BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

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

NOTICE OF FILING

TO:

Don Brown, Clerk of the Board
Illinois Pollution Control Board
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(SEE PERSONS ON ATTACHED SERVICE LIST)

PLEASE TAKE NOTICE that I have today filed with the Office of the Clerk of the Illinois Pollution Control Board the ILLINOIS DEPARTMENT OF NATURAL RESOURCES'S QUESTIONS AND COMMENTS concerning the rulemaking proposed by Huff & Huff to the Board's General Use water quality standards for chlorides, a copy of which are herewith served upon you.

Respectfully submitted,

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

By: Virginia D. Yang

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Dated: January 16, 2019

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QUESTIONS AND COMMENTS
OF THE ILLINOIS DEPARTMENT OF NATURAL RESOURCES

NOW COMES the Illinois Department of Natural Resources (IDNR), an Interested Party to the above referenced proceedings, by and through one of its Attorneys, Virginia I. Yang, to file THE ILLINOIS DEPARTMENT OF NATURAL RESOURCES' QUESTIONS AND COMMENTS to a rulemaking proposed by Huff & Huff to the Board's General Use water quality standards for chlorides, 35 Ill. Adm. Code 302.208(g), pursuant to its statutory authority under the Department of Natural Resources Act, 20 ILCS 801, the Interagency Wetland Policy Act of 1989, 20 ILCS 830, the Fish and Aquatic Life Code, 515 ILCS 5, the Illinois Endangered Species Protection Act, 520 ILCS 10, the Illinois Herptile-Herps Act, 510 68, the Illinois Natural Areas Preservation Act, 525 ILCS30, and the Illinois Natural Areas Stewardship Act, 525 ILCS 31, as follows:

I. RANGE OF CHLORIDE SENSITIVITIES FOR ILLINOIS AQUATIC SPECIES AND LIFE STAGES

How does the petitioner address the range of chloride sensitivities exhibited by Illinois' aquatic species and life stages?

Illinois' aquatic life is represented by approximately 217 extant species of fish, 65 mussels, 32 benthic crustaceans, and hundreds of aquatic insects and other invertebrates, plants and algae. These species and their life stages vary in sensitivity to chloride (Evans and Frick 2001, Bringolf, *et al.* 2007, Gillis 2011). Per the 1985 guidance (Stephan *et al.* 1985), the petitioner uses observed chloride sensitivity of just four aquatic species (i.e., a Cladoceran, an amphipod, a mayfly nymph and a clam from the family Sphaeriidae) in laboratory settings to derive proposed chloride standards. These test species and conditions do not capture the range of chloride sensitivities exhibited by Illinois' aquatic life, and overestimate chloride concentrations protective of Illinois' aquatic life.

The approach to deriving water quality standards based on laboratory toxicity tests using a limited number of representative species, like that used by the petitioner, is being re-evaluated by many professional scientists and science-based organizations (SETAC 2014, Buchwalter *et al.* 2017a, Buchwalter *et al.* 2017b, Warne *et al.* 2017). The USEPA (2016), the Canadian Council

of Ministers of the Environment (2007 and 2011), the Australian and New Zealand Environment and Conservation Council, and the Agriculture and Resource Management Council of Australia and New Zealand (ANZECC/ARMCANZ 2000, Warne *et al.* 2018) have applied *species sensitivity distributions* (SSDs) when identifying hazardous concentrations of a pollutant to develop water quality standards. SSDs are cumulative probability distributions that identify community-level responses to a focal pollutant and are used to identify a threshold at which the pollutant becomes hazardous to biological integrity (Belanger *et al.* 2016, Raimondo *et al.* 2008). SSDs are based on the species and environmental conditions present in the waters to which the standards will be applied.

Professionals and science-based organizations, both nationally and worldwide, are making advances to modernize water quality criteria derivation methods, including expanding the definition of "acceptable data" beyond limited toxicity test protocols (SETAC 2014, Buchwalter *et al.* 2017a, Buchwalter *et al.* 2017b, Warne *et al.* 2017).

IDNR recommends that the petitioner incorporate the full range of chloride sensitivity exhibited by Illinois aquatic life by means of utilizing more contemporary and community-based methods, such as SSDs, in developing chloride standards.

