

BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)
)
WATER QUALITY STANDARDS AND)
EFFLUENT LIMITATIONS FOR THE) R08-9
CHICAGO AREA WATERWAY SYSTEM) (Rulemaking – Water)
AND THE LOWER DES PLAINES RIVER:)
PROPOSED AMENDMENTS TO 35 ILL..) (Subdocket B)
ADM. CODE PARTS 301, 302, 303 and 304)

NOTICE OF FILING

To:

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Persons on the attached service list

Please take notice that on the 15th Day of February, 2011, I filed with the Office of the Clerk of the Illinois Pollution Control Board the attached **Environmental Groups' Reply to Metropolitan Water Reclamation District of Greater Chicago's Responses to Proposed Effluent Bacteria Standards**, a copy of which is hereby served upon you.



By: _____
Ann Alexander, Natural Resources Defense Council

Dated: February 15th, 2011

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CERTIFICATE OF SERVICE

I, Ann Alexander, the undersigned attorney, hereby certify that I have served the attached **Environmental Groups' Reply to Metropolitan Water Reclamation District of Greater Chicago's Responses to Proposed Effluent Bacteria Standards** on all parties of record (Service List attached), by depositing said documents in the United States Mail, postage prepaid, from 227 W. Monroe, Chicago, IL 60606, before the hour of 5:00 p.m., on this 15th Day of February, 2011.

A handwritten signature in blue ink that reads "Ann Alexander". The signature is written in a cursive style.

Ann Alexander, Natural Resources Defense Council

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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:)	
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WATER QUALITY STANDARDS AND)	
EFFLUENT LIMITATIONS FOR THE)	R08-09B
CHICAGO AREA WATERWAYS SYSTEM)	(Rulemaking- Water)
(CAWS) AND THE LOWER DES PLAINES)	
RIVER: PROPOSED AMENDMENTS TO)	
35 Ill. Adm. Code Parts 301, 302, 303 and 304)	
(Recreational Use Designations))	

ENVIRONMENTAL GROUPS’ REPLY TO METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO’S RESPONSES TO PROPOSED EFFLUENT BACTERIA STANDARDS

Natural Resources Defense Council (“NRDC”), Environmental Law & Policy Center, Friends of the Chicago River, Openlands, Alliance for the Great Lakes, Southeast Environmental Task Force,¹ Prairie Rivers Network, and Sierra Club-Illinois Chapter (“Environmental Groups” or “EG”) submit this reply to the District’s² Responses to Comments on the Proposed Effluent Bacteria Standards, filed January 31, 2011 (“Comment Responses”).

The District’s Comment Responses address almost none of the extensive substantive analysis set forth in the EG Final Comment. Over and over again, the Responses offer only superficial defense of scientific and economic contentions that the Environmental Groups, together with USEPA, have demonstrated are simply wrong. Concerning risk, the District’s argument boils down in the end to the proposition that, since the District’s studies were performed by reputable scientists, neither the studies nor the District’s conclusions based on

¹ Southeast Environmental Task Force did not participate in the EG Final Comment submitted January 3, 2011.

² Abbreviations used in this response are defined in the Environmental Groups’ January 3, 2011 Comment unless otherwise noted.

them should be questioned. Concerning economic issues, the District adds effectively nothing to its initial presentation in the District Final Comment, reiterates significant cost estimation errors, and premises its argument largely on the incorrect proposition that disinfection would yield no health benefit. The District's one legal argument – an attempt to avoid the requirements of UAA Factor 6, which have clearly not been met here – is incorrect.

Since most of the District's arguments in its Comment Responses are effectively addressed in the Environmental Groups' earlier filings, this reply will briefly summarize those earlier responses in addressing the few points made by the District.

1. *UAA Factor 6 is plainly applicable in Subdocket B.* The District complains that UAA Factor 6, the federal standard for determining whether control measures required to meet proposed use designations are too costly, should not be part of the Subdocket B analysis of disinfection costs because the UAA factors apply only to the Subdocket A use determination. *See* District Comment Response at 2.

