ADOPTED REGULATION OF THE

STATE ENVIRONMENTAL COMMISSION

LCB File No. R158-06

Effective September 18, 2006

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 controls; revising the standards for toxic materials applicable to designated waters; and providing other matters properly relating thereto.

Section 1. NAC 445A.144 is hereby amended to read as follows:

445A.144 ***1.*** Except as otherwise provided in this section, the **[**~~following~~**]** standards for toxic materials ***prescribed in subsection 2*** are applicable to the waters specified in NAC 445A.123 to 445A.127, inclusive, and 445A.145 to 445A.225, 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 limit of a method that is acceptable to the Division, laboratory results which show that the substance was not detected 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[1] (µg/l)	Aquatic Life[1,2] (µg/l)	Irrigation[1] (µg/l)	Watering of Livestock[1] (µg/l)
INORGANIC CHEMICALS[3]				
Antimony	146[a]	-	-	-
Arsenic	50[b]	-	100[c]	200[d]
~~[Arsenic (III)~~	~~-~~	~~-~~	~~-~~	~~-]~~
1-hour average	-	~~[342[a,g]]~~ ***340 g,h***	-	-
96-hour average	-	~~[180 [a,g]]~~ ***150 g,h***	-	-
Barium	2,000[b]	-	-	-
Beryllium	0[a]	-	100[c]	-
hardness <75 mg/l	-	-	-	-
hardness >= 75 mg/l	-	-	-	-
Boron	-	-	750[a]	5,000[d]
Cadmium	5[b]	-	10[d]	50[d]
1-hour average	-	~~[0.85exp{1.128 ln(H) 3.828}[a,g]]~~ ***(1.136672-{ln(hardness)(0.041838)})* $e^{(1.0166\{\ln(\text{hardness})\} - 3.924)}$ g,h***	-	-

Chemical	Municipal or Domestic Supply[(1)] (µg/l)	Aquatic Life[(1,2)] (µg/l)	Irrigation[(1)] (µg/l)	Watering of Livestock[(1)] (µg/l)
96-hour average	-	~~[0.85exp{0.7852 ln(H) 3.490}[a,f]]~~ ***(1.101672-{ln(hardness)(0.041838))}* e (0.7409{ln(hardness)} - 4.719) g,h***	-	-
Chromium (total)	100[b]	-	100[d]	1,000[d]
Chromium (VI)	-	-	-	-
1-hour average	-	~~[15[a,f]]~~ ***16 g,h***	-	-
96-hour average	-	~~[10[a,f]]~~ ***11 g,h***	-	-
Chromium (III)	-	-	-	-
1-hour average	-	~~[0.85exp{0.8190 ln(H)+3.688}[a,f]]~~ ***(0.316) * e (0.8190{ln(hardness)} + 3.7256) g,h***	-	-
96-hour average	-	~~[0.85exp{0.8190 ln(H)+1.561}[a,f]]~~ ***(0.860) * e (0.8190{ln(hardness)} + 0.6848) g,h***	-	-
Copper	-	-	200[d]	500[d]
1-hour average	-	~~[0.85exp{0.9422 ln(H) 1.464}[a,f]]~~ ***(0.960) * e (0.9422{ln(hardness)} - 1.700) g,h***	-	-
96-hour average	-	~~[0.85exp{0.8545 ln(H) 1.465}[a,f]]~~ ***(0.960) * e (0.8545{ln(hardness)} - 1.702) g,h***	-	-
Cyanide	200[a]	-	-	-
1-hour average	-	22~~[a]~~ ***h***	-	-
96-hour average	-	5.2~~[a]~~ ***h***	-	-
Fluoride	-	-	1,000[d]	2,000[d]
Iron	~~[~~	~~1,000[a]~~	~~5,000[d]~~	~~]~~
96-hour average	***-***	***1,000[h]***	***5,000[d]***	***-***
Lead	50[a,b]	-	5,000[d]	100[d]

