

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

P.C.#44

REVISIONS TO RADIUM WATER )  
QUALITY STANDARDS: PROPOSED )  
NEW 35 ILL. ADM. CODE 302.307 )  
AND AMENDMENTS TO 35 ILL. ADM. )  
CODE 302.207 AND 302.525 )

R2004-021  
Rulemaking - Water

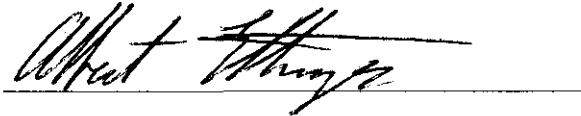
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AUG 15 2005

STATE OF ILLINOIS  
Pollution Control Board

NOTICE OF FILING

PLEASE TAKE NOTICE that the Environmental Law & Policy Center and Sierra Club have filed the attached COMMENTS OF THE SIERRA CLUB AND THE ENVIRONMENTAL LAW AND POLICY CENTER ON THE PROPOSED RULE.



Albert F. Ettinger (Reg. No. 3125045)  
Counsel for Environmental Law & Policy  
Center and Sierra Club

DATED: August 15, 2005

Environmental Law & Policy Center  
35 East Wacker Drive, Suite 1300  
Chicago, IL 60601  
312-795-3707

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COMMENTS OF THE SIERRA CLUB AND THE ENVIRONMENTAL LAW AND  
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The Environmental Law and Policy Center and the Sierra Club support the Board's Proposed Rule in its Second First Notice of April 7, 2005 to adopt a 3.75 pCi/L standard for the state.

However, the proposed exception to the standard to allow a combined radium standard of 30 pCi/L in a one mile mixing zone in stream segments that receive discharge from publicly owned treatment works ("POTWs") receiving wastewater discharge from public drinking water supplies using groundwater with a high radium concentration should not be adopted. Economic considerations cannot properly be taken into account in setting water quality standards except in very limited circumstances not applicable to this proceeding. Moreover, even if economic factors could properly be taken into account in this proceeding, there has been no showing that allowing an exception to the general standard is necessary to avoid imposition of an unusually costly regulatory burden. Indeed, data from the City of Joliet show that there is no great regulatory burden that would justify an exception from protective radium standards.

Further, we also again raise concerns that the Board address the issue of the buildup of radium in stream sediments and propose steps to be taken.

**I. The Board's proposal to adopt a 3.75 pCi/L water quality standard will protect aquatic life from soluble forms of radium.**

We support the Board's order to retain a water quality standard for radium for Illinois' general use waters and the Lake Michigan basin designed be protective of both human health and the environment. The Board's proposed standard of 3.75 pCi/L for combined radium 226 and 228 or less would meet the biota dose limit of 0.1 rad/day for riparian animals. This standard is necessary to protect riparian animals found in Illinois, like the river otter (only recently removed from the list of Illinois Endangered and Threatened species) and raccoons.

## II. The proposal for a different standard for stream segments downstream of POTWs should not be adopted.

A. Economic considerations may not properly be taken into account in developing Illinois numeric standards applicable to general use waters.

Water quality standards have three elements; designation of uses of water bodies, “criteria” to protect those uses and an antidegradation policy. 40 CFR 131.6.<sup>1</sup> For example, a particular river might have the designated uses of aquatic life, swimming and fishing. State “criteria” or “standards” (numeric or narrative) applicable to that water must be protective of those uses. 40 CFR 131.11(a); Natural Resources Defense Council v. U.S. EPA, 16 F.3d 1395, 1401 (4<sup>th</sup> Cir. 1993) (state criteria must be “scientifically defensible” and “protective of designated uses”).

In Illinois almost all waters are designated as “general use” and, thus, are to be protected for aquatic life, wildlife, agricultural use and primary contact. 35 Ill. Adm. Code 302.202. Although Illinois’ “general use” category is rather bulky<sup>2</sup>, it is appropriate that almost all Illinois waters are to be protected for aquatic life, wildlife, fishing and swimming. The Clean Water Act establishes a presumption that all of the nation’s waters are or are to become “fishable and swimmable.” See 33 U.S.C. §1251(a)(2); Kansas Natural Resource Council, Inc. v. Whitman, 255 F. Supp. 1208, 1209 (D. Kan. 2003).

