Seven organizations are filing additional comments regarding the IEPA's effort to change radium in water standards in Illinois. The groups include: Clean Water – Illinois, Des Plaines River Valley Restoration Project, Citizens for Conservation, Illinois Audubon Society, Prairie Woods Audubon Society, Citizens Against Ruining the Environment C.A.R.E., Illinois Division Izaak Walton League of America

In additional two news articles from the Lake Zurich Couriers and the Washington Post are also included. These articles speak to the heart of the radium in water matter.

Doug Dobmeyer

R04-21
PC #25

December 3, 2004

The Honorable Rod Blagojevich
Governor, State of Illinois
James R. Thompson Center, FL. 16
100 W. Randolph St.
Chicago, IL 60601

Dear Governor Blagojevich:

As a diverse group of organizations that champion different environmental issues, we would like to express our disappointment in the Illinois Environmental Protection Agency's (IEPA) proposal to weaken radium water quality standards. As we understand it, the IEPA is proposing to allow a virtually unlimited amount of radium, a cancer causing agent, to be discharged into Illinois rivers, streams and lakes.

The proposed rule change raises many serious concerns. Lowering the water quality standards would set a dangerous precedent, as it would significantly weaken the state's regulatory process and pave the way for polluters to act without concern. Allowing more radium would contribute to the already burgeoning pollution in the waterways, which amplifies the threat to animal and plant life in our rivers, lakes and streams. Most important, relaxing state standards puts the residents of Illinois at risk of developing cancer and other serious diseases.

The citizens of Illinois deserve to know why the IEPA is aggressively pursuing a rule change that compromises environmental security and public health. This action goes against all progressive environmental thinking and we have yet to hear a compelling public interest rationale for weakening the standards that keep our waterways clean.

We are counting on you to work in cooperation with policymakers to maintain the current water quality regulations that have been integral in making Illinois a leader in sound environmental policy. We respectfully request that you urge your agency to conduct a more thorough analysis of this issue and explore cleaner alternatives that promote environmental safety now and in the future.

We are also attaching two media articles pertaining to this issue. The first is from the ***Lake Zurich Courier*** covering the issue of radium in sludge. A ***Washington Post*** article looks at the issue of the discharge of radium tainted wastewater into the waterway system in Maryland. Both of these issues are crucial to the discussions here in Illinois.

Sincerely,

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December 2, 2004

Lake Zurich Courier

Radioactive dirt

IEPA examines sewage processed into fertilizer at area plants

While municipalities concentrate on removing radium from drinking water, environmental agencies are taking a closer look at how the radioactive leftovers are being handled.

Agencies responsible for sewage treatment and water treatment, including Lake in the Hills Sanitary District and the village of Wauconda, are getting more scrutiny from the Illinois Environmental Protection Agency concerning radium that is removed from drinking water and later passes through the sewage treatment.

Other villages, such as Lake Zurich and Island Lake, rely on other sewage treatment agencies to dispose of radium removed from drinking water.

Radium is a naturally occurring radioactive element found in deep wells. Radium breaks down into radon, a harmful gas. Water treatment plants use water softeners to filter radium from drinking water, but that does not mean the element disappears. Byproducts from the softening process, including radium, make their way through sanitary sewers to sewage treatment plants.

Sludge, the organic solid remaining after sewage treatment, can contain radium removed from drinking water. Sludge is often given or sold to farmers, who use the substance as fertilizer. No law restricts the amount of radium that can be present in sludge, although some guidelines exist.

Treated water, or effluent, flowing from sewage treatment plants into rivers and lakes can also contain radium. Radium contained in liquids is diluted by the volume of raw wastewater going into sewage plants and further diluted when the treated effluent reaches rivers and lakes. Rivers and lakes are checked periodically to ensure that levels of radium do not exceed safety standards.

As area municipalities reduce radium levels to make their drinking water safer, that has raised concerns regarding radium content in sludge.

"It's a two-edged sword," said Toby Frevert, who manages the IEPA Division of Water Pollution Control. "Sludge is very valuable (as fertilizer) for its nutrients, but it contains this other chemical. We need to figure out how to benefit from the good."

Health concerns

Concern over radium levels in sludge grew after the IEPA set a deadline of December 2003 for compliance to standards reiterated in 2000. The standards had been in effect for some 30 years, but were not enforced in Illinois.

