

ANNEX A

TITLE 25. ENVIRONMENTAL PROTECTION
PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION
Subpart C. PROTECTION OF NATURAL RESOURCES
ARTICLE II. WATER RESOURCES

CHAPTER 93. WATER QUALITY STANDARDS

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§ 93.1. Definitions.

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

BLM—Biotic ligand model—A tool that uses a mechanistic approach to predict the bioavailability of metals in aquatic ecosystems under different water chemistry conditions and the affinity of these metals to accumulate on a biotic ligand. A biotic ligand is a biochemical receptor on the surface of an organism that binds to a metal and where accumulation leads to toxic effects.

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§ 93.8b. Metals criteria.

Dissolved criteria are footnoted in Table 5 **and Table 6**, and have been developed by applying the most current EPA conversion factors to the total recoverable criteria, **except for copper**. The EPA factors are listed in the following Conversion Factors Table.

Conversion Factors Table			
	<i>Chronic</i>	<i>Acute</i>	<i>Source</i>
* * * * *			
Chromium VI	0.962	0.982	1,2
Copper*	0.960	0.960	1,2
Lead[*]	<u>1.46203- (ln[H] x 0.145712)</u>	1.46203- (ln[H] x 0.145712)	2
Mercury	0.85	0.85	1,2

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*** [Conversion factor applies to both acute and chronic criteria.] Conversion factor is included for NPDES permitting purposes only. The dissolved BLM criteria in Table 5 and Table 6 should be divided by the conversion factor to determine the total recoverable copper criteria.**

Source 1—Final Water Quality Guidance for the Great Lakes System (60 FR 15366, March 23, 1995)

Source 2—Establishment of Numeric Criteria for Priority Pollutants; Revision of Metals Criteria—Interim Final Rule (60 FR 22229, May 4, 1995)

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§ 93.8c. Human health and aquatic life criteria for toxic substances.

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TABLE 5

WATER QUALITY CRITERIA FOR TOXIC SUBSTANCES

<i>PP NO</i>	<i>Chemical Name</i>	<i>CAS Number</i>	<i>Fish and Aquatic Life Criteria</i>		<i>Human Health Criteria (ug/L)</i>	
			<i>Criteria Continuous Concentrations (ug/L)</i>	<i>Criteria Maximum Concentration (ug/L)</i>		
* * * * *						
5M	CHROMIUM VI	18540299	*11	*16	N/A	-
6M	COPPER	07440508	[*0.960xExp(0.8545xln[H]-1.702) (ex: @H=100, CCC=9.0)]	[*0.960xExp(0.9422xln[H]-1.700) (ex: @H=100, CMC=13)]	N/A	-
			*BLM	*BLM		
7M	LEAD	07439921	*{1.46203-(ln[H] x0.145712)} x Exp(1.273xln[H]-4.705)	*{1.46203-(ln[H]x0.145712)} x Exp(1.273xln[H]-1.460)	N/A	-
			(ex: @H=100, CCC=2.5)	(ex: @H=100, CMC=65)		
* * * * *						

Acronyms and Footnotes to Table 5

* Indicates dissolved metal criterion; others are total recoverable metals. Each listed dissolved criterion in Table 5 is equal to the corresponding total recoverable criterion before rounding (from the EPA National Ambient Water Quality Criteria Documents) multiplied by the conversion factor (from the Conversion Factors Table), **except for copper**; a criterion that is expressed as a hardness (H)-based equation is shown in Table 5 as the conversion factor (listed) multiplied by the hardness criterion equation; an example criterion at hardness=100mg/L is included.

† Indicates criterion based on the exposure inputs of 2 liters per day of drinking water and consumption of 17.5 grams of fish per day, for protection of a 70 Kg person.

BLM—Biotic Ligand Model

CAS—Chemical Abstract Service number

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§ 93.8e. Special criteria for the Great Lakes System.

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TABLE 6

GREAT LAKES AQUATIC LIFE AND HUMAN HEALTH CRITERIA

PP NO	Chemical Name	CAS Number	Fish and Aquatic Life Criteria		Human Health Criteria (ug/L)	
			Criteria Continuous Concentrations (ug/L)	Criteria Maximum Concentration (ug/L)		
* * * * *						
5M	Chromium, VI	18540299	*10.56	*15.73	N/A	-
6M	Copper	07440508	[*0.960xExp(0.8545xln[H]-1.702) (ex: @H=100, CCC=8.96)]	[*0.960xExp(0.9422xln[H]-1.700) (ex: @H=100, CMC=13.44)]	N/A	-
			*BLM	*BLM		
8M	Mercury	07439976	* 0.77	*1.44	0.0031	H
* * * * *						

Acronyms and Footnotes to Table 6

* Indicates dissolved metal criterion; others are total recoverable metals. Each listed dissolved criterion in Table 6 is equal to the corresponding total recoverable criterion before rounding (from the EPA National Ambient Water Quality Criteria Documents) multiplied by the conversion factor (from the Conversion Factors Table), **except for copper**; a criterion that is expressed as a hardness (H)-based equation is shown in Table 6 as the conversion factor (listed) multiplied by the hardness criterion equation; an example criterion at hardness=100mg/L is included.

BLM—Biotic Ligand Model

CAS—Chemical Abstract Service number

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