The only way in which the applicable federal regulations allow consideration of economic factors in setting water quality standards relates to designation of uses for particular water bodies for which it is sought to rebut the presumption that all water bodies are to be fishable and swimmable. Under 40 C.F.R. 131.10 (g)(6), a state may remove a designated use (that is not an existing use) if it is shown that pollution controls needed to protect that use would “result in substantial and widespread economic and social impact.”

On the other hand, economic factors may not be taken into account in setting the numeric standards that are protective of uses. Water quality criteria that protect the designated uses “must be based on a sound scientific rationale” and must protect the “most sensitive use.” 40 C.F.R. 131.11(a); see also, People of the State of Illinois v. IPCB, 103 Ill. 2d 441, 469 N.E. 2d 1102, 1108 (Ill. 1984). Economic factors are irrelevant to setting such criteria. Mississippi Commission on Natural Resources v. Costle, 625 F.2d 1269, 1277 (5<sup>th</sup> Cir. 1980)

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<sup>1</sup> There is an unfortunate ambiguity in water quality standards terminology in that the term “criteria” is used in the regulations, literature and caselaw both to describe the recommended numeric values that U.S. EPA develops as guidance for the states in developing standards to protect particular uses and to the portion of the legally binding state standards that specify those values. This proceeding involves developing the state “criteria” or standard for radium. Part of the reason that it has been so difficult to do this is that U.S. EPA has not developed any recommended “criteria” document to assist Illinois in developing a state standard.

<sup>2</sup> Many states break down their use categories and apply different criteria to those categories. For example, many states distinguish warm water fisheries and cold water fisheries.

In short, if there were evidence in the record in this proceeding that adoption of protective radium standards would impose overwhelming costs on some dischargers, that information would not be important here.<sup>3</sup> But there has been no such evidence.

B. There is no evidence that it would be costly to comply with the 3.75 pCi/L standard anywhere.

The hearing record does not contain any testimony showing that complying with the 3.75 pCi/L standard would be costly for any discharger and contains some testimony that it would not be.

New post-hearing data suggest that the Board's proposal to establish a 30 pCi/L combined radium 226 and 228 limit in a mixing zone up to one mile downstream from the point of POTW discharge to provide relief for POTWs would not save anyone much money. On May 13, 2005 the City of Joliet filed a motion for the extension of the public comment period on the Board's Proposed Rule and Second First Notice. They needed the time to perform radium sampling on influent and effluent samples from various communities that utilize groundwater containing radium in excess of 3.75 pCi/L and to do some in-stream sampling. We have been provided a copy of their results. It is informative to note that the highest level of combined radium 226 and 228 found in POTW effluent was 7.4 pCi/L from Community A. In-stream levels of combined radium were less than 1.5 pCi/L at all locations tested. Not knowing the nature of the water bodies to which communities A & B discharge and with the uncertainty in the Monmouth data, we cannot comment on those dischargers. For the rest of the discharges tested, it appears that the communities would be able to meet the 3.75 pCi/L standard with a standard mixing zone, if needed. These new data suggest there is not even a substantial economic reason for the special 30 pCi/L mixing zone included in the Board's Proposed Rule.

### **III. The Board should require sediment monitoring downstream of dischargers that require a mixing zone.**

We support the Board's finding that the DOE technical standard provides the necessary guidance to establish a water quality standard for radium 226 and 228 applicable to general use waters and the Lake Michigan basin. However, we note the proposed standard of 3.75 pCi/L for combined radium 226 and 228 would meet the biota dose limit of 0.1 rad/day for riparian animals only if the levels of combined radium in sediment remain below 190 pCi/g. (See Exhibit 9 of the December 8, 2004 posthearing comments of the Environmental Law and Policy Center and the Sierra Club.) Therefore we recommend that the Board direct the Agency to require regular monitoring of the stream sediment in any POTW permit for which they grant a mixing zone for radium. Regular monitoring of the sediment at a point outside of the prescribed mixing zone would ensure that radium particles were not building up in the sediment so that the biota dose limit of 0.1 rad/day was exceeded.

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<sup>3</sup> It might be relevant to a proceeding relating to re-designation of the use of a particular water body pursuant to a use attainability analysis conducted under 40 CFR 131.10(g).

**IV. The ELPC and Sierra Club do not object to the Board considering the suggestion by U.S. EPA to set the radium standard as an average value over a period of time.**

In Public Comment #41, Linda Holst, Chief of the Water Quality Branch at USEPA Region V, suggests that it may be better to “express the standard as an average value over some period of time to reflect the concern over longer-term exposure, rather than a value that can never be exceeded.” If the Board chooses to do this, then Ms. Holst indicates that the Board must also “establish a 5 pCi/L Public and Food Processing Water Supply standard as an instantaneous maximum standard for public water supply intakes.”