The U.S. Environmental Protection Agency looked in the 1990s at possibly raising the maximum recommended radium levels. A maximum level of radium appropriate for drinking water was identified in the mid-1970s as below 5 picocuries per liter. A picocurie represents the radioactivity in 1 trillionth of a gram of radium. In 1991, the U.S. EPA considered raising the maximum to 20 picocuries.

As municipalities began complying with the safety standards, more radium has been filtered out of drinking water and winding up in sludge, which raises new health concerns.

Prolonged exposure to radium has been proven to cause bone cancer, said Larry Thomas, a vice president with Crystal Lake-based Baxter and Woodman, an engineering consultant for many area municipalities on water and sanitary issues.

It is unclear, Thomas said, whether radium filtered out of water from deep wells -- which later becomes a component of sludge -- is at a high enough level to create any health problems.

According to a joint agreement between the IEPA and Illinois Division of Nuclear Safety, the only existing guideline is that the radium level present in sludge cannot exceed by more than a 10th of a picocurie the existing level of radioactivity in the field where it is being applied.

The IEPA is beginning to evaluate sludge content and to look into how much radium is actually present, Frevert said.

Lake in the Hills

The Lake in the Hills Sanitary District is one of the first to feel the effects of these new concerns.

Every five years, the Sanitary District must apply for a permit so that sludge from its plant can be spread on farm fields. The permit allows the district to contract with a private company, which the district pays to haul away the sludge to give to farmers, according to Sanitary District Manager Ross Nelson.

In 2003, the Sanitary District applied 707.5 metric tons of sludge on fields in McHenry, Kane, LaSalle, Boon and DeKalb counties. It pays Synagro, a national waste solids handler based locally in Sugar Grove, between $30,000 and $40,000 a month to press and remove its sludge.

When re-applying this year for its land-use application permit, the Sanitary District learned the IEPA had new permit guidelines. The new standards restrict the amount of any sludge that can be applied to any particular field.

According to Frevert, the single sludge sample the agency had for Lake in the Hills was 12.7 picocuries of radioactivity per gram. The IEPA analysis showed that at that level the sludge applied to land would hit the minimum target within two years, meaning that sludge could be applied to the same farm field once a year for two years. After that, there could be no more sludge applications on that farm field.

With only one sample available, the IEPA set the bar higher as far as restricting the applications of sludge from the Lake in the Hills Sanitary District, Frevert said.

The Sanitary District recently conducted another test and is waiting for lab results, which should be back in early December, Nelson said.

If the sample shows a lower radium content, the IEPA might reverse its decision, Frevert said. If not, it leaves the sanitary district with a big question.

"What do you do with the sludge?" Nelson asked. "It's a problem finding farmers willing to accept it as it is. This is a real hardship for the district. It will increase our operational costs."

While waiting for the ruling, the Sanitary District will work with towns of Lake in the Hills and Huntley to find a way to reduce the amount of radium entering the waste stream, Nelson said.

In September 2004, Lake in the Hills put 2.8 million gallons of wastewater into the sanitary district, according to Lake in the Hills Water Supervisor Bob Krause. The village doesn't normally test wastewater for radium, just the softened drinking water, which is typically at 1.5 picocuries per liter, which exceeds the safety standard of 5 picocuries. But Krause said the village recently took a sample of its wastewater and is waiting for test results.

Lake Zurich

The Village of Lake Zurich in the process of adding radium removal systems to its drinking water. The village plans to add radium removal systems to all six of its wells at a cost of $1.5 million per well. So far, one well has the technology. The village does not deal directly with sludge.

Robert Duprey, Lake Zurich's assistant public works director, said the village uses an ion exchange radium removal system, which works like a home water softener. The system filters 60 percent of the water coming into it and

blends the filtered water with the remaining 40 percent of unfiltered water. This mixing process dilutes radioactive particles to a level that meets the 5 picocuries standard.

"The bottom line is with all the treatment we will be implementing, we will be treating at a level that will get us to 5 picocuries," Duprey said.

Without treatment, the village water averages 6.8 picocuries, he said.

Lake Zurich discharges the byproduct of its water-filtering system into sanitary sewers. From there, the flow travels to Lake County's Des Plaines River Treatment Plant in Deerfield.

Phil Perna, who monitors water quality reports for Lake County Public Works, said county plant wastewater undergoes regular treatment processes. Sludge is drawn from the wastewater, and a contractor hauls it away for use on farmland. The county leaves radium testing to the contractor.

