ILLINOIS POLLUTION CONTROL BOARD
September 11, 1986

VILLAGE OF ROUND LAKE BEACH Petitioner v. ILLINOIS ENVIRONMENTAL PROTECTION AGENCY, Respondent. and ELIZABETH BOWDEN, BARBARA ELLENWOOD, MICHAEL KARASINSKI, JEAN KENNEDY, CHRISTINE MEEK, STEWART SLAVIK, CITIZENS FOR A BETTER ENVIRONMENT, AND THE LAKE COUNTY DEFENDERS Intervenors.	)	PCB 86-59

DISSENTING OPINION (by B. Forcade):

I dissent from today's action by the majority as an imprudent policy decision based on improper factual manipulation of the record.

Many areas in Illinois draw water from deep aquifers whose naturally occuring combined radium concentration exceed the legally established level. From all indications those aquifers have had high radium levels for so long (compared to a human lifetime) and deliver water of such constant radium quality (assuming stasis in withdrawal and recharge rates) that the levels can be considered a constant over all relevant times for health planning. In other words, if you are currently drinking water with high radium levels you have probably been drinking it all of your life or since the last change in the water supply system.

The Board has established a 5 pCi/l standard for combined radium 226 and 228 based on health effects and the economics of control technologies. Public water supplies that fail to deliver water at that quality are precluded from extending their service to new customers (restricted status). This prevents unsafe water from being delivered to new users and, since limitations on growth are generally considered detrimental, provides an incentive for the system to clean up the water it provides to its existing customers. The recent results of testing have shown

many Illinois municipalities to be above the 5 pCi/l standard and they have been placed on restricted status.

When the recent testing results placed The Village of Round Lake Beach on restricted status it frustrated its growth potential. The Village's dilemma was further complicated when it became clear that safe water would be delivered to users almost immediately by blending low contamination shallow well water with higher contamination deep wells, so long as total water usage did not increase. If, however, water usage was increased by annexation, then immediate compliance was not possible and the alternative of new safe water sources for blending or some form of treatment would be required for future compliance. In other words, safe water now but no growth or growth now and safe water at some point in the future. Round Lake Beach chose the latter approach and petitioned this Board for a variance.

The arguments presented in favor of variance were low health risk, and improved financial condition if variance were granted. These arguments, however, deserve closer attention.

The basis for health related contamination levels for drinking water are fairly simple. First you determine how much drinking water the person you want to protect drinks, then you determine what level of risk should apply to the person who drinks that much water. The United States Environmental Protection Agency and the Pollution Control Board have decided that it is appropriate to protect those individuals who drink two liters per day. Proponents of the variance presented Dr. Richard E. Toohey who testified as follows:

> "There is one reference of a study of drinking water consumption in Canada which actually followed about 10,000 people, and their average intake in Canada was 1.34 liters per day. You don't have to be a scientist to understand that 1.34 is closer to one than it is to two." (R.47)

Dr. Toohey's assumption (one liter per day consumption) has several serious flaws from a health protection standpoint. First, it is entirely inapprorpriate to use averages for water intake. It could be that nearly one-half of the people drink more than the average person drinks. If so, they do not receive the stated level of protection. The more appropriate approach is to decide what portion of the population you wish to protect and what consumption level will cover those people. The second flaw is reducing 1.34 to 1.0. No empirical or logical basis for the reduction is provided. This means that even the average person will no longer receive the stated level of protection. The third flaw is more subtle. Water consumption is to a certain extent temperature related; in hot weather we may drink more. Without

more detail on the temperatures involved in the Canadian study it may be inappropriate to apply those values to Round Lake Beach. In summary, Dr. Toohey's arguments do nothing to convince me that the two liter per day consumption value should be abandoned for estimating health risks.

In a similar vein Dr. Toohey has criticised the linear dose-response model for estimating health risk for low level exposure to radiation. First, it should be noted that there is no experimental data (or at best questionable data) at levels involving a few picocuries per liter. Models are used to predict effects at these low levels based on reliable data obtained at much higher levels. The linear model is used because it is a conservative model and because it places its greatest reliance on the lowest dose (presumably this data point would most accurately reflect the mechanisms which are in effect in the sub-experimental dose range). The question then becomes how conservative should we be in predicting the unknown, where health effects are involved. Dr. Toohey suggests we should be substantially less conservative in predicting the unknown than the linear model. I do not know of any governmental agency that has abandoned the linear model for health planning purposes and Dr. Toohey certainly does not provide compelling evidence to do so. I also question Dr. Toohey's assertion that a risk level of 100 excess cancers per million exposed is acceptable (R. 48). Most environmental health planning strives for an excess lifetime cancer rate of not more than one per million exposed; if that level were applied to radium in drinking water the acceptable levels would be 0.05 pCi/l. Dr. Toohey's arguments were in large part based on how many people we should protect, how conservative our health planning should be, and what level of risk is acceptable. To the extent these arguments are presented as an individual opinion on social policy they are appropriate. To the extent they are presented as representing a "reasonable degree of scientific certainty" (R. 58, 59, 60, 61) they reflect the worst kind of bad science. Science does not tell us what portion of the public to protect. Science does not tell us how conservative our health planning should be. Science does not tell us what level of risk is acceptable. These social policy decisions should not be cloaked in a scientific Shroud of Turin to provide legitimacy to the author's viewpoint.

The second argument made by variance proponents is that hooking up new users would provide additional revenue (from the hook-up fees) which would more easily allow system improvements (R. 205-210). At hearing variance opponents attempted to show that the new users would not only generate new revenues from hook-up fees, but also new costs in other fiscal areas that might make the overall financial position worse. When the witness began his presentation he was interrupted as follows:

"Hearing Officer: Just a moment. Are you speaking to the annexation , or are you speaking to the water variance?

Witness: I am talking about the cost of water. I don't see, Mr. Chairman, how we can separate water costs and school costs, because if the annexation - - if the water variance is going to be given to allow annexation and growth, then the other side of the coin has to be explored, because they may give them a reasonable water bill but it is going to give them a skyrocketing tax bill for the schools.

Hearing Officer: I am going to be capricious and arbitrary and ask you to limit your comments to the water variance, not the annexation. So within those parameters you got four minutes left.

Witness: Well, you know, I don't see how they can be separated. And if that is your ruling --

Hearing Officer: I am asking you to do the best you can

Witness: If that is your ruling, it certainly is going to put a curb on me.

Hearing Officer: I would hope so.

I believe the hearing officer ruling was in error. If the new developments are being justified as a source of revenues that are necessary to fund the water system improvements by the Mayor (R. 205-210), then the costs of the development to the overall financial picture should also be relevant and material to the decision.

Due to the one-sided health related testimony of Dr. Toohey, and the exclusion of information on the costs of the development, I believe the Board was provided with a factually manipulated record that only showed one side.

I also believe that the Board's decision to grant variance relief established an imprudent policy. In the past radium variance cases the Board has been presented with situations where the contaminated wells provided such a large portion of the water supply that blending (which is relatively inexpensive) was not an option. In those cases the Board was asked to allow continued growth while the municipality was constructing treatment facilities or alternative sources to come into compliance. Today the Board has for the first time allowed growth instead of compliance. I cannot support that philosophy and accordingly, I dissent.

Bill S. Forcade
Board Member

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Dissenting Opinion was filed on the 19th day of September 1986.

Dorothy M. Gunn, Clerk
Illinois Pollution Control Board