

ILLINOIS POLLUTION CONTROL BOARD  
August 20, 1987

SCOTT AIR FORCE BASE, )  
 )  
 Petitioner, )  
 )  
 v. ) PCB 87-48  
 )  
 ILLINOIS ENVIRONMENTAL )  
 PROTECTION AGENCY, )  
 )  
 Respondent. )

OPINION AND ORDER OF THE BOARD (by R.C. Flegal):

This matter comes before the Board upon the filing by Scott Air Force Base ("Scott AFB") on April 17, 1987, of a Petition for Variance and on June 1, 1987, of an Amended Petition for Variance. Petitioner requests variance from the five-day biochemical oxygen demand ("BOD<sub>5</sub>") and total suspended solids ("TSS") limitations of 35 Ill. Adm. Code 304.120 and from the NPDES effluent standards of 35 Ill. Adms. Code 304.141(a). These sections respectively provide in pertinent part that:

No effluent whose dilution ratio is less than five to one shall exceed 10 mg/l of BOD<sub>5</sub> or 12 mg/l of suspended solids.

No person to whom an NPDES Permit has been issued may discharge any contaminant in his effluent in excess of the standards and limitations for that contaminant which are set forth in his permit.

Scott additionally requests that the variance be applicable only during those times when the hydraulic loadings at the Scott AFB treatment plant exceed 2.5 million gallons per day ("MGL"), and that the term of the variance extend to July 1, 1988.

The Illinois Environmental Protection Agency ("Agency") filed its recommendation ("Rec") on July 10, 1987. The Agency recommends that variance be granted, subject to conditions. Hearing was waived and none was held.

For the reasons discussed below, the requested relief will be granted.

BACKGROUND

Petitioner is a federal agency (Department of Defense) which operates an air force base in St. Clair County, Illinois. The base is headquarters of the 375 Air Base Group.

Scott AFB operates a sewage treatment system which serves an on-base population of approximately 7,880, with occasional use of base facilities by an additional approximately 11,422 people. The sewage treatment system consists of a collection system first constructed in 1919; a treatment plant consisting of 4 primary clarifiers, 2 trickling filters (one of which is proposed to be taken out of service for repairs upon grant of the requested variance), 3 final clarifiers, 2 anaerobic digesters, sludge drying beds and disinfection facilities constructed in 1940; and final sand filters constructed in 1972. Under normal operating conditions the treatment system accommodates a hydraulic loading of 1.3 MGD, with maximum and minimum capacities of 3.8 MGD and 1.0 MGD, respectively. All effluent standards are met under normal operating conditions.

However, Scott AFB has experienced difficulties with one of the two trickling filters. As Petitioner notes (Petition at 5):

On 23 Dec 86, Base Civil Engineering was forced to shut down trickling filter #2. The filter structure has spalled and cracked from repeated freeze-thaw cycles, excessive hydrogen sulfide attack and extended age. Most importantly the media has crumbled to the point where proper wastewater treatment is no longer possible. To continue operation of the filter would have resulted in a violation of our NPDES Permit.

Upon discovery of the deficiencies associated with this filter, Petitioner consulted with the Agency regarding possible methods of bringing the deteriorated filter back into full operation. Several alternatives have been explored, including partial operation of the filter. None of these alternatives has proven fully successful, and accordingly Scott AFB has determined that it will be necessary to replace the filter.

Construction of the new filter is scheduled to begin prior to October 1, 1987, and completion is scheduled by June 30, 1988. During this period Scott AFB will be operating with only a single filter. Petitioner asserts that operating with the single filter will present no difficulties with respect to compliance

with effluent standards under normal hydraulic loading<sup>1</sup>, but that at high flow conditions the plant will not be able to fully treat the total plant influent. This condition is expected to occur at hydraulic loadings exceeding 2.5 MGD, and to present problems only with respect to the BOD<sub>5</sub> and TSS limitations.

#### ENVIRONMENTAL IMPACT

Scott AFB and the Agency contend that there will be only minimal environmental impact under the conditions of the proposed variance. Among the reasons cited are: (1) the number of expected excursions above the 2.5 MGD hydraulic loading level is limited; (2) flows above 2.5 MGD will continue to receive partial treatment; (3) any inadequately treated sewage will be discharged at a time when the receiving stream is also at high flow; and (4) analysis of ambient water quality in the receiving stream indicates no association between water quality problems and the Scott AFB effluent.

Scott AFB estimates, based on experience and historical records of the past 10 years, that hydraulic loadings in excess of 2.5 MGD have occurred with a frequency of approximately 37 times per year (Petition at 1). These excursions coincide with heavy rainfalls (Id. at 8). Moreover, Scott AFB contends that the estimate of 37 per year may be high due to the recent completion of an inflow and infiltration ("I&I") reduction project<sup>2</sup>.

Should the variance be granted, Scott AFB commits to providing primary treatment and chlorination to all hydraulic loadings in excess of 2.5 MGD (Id. at 10). Scott AFB also agrees to a cap on both daily maximum and 30-day average concentrations of BOD<sub>5</sub> and TSS during the term of the variance, and to conduct special effluent monitoring during those times when hydraulic loading exceeds 2.5 MGD (Amended Petition at 4). The caps requested are specified in the Amended Petition at 3:

We would like to specify that the BOD-5 load limit be increased from 155 lbs/day to 185 lbs/day (for 30 day average) and from 417 lbs/day to 550

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<sup>1</sup> Data provided by the Agency (Rec. at 10) from Petitioner's Discharge Monitoring Reports indicates that Petitioner's effluent has been well within the current BOD<sub>5</sub> and TSS limitations even when Petitioner has been operating with only one effective trickling filter. The Agency cautions, however, that none of these data were collected under the high flow conditions which are expected by Petitioner to cause violations.

