ILLINOIS POLLUTION CONTROL BOARD
October 29, 1987

IN THE MATTER OF:	)	
	)	
PROPOSAL OF MOBIL OIL CORPORATION	)	
TO AMEND THE WATER POLLUTION	)	R84-16
REGULATIONS	)	
	)	

PROPOSED RULE. SECOND NOTICE.

PROPOSED OPINION AND ORDER OF THE BOARD (by J. Marlin):

This matter comes before the Board upon the May 1, 1984 filing of a proposal by Mobil Oil Corporation (Mobil) requesting site-specific relief from the ammonia nitrogen effluent standard (35 Ill. Adm. Code 304.122(b)). Relief is also requested from the requirement that no effluent shall cause a violation of a water quality standard (Section 304.105) as it concerns the general use ammonia nitrogen water quality standard (WQS) (Section 302.212), the secondary ammonia nitrogen WQS (Section 302.407), the general use dissolved oxygen (DO) WQS (Section 302.206) and the secondary DO WQS (Section 302.405). Mobil discharges into the Des Plaines River.

Hearing was held in Joliet, Will County, on July 26, 1984. On October 30 and December 13, 1984, Mobil filed responses to the written inquiries of the Illinois Department of Energy and Natural Resources (DENR). The DENR concluded that an economic impact study was unnecessary and filed its negative declaration on February 22, 1985. The Economic Technical Advisory Committee agreed with this finding, filing its concurrence on March 12, 1985. The last brief was filed on June 4, 1985. The Board by Interim Order dated September 5, 1985, requested that the participants address the question of whether the Board has authority to grant site-specific relief from 35 Ill. Adm. Code 304.105. On February 4, 1986, the Agency moved to file United States Environmental Protection Agency (USEPA) comments, and on February 7, 1986, Mobil filed its response to USEPA comments which contained amended proposed language. Both motions were granted by the Hearing Officer on February 24, 1986. The Agency on March 20 filed its response to Mobil's response and modified proposal. On April 10, 1986, Mobil moved for leave to file its reply to the Agency's response to the modified proposal. That motion is granted. On July 7, 1986, Mobil filed a motion for leave to file Comment in Opposition to Applicability of Central Illinois Public Service Company v. PCB to this cause. In the Agency's response, filed on July 17, 1986, the Agency did not object to Mobil's motion. Mobil's motion is granted.

On February 5, 1987, the Board adopted a proposed rule for First Notice. This proposed rule was published in the Illinois Register on March 13, 1987. 11 Ill. Reg. 4210. On April 27, 1987, Mobil filed comments cited herein as "P.C. #1". On June 5, 1987, Mobil filed a supplement to its comments. The Agency filed its comments, cited herein as "P.C. #2", on June 7, 1987. Although these latter two filings were filed subsequent to the closing of the 45-day comment period, the Board has accepted and fully considered these late filings.

Mobil is currently operating under a variance from 3 mg/l ammonia nitrogen effluent standard of 35 Ill. Adm. Code 304.122(b) until July 1, 1988 or until final action is taken in this matter, whichever occurs first. Under this variance, the ammonia nitrogen concentration in Mobil's discharge must not exceed a monthly average concentration of 25 mg/l and a daily maximum of 35 mg/l. Mobil Oil Company v. Illinois Environmental Protection Agency, PCB 86-45, slip Opinion and Order at 4 (August 14, 1986). Mobil has been granted five previous variances from the ammonia nitrogen standard: PCB 77-22, PCB 78-97, PCB 80-54, PCB 82-36 and PCB 84-37. Mobil has incorporated by reference the proceedings of the five variances in this regulatory proceeding. (R. 114).

Mobil owns and operates a conventional fuels petroleum refinery with a rated capacity of 180,000 barrels per day located in Joliet, in Will County. The refinery discharges 2.74 million gallons of effluent per day. Stormwater, noncontact cooling water and process water are discharged from the facility into the Des Plaines River. The process water and contaminated surface runoff (1600 gpm) are treated in Mobil's wastewater treatment plant (WWTP) which consists of an API separator, a dissolved air flotation unit, an equilization basin for primary treatment and a conventional activated sludge facility for secondary treatment. Treated effluent from the final clarifier is routed through a 4.98 million gallon guard basin where it is retained for approximately 51 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 Oil Company, PCB 86-45 at 1-2.

