

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

GENERAL PROVISIONS

- Sec.  
93.1. Definitions.  
93.2. Scope.  
93.3. Protected water uses.  
93.4. Statewide water uses.

ANTIDegradation REQUIREMENTS

- 93.4a. Antidegradation.  
93.4b. Qualifying as High Quality or Exceptional Value Waters.  
93.4c. Implementation of antidegradation requirements.  
93.4d. Processing of petitions, evaluations and assessments to change a designated use.  
93.5. [Reserved].

WATER QUALITY CRITERIA

- 93.6. General water quality criteria.  
93.7. Specific water quality criteria.  
93.8. [Development of site-specific water quality criteria for the protection of aquatic life.] [Reserved].  
93.8a. Water Quality Criteria for Toxic substances.  
93.8b. Metals criteria.  
93.8c. Human health and aquatic life criteria for toxic substances  
93.8d. Development of site-specific water quality criteria.  
93.8e. Special criteria for the Great Lakes System

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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:

\* \* \* \* \*

Clean Water Act—The Federal Water Pollution Control Act (33 U.S.C.A. §§ 1251-1376).

**Conventional treatment – FOR THE PURPOSE OF SURFACE WATER PROTECTION OF THE POTABLE WATER SUPPLY (PWS) USE, [C]Conventional TREATMENT IS COAGULATION, FOLLOWED BY filtration [in a treatment process that uses separate, sequential units for coagulation/flocculation, clarification, and granular media filtration] FOR THE REMOVAL OF SOLIDS, AND DISINFECTION FOR THE CONTROL OF PATHOGENS to produce [finished] water for drinking AND OTHER HUMAN CONSUMPTION.**

\* \* \* \* \*

*Toxic substance* - A chemical or compound in sufficient quantity or concentration which is, or may become, harmful to human, animal or plant life. The term includes, but is not limited to, priority pollutants and those substances, which are identified in **Tables 5 and 6 of this chapter.** **Additional toxic substances are also described in** Chapter 16 **Appendix A, Table 1** (relating to **site-specific** water quality **criteria for** toxic **[management] substances [strategy - statement of policy]**).

**WER - Water Effect Ratio - A factor that expresses the difference between the measures of the toxicity of a substance in laboratory water and the toxicity in site water. The WER provides a mechanism to account for that portion of a metal that is toxic under certain physical, chemical or biological conditions.**

*Water quality criteria* - Numeric concentrations, levels or surface water conditions that need to be maintained or attained to protect existing and designated uses.

\* \* \* \* \*

**§ 93.3. Protected water uses.**

Water uses which shall be protected, and upon which the development of water quality criteria shall be based, are set forth, accompanied by their identifying symbols, in Table 1:

**TABLE 1**

*Symbol    Protected Use*

**Aquatic Life**

\* \* \* \* \*

MF            *Migratory Fishes*—Passage, maintenance and propagation of anadromous and catadromous fishes and other fishes which **[ascend] move to or from** flowing waters to complete their life cycle **in other waters.**

\* \* \* \* \*

**Water Supply**



minimum 30-day comment period. The Department will maintain a publicly available list of surface waters and parameters where this subsection applies, and **[shall] will**, from time to time, submit appropriate amendments to §§ 93.9a—93.9z.

\* \* \* \* \*

§ 93.8. **[Development of site-specific water quality criteria] (Reserved).**

**[(a) The Department will consider a request for site-specific criteria for protection of aquatic life, human health or wildlife when a person demonstrates that there exist site-specific biological or chemical conditions of receiving waters which differ from conditions upon which the water quality criteria were based. Site-specific criteria may be developed for use only in place of current Statewide or regional (such as the Great Lakes systems) criteria. The request for site-specific criteria shall include the results of scientific studies for the purpose of:**

**(1) Defining the areal boundaries for application of the site-specific criteria which will include the potentially affected wastewater dischargers identified by the Department, through various means, including, but not limited to, the total maximum daily load (TMDL) process described in Chapter 96 (relating to water quality standards implementation) or biological assessments.**

**(2) Developing site-specific criteria which protect its existing use and designated use.**

**(b) Scientific studies shall be performed in accordance with the procedures and guidance in the Water Quality Standards Handbook (EPA 1994), as amended and updated, guidance provided by the Department or other scientifically defensible methodologies approved by the Department.**

**(c) Prior to conducting studies specified in subsections (a) and (b), a proposed plan of study shall be submitted to and approved by the Department.**

**(d) Signed copies of all reports including toxicity test data shall be submitted to the Department within 30 days of completion of the tests.**

**(e) If as a result of its review of the report submitted, the Department determines that a site-specific criterion is appropriate, the Department will, for site-specific changes to criteria in § 93.7 (relating to specific water quality criteria), prepare a recommendation to the EQB in the form of proposed rulemaking, incorporating that criterion for the water body segment. The site-specific changes to the criteria will become effective for the water body segment following adoption by the EQB as final rulemaking and publication in the *Pennsylvania Bulletin*.**

**(f) A person challenging a Department action under this section shall have the burden of proof to demonstrate that the Department's action does not meet the requirements of this section.]**

§ 93.8a. **[Toxic] Water quality criteria for toxic substances.**

\* \* \* \* \*

(b) Water quality criteria for toxic [management] substances shall be established as described under Chapter 16 (relating to water quality toxics management strategy—statement of policy) [wherein the criteria and]. The Department will develop water quality criteria for toxic[s] SUBSTANCES not listed in Chapter 93, Table 5 in accordance with § 93.8d (relating to development of site-specific water quality criteria) and Chapter 16, Appendix A, Table 1 in Chapter 16 lists site-specific human health and aquatic life criteria that have been recently developed or adopted by the Department based on approved methodologies and the best scientific information currently available. The approved [EPA] analytical procedures and detection limits for these substances will also be listed in Chapter 16. Chapter 16, along with changes made to it, is hereby specifically incorporated by reference.

\* \* \* \* \*

(h) [At intervals not exceeding 1 year, the]The Department will periodically, but at least once every 3 years, review, revise as necessary, and publish [a] new or revised water quality criteria for toxic substances, and revised procedures for criteria development in the *Pennsylvania Bulletin*.

\* \* \* \* \*

(j) The requirements for discharges to and antidegradation requirements for the Great Lakes System are as follows:

\* \* \* \* \*

(3) Statewide antidegradation requirements in this chapter and Chapter [95(relating to water quality standards; and wastewater treatment requirements)] 96 (relating to water quality standards implementation) and in the Federal regulation in 40 CFR 131.32(a) (relating to Pennsylvania) as applicable, apply to all surface waters of the Great Lakes System.

\* \* \* \* \*

**§ 93.8b. Metals criteria.**

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

**Conversion Factors Table**

	<u>Chronic</u>	<u>Acute</u>	<u>Source</u>
<u>Arsenic</u>	<u>1.000 (As3+)</u>	<u>1.000 (As3+)</u>	<u>1,2</u>
<u>Cadmium</u>	<u>1.101672- (ln[H]x0.041838)</u>	<u>1.136672- (ln[H]x0.041838)</u>	<u>2</u>
<u>Chromium VI</u>	<u>0.962</u>	<u>0.982</u>	<u>1,2</u>
<u>Copper</u>	<u>0.960</u>	<u>0.960</u>	<u>1,2</u>
<u>Lead*</u>		<u>1.46203-(ln[H]x0.145712)</u>	

<u>Mercury</u>	<u>0.85</u>	<u>0.85</u>	<u>1,2</u>
<u>Nickel</u>	<u>0.997</u>	<u>0.998</u>	<u>1,2</u>
<u>Selenium</u>	<u>0.922</u>	<u>0.922</u>	<u>1</u>
<u>Silver</u>	<u>NA</u>	<u>0.85</u>	<u>2</u>
<u>Zinc</u>	<u>0.986</u>	<u>0.978</u>	<u>1,2</u>

\*Conversion factor applies to both acute and chronic 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)

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

(a) Table 5 and Chapter 16, Appendix A, Table 1 (relating to site-specific water quality criteria for toxic substances) list the aquatic life and human health criteria for toxic substances which the Department uses in development of effluent limitations in NPDES Permits and for other purposes. The human health criteria, which include probable modes of exposure (such as, but not limited to ingestion from drinking water and fish consumption, inhalation, and dermal absorption), are further defined as to the specific effect (that is, cancer or threshold health effects). For those aquatic life criteria which are hardness related and specified as a formula, such as several of the heavy metals, the Department will use the specific hardness of the receiving stream after mixing with the waste discharge in calculating criteria on a case-by-case basis. The priority pollutant numbers (PP NO) used by the EPA to identify priority pollutants are included in Table 5 for reference purposes. The toxics without a PP NO are non-priority pollutants and State-derived criteria.