Chemical	Municipal or Domestic Supply[(1)] (µg/l)	Aquatic Life[(1,2)] (µg/l)	Irrigation[(1)] (µg/l)	Watering of Livestock[(1)] (µg/l)
1-hour average	-	~~[0.50exp{1.273 ln(H) 1.460}[a,g]]~~ ***(1.46203-{ln(hardness)(0.145712)})* e [(1.273{ln(hardness)} - 1.460) g,h***	-	-
96-hour average	-	~~[0.25exp{1.273 ln(H) 4.705}a[g]]~~ ***(1.46203-{ln(hardness)(0.145712)})* e [(1.273{ln(hardness)} - 4.705) g,h***	-	-
Manganese	-	-	200[d]	-
Mercury	2[b]	-	-	10[d]
1-hour average	-	~~[2.0[a,g]]~~ ***1.4 [g,h]***	-	-
96-hour average	-	~~[0.012[a]]~~ ***0.77 [g,h]***	-	-
Molybdenum	-	19[e]	-	-
Nickel	13.4[a]	-	200[d]	-
1-hour average	-	~~[0.85exp{0.8460 ln(H)+3.3612}[a,g]]~~ ***(0.998) * e [(0.8460{ln(hardness)} + 2.255) g,h***	-	-
96-hour average	-	~~[0.85exp{0.8460 ln(H)+1.1645}[a,g]]~~ ***(0.997) * e [(0.8460{ln(hardness)} + 0.0584) g,h***	-	-
Selenium	50[b]	-	20[d]	50[d]
1-hour average	-	20[a]	-	-
96-hour average	-	5.0~~[a]~~ ***h***	-	-
Silver	~~[~~	~~0.85exp{1.72 ln(H) 6.52}[a,g]~~	~~-~~	~~-]~~
1-hour average	-	***(0.85) * e [(1.72{ln(hardness)} - 6.59) g,h***	-	-

Chemical	Municipal or Domestic Supply[1] (µg/l)	Aquatic Life[1,2] (µg/l)	Irrigation[1] (µg/l)	Watering of Livestock[1] (µg/l)
Sulfide (undissociated hydrogen sulfide)	~~[~~	~~2~~[a]	-	~~]~~
96-hour average	-	***2.0***[h]	-	-
Thallium	13[a]	-	-	-
Zinc	-	-	2,000[d]	25,000[d]
1-hour average	-	~~[0.85exp{0.8473 ln(H)+0.8604}[a,g]]~~ ***(0.978) * e*** [(0.8473{ln(hardness)} + 0.884) g,h]	-	-
96-hour average	-	~~[0.85exp{0.8473 ln(H)+0.7614}[a,g]]~~ ***(0.986) * e*** [(0.8473{ln(hardness)} + 0.884) g,h]	-	-
ORGANIC CHEMICALS				
Acrolein	320[a]	-	-	-
Aldrin	0[a]	3[a]	-	-
Chlordane	0[a]	2.4[a]	-	-
24-hour average	-	0.0043[a]	-	-
2,4-D	100[a,b]	-	-	-
DDT & metabolites	0[a]	1.1[a]	-	-
24-hour average	-	0.0010[a]	-	-
Demeton	-	0.1[a]	-	-
Dieldrin	0[a]	2.5[a]	-	-
24-hour average	-	0.0019[a]	-	-
Endosulfan	75[a]	0.22[a]	-	-
24-hour average	-	0.056[a]	-	-
Endrin	0.2[b]	0.18[a]	-	-
24-hour average	-	0.0023[a]	-	-