Mobil is requesting that its effluent limits for ammonia nitrogen be set at 25 mg/l for a monthly average and 40 mg/l for a daily maximum. (Pet. Brief, p. 3).

In the past 13 years, Mobil has expended considerable time and effort in its attempt to reach ultimate compliance with the ammonia standards. The total cost of ammonia related capital expenditures is in excess of $2.1 million. The average annual operating cost for ammonia reduction projects during the last five years has been $1,801,000, including amortization of capital investments. Equalization system improvements and continuous dissolved oxygen monitoring in the aeration basins cost an

additional $64,000 between 1982 and 1985. Projects have included the purchase and installation of a nitrification pilot plant, nitrification inhibition studies, mutant bacteria trials, alkalinity addition and temperature control in the aeration basins. Since 1973, these efforts have reduced Mobil's discharged ammonia concentration by 96 percent. Mobil Oil Company, PCB 86-45 at 2.

Mobil investigated six alternative nitrification technologies. Three biological systems (activated sludge, trickling filter and rotating biological contactor) were rejected because of their inability to consistently achieve the ammonia nitrogen effluent standard of 3 mg/l (R. 97-8, See Pet. Exh. 2, p. 59, 60). Three chemical processes were also addressed. Breakpoint chlorination and ion exchange processes would consistently meet the 3 mg/l standard (R. 94-5). However, breakpoint chlorination was not recommended because of the formation and release of toxic chlorinated byproducts (R. 94). The ion exchange process would entail a 7-8 million dollar capital cost with a $450,000 annual operating cost, plus an added cost for activated carbon treatment if organic fouling occurred (R. 95). The third chemical process, ammonia stripping, would not enable Mobil to reduce its effluent concentration enough to achieve the 3 mg/l standard. In addition, it has relatively high capital and operating costs as well as potential operational problems. (R. 96). After assessing the available control alternatives, an expert witness for Mobil concluded that absolute compliance with the 3 mg/l standard could only be achieved by the ion exchange process. He stated that "[i]n the absence of a beneficial influence on receiving water quality, it is difficult to recommend the expenditure of several million dollars to achieve further reduction in effluent ammonia at the Joliet refinery." (R. 103).

Environmental Impact

Water quality standards for ammonia nitrogen and dissolved oxygen are being exceeded in the Des Plaines River at the point of Mobil's discharge, river mile 278. (R. 157-8). Mobil asserts, and the Agency agrees, that the condition of the river is primarily due to the discharges of three Metropolitan Sanitary District of Greater Chicago (MSDGC) sewage treatment plants located upstream of Mobil. (Pet. Brief, p. 6-7; Ag. Brief, p. 3). Based on an annual average, calculated from data taken from July, 1982 through December 31, 1983, Mobil's discharge constitutes 0.3 percent of the river's total point source loading of ammonia nitrogen. (R. 139). Th MSDGC sewage treatment plants discharges make up 96 percent of the ammonia nitrogen loading. (Pet. Exh. #7, p. 8).

The Agency concurs with Mobil that Mobil's current discharges of ammonia nitrogen have "no significant environmental impact." The Agency states that "continued discharges by Mobil

at its present rate and concentration will have no discernible effect upon the biota in the lower Des Plaines and upper Illinois Rivers." (Ag. Brief, p. 3).

In addition, the nearest actual or proposed public water supply downstream of Mobil's outfall is the City of Peoria which is 110 river miles away. Because of the distance and the relative amount of the discharge, a witness for Mobil stated that the ammonia nitrogen added by Mobil would have "appreciable time for degradation" by the time it reaches Peoria. (R. 182).