The District misstates the purpose and applicability of the UAA factors. The regulation setting forth the six UAA factors applies to the intertwined determination of what uses are physically attainable and the cost of the control measures necessary for attainment. The regulation states in pertinent part,

(g) States may remove a designated use which is not an existing use, as defined in § 131.3, or establish sub-categories of a use if the State can demonstrate that attaining the designated use is not feasible because:

(6) Controls more stringent than those required by Sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.

40 C.F.R. § 131.10(g). The overall issue addressed in subsection (g) is whether attaining a proposed use is feasible – either with respect to the physical limitations of the waterway, or

the economic cost of attainment through control measures. Ordinarily – and originally in this proceeding – these intertwined questions of physical and economic feasibility of attainment are addressed together. However, for purposes of convenience, in this case the Board split the analysis of physical attainability of uses (*i.e.* an assessment of inherent physical constraints in the configuration of the CAWS) and technical/economic attainability of those uses (*i.e.*, an assessment of the necessary control technology, disinfection) into separate subdockets. Accordingly, UAA Factors 1 through 5, which concern the physical constraints of the waterway, were addressed at length by the parties and the Board in Subdocket A. Factor 6, which expressly concerns feasibility of “controls” necessary to attain proposed uses, was reserved for discussion in Subdocket B.

The District itself, like every other party, adhered to this separation of issues. Its April 15, 2010 final comment in Subdocket A (PC # 295) does not address the issue of cost of disinfection at all, whether in terms of state law economic reasonableness analysis or Factor 6. As explained in the EG Final Comment, the state law economic reasonableness analysis must be performed in the context of the Factor 6 standard in a UAA evaluation required by the CWA. *See* EG Final Comment at 76-79. Having failed to address costs at all in Subdocket A, the District cannot now sandbag this essential analysis by claiming it doesn't belong in Subdocket B.

2. *Prior studies confirming risks of recreational use are not rendered invalid merely because they may address greater exposure levels.* The District asks the Board to disregard previous research concerning recreational risk and rely on the CHEERS study alone, largely because previous studies concerned recreational activities that may in some cases result in greater water exposure than the activities studied in CHEERS. District

Comment Response at 6-9. However, as explained at length in the EG Final Comment, there is overwhelming scientific consensus both that pathogen indicators are linked to health risk, and that water recreational activities of all kinds – both primary and secondary contact – are exposure pathways to that risk. *See* EG Final Comment at 8-12, 45-55. This association was confirmed by CHEERS as well. EG Final Comment at 48. The District is correct that CAWS users may in some cases have lower exposure levels than recreators studied elsewhere, since, as has been established, CHEERS recreators are profoundly cautious about getting wet. *See* EG Final Comment at 51-52. However, as the Environmental Groups have demonstrated at length, exposure assessment was a significant weak link in the CHEERS research, and any suggestion that the difference between CHEERS results and previous study results can be attributed to differing exposure levels is purely speculative. *See* EG Final Comment at 50-55. At most, CHEERS provides the impetus for further study of the correlation between exposure levels and risk. And it does nothing, as explained by both the Environmental Groups and USEPA and effectively admitted by Dr. Dorevich (*see* PC #562), to assess the risk associated with the far less inhibited level of exposure that takes place on cleaner waterbodies; or to address with sufficient statistical power the exposure risk to CAWS recreators who have the misfortune to fall in.

3. *The District's remaining complaints regarding previous recreational risk studies have no merit.* The District complains that the Taylor study cited by the Environmental Groups' witness Marylynn Yates addresses risk of schistosomiasis, which has not yet been documented in Illinois (although there have been outbreaks of it elsewhere in the U.S). However, it ignores the fact that the same study also addressed norovirus, which is very much present in the CAWS. *See* CHEERS Report at II-76. With regard to the Roberts

study showing heightened risk to anglers (*see* EG Final Comment at 48), the District nonsensically suggests that the documented risk to anglers in research designed and powered to study specifically this activity should be ignored in favor of the CHEERS research which was not. District Comment Response at 6.

