

ILLINOIS POLLUTION CONTROL BOARD
September 4, 1980

UNION OIL COMPANY OF CALIFORNIA,)
)
) Petitioner,)
)
) v.) PCB 80-124
)
) ILLINOIS ENVIRONMENTAL PROTECTION)
) AGENCY,)
)
) Respondent.)

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

Union Oil is seeking a second extension of a prior variance from Rule 406 of the Illinois Pollution Control Board's Rules and Regulations, Chapter 3: Water Pollution. On September 29, 1977, the Board granted a variance until September 27, 1978 (see PCB 77-163). On September 21, 1978, this was extended to September 29, 1980 (see PCB 78-168). Hearing was waived, and none was held.

The Environmental Protection Agency has recommended that the variance be granted, subject to certain conditions. On August 18, 1980, Union Oil filed a motion for extension of time to respond to that recommendation. That motion is granted, and the Board has considered Union Oil's response, which was filed on August 25, 1980.

Union Oil owns and operates a petroleum refinery, which is the subject of this petition, known as its Chicago Refinery, located on an 860 acre tract of land at Lemont, Illinois. The refinery takes its influent from and discharges its effluent into the Chicago Ship and Sanitary Canal (Canal).

Union Oil's present request is for a two year extension of its variance with somewhat higher interim ammonia nitrogen weight effluent limits (688 pounds daily average and 1261 pounds daily maximum) than the currently applicable limits under PCB 78-168 (575 pounds daily average and 1260 pounds daily maximum). These higher limits are based upon the proposed U.S. EPA 1984 Best Available Technology (BAT) guidelines as published in the December 21, 1979 Federal Register (44FR 75926).

Union Oil argues that these higher limits are appropriate because the rationale for the Rule 406 limitation of 3.0 mg/l effluent discharge is no longer valid, based upon the improvement in downstream dissolved oxygen levels. It is true, as the Board

noted in PCB 78-168, that "the standard in this instance (3.0 mg/l) is based upon a strategy for achievement and maintenance of downstream dissolved oxygen." However, as was pointed out in PCB 77-163, the LaGrange Pool in the Illinois River is a critical area for measuring that achievement. This is because ammonia nitrogen discharged into the Canal has the delayed effect of depleting dissolved oxygen levels downstream. That effect is most pronounced in the LaGrange Pool area.

The present record does not include dissolved oxygen levels in the LaGrange pool. While the Petition includes levels for Havana and near Valley City, these levels may differ from the pool. The Agency in its recommendation gives the average as 2.8 mg/l and low as zero but gives the location only as "downstream" and may in fact mean the Canal itself and not the Illinois River. Therefore, the Board rejects this argument.

Union Oil further argues that the Agency's data does not draw a correlation between dissolved oxygen and ammonia nitrogen and that high BOD₅ levels may be responsible for the low dissolved oxygen levels. However, simply because more than one factor contributes to a problem does not mean that any of the factors should be ignored.

During the period of its variance granted in PCB 78-168, Union Oil has progressed toward compliance with the state standard and has demonstrated an ability to maintain effluent limits at or below 567 lbs/day average and 1002 lbs/day maximum. Therefore, the Board finds that limits of 570 lbs/day average and 1010 lbs/day maximum are appropriate.

The Board is reluctant to grant a third variance without receipt of even a tentative compliance plan and schedule, and would not do so were it not for the technical difficulties confronting Union Oil, the need for further research, and apparent good faith efforts to develop such a plan and to come into compliance. The Board notes that during the course of the existing variance, Union Oil has spent \$728,000 attempting to sustain nitrification through source control, upgrading and optimizing existing facilities, and applied research on treatment techniques. Sources of high ammonia bearing sour water have been identified and equipment installed to divert them to the sour water strippers for ammonia removal. Steam/charge ratio controllers were installed for optimum stripping rates. A cross-connection has been installed to decant oil from sour water to improve stripping performance. Nitrification has been achieved periodically with good results, but Union Oil has been unable as yet to develop a consistently functioning system.

The Board finds that the environmental impact of granting the variance is small in that no more than 0.024 mg/l increase in ammonia concentration will occur, compared to the general concentration of 3.4 mg/l in the Sanitary and Ship Canal.

The Board, having been advised of Union Oil's problems and progress in these areas, finds that a denial of the variance would constitute an arbitrary and unreasonable hardship. Therefore, the Board will grant a two year variance from Rule 406, subject to several conditions which are delineated in the Order below.

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

ORDER

The Board hereby grants Union Oil Company of California a variance from Rule 406 of Chapter 3: Water Pollution, of the Board's Rules and Regulations, beginning September 30, 1980, and expiring September 29, 1982, or upon full implementation of the compliance program (as set forth in Condition 6, below), whichever comes first, subject to the following conditions:

1. Discharge of ammonia nitrogen into the Chicago Sanitary and Ship Canal shall not exceed a daily average of 570 pounds and a daily maximum of 1010 pounds.
2. Petitioner shall continue its efforts to develop a program to enable it to comply with Rule 406. Petitioner shall continue to pursue its research efforts, including analysis of biological nitrification.
3. Petitioner shall submit to the Agency quarterly progress reports on its research efforts, detailing with particularity what methods and systems are being tried or considered. These reports shall reflect the ammonia nitrogen concentrations in petitioner's effluent discharge during the preceding three month period.
4. Petitioner shall, no later than July 1, 1981, submit in writing to the Agency a preliminary technical proposal and time schedule for compliance with Rule 406.
5. Petitioner shall, no later than January 1, 1982, submit in writing to the Agency a final technical proposal and time schedule for compliance with Rule 406.
6. Upon Agency approval of a proposed compliance plan and schedule, and upon timely application for and receipt of all necessary permits, the Petitioner shall promptly implement its compliance plan.

- 7. Within 45 days of the date of the order of the Board granting the Petition for Variance, Petitioner shall execute and forward to the Illinois Environmental Protection Agency, 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 of certification shall be as follows:

CERTIFICATION

Union Oil Company of California hereby accepts and agrees to be bound by all terms and conditions of the Order of the Pollution Control Board in PCB 80-124, dated September 4, 1980.

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 was adopted on the 4th day of September, 1980 by a vote of 5-0.

Christan L. Moffett
Christan L. Moffett, Clerk
Illinois Pollution Control Board