

R149-24RP

This is a green lined version of regulatory petition R149-24P (modified from the original LCB Draft).

Note that the only modification is to change “microcystin” to “microcystins” in the Legislative Counsels Digest on page 1 and in Section 1, page 5.

This amendment does not change the intent, purpose, or scope of the proposed regulation.

**PROPOSED REGULATION OF THE
STATE ENVIRONMENTAL COMMISSION**

LCB File No. R149-24

July 25, 2024

EXPLANATION – Matter in *italics* is new; matter in brackets ~~[omitted material]~~ is material to be omitted.

AUTHORITY: § 1, NRS 445A.425 and 445A.520.

A REGULATION relating to water quality standards; revising the water quality standards for certain toxins that are applicable to certain designated waters in this State; and providing other matters properly relating thereto.

Legislative Counsel’s Digest:

Existing law requires the State Environmental Commission to adopt regulations establishing water quality standards at a level designed to protect and ensure a continuation of the designated beneficial use or uses which the Commission has determined to be applicable to each stream segment or other body of surface water in the State. The Commission is further required to base its water quality standards on water quality criteria which: (1) numerically or descriptively define the conditions necessary to maintain the designated beneficial use or uses of the water; and (2) provide for recreation in and on the water if these objectives are reasonably attainable. (NRS 445A.520)

Existing regulations set forth the standards for toxic materials that are applicable to certain designated waters in this State. (NAC 445A.1236) This regulation makes various changes to the standards for toxic materials.

Section 1 of this regulation sets forth certain water quality standards for cylindrospermopsin and microcystins relating to the designated beneficial use of recreation involving contact with the water. These standards are based on certain publications of the United States Environmental Protection Agency, as cited in section 1.

Section 1 further makes technical corrections to: (1) add a footnote to the water quality standards for cyanide; and (2) the spelling of the term “Heptachlor Epoxide.”

Section 1. NAC 445A.1236 is hereby amended to read as follows:

445A.1236 1. Except for waters which have site-specific standards for toxic materials or as otherwise provided in this section, the standards for toxic materials prescribed in subsection 2

are applicable to the waters specified in NAC 445A.123 to 445A.2234, inclusive. The following criteria apply to this section:

- (a) If the standards are exceeded at a site and are not economically controllable, the Commission will review and may adjust the standards for the site.
- (b) If a standard does not exist for each designated beneficial use, a person who plans to discharge waste must demonstrate that no adverse effect will occur to a designated beneficial use. If the discharge of a substance will lower the quality of the water, a person who plans to discharge waste must meet the requirements of NRS 445A.565.
- (c) If a criterion is less than the reporting limit of a method that is acceptable to the Division, laboratory results which show that the substance was not detected at a quantifiable level shall be deemed to show compliance with the standard unless other information indicates that the substance may be present.

2. The standards for toxic materials are:

Chemical	Municipal or Domestic Supply	Aquatic Life ^(1,2)	Irrigation	Watering of Livestock	<i>Recreation Involving Contact With the Water</i>
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
INORGANIC CHEMICALS⁽³⁾					
Antimony	146 ^a	-	-	-	-
Arsenic	50 ^b	-	100 ^c	200 ^d	-
1-hour average	-	340 ^{f(4)}	-	-	-
96-hour average	-	150 ^{f(4)}	-	-	-
Barium	2,000 ^b	-	-	-	-
Beryllium	4 ⁱ	-	100 ^c	-	-
Boron	-	-	750 ^a	5,000 ^d	-
Cadmium	5 ^b	-	10 ^d	50 ^d	-
1-hour average	-	(1.136672- {ln(hardness)(0.041838)})* e ^{(0.9789 {ln(hardness)} - 3.866) h_i(4)}	-	-	-
96-hour average	-	(1.101672- {ln(hardness)(0.041838)})* e ^{(0.7977 {ln(hardness)} - 3.909) h_i(4)}	-	-	-
Chromium (total)	100 ^b	-	100 ^d	1,000 ^d	-
Chromium (VI)	-	-	-	-	-