II. PROTECTION OF ILLINOIS AQUATIC LIFE FROM MORTALITY AND OTHER SUBLETHAL RESPONSES

How does the petitioner ensure the proposed chloride standards are protective of Illinois' aquatic life given that mortality and other sublethal responses that occur at chloride concentrations less than those required to produce the LD50?

The *median lethal dose* (i.e., LD50) is the amount of a substance required to kill 50% of exposed individuals. The petitioner uses the LD50 as the response endpoint in test organisms, but negative impacts occur to aquatic life at lower chloride concentrations and exposure periods. Common sublethal impacts include immobilization, reduced reproduction, reduced growth rate and reduced metabolic rates (Evans and Frick 2001). These sublethal impacts at chloride concentrations lower than the LD50 concentration were also observed in the petitioner's funded experiments (New England Bioassay 2016, Soucek and Dickinson 2018).

Both lethal and sublethal responses can reduce the likelihood of population persistence, and in the context of protected species, would be prohibited as "take" as defined by the Illinois Endangered Species Protection Act (520 ILCS 10/2).[1] Chloride standards derived from LD50s

[1] As defined by the Illinois Endangered Species Protection Act, 520 ILCS 10/2, " 'Take" means, in reference to animals…to *harm* (emphasis added), hunt, shoot, pursue, lure, wound, *kill, destroy, harass* (emphasis added), gig spear, ensnare, trap, capture, collect, or *attempt to engage in such conduct* (emphasis added). "

are not sufficiently protective of Illinois' aquatic life and likely would not sustain "propagation of fish, shellfish and wildlife" as required by the Clean Water Act (Section 303 (b)(2)(A)).

IDNR recommends the petitioner evaluate chloride sensitivity at lethal endpoints below the LD50 and sublethal endpoints for Illinois aquatic life.

III. IMPACT FROM INCREASED CHLORIDE CONCENTRATION IN ILLINOIS SURFACE WATER AND GROUNDWATER

To what extent will the proposed chloride standards contribute to increasing chloride in Illinois' surface water and groundwater?

Chloride concentrations are increasing in Illinois surface waters and groundwater. Data from the Illinois River at Peoria indicate chloride concentrations have been steadily increasing since the 1960s at a rate of: 1] 1.0 mg/L per year between 1960 and 2005, and 2] 3.1 mg/L per year between 1990 and 2005 (Kelly *et al.* 2010, Kelly *et al.* 2012, Kelly and Kuykendall 2018). Groundwater data exhibit similar trends (Kelly et al. 2012). The petition does not addressed how a relaxation of chloride standards would accelerate these trends. Specifically, the petition needs to examine the impact of its proposed chloride standards on Class III groundwater, 30 Ill. Adm. Code 620.230 – Class III Special Resources Groundwater, which could impact IDNR protection of dedicated lands protected under the Illinois Natural Areas Preservation Act (525 ILCS 30).

Permitting the increase of chloride into the surface waters and subsequently into the groundwaters of the State may not only harm the ecological resources and functions of these systems, but also impact the human services these systems provide (e.g., public water supply).

IDNR recommends further evaluation of contribution of the proposed chloride standard to the observed trends of increasing chloride in Illinois surface water and groundwater.

IV. ONE-PER-THREE-YEAR EXCEEDANCES INSUFFICIENT PROTECTION OF ILLINOIS AQUATIC LIFE

What is the justification for the "once-per-three-year" exceedances under the proposed water standards and its impact on Illinois aquatic life?

The proposed chloride standards allow exceedances, without a concentration limit, not more than once per three years, on average. Given the proposed standards are derived from the chloride concentration at which half of test organisms die, the proposed exceedances will cause mortality events. The intensity and extent of these mortality events is unknown, but chloride concentrations greater than those required to produce the LD100 (i.e., mortality of all individuals) in the petitioner-funded experiments (New England Bioassay 2016, Soucek and

Dickinson 2018) have been observed in Illinois' waters. These high chloride concentrations would be permissible under the proposed standards. Without additional protective means, the proposed chloride standard would cause mortality events on a known scale that are not protective of Illinois' aquatic life.

IDNR recommends the petitioner estimate the frequency and intensity of exceedances in Illinois waters and evaluate the response of Illinois' aquatic life to those exceedances.

