

ILLINOIS POLLUTION CONTROL BOARD  
April 26, 1990

VILLAGE OF MUNDELEIN, )  
 )  
 Petitioner, )  
 )  
 v. ) PCB 90-23  
 ) (Variance)  
 ILLINOIS ENVIRONMENTAL )  
 PROTECTION AGENCY, )  
 )  
 Respondent. )

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

This matter comes before the Board on a Petition for Variance ("Petition") filed by the Village of Mundelein ("Mundelein") on February 9, 1990. Mundelein seeks variance from 35 Ill. Adm. Code 602.105(a), "Standards For Issuance", and 602.106(b), "Restricted Status", to the extent that the rules relate to the violation by Mundelein's public water supply of the 5 picocuries per liter ("pCi/l") combined radium-226 and radium-228 standard of 35 Ill. Adm. Code 604.301(a). Mundelein seeks a five year variance to allow issuance of permits for water main extension during the period of its non-compliance with the radium standard rather than a variance from the radium standard itself. The variance is requested for a period of five years from the date variance is granted, or when analysis pursuant to 35 Ill. Adm. Code 605.104(a) shows compliance with the radium standard, whichever occur first. The Environmental Protection Agency ("Agency") filed its Variance Recommendation on March 13, 1990. The Agency recommends that variance be granted, but only until May 31, 1993. The recommendation, however, was subject to conditions. Mundelein waived hearing and none was held.

Based on the record before it, the Board finds that Mundelein has presented adequate proof that immediate compliance with the Board regulations would impose an arbitrary or unreasonable hardship. Accordingly, the variance will be granted subject to the conditions set forth in this Opinion and Order.

BACKGROUND

This is Mundelein's first variance request from the public water supply regulations. The Village of Mundelein is located in Lake County, Illinois. It owns and operates a potable water supply and distribution system that serves 17,200 residents and 603 industries that, in turn, employ 11,600 individuals. Mundelein also provides water service to certain areas in

unincorporated Lake County. The system is comprised of four deep wells and four shallow wells, in addition to pumping, storage, and distribution facilities.

The Agency first advised Mundelein of a potential violation of the combined radium standard by letter dated February 4, 1988. The Agency based its determination on an analysis of a single sample of Well No. 6. The analysis showed a radium-226 content of 5.5 pCi/l and a radium-228 content of 6.4 pCi/l, for a combined value of 11.9 pCi/l. (Pet., p. 7, Attachment 1)

After it received the Agency's letter, Mundelein instituted a sampling program of its four deep wells. Specifically, Mundelein collected samples from each well for four consecutive quarters. The last samples were collected in October, 1989. An analyses of composite samples yielded the following results, measured in pCi/l:

<u>No. Sample</u>	<u>Location</u>	<u>Raw or Distribution</u>	<u>Radium 226</u>	<u>Radium 228</u>	<u>Combined Radium</u>
SPW-0089	Well #6	Raw	5.2+/-0.2	4.0+/-0.7	0.2
SPW-0090	Well #8	Raw	5.4+/-0.3	5.2+/-0.8	10.6
SPW-0091	Well #8	Raw	5.9+/-0.3	5.7+/-0.7	11.6
SPW-0092	Well #9	Raw	4.8+/-0.2	5.9+/-0.7	9.8
SPW-0093	Well #10	Raw	5.5+/-0.2	5.0+/-0.7	10.5

(Pet., p. 8; Pet., Attachment 2)

Mundelein submitted the above results to the Agency on November 29, 1989. In a letter dated December 18, 1989, the Agency advised Mundelein that it exceeded the maximum combined radium-226 and radium-228 level. (Pet., p. 8, Attachment 3). The Agency, in a letter dated January 5, 1990, then notified Mundelein of its placement on restricted status. (Pet., p. 8, Attachment 3).

REGULATORY FRAMEWORK

In recognition of a variety of possible health effects occasioned by exposure of radioactivity, the United States Environmental Protection Agency ("USEPA") has promulgated a maximum concentration limit for drinking water of 5 pCi/l of combined radium-226 and radium-228. Illinois subsequently adopted the same limit as the maximum allowable concentration under Illinois law. Moreover, pursuant to Section 17.6 of the Illinois Environmental Protection Act ("Act") (Ill. Rev. Stat. ch. 111 1/2, par. 1017.6), any revision to the 5 pCi/l standard by the USEPA will automatically become the standard in Illinois.

