

ILLINOIS POLLUTION CONTROL BOARD  
December 3, 1987

VILLAGE OF ROSELLE, )  
 )  
 Petitioner, )  
 )  
 v. ) PCB 87-39  
 )  
 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 Village of Roselle (Village) on March 30, 1987 as amended May 11, 1987 and supplemented on September 21, 1987. The Village requests a five year variance from 35 Ill. Adm. Code 602.105(a) (Standards for Issuance) and 35 Ill. Adm. Code 602.106(b) (Restricted Status List) as they relate to violations of the 5 pCi/l combined radium-226 and radium-228 standard of 35 Ill. Adm. Code 604.301(a). The Village seeks variance to allow the Agency to issue permits for water main extensions during the period of the Village's non-compliance with the radium standard.

On July 21, 1987, the Illinois Environmental Protection Agency (Agency) filed a Recommendation that variance be granted, despite its finding that the petition was deficient in various respects. In response to the Board's Order of August 20, 1987 identifying certain areas in which the Agency's Recommendation as well as the petition were unclear, on August 31, 1987 the Agency filed a Supplement to its Recommendation. On October 22, 1987 the Agency filed an amended Recommendation addressing the information contained in the Village's September 21, 1987 Supplement to its petition. The Agency again recommended that variance be granted subject to conditions, although again noting that "better documentation" should have been provided in some areas. Hearing was waived, and none has been held. This matter is being given expedited consideration in response to the Village's motion of October 29, 1987.

The Village of Roselle, which is located in DuPage County, Illinois, provides water to a population of approximately 6,000 residential industrial/commercial users representing some 19,000 residents and some 100 industries and businesses as of 1986.

The Water Supply System and the Village's Radium Excursion

The Village public water supply and distribution system includes one (1) deep well, six (6) shallow wells, pumps, storage tanks, and distribution facilities. The system is provided to all residential, commercial, and industrial users as needed and charges, as established by ordinance, are made to all users.

The Village reports that it has the following wells (with their depths and age):

Well No. 1	182 ft. deep	170 GPM	placed in operation	1925
Well No. 2	183 ft. deep	320 GPM	placed in operation	1954
Well No. 3	260 ft. deep	720 GPM	placed in operation	1960
Well No. 4	195 ft. deep	900 GPM	placed in operation	1972
Well No. 5	1423 ft. deep	900 GPM	placed in operation	1980
Well No. 6	127 ft. deep	270 GPM	placed in operation	1977
Well No. 7	2551 ft. deep	150 GPM	placed in operation	1964

Although it is not clear from this record, the Board assumes that deep Well No. 7 is not in service.

The question of whether the Village is in fact out of compliance with the combined radium standard was a matter which was not plainly presented until the last filings were made in this case.

In its initial petition, the Petitioner asserted that it was first advised of the excessive combined radium content of its water by an Agency letter dated December 6, 1986, which reported a radium-226 content of 3.5 pico Curies per liter (pCi/l) and a radium-228 content of 2.0 pCi/l, for a combined total of 5.5 pCi/l. This total exceeds the 5 pCi/l combined radium standard by 0.5 pCi/l. The water sample analysis of an annual composite of four consecutive quarterly samples (or the average of the analyses of four samples obtained at quarterly intervals) was performed by the USEPA laboratory. By letter dated January 8, 1987, the Agency notified the Village that its public water supply was being placed on restricted status because the Petitioner's water supply exceeded the maximum allowable concentration for combined radium-226 and radium-228.

However, Petitioner went on to assert that, since receiving the Agency's report, the Village conducted its own analyses of water in its distribution system. These analyses of Petitioner's water samples show the following results in pico curies per liter:

<u>Date</u>	<u>Results</u>	<u>Location</u>
January, 1987	<1.1	Well #4
January, 1987	6.1 ± .8	Well #5
January, 1987	<1.7	Distribution System
September, 1985	<2.1	Distribution System

In its amended petition, the Village presented additional data which it claimed showed radium reduction through blending. The Agency questioned this claim in its original Recommendation, noting that:

The Amended Petition for various in paragraph 20 alleges that, "A comparison of the sampling data taken from identical locations within the Village of Roselle distribution system between October, 1985, and January, 1987, as seen in Exhibits E and H attached hereto, shows that blending has been successfully used to reduce contamination levels throughout the Petitioner's system." (underlining in original)

This statement is confusing to the Agency because said Exhibits E and H do not show any significant reduction in the combined radium level. See below:

	Date	Radium 226	Radium 228
Exhibit H	10/04/85	1.1	<1.0
Exhibit E	01/23/87	1.0	<0.7

Areas near well number 5 would likely have combined radium of 6.1 pCi/l. See Amended Petition for Variance, Exhibit F. An analysis as to the effect of blending should have been made by Petitioner.