Chemical	Municipal or Domestic Supply[(1)] (µg/l)	Aquatic Life[(1,2)] (µg/l)	Irrigation[(1)] (µg/l)	Watering of Livestock[(1)] (µg/l)
Guthion	-	0.01[a]	-	-
Heptachlor	-	0.52[a]	-	-
24-hour average	-	0.0038[a]	-	-
Lindane	4[b]	2.0[a]	-	-
24-hour average	-	0.080[a]	-	-
Malathion	-	0.1[a]	-	-
Methoxychlor	100[a,b]	0.03[a]	-	-
Mirex	0[a]	0.001[a]	-	-
Parathion	-	-	-	-
1-hour average	-	0.065[a]	-	-
96-hour average	-	0.013[a]	-	-
Silvex (2,4,5-TP)	10[a,b]	-	-	-
Toxaphene	5[b]	-	-	-
1-hour average	-	0.73[a]	-	-
96-hour average	-	0.0002[a]	-	-
Benzene	5[b]	-	-	-
Monochlorobenzene	488[a]	-	-	-
m-dichlorobenzene	400[a]	-	-	-
o-dichlorobenzene	400[a]	-	-	-
p-dichlorobenzene	75[b]	-	-	-
Ethylbenzene	1,400[a]	-	-	-
Nitrobenzene	19,800[a]	-	-	-
1,2-dichloroethane	5[b]	-	-	-

Chemical	Municipal or Domestic Supply[(1)] (µg/l)	Aquatic Life[(1,2)] (µg/l)	Irrigation[(1)] (µg/l)	Watering of Livestock[(1)] (µg/l)
1,1,1-trichloroethane (TCA)	200[b]	-	-	-
Bis (2-chloroisopropyl) ether	34.7[a]	-	-	-
Chloroethylene	2[b]	-	-	-
(vinyl chloride)				
1,1-dichloroethylene	7[b]	-	-	-
Trichloroethylene (TCE)	5[b]	-	-	-
Hexachlorocyclopentadiene	206[a]	-	-	-
Isophorone	5,200[a]	-	-	-
Trihalomethanes (total)[f]	100[b]	-	-	-
Tetrachloromethane	5[b]	-	-	-
(carbon tetrachloride)				
Phenol	3,500[a]	-	-	-
2,4-dichlorophenol	3,090[a]	-	-	-
Pentachlorophenol	1,010[a]	-	-	-
1-hour average	-	exp{1.005 (pH)-4.830}[a]	-	-
96-hour average	-	exp{1.005 (pH)-5.290}[a]	-	-
Dinitrophenols	70[a]	-	-	-
4,6-dinitro-2-methylphenol	13.4[a]	-	-	-
Dibutyl phthalate	34,000[a]	-	-	-
Diethyl phthalate	350,000[a]	-	-	-
Dimethyl phthalate	313,000[a]	-	-	-
Di-2-ethylhexyl phthalate	15,000[a]	-	-	-
Polychlorinated biphenyls				

Chemical	Municipal or Domestic Supply[(1)] (µg/l)	Aquatic Life[(1,2)] (µg/l)	Irrigation[(1)] (µg/l)	Watering of Livestock[(1)] (µg/l)
(PCBs)	0[a]	-	-	-
24-hour average	-	0.014[a]	-	-
Fluoranthene	42[a]	-	-	-
(polynuclear aromatic hydrocarbon)				
Dichloropropenes	87[a]	-	-	-
Toluene	14,300[a]	-	-	-

Footnotes ***:*** ~~[and References]~~

(1) Single concentration limits and 24-hour average concentration limits must not be exceeded. One-hour average and 96-hour average concentration limits may be exceeded only once every 3 years. See reference a.

(2) ~~[Hardness (H) is expressed as mg/1 CaCO3.]~~

~~[(3) If a criterion is less than the detection limit of a method that is acceptable to the Division, laboratory results which show that the substance was not detected will be deemed to show compliance with the standard unless other information indicates that the substance may be present.~~

~~(4) 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.~~

~~(5)]~~ ***Aquatic life standards apply to surface waters only; "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.

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, 141.12, 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. California State Water Resources Control Board, Regulation of Agricultural Drainage to the San Joaquin River: Appendix D, Water Quality Criteria (March 1988 revision).

f. The criteria for trihalomethanes (total) is the sum of the concentrations of bromodichloromethane, dibromochloromethane, tribromomethane (bromoform) and trichloromethane (chloroform). See reference b.

g. This standard applies to the dissolved fraction.

h. U.S. Environmental Protection Agency, National Recommended Water Quality Criteria, May 2005.