT IS SO ORDERED.

I, Christan Moffett, Clerk of the Illinois Pollution Control Board, certify that the above Opinion and Order was adopted on the 11<sup>th</sup> day of October, 1973, by a vote of 4 to 0.

Christan S. Moffett