In its Order of August 20, 1987, requesting supplemental information on this and other points, the Board noted that:

The existing record does not adequately address the threshold issue in a variance case: whether there is in fact non-compliance requiring variance relief. It is clear from the Village's sampling results that Well No. 5, with a combined radium content of  $6.1 \pm 0.8$  pCi/l, itself does not comply with the 5.0 pCi/l standard. The analysis of the distribution system samples which the Village had taken from locations at the Waterbury, St. Walter, Medinah Middle and Spring Hill Schools in 1985 and 1987 indicate combined radium levels, respectively of <2.5 pCi/l; and <1.7 pCi/l. The relationship of these figures to the Agency's 5.5 pCi/l distribution sample analysis is unclear; this record does not state the location of the Agency's sampling point.

In its Supplement, the Agency stated that the 5.5 pCi/l combined radium reading resulted from a composite of the

following distribution samples: 07/09/84 - 215 Mulford; 09/18/84 - 213 Rush Street; 02/25/85 - 480 Ridgefield; and 02/03/86 - composite from Medinah Middle School, 700 E. Granville; St. Walter's School, 139 W. Maple; Spring Hill School, 560 Pinecroft; and Waterbury School, 345 Rodenbury Road.

The Agency further advised that it had reported to Roselle on August 23, 1985 that a composite sample showed a radium 226 content of 3.1 pCi/l and radium 228 content of 3.7, for a combined total of 6.8 pCi/l; sample locations are unavailable at this time for this composite. The Agency noted that its records do not show any more recent analysis for combined radium covering four quarterly samples. The Agency believes that, as Roselle's analyses reported in its Petition for Variance do not cover four quarters, until it demonstrates compliance over four quarters, it remains in violation of the combined radium standard. See 35 Ill. Adm. Code 605.105(a).

In its Supplement, the Village does not contest the Agency opinion that it remains in violation of the standard. The Village explained that:

"the Agency has correctly opined that distribution samples taken from areas near Well No. 5 would show a violation of the combined radium standard in virtually every instance.

Petitioner is presently using all available blending equipment, to its maximum capacity, to reduce the amount of combined radium in its distribution system. The blending system is not adequate, even when used to its maximum capacity, to reduce the combined radium present in the water near Well No. 5 to a point below the legally mandated combined radium standards.

The Petitioner must rely on Well No. 5 to meet its water supply needs. The Petitioner cannot improve its blending capabilities beyond that which has already been achieved in its present system.

#### Proposed Compliance Plan

The Village has identified two possible compliance alternatives. The first would involve construction of treatment facilities for radium removal, by either the ion exchange (zeolite-sodium cycle) method or by the lime-soda ash softening method. Capital costs and annual operation and maintenance costs would be \$250,000 and \$239,700 for the ion exchange system, and \$500,000 and \$100,700 for the lime softening system. The estimated time for implementation of each system is twelve (12) months.

The Village calculates that, based on a resident population of 19,600, the cost of constructing the treatment facilities would approximate \$13.00-\$27.00 per capita, a one-time expense, without considering financing expenses. The increase in monthly water bills per average residential customer to pay for construction, including its financing, of just the improvements required to achieve compliance with the combined radium standard could be as high as \$2.10 to \$4.20/monthly over five (5) years. The increase in monthly water bills per average residential customer to pay for just the increase in costs for operation, maintenance, and sludge removal required to achieve compliance with the combined Radium 226 plus Radium 228 standard could be as high as \$3.55 to \$8.47 per month over five (5) years.

The second compliance option is that preferred by the Village: replacement of its well water by Lake Michigan water. The Village states that it has been a member of the DuPage Water Commission (DWC) since 1981. Since that time, Petitioner and the 22 other member municipalities have secured allocations from the State of Illinois to use Lake Michigan water. The DuPage Water Commission has executed contracts with the City of Chicago, with property owners (governmental and private) for rights-of-way, and with several construction contractors. Together, DWC members will be investing more than \$350-million in a water transmission system to deliver Lake Michigan water via the City of Chicago to some 726,845 people in DuPage County. The system is designed and being built to meet the members' water needs into the 21st Century. The Village notes that while its primary purpose in entering into this program was and still is to cease using the dwindling supply of ground water and assure its users of an adequate supply of high quality Lake Michigan water, the effort will also eliminate its radium problem. The Village asserts that it expects that DWC will begin to deliver Lake Michigan water beginning in 1991, and with its first full year of operation in 1992. When that occurs, the Village will cease using its ground water supplies and will rely on Lake Michigan water for the entire community, except when otherwise necessary and permitted pursuant to the Village's contract with the DWC.

