ILLINOIS POLLUTION CONTROL BOARD
July 30, 2018

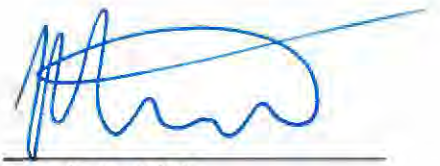
IN THE MATTER OF	)	
	)	
AMENDMENTS TO GENERAL USE	)	R18-32
WATER QUALITY STANDARDS	)	(Rulemaking – Water)
FOR CHLORIDE	)	

HEARING OFFICER ORDER

A prehearing conference was held on July 26, 2018 to schedule hearings. Present at the prehearing conference were the proponent, the Illinois Environmental Protection Agency (IEPA), and Mr. Sims from ExxonMobil Oil Corp. IEPA explained they are in discussions with USEPA regarding the proposed rule. IEPA requested that scheduling of hearings be postponed until at least October as those discussion continue. No participant objected to postponing scheduling of hearings. No date was scheduled for a prehearing conference, but participants agreed that a date for a prehearing conference in early October 2018 is acceptable.

Also, participants were informed that an addendum of the proposed rule language will be included with this hearing officer order. The addendum contains the proposed rule. And in addition to the proponent's rule language, the addendum contains non-substantive amendments of the type often requested by Joint Committee on Administrative Rules and the Illinois Secretary of State, Code Division. All amendments or modifications to the proponent's rule language are to be based on this addendum.

IT IS SO ORDERED.



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RULEMAKING ADDENDUM
TO THE JULY 30, 2018 HEARING OFFICER ORDER
Proposed Amendments to 35 Ill. Adm. Code 302

TITLE 35: ENVIRONMENTAL PROTECTION
SUBTITLE C: WATER POLLUTION
CHAPTER I: POLLUTION CONTROL BOARD

PART 302
WATER QUALITY STANDARDS

SUBPART A: GENERAL WATER QUALITY PROVISIONS

Section
302.100 Definitions
302.101 Scope and Applicability
302.102 Allowed Mixing, Mixing Zones and ZIDs
302.103 Stream Flows
302.104 Main River Temperatures
302.105 Antidegradation

SUBPART B: GENERAL USE WATER QUALITY STANDARDS

Section
302.201 Scope and Applicability
302.202 Purpose
302.203 Offensive Conditions
302.204 pH
302.205 Phosphorus
302.206 Dissolved Oxygen
302.207 Radioactivity
302.208 Numeric Standards for Chemical Constituents
302.209 Fecal Coliform
302.210 Other Toxic Substances
302.211 Temperature
302.212 Total Ammonia Nitrogen
302.213 Effluent Modified Waters (Ammonia)(Repealed)
<u>302.214 Chlorides</u>

SUBPART C: PUBLIC AND FOOD PROCESSING WATER SUPPLY STANDARDS

Section
302.301 Scope and Applicability
302.302 Algicide Permits
302.303 Finished Water Standards
302.304 Chemical Constituents

SUBPART D: CHICAGO AREA WATERWAY SYSTEM AND LOWER DES PLAINES RIVER WATER QUALITY AND INDIGENOUS AQUATIC LIFE STANDARDS

SUBPART E: LAKE MICHIGAN BASIN WATER QUALITY STANDARDS

SUBPART F: PROCEDURES FOR DETERMINING WATER QUALITY CRITERIA

Section

AUTHORITY: Implementing Section 13 and authorized by Sections 11(b) and 27 of the Environmental Protection Act [415 ILCS 5/13, 11(b), and 27].

SOURCE: Filed with the Secretary of State January 1, 1978; amended at 2 Ill. Reg. 44, p. 151, effective November 2, 1978; amended at 3 Ill. Reg. 20, p. 95, effective May 17, 1979; amended at 3 Ill. Reg. 25, p. 190, effective June 21, 1979; codified at 6 Ill. Reg. 7818; amended at 6 Ill. Reg. 11161, effective September 7, 1982; amended at 6 Ill. Reg. 13750, effective October 26, 1982; amended at 8 Ill. Reg. 1629, effective January 18, 1984; peremptory amendments at 10 Ill. Reg. 461, effective December 23, 1985; amended at R87-27 at 12 Ill. Reg. 9911, effective May 27, 1988; amended at R85-29 at 12 Ill. Reg. 12082, effective July 11, 1988; amended in R88-1 at 13 Ill. Reg. 5998, effective April 18, 1989; amended in R88-21(A) at 14 Ill. Reg. 2899, effective February 13, 1990; amended in R88-21(B) at 14 Ill. Reg. 11974, effective July 9, 1990; amended in R94-1(A) at 20 Ill. Reg. 7682, effective May 24, 1996; amended in R94-1(B) at 21 Ill. Reg. 370, effective December 23, 1996; expedited correction at 21 Ill. Reg. 6273, effective December 23, 1996; amended in R97-25 at 22 Ill. Reg. 1356, effective December 24, 1997; amended in R99-8 at 23 Ill. Reg. 11249, effective August 26, 1999;