The action that Mundelein requests here is not variance from this maximum allowable concentration. Regardless of the action

taken by the Board in the instant matter, this standard will remain applicable to Mundelein. Rather, Mundelein requests variance from the prohibitions imposed pursuant to 35 Ill. Adm. Code 602.105(a) and 602.106(b) until it can achieve compliance. In pertinent part, these sections read:

Section 602.105 Standards for Issuance

- a) The Agency shall not grant any construction or operating permit required by this Part unless the applicant submits adequate proof that the public water supply will be constructed, modified or operated so as not to cause a violation of the Environmental Protection Act (Ill. Rev. Stat. 1981, ch. 111 1/2, pars. 1001 et seq.) (Act), or of this Chapter.

Section 602.106 Restricted Status

- b) The Agency shall publish and make available to the public, at intervals of not more than six months, a comprehensive and up-to-date list of supplies subject to restrictive status and the reasons why.

Illinois regulations thus provide that communities are prohibited from extending water service, by virtue of not being able to obtain the requisite permits, if their water fails to meet any of the several standards for finished water supplies. This provision is a feature of the Illinois regulations and is not found in federal law. It is from this prohibition which Mundelein request a variance. However, we emphasize that, because the duration of restricted status is linked to the length of time it takes the water supply to come into compliance with the underlying standards, the timeframes in the proposed compliance plan itself are a concomitant, indeed an essential, consideration in a restricted status variance determination, whether or not variance is being requested from those standards. Thus, grant of variance from restricted status will be conditioned on a schedule of compliance with the standards.

In consideration of any variance, the Board determines whether a petitioner has presented adequate proof that immediate compliance with the Board regulations at issue would impose an arbitrary or unreasonable hardship. Ill. Rev. Stat. 1987, ch. 111 1/2, par. 1035(a). Further, the burden is not upon the Board to show that the harm to the public outweighs petitioner's hardships; the burden is upon petitioner to show that its claimed arbitrary or unreasonable hardship outweighs the public interest in attaining compliance with regulations designed to protect human health and the environment. Willowbrook Motel v. Illinois

Pollution Control Board, 135 Ill.App.3d 343, 481 N.E.2d 1032 (1st Dist. 1985).

Lastly, a variance by its nature is a temporary reprieve from compliance with the Board's regulations and compliance is to be sought regardless of the hardship which the task of eventual compliance presents an individual polluter. Monsanto co. v. IPCB 67 Ill. 2d 267, 367 N.E.2d 684 (1977). Accordingly, except in certain special circumstances, a variance petitioner is required, as a condition to grant of variance, to commit to a plan that is reasonably calculated to achieve compliance with the term of the variance.

#### COMPLIANCE PROGRAM

In order to achieve compliance, Mundelein proposes to replace the water currently supplied by its deep wells with Lake Michigan water. Prior to verifying its radium problem, Mundelein had already taken several steps to achieve this goal in order to assure an adequate water supply. (Pet., p. 10). In 1981, Mundelein along with several municipalities in central Lake County began plans to design, construct, and operate a Lake Michigan water transmission system.\* This group later formed the Central Lake County Joint Action Water Agency ("JAWA").\*\* On March 15, 1988, Mundelein passed an advisory referendum to connect to a Lake Michigan water supply source. In April of that same year, Mundelein entered into an agreement with an engineering firm to identify the impact and costs that would result from a Lake Michigan water connection. A second referendum authorizing Mundelein to issue \$12 million in bonds to fund such a project was passed on November 8, 1988. Since that time, the various members of JAWA have secured allocations from the State to use Lake Michigan water, and have executed several contracts to implement that goal. Moreover, Mundelein has executed contracts for the design of internal improvements to its water system. In October, 1989, Mundelein again contracted with an engineering firm for the purpose of developing plans and specifications for the construction of storage facilities, pumping facilities, and connection points for the Lake Michigan water.

Mundelein sets forth the following compliance schedule for the internal improvements to its water system:

\* The expected start-up date for JAWA's water treatment facility is January, 1992.

\* Mundelein officially joined JAWA in April, 1989.

Preliminary Design	December, 1989-March, 1990
Land Aquisition	January, 1990-July, 1990
Final Design	March, 1990-September, 1990
IEPA Permit Review	April, 1990-mid-October, 1990
Bidding and Award	mid-October, 1990-January, 1991
Construction	January, 1991-April, 1992

(Pet., Attachment 5-2).