Economic Impact

An expert witness for Mobil stated that if the lower Des Plaines and upper Illinois rivers improved greatly in quality such that it would become a combined sport and commercial fishery, its value would be $51,633 per mile per year. (R. 187). If Mobil discharged 3 MGD at 40 mg/l into the river during a seven-day, ten-year low flow of 1186 MGD, the river's concentration of ammonia nitrogen would rise by 0.101 mg/l near the discharge point. (R. 145-6). The river would flow approximately 1.85 miles before returning to the original ammonia nitrogen concentration. (R. 187-88). If it is assumed that a 0.101 mg/l increase in ammonia nitrogen would completely destroy the value of the river's potential in being a sport and commercial fishery (within that 1.85 mile stretch), the impact would equate to a loss of $95,521 per year. When figuring Mobil's relative contribution to an overall 1.6 mg/l river concentration, the monetary loss directly attributable to Mobil would be $6,448 per year. (R. 188) It was estimated that if Mobil is granted relief, it would save, at the minimum, $420,000 per year. Based upon these assumptions, the ratio of Mobil's savings to society's cost would be 65 to 1. (R. 189-90). It is Mobil's position that a treatment plant expansion, required to achieve compliance with the existing standard is not economically justified. (Pet. Brief, p. 10). The Agency concurs with Mobil that "the ratio of likely cost expansion to likely beneficial impact would be extremely high, and thus economically unjustified." (Ag. Brief, p. 4).

The Department of Energy & Natural Resources (DENR) concluded that the "cost of making a formal study is economically unreasonable in relation to the value of the study to the Board in determining the adverse economic impacts of the regulation." (DENR Negative Declaration, p. 2). Consequently, it issued a negative declaration in this matter.

Ammonia Nitrogen Limitations

Mobil requested that the Board set limitations of a 25 mg/l monthly average and a 40 mg/l daily maximum. These limitations were determined by evaluating the historical performance data of the WWTP. According to Mobil, these limits are necessary to

account for fluctuations in the effluent concentrations. Studies indicate that the WWTP consistently removes a 17 mg/l increment from the WWTP influent. Consequently, Mobil concludes that the effluent fluctuations are due to higher crude nitrogen and production levels. Due to these variations, Mobil states that the requested limitations are necessary to "insure consistent compliance." (Pet. Reply, p. 6).

Pursuant to a Hearing Officer Order dated August 13, 1985 in this proceeding and the variance conditions of PCB 86-45, Mobil has submitted bi-monthly reports which cover effluent data from January, 1983 to August, 1987. The data from these bi-monthly reports can be summarized as follows:

AMMONIA NITROGEN CONCENTRATIONS (MG/L)

Year	Yearly Avg. of the Monthly Avg's.	Highest Monthly Avg.	Highest Daily Maximum
1983	4.35	15	27
1984	2.58	8	19
1985	3.33	16	25
1986	4.00	11	32
1987[1]	1.89 (8 month avg.)	3.5	13.1

The Board recognizes that in 1973 Mobil's monthly discharge averaged 77 mg/l and that in 1979 and 1980, it averaged 13 and 17 mg/l respectively. Mobil Oil Company, PCB 86-45 at 2. However, data from the past 4 2/3 years indicates that Mobil's actual performance level, when calculating an annual average, of the monthly figures, is quite close to the 3 mg/l standard.

The Board finds that if Mobil is granted relief, the resulting environmental and economic impact would be minimal. Considering the available alternatives for Mobil, compliance with the 3 mg/l standard, although technically feasible, would be economically unreasonable given Mobil's current performance levels. Consequently, the Board will grant Mobil relief from Section 304.122(b).

The Agency is concerned that if the Board grants Mobil the limits that it is requesting, Mobil may relax its present control

1* The values for 1987 are derived from data concerning Mobil's discharges during the period from January, 1987 to August, 1987. This data was filed by Mobil on September 17 as a part of its Bi-monthly Progress Report.*

methods thereby increasing the ammonia nitrogen concentration in its discharge. The Agency proposed a 10 mg/l monthly average, a 30 mg/l daily maximum, and a 5 mg/l annual average. The Board shares the Agency's concern in light of the fact that limits requested by Mobil are considerably higher (sometimes by a factor of two) than its actual discharge.

As a result, the Board proposed for First Notice that Mobil's discharge not exceed the following limitations: monthly average, 20 mg/l; daily composite, 35 mg/l; and and yearly average, 8 mg/l. The daily composite limit was set to allow Mobil the day to day fluctuations of effluent concentrations that it periodically experiences. The monthly average limit was set to account for the impact that these daily fluctuations have upon a monthly average calculation. The yearly average of 8 mg/l was set to allow for considerable deviation from current performance due to anticipated problems and varying feedstocks without allowing Mobil to significantly decrease its control efforts. Even after recognizing the fact that Mobil experiences periodic losses of nitrification, the Board viewed Mobil's current performance levels as falling within the proposed effluent limits. However, in its first Notice comments, Mobil disagrees.