V. ADVERSE IMPACT ON ILLINOIS AQUATIC LIFE TO CHLORIDES UNDER INCREASED WATER TEMPERATURES

How would water temperatures above those in the experiments used to derive the proposed chloride standards impact-Illinois' aquatic life?

The petitioner uses laboratory toxicity experiments at 10°C to derive winter period chloride standards with the following assumptions: 1] that these test conditions are representative of water temperatures during Illinois winter, and 2] that sensitivity of aquatic life to chloride decreases with temperature. Illinois stream and river temperatures exceed 10°C in 28% of IEPA winter period records during the most recent eleven years, and exceed 15°C in nearly 10% of those records (IEPA 2018). The adverse water quality impact from chlorides to Illinois aquatic life is more toxic as temperature increases. IDNR believes that the proposed winter period standards and the underlying toxicity experiments conducted by the petitioner are not sufficiently conservative for the protection of Illinois' aquatic life.

Similarly, the proposed non-winter chloride standards are derived from toxicity experiments conducted at 23°C or 25°C; however, approximately 14% of recorded temperatures within the Illinois during the past eleven years are above 25°C (IEPA 2018). With no provision for test conditions that are representative of state winter period temperatures, the information provided in the petition is insufficient to determine whether the proposed standards are protective of Illinois' aquatic life.

IDNR recommends that petitioner evaluate chloride sensitivities of Illinois' aquatic life at all seasonal range of temperatures occurring in Illinois waters.

VI. IMPACT ON EARLY AQUATIC LIFE STAGES DURING WINTER SEASON

Does the petitioner account for sensitive life stages of Illinois' aquatic life when delineating the temporal extent of the winter standards period?

Life stages of Illinois' aquatic life most sensitive to chloride will also be present during the winter period. Fish eggs and larvae are present in Illinois' waters in early spring (within the petitioner's proposed winter period) at water temperatures below 15°C (Smith 1979, Baker 1983, Jenkins and Burkhead 1994). These early aquatic life stages are more sensitive to chloride than that of adults (Evans and Frick 2001). Mussel glochidia are present in ripe females, in the water column or encysted on the gills of fish during the petitioner's proposed winter period (Watters, *et al.* 2009, Haag 2012), and glochidia are more sensitive to chloride than adults (e.g., Bringolf, *et al.* 2007, Gillis 2011). The proposed standards will expose those early life stages of Illinois' aquatic life, which are the most vulnerable to chlorides, to the highest permittable chloride concentrations.

IDNR recommends that petitioner evaluate timing of sensitive life history stages and incorporate relevant stages into the development of these proposed chloride standards.

VII. IMPACTS ARISING FROM VARIED SOURCES OF CHLORIDES

How do the proposed standards address the various sources of chloride in Illinois?

The 1988 Ambient Water Quality Criteria for chloride "are expected to be essentially equivalent to dissolved chloride concentrations" (USEPA 1988). The USEPA (1988) recognizes chlorides of potassium (K), calcium (Ca), and magnesium (Mg) as being generally more acutely toxic to aquatic life than sodium chloride (Biesinger and Christensen 1972, Dowden 1961, Dowden and Bennett 1965, Hamilton *et al.* 1975, Patrick *et al.* 1968, and Trama 1954; as cited in USEPA 1988). However, in 1988 when the USEPA established chloride standards, available data for chlorides of K, Ca, and Mg were not sufficient to inform the development of the water quality criterion. Studies at the time indicated that most anthropogenic chloride in ambient water was associated with sodium, rather than potassium, calcium, or magnesium (Dickman and Gochnauer 1978 and Sonzogni *et al.* 1983; as cited in USEPA 1988). More recently, statistics indicate a quarter of the metric tons of chloride entering the environment annually could be in the form of potassium chloride (Kelly *et al.* 2012).