4. *The “validity” of the CHEERS study is not at issue, its potential misuse is.*

The District argues that the CHEERS study must form the basis for the Board’s assessment of the necessity of disinfection because it is —*valid*.” District Comment Response at 11-19. To be perfectly clear, again, the Environmental Groups have never argued that the study is not —*valid*,” if by valid one means conducted in accordance with baseline requirements of scientific research. Neither have the Environmental Groups argued that it should be —*disregarded*” (*Id.* at 12). Rather, the Environmental Groups’ extensive comments on CHEERS argue that the Board should use extreme caution in concluding from it that disinfection is unnecessary given the study’s flaws and limitations (flagged by both the Environmental Groups and USEPA), and the fact that its results contravene volumes of established science concerning recreational health risks. The District is clearly correct that some (albeit not all) of the flaws in CHEERS identified by USEPA and the environmental groups are inherent in epidemiologic research. Indeed, the EG Final Comment makes that point at length. *See* EG Final Comment subsection III.A.2 (“The CHEERS Study Suffers from the Limitations Common to Epidemiologic Studies and All Scientific Research”) at 36 *et seq.* The fact that these limitations are pervasive in epidemiologic research is not a reasonable argument for disregarding them.

5. *USEPA has expressly reaffirmed the applicability of the 8 illnesses per 1,000 risk benchmark in this context.* The District questions use of USEPA’s risk benchmark of 8

illnesses per 1,000, greatly exceeded in both the CAWS and G UW according to CHEERS, because that benchmark has generally been applied to primary contact recreation, and because USEPA uses a different benchmark in marine waters. However, as pointed out in the Environmental Groups' January 31, 2011 Response to the District Final Comment (–EG Response”), USEPA expressly affirmed the applicability of the 8 per 1,000 benchmark in this context (and has shown no particular –flexibility” regarding its application elsewhere). EG Response at 6.

6. *There are many unaccounted-for differences between the CAWS and G UW besides the presence of undisinfected WWTP effluent.* The District attempts to gloss over perhaps the most significant shortcoming in CHEERS, pointed out by both USEPA and the Environmental Groups, which is that it compared sewage-contaminated CAWS waters to sewage-contaminated G UW waters in reaching its conclusion that GI illness rates were similar. In its Comment Response, it simply re-asserts the presence of undisinfected effluent in the CAWS as the relevant difference between the G UW and CAWS waters (District Comment Response at 7), without once addressing the specific facts presented by the Environmental Groups and USEPA showing that this is simply not the case. These facts include (i) the listing of many of the G UW on IEPA's 303(d) list as impaired for recreational use, (ii) the failure to account for the potential influence of CSOs, WWTPs, and CAWS backflows on G UW sewage contamination levels, (iii) the known heavy bacterial contamination at many Lake Michigan beaches, and (iv) the failure of CHEERS to address sharp differences in contamination and risk levels within the CAWS and G UW waters. See EG Final Comment at 33-36, USEPA CHEERS Comment (PC # 561), Comments of Tinka G. Hyde, Director, Water Division, USEPA, dated January 31, 2011 (PC # 580) (–USEPA

Comment Response”). (The District resurrects its specious argument that the latter point should be disregarded because Dr. Gorelick termed it with the shorthand “heterogeneity bias,” even though he explained at length on the record the specific nature of his concern, which the District has never substantively addressed. *See* 10/20/10 at 87-88.) The failure to meaningfully address the presence of significant sewage contamination in the G UW is fatal to any attempt to attach significance to similar GI illness rates found in the CAWS and the G UW.

7. *The District offers no meaningful defense of the Risk Assessment.* The District responds to the extensive critique of the Risk Assessment proffered by both the Environmental Groups and USEPA by asserting that, since it was performed by “nationally-recognized experts,” and the District has written a letter back to USEPA, the results of the Assessment should be accepted at face value. *See* District’s Response at 11. This non-substantive response of the District to the multiplicity of specific scientific concerns regarding the Risk Assessment presented in this proceeding, coupled with USEPA’s repeatedly-expressed concern that the District’s responses to those concerns are wholly inadequate, should rule out giving it serious consideration here. *See* EG Final Comment at 70-75.

8. *The District repeats two misinterpretations of the CHEERS data.* Once again, the District badly misinterprets both the significance of Dr. Dorevich’s supplemental analysis of the impact of handwashing (which reached the anomalous result that accounting for *more* handwashing by CAWS users contributes to *lower* rates of eye infection, *see* EG Comment Response at 2-3), and Dr. Gorelick’s testimony regarding statistical confidence levels and study replication (in which he explained that the “same” result within the 95 percent

confidence bounds could actually represent a very different result, *see Id.* at 2). District Comment Response at 8, 15.