Mobil first claims that the Board is without authority to impose an annual average. Secondly, Mobil asserts that the annual average imposed by the Board is unsupported by the record. The Board will address this second argument first.

Mobil claims that the Board imposed the annual average only because the Board was concerned that if Mobil was granted relief it might relax its treatment efforts in the future. (P.C. #1, p. 5). Mobil is partially correct. The Board fashioned relief with a monthly average, daily maximum, and yearly average so as to keep Mobil's discharge as close as possible to the 3 mg/l value. Also, the combination of these three limits would allow for some variability in the discharge due to periodic losses of nitrification. The Board viewed the annual average limit as providing added incentive for Mobil to work to keep its discharge concentrations low. As stated above, the ammonia concentrations of Mobil's discharges, for the years 1983 through August 1987, were at levels significantly lower than the 35/40 level, which Mobil has requested.

It naturally follows, then, that if Mobil was granted relief as it has requested, it could discharge effluents with significantly greater concentrations of ammonia than it has discharged during the past 4 2/3 years. By taking this position, the Board is not suggesting that Mobil would deliberately seek to decrease its ammonia control efforts, but rather without the annual average, there would be no legal incentive for Mobil to keep the discharge at levels it has attained since 1983.

In support of its position, Mobil points to a statement made at hearing by James Patterson, Ph.D. In its comment, Mobil quotes Patterson:

> As I testified, at the limits that I mentioned, 35 daily and 25 monthly, there is a five percent probability that they would violate those standards based upon the 1982-83 data. They would have to actually improve their performance in order to not violate those standards. (emphasis added) (R. 104-5).

It is important to note that this statement was made on July 26, 1984 and was based solely on the effluent data of 1982 and 1983. Mobil seems to ignore the performance levels attained by Mobil since 1983.

Mobil also quotes the Board's Opinion from PCB 86-45.

> Mobil has made admirable progress in reducing its nitrogen discharge, and there is no reason to believe it will lessen its control efforts during the period of this variance. (emphasis added) Mobil Oil Corporation v. EPA, PCB 86-45, slip. op at 3 (August 14, 1986).

The Board is at a loss to determine how this statement is inconsistent with the concerns the Board has expressed in this site-specific rulemaking. A variance proceeding deals with temporary relief and its corresponding impacts. A plan for ultimate compliance is also essential in such a proceeding. In a site-specific rulemaking, the issues are much more sweeping. The Board must determine whether permanent relief from a requirement is justified. Therefore, the Board must consider the far reaching consequences that are incidental to permanent relief. In general, the Board does not believe that the deliberations in a site-specific rulemaking are necessarily bound by determinations made in an earlier variance proceeding. In particular, even if the Board viewed the quoted statement as controlling, it would still not contravene the Board's present concerns. The statement is qualified by the phrase "during the variance period." That is, the statement would not preclude the Board from considering in this rulemaking, situations which could arise subsequent to the variance period.

Mobil's statistical argument for dropping the annual average is much more convincing. As Exhibit B to its Comments, Mobil has submitted a report written by James Patterson entitled "Evaluation of Proposed Ammonia Discharge Limitations (PCB R84-16)". In that report, Patterson critiques the effluent limits proposed by the Board at First Notice.

Patterson concludes that the use of a daily maximum plus a monthly average limit is sufficient to describe the performance level of a treatment facility. He also asserts that the additional imposition of an annual average limit is "redundant if internally consistent with the statistical profile [of performance], and could render one or more of the other limits moot if [the annual average is] internally inconsistent." Specifically, Patterson claims that the annual average of 8 mg/l, as proposed by the Board at First Notice, is "statistically inappropriate" when considering Mobil's operations during the period from 1982 to 1986. Based on such data, Patterson concludes that there is "an approximate 15 to 20 percent possibility that the [annual average] limit would be exceeded in any one year." (P.C. #1, Exh. B, p. 27).

Specific effluent limits can be correlated with percentile levels which characterize past performance levels. For example, a particular limit at the 50th percentile, for a given period, indicates that during that period half the values were below that limit and half the values exceeded that limit. (P.C. #1, Exh. B, p. 4).

