

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

Pursuant to the authority of Iowa Code sections 455B.105 and 455B.173, the Environmental Protection Commission hereby amends Chapter 61, “Water Quality Standards,” and Chapter 62, “Effluent and Pretreatment Standards: Other Effluent Limitations or Prohibitions,” Iowa Administrative Code.

Notice of Intended Action was published in the Iowa Administrative Bulletin on June 17, 2009, as **ARC 7853B**. Seven public hearings were held with notice of the hearings sent to various individuals, organizations, associations and interest groups, and to statewide news network organizations. Comments were received from approximately 16 persons and organizations. No comments were received that resulted in any substantial changes to the proposed amendments. A responsiveness summary addressing the comments can be obtained from the Department of Natural Resources.

The adopted amendments change the Commission’s Water Quality Standards (WQS) as summarized below. The changes:

- Establish numerical water quality criteria for chloride for the protection of aquatic life uses.
- Establish numerical water quality criteria for sulfate for the protection of aquatic life uses.
- Update the effective date of references to the “Supporting Document for Iowa Water Quality Management Plans” found in 567—Chapters 61 and 62 to reflect the removal of the total dissolved solids site-specific approach and the revision of the sulfate ion guideline value.
- Revise the default hardness level used for hardness-dependent chemical criteria from 100 mg/l (as CaCO₃) to 200 mg/l.

Additional information on Iowa’s Water Quality Standards and the Department’s rules can be found on the Department’s Web site at <http://www.iowadnr.com/water/standards/index.html>.

These amendments may have an impact upon small businesses.

These amendments are intended to implement Iowa Code chapter 455B, division III, part 1.

These amendments will become effective November 11, 2009.

The following amendments are adopted.

ITEM 1. Strike “June 16, 2004” wherever it appears in **567—Chapter 61** and **Chapter 62** and insert “November 11, 2009” in lieu thereof.

ITEM 2. Amend paragraph **61.3(2)“g”** as follows:

~~g. Acceptable levels of total dissolved solids (TDS) and constituent cations and anions will be established on a site-specific basis. The implementation approach for establishing the site-specific levels~~ Cations and anions guideline values to protect livestock watering may be found in the “Supporting Document for Iowa Water Quality Management Plans,” Chapter IV, July 1976, as revised on November 11, 2009.

ITEM 3. Amend subrule **61.3(3)**, TABLE 1. Criteria for Chemical Constituents, parameters for cadmium, chloride, copper, lead, nickel and zinc, as follows:

Parameter		Use Designations							
		B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)	C	HH
Cadmium	Chronic	1	—	.27(h) .45(h)	.27(h) .45(h)	.27(h) .45(h)	1	—	—
		Acute	4	—	2.13(h) 4.32(h)	2.13(h) 4.32(h)	2.13(h) 4.32(h)	4	—
	Human Health + — Fish		—	—	—	—	—	—	—
	MCL	—	—	—	—	—	—	5	—
Chloride	Chronic	389(m)*	389(m)*	389(m)*	389(m)*	389(m)*	389(m)*	—	—

Parameter		Use Designations							
		B(CW1)	B(CW2)	B(WW-1)	B(WW-2)	B(WW-3)	B(LW)	C	HH
		629(m)*	629(m)*	629(m)*	629(m)*	629(m)*	629(m)*	—	—
	MCL	—	—	—	—	—	—	250*	—
Copper	Chronic	20	—	9.3 16.9(i)	9.3 16.9(i)	9.3 16.9(i)	10	—	—
		30	—	14 26.9(i)	14 26.9(i)	14 26.9(i)	20	—	—
	Human Health + — Fish	—	—	—	—	—	—	—	1000(e)
	Human Health + — F & W	—	—	—	—	—	—	—	1300(f)
	Acute	—	—	—	—	—	—	—	—
Lead	Chronic	3	—	3.2 7.7(i)	3.2 7.7(i)	3.2 7.7(i)	3	—	—
		80	—	81.7 197(i)	81.7 197(i)	81.7 197(i)	80	—	—
	Acute	—	—	—	—	—	—	—	—
	MCL	—	—	—	—	—	—	50	—
Nickel	Chronic	350	—	52 93(k)	52 93(k)	52 93(k)	150	—	—
		3250	—	470 843(k)	470 843(k)	470 843(k)	1400	—	—
	Human Health + — Fish	—	—	—	—	—	—	—	4600(e)
	Human Health + — F & W	—	—	—	—	—	—	—	610(f)
	Acute	—	—	—	—	—	—	—	—
Zinc	Chronic	200	—	120 215(l)	120 215(l)	120 215(l)	100	—	—
		220	—	120 215(l)	120 215(l)	120 215(l)	110	—	—
	Human Health + — Fish	—	—	—	—	—	—	—	26*(e)
	Human Health + — F & W	—	—	—	—	—	—	—	7.4*(f)
	Acute	—	—	—	—	—	—	—	—

* units expressed as milligrams/liter

ITEM 4. Amend subrule **61.3(3)**, TABLE 1. Criteria for Chemical Constituents, footnotes (h) to (l), as follows:

- (h) Class B(WW-1), B(WW-2), and B(WW-3) criteria listed in main table are based on a hardness of ~~400~~ 200 mg/l (as CaCO₃ (mg/l)). Numerical criteria (µg/l) for cadmium are a function of hardness (as CaCO₃ (mg/l)) using the equation for each use according to the following table:

	B(WW-1)	B(WW-2)	B(WW-3)
Acute	$e^{[1.0166\text{Ln}(\text{Hardness}) - 3.924]}$	$e^{[1.0166\text{Ln}(\text{Hardness}) - 3.924]}$	$e^{[1.0166\text{Ln}(\text{Hardness}) - 3.924]}$
Chronic	$e^{[0.7409\text{Ln}(\text{Hardness}) - 4.719]}$	$e^{[0.7409\text{Ln}(\text{Hardness}) - 4.719]}$	$e^{[0.7409\text{Ln}(\text{Hardness}) - 4.719]}$

- (i) Class B(WW-1), B(WW-2), and B(WW-3) criteria listed in main table are based on a hardness of ~~400~~ 200 mg/l (as CaCO₃ (mg/l)). Numerical criteria (µg/l) for copper are a function of hardness (CaCO₃ (mg/l)) using the equation for each use according to the following table:

	B(WW-1)	B(WW-2)	B(WW-3)
Acute	$e^{[0.9422\text{Ln}(\text{Hardness}) - 1.700]}$	$e^{[0.9422\text{Ln}(\text{Hardness}) - 1.700]}$	$e^{[0.9422\text{Ln}(\text{Hardness}) - 1.700]}$
Chronic	$e^{[0.8545\text{Ln}(\text{Hardness}) - 1.702]}$	$e^{[0.8545\text{Ln}(\text{Hardness}) - 1.702]}$	$e^{[0.8545\text{Ln}(\text{Hardness}) - 1.702]}$

- (j) Class B(WW-1), B(WW-2), and B(WW-3) criteria listed in main table are based on a hardness of ~~400~~ 200 mg/l (as CaCO₃ (mg/l)). Numerical criteria (µg/l) for lead are a function of hardness (CaCO₃ (mg/l)) using the equation for each use according to the following table:

	B(WW-1)	B(WW-2)	B(WW-3)
Acute	$e^{[1.2731\text{Ln}(\text{Hardness}) - 1.46]}$	$e^{[1.2731\text{Ln}(\text{Hardness}) - 1.46]}$	$e^{[1.2731\text{Ln}(\text{Hardness}) - 1.46]}$
Chronic	$e^{[1.2731\text{Ln}(\text{Hardness}) - 4.705]}$	$e^{[1.2731\text{Ln}(\text{Hardness}) - 4.705]}$	$e^{[1.2731\text{Ln}(\text{Hardness}) - 4.705]}$

- (k) Class B(WW-1), B(WW-2), and B(WW-3) criteria listed in main table are based on a hardness of ~~400~~ 200 mg/l (as CaCO₃ (mg/l)). Numerical criteria (µg/l) for nickel are a function of hardness (CaCO₃ (mg/l)) using the equation for each use according to the following table:

	B(WW-1)	B(WW-2)	B(WW-3)
Acute	$e^{[0.846\text{Ln}(\text{Hardness}) + 2.255]}$	$e^{[0.846\text{Ln}(\text{Hardness}) + 2.255]}$	$e^{[0.846\text{Ln}(\text{Hardness}) + 2.255]}$
Chronic	$e^{[0.846\text{Ln}(\text{Hardness}) + 0.0584]}$	$e^{[0.846\text{Ln}(\text{Hardness}) + 0.0584]}$	$e^{[0.846\text{Ln}(\text{Hardness}) + 0.0584]}$

- (l) Class B(WW-1), B(WW-2), and B(WW-3) criteria listed in main table are based on a hardness of ~~400~~ 200 mg/l (as CaCO₃ (mg/l)). Numerical criteria (µg/l) for zinc are a function of hardness (CaCO₃ (mg/l)) using the equation for each use according to the following table:

	B(WW-1)	B(WW-2)	B(WW-3)
Acute	$e^{[0.8473\text{Ln}(\text{Hardness}) + 0.884]}$	$e^{[0.8473\text{Ln}(\text{Hardness}) + 0.884]}$	$e^{[0.8473\text{Ln}(\text{Hardness}) + 0.884]}$
Chronic	$e^{[0.8473\text{Ln}(\text{Hardness}) + 0.884]}$	$e^{[0.8473\text{Ln}(\text{Hardness}) + 0.884]}$	$e^{[0.8473\text{Ln}(\text{Hardness}) + 0.884]}$

ITEM 5. Amend subrule **61.3(3)**, TABLE 1. Criteria for Chemical Constituents, by adopting **new** footnote (m) as follows:

- (m) Acute and chronic criteria listed in main table are based on a hardness of 200 mg/l (as CaCO₃ (mg/l)) and a sulfate concentration of 63 mg/l. Numerical criteria (µg/l) for chloride are a function of hardness (CaCO₃ (mg/l)) and sulfate (mg/l) using the equation for each use according to the following table:

	B(CW1), B(CW2), B(WW-1), B(WW-2), B(WW-3), B(LW)
Acute	$287.8(\text{Hardness})^{0.205797}(\text{Sulfate})^{-0.07452}$
Chronic	$177.87(\text{Hardness})^{0.205797}(\text{Sulfate})^{-0.07452}$

ITEM 6. Adopt the following **new** table 4 in subrule **61.3(3)**:

TABLE 4. Aquatic Life Criteria for Sulfate for Class B Waters
(all values expressed in milligrams per liter)

Hardness mg/l as CaCO ₃	Chloride		
	Cl ⁻ < 5 mg/l	5 ≤ Cl ⁻ < 25	25 ≤ Cl ⁻ ≤ 500
H < 100 mg/l	500	500	500
100 ≤ H ≤ 500	500	$[-57.478 + 5.79(\text{hardness}) + 54.163(\text{chloride})] \times 0.65$	$[1276.7 + 5.508(\text{hardness}) - 1.457(\text{chloride})] \times 0.65$
H > 500	500	2,000	2,000

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EDITOR'S NOTE: For replacement pages for IAC, see IAC Supplement 10/7/09.