ELPC and the Sierra Club do not object to U.S. EPA’s suggestion. We agree that a radium water quality standard that is an average value over some period of time addresses the goal to not exceed the biota dose limit of 0.1 rad/day for riparian animals. However, we also believe that if such an approach is taken, it is even more imperative that any discharger granted a mixing zone be required to periodically monitor the in-stream sediment outside of that zone.

**CONCLUSION**

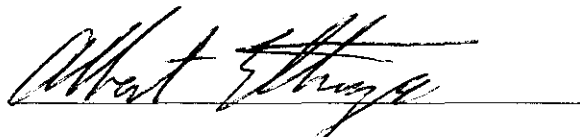
The Board should adopt the 3.75 pCi/L standard. The exception allowing a weaker standard downstream of certain POTW discharges should be deleted. Action is needed to prevent build-up of radioactive sediments in Illinois waters receiving radium laden discharges.

Albert Ettinger  
ELPC - Senior Staff Attorney  
Illinois Chapter Sierra Club - Water Issues Coordinator

Cynthia Skrukud Ph.D.  
Illinois Chapter Sierra Club - Clean Water Advocate

**CERTIFICATE OF SERVICE**

I, Albert F. Ettinger, certify that on August 15, 2005, I filed the attached COMMENTS OF THE SIERRA CLUB AND THE ENVIRONMENTAL LAW AND POLICY CENTER ON THE PROPOSED RULE. An original and 9 copies was filed, on recycled paper, with the Illinois Pollution Control Board, James R. Thompson Center, 100 West Randolph, Suite 11-500, Chicago, IL 60601, and copies were served via United States Mail to those individuals on the included service list.

A handwritten signature in black ink, appearing to read "Albert Ettinger", is written over a horizontal line.

Albert F. Ettinger (Reg. No. 3125045)  
Counsel for Environmental Law & Policy  
Center and Sierra Club

DATED: August 15, 2005

Environmental Law & Policy Center  
35 East Wacker Drive, Suite 1300  
Chicago, IL 60601  
312-795-3707

## SERVICE LIST

Deborah J. Williams  
Stefanie N. Diers  
Illinois Environmental Protection Agency  
1021 N. Grand Avenue East  
PO Box 19276  
Springfield, IL 62794

Roy M. Harsch  
Sasha M. Engle  
Gardner Carton & Douglas  
191 N. Wacker Drive, Suite 3700  
Chicago, IL 60606

Jeffrey C. Fort  
Letissa Carver Reid  
Sonnenschein Nath & Rosenthal  
8000 Sears Tower  
233 S. Wacker Drive  
Chicago, IL 60606

John McMahan  
Wilkie & McMahan  
1 East Main Street, #214  
Champaign, IL 61820

Joel J. Sternstein  
Office of the Attorney General Petitioner  
188 W. Randolph, 20<sup>th</sup> Floor  
Chicago, IL 60601

Matthew J. Dunn, Division Chief  
Office of the Attorney General Petitioner  
188 W. Randolph, 20<sup>th</sup> Floor  
Chicago, IL 60601

Dorothy M. Gunn, Clerk of the Board  
Illinois Pollution Control Board  
100 W. Randolph St, Suite 11-500  
Chicago, IL 60601

Amy Antonioli, Hearing Officer  
Illinois Pollution Control Board  
100 W. Randolph St, Suite 11-500  
Chicago, IL 60601

Claire A. Manning  
Posegate & Denes  
111 N. Sixth St.  
Springfield, IL 62701

Stanley Yonkauski, Acting General Counsel  
Illinois DNR  
One Natural Resources Way  
Springfield, IL 62702

Lisa Frede  
CICI  
2250 E. Devon Ave., Suite 239  
Des Plaines, IL 60018

William Seith  
Total Environmental Solutions  
631 E. Butterfield Rd, Suite 315  
Lombard, IL 60148

Abdul Kahlique  
Metropolitan Reclamation District  
6001 W. Pershing Road  
Cicero, IL 60804

Richard Lanyon  
Metropolitan Reclamation District  
6001 W. Pershing Road  
Cicero, IL 60804

Dennis Duffield  
Director of Public Works and Utilities  
City of Joliet  
921 E. Washington Street  
Joliet, IL 60431