Based on data taken from January, 1982 through June 1984, Patterson suggested, at hearing, a daily maximum of 35 mg/l. This limit equates to a 95th percentile level for that data base. That is, 95 percent of the daily effluent concentrations, for the period from January 1982 through June 1984, fell at or below the 35 mg/l level. (P.C. #1, Exh. B, p. 1, 13). The Board proposed this limit at First Notice.

Patterson had also recommended, at hearing, a 25 mg/l monthly average, based on data from January 1982 through June 1984. However, when that period is expanded to include data through December 1986, the 95 percentile value is 22 mg/l. The Board has proposed a 20 mg/l monthly standard, which according to Patterson, is equivalent to the 94th percentile value for that expanded data base. (P.C. #1, Exh. B, p. 10, 15).

Patterson has also figured the percentile level for an annual average limit of 8 mg/l. The data base he has used in this calculation are the discharge levels from January, 1982 through December, 1986. However, instead of calculating an annual average according to the calendar year, Patterson has plotted 12 month rolling averages. Specifically, he has plotted seventeen 12-month averages with each subsequent 12-month period beginning 3 months after the previous 12-month period. That is, the first period covers the time from January 1, 1982 to December 31, 1982. The second 12-month period covers the time from April 1, 1982 through March 31, 1983. The procedure goes on until 17, 12-month periods are defined. From the plotting of these 12-month averages, Patterson has calculated that the 8 mg/l annual average represents the 85th percentile for this data base. (P.C. #1, Exh. B, p. 22). However, the Board notes that section

304.104(b)(1) defines a monthly average as "numerical average of all daily composites taken during a calendar month." (emphasis added). By analogy, the Board would expect the annual average to be computed on the basis of a calendar year.

Using these percentile figures, Patterson has made further calculations to demonstrate the feasibility of achieving the proposed limits under certain scenarios. Since the Board has the daily maximum at 35 mg/l, which according to Patterson is the 95 percentile for performance, Patterson reasons that in one year, approximately 18 daily effluent values will exceed the 35 mg/l level. Patterson claims that if those 18 days occur all in one month, it would be impossible for Mobil to meet a monthly average of 25 mg/l as well as an annual average of 8 mg/l. If those 18 days of daily exceedances occurred in two months, at 9 days for each month, Patterson concludes that Mobil could meet the monthly standard but that it would be impossible to achieve the annual average. (P.C. #1, Exh. B, p. 20).

Patterson also asserts that data show "that when higher ammonia discharge levels occur, they persist for several consecutive days." In other words, when significantly higher ammonia concentrations appear in Mobil's effluent, such concentrations tend to last. In light of this fact, combined with the analysis just discussed, Patterson concludes:

> For hypothetical but realistic situations wherein Mobil might meet the proposed daily maximum and monthly average limits, the imposition of the proposed annual average limit would result in circumstances ranges [sic] from an impossibility of compliance with the annual average, to having to achieve an annual average far less than that achieved in Mobil's best year of record.
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> (P.C. #1, Exh. B, p. 28)

Mobil, itself, characterizes Patterson's study:

> More alarmingly, he [Patterson] forecast reasonable situations, based upon Mobil's actual historical performance data, where the Joliet Refinery discharge would likely violate the proposed annual standard even though the treatment plant performed within the admittedly restrictive daily maximum/monthly average standards now being proposed by the Board. (Mobil's emphasis)
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> (P.C. #1, p. 1172).

Mobil is clearly taking the position that it would be difficult, if not impossible, to comply with an annual average limitation of 8 mg/l. The Board is reluctant to impose a limitation on the proponent of a site-specific rulemaking when the proponent believes that compliance with the limit is not achievable. In light of this and the environmental impact at issue in this proceeding, the Board will delete the annual average limit of 8 mg/l from the proposed rule.

Since the Board will not utilize an annual average limit, it is unnecessary to specifically answer Mobil's arguments that the imposition of such a limit is beyond the Board's authority. However, at this point, the Board believes that it does have the authority to impose an annual average effluent limitation.