Chemical	Municipal or Domestic Supply	Aquatic Life ^(1,2)	Irrigation	Watering of Livestock	Recreation Involving Contact With the Water
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
1-hour average	-	16 ^{f,(4)}	-	-	-
96-hour average	-	11 ^{f,(4)}	-	-	-
Chromium (III)	-	-	-	-	-
1-hour average	-	$(0.316) * e^{(0.8190 \{ \ln(\text{hardness}) \} + 3.7256) f,(4)}$	-	-	-
96-hour average	-	$(0.860) * e^{(0.8190 \{ \ln(\text{hardness}) \} + 0.6848) f,(4)}$	-	-	-
Copper	-	-	200 ^d	500 ^d	-
1-hour average	-	$(0.960) * e^{(0.9422 \{ \ln(\text{hardness}) \} - 1.700) f,(4)}$	-	-	-
96-hour average	-	$(0.960) * e^{(0.8545 \{ \ln(\text{hardness}) \} - 1.702) f,(4)}$	-	-	-
Cyanide	200 ^{a,(5)}	-	-	-	-
1-hour average	-	22 ^{f,(5)}	-	-	-
96-hour average	-	5.2 ^{f,(5)}	-	-	-
Fluoride	-	-	1,000 ^d	2,000 ^d	-
Iron	-	-	5,000 ^d	-	-
96-hour average	-	1,000 ^f	-	-	-
Lead	50 ^{a,b}	-	5,000 ^d	100 ^d	-
1-hour average	-	$(1.46203 - \{ \ln(\text{hardness}) (0.145712) \}) * e^{(1.273 \{ \ln(\text{hardness}) \} - 1.460) f,(4)}$	-	-	-
96-hour average	-	$(1.46203 - \{ \ln(\text{hardness}) (0.145712) \}) * e^{(1.273 \{ \ln(\text{hardness}) \} - 4.705) f,(4)}$	-	-	-
Manganese	-	-	200 ^d	-	-
Mercury	2 ^b	-	-	10 ^d	-
1-hour average	-	1.4 ^{f,(4)}	-	-	-
96-hour average	-	0.77 ^{f,(4)}	-	-	-
Molybdenum	-	-	-	-	-
1-hour average	-	6,160 ^g	-	-	-
96-hour average	-	1,650 ^g	-	-	-
Nickel	13.4 ^a	-	200 ^d	-	-
1-hour average	-	$(0.998) * e^{(0.8460 \{ \ln(\text{hardness}) \} + 2.255) f,(4)}$	-	-	-
96-hour average	-	$(0.997) * e^{(0.8460 \{ \ln(\text{hardness}) \} + 0.0584) f,(4)}$	-	-	-
Selenium	50 ^b	See NAC 445A.1237	20 ^d	50 ^d	-
Silver	-	-	-	-	-
1-hour average	-	$(0.85) * e^{(1.72 \{ \ln(\text{hardness}) \} - 6.59) f,(4)}$	-	-	-
Sulfide (undissociated hydrogen sulfide)	-	-	-	-	-
96-hour average	-	2.0 ^f	-	-	-
Thallium	13 ^a	-	-	-	-
Zinc	-	-	2,000 ^d	25,000 ^d	-
1-hour average	-	$(0.978) * e^{(0.8473 \{ \ln(\text{hardness}) \} + 0.884) f,(4)}$	-	-	-
96-hour average	-	$(0.986) * e^{(0.8473 \{ \ln(\text{hardness}) \} + 0.884) f,(4)}$	-	-	-
ORGANIC CHEMICALS					
Acrolein	320 ^a	-	-	-	-
1-hour average	-	3 ^f	-	-	-
96-hour average	-	3 ^f	-	-	-
Aldrin	0 ^a	-	-	-	-
1-hour average	-	3.0 ^f	-	-	-
alpha-Endosulfan	-	-	-	-	-
1-hour average	-	0.22 ^f	-	-	-
96-hour average	-	0.056 ^f	-	-	-
beta-Endosulfan	-	-	-	-	-
1-hour average	-	0.22 ^f	-	-	-
96-hour average	-	0.056 ^f	-	-	-
Benzene	5 ^b	-	-	-	-
Bis (2-chloroisopropyl) ether	34.7 ^a	-	-	-	-
<i>Cylindrospermopsin</i>	-	-	-	-	15 ^{i,k(8)}
Chlordane	0 ^a	-	-	-	-