9. *The District effectively acknowledges the possibility of heightened sensitivity of children.* The District asserts that current science regarding the sensitivity of children to infection from water recreation is not settled. Yet it acknowledges that USEPA has found evidence of such sensitivity (albeit still failing to acknowledge the substantial body of non-USEPA research also reaching this conclusion, EG Final Comment at 48, 55-57). *See* District Final Comment at 18. Moreover, the District addresses only the question of sensitivity in the specific context of water recreation, and does not acknowledge the larger body of more settled research that children have heightened sensitivity to infection. *Id.* at 55-57. (With respect to other sensitive subpopulations, such as the elderly and pregnant women, the District notes that USEPA did not evaluate them, but similarly disregards the settled consensus that these populations are sensitive as well, *see* EG Final Comment at 56.) Overall, the data gaps and varying results cited by the District concerning subpopulation sensitivity point to, at most, the possibility of further study of the matter, not disregard of the known heightened sensitivity to infection of 20-25 percent of the population. *See* EG Final Comment at 55, 57-60.

10. *The District has not substantively addressed the multiple flaws in its calculation of wet weather days.* The Environmental Groups presented numerous fairly gross flaws in the District's analysis supporting its calculation of the number of wet weather days influenced by CSO discharges. *See* EG Final Comment at 84-88. The District's response, boiled down, is that since making an estimate of lingering influence is complicated and difficult, it chose the assumption of two days of influence out of a hat. *See* District Final

Comment at 21-22. Aside from the fact that this assumption directly contradicts the conclusion reached by Dr. Dorevich and others that the lingering influence of CSOs is generally about 24 hours (*see* EG Comment Response at 5), it fails to address any of the other analytical flaws described in the EG Final Comment. The District's attempt to minimize the need to reduce WWTP contamination on dry weather days has no credibility and should be disregarded.

11. *Waiting for completion of research in support of an instream bacterial standard would unduly delay protection of public health.* The District suggests that the CHEERS study provides a basis for developing instream recreational water quality standards (which the District proposes be a narrative standard that essentially reflects its current permit requirements). *See* District Comment Response at 3-4. However, for all of the reasons set forth in the EG Final Comment, and not addressed by the District, CHEERS does not provide sufficient information to establish an instream standard. *See* EG Final Comment at 67-69. The ongoing research by USEPA in support of an instream standard is on a long timeline, and waiting for it to be completed, and then for IEPA to promulgate a new rule based on it, would result in an unacceptable delay in implementing a public health protection that is near-universal elsewhere in the U.S. *See* EG Final Comment at 4-6.

12. *The District's need for increased funding will materialize with or without disinfection.* The District reiterates the fact that a disinfection mandate would require legislative action or other means to enable the district to raise sufficient funds. District Final Comment at 24 - 25. However, as pointed out in the EG Final Comment, the District will have to go to the legislature in any case before 2016 to obtain additional levy authority. EG Final Comment at 78.

13. *The USEPA Comment Response (PC #580) reaffirms the Environmental Groups' conclusion that the District's nutrient removal estimates are badly inflated.* The District stakes its economic reasonableness argument in substantial part on the estimated cost of nutrient removal coupled with the cost of disinfection. However, USEPA concurs with the Environmental Groups' conclusion that the District's very high nutrient removal cost estimates are not supported by USEPA's *Municipal Nutrient Removal Technologies Reference Document*, which provides substantially lower estimates. *See* USEPA Comment Response (PC #580) at 6, EG Comment Response at 9-13.

CONCLUSION

For all of the reasons set forth in the Environmental Groups' submissions, the Board should adopt the proposal of the Illinois Environmental Protection Agency that an effluent standard of 400 cfu/100 ml be applied to the discharges into the CAWS.

.Dated: February 15, 2011

Respectfully submitted,

NATURAL RESOURCES DEFENSE
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OPENLANDS

SIERRA CLUB—ILLINOIS
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PRAIRIE RIVERS NETWORK

FRIENDS OF THE CHICAGO RIVER

ALLIANCE FOR THE GREAT LAKES

By:

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