

ILLINOIS POLLUTION CONTROL BOARD
October 2, 1980

CITY OF MINONK,)
)
) Petitioner,)
)
) v.) PCB 80-136
)
) ENVIRONMENTAL PROTECTION AGENCY,)
)
) Respondent.)

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

On July 23, 1980 the City of Minonk filed a petition for variance from the 2.0 mg/l fluoride maximum level contained in Rule 304(B) and from radiological quality standards contained in Rule 304(C) of Chapter 6: Public Water Supplies. On August 25, 1980 the Environmental Protection Agency (Agency) filed its Recommendation that a variance, subject to conditions, be granted through January 1, 1981, the current deadline for exemptions from the Safe Drinking Water Act (SDWA). Hearing in this matter was waived, and none was held.

The City of Minonk (City), located in Woodford County, supplies 910 water users from two deep wells drilled into St. Peter sandstone. Well No. 1, which is 1850 feet deep, was drilled in 1893; Well No. 2, which is 2005 feet deep, was drilled in 1922. While the petition is somewhat unclear, it would seem that the City seeks this variance in order to be permitted to extend its distribution system, as well as to continue using its present water supply (Pet. 2, 6). Distribution samples show concentrations of fluoride and radiation in violations of the Board's rules. We will first deal with the radiological quality issue.

Two samples taken from the City's distribution system in July and December of 1979 showed gross alpha particle activity of 38.1 ± 15.8 and 17.1 ± 8.63 pico curies per liter (pCi/l), and gross beta particle activity of 29.5 ± 15.7 and 26.8 ± 14.3 pCi/l. Tests for radium 226 and 228, and uranium were not performed (Pet. 1, Rec. 2).

Rule 304(C) establishes a 15 pCi/l maximum for gross alpha particle activity. The Board has previously held that variance relief may be granted, even if less than four quarterly samples (required by Rule 309(C)(1)(a) as proof of an enforceable violation) indicate non-compliance with Rule 304 e.g. City of Rolling Meadows v. EPA, PCB 80-70, July 14, 1980. However, in its Recommendation in this case, the Agency has informed the Board that USEPA sources have advised it that:

"the testing methodology used to determine gross alpha particle activity has a previously undiscovered accuracy problem ...[which] can lead to a theoretical over estimation of up to 4 times the proper result. This variability impairs the usefulness of the gross alpha particle test as a screening method for the presence of radium." Rec. 2-3.

The Agency has further determined that it has no "reliable data base for the radiological constituents," and consequently will not withhold permits pursuant to Section 39 of the Act until it is sure that its "analytical procedures will give correct results" (Pet. Ex. A).

The Board declines to award variances if it is unlikely that the Petitioner is in violation of its rules, Rolling Meadows, supra, at 2. As the accuracy of the Agency's data base has been questioned by the Agency itself, the likelihood that the City is in violation of Rule 304(C) is questionable. Therefore, the Board denies variance from Rule 304(C), as being unnecessary at this time and unwarranted by the facts here presented. Testing must be continued however in order that the radiological content of the City's water be accurately determined.

Rule 304(B) establishes a maximum fluoride concentration level of 2.0 mg/l. Analyses of four samples taken from each well (in 1961, 1975, and 2 in 1977) and from the distribution system (4 in 1979) establish that both the water drawn from each well and the water drawn from the distribution system violates this standard. The average of the four distribution system samples is 3.2 mg/l (Pet. 1, Rec. 2).

The City asserts that it cannot meet the 2.0 mg/l fluoride standard by reconstructing its present wells or by developing new water sources, based on reports given it by the Illinois State Geological and Water Surveys as to ground water availability. Consequently, to remove fluoride, the City would be forced to employ the adsorption on bone-char or activated alumina media treatment technique recommended in the USEPA "Manual of Treatment Techniques."

The City states that fluoride removal will place an unreasonable economic burden on it, and on the system users. The City estimates the construction cost of a fluoride removal unit to be \$105,000. Financing and operating costs are estimated to be an additional \$21,000. (This is based on the necessity of financing the project through issuance of revenue bonds, since its general obligation bonding capacity has been diminished by financing of its sewage treatment plant and sewer project.) In addition, a fluoride removal requirement would require an additional water use charge of \$2.30 per month. Water use charges are currently \$6 month on an average (sewer use charges equal to water use charges have also recently been imposed)(Pet. 5).