(b) Some of these criteria may be superseded for the Delaware Estuary, Ohio River Basin, Lake Erie Basin, and Genesee River Basin under interstate and international compact agreements with the Delaware River Basin Commission, Ohio River Valley Sanitation Commission and International Joint Commission, respectively. The criteria in Table 5 do not apply to the Great Lakes System. Water quality criteria for the Great Lakes System are contained in § 93.8e (relating to special criteria for the Great Lakes System) and Table 6 (relating to Great Lakes Aquatic Life and Human health Criteria). Criteria may be developed for the Great Lakes System for substances other than those listed in § 93.8e under the methodologies in §16.61 (relating to special provisions for the Great Lakes system).

TABLE 5

WATER QUALITY CRITERIA FOR TOXIC SUBSTANCES

Fish and Aquatic Life Criteria

<u>PP</u> <u>NO</u>	<u>Chemical Name</u>	<u>CAS</u> <u>Number</u>	<u>Criteria Continuous</u> <u>Concentrations (ug/L)</u>	<u>Criteria Maximum</u> <u>Concentration (ug/L)</u>	<u>Human</u> <u>Health</u> <u>Criteria</u> <u>(ug/L)</u>	
1M	<u>ANTIMONY</u>	<u>07440360</u>	<u>220</u>	<u>1100</u>	<u>5.6</u>	<u>H</u>
2M	<u>ARSENIC</u>	<u>07440382</u>	<u>150 (As3+)</u>	<u>340 (As3+)</u>	<u>10</u>	<u>H</u>
3M	<u>BERYLLIUM</u>	<u>07440417</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>
4M	<u>CADMIUM</u>	<u>07440439</u>	<u>*{1.101672-(ln[H]x0.041838)}x</u> <u>Exp(0.7409xln[H]-4.719)</u> <u>(ex: @H=100, CCC=0.25)</u>	<u>*{1.136672-(ln[H]x0.041838)}x</u> <u>Exp(1.0166xln[H]-3.924)</u> <u>(ex: @H=100, CMC=2.0)</u>	<u>N/A</u>	<u>:</u>
5M	<u>CHROMIUM III</u>	<u>16065831(7)</u>	<u>*0.860xExp(0.819xln[H]+0.6848)</u> <u>(ex: @H=100, CCC=74)</u>	<u>*0.316Exp(0.819xln[H]+3.7256)</u> <u>(ex: @H=100, CMC=570)</u>	<u>N/A</u>	<u>:</u>
5M	<u>CHROMIUM VI</u>	<u>18540299</u>	<u>*10</u>	<u>*16</u>	<u>N/A</u>	<u>:</u>
6M	<u>COPPER</u>	<u>07440508</u>	<u>*0.960xExp(0.8545xln[H]-1.702)</u> <u>(ex: @H=100, CCC=9.0)</u>	<u>*0.960xExp(0.9422xln[H]-1.700)</u> <u>(ex: @H=100, CMC=13)</u>	<u>N/A</u>	<u>:</u>
7M	<u>LEAD</u>	<u>07439921</u>	<u>*{1.46203-(ln[H]x0.145712)}x</u> <u>Exp(1.273xln[H]-4.705)</u> <u>(ex: @H=100, CCC=2.5)</u>	<u>*{1.46203-(ln[H]x0.145712)}x</u> <u>Exp(1.273xln[H]-1.460)</u> <u>(ex: @H=100, CMC=65)</u>	<u>N/A</u>	<u>:</u>
8M	<u>MERCURY</u>	<u>07439976</u>	<u>*0.77 (Hg2+)</u>	<u>*1.4 (Hg2+)</u>	<u>0.05</u>	<u>H</u>
9M	<u>NICKEL</u>	<u>07440020</u>	<u>*0.997xExp(0.846xln[H]+0.0584)</u> <u>(ex: @H=100, CCC=52)</u>	<u>*0.998xExp(0.846xln[H]+2.255)</u> <u>(ex: @H=100, CMC=470)</u>	<u>610</u>	<u>H</u>
10M	<u>SELENIUM</u>	<u>07782492</u>	<u>*4.6</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>
11M	<u>SILVER</u>	<u>07440224</u>	<u>N/A</u>	<u>*0.850xExp(1.72xln[H]-6.590)</u> <u>(ex: @H=100, CMC=3.2)</u>	<u>N/A</u>	<u>:</u>
12M	<u>THALLIUM</u>	<u>07440280</u>	<u>13</u>	<u>65</u>	<u>0.24</u>	<u>H</u>
13M	<u>ZINC</u>	<u>07440666</u>	<u>*0.986xExp(0.8473xln[H]+0.884)</u> <u>(ex: @H=100, CCC=120)</u>	<u>*0.978xExp(0.8473xln[H]+0.884)</u> <u>(ex: @H=100, CMC=120)</u>	<u>N/A</u>	
14M	<u>CYANIDE,</u> <u>FREE</u>	<u>00057125</u>	<u>5.2</u>	<u>22</u>	<u>140</u>	<u>H</u>
1A	<u>2-CHLOROPHENOL</u>	<u>00095578</u>	<u>110</u>	<u>560</u>	<u>81</u>	<u>H</u>
2A	<u>2,4-DICHLORO-</u> <u>PHENOL</u>	<u>00120832</u>	<u>340</u>	<u>1700</u>	<u>77</u>	<u>H</u>
3A	<u>2,4-DIMETHYL-</u> <u>PHENOL</u>	<u>00105679</u>	<u>130</u>	<u>660</u>	<u>380</u>	<u>H</u>
4A	<u>4,6-DINITRO-o-</u>	<u>00534521</u>	<u>16</u>	<u>80</u>	<u>13</u>	<u>H</u>