Kelly *et al.* (2012) reports "anthropogenic sources [of chloride] include human sewage, livestock waste, water conditioning salt [predominately NaCl], synthetic fertilizer (primarily KCl), brine disposal pits associated with oil fields, chemical and other industries, and, in snowy climes, road salt runoff." The petitioner focuses discussion on the use of road salts during storm events in the Chicago region as a source of chloride in urban areas, but studies indicate agricultural sources of chloride are of great importance in rural areas, and in the southern two-thirds of Illinois, oil field-related sources of chloride are problematic (Kelly *et al.* 2012). Road salt (generally in the form of NaCl) accounts for approximately 30% of the metric tons of chloride entering the environment each year with fertilizer (commonly in the form of KCl) accounting for approximately 24%

(Kelly *et al.* 2012). Livestock, water treatment, and water conditioning account for approximately 9, 8, and 8 % of the total metric tons of chloride, respectively

Because of these multiple forms of chlorides (e.g., K, Ca, Mg) with differing toxicities, the multiple sources of chloride statewide, and regional differences in abundance of these compounds, it is critical to understand the chlorides from these other elements and the relative toxicity testing of such compounds.

IDNR recommends petitioner estimate the spatiotemporal prevalence and toxicity of chlorides other than NaCL and use these estimates to evaluate impact to Illinois' aquatic life.

VIII. WATER QUALITY IMPACTS UPON SEMI-AQUATIC COMMUNITY-TYPES/HABITATS

Does the petitioner account for water quality changes that may occur in semi-aquatic community-types/habitats, such as wetlands, and the biota that inhabit them if the proposed chloride standards are approved?

As found in conditions of northeastern Illinois fens, vegetation diversity was reduced and shifted to more salt-tolerant species when chloride concentrations exceeded 45mg/L (Panno *et al.* 1999). Such changes in these communities can alter species richness of most biological groups and decrease biodiversity (Herbert *et al.* 2015).

IDNR recommends that petitioner conduct additional evaluation of semi-aquatic communities and potential chloride impacts arising from the proposed chloride standards.

Finally, the IDNR notes that technical information resources normally available from federal entities, such as the U.S. Geological Survey, the U.S. Fish and Wildlife Service, National Oceanic Atmospheric Administration, etc., as well as federal scientists are currently not available due the ongoing federal government shutdown. This shutdown also affects the availability to access federal databases for federal research projects, reports, surveys, etc. The benefit of accessing such federal resources would be identifying current up-to-date data relevant to the technical data prepared and presented by the petitioner in this rulemaking proceedings concerning state water quality standards for chlorides.

Respectfully submitted,

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Attachment A

IDNR Listing for Cited Literature

Australian and New Zealand Environment and Conservation Council and Resource Council of Australia and New Zealand. 2000. Australian and New Zealand guidelines for fresh and marine water quality, volume 1.

Becker, G.C. 1983. Fishes of Wisconsin. University of Wisconsin Press, Madison, Wisconsin.

Belanger, S., M. Barron, P. Craig, S. Dyer, M. Galay-Burgos, M. Hamer, S. Marshall, L. Posthuma, S. Raimondo and P. Whitehouse. 2016. Future needs and recommendations in the development of species sensitivity distribution: Estimating toxicity thresholds for aquatic ecological communities and assessing impact of chemical exposures. Integrated Environmental Assessment and Management, 13(4), 664-674.

Bringolf, R.B., W.G. Cope, C.B. Eads, P.R. Lazaro, M.C. Barnhart and D. Shea. 2007. Acute and chronic toxicity of technical-grade pesticides to glochidia and juveniles of freshwater mussels (Unionidae). Environmental Toxicology and Chemistry, 26(10), 2086-2093.

Buckwalter, D.B., W.H. Clements and S. N. Luoma. 2017a. Modernizing water quality criteria in the United States: A need to expand the definition of acceptable data. Environmental Toxicology and Chemistry, 36(2), 285-291.

Buckwalter, D.B., W.H. Clements and S. N. Luoma. 2017b. Letter to the Editor. Environmental Toxicology and Chemistry, 36(6), 1425-1426.

Canadian Council of Ministers of the Environment. 2007. A protocol for derivation of water quality guidelines for the protection of aquatic life. Canadian Council of Ministers of the Environment, Winnipeg.

Canadian Council of Ministers of the Environment. 2011. Canadian water quality guidelines for the protection of aquatic life: Chloride. Canadian Council of Ministers of the Environment, Winnipeg.

Evans, M. and C. Frick. 2001. The effects of road salts on aquatic ecosystems. Environment Canada Water and Science Directorate. WSTD Contribution No. 02-308.

Gillis, P.L. 2011. Assessing the toxicity of sodium chloride to the glochidia of freshwater mussels: Implications for salinization of surface waters. Environmental Pollution, 159(2011), 1702-1708.