amended in R01-13 at 26 Ill. Reg. 3505, effective February 22, 2002; amended in R02-19 at 26 Ill. Reg. 16931, effective November 8, 2002; amended in R02-11 at 27 Ill. Reg. 166, effective December 20, 2002; amended in R04-21 at 30 Ill. Reg. 4919, effective March 1, 2006; amended in R04-25 at 32 Ill. Reg. 2254, effective January 28, 2008; amended in R07-9 at 32 Ill. Reg. 14978, effective September 8, 2008; amended in R11-18 at 36 Ill. Reg. 18871, effective December 12, 2012. ; amended in R11-18(B) at 37 Ill. Reg. 7493 effective May 16, 2013, amended at in R08-09(D) at 39 Ill. Reg. 9388, effective July 1, 2015; amended in R18-32 at 42 Ill. Reg._____, effective_____.

Section 302.208 Numeric Standards for Chemical Constituents

a) The acute standard (AS) for the chemical constituents listed in subsection (e) must~~shall~~ not be exceeded at any time except for those waters for which a zone of initial dilution (ZID) has been approved by the Agency under~~pursuant to~~ Section 302.102.

b) The chronic standard (CS) for the chemical constituents listed in subsection (e) must~~shall~~ not be exceeded by the arithmetic average of at least four consecutive samples collected over any period of at least four days, except for those waters in which the Agency has approved a mixing zone or in which mixing is allowed under~~pursuant to~~ Section 302.102. The samples used to demonstrate attainment or lack of attainment with a CS must be collected in a manner that assures an average representative of the sampling period. For the chemical constituents that have water quality based standards dependent upon hardness, the chronic water quality standard will be calculated according to subsection (e) using the hardness of the water body at the time the sample was collected. To calculate attainment status of chronic standards, the concentration of the chemical constituent in each sample is divided by the calculated water quality standard for the sample to determine a quotient. The water quality standard is attained if the mean of the sample quotients is less than or equal to one for the duration of the averaging period.

c) The human health standard (HHS) for the chemical constituents listed in subsection (f) must~~shall~~ not be exceeded when the stream flow is at or above the harmonic mean flow under~~pursuant to~~ Section 302.658 nor must~~shall~~ an annual average, based on at least eight samples, collected in a manner representative of the sampling period, exceed the HHS except for those waters in which the Agency has approved a mixing zone or in which mixing is allowed under~~pursuant to~~ Section 302.102.

d) The standard for the chemical constituents of subsections (g) and (h) must~~shall~~ not be exceeded at any time except for those waters in which the Agency has approved a mixing zone or in which mixing is allowed under~~pursuant to~~ Section 302.102.

e) Numeric Water Quality Standards for the Protection of Aquatic Organisms

Constituent	AS (µg/L)	CS (µg/L)
Arsenic (trivalent, dissolved)	360 × 1.0* = 360	190 × 1.0* = 190
Boron (total)	40,100	7,600
Cadmium (dissolved)	$e^{A+B\ln(H)} \times \left\{1.138672 - [(\ln(H))(0.041838)]\right\}$*	$e^{A+B\ln(H)} \times \left\{1.101672 - [(\ln(H))(0.041838)]\right\}$*
	where A = -2.918 and B = 1.128	where A = -3.490 and B = 0.7852
Chromium (hexavalent, total)	16	11
Chromium (trivalent, dissolved)	$e^{A+B\ln(H)} \times 0.316$*	$e^{A+B\ln(H)} \times 0.860$*
	where A = 3.688 and B = 0.8190	where A = 1.561 and B = 0.8190
Copper (dissolved)	$e^{A+B\ln(H)} \times 0.960$*	$e^{A+B\ln(H)} \times 0.960$*
	where A = -1.464 and B = 0.9422	where A = -1.465 and B = 0.8545
Cyanide**	22	5.2
Fluoride (total)	$e^{A+B\ln(H)}$	$e^{A+B\ln(H)}$, but must~~shall~~ not exceed 4.0 mg/L
	where A = 6.7319 and B = 0.5394	where A = 6.0445 and B = 0.5394
Lead (dissolved)	$e^{A+B\ln(H)} \times \{1.46203 - [(\ln(H))(0.145712)]\}$*	$e^{A+B\ln(H)} \times \{1.46203 - [(\ln(H))(0.145712)]\}$*
	where A = -1.301 and B = 1.273	where A = -2.863 and B = 1.273