CRESOL

<u>5A</u>	<u>2,4-DINITRO-PHENOL</u>	<u>00051285</u>	<u>130</u>	<u>660</u>	<u>69</u>	<u>H</u>
<u>6A</u>	<u>2-NITROPHENOL</u>	<u>00088755</u>	<u>1600</u>	<u>8000</u>	<u>N/A</u>	<u>:</u>
<u>7A</u>	<u>4-NITROPHENOL</u>	<u>00100027</u>	<u>470</u>	<u>2300</u>	<u>N/A</u>	<u>:</u>
<u>8A</u>	<u>P-CHLORO-m-CRESOL</u>	<u>00059507</u>	<u>30</u>	<u>160</u>	<u>N/A</u>	<u>:</u>
<u>9A</u>	<u>PENTACHLORO-PHENOL</u>	<u>00087865</u>	<u>Exp(1.005x[pH]-5.134)</u> <u>@pH= 6.5 7.8 9.0</u> <u>Crit= 4.1 15 50</u>	<u>Exp(1.005x[pH]-4.869)</u> <u>@pH= 6.5 7.8 9.0</u> <u>Crit= 5.3 19 65</u>	<u>0.27</u>	<u>CRL</u>
<u>10A</u>	<u>PHENOL</u>	<u>00108952</u>	<u>N/A</u>	<u>N/A</u>	<u>21000</u>	<u>H</u>
<u>11A</u>	<u>2,4,6-TRICHLORO-PHENOL</u>	<u>00088062</u>	<u>91</u>	<u>460</u>	<u>1.4</u>	<u>CRL</u>
<u>1V</u>	<u>ACROLEIN</u>	<u>00107028</u>	<u>1</u>	<u>5</u>	<u>190</u>	<u>H</u>
<u>2V</u>	<u>ACRYLONITRILE</u>	<u>00107131</u>	<u>130</u>	<u>650</u>	<u>0.051</u>	<u>CRL</u>
<u>3V</u>	<u>BENZENE</u>	<u>00071432</u>	<u>130</u>	<u>640</u>	<u>1.2</u>	<u>CRL</u>
<u>5V</u>	<u>BROMOFORM</u>	<u>00075252</u>	<u>370</u>	<u>1800</u>	<u>4.3</u>	<u>CRL</u>
<u>6V</u>	<u>CARBON TETRACHLORIDE</u>	<u>00056235</u>	<u>560</u>	<u>2800</u>	<u>0.23</u>	<u>CRL</u>
<u>7V</u>	<u>CHLORO-BENZENE</u>	<u>00108907</u>	<u>240</u>	<u>1200</u>	<u>130</u>	<u>H</u>
<u>8V</u>	<u>CHLORODIBROMO-METHANE</u>	<u>00124481</u>	<u>N/A</u>	<u>N/A</u>	<u>0.40</u>	<u>CRL</u>
<u>9V</u>	<u>CHLOROETHANE</u>	<u>00075003</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>
<u>10V</u>	<u>2-CHLOROETHYL VINYL ETHER</u>	<u>00110758</u>	<u>3500</u>	<u>18000</u>	<u>N/A</u>	<u>:</u>
<u>11V</u>	<u>CHLOROFORM</u>	<u>00067663</u>	<u>390</u>	<u>1900</u>	<u>5.7</u>	<u>CRL</u>
<u>12V</u>	<u>DICHLOROBROMO- METHANE</u>	<u>00075274</u>	<u>N/A</u>	<u>N/A</u>	<u>0.55</u>	<u>CRL</u>
<u>14V</u>	<u>1,1-DICHLORO-ETHANE</u>	<u>00075343</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>
<u>15V</u>	<u>1,2-DICHLORO-ETHANE</u>	<u>00107062</u>	<u>3100</u>	<u>15000</u>	<u>0.38</u>	<u>CRL</u>
<u>16V</u>	<u>1,1-DICHLORO-ETHYLENE</u>	<u>00075354</u>	<u>1500</u>	<u>7500</u>	<u>33.0</u>	<u>H</u>
<u>17V</u>	<u>1,2-DICHLORO-PROPANE</u>	<u>00078875</u>	<u>2200</u>	<u>11000</u>	<u>N/A</u>	<u>:</u>
<u>18V</u>	<u>1,3-DICHLORO-PROPYLENE</u>	<u>00542756</u>	<u>61</u>	<u>310</u>	<u>0.34</u>	<u>CRL</u>
<u>19V</u>	<u>ETHYLBENZENE</u>	<u>00100414</u>	<u>580</u>	<u>2900</u>	<u>530</u>	<u>H</u>
<u>20V</u>	<u>METHYL BROMIDE</u>	<u>00074839</u>	<u>110</u>	<u>550</u>	<u>47</u>	<u>H</u>
<u>21V</u>	<u>METHYL CHLORIDE</u>	<u>0074873</u>	<u>5500</u>	<u>28000</u>	<u>N/A</u>	<u>:</u>



<u>22V</u>	<u>METHYLENE CHLORIDE</u>	<u>00075092</u>	<u>2400</u>	<u>12000</u>	<u>4.6</u>	<u>CRL</u>
<u>23V</u>	<u>1,1,2,2-TETRA-CHLOROETHANE</u>	<u>00079345</u>	<u>210</u>	<u>1000</u>	<u>0.17</u>	<u>CRL</u>
<u>24V</u>	<u>TETRACHLORO-ETHYLENE</u>	<u>00127184</u>	<u>140</u>	<u>700</u>	<u>0.69</u>	<u>CRL</u>
<u>25V</u>	<u>TOLUENE</u>	<u>00108883</u>	<u>330</u>	<u>1700</u>	<u>1300</u>	<u>H</u>
<u>26V</u>	<u>1,2-trans-DICHLORO-ETHYLENE</u>	<u>00156605</u>	<u>1400</u>	<u>6800</u>	<u>140</u>	<u>H</u>
<u>27V</u>	<u>1,1,1-TRICHLORO-ETHANE</u>	<u>00071556</u>	<u>610</u>	<u>3000</u>	<u>N/A</u>	
<u>28V</u>	<u>1,1,2-TRICHLORO-ETHANE</u>	<u>00079005</u>	<u>680</u>	<u>3400</u>	<u>0.59</u>	<u>CRL</u>
<u>29V</u>	<u>TRICHLORO-ETHYLENE</u>	<u>00079016</u>	<u>450</u>	<u>2300</u>	<u>2.5</u>	<u>CRL</u>
<u>31V</u>	<u>VINYL CHLORIDE</u>	<u>00075014</u>	<u>N/A</u>	<u>N/A</u>	<u>0.025</u>	<u>CRL</u>
<u>1B</u>	<u>ACENAPHTHENE</u>	<u>00083329</u>	<u>17</u>	<u>83</u>	<u>670</u>	<u>H</u>
<u>2B</u>	<u>ACENAPHTHYLENE</u>	<u>00208968</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>
<u>3B</u>	<u>ANTHRACENE</u>	<u>00120127</u>	<u>N/A</u>	<u>N/A</u>	<u>8300</u>	<u>H</u>
<u>4B</u>	<u>BENZIDINE</u>	<u>00092875</u>	<u>59</u>	<u>300</u>	<u>0.000086</u>	<u>CRL</u>
<u>5B</u>	<u>BENZO(a)-ANTHRACENE</u>	<u>00056553</u>	<u>0.1</u>	<u>0.5</u>	<u>0.0038</u>	<u>CRL</u>
<u>6B</u>	<u>BENZO(a)PYRENE</u>	<u>00050328</u>	<u>N/A</u>	<u>N/A</u>	<u>0.0038</u>	<u>CRL</u>
<u>7B</u>	<u>3,4-BENZO-FLUORANTHENE</u>	<u>00205992</u>	<u>N/A</u>	<u>N/A</u>	<u>0.0038</u>	<u>CRL</u>
<u>8B</u>	<u>BENZO(ghi)-PERYLENE</u>	<u>00191242</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>
<u>9B</u>	<u>BENZO(k)-FLUORANTHENE</u>	<u>00207089</u>	<u>N/A</u>	<u>N/A</u>	<u>0.0038</u>	<u>CRL</u>
<u>10B</u>	<u>BIS(2-CHLORO-ETHOXY)METHANE</u>	<u>00111911</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>
<u>11B</u>	<u>BIS(2-CHLORO-ETHYL)ETHER</u>	<u>00111444</u>	<u>6000</u>	<u>30000</u>	<u>0.030</u>	<u>CRL</u>
<u>12B</u>	<u>BIS(2-CHLORO-ISOPROPYL)ETHER</u>	<u>00108601</u>	<u>N/A</u>	<u>N/A</u>	<u>1400</u>	<u>H</u>
<u>13B</u>	<u>BIS(2-ETHYL-HEXYL)PHTHALATE</u>	<u>00117817</u>	<u>910</u>	<u>4500</u>	<u>1.2</u>	<u>CRL</u>
<u>14B</u>	<u>4-BROMOPHENYL PHENYL ETHER</u>	<u>00101553</u>	<u>54</u>	<u>270</u>	<u>N/A</u>	<u>:</u>
<u>15B</u>	<u>BUTYLBENZYL PHTHALATE</u>	<u>00085687</u>	<u>35</u>	<u>140</u>	<u>150</u>	<u>H</u>
<u>16B</u>	<u>2-CHLORO-NAPHTHALENE</u>	<u>00091587</u>	<u>N/A</u>	<u>N/A</u>	<u>1000</u>	<u>H</u>
<u>17B</u>	<u>4-CHLORO-PHENYL PHENYL</u>	<u>07005723</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>