Haag, W.R. 2012. North American Freshwater Mussels: Natural History, Ecology and Conservation. Cambridge University Press, Cambridge, United Kingdom.

Herbert, E.R., P. Boon, A.J. Burgin, S.C. Neubauer, R.B. Franklin, M. Ardon, K.N. Hopfendsperger, L.P.M. Lamers, and P. Gell. 2015. A global perspective on wetland salinization: Ecological consequences of a growing threat to freshwater wetlands. ECOSPHERE, 6(10), 1-43.

Illinois Environmental Protection Agency. 2018. Unpublished chloride, total dissolved solids and temperature data. Received 12/17/2018 for Illinois Environmental Protection Agency.

Jenkins, R.E. and N.M. Burkhead. 1994. Freshwater Fishes of Virginia. American Fisheries Society, Bethesda, Maryland.

Kelly, W.R., S.V. Panno, K.C. Hackley, H-H. Hwang, A.T. Martinsek and M. Markus. 2010. Using chloride and other ions to trace sewage and road salt in the Illinois Waterway. Applied Geochemistry, 25(2010), 661-673.

Kelly, W.R., S.V. Panno and K. Hackley. 2012. The sources, distribution and trends of chloride in waters of Illinois. Illinois State Water Survey Bulletin B-74.

Kelly, W.R. and S. Kuykendall. 2018. Sensible salting in the Chicago region: How to maintain public safety while reducing road salt. Northwest Water Planning Alliance.

New England Bioassay. 2016. Acute toxicity test report: Chronic toxicity testing at 10°C and 25°C using *Ceriodaphnia dubia*. Submitted to Huff & Huff, a subsidiary of GZA.

Panno, S.V., V.A. Nuzzo, K. Cartwright, B.R. Hensel, and I.G. Krapac. 1999. Impact of urban development on the chemical composition of ground water in a fen-wetland complex. Wetlands, 9(1), 236-245.

Raimondo, S., D.N. Vivian, C. Delos and M.G. Barron. 2008. Protectiveness of species sensitivity distribution hazard concentrations for acute toxicity used in endangered species risk assessment. Environmental Toxicology and Chemistry, 27(12), 2599-2607.

Smith, P.W. 1979. The Fishes of Illinois. University of Illinois Press, Urbana, Illinois.

Society of Environmental Toxicology and Chemistry. 2014. Technical Workshop on Freshwater Salinization. BurgLudwigstein Castle, Germany. March 10-13.

Soucek, D.J. and A. Dickinson. 2018. Influence of temperature on acute and chronic toxicity of sodium chloride to selected freshwater invertebrates. Submitted to Huff & Huff, a subsidiary of GZA

Stephan, C.E., D.I. Mount, D.J. Hansen, J.H. Gentile, G.A. Chapman and W.A. Brungs. 1985. Guidelines for deriving numerical national water quality criteria for the protection of aquatic organisms and their uses. PB85-227049. National Technical Information Service, Springfield, VA.

United States Environmental Protection Agency. 2016. Public Review Draft: Field-based methods for developing aquatic life criteria for specific conductivity. USEPA Office of Water, EPA-822-R-07-010.

Warne, M.S., van Dam, R.A., G.E. Batley and J.L. Stauber. 2017. Response to Buchwalter *et al.* Further consideration for modeling water quality criteria in the United States and elsewhere. Environmental Toxicology and Chemistry, 36(6), 1422-1424.

Warne, M.S., G.E. Batley, R.A. van Dam, J.C. Chapman, D.R. Fox, C.W. Hickey and J.L. Stauber. 2018. Revised method for deriving Australian and New Zealand guideline values for toxicants – updated of 2015 version. Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Governments and Australian State and Territory Governments.

Watters, G.T. and S.H. O'Dee. 1998. Glochidial release as a function of water temperature: Beyond bradyticty and tachyticty. Proceedings of the Conservation, Captive Care and Propagation of Freshwater Mussels Symposium, 1998, 135-140.

CERTIFICATE OF SERVICE

I, Virginia I. Yang, Legal Counsel for the Illinois Department of Natural Resources, herein certify that I have served a copy of the foregoing QUESTIONS AND COMMENTS OF THE ILLINOIS DEPARTMENT OF NATURAL RESOURCES, via electronic mailing upon:

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