Chemical	Municipal or Domestic Supply	Aquatic Life ^(1,2)	Irrigation	Watering of Livestock	<i>Recreation Involving Contact With the Water</i>
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
1-hour average	-	2.4 ^f	-	-	-
96-hour average	-	0.0043 ^f	-	-	-
Chloroethylene (vinyl chloride)	2 ^b	-	-	-	-
Chlorpyrifos	-	-	-	-	-
1-hour average	-	0.083 ^f	-	-	-
96-hour average	-	0.041 ^f	-	-	-
2,4-D	100 ^{a,b}	-	-	-	-
DDT & metabolites	0 ^a	-	-	-	-
4,4'-DDT	-	-	-	-	-
1-hour average	-	1.1 ^{f,(6)}	-	-	-
96-hour average	-	0.001 ^{f,(6)}	-	-	-
Demeton	-	-	-	-	-
96-hour average	-	0.1 ^f	-	-	-
Diazinon	-	-	-	-	-
1-hour average	-	0.17 ^f	-	-	-
96-hour average	-	0.17 ^f	-	-	-
Dibutyl phthalate	34,000 ^a	-	-	-	-
m-dichlorobenzene	400 ^a	-	-	-	-
o-dichlorobenzene	400 ^a	-	-	-	-
p-dichlorobenzene	75 ^b	-	-	-	-
1,2-dichloroethane	5 ^b	-	-	-	-
1,1-dichloroethylene	7 ^b	-	-	-	-
2,4-dichlorophenol	3,090 ^a	-	-	-	-
Dichloropropenes	87 ^a	-	-	-	-
Dieldrin	0 ^a	-	-	-	-
1-hour average	-	0.24 ^f	-	-	-
96-hour average	-	0.056 ^f	-	-	-
Di-2-ethylhexyl phthalate	15,000 ^a	-	-	-	-
Diethyl phthalate	350,000 ^a	-	-	-	-
Dimethyl phthalate	313,000 ^a	-	-	-	-
4,6-dinitro-2-methylphenol	13.4 ^a	-	-	-	-
Dinitrophenols	70 ^a	-	-	-	-
Endosulfan	75 ^a	-	-	-	-
Endrin	0.2 ^b	-	-	-	-
1-hour average	-	0.086 ^f	-	-	-
96-hour average	-	0.036 ^f	-	-	-
Ethylbenzene	1,400 ^a	-	-	-	-
Fluoranthene (polynuclear aromatic hydrocarbon)	42 ^a	-	-	-	-
Guthion	-	-	-	-	-
96-hour average	-	0.01 ^f	-	-	-
Heptachlor	-	-	-	-	-
1-hour average	-	0.52 ^f	-	-	-
96-hour average	-	0.0038 ^f	-	-	-
Heptachlor Heptachlor	-	-	-	-	-
Epoxide	-	-	-	-	-
1-hour average	-	0.52 ^f	-	-	-
96-hour average	-	0.0038 ^f	-	-	-
Hexachlorocyclopentadiene	206 ^a	-	-	-	-
Isophorone	5,200 ^a	-	-	-	-
Lindane	4 ^b	-	-	-	-
1-hour average	-	0.95 ^f	-	-	-
Malathion	-	-	-	-	-
96-hour average	-	0.1 ^f	-	-	-
Methoxychlor	100 ^{a,b}	-	-	-	-
96-hour average	-	0.03 ^f	-	-	-