**ETHER**

<b>18B</b>	<b><u>CHRYSENE</u></b>	<b><u>00218019</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>0.0038</u></b>	<b><u>CRL</u></b>
<b>19B</b>	<b><u>DIBENZO(a,h)- ANTHRACENE</u></b>	<b><u>00053703</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>0.0038</u></b>	<b><u>CRL</u></b>
<b>20B</b>	<b><u>1,2-DICHLORO- BENZENE</u></b>	<b><u>00095501</u></b>	<b><u>160</u></b>	<b><u>820</u></b>	<b><u>420 for dichloro- benzene</u></b>	<b><u>H</u></b>
<b>21B</b>	<b><u>1,3-DICHLORO- BENZENE</u></b>	<b><u>00541731</u></b>	<b><u>69</u></b>	<b><u>350</u></b>	<b><u>See 20B</u></b>	<b><u>H</u></b>
<b>22B</b>	<b><u>1,4-DICHLORO- BENZENE</u></b>	<b><u>00106467</u></b>	<b><u>150</u></b>	<b><u>730</u></b>	<b><u>See 20B</u></b>	<b><u>H</u></b>
<b>23B</b>	<b><u>3,3-DICHLORO- BENZIDINE</u></b>	<b><u>00091941</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>0.021</u></b>	<b><u>CRL</u></b>
<b>24B</b>	<b><u>DIETHYL PHTHALATE</u></b>	<b><u>00084662</u></b>	<b><u>800</u></b>	<b><u>4000</u></b>	<b><u>17000</u></b>	<b><u>H</u></b>
<b>25B</b>	<b><u>DIMETHYL PHTHALATE</u></b>	<b><u>00131113</u></b>	<b><u>500</u></b>	<b><u>2500</u></b>	<b><u>270000</u></b>	<b><u>H</u></b>
<b>26B</b>	<b><u>DI-N-BUTYL PHTHALATE</u></b>	<b><u>00084742</u></b>	<b><u>21</u></b>	<b><u>110</u></b>	<b><u>2000</u></b>	<b><u>H</u></b>
<b>27B</b>	<b><u>2,4-DINITRO- TOLUENE</u></b>	<b><u>00121142</u></b>	<b><u>320</u></b>	<b><u>1600</u></b>	<b><u>0.05 for dinitro- toluene</u></b>	<b><u>CRL</u></b>
<b>28B</b>	<b><u>2,6-DINITRO- TOLUENE</u></b>	<b><u>00606202</u></b>	<b><u>200</u></b>	<b><u>990</u></b>	<b><u>See 27B</u></b>	<b><u>CRL</u></b>
<b>29B</b>	<b><u>DI-N-OCTYL PHTHALATE</u></b>	<b><u>00117840</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>:</u></b>
<b>30B</b>	<b><u>1,2-DIPHENYL- HYDRAZINE</u></b>	<b><u>00122667</u></b>	<b><u>3</u></b>	<b><u>15</u></b>	<b><u>0.036</u></b>	<b><u>CRL</u></b>
<b>31B</b>	<b><u>FLUORANTHENE</u></b>	<b><u>00206440</u></b>	<b><u>40</u></b>	<b><u>200</u></b>	<b><u>130</u></b>	<b><u>H</u></b>
<b>32B</b>	<b><u>FLUORENE</u></b>	<b><u>00086737</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>1100</u></b>	<b><u>H</u></b>
<b>33B</b>	<b><u>HEXACHLORO- BENZENE</u></b>	<b><u>00118741</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>0.00028</u></b>	<b><u>CRL</u></b>
<b>34B</b>	<b><u>HEXACHLORO- BUTADIENE</u></b>	<b><u>00087683</u></b>	<b><u>2</u></b>	<b><u>10</u></b>	<b><u>0.44</u></b>	<b><u>CRL</u></b>
<b>35B</b>	<b><u>HEXACHLORO- CYCLOPENTADIENE</u></b>	<b><u>00077474</u></b>	<b><u>1</u></b>	<b><u>5</u></b>	<b><u>40</u></b>	<b><u>H</u></b>
<b>36B</b>	<b><u>HEXACHLORO- ETHANE</u></b>	<b><u>00067721</u></b>	<b><u>12</u></b>	<b><u>60</u></b>	<b><u>1.4</u></b>	<b><u>CRL</u></b>
<b>37B</b>	<b><u>INDENO(1,2,3- cd)PYRENE</u></b>	<b><u>00193395</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>0.0038</u></b>	<b><u>CRL</u></b>
<b>38B</b>	<b><u>ISOPHORONE</u></b>	<b><u>00078591</u></b>	<b><u>2100</u></b>	<b><u>10000</u></b>	<b><u>35</u></b>	<b><u>H</u></b>
<b>39B</b>	<b><u>NAPHTHALENE</u></b>	<b><u>00091203</u></b>	<b><u>43</u></b>	<b><u>140</u></b>	<b><u>N/A</u></b>	<b><u>:</u></b>
<b>40B</b>	<b><u>NITROBENZENE</u></b>	<b><u>00098953</u></b>	<b><u>810</u></b>	<b><u>4000</u></b>	<b><u>17</u></b>	<b><u>H</u></b>
<b>41B</b>	<b><u>N-NITROSO- DIMETHYLAMINE</u></b>	<b><u>00062759</u></b>	<b><u>3400</u></b>	<b><u>17000</u></b>	<b><u>0.00069</u></b>	<b><u>CRL</u></b>
<b>42B</b>	<b><u>N-NITROSODI-N-</u></b>	<b><u>00621647</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>0.005</u></b>	<b><u>CRL</u></b>