#### ALTERNATIVE COMPLIANCE OPTIONS

Mundelein considered, but later rejected two alternate methods of compliance; namely, blending and treatment facilities. Mundelein provides three reasons why the blending of its shallow and deep well water prior to distribution to reduce the radium levels is an unacceptable alternative. First, Mundelein contends that it cannot implement the blending option due to the geographic location of the municipal well connections and storage devices. (Pet., pp. 13,15). Second, Mundelein contends that the shallow wells that would be used for blending are of inferior quality because of their high mineral content. (Id. at p. 15). Third, Mundelein states that a centralized distribution point for the blended water is unavailable. (Id.).

With regard to the treatment option, Mundelein states that there are two treatment methods, but that both are unacceptable. Mundelein contends that the first method, radium removal by lime softening, is unacceptable because it produces large quantities of sludge, concentrates the radium, and creates a need for waste disposal that can be expensive and problematic. (Id. at p. 14). Mundelein also cites several reasons why the second method, ion exchange water softening, is unacceptable. Specifically, Mundelein argues that the sodium content of the water will be increased if a softener that is regenerated with salt is used and that this, in turn, may create a risk to those persons who are hypertensive or who have heart problems; it may be difficult to legally dispose of the waste from routine softening because it is high in total dissolved solids; the ion exchange process also concentrates radioactivity, the majority of which is released in the water stream in a concentrated form; and, because some of the radioactivity remains in the ion exchange material, it may be hazardous for persons to work on the softener, and it may be difficult to dispose of the radioactive ion exchange material. (Id. at pp. 14-15).

It should be noted, however, that Mundelein has spent \$72,000 to rehabilitate several of its shallow wells in order to maximize their usage and provide some reduction of the radium level in the distribution system. Specifically, Mundelein has installed new pumps in several of the shallow wells, has acidized and cleaned one shallow well, and has increased pumping at several of the wells in order to increase the proportion of shallow well water in its distribution system and reduce the radium levels. (Pet., p. 13)

#### HARDSHIP

Mundelein cites several reasons why it would experience an arbitrary and unreasonable hardship if the Board denied its variance request. First, Mundelein states that an expenditure of significant sums of money on intermediary measures of compliance before Lake Michigan water is obtained would be arbitrary or unreasonable when there would be no significant injury to the public or environment during the limited time period of the variance. (Pet., p. 17). Second, Mundelein points to the time and expense it already has spent to achieve its goal of obtaining Lake Michigan water. (Id.). Third, Mundelein contends that, given the anticipated change in the radium standards (see following) and the fact that it may be able to comply with such standards, a substantial expenditure of public monies for the design and construction of treatment facilities at well sites that may later become obsolete when the wells are abandoned is not in the public interest and would not benefit the public. (Id. at pp. 17-19). Fourth, Mundelein asserts that prospective home purchasers and business developers would be hurt (to the tune of approximately \$111,000) if construction within the service area requiring the extension of the water supply system could not resume. (Id. at p. 19). Finally, Mundelein asserts that there is a need for the expansion of its water distribution system to serve the domestic and fire protection requirements of the local population. (Id.).

The Agency supports Mundelein's variance request and agrees that denial of the variance would result in an arbitrary and unreasonably hardship. The Agency specifically points to the fact that it would be required to deny construction and operating permits for the new water main extensions until compliance is achieved (unless a variance from 35 Ill. Adm. Code 604.301 is granted) and that, as a result, any economic growth resulting from those water main extensions would be stifled. (Rec., Par. 19). However, the Agency recommends that variance terminate on May 31, 1993, because Mundelein's compliance schedule shows that construction on its internal improvements will be completed by April, 1992, and because an additional year is needed to demonstrate compliance.

### ENVIRONMENTAL IMPACT

Although Mundelein states that it has made no formal assessment of the environmental effect of the requested variance, it contends that extension of its watermains will not cause any significant harm to the environment or to any potential customers served by the extension for the limited time period of the requested variance. (Pet., p. 12). In support of this contention, Mundelein references the testimony of Richard C. Toohey, Ph.D., and James Stebbins, Ph.D., both of Argonne National Laboratory, that was presented at the July 30, 1985, and the August 2, 1985, hearings in R85-14, Proposed Amendments to Public Water Supply Regulations, 35 Ill. Adm. Code at 602.105 and 602.106.

