PROPOSED REGULATION OF THE

STATE ENVIRONMENTAL COMMISSION

LCB FILE NO. R114-22I

THE FOLLOWING DOCUMENT IS THE INITIAL DRAFT REGULATION PROPOSED BY THE AGENCY SUBMITTED ON 06/27/2022

BWQP PETITION P2022-13 – (PROPOSED REVISIONS TO NAC 445A.1236(1)(C) AND WATER QUALITY STANDARDS FOR BERYLLIUM)

PROPOSED PERMANENT REGULATION OF THE NEVADA STATE ENVIRONMENTAL COMMISSION

A PROPOSED PERMANENT REGULATION relating to water quality; making various changes in provisions that establish standards for water quality; and providing other matters properly relating thereto.

PETITION 2022-13 Changes to the Nevada Administrative Code to revise NAC 445A.1236.

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

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

Section 1 or P2022-13 makes a minor modification to the language in section 1(c) of NAC 445A.1236, by replacing the words "detection limit" with "reporting limit."

Section 2 of P2022-13 revises section 2 of NAC 445A.1236 to change the "Municipal or Domestic Supply" standards for toxic materials for beryllium to 4 micrograms per liter (µg/L).

Proposed Revisions:

Section 1. NAC 445A.1236 is hereby amended by revising language in section 1(c), as follows:

NAC 445A.1236 Standards for toxic materials applicable to designated waters. (NRS 445A.425, 445A.520)

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 ***~~[detection]~~*** ***reporting*** limit of a method that is acceptable to the Division, laboratory results which show that the substance was not detected ***at quantifiable levels*** shall be deemed to show compliance with the standard unless other information indicates that the substance may be present.

Section 2. NAC 445A.1236 is hereby amended by revising the Municipal or Domestic Supply standard for beryllium, as follows:

2. The standards for toxic materials are:

Chemical	Municipal or Domestic Supply (µg/l)	Aquatic Life[1,2] (µg/l)	Irrigation (µg/l)	Watering of Livestock (µg/l)
INORGANIC CHEMICALS[3]				
Antimony	146[a]	-	-	-
Arsenic	50[b]	-	100[c]	200[d]
1-hour average	-	340[e,(4)]	-	-
96-hour average	-	150[e,(4)]	-	-
Barium	2,000[b]	-	-	-
Beryllium	~~0~~[a] 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,**(4)	-	-
96-hour average	-	(1.101672-{ln(hardness)(0.041838)}) *e **(0.7977**{ln(hardness)**} -3.909)** **h,**(4)	-	-
Chromium (total)	100[b]	-	100[d]	1,000[d]
Chromium (VI)	-	-	-	-
1-hour average	-	16[e,(4)]	-	-
96-hour average	-	11[e,(4)]	-	-
Chromium (III)	-	-	-	-
1-hour average	-	(0.316) * e (0.8190{ln(hardness)} + 3.7256) e,(4)	-	-
96-hour average	-	(0.860) * e (0.8190{ln(hardness)} + 0.6848) e,(4)	-	-
Copper	-	-	200[d]	500[d]
1-hour average	-	(0.960) * e (0.9422{ln(hardness)} - 1.700) e,(4)	-	-
96-hour average	-	(0.960) * e (0.8545{ln(hardness)} - 1.702) e,(4)	-	-
Cyanide	200[a]	-	-	-
1-hour average	-	22[e,(5)]	-	-
96-hour average	-	5.2[e,(5)]	-	-
Fluoride	-	-	1,000[d]	2,000[d]
Iron	-	-	5,000[d]	-
96-hour average	-	1,000[e]	-	-
Lead	50[a,b]	-	5,000[d]	100[d]
1-hour average	-	(1.46203-{ln(hardness)(0.145712)})*e (1.273{ln(hardness)} - 1.460) e,(4)	-	-
96-hour average	-	(1.46203-{ln(hardness)(0.145712)})*e (1.273{ln(hardness)} - 4.705) e,(4)	-	-
Manganese	-	-	200[d]	-
Mercury	2[b]	-	-	10[d]
1-hour average	-	1.4[e,(4)]	-	-
96-hour average	-	0.77[e,(4)]	-	-
Molybdenum	-	-	-	-
1-hour average	-	6,160[f]	-	-
96-hour average	-	1,650[f]	-	-
Nickel	13.4[a]	-	200[d]	-
1-hour average	-	(0.998) * e (0.8460{ln(hardness)} + 2.255) e,(4)	-	-
96-hour average	-	(0.997) * e (0.8460{ln(hardness)} + 0.0584) e,(4)	-	-
1-hour average	-	20[a]	-	-
96-hour average	-	5.0[e]	-	-
Selenium	50[b]	See NAC 445A.1237	20[d]	50[d]
Silver				
1-hour average	-	(0.85) * e (1.72{ln(hardness)} - 6.59) e,(4)	-	-
Sulfide (undissociated hydrogen sulfide)	-	-	-	-
96-hour average	-	2.0[e]	-	-
Thallium	13[a]	-	-	-
Zinc	-	-	2,000[d]	25,000[d]
1-hour average	-	(0.978) * e (0.8473{ln(hardness)} + 0.884) e,(4)	-	-