Chemical	Municipal or Domestic Supply	Aquatic Life ^(1,2)	Irrigation	Watering of Livestock	<i>Recreation Involving Contact With the Water</i>
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
<i>Microcystins</i>	-	-	-	-	<i>8^{g,k(8)}</i>
Mirex	0 ^a	-	-	-	-
96-hour average	-	0.001 ^f	-	-	-
Monochlorobenzene	488 ^a	-	-	-	-
Nitrobenzene	19,800 ^a	-	-	-	-
Nonylphenol	-	-	-	-	-
1-hour average	-	28 ^f	-	-	-
96-hour average	-	6.6 ^f	-	-	-
Parathion	-	-	-	-	-
1-hour average	-	0.065 ^a	-	-	-
96-hour average	-	0.013 ^a	-	-	-
Pentachlorophenol	1,010 ^a	-	-	-	-
1-hour average	-	e ^{1.005(pH) - 4.869f}	-	-	-
96-hour average	-	e ^{1.005(pH) - 5.134f}	-	-	-
Phenol	3,500 ^a	-	-	-	-
Polychlorinated biphenyls (PCBs)	0 ^a	-	-	-	-
96-hour average	-	0.014 ^f	-	-	-
Silvex (2,4,5-TP)	10 ^{a,b}	-	-	-	-
Tetrachloromethane (carbon tetrachloride)	5 ^b	-	-	-	-
Toluene	14,300 ^a	-	-	-	-
Toxaphene	5 ^b	-	-	-	-
1-hour average	-	0.73 ^a	-	-	-
96-hour average	-	0.0002 ^a	-	-	-
Tributyltin (TBT)	-	-	-	-	-
1-hour average	-	0.46 ^f	-	-	-
96-hour average	-	0.072 ^f	-	-	-
1,1,1-trichloroethane (TCA)	200 ^b	-	-	-	-
Trichloroethylene (TCE)	5 ^b	-	-	-	-
Trihalomethanes (total) ⁽⁷⁾	100 ^b	-	-	-	-

Footnotes:

- (1) One-hour average and 96-hour average concentration limits may be exceeded only once every 3 years. See reference a.
- (2) “Hardness” is expressed as mg/L CaCO₃; and “e” refers to the base of the natural logarithm whose value is 2.718.
- (3) The standards for metals are expressed as total recoverable, unless otherwise noted.
- (4) This standard applies to the dissolved fraction.
- (5) This standard is expressed as free cyanide.
- (6) This standard applies to DDT and its metabolites (i.e., the total concentration of DDT and its metabolites should not exceed this value).

- (7) The standard for trihalomethanes (TTHMs) is the sum of the concentration of bromodichloromethane, dibromochloromethane, tribromomethane (bromoform) and trichloromethane (chloroform). See reference b.
- (8) *The applicable criterion value must not be exceeded in more than three separate 10-day non-rolling periods in consecutive water years. As used in this footnote, “water year” means the 12-month period beginning on October 1 and ending on September 30 of the immediately following calendar year.*

References:

- a. U.S. Environmental Protection Agency, Pub. No. EPA 440/5-86-001, *Quality Criteria for Water* (Gold Book) (1986).
- b. Federal Maximum Contaminant Level (MCL), 40 C.F.R. §§ 141.11, 141.61 and 141.62 (1992).
- c. U.S. Environmental Protection Agency, Pub. No. EPA 440/9-76-023, *Quality Criteria for Water* (Red Book) (1976).
- d. National Academy of Sciences, *Water Quality Criteria* (Blue Book) (1972).
- e. Not used to avoid confusion with “e” as a natural logarithm.
- f. U.S. Environmental Protection Agency, *National Recommended Water Quality Criteria*, May 2009.
- g. Nevada Division of Environmental Protection, *Aquatic Life Water Quality Criteria for Molybdenum*, Tetra Tech, Inc., (June 2008).
- h. U.S. Environmental Protection Agency, Pub. No. EPA-820-R-16-002, *Aquatic Life Ambient Water Quality Criteria Cadmium - 2016*, March 2016.
- i. U.S. Environmental Protection Agency, Pub. No. EPA 811-Z-92-002, *40 CFR Parts 141 and 142, National Primary Drinking Water Regulations; Synthetic Organic Chemicals and Inorganic Chemicals; Final Rule* (Table 1-MCLGs and MCLs for Inorganic Contaminants) (July 1992).
- j. *U.S. Environmental Protection Agency, Pub. No. EPA 823-R-21-002, Implementing the 2019 National Clean Water Act Section 304(a) Recommended Human Health Recreational Ambient Water Quality Criteria or Swimming Advisories for Microcystins and Cylindrospermopsin, July 2021.*
- k. *U.S. Environmental Protection Agency, Pub. No. EPA 822-R-19-001, Recommended Human Health Recreational Ambient Water Quality Criteria or Swimming Advisories for Microcystins and Cylindrospermopsin, May 2019.*