The Agency agrees with Mundelein's assertions and notes that while radiation at any level creates some risk, the risk associated with Mundelein's radiation levels is low. (Rec., pars. 14,18). In addition to the above testimony, the Agency also cites the testimony given by Dr. Toohey on June 25, 1985, in PCB 85-54, to support its views regarding public health effects. (Rec., par. 15).

### CONSISTENCY WITH FEDERAL LAW

Both Mundelein and the Agency state that Mundelein may be granted variance consistent with the requirements of the Safe Drinking Water Act (42 U.S.C. 300(f) et. seq.), as amended by the Safe Drinking Water Act Amendments of 1986 (Pub. Law 99-339, 100 Stat. 642 (1986)), and the USEPA National Interim Primary Drinking Water Regulations (40 CFR Part 141) because the requested relief would not be a variance from national primary drinking water regulations nor a federal variance. Specifically, granting a variance from the effects of restricted status means that only the State's criteria for variances are relevant. (Pet., pp. 20, 21; Rec., pars. 21,22).

The Agency states that grant of variance leaves Mundelein subject to the possibility of federal enforcement for violations of the radium standards. The Agency notes, however, that if the state variance requires compliance by the end of the Agency's recommended variance period, USEPA would probably consider the variance order to be a "Compliance Order" and defer federal enforcement. (Rec., par. 24).

### ANTICIPATED FEDERAL STANDARD REVISION

The federal standard for radium has been under review for some time. Additionally, the Act has been amended at Section 17.6 to provide that any new federal radium standard immediately supersedes the currently Illinois standard. While it remains uncertain as to when and how the radium standard will actually be

modified, we conclude that it remains possible, even probable, that USEPA will propose a change in the radium standard in the near future.\*

#### TERMS OF VARIANCE

Mundelein requests that the term of variance be five years from the date variance is granted, or when analysis pursuant to 35 Ill. Adm. Code 605.104(a) shows compliance with the radium standard, whichever occurs first. The Agency, however, recommends that variance end on May 1, 1993, or when analysis shows compliance, whichever occurs first. The Agency reasons that no further time beyond the May 1, 1993, date is needed because Mundelein will complete construction on its internal improvements in April, 1992, and will only need one year to conduct quarterly sampling to prove compliance. (Rec., par. 27).

#### CONCLUSION

The Board finds that, in light of all the facts and circumstances of this case, Mundelein has presented adequate proof that immediate compliance with 35 Ill. Adm. Code 602.105(a) and 602.106(b) would impose an arbitrary or unreasonable hardship upon Mundelein. We particularly note that Mundelein's commitment, both financially and otherwise, towards getting Lake Michigan water is firm and well on its way to fruition. We also note that, at this juncture, the time to implement the options of lime treatment or ion exchange could take longer than the time to complete the connection to obtain Lake Michigan water (2 years). The Board, however, agrees with the Agency's reasoning regarding the termination date of the variance. The Board will therefore allow Mundelein until April 1, 1992, to complete construction on its internal improvements in order to obtain Lake Michigan water and until May 1, 1993, to demonstrate compliance.

The Board also agrees with the parties that no significant health risk will be incurred by persons who are served by any new water main extensions, assuming that compliance is timely forthcoming. The Board will accordingly grant variance consistent with this Opinion.

As a final note, the Board believes that the conditions as recommended by the Agency are generally appropriate. The Board, however, makes one substantive insertion; the placement appropriate positions of the phrase, "or with any standard for radium in drinking water then in effect", or like phrases, at

\* For a further discussion, see Village of North Aurora v. Illinois Environmental Protection Agency (PCB 89-66, February 8, 1990) and City of Geneva v. Illinois Environmental Protection Agency (PCB 89-107, March 22, 1990).



appropriate places in the Order. The purpose is to assure that if the radium standard is altered during the term of variance by USEPA action and corresponding operation of Section 17.6 of the Act, the compliance target for Mundelein then becomes the revised radium standard rather than the presently applicable 5 pCi/l combined standard.

