

ILLINOIS POLLUTION CONTROL BOARD
July 25, 1991

CITY OF ST. CHARLES,)	
)	
Petitioner,)	
)	
v.)	PCB 91-58
)	(Variance)
ILLINOIS ENVIRONMENTAL)	
PROTECTION AGENCY,)	
)	
Respondent.)	

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

This matter comes before the Board on the March 29, 1991 filing of a petition for variance ("Pet.") by the City of St. Charles ("St. Charles"). St. Charles seeks relief from 35 Ill. Adm. Code 602.105(a), "Standards for Issuance", and 602.106(b); "Restricted Status", to the extent those rules relate to violation by St. Charles' public water supply of the 5 picocuries per liter ("pCi/l") combined radium-226 and radium-228 and 15 pCi/l gross alpha particle activity standards of 35 Ill. Adm. Code.Subtitle F¹. Variance is requested for five years, or two years following the promulgation of a new radium standard by the United States Environmental Protection Agency ("USEPA"), or when analysis demonstrates compliance with the standards for radium and gross alpha particle activity then in effect, whichever is earlier.

The Illinois Environmental Protection Agency ("Agency") filed its Variance Recommendation ("Rec.") on May 6, 1991 accompanied by a motion to file instanter. On May 20, 1991, St. Charles filed a response to the Agency's variance recommendation. The Agency filed an Amended Variance Recommendation ("Amend. Rec.") on May 24, 1991, also accompanied by a motion to file instanter². The Agency recommends that variance be granted, subject to conditions. St. Charles waived hearing and no hearing has been held.

¹ The standard for combined radium was formerly found at 35 Ill. Adm. Code 604.301(a); effective September 20, 1990 it was recodified to 35 Ill. Adm. Code 611.330(a) (see Illinois Register, Volume 14, Issue 40, October 5, 1990).

² The motions to file the variance recommendation and amended variance recommendation instanter were granted by the Board on May 9, 1991 and June 6, 1991, respectively.

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

BACKGROUND

St. Charles is a municipality located in Kane and DuPage Counties. Among other services, St. Charles provides potable water supply and distribution to a population of 23,168 persons. St. Charles's water supply system is a combined deep- and shallow-well system composed of four deep wells (3, 4, 5, and 8), three shallow wells (9, 11, and 7)³, and pumps, storage, and distribution facilities. The water distribution system consists of 137 miles of water main, which is differentiated by a high and low pressure zone. The low pressure system is primarily supplied by wells 3, 4, and 5, and represents 25% of total water consumption. The high pressure system is primarily supplied by wells 7, 8, 9, and 11 and provides the remaining 75% of the water consumed by the residents of St. Charles (Pet. at 3)

St. Charles was first advised that its water supply exceeded the maximum allowable concentration for combined radium and gross alpha particle activity in a letter dated January 30, 1991 (Pet. at 1). The Agency reported that a January 1991 analyses of four consecutive quarterly samples showed:

<u>Well #</u>	<u>Combined Radium</u>	<u>Gross Alpha</u>
3	13.6 pCi/l	25.7 pCi/l
4	11.2 pCi/l	22.2 pCi/l
5	15.6 pCi/l	24.1 pCi/l
7	-	< 4.66
8	3.1 pCi/l	12.7 pCi/l
9	0.1 pCi/l	2.4 pCi/l

(Rec. ¶11; Pet. at Exh. A). St. Charles was notified of being placed on restricted status by letter from the Agency dated February 6, 1991 (Rec. ¶10; Pet. at Exh. B).

St. Charles has no prior history of noncompliance for radium, gross alpha particle activity or other contaminants (Pet. at 8-9). The present petition for variance was filed within sixty days of Agency notification of restricted status.

³ The record indicates that wells 1 and 2 are old wells that have been sealed, and well 10 is a proposed new well (Pet. at Exh. D).

REGULATORY FRAMEWORK

The instant variance request concerns two features of the Board's public water supply regulations: "Standards for Issuance" and "Restricted Status". These features are found at 35 Ill. Adm. Code 602.105 and 602.106, which in pertinent part 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. 1989, ch. 111½, 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.

