ILLINOIS POLLUTION CONTROL BOARD
September 24, 1981

TEXACO, INC., a Delaware corporation, Petitioner,	)	
v.	)	PCB 81-70
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, Respondent.	)	

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

This matter comes before the Board upon a petition and amended petition for variance filed May 4 and June 26, 1981 by Texaco, Inc., a Delaware corporation (Texaco). The petition requests extension of a variance previously granted from Rule 406 of Chapter 3: Water Pollution with respect to ammonia nitrogen discharges from Texaco's Lockport petroleum refinery. On June 4, 1981 the Illinois Environmental Protection Agency (Agency) recommended that the variance be granted with conditions. An amended recommendation correcting a typographical error was filed on August 7, 1981. No hearing has been held and the Board has received no public comment.

Texaco operates a petroleum refinery on the northern periphery of Lockport, on the eastern bank of the Chicago Sanitary and Ship Canal, in Will County. The facility possesses NPDES Permit No. IL 0002305. It has been granted two previous variances from Rule 406 (Texaco, Inc. v. EPA, PCB 77-154, 28 PCB 371, December 8, 1977; and PCB 78-306, 33 PCB 117, March 15, 1979. The petition in the latter is incorporated by reference pursuant to Procedural Rule 402(a). Texaco was allowed to discharge a daily average of 184 kg of ammonia nitrogen with a daily maximum of 405 kg.

Sources of ammonia include intake water, sour water strippers and a water degassing drum. Treatment includes bacterial denitrification. Texaco has achieved low effluent ammonia levels at times, but experiences elevated levels during cold weather and at other times. Texaco suspects that materials toxic to its bacteria are sometimes introduced into its wastewater from its processes. In PCB 78-306 Texaco agreed to implement a compliance program involving preparation of a

proposal to deal with nitrification problems in cold weather. Texaco concluded that it would cost $1300 per day to heat the aeration basin. This was not thought to be "cost effective".

Texaco also concluded that low temperature was not the only cause of decreased nitrification. Texaco felt that inhibitory compounds exist in some refinery wastestreams, including unstripped sour water. Texaco proposed to identify inhibitors, increase sour water stripping capacity, control sour water discharges and suspected inhibitors, maintain adequate dissolved oxygen in the aeration basin and use mutant bacteria.

Texaco achieved some success with mutant bacteria and with maintenance of oxygen levels. A sour water storage tank and collection system has been completed. A water recycling project has been completed in addition to the proposed program.

On May 1, 1981, refinery operations ceased. Texaco intends, in the spring of 1982, to decide whether to reopen.

After the decision to cease production, Texaco ceased construction activities directed toward compliance. These included additional recycling and sour water storage systems. Although production has ceased, the wastewater treatment plant continues in operation, treating waste water generated from cleaning and other shutdown operations. The plant no longer produces sour water. Texaco is continuing to add mutant bacteria and is continuing research directed at identifying inhibitory compounds.

The facility withdraws from the canal about 84.5 Ml/day (megaliters per day) or 22.3 MGD (million gallons per day). 30.0 Ml/day is used for process water, resulting in a process wastestream of about 16.9 Ml/day (4.5 MGD). This is mixed with 54.5 Ml/day of once-through cooling water, resulting in a total discharge of 71.4 Ml/day (18.9 MGD). This is discharged to the canal.

In PCB 78-306 Texaco was granted a two-year variance from the 3.0 mg/l ammonia nitrogen standard of Rule 406. The variance condition was set at a level equal to applicable federal guidelines. Texaco was not to exceed a daily average of 184 kg/day or a daily maximum of 405 kg/day, the same limitations requested in this action.

The 3.0 mg/l standard applied to the process wastestream would allow 51 kg/day. Applied to the total discharge without correction for dilution it would allow 214 kg/day [Rule 401(a)].