**PROPYLAMINE**

<b><u>43B</u></b>	<b><u>N-NITROSO-DIPHENYLAMINE</u></b>	<b><u>00086306</u></b>	<b><u>59</u></b>	<b><u>300</u></b>	<b><u>3.3</u></b>	<b><u>CRL</u></b>
<b><u>44B</u></b>	<b><u>PHENANTHRENE</u></b>	<b><u>00085018</u></b>	<b><u>1</u></b>	<b><u>5</u></b>	<b><u>N/A</u></b>	<b><u>:</u></b>
<b><u>45B</u></b>	<b><u>PYRENE</u></b>	<b><u>00129000</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>830</u></b>	<b><u>H</u></b>
<b><u>46B</u></b>	<b><u>1,2,4-TRICHLORO-BENZENE</u></b>	<b><u>00120821</u></b>	<b><u>26</u></b>	<b><u>130</u></b>	<b><u>35</u></b>	<b><u>H</u></b>
<b><u>1P</u></b>	<b><u>ALDRIN</u></b>	<b><u>00309002</u></b>	<b><u>0.1</u></b>	<b><u>3</u></b>	<b><u>0.000049</u></b>	<b><u>CRL</u></b>
<b><u>2P</u></b>	<b><u>alpha-BHC</u></b>	<b><u>00319846</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>0.0026</u></b>	<b><u>CRL</u></b>
<b><u>3P</u></b>	<b><u>beta-BHC</u></b>	<b><u>00319857</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>0.0091</u></b>	<b><u>CRL</u></b>
<b><u>4P</u></b>	<b><u>gamma-BHC (LINDANE)</u></b>	<b><u>00058899</u></b>	<b><u>N/A</u></b>	<b><u>0.95</u></b>	<b><u>0.098</u></b>	<b><u>H</u></b>
<b><u>5P</u></b>	<b><u>delta-BHC</u></b>	<b><u>00319868</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>:</u></b>
<b><u>6P</u></b>	<b><u>CHLORDANE</u></b>	<b><u>00057749</u></b>	<b><u>0.0043</u></b>	<b><u>2.4</u></b>	<b><u>0.00080</u></b>	<b><u>CRL</u></b>
<b><u>7P</u></b>	<b><u>4,4-DDT</u></b>	<b><u>00050293</u></b>	<b><u>0.001</u></b>	<b><u>1.1</u></b>	<b><u>0.00022</u></b>	<b><u>CRL</u></b>
<b><u>8P</u></b>	<b><u>4,4-DDE</u></b>	<b><u>00072559</u></b>	<b><u>0.001</u></b>	<b><u>1.1</u></b>	<b><u>0.00022</u></b>	<b><u>CRL</u></b>
<b><u>9P</u></b>	<b><u>4,4-DDD</u></b>	<b><u>00072548</u></b>	<b><u>0.001</u></b>	<b><u>1.1</u></b>	<b><u>0.00031</u></b>	<b><u>CRL</u></b>
<b><u>10P</u></b>	<b><u>DIELDRIN</u></b>	<b><u>00060571</u></b>	<b><u>0.056</u></b>	<b><u>0.24</u></b>	<b><u>0.000052</u></b>	<b><u>CRL</u></b>
<b><u>11P</u></b>	<b><u>alpha-ENDOSULFAN</u></b>	<b><u>00959988</u></b>	<b><u>0.056</u></b>	<b><u>0.22</u></b>	<b><u>62 for endosulfan</u></b>	<b><u>H</u></b>
<b><u>12P</u></b>	<b><u>beta-ENDOSULFAN</u></b>	<b><u>33213659</u></b>	<b><u>0.056</u></b>	<b><u>0.22</u></b>	<b><u>See 11P</u></b>	<b><u>H</u></b>
<b><u>13P</u></b>	<b><u>ENDOSULFAN SULFATE</u></b>	<b><u>01031078</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>:</u></b>
<b><u>14P</u></b>	<b><u>ENDRIN</u></b>	<b><u>00072208</u></b>	<b><u>0.036</u></b>	<b><u>0.086</u></b>	<b><u>0.059</u></b>	<b><u>H</u></b>
<b><u>15P</u></b>	<b><u>ENDRIN ALDEHYDE</u></b>	<b><u>07421934</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>0.29</u></b>	<b><u>:</u></b>
<b><u>16P</u></b>	<b><u>HEPTACHLOR</u></b>	<b><u>00076448</u></b>	<b><u>0.0038</u></b>	<b><u>0.52</u></b>	<b><u>0.000079</u></b>	<b><u>CRL</u></b>
<b><u>17P</u></b>	<b><u>HEPTACHLOR EPOXIDE</u></b>	<b><u>01024573</u></b>	<b><u>0.0038</u></b>	<b><u>0.5</u></b>	<b><u>0.000039</u></b>	<b><u>CRL</u></b>
<b><u>18P</u></b>	<b><u>PCB</u></b>		<b><u>0.014</u></b>	<b><u>N/A</u></b>	<b><u>0.000064 for PCBs</u></b>	<b><u>CRL</u></b>
<b><u>25P</u></b>	<b><u>TOXAPHENE</u></b>	<b><u>08001352</u></b>	<b><u>0.0002</u></b>	<b><u>0.73</u></b>	<b><u>0.00028</u></b>	<b><u>CRL</u></b>
<b><u>PP</u></b>	<b><u>2,3,7,8-TCDD</u></b>	<b><u>01746016</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>5.0 E-9</u></b>	<b><u>CRL</u></b>
<b><u>—</u></b>	<b><u>ACETONE</u></b>	<b><u>00067641</u></b>	<b><u>86000</u></b>	<b><u>450000</u></b>	<b><u>3500</u></b>	<b><u>H</u></b>
<b><u>—</u></b>	<b><u>ALUMINUM</u></b>	<b><u>07429905</u></b>	<b><u>N/A</u></b>	<b><u>750</u></b>	<b><u>N/A</u></b>	<b><u>:</u></b>
<b><u>—</u></b>	<b><u>BARIUM</u></b>	<b><u>07440393</u></b>	<b><u>4100</u></b>	<b><u>21000</u></b>	<b><u>2400</u></b>	<b><u>H</u></b>
<b><u>—</u></b>	<b><u>BORON</u></b>	<b><u>07440428</u></b>	<b><u>1600</u></b>	<b><u>8100</u></b>	<b><u>3100</u></b>	<b><u>H</u></b>
<b><u>—</u></b>	<b><u>COBALT</u></b>	<b><u>07440484</u></b>	<b><u>19</u></b>	<b><u>95</u></b>	<b><u>N/A</u></b>	<b><u>:</u></b>
<b><u>—</u></b>	<b><u>p-CRESOL</u></b>	<b><u>00106445</u></b>	<b><u>160</u></b>	<b><u>800</u></b>	<b><u>N/A</u></b>	<b><u>:</u></b>
<b><u>—</u></b>	<b><u>DIAZINON</u></b>	<b><u>333415</u></b>	<b><u>0.17</u></b>	<b><u>0.17</u></b>	<b><u>N/A</u></b>	<b><u>:</u></b>
<b><u>—</u></b>	<b><u>FORMALDEHYDE</u></b>	<b><u>00050000</u></b>	<b><u>440</u></b>	<b><u>2200</u></b>	<b><u>700</u></b>	<b><u>H</u></b>
<b><u>—</u></b>	<b><u>2-HEXANONE</u></b>	<b><u>00591786</u></b>	<b><u>4300</u></b>	<b><u>21000</u></b>	<b><u>N/A</u></b>	<b><u>:</u></b>
<b><u>—</u></b>	<b><u>LITHIUM</u></b>	<b><u>07439932</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>N/A</u></b>	<b><u>:</u></b>

=	<u>METHYLETHYL KETONE</u>	<u>00078933</u>	<u>32000</u>	<u>230000</u>	<u>21000</u>	<u>H</u>
=	<u>METHYLISO-BUTYL KETONE</u>	<u>00108101</u>	<u>5000</u>	<u>26000</u>	<u>N/A</u>	<u>:</u>
=	<u>METOLACHLOR</u>	<u>51218452</u>	<u>NA</u>	<u>NA</u>	<u>69</u>	<u>H</u>
[=	<u>MOLYBDENUM</u>	<u>07439987</u>	<u>NA</u>	<u>NA</u>	<u>210</u>	<u>H]</u>
=	<u>I-PROPANOL</u>	<u>00071238</u>	<u>46000</u>	<u>230000</u>	<u>N/A</u>	<u>:</u>
=	<u>2-PROPANOL</u>	<u>00067630</u>	<u>89000</u>	<u>440000</u>	<u>N/A</u>	<u>:</u>
=	<u>1,2,3-TRICHLORO- PROPANE</u>	<u>00096184</u>	<u>N/A</u>	<u>N/A</u>	<u>210</u>	<u>H</u>
=	<u>VANADIUM</u>	<u>07440622</u>	<u>100</u>	<u>510</u>	<u>N/A</u>	<u>:</u>
=	<u>XYLENE</u>	<u>01330207</u>	<u>210</u>	<u>1100</u>	<u>70000</u>	<u>H</u>

### 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 Conversions Factors Table); 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.

CAS – Chemical Abstract Service number

CRL – Cancer risk level at  $1 \times 10^{-6}$

H—Threshold effect human health criterion; incorporates additional uncertainty factor for some Group C carcinogens.

ln [H]—Natural Logarithm of the Hardness of stream as mg/l CaCO<sub>3</sub>

ug/L – Micrograms per liter

N/A—criterion not developed

PP NO – Priority Pollutant Number

### § 93.8d. Development of site-specific water quality criteria.

(a) The Department will consider a request for site-specific criteria for protection of aquatic life, human health or wildlife when a person demonstrates that there exist site-specific biological or chemical conditions of receiving waters which differ from conditions upon which the water quality criteria were based. Site-specific criteria may be developed for use only in place of current Statewide or regional (such as the Great Lakes systems)

criteria. The request for site-specific criteria must include the results of scientific studies for the purpose of:]

(A) THE DEPARTMENT WILL CONSIDER A REQUEST FOR SITE-SPECIFIC CRITERIA WHEN:

(1) THERE EXIST SITE-SPECIFIC BIOLOGICAL OR CHEMICAL CONDITIONS OF RECEIVING WATERS WHICH DIFFER FROM CONDITIONS UPON WHICH THE WATER QUALITY CRITERIA WERE BASED

(2) MORE STRINGENT CRITERIA ARE NEEDED FOR A PARAMETER LISTED IN § 93.7 TO PROTECT MORE SENSITIVE, INTERVENING USES; OR

(3) THERE EXISTS A NEED FOR A SITE-SPECIFIC CRITERION FOR A SUBSTANCE NOT LISTED IN CHAPTER 93, TABLE 5.

