BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	R18-32
AMENDMENTS TO GENERAL USE	)	(Rulemaking- Water)
WATER QUALTIY STANDARDS	)	
FOR CHLORIDES	)	

NOTICE OF FILING

Don Brown, Clerk of the Board
Illinois Pollution Control Board
James R. Thompson Center
100 West Randolph, Suite 11-500
Chicago, Illinois 60601
(**VIA Electronic Filing)**

Martin Klein
Hearing Officer
Illinois Pollution Control Board
James R. Thompson Center
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Chicago, Illinois 60601
(**VIA Electronic Filing)**

SEE ATTACHED SERVICE LIST

PLEASE TAKE NOTICE that I have filed electronically today with the Illinois Pollution Control Board ILLINOIS EPA'S QUESTIONS ON THE AMENDED PETITION, a copy of which is herewith served upon you.

ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By:/s/Stefanie N. Diers
Stefanie N. Diers
Assistant Counsel

Dated: May 30, 2019
1021 North Grand Avenue East
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BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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	)	R18-32
AMENDMENTS TO GENERAL USE	)	(Rulemaking- Water)
WATER QUALTIY STANDARDS FOR	)	
CHLORIDES	)	

ILLINOIS EPA'S QUESTIONS ON THE AMENDED PEITION

The Illinois Environmental Protection Agency ("Illinois EPA" or "Agency"), by and through its attorneys, hereby submits questions in response to the Board's Order of May 16, 2019.

Incorporation of available acute data

1) Table 1 of the amended petition now includes 24-hour acute toxicity values for *Lampsilis* glochidia reported by Gillis (2011), but the *Epioblasma* glochidia data from the same study was not added to the acute dataset. Addition of *Epioblasma* data to the acute dataset would result in this organism being the most acutely sensitive organism.

a) Why was the *Lampsilis* data entered, but not the *Epioblasma* data?

b) Please revise Table 1 to include a GMAV for *Epioblasma*, as well as any other newly available data, and recalculate the acute standards as needed.

Improper development of chronic standard

2) It appears you developed default vertebrate and invertebrate ACRs from the 13 chronically tested genera and applied these ACRs to all 33 GMAVs within Table 1 to derive 33 GMCVs. GMCVs are traditionally developed only for those genera that were chronically tested, whereas in this instance 20 of the 33 genera were not chronically tested. Further, and more importantly, using an artificially inflated number of GMCVs

(33) in the Final Chronic Value (FCV) calculations results in a FCV of 300 mg/L, which is 25% higher than what the true FCV would be (241 mg/L) if the correct number of GMCVs (13) were used in these calculations.

a) Is this approach consistent the methodology within the USEPA 1985 Guidelines?

b) Why was a default ACR of 3.45 utilized for invertebrate species that already had a species-specific ACR in Table 4 (e.g., *Procloeon fragile* has an actual ACR of 6.1)? Is this approach consistent the methodology within the USEPA 1985 Guidelines?

3) The use of the ACR approach for the development of chronic chloride standards is unnecessary. The availability of chronic chloride data allows for fulfillment of the eight minimum data requirements of USEPA, whereupon GMCVs can be developed without the use of ACRs and ranked based on lethal or sublethal responses to chronic chloride exposures (e.g., growth or reproductive EC20s).

a) Was an attempt made to rank the sensitivity of organisms that were actually tested for lethal or sublethal responses to chronic chloride exposures?

b) Can you please revise Table 4 to only include genera for which chronic chloride toxicity testing has been conducted on and provide the data in a hardness and sulfate normalized fashion?

c) Can you revise Table 2 with the reranked GMCVs and recalculate the FCV using the appropriate number of GMCVs in the dataset (i.e., 13 rather than 33)?

Vertebrate sensitivity

4) *Pimephales* was the second most sensitive GMCV in the dataset compiled for the Iowa chloride standard. When considering test organisms for the Illinois proposal, why was *Pimephales* not selected for temperature dependent chloride toxicity testing?

5) When developing the USEPA National Ammonia Criteria, USEPA determined that fish sensitivity to ammonia was temperature invariant. As a result, in cold-water scenarios the chronic ammonia criteria are driven by fish sensitivity (specifically *Lepomis*), as invertebrate sensitivities diminish under cooler temperatures and the invariant sensitivity of fish take precedence.

a) Is there evidence to suggest that vertebrates such as *Pimephales* would show greater tolerances to chloride under cold temperatures? If not, under colder conditions whereupon invertebrates show greater tolerance, could temperature invariant vertebrates be considered one of the four most sensitive taxa to chloride if the GMCVs were reranked?

b) Is the temperature dependent chloride tolerance of vertebrate species appropriately represented by the temperature slope that was developed using invertebrate species? If not, should a separate temperature slope be developed to appropriately account for vertebrate sensitivities to chloride under different temperatures?

Coldwater invertebrates

6) The petition states *"We know that growth and reproduction for most aquatic organisms are limited at colder water temperatures, which raises the question of the appropriateness of the many chronic concerns during the winter months. In addition, some species are absent from the water column during the winter months."*. While these statements hold merit, the Petition does not include chloride toxicity data for taxa that remain active during the winter months, nor does it include chloride toxicity data for taxa that continue to grow and reproduce under these conditions. For example, "Winter Stoneflies" (Family Capniidae) are emerge and mate during the winter months, but are inactive during warmer temperatures. Likewise, there are some species of midges (Family Chironomidae) such as the genus *Diamesa* ("snow-born midge") that emerge during the winter. These taxa are present in Illinois waters. Further, Dr. Soucek has

previously conducted acute toxicity testing with *Allocapnia vivipara* (winter stonefly) in support of the IPCB-approved boron standards. Given its preference of cold temperatures, testing for this organism was conducted at 12˚ C following ASTM E729 (2002) recommendations. Why was cold temperature testing with winter stoneflies or *Diamesa* not conducted?

Respectfully submitted,
ILLINOIS ENVIRONMENTAL
PROTECTION AGENCY

By: /s/Stefanie N. Diers
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CERTIFICATE OF SERVICE

I, STEFANIE N. DIERS, Assistant Counsel for the Illinois EPA, herein certifies that she has served a copy of the foregoing NOTICE OF FILING, and ILLINOIS EPA'S QUESTIONS ON THE AMENDED PETITION, upon persons listed on the Service List, by placing by sending an email from my email account (Stefanie.diers@illinois.gov) to the email addresses designated below with the following attached as a PDF document in an e-mail transmission on or before 5:00 pm on May 30, 2019.

/s/Stefanie N. Diers
Stefanie N. Diers
Assistant Counsel

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