

ILLINOIS POLLUTION CONTROL BOARD  
November 15, 1979

ZEIGLER COAL COMPANY, )  
 )  
 Petitioner, )  
 )  
 v. ) PCB 79-123  
 )  
 ENVIRONMENTAL PROTECTION AGENCY, )  
 )  
 Respondent. )

OPINION AND ORDER OF THE BOARD (by Dr. Satchell):

This matter first came before the Board upon a petition for variance filed on June 15, 1979. An amended petition was filed on September 7, 1979. A recommendation by the Illinois Environmental Protection Agency (Agency) was filed on October 15, 1979. No response by Petitioner was made to the recommendation. Petitioner requests a five year variance from Rule 203(f) of Chapter 3: Water Pollution as it applies to sulfate and total dissolved solids (TDS) and from Rule 408(b) of Chapter 3. The variance is requested for Petitioner's mining operation known as Zeigler No. 4 Mine located in Williamson County, Illinois. The Agency recommends a grant of the variance subject to certain conditions.

This mine, located in sections 9, 16 and 17, township 8 south, range 3 east of the 3rd principal meridian, Williamson County, Illinois, is an underground coal mine, producing and processing 4000 tons of raw coal per day and has 250 employees. The mine has had ongoing problems with water pollution since 1972 (7 PCB 19, February 6, 1973). Various projects to move toward compliance have appeared as permit conditions.

A commercial process for removing sulfate and TDS from water is the reverse osmosis technique. To employ this process on the scale necessary to treat the discharges from Petitioner's property would involve a capital investment for equipment of \$1,296,000 and a daily operating cost of \$1210 (Pet. 2). This does not include the cost of disposal of the waste from the system.

The Agency issued Petitioner NPDES Permit No. IL 0059056 for discharges for the subject mine with an effective date of February 9, 1979 and an expiration date of December 31, 1979. Two discharge points are authorized by the NPDES permit: Discharge Point 001 from the slurry circuit which occurs after the water contained therein has undergone lime treatment, and Discharge Point 002, an emergency discharge from the slurry circuit, specifically Slurry Lake No. 5, which occurs before the water

contained therein has undergone lime treatment. From information supplied by Petitioner's renewal application for its mine related pollution control permit (No. 1977-MO-5114), the Agency recommendation states that the estimated system water losses will exceed rainfall runoff contributions by 54.1 acre/feet on a yearly basis. Intermittent discharges are expected during periods of excessively wet weather when the storage capacity of the slurry circuit is exceeded. Petitioner's estimated maximum flow from the discharge or discharges will be 1200 gpm (1.73 MGD). It is unclear whether these flow estimates include the emergency discharge from Discharge Point 002. If 1200 gpm were released there would be 1800 lbs. of sulfates (at 3000 mg/l) and 300 lbs. of calcium and miscellaneous metals (at 500 mg/l) for a one hour release (Amend. Pet.). Petitioner did not indicate the amount of storage capacity in the slurry circuit.

The petition states that the discharge of TDS would be approximately 4500 mg/l based on normal operation of a similar treatment system now in operation. It is not stated where the similar system is located. The discharges from the mine in question enter into unnamed tributaries of Lake Creek. Lake Creek, in turn, enters into Pond Creek which, subsequently joins the Big Muddy River. The Johnston City Sewage Treatment Plant (design average flow--400,000 gpd) discharges into Lake Creek downstream from Zeigler No. 4 Mine.

The Agency recommendation provides further information. According to the Illinois State Water Survey the receiving waters of the mine discharge with the exception of the Big Muddy River are classified as intermittent. The 7-day, 10-year low flow of the Big Muddy at United States Geological Survey Gauging Station 5-5970 which is located above the confluence with Pond Creek is 31.0 cfs (13,913 gpm). As a result, the minimum dilution ratio for all discharges from the subject mine which reach the Big Muddy River would be 11.6 to 1 (Rec. 6). Since the discharges from the subject mine should occur only during excessively wet periods of weather, additional dilution can be expected. The City of Royalton does draw its drinking water from the Big Muddy River at a point downstream from its confluence with Pond Creek.

