

ILLINOIS POLLUTION CONTROL BOARD
May 9, 1986

LAKE COUNTY PUBLIC WORKS)
DEPARTMENT, VERNON HILLS WATER)
SUPPLY SYSTEM,)
)
Petitioner,)
)
v.) PCB 86-35
)
)
ILLINOIS ENVIRONMENTAL)
PROTECTION AGENCY,)
)
Respondent.)

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

This matter comes before the Board upon a March 7, 1986, petition for variance from restricted status filed on behalf of the Lake County Public Works Department, Vernon Hills Water Supply System (the Department). The Department requests variance from 35 Ill. Adm. Code 602.105(a), Standards of Issuance, and 35 Ill. Adm. Code 602.106(b), Restricted Status, to the extent that those rules relate to 35 Ill. Adm. Code 604.301(a), combined radium-226 and radium-228. On April 15, 1986, the Illinois Environmental Protection Agency (Agency) filed a recommendation that variance be granted subject to certain conditions. Hearing was waived, and none was held.

The Department owns and operates a public water supply system serving the Village of Vernon Hills which has a population of 12,500. The system consists of wells, pumps, storage and distribution facilities. The water supply is chlorinated before being discharged into the distribution system. The Department maintains four wells which supply the water for Vernon Hills. Wells number One and Two are deep wells which were constructed in 1973. Wells number Four and Five are shallow wells constructed in 1961. Wells Four and Five are not presently in use and Well number Three has been permanently sealed. The average daily pumpage for the water system is approximately 1,245,000 gpd. Well number One is 1900 feet deep with an average daily pumpage of 750,000 gpd. Well number Two is 1875 feet deep with an average daily pumpage of 495,000 g.p.d. Storage capacity of the water system is 1,765,000 gallons. The water is distributed to users via 47.8 miles of 6 inch to 12 inch water mains.

Proposed and pending projects in Vernon Hills to which the Department desires to extend its service include:

- a) Corporate Woods - 350 acres of land to be developed starting in 1986 for industry and commercial use consisting of approximately 4,400,000 square feet of total building area. Total number of employees within Corporate Woods upon completion would be between 8,000 and 10,000. Between 4-5000 construction workers would be involved in the development of the project.
- b) Strop Shopping Plaza - 100,000 square feet commercial development.
- c) NCT Residential Unit - 115 housing unit development.
- d) Hawthorn School District - 3 building complex.
- e) Cambridge Heights Residential - 15 lot development.
- f) Continental Grain Company - 600 acres proposed to be developed for office and light industry.

Such extensions are not presently allowed, however, because the Agency has placed the system on restricted status due to violation of the radiological standards. On December 9, 1985, the Agency informed the Department of sampling results which showed Radium-226 levels to be 6.3 pCi/l and Radium-228 to be 3.1 pCi/l for a total combined level of 9.4 pCi/l which is in excess of the 5pCi/l standards of 35 Ill. Adm. Code 604.301(a). Further tests were performed by Tiledyne Isotopes Laboratory which resulted in the following findings:

| | <u>pCi/l</u> | |
|------------|---------------|---------------|
| | <u>Ra-226</u> | <u>Ra-228</u> |
| Well No. 1 | 5.0+0.1 | 5.6+0.9 |
| Well No. 2 | 5.8+0.1 | 3.8+0.8 |
| Well No. 3 | 4.6+0.1 | 3.2+0.7 |

These results were received by the Department on January 15, 1986. Thus, the Department has had little time to investigate compliance alternatives and has not yet developed a compliance plan. However, the Department has been working toward obtaining Lake Michigan water.

On February 28, 1981, the Department was granted a Lake Michigan Allocation Permit, said allocation to be effective from 1985 continuing through 2020. Based on that, the Department along with six other municipalities, entered into an agreement in November of 1982 establishing the Central Lake County Water Supply Committee to evaluate the technical, institutional and financial feasibility of new supply, treatment, and transmission facilities to provide the communities with potable water from Lake Michigan. The Committee has retained consulting engineers

who have evaluated long term alternatives for procuring Lake Michigan water and a financial consultant has been retained to assist in implementing the Lake Michigan Water Allocation.

The Department has also evaluated various treatment alternatives including substitution or dilution with Lake Michigan water, dilution with shallow groundwater, lime softening, ion-exchange softening and reverse osmosis. As of now the Department believes that the use of Lake Michigan water is the only reasonable alternative, alleging that other alternatives are either cost prohibitive or would result in replacing one problem with another (e.g. the increase of sodium levels in the finished water if ion-exchange osmosis is used).