The principal effect of these regulations is to provide that public water supply systems are prohibited from extending water service, by virtue of not being able to obtain the requisite permits, unless and until their water meets all of the standards for finished water supplies. It is St. Charles' request that it be allowed to extend its water service while it pursues compliance with the radium and gross alpha particle standards, as opposed to extending service only after attaining compliance.

In determining whether any variance request is to be granted, the Act requires that the Board determine whether the petitioner has presented adequate proof that immediate compliance with the Board regulations at issue would impose an arbitrary or unreasonable hardship (Ill. Rev. Stat. 1989, ch. 111½, par. 1035(a)). Furthermore, the burden is upon the petitioner to show that its claimed hardship outweighs the public interest in attaining compliance with regulations designed to protect the public (Willowbrook Motel v. Pollution Control Board (1977), 135 Ill.App.3d 343, 481 N.E.2d, 1032). Only with such showing can the claimed hardship rise to the level of arbitrary or unreasonable hardship.

A further feature of a variance is that it is, by its nature, a temporary reprieve from compliance with the Board's regulations (Monsanto Co. v. IPCB (1977), 67 Ill.2d 276, 367 N.E.2d, 684); compliance is to be sought regardless of the hardship which the task of eventual compliance presents an individual polluter (Id.). Accordingly, except in certain special circumstances, a variance petitioner is required, as a

condition to grant of variance, to commit to a plan which is reasonably calculated to achieve compliance within the term of the variance.

It is to be noted that grant of variance from "Standards of Issuance" and "Restricted Status" does not absolve a petitioner from compliance with the drinking water standards at issue, nor does it insulate a petitioner from possible enforcement action brought for violation of those standards, as St. Charles itself notes (Pet. at 19). The underlying standards remain applicable to the petitioner regardless of whether variance is granted or denied.

Standards for radium and gross alpha particle activity in drinking water were first adopted as National Interim Primary Drinking Water Regulations (NIPDWRs) by the USEPA in 1976. The standards adopted were 5 pCi/l for the sum of the two isotopes of radium, radium-226 and radium-228 ("combined radium"), and 15 pCi/l for gross alpha particle activity. Shortly thereafter Illinois adopted the same limits. Although characterized as "interim" limits, these standards nevertheless are the maximum allowable concentrations under both federal and Illinois law, and will remain so unless modified by the USEPA⁴.

Over much of the fifteen years since their original promulgation, the current radium and gross alpha particle activity standards have been under review at the federal level. The USEPA first proposed revision of the standards in October 1983 in an Advance Notice of Proposed Rulemaking (48 FR 45502). It later republished this advance notice in September 1986 (51 FR 34836). Most recently, on June 19, 1991, USEPA announced a proposal to modify both standards⁵. USEPA proposes to replace the 5 pCi/l combined radium standard by separate standards of 20 pCi/l each for radium-226 and radium-228. The gross alpha particle activity standard is proposed to be replaced by an adjusted gross alpha particle activity standard; the latter would still have a 15 pCi/l value, but would no longer include alpha particle activity associated with radium or uranium decay. Under the USEPA's calendar, these standards are scheduled for promulgation by April 1993 with an effective date of October 1994.

⁴ In anticipation of USEPA revision of the radium standard, the legislature amended the Illinois Environmental Protection Act at Section 17.6 in 1988 to provide that any new federal radium standard immediately supersedes the current Illinois standard.

⁵ Publication occurred at 56 FR 33050, July 18, 1991.

COMPLIANCE PROGRAM

Since St. Charles has several shallow wells with sufficient capacity for blending, St. Charles is considering blending of radiological-free shallow well water with its deep well water that contains radium and show elevated gross alpha particle activity. In fact, St. Charles has already begun blending of some of the water from its wells, as described below. St. Charles' blending plan for each problematic well is outlined below (Pet. at 14, 4-6).