Petitioner's Addendum to Variance Petition provides an environmental study for the discharges presently occurring. This included drainage from the requested emergency discharge. The study was done on one day, August 1, 1979. The investigation included five sampling points. Stream degradation was apparent in a 0.9 mile stretch of stream from sampling station Z-2 to Z-5. At

stations Z-4 and Z-5 this may be partially accounted for as a result of the physical habitat present. There is no record of fish kills, or collection of threatened or endangered species of fish reported in the area of sampling.

There are currently two regulatory proceedings pending before the Board concerning these types of discharges. R76-7 concerns an exemption for coal mining from the TDS standards of Chapter 3. R77-10 is a petition for amendments to the mining regulations. In order to further address these problems a Mine Related Pollution Task Force consisting of members from both industry and government have proposed an amendment in R77-10 to include a Code of Good Operating Practices. If adopted, these changes would allow the Agency to grant exemptions to the mine operator from the Chapter 3 standards for TDS, sulfates, chlorides, iron and manganese if the operator demonstrates compliance with the Code of Good Operating Practices.

The Agency does agree with Petitioner that it is neither technically feasible nor economically reasonable for Petitioner to maintain its effluent at Discharge Point 001 at the levels of TDS and sulfates mandated by Rules 203(f) and 408(b) of Chapter 3. With regard to Discharge Point 002, the Board does not grant variances for emergency discharges.

The Board finds, considering the limited environmental damage of Petitioner's current discharge coupled with the potential change of regulations and the lack of economically available treatment, that to require Petitioner's Discharge Point 001 to comply at this time would be an arbitrary and unreasonable hardship. The Board will grant Petitioner a variance for three years or until final resolution of R77-10 by the Board, whichever occurs first. The variance will be subject to the Agency's proposed conditions.

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

#### ORDER

It is the Order of the Illinois Pollution Control Board that Zeigler Coal Company shall be granted a variance for its Mine No. 4 in Williamson County from Chapter 3: Water Pollution, Rules 203(f) and 408(b) as those rules apply to TDS and sulfates. This variance shall be for three years or until resolution of proposed regulatory change R77-10, whichever occurs first, and shall be subject to the following conditions:

1. Petitioner shall comply with the Management Requirements of its NPDES permit.
2. The variance shall be granted only for the discharge from Discharge Point 001. No variance shall be granted for any discharge from Discharge Point 002.
3. Petitioner shall meet the following effluent standards:

|         | <u>Maximum (mg/l)</u> |
|---------|-----------------------|
| TDS     | 3500                  |
| Sulfate | 3000                  |

4. Petitioner shall meet the following water quality standards:

|         | <u>Maximum (mg/l)</u> |
|---------|-----------------------|
| TDS     | 3500                  |
| Sulfate | 3000                  |

5. Petitioner, within forty-five (45) days of the Board Order herein, shall submit to the Illinois Environmental Protection Agency, Mine Pollution Control Program, 2200 Churchill Road, Springfield, Illinois 62706, a report detailing the specific steps it intends to take in order to achieve "good operating practices", as those practices are set forth in the Code of Good Operating Practices and to reduce the levels of TDS and sulfate in its effluent.
6. The Agency shall, pursuant to Rule 914 of Chapter 3: Water Pollution, modify NPDES Permit No. IL 0059056 consistent with the conditions set forth in this Order.
7. Within forty-five (45) days of the date of this Order, Petitioner shall execute and forward to the Illinois Environmental Protection Agency, Variance Section, 2200 Churchill Road, Springfield, Illinois 62706, a Certificate of Acceptance and Agreement to be bound to all terms and conditions of this variance. This

forty-five day period shall be held in abeyance for any period this matter is being appealed. The form of the certificate shall be as follows:

CERTIFICATION

I, (We), \_\_\_\_\_, having read and fully understanding the Order in PCB 79-123, hereby accept that Order and agree to be bound by all of its terms and conditions.

SIGNED \_\_\_\_\_  
TITLE \_\_\_\_\_  
DATE \_\_\_\_\_

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify the above Opinion and Order were adopted on the 15<sup>th</sup> day of November, 1979 by a vote of 4-0.

  
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Christan L. Moffett, Clerk  
Illinois Pollution Control Board