Rule 406 is currently based on a daily average. A proposal to change this to a monthly basis is pending before the Board (R76-21, Proposed rule, Second notice Order of August 20, 1981). Petitioner complied with the variance limitations during the period from April, 1980 through March, 1981. The following table indicates the overall averages and the range of values recorded:

	kg/day	mg/l
Minimum	0	less than 0.1
Average	68	4.1
Maximum	395	24.0

Pursuant to the Board's request Texaco provided information concerning dissolved oxygen levels in the LaGrange Pool of the Illinois River. Ammonia nitrogen discharges tend to depress dissolved oxygen levels downstream due to the oxygen required for denitrification. Texaco's data indicate dissolved oxygen levels in the river of 4.0 to 5.8 mg/l during the summer of 1979. Most of these are less than the instantaneous minimum dissolved oxygen standard of 5.0 mg/l for general use waters [Rule 203(d)].

Texaco's effluent data do not show a clear trend toward a reduction in ammonia levels. However the Board finds that Texaco has made satisfactory progress toward full compliance within the meaning of §36(b) of the Environmental Protection Act (Act). The variance will be granted with conditions similar to those recommended by the Agency. Texaco will be required to file quarterly reports outlining its efforts to achieve compliance. Petitioner will be required to notify the Agency in the event production is resumed and provide within one year a written technical proposal for compliance with Rule 406.

The Board will also require that Texaco provide a plan for in stream aeration of the Sanitary and Ship Canal as a part of the above compliance plan. This is to be in addition to a plan for improving the effluent quality. In the event Texaco reopens the facility, it will be required to present to the Agency a study of the feasibility of introducing excess oxygen into the Canal, including cost estimates. The aeration plant need not be located at the refinery and Texaco may propose a facility operated jointly with other dischargers. The plan should also address any regulatory obstacles to in stream aeration.

The variance granted in PCB 78-306 referred to a "daily average" and a "daily maximum". Texaco requested the same mass discharge limits except that the lower figure is to be a "monthly average" and the higher figure a "daily maximum". In its amendment the Agency recommended the same thing. The Board

will condition the variance on a "monthly average" and "daily composite". This terminology will be more consistent with the proposal in R76-21.

The terms "daily average" and "daily maximum" were not defined in the earlier Order. The variance condition here is identical to the earlier if "daily maximum" referred to the highest daily average in a given month (now called the "daily composite") and "daily average" referred to the average of composites over a month (now called "monthly average"). On the other hand, it is arguable that the old conditions referred to daily composite and grab sample limits. If this were the case, the variance granted here would differ from the earlier. The Board will assume this was not the case. The following is a summary of terminology:

PCB 78-306	PCB 81-70	kg/day
Daily average	Monthly average	184
Daily maximum	Daily composite	405

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

ORDER

Petitioner Texaco, Inc. is granted for its Lockport refinery a variance from Rule 406 of Chapter 3: Water Pollution subject to the following conditions:

1. This variance will expire two years from the date of this Order.

2. Petitioner shall not cause or allow the discharge of ammonia nitrogen into the Chicago Sanitary and Ship Canal in excess of the levels indicated below. This is not intended to alter monitoring and reporting requirements in the NPDES permit.

	Monthly Average	Daily Composite
Ammonia nitrogen	184 kg/day	405 kg/day

3. Petitioner shall notify the Agency of any decision to permanently close the refinery.

4. Petitioner shall notify the Agency in the event production is re-established.

5. Within one year after production is re-established Petitioner shall provide the Agency with a written technical proposal for compliance with Rule 406. This shall include a proposal for in stream aeration as outlined in the Opinion.

6. Petitioner shall notify the Agency at the time its wastewater treatment plant is shutdown and also at the time its wastewater treatment plant is brought back into operation for final cleanup.

7. Within forty-five 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 81-70, hereby accept that Order and agree to be bound by all of its terms and conditions.

SIGNED _____

TITLE _____

DATE _____

8. The Agency, pursuant to Rule 914 of Chapter 3: Water Pollution, shall modify NPDES permit No. IL0002305 consistent with the conditions set forth in this Order.

IT IS SO ORDERED.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify that the above Order was adopted on the 24th day of September, 1981 by a vote of 4-0.

Christan L. Moffett, Clerk
Illinois Pollution Control Board