Wells 3 and 4

St. Charles has initiated blending at the common reservoir for wells 3 and 4 by the addition of radiological-free water from shallow wells 9 and 11. St. Charles claims that the results of sampling conducted February 28 and March 12, 1991 are within allowable concentrations:

<u>Sample Description</u>	<u>Gross Alpha</u>	<u>Concentration (pCi/L)</u>	
		<u>Ra-226</u>	<u>Ra-228</u>
Two East State Avenue	9.9±1.3	3.3±0.2	1.5±6
1317 East Main Street	6.7±1.1	2.6±0.2	2.1±7

[Water Samples Collected March 12, 1991]

<u>Sample Description</u>	<u>Gross Alpha</u>	<u>Concentration (pCi/L)</u>	
		<u>Ra-226</u>	<u>Ra-228</u>
155 Illinois Street	8.6±1.2	3.9±0.3	1.7±0.9
1317 East Main Street	7.1±1.1	4.4±0.3	1.8±0.8

[Water Samples Collected February 28, 1991]
(Pet. at Exh. F)

If future results do not demonstrate compliance, St. Charles states that it will adjust the amount of water blended until compliance is fully achieved (Pet. at 14)⁶.

⁶ Pursuant to 611.Subpart Q, an analysis of an annual composite of four consecutive quarterly samples or the average of the analyses of four samples obtained at quarterly intervals is necessary to demonstrate compliance.

Well 5

Following receipt of the notice of noncompliance, St. Charles shut down well 5. St. Charles states that this is not a viable long term alternative, since St. Charles needs the water from this well to ensure adequate flow to provide water for its residents and for emergency situations. Therefore, St. Charles is considering two compliance alternatives for well 5 (Pet. at 15).

The first alternative is to provide a dedicated water main to interconnect well 5 with the low pressure distribution system at the 10th Street water tower. This would allow blending of the water from wells 3, 4, 9, and 11 with water from well 5. In addition, this alternative would require St. Charles to disconnect approximately 10 customers supplied water from well 5 and reconnect them to the system accommodating the dedicated water main from well 5 to the elevated 10th Street water tower. The estimated cost of this alternative is \$10,000 to \$15,000 (Pet. at 15).

The second alternative is to use a blending valve at well 5 to allow for blending with shallow well water. This alternative would also require a water main extension. The estimated cost is between \$45,000 and \$55,000 with an estimated annual operating cost in the range of \$2,500 to \$3,500 (Pet. at 15).

In its Amended Recommendation, the Agency proposes a condition which would require St. Charles to notify the Agency of its intent to use well 5, or in case of an emergency, to notify the Agency immediately after well 5 is put into operation (Amend. Rec. ¶2-4)⁷. The Agency believes this condition is necessary because well 5 exhibits high levels of the contaminants in question. The record shows levels of 20.7, 27.6, 21.8, and 26.4 pCi/l for gross alpha particle activity for the four quarters of 1990 (Pet. at Exh. F). As noted above, the Agency reports a combined radium level for 4 quarters of 1990 of 15.6 pCi/l for well 5.

Well 8

St. Charles believes that as a result of the configuration of St. Charles waster distribution system, a significant amount of inline blending is occurring in the distribution system served by well 8. St. Charles reports that this inline blending is also demonstrated by the fact that test results from the well head of

⁷ The Board notes that the Agency, in its Amended Recommendation, changed the recommended condition as it pertained to the emergency use of well 8. The Agency now intends that this emergency use refer to well 5 rather than well 8, and amended its recommended condition accordingly.

well 8 exhibits radiological levels above the Board's standards, and water from the distribution system served by well 8 demonstrates compliance with the standards⁸. St. Charles believes that a few residential customers may occasionally receive water from well 8 prior to the inline blending. Hence, St. Charles has also investigated compliance options for well 8.

St. Charles previously investigated the alternative of sleeving well 8 to isolate the sources of radium and gross alpha particle activity, but this was rejected due to an unacceptable reduction in yield (Pet. at 16, 12-13). St. Charles has retained the services of Layne-Western to further explore compliance options for well 8. Since none of St. Charles' existing shallow wells are in the vicinity of well 8, Layne-Western has proposed test drilling to locate a shallow well suitable for blending, near well 8. St. Charles also intends to explore the possibility of transmission main changes to further any incidental blending within the distribution system served by well 8.

In addition, St. Charles anticipates participating in a joint study with the City of Geneva and Kane County to evaluate shallow aquifers, and has budgeted funds for fiscal year 1991-92 to share in the funding for the study. Through its participation in this study, St. Charles anticipates that identification of shallow aquifers on the east side of the city which it potentially can use as sources for blending with well 8 water (Pet. at 16).