As documentation of its commitment to DWC, the Village submitted of An Ordinance Approving Water Purchase and Sale Contract, dated as of June 11, 1986, by and between the Village of Roselle, Illinois, the Du Page Water Commission and other Charter Customers. The Agency points out that Section 8(a) of the "Water Purchase and Sale Contract Between the DuPage Water Commission and Charter Customers" states in relevant part that, "The Commission will make a diligent effort to have its facilities completed to the point of delivery so as to furnish Lake Water to the Charter Customers by January 31, 1992, but the Commission does not hereby guarantee delivery by such date." (Based on a review of that contract, Roselle appears to be a "Charter Customer".)

The Village asserts that denial of a five-year variance would impose an arbitrary or unreasonable hardship. The Village notes that the combined radium standard is under review by USEPA, although it also notes that there has been no indication whether any proposed revised standard will be more strict or less strict than the current one. However, given its commitment to pursuit of the Lake Michigan water source, the Village believes that:

"the substantial expenditure of public funds for treatment facilities which may become obsolete in the near future is not in the public interest and does not grant a corresponding benefit to the public."

The Village next argues that, as a result of restricted status, "failure to obtain a variance means that all construction within Petitioner's service area requiring the extension of the water supply system would come to a halt. This hurts prospective home purchasers as well as business developers and Petitioner's tax base." The Village states that the following projects/developments are being delayed by restricted status: Roselle Commerce Center Development, Walnut Oaks Subdivision, Candle Lyte Subdivision, Bryn Mawr Subdivision, Case International Development, and Poretta Development. The Village has provided no details concerning these projects, such as valuations, projected tax revenues, or numbers of persons to be served by new water mains constructed to service these projects.

After reviewing all of the Village's filings, the Agency concluded in its amended Recommendation that

Although better documentation should have been provided as a blending and number of people to be served by a new water mains, the Agency continues to believe a variance should be granted, in light of the cost of treatment, the likelihood of no significant injury to the public, and the probability of compliance with the radium standard on obtaining Lake Michigan water. The Agency continues to recommend that the variance conditions stated in paragraph 37 of its Agency Recommendation be imposed.

These conditions include the requirement that treatment facilities be installed if it appears that Lake Michigan water will not be available at the end of the variance period, and notification of grant of variance to the Village's water users.

Based on all of the facts and circumstances presented here, the Board finds that denial of variance would impose an arbitrary or unreasonable hardship. The Board notes that this petition could have been handled more expeditiously if all relevant information had been provided early on, and agrees with the

Agency that information in certain areas remains scanty. However, the Board places weight on the facts that 1) the Village has known of its radium problem for a relatively short period of time; 2) the radium content of its finished water based on the 1985/1986 composite sample is only slightly (0.5 pCi/l) over the standard; 3) the Village has already initiated a blending program, with the result that many of its users receive water which are in compliance with the standard; and 4) the Village has adequately demonstrated a long standing commitment to providing its water users with Lake Michigan water through the DWC, and that delivery of such water is currently expected before the end of the proposed variance period. For these reasons, as well as the other factors referred to by the Agency, the Board hereby grants a variance for five years, subject to conditions.

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

ORDER

1. The Petitioner, the Village of Roselle, is hereby granted variance from 35 Ill. Adm. Code 602.105(a) and from 35 Ill. Adm. Code 602.106(b) but only as they relate to the 5 pCi/l combined radium-226 and radium-228 standard of 35 Ill. Adm. Code 604.301(a), subject to the following conditions:
  - (a) This variance terminates on December 3, 1992, or when analysis pursuant to 35 Ill. Adm. Code 605.105(a) shows compliance with the combined radium standard, whichever comes first;
  - (b) In consultation with the Agency, Petitioner shall continue its sampling program to determine as accurately as possible the level of radioactivity in its finished water. Until this variance expires, Petitioner shall collect quarterly samples of its water from its distribution system, shall composite and shall analyze them annually by a laboratory certified by the State of Illinois for radiological analysis so as to determine the concentration of combined radium. The results of the analyses shall be reported to the Compliance Assurance Section, Division of Public Water Supplies, 2200 Churchill Road, IEPA, Springfield, Illinois 62794-9276, within 30 days of receipt of each analysis. At the option of Petitioner, the quarterly samples may be analyzed when collected. The running average of the most recent four quarterly sample results shall be reported to the above address within 30 days of receipt of the most recent quarterly sample;
  - (c) Compliance shall be achieved no later than December 3, 1992;