The annual average used in combination with the monthly and daily maximum limits, as previously proposed, would have effectively required a more stringent performance level when compared with what would have been required if only monthly and daily limits were set. This position is supported by Mobil's own claim that situations could exist where Mobil could meet the monthly and daily limits and at the same time violate the annual average. With the removal of the annual average, Mobil will be able to discharge effluent at higher ammonia concentrations than what would have been allowed with the annual average. Because the new proposed rule has the effect of allowing Mobil to discharge more ammonia when compared to the previous proposal, the Board will include a sunset provision in this new proposal.

In its First Notice Opinion the Board discussed the possibility of a sunset provision and concluded that a sunset was unnecessary.

> Finally, it is the Board's position that the record supports the granting of permanent relief from the ammonia nitrogen effluent standard. In re Union Oil Company of California, R 84-13, January 8, 1987, the Board also granted Union Oil relief from the ammonia nitrogen effluent standard with regard to its Lemont Refinery. However, the Board limited the relief to seven years. Such a "sunset provision", though, is not necessary in this matter.
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> The data shows that Mobil, unlike Union, has largely been successful in reducing the concentration of ammonia nitrogen in its discharge. The Board notes that on an annual average Mobil's discharge has been quite close to the 3 mg/l standard. This is true even in recent years when the nitrogen content of the oil feedstocks have been

> high. The Board fully expects Mobil to continue its high performance level concerning ammonia nitrogen concentrations. The Board, therefore, grants Mobil a permanent relief from Section 304.122(b) within the conditions listed in the Order. (emphasis added).
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> Opinion and Order, R84-16, slip. op. at 7-8 (February 5, 1987).

Although the Board still expects Mobil to continue its high performance levels, without the annual average limit there is no legal requirement for Mobil to continue to produce an effluent whose annual average would be close to 3 mg/l. With only the monthly and daily limits, set at 20 and 35 mg/l respectively, Mobil is only legally required to produce an effluent to meet those standards. Consequently, Mobil will be allowed to discharge an effluent of such quality that a yearly average of the monthly averages could be as high as 20 mg/l. This is in great contrast to the yearly averages of the monthly averages for the years 1983 through 1987 which are set forth on page 5 of this Opinion. It is obvious that with monthly and daily limits set at 20/35, Mobil will not be required to maintain the level of performance that it has achieved in the past 4 2/3 years. Consequently, factors, which the Board relied upon at First Notice to omit a sunset, have changed such that the Board will now impose a sunset.

As in Union, the Board will terminate this rule on December 31, 1993. The six years will allow time for improvement of the Des Plaines' condition. As the Board noted in Union, upstream activities by the MSDGC might greatly enhance water quality. In re Union Oil Company, R84-13 slip. op. at 11 (March 19, 1987). The Board may then be in a better position to accurately evaluate the environmental impact that would result from granting Mobil permanent relief. Also, the six years will give Mobil further time to monitor its effluent and perhaps discover a technically feasible and economically reasonable method for achieving the general 3 mg/l limitation.

Mobil has asserted that an increase in the nitrogen content of the crude oil it refines correspondingly increases its effluent concentration. In particular, it claims that nitrogen content of the crudes have increased over the years. The crude oil nitrogen content at the Joliet refinery has gone from a low of about 680 parts per million (ppm) in 1976 to a high of about 1450 ppm in 1984. In 1985, it dropped to a level of 1120 ppm. Mobil Oil Company, PCB 86-45 at 3. If Mobil finds in the future that it exceeds the standards on a regular basis, it can come before the Board under another docket to seek relief. However, even though in recent years Mobil's crude feedstocks have had a high nitrogen content, its effluent has been within the limits set herein.

Mobil will be required to monitor and report its effluent concentration. However, procedures for monitoring and reporting effluent concentrations, will also be set forth in the permit. Mobil will be required to report on an annual basis the nitrogen content of its feedstock.

Water Quality Standard Relief

Mobil has also requested relief from being liable for causing the violation of various water quality standards (WQS). In response to a U.S. Environmental Protection Agency (USEPA) Review Statement submitted by the Agency, Mobil modified its original proposed language addressing the water quality standards issue. Essentially, the modified language states that 35 Ill. Adm. Code 304.105 will apply to Mobil with respect to general use and secondary contact WQS for ammonia nitrogen and dissolved oxygen, "unless such discharge does not cause or contribute significantly to the violation" of the WQS. (Mobil Response, p. 1). Mobil's discharge is located approximately 200 feet upstream of the I-55 bridge. The river upstream of the bridge is classified as secondary contact, whereas downstream of the bridge, the river is considered general use. (R. 125-26). Consequently, Mobil's discharge may, in theory, impact upon both secondary contact and general use streams.