Manganese (dissolved)	$e^{A+B\ln(H)} \times 0.9812$*	$e^{A+B\ln(H)} \times 0.9812$*
	where A = 4.9187 and B = 0.7467	where A = 4.0635 and B = 0.7467
Mercury (dissolved)	2.6 × 0.85* = 2.2	1.3 × 0.85* = 1.1
Nickel (dissolved)	$e^{A+B\ln(H)} \times 0.998$*	$e^{A+B\ln(H)} \times 0.997$*
	where *A* = 0.5173 and *B* = 0.8460	where *A* = -2.286 and *B* = 0.8460
TRC	19	11
Zinc (dissolved)	$e^{A+B\ln(H)} \times 0.978$*	$e^{A+B\ln(H)} \times 0.986$*
	where *A* = 0.9035 and *B* = 0.8473	where *A* = -0.4456 and *B* = 0.8473
Benzene	4200	860
Ethylbenzene	150	14
Toluene	2000	600
Xylene(s)	920	360

where:

µg/L	=	microgram per liter
e^x	=	base of natural logarithms raised to the x-power
ln(*H*)	=	natural logarithm of Hardness
*	=	conversion factor multiplier for dissolved metals
**	=	standard to be evaluated using either of the following USEPA approved methods, incorporated by reference at 35 Ill. Adm. Code 301.106: Method OIA-1677, DW: Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry, January 2004, Document Number EPA-821-R-04-001 or Cyanide Amenable to Chlorination, Standard Methods 4500-CN-G (40

CFR 136.3)

f) Numeric Water Quality Standard for the Protection of Human Health

Constituent	(µg/L)
Mercury (total)	0.012
Benzene	310

where:
µg/L = micrograms per liter

g) Single-value standards apply at the following concentrations for these substances:

Constituent	Unit		Standard
Barium (total)	mg/L		5.0
~~Chloride (total)~~	~~mg/L~~		~~500~~
Iron (dissolved)	mg/L	~~01046~~	1.0
Phenols	mg/L		0.1
Selenium (total)	mg/L		1.0
Silver (total)	µg/L		5.0

where:
mg/L = milligram per liter and
µg/L = microgram per liter

h) Water quality standards for sulfate are as follows:

1) At any point where water is withdrawn or accessed for purposes of livestock watering, the average of sulfate concentrations must not exceed 2,000 mg/L when measured at a representative frequency over a 30-day period.

2) The results of the following equations provide sulfate water quality standards in mg/L for the specified ranges of hardness (in mg/L as $CaCO_3$) and chloride (in mg/L) and must always be met ~~at all times~~:

A) If the hardness concentration of receiving waters is greater than or equal to 100 mg/L but less than or equal to 500 mg/L, and if the chloride concentration of waters is greater than or equal to 25 mg/L but less than or equal to 500 mg/L, then:

C = [1276.7 + 5.508 (hardness) - 1.457 (chloride)] * 0.65

where:

C = sulfate concentration

B) If the hardness concentration of waters is greater than or equal to 100 mg/L but less than or equal to 500 mg/L, and if the chloride concentration of waters is greater than or equal to 5 mg/L but less than 25 mg/L, then:

C = [-57.478 + 5.79 (hardness) + 54.163 (chloride)] * 0.65

where:

C = sulfate concentration

3) The following sulfate standards must be met at all times when hardness (in mg/L as $CaCO_3$) and chloride (in mg/L) concentrations other than specified in (h)(2) are present:

A) If the hardness concentration of waters is less than 100 mg/L or chloride concentration of waters is less than 5 mg/L, the sulfate standard is 500 mg/L.

B) If the hardness concentration of waters is greater than 500 mg/L and the chloride concentration of waters is 5 mg/L or greater, the sulfate standard is 2,000 mg/L.

C) If the combination of hardness and chloride concentrations of existing waters are not reflected in subsection (h)(3)(A) or (B), the sulfate standard may be determined in a site-specific rulemaking underpursuant to section 303(c) of the Federal Water Pollution Control Act of 1972 (Clean Water

Act), 33 USC 1313, and Federal Regulations at 40 CFR 131.10(j)(2).

(Source: Amended at 42 Ill. Reg. _____, effective _____)

Section 302.214 Chlorides

a) From May 1st to November 30th:

1) an acute chloride standard of 860 mg/L must not be exceeded more than once every three years on the average, except for those waters for which a zone of initial dilution (ZID) has been approved by the Agency under Section 302.102.

2) a chronic chloride standard of 230 mg/L must not be exceeded more than once every three years by the arithmetic average of at least four consecutive samples collected over any period of four days, except for those waters for which a zone of initial dilution (ZID) has been approved by the Agency under Section 302.102.

b) From December 1st to April 30th:

1) an acute chloride standard of 1,010 mg/L must not be exceeded more than once every three years on the average, except for those waters for which a zone of initial dilution (ZID) has been approved by the Agency under Section 302.102.

2) a chronic chloride standard of 640 mg/L must not be exceeded more than once every three years by the arithmetic average of at least four consecutive samples collected over any period of four days. The samples used to demonstrate attainment or lack of attainment with a chloride standard must be collected in a manner that assures an average representative of the sampling period.

(Source: Added at 42 Ill. Reg. _____, effective _____)