- (d) The Petitioner shall continue to make every reasonable effort to replace its well water supply with Lake Michigan water in conformance with its contract with the DuPage Water Commission. Beginning December 3, 1988, Petitioner shall report to the Agency yearly on each December 3 prior to the expiration of this variance as well as on September 3, 1991 as to the feasibility/status of obtaining Lake Michigan water before this variance expires. If it reasonably appears to the Petitioner, or if the Agency notifies Petitioner that it reasonably appears to the Agency, that Petitioner will not obtain Lake Michigan water prior to December 3, 1992, Petitioner shall apply to IEPA for all necessary permits for the construction of treatment facilities on or before December 3, 1991 and shall install said facilities and have them operational prior to December 3, 1992. The deadline for applying for said permits for treatment facilities and starting said construction of treatment facilities may be extended by the Agency in writing for good cause shown. Notwithstanding this provision Petitioner must comply in full with paragraph (h), below.
- (e) On or before March 3, 1988, the Petitioner shall secure professional assistance (either from present staff or an outside consultant) to investigate compliance options, including the possibility and feasibility of achieving compliance by obtaining an alternate water source, building treatment facilities or blending water from shallow wells with that of its deep wells;
- (f) On or before April 3, 1988, the Petitioner shall submit evidence that such professional assistance has been secured to the Agency's Division of Public Water Supplies, FOS, at 2200 Churchill Road, Springfield, Illinois 62794-9276;
- (g) Within two months after each construction permit is issued by IEPA, DPWS, the Petitioner shall advertise for bids, to be submitted within 60 days, from contractors to do the necessary work described in the construction permit. The Petitioner shall accept appropriate bids within a reasonable time. Petitioner shall notify IEPA, DPWS, within 30 days of each action, of: 1) advertisements for bids, 2) names of successful bidders, and 3) whether Petitioner accepted the bids;
- (h) Construction pursuant to said construction permits shall begin within a reasonable time of bids being accepted, but in any case, construction of all installations, changes or additions necessary to achieve compliance with the maximum allowable concentration in question



shall begin no later than June 3, 1992; and shall be completed no later than December 3, 1992;

- (i) Pursuant to 35 Ill. Adm. Code 606.201, in its first set of water bills or within three months after the date of this Variance 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 35 Ill. Adm. Code 602.105(a) Standards of Issuance and 35 Ill. Adm. Code 602.106(b) Restricted Status, as they relate to the 5 pCi/l combined radium standard;
  - (j) Pursuant to 35 Ill. Adm. Code 606.201, 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 as written notice to the effect that Petitioner is not in compliance with the combined radium standard. The notice shall state the average combined radium content in samples taken since the last notice period during which samples were taken;
  - (k) That Petitioner shall take all reasonable measures with its existing equipment to minimize the level of combined radium in question in its finished water; and
  - (l) The Petitioner shall provide written progress reports to IEPA, DPWS, FOS every six months concerning steps taken to comply with paragraphs (k) and every three months after December 3, 1991 concerning steps taken to comply with paragraphs g and h. Progress reports shall quote each of said paragraphs and immediately below each paragraph state what steps have been taken to comply with each paragraph.
2. Within 45 days of the date of this Order, Petitioner shall execute and forward to Wayne L. Wiemerslage, Enforcement Programs, Illinois Environmental Protection Agency, 2200 Churchill Road, Springfield, Illinois 62794-9276, a Certification of Acceptance and Agreement to be bound to all terms and conditions of this variance. The 45-day period shall be held in abeyance during any period that this matter is being appealed. Failure to execute and forward the Certificate within 45 days renders this variance void and of no force and effect as a shield against enforcement of rules from which variance was granted. The form of said Certification shall be as follows:

CERTIFICATION

I, (We) \_\_\_\_\_, hereby accept and agree to be bound by all terms and conditions of the Order of the Pollution Control Board in PCB 87-39, December 3, 1987.

\_\_\_\_\_  
Petitioner

\_\_\_\_\_  
Authorized Agent

\_\_\_\_\_  
Title


\_\_\_\_\_  
Date

Section 41 of the Environmental Protection Act, Ill. Rev. Stat. 1985 ch. 111 1/2 par. 1041, provides for appeal of final Orders of the Board within 35 days. The Rules of the Supreme Court of Illinois establish filing requirements.

IT IS SO ORDERED.

J. D. Dumelle and B. Forcade dissented.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 3rd day of December, 1987, by a vote of 5-2.

  
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Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board