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

ORDER

Petitioner, the Village of Mundelein, is hereby granted variance from 35 Ill. Adm. Code 602.105(a), Standards of Issuance, and 602.106(b), Restricted Status, 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:

- (1) This variance shall terminate on the earliest of the following dates:
  - (a) May 1, 1993; or
  - (b) When analyses pursuant to 35 Ill. Adm. Code 605.104(a), or any compliance demonstration then in effect, show compliance with the combined radium standard or any standard for radium in drinking water then in effect.
- (2) Compliance shall be achieved with the maximum allowable concentration of radium, or with any revised standard for radium in drinking water then in effect, no later than May 1, 1993.
- (3) In consultation with the Agency, Mundelein shall continue its sampling program to determine as accurately as possible the level of radioactivity in its wells and finished water. Until this variance terminates, Mundelein shall collect quarterly samples of its water from its distribution system at locations approved by the Agency. Mundelein shall composite the quarterly samples for each location separately and shall have them analyzed annually by a laboratory certified by the State of Illinois for radiological analysis so as to determine the concentration of the two parameters, radium-226 and radium-228. At the option of Mundelein, the quarterly samples may be analyzed when collected. The running average of the most recent four quarterly sample results of the analyses shall be reported within 30 days of receipt of the most recent quarterly sample to:

Illinois Environmental Protection Agency  
Division of Public Water Supply  
Compliance Assurance Section  
2200 Churchill Road  
Springfield, Illinois 62794-9276

- (4) By August 1, 1990, Mundelein shall apply for all permits necessary for construction of installations, changes or additions to Mundelein's public water supply needed for achieving compliance with the maximum allowable concentration for the combined radium standard or with any standard for radium in drinking water then in effect. Such applications shall be made to:

Illinois Environmental Protection Agency  
Division of Public Water Supply  
Permit Section  
2200 Churchill Road  
Springfield, Illinois 62794-9276

- (5) By August 1, 1990, Mundelein shall advertise for bids, to be submitted within 60 days, from contractors to do the necessary work described in the construction permit. Mundelein shall accept appropriate bids within a reasonable time. Petitioner shall notify the Agency at the address in condition of (4) of each of the following actions: 1) advertisement for bids, (2) names of successful bidders, and 3) whether Mundelein accepted the bids.
- (6) Construction allowed on 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 of combined radium, or with any standard for radium in drinking water then in effect, shall begin no later than March 1, 1991, and shall be completed not later than May 1, 1992.
- (7) 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, Mundelein shall send to each user of its public water supply a written notice to the effect that Mundelein 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 combined radium-226 and radium-228 standard.

- (8) 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, Mundelein shall send to each user of its public water supply a written notice to the effect that Mundelein is not in compliance with the combined radium-226 and radium-228 standard. The notice shall state the average content of the contaminant in question in samples taken since the last notice period during which samples were taken.
- (9) Until full compliance is achieved, Mundelein shall take all reasonable measures with its existing equipment to minimize the level of combined radium, radium-226, and radium-228 in its finished drinking water. In particular, Mundelein shall continue to maintain, to the degree reasonably practicable, the increased proportion of shallow well water in its distribution system in order to reduce the radium level.
- (10) Mundelein shall provide written progress reports to the Agency every six months concerning steps taken to comply with conditions 1 through 9 of this Order. Progress reports shall quote each of said conditions and immediately below each condition state what steps have been taken to comply with each condition. Such written progress reports shall be submitted to:

Illinois Environmental Protection Agency  
Division of Public Water Supply  
Field Operations Section  
2200 Churchill Road  
Springfield, Illinois 62794-9276

Within 45 days of the date of this Order, Petitioner shall execute and forward to Bobella Glatz, Enforcement Programs, Illinois Environmental Protection Agency, 2200 Churchill Road, Post Office Box 19276, 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 the bound by all terms and conditions of the Order of

the Illinois Pollution Control Board, in PCB 90-23, April 26, 1990.

\_\_\_\_\_  
Petitioner

\_\_\_\_\_  
By: Authorized Agent

\_\_\_\_\_  
Title

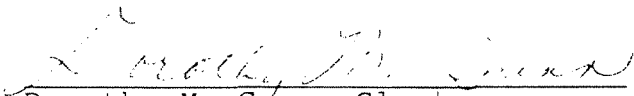
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Date

Section 41 of the Environmental Protection Act, Ill. Rev. Stat. 1987, 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.

Board Members J. 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 26<sup>th</sup> day of April, 1990, by a vote of 5-2.

  
\_\_\_\_\_  
Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board