Other Related Measures

As mentioned above, and during the course of the variance, St. Charles states that it will continue to develop its blending program for wells 3 and 4. St. Charles states it will also conduct the necessary engineering studies to determine the most cost effective and technically feasible alternatives for wells 5 and 8. St. Charles explains that it will keep well 5 shut down, except for emergency purposes such as a large fire, water main break, or severe drought. Once it selects compliance alternatives, St. Charles states that it will proceed with all actions short of final design and construction of compliance equipment (Pet. at 17).

HARDSHIP

St. Charles contends that denial of variance would constitute an arbitrary or unreasonable hardship. If the variance is not granted, St. Charles alleges that loss of proposed and actual development would result which would cause

⁸ The Board notes that the January 1991 Agency letter shows compliant levels of radium and gross alpha for 1990 well 8 samples (Pet. at Exh. A).

serious adverse economic impact upon St. Charles (Pet. at 17-18). St. Charles lists 44 new and potential developments, consisting of single and multi-family units, as well as commercial, office, and industrial site developments (Pet. at Exh. I). St. Charles also states that denial of the variance could stop water system improvements for the city, including the downtown area and older section of the city (Pet. at 18; Exh. I).

The Agency states that denial of variance would require the Agency to continue to deny construction and operating permits until compliance is achieved, allowing no grants of permits for new water main extensions, thereby halting economic growth dependent on any new mains (Rec. ¶20). The Agency believes that denial of variance would constitute an arbitrary or unreasonable hardship (Rec. ¶19).

ENVIRONMENTAL IMPACT

Although St. Charles has not undertaken a formal assessment of the environmental effect of its requested variance, it contends that there will be little or no adverse impact caused by the granting of variance (Pet. at 6-7). The Agency contends likewise (Rec. ¶16). In support of their contention, St. Charles (Pet. at 6) and the Agency (Rec. ¶15) reference testimony presented by Richard E. Toohey, Ph.D. of Argonne National Laboratory at hearings held for R85-14 and to updated testimony presented by Dr. Toohey in the Board's hearing on the Braidwood variance, PCB 89-212.

In its recommendation, the Agency states that while radiation at any level creates some risk, the risk associated with St. Charles's water is very low (Rec. ¶14). In summary, the Agency states:

The Agency believes that the hardship resulting from denial of the recommended variance from the effect of being on Restricted Status would outweigh the injury of the public from grant of that variance. In light of the likelihood of no significant injury to the public from continuation of the present level of the contaminants in question in the Petitioner's water for the limited time of the variance, and the possibility of compliance with a new MCL standard by less expensive means if the standard is revised upward, the Agency concludes that denial of variance from the effects of Restricted Status would impose an arbitrary or unreasonable hardship upon Petitioner.

The Agency observes that this grant of variance from restricted status should affect only those users who consume water drawn from any newly extended water lines. This variance should not affect the status of

the rest of Petitioner's population drawing water from existing water lines, except insofar as the variance by its conditions may hasten compliance. In so saying, the Agency emphasizes that it continues to place a high priority on compliance with the standards.

(Rec. ¶127 and ¶128)

CONSISTENCY WITH FEDERAL LAW

The Board can grant variance from restricted status 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 such relief would not constitute a variance from national primary drinking water regulations nor a federal variance (Rec. ¶¶22-24; Pet. at 19). Specifically, grant of variance from restricted status means that only the State's criteria for variances are relevant.

The Agency and St. Charles agree that grant of variance leaves St. Charles subject to the possibility of federal enforcement for violations of the radium standards (Rec. ¶25, Pet. at 19). The Agency believes that it is unlikely that USEPA will object to the issuance of variance because of the current review of radium standards (Rec. ¶ 26).

CONCLUSION

The Board finds that, in light of all the facts and circumstances in this case, denial of variance would impose an arbitrary or unreasonable hardship upon St. Charles. 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. Therefore, the Board grants the variance as requested, with conditions.

The Board notes that timely compliance by St. Charles may be affected by pending USEPA action to promulgate new standards for radionuclides in drinking water. New radionuclide standards from USEPA could significantly alter St. Charles's need for a variance or St. Charles's alternatives for achieving compliance. In recognition of this situation, the Board's variance will contain suitable timeframes to account for the effects of any USEPA alteration (or notice of refusal to alter) of the radium standard.