(B) THE REQUEST FOR SITE-SPECIFIC CRITERIA MUST INCLUDE THE RESULTS OF SCIENTIFIC STUDIES FOR THE PURPOSE OF:

(1) Defining the areal boundaries for application of the site-specific criteria which will include the potentially affected wastewater dischargers identified by the Department, through various means, including, but not limited to, the total maximum daily load (TMDL) process described in Chapter 96 (relating to water quality standards implementation) or biological assessments.

(2) Developing site-specific criteria which protect the surface water's existing and designated uses.

[~~(b)~~] (C) Scientific studies shall be performed in accordance with the procedures and guidance in the Water Quality Standards Handbook (EPA 1994), as amended and updated, including: "Guidance on the Determination and Use of Water-Effect Ratios for Metals" (February 1994); and [~~with~~] the "Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health" (2000), [~~as amended and updated~~]. Other guidance approved by the Department, which is based on other EPA approved or scientifically defensible methodologies, may be used. [~~The WER study may be conducted, based on either total recoverable or dissolved criteria, depending on the form of the criterion.~~]

[~~(e)~~] (D) Prior to conducting studies specified in subsections [~~(a) and~~] (b) AND (C), a proposed plan of study shall be submitted to [~~and approved by~~] the Department for review, consideration and approval.

[~~(d)~~] (E) Signed copies of all reports including toxicity test data shall be submitted to the Department within [~~30~~] 60 days of completion of the tests.

[(e) If, as a result of its review of the report submitted to satisfy a request, the Department determines that a site-specific criterion for a toxic substance is appropriate, the Department will publish the site-specific criterion in the *Pennsylvania Bulletin*, along with other special conditions under § 92.61(a)(5) (relating to public notice of permit application and public hearing), and in Chapter 16 Appendix A, Table 1 (relating to site-specific water quality criteria for toxic substances). Changes listed in Appendix A, Table 1 will be promulgated through a formal rulemaking process as part of a triennial review or other rulemaking. If, as a result of its review of the report submitted to satisfy a request, the Department determines that a site-specific criterion for a parameter listed in § 93.7 (relating to specific water quality criteria) is appropriate, the Department will prepare a recommendation to the EQB in the form of proposed rulemaking, incorporating that criterion for the water body segment. A change to the criterion for a parameter listed in § 93.7 will become effective following adoption by the EQB as final rulemaking and publication in the *Pennsylvania Bulletin*.]

(F) IF THE DEPARTMENT DETERMINES THAT SITE-SPECIFIC CRITERIA ARE APPROPRIATE IN ACCORDANCE WITH PARAGRAPH (a), THE DEPARTMENT WILL:

(1) PUBLISH THE SITE-SPECIFIC CRITERION IN THE PENNSYLVANIA BULLETIN, ALONG WITH OTHER SPECIAL CONDITIONS UNDER § 92.61(a)(5) (RELATING TO PUBLIC NOTICE OF PERMIT APPLICATION AND PUBLIC HEARING) AND PROVIDE FOR PUBLIC PARTICIPATION AND PUBLIC HEARING IN ACCORDANCE WITH §§92.61, 92.63 AND 92.65;

(2) MAINTAIN PUBLICLY AVAILABLE LISTS OF SITE-SPECIFIC CRITERIA;

(3) SUBMIT THE METHODOLOGIES USED FOR SITE-SPECIFIC CRITERIA DEVELOPMENT TO U.S. ENVIRONMENTAL PROTECTION AGENCY'S REGIONAL ADMINISTRATOR FOR REVIEW AND APPROVAL, WITHIN 30 DAYS OF DEPARTMENT'S FINAL ACTION; AND

(4) PREPARE A RECOMMENDATION TO THE EQB IN THE FORM OF PROPOSED RULEMAKING, INCORPORATING THAT CRITERION FOR THE WATER BODY SEGMENT.

(G) IF THE DEPARTMENT DETERMINES THAT NEW STATEWIDE CRITERIA OR MODIFICATIONS TO STATEWIDE CRITERIA ARE APPROPRIATE, THE DEPARTMENT WILL PREPARE A RECOMMENDATION TO THE EQB IN THE FORM OF PROPOSED RULEMAKING, INCORPORATING THE CRITERIA INTO THIS CHAPTER. THE NEW CRITERIA AND CHANGES TO THE CRITERIA WILL BECOME EFFECTIVE FOLLOWING ADOPTION BY THE EQB AS FINAL RULEMAKING AND PUBLICATION IN THE PENNSYLVANIA BULLETIN.

**[(F)] (H) A person challenging a Department action under this section shall have the burden of proof to demonstrate that the Department's action does not meet the requirements of this section.**

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

**(a) Special criteria. The special provisions in this section apply for the Great Lakes System, which includes the streams, rivers, lakes and other bodies of surface water within the drainage basin of the Great Lakes in this Commonwealth:**

**(b) Water quality criteria for the Great Lakes System. Human health and aquatic life criteria for the Great Lakes System are contained in Table 6 (relating to Great Lakes aquatic life and human health criteria). For any pollutant not listed in the table, criteria to protect existing and designated uses will be developed by the Department, as needed in accordance with this chapter and [Chapter 16 (relating to water quality toxics management strategy—statement of policy)] § 16.61 (RELATING TO SPECIAL PROVISIONS FOR THE GREAT LAKES SYSTEM) .**

**TABLE 6**  
**GREAT LAKES AQUATIC LIFE AND HUMAN HEALTH CRITERIA**

<u>PP</u> <u>NO</u>	<u>Chemical Name</u>	<u>CAS</u> <u>Number</u>	<u>Fish and Aquatic Life Criteria</u>		<u>Human</u> <u>Health</u> <u>Criteria</u> <u>(ug/L)</u>	
			<u>Criteria Continuous</u> <u>Concentrations (ug/L)</u>	<u>Criteria Maximum</u> <u>Concentration (ug/L)</u>		
<u>2M</u>	<u>Arsenic</u>	<u>07440382</u>	<u>*148 (As3+)</u>	<u>*340 (As3+)</u>	<u>N/A</u>	
<u>4M</u>	<u>Cadmium</u>	<u>07440439</u>	<u>*{1.101672-(ln[H]x0.041838)}x</u> <u>Exp(0.7852xln[H]-2.715)</u> <u>(ex: @H=100, CCC=2.24)</u>	<u>*{1.136672-(ln[H]x0.041838)}x</u> <u>Exp(1.128xln[H]-3.6867)</u> <u>(ex: @H=100, CMC=4.26)</u>	<u>N/A</u>	
<u>5M</u>	<u>Chromium, III</u>	<u>16065831</u>	<u>*0.860xExp(0.819xln[H]+0.6848)</u> <u>(ex: @H=100, CCC=74)</u>	<u>*0.316xExp(0.819xln[H]+3.7256)</u> <u>(ex: @H=100, CMC=570)</u>	<u>N/A</u>	
<u>5M</u>	<u>Chromium, VI</u>	<u>18540299</u>	<u>*10.56</u>	<u>*15.73</u>	<u>N/A</u>	<u>:</u>
<u>6M</u>	<u>Copper</u>	<u>07440508</u>	<u>*0.960xExp(0.8545xln[H]-1.702)</u> <u>(ex: @H=100, CCC=8.96)</u>	<u>*{0.960xExp(0.9422xln[H]-</u> <u>1.700)</u> <u>(ex: @H=100, CMC=13.44)</u>	<u>N/A</u>	
<u>8M</u>	<u>Mercury</u>	<u>07439976</u>	<u>*0.77</u>	<u>*1.44</u>	<u>0.0031</u>	<u>H</u>
<u>9M</u>	<u>Nickel</u>	<u>07440020</u>	<u>*0.997xExp(0.846xln[H]+0.0584)</u> <u>(ex: @H=100, CCC=52.01)</u>	<u>*[0.998xExp(0.846xln[H]+2.255)</u> <u>(ex: @H=100, CMC=468.24)</u>	<u>N/A</u>	<u>H</u>
<u>10M</u>	<u>Selenium</u>	<u>07782492</u>	<u>*4.61</u>	<u>N/A</u>	<u>N/A</u>	<u>:</u>
<u>13M</u>	<u>Zinc</u>	<u>07440666</u>	<u>*0.986xExp(0.8473xln[H]+0.884)</u>	<u>*0.978xExp(0.8473xln[H]+0.884)</u>	<u>N/A</u>	