The general use water quality standard for total ammonia nitrogen, given the river's pH and temperature, is 1.5 mg/l (35 Ill. Adm. Code 302.212). The general use water quality standard for dissolved oxygen is 6 mg/l (35 Ill. Adm. Code 302.206). Mobil's impact upon these standards is discussed in Petitioner's Exhibit 3, a report prepared by an expert witness for Mobil.

The report shows that the general use standard for ammonia nitrogen is exceeded downstream of Mobil's discharge. However, it is concluded that under worst case conditions (Mobil discharging 3 MGD at 40 mg/l into the river flowing at a low level of 1,186 MGD), Mobil's discharge would extend by only 1.85 miles the reach of the river which did not meet the ammonia nitrogen standards. (Pet. Exh. #3, p. 16).

Similarly, the dissolved oxygen standard is currently exceeded downstream of Mobil. However, under the same worst case conditions, Mobil's discharge would extend by no more than one mile the reach of the river which did not meet the dissolved oxygen standard. (Id. at 19).

The secondary contact ammonia nitrogen standard is 2.5 mg/l for April through October, (35 Ill. Adm. Code 302.407). It is apparent from data reported in Petitioner's Exhibit #3 that this standard is exceeded upstream of Mobil's discharge. (Pet. Exh. #3, p. 17).

The secondary contact standard for dissolved oxygen is 4 mg/l (35 Ill. Adm. Code 302.405). Data shows that this standard is exceeded in the river mile where Mobil discharges. (Pet. Exh. #3, p. 18). Consequently, it is likely, given the upstream exceedances of the ammonia nitrogen standard, that the dissolved oxygen standard is also being violated upstream of Mobil's discharge point.

In the USEPA's Review Statement, the USEPA stated that Mobil's addition to the river is "insignificant" with respect to water quality violations. It concluded:

> Mobil should not be granted relief from Section 304.105 but should be required in their NPDES permit to, in addition to standard effluent monitoring, conduct upstream and downstream ammonia-N monitoring at representative sampling points to clearly ascertain whether or not they are responsible for water quality standards violations for ammonia-N.

In its First Notice Opinion, the Board classified Mobil's current impact on water quality as "de minimus". In their First Notice comments, Mobil and the Agency both object to the Board's de minimus characterization. Upon reconsideration, the Board finds the de minimus language to be inappropriate and hereby rescinds it.

In its First Notice comments, Mobil requests that the Board clarify when Section 304.105 would apply to Mobil's discharge. (P.C. #1, p. 12-13). Evidently, Mobil is referring to its modified language that Section 304.105 will not apply unless Mobil "causes or contributes significantly" to a WQS violation. The Agency suggests that the Board rule that "compliance with the proposed effluent limits shall be considered adequate compliance with the water quality standards for the purposes of Section 304.105." (P.C. #2, p. 4). The Board disagrees with both positions.

The Board first adopted the language of Section 304.105 as Rule 402 in 1972. In its adopting Opinion, the Board discussed the purpose behind the rule:

> 402 Violation of Water Quality Standards. The numerical effluent standards adopted today are intended as basic requirements that should be met everywhere as representing ordinary good practice in keeping potentially harmful materials out of the waters. In some cases, because of the low volume of the receiving stream or the large quantities of treated wasted discharged, meeting these

> standards may not suffice to assure that the stream complies with water quality standards set on the basis of what is necessary to support various water uses. In such cases, the very nature of water quality standards requires that additional measures be taken beyond those required by ordinary good practice to reduce further the discharge of contaminants to the stream. This would not be so if effluents were all required to be as clean as the receiving stream, but in recognition of economic hardship we have refrained from imposing such a requirement across the board. What additional measures are required can be determined only on the basis of more detailed consideration of each stream in accordance with the statutory requirement that different needs may dictate different standards. Rule 402 states the principle that discharges causing violations of the water quality standards are forbidden, as was the case under the earlier regulations, and states basic considerations for determining which of a number of contributors to an overloaded stream must take measures to abate the problem (emphasis added).
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> In re: Effluent Criteria; Water Quality Standards Revisions; and Water Quality Standards Revisions for Intrastate Waters, R70-8; R71-14; R71-20, 3 PCB 401, 405 (January 6, 1972).