St. Charles is to bear in mind that today's action is solely a grant of variance from standards of issuance and restricted status. St. Charles is not being granted variance from compliance with the radium and gross alpha particle activity

standards, nor does today's action insulate St. Charles in any manner against enforcement for violation of those standards.

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

ORDER

Petitioner, City of St. Charles, is hereby granted variance from 35 Ill. Adm. Code 602.105(a), Standards of Issuance, and 602.106(b), Restricted Status, as they relate to the standard for radium and gross alpha particle activity in drinking water of 35 Ill. Adm. Code.Subtitle F, subject to the following conditions:

- (A) For the purposes of this Order, the date of USEPA action shall consist of the earlier of the:
 - (1) Date of promulgation by the U.S. Environmental Protection Agency ("USEPA") of any regulation which amends the maximum concentration level for combined radium, either of the isotopes of radium, gross alpha particle activity, or the method by which compliance with either the radium or gross alpha particle activity maximum concentration level is demonstrated; or
 - (2) Date of publication of notice by the USEPA that no amendments to the 5 pCi/l combined radium standard, the 15 pCi/l gross alpha particle activity standard, or the methods for demonstrating compliance with either standard will be promulgated.
- (B) Variance shall terminate on the earliest of the following dates:
 - (1) When analysis pursuant to 35 Ill. Adm. Code 611.Subpart Q, or any compliance demonstration method then in effect, shows compliance with any standards for radium and gross alpha particle activity in drinking water then in effect;
 - (2) Two years following the date of USEPA action; or
 - (3) July 25, 1996.
- (C) Compliance shall be achieved with any standards for radium and gross alpha particle activity then in effect no later than the date on which this variance terminates.

- (D) In consultation with the Illinois Environmental Protection Agency ("Agency"), Petitioner 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, Petitioner shall collect quarterly samples of water from its distribution system at locations approved by the Agency. Petitioner 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 radium-226 and radium-228 and gross alpha particle activity. At the option of Petitioner the quarterly samples may be analyzed when collected. The results of the analyses shall be reported within 30 days of receipt of the most recent result to:

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

- (E) Construction of all installations, changes or additions necessary to achieve compliance with the standards for radium and gross alpha particle activity shall be completed no later than four years from grant of the variance, one year will be necessary to prove compliance.
- (F) Prior to or in case of emergency, immediately after well #5 is put into operation, Petitioner shall notify Leonard Lindstrom, Regional Manager of the Agency's Regional Office at 708/741-7771, of the intention to utilize well #5, and the projected duration of such use.
- (G) Pursuant to 35 Ill. Adm. Code 611.851(b), 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 shall 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 radium and gross alpha particle activity standards.
- (H) Pursuant to 35 Ill. Adm. Code 611.851(b), 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 shall send to each

user of its public water supply a written notice to the effect that Petitioner is not in compliance with standards for radium and gross alpha particle activity. The notice shall state the average content of radium and gross alpha particle activity in samples taken since the last notice period during which samples were taken.

- (I) Until full compliance is achieved, Petitioner shall take all reasonable measures with its existing equipment to minimize the level of combined radium, radium-226, radium-228, and gross alpha particle activity in its finished drinking water.
- (J) Petitioner shall provide written progress reports to the Agency at the address below every six months concerning steps taken to comply with paragraphs C-I. Progress reports shall quote each of said paragraphs and immediately below each paragraph state what steps have been taken to comply with each paragraph.

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 Stephen C. Ewart, Division of Legal Counsel, 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 be bound by all terms and conditions of the Order of the Pollution Control Board in PCB 91-58, July 25, 1991.

Petitioner

Authorized Agent

Title

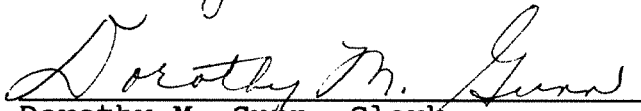
Date

Section 41 of the Environmental Protection Act, Ill. Rev. Stat. 1989 ch. 111 ½ 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 Member J. D. Dumelle dissented.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 25th day of July, 1991, by a vote of 4-1.



Dorothy M. Gunn, Clerk
Illinois Pollution Control Board