

ILLINOIS POLLUTION CONTROL BOARD
December 18, 1975

MOBIL OIL CORPORATION,)
(JOLIET REFINERY),)
)
Petitioner,)
)
v.) PCB 75-420
)
ENVIRONMENTAL PROTECTION AGENCY,)
)
Respondent.)

OPINION AND ORDER OF THE BOARD (by Mr. Zeitlin):

The Petition for Variance in this matter was filed by Petitioner Mobil Oil Corporation (Mobil) on October 28, 1975, seeking relief from Rule 408(a) (as it applies to cyanide), and 1002 of Chapter 3: Water Pollution, of the Pollution Control Board (Board) Rules and Regulations. PCB Regs., Ch. 3, Rules 408(a), 1002. The Environmental Protection Agency (Agency) Recommendation was filed on December 4, 1975. No hearing was held in this matter.

The relief sought here is essentially the same as that granted by the Board in two previous Variances for Mobil's Joliet Refinery. PCB 73-452, 13 PCB 179 (1974); PCB 74-393, 15 PCB 253 (1975). In each of those cases the Board's Opinion examined the operations of the Joliet Refinery, and the sources of cyanide in the refinery's operations. We may summarize our findings there by stating that essentially all of the cyanide-bearing wastewaters are generated in the fluid catalytic converter (90%) and coker (10%) operations; for further information, the reader is referred to our earlier Opinions.

As was true in the previous Variance cases, Mobil bases its petition on a lack of available treatment technology for the removal of sub-milligram per liter cyanide concentration levels from refinery wastewaters, and its inability to control the formation of cyanide and cyanide compounds in the basic refinery processes. We accept these contentions, which are well documented in the records of this and the previous Variance cases, as well as in the reports submitted by Mobil under the Orders in PCB 73-452 and PCB 74-393.

Both of the previous Variances were of the "research" type, wherein the Variance grant is conditioned on the initiation or continuation of research in an attempt to either eliminate the contaminant source or to develop a feasible treatment technology, where no such treatment technology exists. As was the case in the more recent of the prior Variances, PCB 74-393, we again find that Mobil has attempted in good faith to resolve the cyanide problem at the Joliet Refinery. Mobil has continued its investigation of various unproven technologies, and has also attempted to modify fluid catalytic cracker operations to control cyanide formation, all without success.

Mobil has complied with all other conditions of the previous Variances, concerning attempts to arrive at more accurate testing methods and extensive sampling and reporting requirements.

The same factors found in our earlier Opinions remain:

1. The record again fails to show a suitable means of removing the cyanide from the Joliet Refinery's effluent, giving rise to sufficient hardship for the grant of the Variance.

2. Testing to date has failed to show any adverse environmental effect on the Des Plaines River, the refinery's receiving stream.

Weighing these factors, we find that the grant of a Variance has once again been justified. The only remaining matter is to determine the conditions which shall accompany that grant.

First, Mobil asks that the effluent levels contained in the more recent Variance, PCB 74-393, be continued. The Board there allowed cyanide levels of 0.3 mg/l on a monthly average, with a maximum at any time of 0.5 mg/l. The Agency notes that in 1975, Mobil's cyanide effluent has exceeded 0.1 mg/l only 11% of the time, and has never exceeded 0.2 mg/l, and therefore suggests a monthly average limitation of 0.2 mg/l, with the level never to exceed 0.32 mg/l. Apparently anticipating such a request by the Agency, the Petition notes that Mobil is unable to explain the decrease in its cyanide effluent content over the last two years, and postulates that the cyanide levels are dependent on nitrogen levels in crude oil, a factor over which Mobil has no control. We agree with the Agency. The Board will not, in an instance such as this, grant a higher interim limitation than that which is shown to be necessary.

Second, Mobil asks that the requirement that it sample and analyze water from the Des Plaines, both upstream of the refinery and at the edge of its mixing zone, be dropped. The Agency agrees that upstream sampling should no longer be required, but notes that some analyses at the edge of the mixing zone have shown levels of cyanide approaching the water quality standard of 0.025 mg/l. We agree with the Agency that continued sampling and analysis at the edge of the mixing zone will continue to allow measurement of the effect of the refinery on water quality in the Des Plaines, and may serve to protect that water quality.

Third, Mobil notes that it has had difficulty in conforming to that portion of the Board's prior Order in PCB 74-393 concerning sampling of "dissociated toxic ions, moderately complexed cyanide ions that are amenable to alkaline chlorination, highly complexed cyanide ions that are not amenable to alkaline chlorination destruction, and cyanide ions associated with organic compounds." 15 PCB at 258. The difficulty here concerns the lack of acceptable testing and analytical procedures at sub-milligram levels. To resolve this issue, we shall require that only a portion of this testing breakdown of Mobil's effluent be continued. Our Order here shall require only that Mobil report on those cyanides present in its wastewater that are amenable to alkaline chlorination, and its total cyanide effluent.

The remaining conditions are identical to those contained in the Order in PCB 74-393.

We also take notice of the fact that the Board has pending before it two proposals (R 74-15, -16) which seek a relaxation of current general cyanide standards. Our Order provides for the possibility that new standards might be adopted following those proceedings, and requires that Mobil takes whatever steps are necessary for compliance with any new, relaxed standard.

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

ORDER

1. Petitioner Mobil Oil Corporation is hereby granted a Variance from Rules 408(a) (cyanide only) and 1002 of Chapter 3: Water Pollution, of the Pollution Control Board Rules and Regulations for the period January 24, 1976 through January 24, 1977, subject to the following conditions:

a. Petitioner's cyanide effluent concentration shall not exceed a monthly average of 0.2 mg/l or a maximum at any time of 0.32 mg/l during the period of this Variance.

b. Petitioner shall continue its efforts to develop a control program to reduce its cyanide effluent concentration to 0.025 mg/l.

c. Petitioner shall continue to file bi-monthly progress reports with the Environmental Protection Agency, such reports to include as a minimum:

(1) Progress on all cyanide control methods being pursued by Petitioner.

(2) Any and all records of cyanide concentration in Petitioner's effluent, with at least four determinations to be made weekly.

(3) Any and all records of cyanide concentrations at the edge of its wastewater mixing zone, with at least one determination to be made weekly.

(4) At least one study per bi-monthly reporting period indicating the characteristics of Petitioner's cyanide wastes, including but not limited to cyanides amenable to chlorination and total cyanide.

d. Should a technologically feasible and economically reasonable method of compliance with the general standard of 0.025 mg/l total cyanide be developed during the term of this Variance, Petitioner shall commence immediately to implement such method as expeditiously as possible.

e. In the event a less restrictive general effluent limitation for cyanide is promulgated by this Board as a result of proceedings currently before the Board, Petitioner shall within 30 days submit to the Illinois Environmental Protection Agency a final plan for compliance with such new standard, and shall implement such plan immediately.

2. Petitioner Mobil Oil Corporation within thirty (30) days of the date of this Order shall execute and forward to the Environmental Protection Agency, Control Program Coordinator, 2200 Churchill Road, Springfield, Illinois 62706, a certificate of acceptance in the following form:

I, (We), _____ having read the Order of the Illinois Pollution Control Board in case No. PCB 75-420, understand and accept said Order, realizing that such acceptance renders all terms and conditions thereto binding and enforceable.

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 18th day of December, 1975 by a vote of 4-0.

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