		<u>(ex: @H=100, CCC=118.14)</u>	<u>(ex: @H=100, CMC=117.18)</u>		
<u>14M</u>	<u>Cyanide, Free</u>	<u>00057125</u>	<u>5.2</u>	<u>22</u>	<u>600</u> <u>H</u>
<u>3A</u>	<u>2,4-Dimethyl-phenol</u>	<u>00105679</u>	<u>N/A</u>	<u>N/A</u>	<u>450</u> <u>H</u>
<u>5A</u>	<u>2,4-Dinitro-phenol</u>	<u>00051285</u>	<u>N/A</u>	<u>N/A</u>	<u>55</u> <u>H</u>
<u>9A</u>	<u>Pentachlorophenol</u>	<u>00087865</u>	<u>Exp(1.005[pH]-5.134)</u> <u>@pH= 6.5 7.8 9.0</u> <u>Crit = 4.05 14.95 49.95</u>	<u>Exp (1.005[pH]-4.869)</u> <u>@pH = 6.5 7.8 9.0</u> <u>Crit = 5.28 19.49 65.10</u>	<u>N/A</u>
<u>3V</u>	<u>Benzene</u>	<u>00071432</u>	<u>N/A</u>	<u>N/A</u>	<u>1.2</u> <u>CRL</u>
<u>7V</u>	<u>Chloro-benzene</u>	<u>00108907</u>	<u>N/A</u>	<u>N/A</u>	<u>470</u> <u>H</u>
<u>22V</u>	<u>Methylene Chloride</u>	<u>00075092</u>	<u>N/A</u>	<u>N/A</u>	<u>4.7</u> <u>CRL</u>
<u>25V</u>	<u>Toluene</u>	<u>00108883</u>	<u>N/A</u>	<u>N/A</u>	<u>5600</u> <u>H</u>
<u>29V</u>	<u>Trichloro-ethylene</u>	<u>00079016</u>	<u>N/A</u>	<u>N/A</u>	<u>2.9</u> <u>CRL</u>
<u>33B</u>	<u>Hexachloro-benzene</u>	<u>00118741</u>	<u>N/A</u>	<u>N/A</u>	<u>0.000045</u> <u>CRL</u>
<u>36B</u>	<u>Hexachloro-ethane</u>	<u>00067721</u>	<u>N/A</u>	<u>N/A</u>	<u>0.53</u> <u>CRL</u>
<u>4P</u>	<u>gamma-BHC (Lindane)</u>	<u>00058899</u>	<u>N/A</u>	<u>0.95</u>	<u>0.47</u> <u>H</u>
<u>6P</u>	<u>Chlordane</u>	<u>00057749</u>	<u>N/A</u>	<u>N/A</u>	<u>0.000025</u> <u>CRL</u>
<u>7P</u>	<u>4,4-DDT</u>	<u>00050293</u>	<u>N/A</u>	<u>N/A</u>	<u>0.000015</u> <u>CRL</u>
<u>10P</u>	<u>Dieldrin</u>	<u>00060571</u>	<u>0.056</u>	<u>0.24</u>	<u>0.00000065</u> <u>CRL</u>
<u>14P</u>	<u>Endrin</u>	<u>00072208</u>	<u>0.036</u>	<u>0.086</u>	<u>N/A</u>
<u>18P</u>	<u>PCBs</u>		<u>N/A</u>	<u>N/A</u>	<u>0.00000039</u> <u>CRL</u>
<u>25P</u>	<u>Toxaphene</u>	<u>08001352</u>	<u>N/A</u>	<u>N/A</u>	<u>0.0000068</u> <u>CRL</u>
<u>PP</u>	<u>2,3,7,8-TCDD</u>	<u>01746016</u>	<u>N/A</u>	<u>N/A</u>	<u>8.6 E-10</u> <u>CRL</u>
<u>—</u>	<u>Parathion</u>	<u>00056382</u>	<u>0.013</u>	<u>0.065</u>	<u>N/A</u>

#### 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 Conversions Factors); 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.

CAS – Chemical Abstract Service number

CRL – Cancer risk level at  $1 \times 10^{-6}$

H—Threshold effect human health criterion; incorporates additional uncertainty factor for some Group C carcinogens.

ln [H]—Natural Logarithm of the Hardness of stream as mg/l CaCO<sub>3</sub>

ug/L – Micrograms per liter

N/A—Criterion not developed

PPNO – Priority Pollutant Number

(c) Wildlife criteria. Wildlife criteria will be developed for the bioaccumulative chemicals of concern (BCCs) in the Great Lakes System using methodologies contained in the Great Lakes guidance in 40 CFR Part 132, Appendix D (relating to Great Lakes Water Quality Initiative methodology for the development of wildlife criteria). The wildlife criteria are contained in the following table:

### GREAT LAKES WILDLIFE CRITERIA

TABLE 7

<u>PP</u>	<u>CHEMICAL</u>	<u>CRITERION</u>
<u>NO.</u>	<u>NAME</u>	<u>(ug/L)</u>
<u>7-9P</u>	<u>DDT &amp; METABOLITES</u>	<u>0.000011</u>
<u>8M</u>	<u>MERCURY</u>	<u>0.0013</u>
<u>18-24P</u>	<u>PCBs (TOTAL)</u>	<u>0.00012</u>
<u>PP</u>	<u>2,3,7,8-TCDD</u>	<u>3.1 E-9</u>

### **DESIGNATED WATER USES AND WATER QUALITY CRITERIA**

#### **§ 93.9. Designated water uses and water quality criteria.**

(a) The tables in §§ 93.9a—93.9z display designated water uses and water quality criteria in addition to the water uses and criteria specified in Tables 2 and 3. Designated uses shall be protected in accordance with Chapters 95 and 96 (relating to wastewater treatment requirements; and water quality standards implementation) and any other applicable State and Federal laws and

regulations. The tables also indicate specific exceptions to Tables 2 and 3 on a stream-by-stream or segment-by-segment basis by the words “add” or “delete” followed by the appropriate symbols described elsewhere in this chapter. The county column in §§ 93.9a—93.9z indicates the county in which the mouth of the stream **or the downstream limit of the zone described for that entry** is located. Abbreviations used in the Stream and the “Zone” columns are as follows:

\* \* \* \* \*

(b) When appropriate, “Exceptions to Specific Criteria” provide reference to the Delaware River Basin Commission (DRBC) water quality regulations, Orsanco (Ohio River Valley Water Sanitation Commission) pollution control standards and the Great Lakes Water Quality Agreement (GLWQA) which specify the criteria that apply **if a water quality standard is more stringent than those in this title.** The applicable criteria can be obtained from the following:

\* \* \* \* \*

**(Editor’s note:** A basin-wide migratory fishes (MF) designation is being applied to Drainage Lists A – O and Z, unless there are specific exceptions already noted for certain waterbodies or stream segments within one of these drainage lists. These specific changes to the drainage lists, however, are not reflected in this Annex, but will be added to the regulations at final rulemaking. Drainage lists A –G are located within the Delaware River Basin. Drainage lists H – O are located within the Susquehanna River Basin. Drainage list Z is located within the Potomac River Basin.)

