

ILLINOIS POLLUTION CONTROL BOARD
June 10, 1982

MOBIL OIL COMPANY,)
)
) Petitioner,)
)
) v.) PCB 82-36
)
) ILLINOIS ENVIRONMENTAL PROTECTION)
) AGENCY,)
)
) Respondent.)

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

On March 31, 1982 Mobil Oil Company filed a petition for variance for a period of two years from Rule 406 of Chapter 3: Water Pollution, as it relates to the 3.0 mg/l ammonia nitrogen standard applicable to its Joliet Refinery's discharge into the Des Plaines River. On May 26, 1982 the Illinois Environmental Protection Agency (Agency) filed a recommendation that the variance be granted subject to certain conditions. Hearing was waived and none was held.

Mobil owns and operates a conventional fuels petroleum refinery with a rated capacity of 180,000 barrels per day located in Will County. Stormwater, noncontact cooling water and process water are discharged from the facility into the Des Plaines River. The process water and contaminated surface runoff (2.74 MGD) are treated in Mobil's wastewater treatment plant (WWTP) which consists of an API separator, a dissolved air flotation unit, an equalization basin for primary treatment and a conventional activated sludge facility for secondary treatment. Treated effluent from the final clarifier is routed through a 4.9 million gallon guard basin where it is retained an average of 45 hours and then aerated in the final aeration cone prior to release to the Des Plaines River. The effluent meets all discharge standards other than ammonia nitrogen.

Mobil has been granted three previous variances from the ammonia nitrogen standard of Rule 406 (PCB 77-22, PCB 78-97, and PCB 80-54). In PCB 80-54 (39 PCB 50, July 10, 1980) variance was granted until July 1, 1982, subject to certain conditions including an ammonia nitrogen effluent limitation of 25 mg/l as a monthly average and 40 mg/l daily maximum concentration.

During the period of the latest variance Mobil has substantially complied with all the terms and conditions of variance. Ammonia nitrogen effluent data submitted in response to that order shows an overall range of 0-66 mg/l, an average monthly range of 6-28 mg/l, and an overall average of 15 mg/l. The overall average ammonia reduction from influent levels was 35% as compared to 20% for the previous variance period. However, the effluent levels have actually increased an overall average of 3 mg/l. This has apparently resulted from a higher influent concentration due to deterioration of the quality of crude oil used.

Only during two months of the latest variance period (January and February, 1982) were the interim standards exceeded, and those excursions resulted from difficulties caused by the extremely cold weather of January 9 and 10, 1982, which caused malfunctions and freeze-ups in the refinery process units and sour water system, resulting in the discharge of high concentrations of ammonia to the 7.9 million gallon equalization tank. These discharges were slowly drained to the WWTP until continuing cold weather necessitated normal equalization service for the tank beginning January 23 to protect the WWTP from shock loading of ammonia and other contaminants. Thereafter, excursions occurred from January 25 through February 9, 1982.

Mobil has expended considerable time and effort in a good faith attempt to reach ultimate compliance with the ammonia standards. Capital outlays during the period of 1979 through 1981 for ammonia source control and pilot plant research totalled \$300,000. Operating costs for all ammonia reduction projects totalled in excess of \$2.5 million in 1981. Projects have included the purchase and installation of a nitrification pilot plant, nitrification inhibition studies, mutant bacteria trials and temperature control in the aeration basins.

The environmental impact of the granting of variance is not clear. Dissolved oxygen levels in the Illinois River for 1981 were not presented. Although no analysis of ammonia nitrogen levels at the edge of the mixing zone is presented, the net increase in river ammonia nitrogen concentration has been calculated as 0.005 mg/l. The environmental impact is thus not fully known but is probably outweighed by the economic hardship upon Mobil should the variance be denied. Further, granting of variance would allow continued research and experimentation leading toward eventual compliance.

The Board, therefore, finds that denial of variance would impose an arbitrary or unreasonable hardship. Variance will be granted for a period of two years.

Mobil requests that interim limitations for ammonia nitrogen be set at 44 mg/l as a monthly average and 65 mg/l as a daily maximum, which represents Best Available Technology standards.

However, given the overall compliance during the last variance period and the unusual circumstances leading to the excursions, the Board finds that the interim limitations set during the last variance period remain reasonable and that unforeseeable excursions should be addressed when and if they occur.

The Board notes that Mobil will have been operating under four variances for more than five years by the end of this variance period without having presented a compliance plan. The reason for that is apparently that the technology does not presently exist to reasonably reach compliance. However, variances are not intended to act as seriatim simplified site-specific regulations. The Board will, therefore, require that a compliance plan be submitted by May 1, 1984. If no such plan is feasible by then, Mobil should consider submitting a proposal for a site-specific regulatory change.

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

ORDER

Mobil Oil Corporation is hereby granted a variance from Rule 406 of Chapter 3 until July 1, 1984 subject to the following conditions:

1. Mobil's ammonia nitrogen effluent discharge shall not exceed a monthly average concentration of 25 mg/l and a daily maximum concentration of 40 mg/l during the period of this variance.
2. Mobil shall continue efforts to develop a program which will result in compliance with Rule 406 of Chapter 3.
3. Mobil shall continue to submit bi-monthly reports to the Agency outlining its efforts to achieve compliance with Rule 406 of Chapter 3.
4. Mobil shall, by May 1, 1984, provide the Agency with a written technical proposal and time schedule for compliance with Rule 406 of Chapter 3.
5. Within 45 days of the date of this Order, Mobil shall execute and forward to the Board and to the Illinois Environmental Protection Agency, Compliance Assurance Unit, Water Pollution Control Division, 2200 Churchill Road, Springfield, Illinois 62706, a Certification of Acceptance and Agreement to be bound to all terms

and conditions set forth in the Order. The 45 day period shall be held in abeyance during any period in which this matter is being appealed. The form shall be as shown below:

CERTIFICATION

I (We), _____, hereby accept(s) and agree(s) to be bound by all terms and conditions of the order of the Pollution Control Board in PCB 82-36, dated June 10, 1982.

Petitioner


By: Authorized Agent

Title

Date

IT IS SO ORDERED.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order were adopted on the 10th day of June, 1982 by a vote of 5-0.



Christan L. Moffett, Clerk
Illinois Pollution Control Board