Wauconda

Four of Wauconda's eight municipal wells are deep wells. Radiation in unfiltered water from the four deep wells averages 13.8 picocuries per liter, said Assistant Superintendent of Public Works Betty Harrison. After filtering, the radiation level in drinking water measures less than the required 5 picocuries per liter.

The liquid byproduct from the filtering process contains about 9 picocuries of radiation per liter and is discharged into the sanitary sewers. After processing at the Wauconda Wastewater Treatment Plant, the radium ends up in sludge, which is hauled away for use by area farms as fertilizer, and in the treated effluent that flows into Fiddle Creek and eventually into the Fox River.

Wauconda's permit for land application expires Sept. 30, 2008.

Island Lake

The two deep wells in Island Lake average a combined radiation level of 8.8 picocuries. Almost all of that is filtered out during treatment for drinking water, said Public Water Superintendent Neal De Young.

The liquid byproduct from the filtering goes to the Northern Moraine Wastewater Reclamation District in Island Lake where it is processed with that of two other municipalities, said Dorothy Bangle, the district's administrative coordinator.

Treated effluent from the sewage treatment plant flows into the Fox River; sludge is hauled by an outside company to area farmland for use as fertilizer.

The district's permit is up for renewal July 31, 2005.

Charles Drops Plan to Discharge Tainted Water Into Stream

By Joshua Partlow
Washington Post Staff Writer
Sunday, November 21, 2004; Page SM06

Charles County officials headed off a potential confrontation over elevated levels of radiation in a subdivision's water supply with their decision last week against discharging the polonium-tainted water into a nearby stream.

In March, residents of the 95-home Chapel Point Woods subdivision learned that the county planned to install a reverse osmosis filtration system to remove naturally occurring polonium and radium from their water supply. The level of radiation coming from three wells is about three times the federal limit. But the question then became: Once the radiation is removed, where should it go?

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The county initially wanted to dump a daily dose of 8,600 gallons and the radioactive materials into a small stream that runs through the subdivision before emptying into the Port Tobacco River. Some residents and members of the Port Tobacco River Conservancy adamantly opposed the idea because they feared the highly toxic polonium could be dangerous to children playing in the stream and to fish and other aquatic life.

But at a meeting with residents Tuesday night, officials said the county had decided not to release the substances into a tributary of Wills Branch. The county will cancel its discharge permit application with the Maryland Department of the Environment, said Jerome Michael, the county's director of public utilities.

The change of heart came after a preliminary study by the Department of the Environment found that the concentrations of polonium estimated in the discharge water -- 225 picocuries per liter -- would exceed safe levels, Michael said. State officials at a public meeting in La Plata on Tuesday night said they would not release the study until it was approved or specify what the safe levels of polonium are.

"With the numbers they were talking about," Michael said, "we're not even close. Not even close."

Some of those gathered in La Plata found the news reassuring.

"This was a good decision," said David Gardiner, the executive director of the Port Tobacco River Conservancy. "There have been concerns by several people that the level of polonium would be a very serious problem if it were released into the stream."

The county must now find an alternative method of disposing of the polonium. Michael said one possibility would be to truck the discharge water to the Mattawoman Wastewater Treatment Plant off Hawthorne Road near Mason Springs. It would be a more expensive option, he said, but when diluted by the 15 million gallons of daily discharge at the plant, the radioactive substances probably would not cause a problem in the Potomac River.

Installation of the Chapel Point Woods filtration system is scheduled for completion in the summer, and the timeline will not be affected by changing the discharge plans, officials said. A test of the system removed 97 percent of the polonium from the water, said Ben Movahed, an engineer with Watek Engineering Corp., which is designing the filter.

In the late 1990s, hundreds of wells in Anne Arundel County were found to have elevated levels of radium, an element that occurs in trace amounts in rocks and soil. But this case was the first discovery of polonium in Maryland.

"This isn't something we've come across in Maryland before," said Steve Luckman of the permits division of the Maryland Department of the Environment.

Officials did not know why the polonium was in the earth below these three wells, which descend about 600 feet into the Patapsco aquifer. No other nearby wells outside the subdivision have had elevated radiation levels, officials said. Residents of Chapel Point Woods, weary of buying bottled water for drinking and cooking, want to be able to say the same soon.

"As long as they proceed with treating the water," said Bruce McCormick, who has lived in the neighborhood for 14 years. "That's what matters to me."