The record indicates 96 percent of the ammonia loading in the Des Plaines is due to the discharges from MSDGC sewage treatment plants. Mobil, itself accounts for 0.3 percent of the point source loading. Therefore, the Des Plaines is a type of river expressly contemplated by the Board when it adopted Rule 402. "In some cases,...because of large quantities of treated wastewater discharged, meeting these [effluent] standards may not suffice to assure that the stream complies with water quality standards.... In such cases, [as with this particular stretch of the Des Plaines] the very nature of water quality standards requires that additional measures be taken...." These "additional measures" equate to the enforcement of Section 304.105. The reasoning behind Section 304.105 is just as valid today as it was in 1972 when it was adopted as Rule 402.

In its 1972 Opinion, the Board clearly described two lines of defense in the protection of a stream's water quality. The first line entails the regulation of effluents. The second line, which is just as important as the first, involves enforcement

against a source that causes a violation of a water quality standard. In the instance at hand, Mobil has justified relief as to its effluent discharge. Due to technical, economic, and environmental consideration, the Board will alter Mobil's effluent limits. However, Mobil has not justified to the Board the necessity for abandoning completely, or even partially, this second line of defense.

In the record, much has been made about the relatively poor quality of the Des Plaines River. The implication is that the Board should grant Mobil some sort of relief from Section 304.105 because the water quality standards are already being exceeded. However, the Board is not in the position to merely preserve the status quo when water quality standards are being violated in a river. The Board is to adopt regulations "to promote the purposes and provisions" of the Act. Ill. Rev. Stat. 1985, ch. 111 ½, par. 1013 (a). One of the purposes of the Act is to "restore, maintain and enhance the purity of the waters of this State in order to protect health, welfare, property, and the quality of life and to assure that no contaminants are discharged into the waters of the State." Ill. Rev. Stat. 1985, ch. 111 ½, par. 1011(b).

The Board is not convinced that it would be furthering the purposes of the Act by insulating Mobil from an enforcement action when Mobil is contributing to a WQS violation.

Secondly, any relief from Section 304.105 could be considered a de facto WQS revision. Although the Board has the authority to revise a WQS, federal law, under the Federal Water Protection Control Act, requires that certain criteria be met in the case of such a revision. The record does not contain the necessary information that would be required before the Board could consider a WQS change. Also, no numerical WQS alternative is proposed. Mobil is merely requesting that Section 304.105 not apply to Mobil as it would apply to all other sources.

For all of the above reasons, the Board will deny that part of Mobil's proposal which requests partial relief from Section 304.105.

Finally, the Board also believes that the instream monitoring, as proposed by the USEPA, is a requirement suitable for consideration by the Agency as a permit condition.

ORDER

The Board directs that Second Notice of the following proposed rule be submitted to the Joint Committee on Administrative Rules.

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE C: WATER POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD

PART 304
EFFLUENT STANDARDS

SUBPART B: SITE-SPECIFIC RULES AND EXCEPTIONS NOT OF GENERAL APPLICABILITY

Section 304.214 Mobil Oil Refinery Ammonia Discharge

a) This Section applies to discharges from Mobil Oil Corporation's Refinery, located near Joliet, into the Des Plaines River.

b) The requirements of Section 304.122(b) shall not apply to the discharge. Instead Mobil's discharge shall not exceed the following limitations:

CONSTITUENT	CONCENTRATION (mg/l)
Ammonia Nitrogen	
Monthly Average	20
Daily Composite	35

c) Section 304.104(a) shall not apply to this Section. Monthly average and daily composites are as defined in Section 304.104(b).

d) Mobil shall monitor the nitrogen concentration of its oil feedstocks and report on an annual basis such concentrations to the Agency. The report shall be filed with the Agency by January 31 of each year.

e) The provisions of this Section shall terminate on December 31, 1993.

(Source: Added at 11 Ill. Reg. , effective)

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Proposed Opinion and Order was adopted on the 29th day of October, 1987, by a vote of 7-0.

Dorothy M. Gunn

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board