The Agency does not challenge the City's cost estimates. It instead makes a persuasive argument as to the economic reasonableness of not requiring immediate construction of a fluoride removal facility. Bearing in mind the possibility that radium removal might be required, should accurate future tests prove it necessary, the Agency states "there would be a substantial cost savings to the petitioner from designing and constructing a unified treatment facility (if alternate [water] sources do not develop) that would achieve compliance with both the fluoride and gross alpha radiation standards simultaneously, rather than to design and construct one for fluoride and then, if necessary, another for radium" (Rec. 3).

Both the City and the Agency agree that the fluoride content of the City's water presents no threat to health, and remind the Board that the Agency has urged USEPA to raise the maximum fluoride level to 4.0 mg/l (Pet, 5-6, Rec. 4-5).

While the Agency therefore supports grant of the variance, it again recommends that the Board grant variance only through the date for exemptions from the SDWA. This date is currently January 1, 1981, although the Agency's most recent information indicates that Congress is likely to extend this time limit during this legislative session.

Both the points made in the Agency's Recommendation, and the circumstances detailed in the City's petition, are similar to those in Village of Altona v. EPA, PCB 80-74, July 10, 1980, Village of Wataga v. EPA, PCB 80-30, May 1, 1980, and Turnberry Utilities, Inc. v. EPA, PCB 79-257, March 20, 1980. For all of the reasons there expressed, the Board finds variance relief under §1415 of the SDWA, 42 U.S.C. §300(g)-4 available, and appropriate.

The Board finds that denial of variance would be arbitrary and unreasonable, in light of the City's demonstrated financial pressures, the lack of a health threat to its citizens, and the economic advantage of not constructing a unified treatment plant until after the City's water treatment needs can be accurately and definitely determined. Accordingly, a five-year variance is granted, subject to the conditions outlined in the attached order.

This Opinion constitutes the Board's finding of fact and conclusion of law in this matter.

ORDER

1. Petitioner, the City of Minonk, is granted a variance from the 2.0 mg/l maximum fluoride concentration standard of Rule 304(B) of Chapter 6: Public Water Supplies, subject to the following conditions:

A. This variance will expire 5 years from the date of this order, or at such earlier time as fluoride standards are revised.

B. Subject to prior revision of fluoride standards, by January 1, 1981, the Petitioner shall submit to the Agency a report on the availability of, and economic feasibility of utilizing, alternative water sources which could be blended with its current well sources to reduce the fluoride content of the finished water.

C. Subject to prior revisions of fluoride standards, beginning on or about January 1, 1981, and at six month intervals thereafter, the Petitioner shall communicate with the Agency in order to ascertain whether fluoride removal techniques specifically applicable to small systems have been developed and identified. As expeditiously after such identification as is practicable, Petitioner shall submit to the Agency a program (with increments of progress) for bringing its system into compliance with fluoride standards.

D. Petitioner shall take all reasonable measures with its existing equipment to minimize the level of fluoride in its water supply and shall not allow the fluoride concentration to exceed 4.0 mg/l.

E. On or before December 30, 1980 and every three months thereafter Petitioner will send to each user of its public water supply a written notice to the effect that Petitioner has been granted by the Pollution Control Board a variance from the 2.0 mg/l maximum fluoride standard. The notice shall state the average content of fluoride in samples taken since the last notice period during which samples were taken. The notice shall state that consumption of water containing excessive amounts of fluoride can result in fluorosis and that dental mottling can occur at levels in excess of 4.0 mg/l.

F. Petitioner and the Environmental Protection Agency shall devise a mutually agreeable schedule for sampling of Petitioner's public water supply.

2. Variance from Rule 304(C) of Chapter 6 is denied as unnecessary at this time. The City shall, however, continue to submit representative samples of its water to the Agency for accurate radiological analysis.

3. 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 the Order of the Illinois Pollution Control Board in PCB 80-136, dated _____, understand and accept the said Order, realizing that such acceptance renders all terms and conditions thereto binding and enforceable.

Petitioner

By: _____

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 were adopted on the 2ND day of October, 1980 by a vote of 5-0.

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