Chemical	Municipal or Domestic Supply (µg/l)	Aquatic Life[1,2] (µg/l)	Irrigation (µg/l)	Watering of Livestock (µg/l)
96-hour average	-	(0.986) * e [(0.8473{ln(hardness)} + 0.884) e,(4)]	-	-
ORGANIC CHEMICALS				
Acrolein	320[a]	-	-	-
1-hour average	-	3[e]	-	-
96-hour average	-	3[e]	-	-
Aldrin	0[a]	-	-	-
1-hour average	-	3.0[e]	-	-
alpha-Endosulfan	-	-	-	-
1-hour average	-	0.22[e]	-	-
96-hour average	-	0.056[e]	-	-
beta-Endosulfan	-	-	-	-
1-hour average	-	0.22[e]	-	-
96-hour average	-	0.056[e]	-	-
Benzene	5[b]	-	-	-
Bis (2-chloroisopropyl) ether	34.7[a]	-	-	-
Chlordane	0[a]	-	-	-
1-hour average	-	2.4[e]	-	-
96-hour average	-	0.0043[e]	-	-
Chloroethylene (vinyl chloride)	2[b]	-	-	-
Chlorpyrifos	-	-	-	-
1-hour average	-	0.083[e]	-	-
96-hour average	-	0.041[e]	-	-
2,4-D	100[a,b]	-	-	-
DDT & metabolites	0[a]	-	-	-
4,4'-DDT	-	-	-	-
1-hour average	-	1.1[e,(6)]	-	-
96-hour average	-	0.001[e,(6)]	-	-
Demeton	-	-	-	-
96-hour average	-	0.1[e]	-	-
Diazinon	-	-	-	-
1-hour average	-	0.17[e]	-	-
96-hour average	-	0.17[e]	-	-
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[e]	-	-
96-hour average	-	0.056[e]	-	-
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[e]	-	-
96-hour average	-	0.036[e]	-	-
Ethylbenzene	1,400[a]	-	-	-
Fluoranthene (polynuclear aromatic hydrocarbon)	42[a]	-	-	-

Chemical	Municipal or Domestic Supply (µg/l)	Aquatic Life[1,2] (µg/l)	Irrigation (µg/l)	Watering of Livestock (µg/l)
Guthion	-	-	-	-
96-hour average	-	0.01[e]	-	-
Heptachlor	-	-	-	-
1-hour average	-	0.52[e]	-	-
96-hour average	-	0.0038[e]	-	-
Heptacholor Epoxide	-	-	-	-
1-hour average	-	0.52[e]	-	-
96-hour average	-	0.0038[e]	-	-
Hexachlorocyclopentadiene	206[a]	-	-	-
Isophorone	5,200[a]	-	-	-
Lindane	4[b]	-	-	-
1-hour average	-	0.95[e]	-	-
Malathion	-	-	-	-
96-hour average	-	0.1[e]	-	-
Methoxychlor	100[a,b]	-	-	-
96-hour average	-	0.03[e]	-	-
Mirex	0[a]	-	-	-
96-hour average	-	0.001[e]	-	-
Monochlorobenzene	488[a]	-	-	-
Nitrobenzene	19,800[a]	-	-	-
Nonylphenol	-	-	-	-
1-hour average	-	28[e]	-	-
96-hour average	-	6.6[e]	-	-
Parathion	-	-	-	-
1-hour average	-	0.065[a]	-	-
96-hour average	-	0.013[a]	-	-
Pentachlorophenol	1,010[a]	-	-	-
1-hour average	-	$e^{1.005(pH) - 4.869e}$	-	-
96-hour average	-	$e^{1.005(pH) - 5.134e}$	-	-
Phenol	3,500[a]	-	-	-
Polychlorinated biphenyls (PCBs)	0[a]	-	-	-
96-hour average	-	0.014[e]	-	-
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[e]	-	-
96-hour average	-	0.072[e]	-	-
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 $CaCO_3$; 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 bromodicholoromethane, dibromocholoromethane, tribromomethane (bromoform) and trichloromethane (chloroform). See reference b.

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. 1992. 40 CFR, Parts 141 and 142, National Primary Drinking Regulations; Synthetic Organic Chemicals and Inorganic Chemicals. Final Rule EPA 811-Z-92-002. July. Table 1. Maximum contaminant level for beryllium.