<sup>2</sup> The Board notes that Scott AFB provides no documentation that the I&I reduction has caused an actual decrease in wet-weather flows to the plant.

lbs/day (for daily maximum). Likewise, we would ask that the BOD-5 concentration limit parameters be increased from 10 mg/l to 20 mg/l (for 30 day average) and from 20 mg/l to 30 mg/l (for daily maximum). In regards to the TSS parameter, we ask that allowable load limits be increased from 186 lbs/day to 210 lbs/day (30 day average) and 500 lbs/day to 600 lbs/day (daily maximum). Finally, we request that TSS concentration limits be raised from 12 mg/l to 20 mg/l (30 day average) and 24 mg/l to 35 mg/l (daily maximum).

The Agency agrees with these requested caps, and recommends that they and the commitment to conduct special monitoring at hydraulic loadings greater than 2.5 MGD be stipulated within the conditions of the variance.

Because high influent hydraulic loadings coincide with heavy rainfalls, there also tends to be a coincidence of high influent flow with high discharges in the receiving stream, Silver Creek. For this reason the Agency concludes (Rec. at 12):

The Agency has no reason to believe that the lesser quality effluent Petitioner plans to discharge will have a significant adverse impact on the receiving stream because the slight increase in concentrations will only occur during wet weather and consequently high stream flows.

The Agency further believes that this circumstance will mitigate any adverse effect on the waters of the State (Rec. at 16).

Both Scott AFB and the Agency have provided analyses of the ambient water quality in the receiving stream, both upstream and downstream of the Scott AFB discharge (Amended Petition at 4; Rec. at 11 and 12). These data indicate generally acceptable water quality for the parameters identified, and no discernable affect of the Scott AFB discharge.

#### HARDSHIP AND COMPLIANCE PLAN

As the Agency recognizes, the hardship upon Petitioner in the instant matter is not a question of limited resources, but rather a question of feasibility (Rec. at 15). In the absence of variance, Petitioner can not expect to be in consistent compliance with the present BOD<sub>5</sub> and TSS limitations, and therefore, absent variance, would be subject to enforcement action. Petitioner does intend to permanently rectify this matter by installing a new trickling filter, which it commits to doing by June 30, 1988 (Petition at 6; Amended Petition at 2; Rec. at 13). There is no indication in the record that it would be feasible to install the new filter in a significantly shorter time, and the Agency contends that approximately one year appears

to be a reasonable period in which to expect the work to be completed (Rec. at 13).

CONCLUSION

Given the entirety of the circumstances in this matter, the Board finds that Scott AFB would suffer an arbitrary or unreasonable hardship not justified by the environmental impact if required to come into immediate compliance. For this reason the requested variance will be granted, subject to conditions as presented in the Order below. The conditions are essentially those recommended by Petitioner and the Agency.

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

ORDER

Scott Air Force Base is hereby granted variance from 35 Ill. Adm. Code 304.120 and 304.141(a), subject to the following conditions.

- 1) Variance shall commence on October 30, 1967, or upon start of construction of trickling filter #2, and expire on July 1, 1968, or upon completion of trickling filter #2, whichever occurs first.
- 2) Variance shall be in effect only at such times as when daily and/or monthly plant hydraulic loadings are greater than 2.5 MGD.
- 3) Petitioner shall meet the following effluent limits during the term of the variance at any time when daily and/or monthly average hydraulic loadings are greater than 2.5 MGD:
  - a) BOD<sub>5</sub> concentration = 20 mg/l monthly average and 30 mg/l daily maximum;
  - b) BOD<sub>5</sub> quantity = 185 lbs/day monthly average and 550 lbs/day daily maximum;
  - c) TSS concentration = 20 mg/l monthly average and 35 mg/l daily maximum;
  - d) TSS quantity = 210 lbs/day monthly average and 600 lbs/day daily maximum.
- 4) All flows in excess of 2.5 MGD shall, at the minimum, receive primary treatment and chlorination.
- 5) Petitioner shall sample its effluent each day when hydraulic loadings exceed 2.5 MGD. The effluent samples

shall be analyzed for parameters listed in Petitioner's NPDES Permit. Petitioner shall summarize all samples taken and submit the summaries, along with plant flow data, with its monthly Discharge Monitoring Report.

- 6) Petitioner shall report to the Agency's Collinsville Regional Office by telephone when repair work is to begin and when it is completed. A written confirmation of the notification shall be sent to the following address within five (5) days thereafter:

Illinois Environmental Protection Agency  
 Division of Water Pollution Control  
 Compliance Assurance Section  
 2200 Churchill Road  
 Post Office Box 19276  
 Springfield, Illinois 62794-9276

- 7) Petitioner shall apply for and receive any applicable permits from the Agency prior to beginning construction.

- 8) Petitioner shall execute and submit a Certificate of Acceptance to the address in (c) within forty-five (45) days of this Order. This forty-five day period shall be held in abeyance for any period this matter may be appealed. The form of the Certificate shall be:

Scott Air Force Base has received and understands the Order of the Illinois Pollution Control Board in PCB 87-46 and hereby accepts said Order and agrees to be bound by all of the terms and conditions thereof.

By: \_\_\_\_\_  
 R. T. Dixon, Jr., Colonel USAF  
 Commander

\_\_\_\_\_  
 Date

IT IS SO ORDERED.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 20<sup>th</sup> day of August, 1987, by a vote of 6-0.

Dorothy M. Gunn, Clerk  
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 Illinois Pollution Control Board