

ILLINOIS POLLUTION CONTROL BOARD
May 27, 1982

CITY OF ABINGDON,)
)
) Petitioner,)
)
) v.) PCB 81-107
)
 ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,)
)
) Respondent.)

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

This matter comes before the Board on the petition for variance filed by the City of Abingdon (City) June 23, 1981 as amended March 26, 1982. The City seeks variance from the 2.0 mg/l fluoride concentration limit of Rule 304(B)(4) of Chapter 6: Public Water Supplies (Chapter 6) and from the 15 pCi/l gross alpha particle activity limitation of Rule 304(B)(4) of Chapter 6. On July 8, 1981 the Illinois Environmental Protection Agency (Agency) filed its Recommendation in support of grant of variance until January 1, 1984. Hearing was waived and none has been held.

The City of Abingdon, located in Knox County, supplies the water needs of its population of approximately 4,150 (1500 water users) from two deep wells (depth unspecified). The fluoride and gross alpha levels of each well have not been provided. The City states however that its raw water has contained fluoride levels ranging from a high level of 4.0 mg/l in 1972 to a low level of 2.33 mg/l in 1979, with the last analysis available at the time of the petition's filing showing a 2.42 mg/l level (December, 1979). The City also states that gross alpha particle activity levels in its raw water have ranged from a low level of 16.6 pCi/l in 1975 to 30.2 pCi/l in 1980. The Agency in its Recommendation has supplemented this information. Analysis of a composite of four quarterly distribution system samples taken between August, 1979 and September, 1980 and analyzed after correction of Agency analysis procedures, shows a gross alpha particle activity level of 30.2 ± 7.86 pCi/l.

The City's consulting engineers, Anderson Engineering Consultants, Ltd., have investigated various compliance options to solve both problems. They have concluded that there is not available to the City an economically feasible alternative surface water supply of proven quality. An alternative groundwater source is also unavailable, as the aquifer underlying Knox, Fulton and Peoria Counties is recognized as having an elevated fluoride levels, ranging in Knox County from 2.2 mg/l to 8.0 mg/l.

Treatment alternatives scrutinized were the reverse osmosis and lime softening methods which accomplish both fluoride and radioactivity reduction, and the adsorption method which reduces fluoride alone. Lime softening was identified as the least costly method of reaching both compliance goals. Total capital costs of such a system were estimated to be \$379,100, with annual operation, maintenance, and capital amortization costs of \$88,260. These costs do not include costs for the disposal of the system's resulting sludge, a special waste.

The City asserts that immediate compliance would impose an arbitrary or unreasonable hardship. Installation of the softening system would increase a typical water bill from \$5.70 to \$10.50. The City, first, states that in the 79 years since the water supply's construction that no adverse health effects have been observed, and second, that it believes that the fluoride in its water reduces tooth decay and hardens bone structure.

The Agency does not dispute the City's cost figures. It asserts its belief that the public health will not be endangered by grant of variance until January 1, 1984, the deadline date for exemptions pursuant to §1416 of the federal Safe Drinking Water Act.

In light of the high cost of compliance, and the apparent lack of any immediate threat to health of consumption of water containing fluoride or radioactivity at the levels present in the Village's water (see Village of Kirkwood v. IEPA, PCB 81-111, December 3, 1981 and Village of Lemont v. IEPA, PCB 80-48, April 30, 1981) the Board finds that denial of variance would impose an arbitrary or unreasonable hardship. Variance is granted until January 1, 1984, subject to the conditions outlined in the attached Order. Given the apparent rise in gross alpha particle activity in the City's water over the years, and the Board's continuing uncertainty about the accuracy of test analyses (see County of Du Page, PCB 82-24, May 27, 1982), it is even more than usually important that gross alpha testing continue and that radium testing commence, and the Board will so order. In addition, the City would seem not to have considered the feasibility of blending, using an auxiliary water source as an alternative to complete replacement of its current water supply, and will be ordered to investigate this option.

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

ORDER

1. Petitioner, the City of Abingdon is granted a variance from the 2.0 mg/l fluoride limitation of Rule 304(B)(4) and the 15 pCi/l gross alpha particle activity limitation of Rule 304(C)(1)(b) of Chapter 6: Public Water Supply until January 1, 1984, subject to the following conditions:

a. Petitioner shall, in consultation with the Agency, continue its sampling program to determine as accurately as possible the level of radioactivity in its wells and finished water. Testing for radium 226 and 228 shall be commenced.

b. Petitioner shall investigate the possibility and feasibility of achieving compliance by blending water from its deep wells with water from another source. As expeditiously after identification of a feasible compliance method as is practicable, but no later than January 1, 1984, Petitioner shall submit, to the Agency, a program (with increments of progress) for bringing its system into compliance with radiological quality and fluoride standards.

c. Petitioner shall take all reasonable measures with its existing equipment to minimize the level of fluoride and radioactivity in its water supply. The fluoride level shall not be allowed to exceed an average of 4.0 mg/l.

d. Pursuant to Rule 313(D)(1) of Chapter 6, in its first set of water bills or within three months after the date of this Order, whichever occurs first, 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 fluoride standard and 15 pCi/l maximum gross alpha particle activity standard. The notice shall state the average content of gross alpha particle activity in samples taken since the last notice period during which samples were taken.

2. Within forty-five days of the date of this Order, Petitioner shall execute and forward to the Illinois Environmental Protection Agency, PWS Enforcement Programs, 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:

CERTIFICATE

I, (We), _____, having read the Order of the Illinois Pollution Control Board, in PCB 81-107, dated _____, understand and accept the said Order, realizing that such acceptance renders all terms and conditions thereto binding and enforceable.

Petitioner

By: Authorized Agent

Title

Date

IT IS SO ORDERED.

Board Member I. Goodman abstained.

I, Christan L. Moffett, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 27th day of May, 1982 by a vote of 4-0.

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