The Department further alleges that the granting of variance would not be harmful to the environment or the residents of Vernon Hills. While no formal assessment of the effect of this variance on the environment has been made by the Department, it cites the testimony and exhibits presented by Richard E. Toohey, Ph.D. and James Steffings, Ph.D. both of the Argonne National Laboratory, on July 30 and August 2, 1985 in R85-14, Proposed Amendments to Public Water Supply Regulations, 35 Ill. Adm. Code 602.105 and 602.106 for the proposition that the granting of this variance for the limited time of the requested variance will not cause any significant harm to the environment or to the people served by potential water main extensions. The Department also submitted Exhibit 5, a report of D.L. Bennett, Supervisor of the Water Quality Unit of the Agency, which states that compared to the risk from other forms of natural radiation the risk from water is quite low.

The Agency agrees with the Department's allegations of fact, and states that:

while radiation at any level creates some risk, the risk associated with this level is very low...The Agency believes an incremental increase in the allowable concentration up to a maximum of four times the level of the maximum allowable concentration ("MAC") for the contaminant in question, should cause no significant health risk for the limited population served by new water main extensions for the time period of this recommended variance (Rec. pp. 5-6; emphasis in the original).

The Agency also agrees with the Department's assessment of compliance alternatives and recommends that variance be granted. (Rec. pp.6-8).

The Board notes that the United States Environmental Protection Agency (USEPA) has challenged several Board issued variances from the radiological standards as be in inconsistent

with the state's obligations under the Safe Drinking Water Act (SDWA). However, the variance requested here is solely from the state regulations establishing the restricted status mechanism and not from the national primary drinking water regulations. That being the case, such variance will not insulate the Department from the possibility of enforcement for violations of the underlying radiological standards. However, the Agency argues, and the Board agrees, that if the state-issued variance includes appropriate increments of progress, USEPA may consider the variance to be a proper compliance order which would be sufficient to defer federal enforcement. However, the Department would remain subject to enforcement of the underlying standards by any other person or entity.

The Agency has recommended that variance be granted for a period of five years from 35 Ill. Adm. Code 602.105(a) and 602.106(b) as they relate to the radiological standards subject to conditions which would require continued sampling, the procurement of professional assistance to investigate compliance options, the preparation of a compliance plan, the procurement of necessary permits for carrying out that plan, and appropriate notice to the public.

The Board agrees with the Agency for the most part and finds that denial of variance would constitute an arbitrary or unreasonable hardship. The Department has responded quickly to the problem once it was discovered in December of last year and has agreed to take appropriate steps toward expeditious compliance with the underlying standards. Further, there has been no showing of bad faith or delay in its response. However, given the absence of a specific compliance plan, the five years requested for variance does not provide for appropriate Board oversight of the Department's movements towards compliance. Instead, the Board will grant a variance, with conditions, until January 1, 1988. This will cover two construction seasons, and yet allow the Board to review the status of the Department selection of a compliance plan and efforts towards achieving compliance.

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

ORDER

The Lake County Public Works Department, Vernon Hills Water Supply System is hereby granted a variance from 35 Ill. Adm. Code 602.105(a) Standards of Issuance, and 602.106(b) (Restricted Status) as these rules relate to exceedances from the combined radium-226 and radium-228 limitation of 35 Ill. Adm. Code 604.30(a), subject to the following conditions:

- a) Variance expires on January 1, 1988.

- b) In consultation with the Agency, the Department shall 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 continued.
- c) On or before August 15, 1986, the Department shall secure professional assistance (either from present staff or an outside consultant) in investigating compliance options, including the possibility and feasibility of achieving compliance by blending water from its shallow well(s) with that of its deep well(s).
- d) On or before September 15, 1986, evidence that such professional assistance has been secured shall be submitted to the Agency's Division of Public Water Supplies, FOS, at 2200 Churchill Road, Springfield, Illinois 62706.
- e) On or before February 15, 1987, the Department shall complete investigating compliance methods, including those treatment techniques described in the Manual of Treatment Techniques for Meeting the Interim Primary Drinking Water Regulations, USEPA, May 1977, EPA-600/8-77-005, and prepare a detailed Compliance Report showing how compliance shall be achieved within the shortest practicable time, but no later than five years from the date of this variance.
- f) On or before March 15, 1987, the Compliance Report shall be submitted to the Agency's Division of Public Water Supplies (DPWS).
- g) On or before June 15, 1987, or within any written extension of this period made by the Agency, the Department shall apply to the Agency, DPWS, Permit Section, for all permits necessary for construction of installations, changes or additions to the Department's public water supply needed for achieving compliance with 35 Ill. Adm. Code 604.301(a).
- h) 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, the Department 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 it relates to Section 604.301(a).

- i) The Department shall take all reasonable measures with its existing equipment to minimize the level of Radium-226 and Radium 228 in its finished water.
- j) Within forty-five days of the date of this Order, the Department shall execute and forward to Wayne Wiemerslage, Enforcement Programs, Illinois Environmental Protection Agency, 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.

CERTIFICATION

I, (We), _____, having read the Order of the Illinois Pollution Control Board, in PCB 86-35, dated May 9, 1986, 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.

B. F. Forcade concurred.

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 9th day of May, 1986 by a vote of 6-1.

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