\* \* \* \* \*

§93.9d. Drainage List D

Delaware River Basin in Pennsylvania  
*Lehigh River*

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria
3—Penn Springs	Basin	Carbon	HQ-CWF	None
3—Black Creek	<b>[Basin, Source to Beaver Creek</b>	<b>Carbon</b>	<b>HQ-CWF</b>	<b>None]</b>
<b><u>4—Hazle Creek</u></b>	<b><u>Basin</u></b>	<b><u>Carbon</u></b>	<b><u>HQ-CWF</u></b>	<b><u>None</u></b>
4—Beaver Creek	Basin	Carbon	CWF	None
3—Black Creek	Main Stem, <b><u>Confluence of Hazle Creek and</u></b> Beaver Creek to Mouth	Carbon	CWF	None
4—[Unnamed Tributaries] UNTs to Black Creek	Basins, <b><u>Confluence of Hazle Creek and</u></b> Beaver Creek to Mouth	Carbon	HQ-CWF	None
<b><u>4—Koons Creek</u></b>	<b><u>Basin</u></b>	<b><u>Carbon</u></b>	<b><u>HQ-CWF</u></b>	<b><u>None</u></b>
4—Quakake Creek	Basin, Source to Wetzel Creek	Carbon	HQ-CWF	None
5—Wetzel Creek	Basin	Carbon	CWF	None
4—Quakake Creek	Basin, Wetzel Creek to Mouth	Carbon	CWF	None

\* \* \* \* \*



*Susquehanna River*

<b>Stream</b>	<b>Zone</b>	<b>County</b>	<b>Water Uses Protected</b>	<b>Exceptions To Specific Criteria</b>
*****				
2—Mehoopany Creek	Basin, Source to North <b>[Fork] <u>Branch Mehoopany Creek</u></b>	Wyoming	HQ-CWF	None
3—North <b>[Fork] <u>Branch</u></b> Mehoopany Creek	Basin	Wyoming	CWF	None
2—Mehoopany Creek	Basin, North <b>[Fork] <u>Branch Mehoopany Creek</u></b> to Mouth	Wyoming	CWF	None
2—Tagues Creek	Basin	Wyoming	CWF	None
2—Tunkhannock Creek	Main Stem, Source to Susquehanna-Wyoming County Border	Susquehanna-Wyoming	CWF	None
3— <b>[Unnamed Tributaries] <u>UNTs</u></b> to Tunkhannock Creek	Basins, Source to Susquehanna-Wyoming County Border	Susquehanna	CWF	None
3—Bear Swamp Creek	Basin	Susquehanna	CWF	None
3—Bell Creek	Basin	Susquehanna	CWF	None
3— <b>[Leslie] <u>Nine Partners</u></b> Creek	Basin	Susquehanna	CWF	None
3—Partners Creek	Basin	Susquehanna	CWF	None
*****				

§93.9l. Drainage List L

Susquehanna River Basin in Pennsylvania  
*West Branch Susquehanna River*

<b>Stream</b>	<b>Zone</b>	<b>County</b>	<b>Water Uses Protected</b>	<b>Exceptions To Specific Criteria</b>
*****				
4— <b>[Unnamed Tributary] <u>UNT</u></b> 21134	Basin, Source to Raughtown Creek	Lycoming	CWF	None
5—Raughtown Creek	<b>[Basin, Source to Confluence of Rockey Run and Gottshall Run</b>	<b>Clinton</b>	<b>HQ-CWF</b>	<b>None]</b>
<b><u>6—Rockey Run</u></b>	<b><u>Basin</u></b>	<b><u>Clinton</u></b>	<b><u>HQ-CWF</u></b>	<b><u>None</u></b>
<b><u>6—Gottshall Run</u></b>	<b><u>Basin</u></b>	<b><u>Clinton</u></b>	<b><u>HQ-CWF</u></b>	<b><u>None</u></b>
5—Raughtown Creek	Basin, Confluence of Rockey Run and Gottshall Run to Mouth	Lycoming	CWF	None
*****				

§93.9m. Drainage List M

**Susquehanna River Basin in Pennsylvania**  
*Susquehanna River*

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria
* * * * *				
3—Trout Run	Basin	Northumberland	CWF	None
3 – <b>[Buddys] Bennys</b> Run	Basin	Northumberland	CWF	None
3—Millers Run	Basin	Northumberland	CWF	None
* * * * *				

**§93.9q. Drainage List Q**

**Ohio River Basin in Pennsylvania**  
*Allegheny River*

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria
* * * * *				
4—Marsh Run	Basin	Crawford	CWF	None
4—Thompson Creek	Basin, <b><u>Source to Shirley Run</u></b>	Crawford	CWF	None
<b><u>5—Shirley Run</u></b>	<b><u>Basin</u></b>	<b><u>Crawford</u></b>	<b><u>HQ-CWF</u></b>	<b><u>None</u></b>
<b><u>4—Thompson Creek</u></b>	<b><u>Basin, Shirley Run to Mouth</u></b>	<b><u>Crawford</u></b>	<b><u>CWF</u></b>	<b><u>None</u></b>
* * * * *				
5—Caldwell Creek	Basin, Source to West Branch Caldwell Creek	Warren	HQ-CWF	None
6—West Branch Caldwell Creek	Basin	<b>[Crawford]</b> <b><u>Warren</u></b>	EV	None
5—Caldwell Creek	Basin, West Branch Caldwell Creek to Mouth	Crawford	EV	None
* * * * *				

**§93.9v. Drainage List V**

**Ohio River Basin in Pennsylvania**  
*Monongahela River*

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria
* * * * *				

3—Bates Run	Basin	Fayette	WWF	None
3—Tenmile Creek	Basin, Source to South Fork Tenmile Creek	Greene- <u>Washington</u>	TSF	None
4—South Fork Tenmile Creek	Basin, Source to Browns Creek	Greene	HQ-WWF	None
5—Browns Creek	Basin	Greene	HQ-WWF	None
4—South Fork Tenmile Creek	Basin, Browns Creek to Mouth	Greene- <u>Washington</u>	WWF	None
3—Tenmile Creek	Basin, South Fork Tenmile Creek to Mouth	Greene- <u>Washington-Fayette</u>	WWF	None

\* \* \* \* \*

§ 93.9x. Drainage List X.

Lake Erie

Stream	Zone	County	Water Uses Protected	Exceptions To Specific Criteria
1—Lake Erie	All sections of lake in PA except Outer Erie Harbor and Presque Isle Bay	Erie	CWF	<i>Delete</i> Fe, [pH1,] DO1 and Bac1 See GLWQA <u>Add E. coli per 40 CFR 131.41 (EXCEPT (F)) and See 28 Pa. Code § 18.28(b)(2) and (3)</u> <i>Delete</i> pH Add pH between 7 and 9
1—Lake Erie (Outer Erie Harbor and Presque Isle Bay)	Portion of lake bordered by Presque Isle on west, longitude 80°10'18" on north, except harbor area and central channel dredged and maintained by United States Army Corps of Engineers.	Erie	WWF	<u>Add E. coli per 40 CFR 131.41 (EXCEPT (F)) and See 28 Pa. Code § 18.28(b)(2) and (3)</u>
1—Lake Erie (Outer Erie Harbor and Presque Isle Bay)	Harbor area and central channel dredged and maintained by United States Army Corps of Engineers	Erie	WWF, <i>Delete</i> WC	<i>Delete</i> pH and Bac1 Add pH between 7 and 9, Bac2

\* \* \* \* \*