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Title 40 – Protection of Environment
Chapter I – Environmental Protection Agency
Subchapter D – Water Programs
Part 131 – Water Quality Standards
Subpart D – Federally Promulgated Water Quality Standards

Authority: 33 U.S.C. 1251 *et seq.*

Source: 48 FR 51405, Nov. 8, 1983, unless otherwise noted.

§ 131.45 Revision of certain Federal water quality criteria applicable to Washington.

- (a) **Scope.** This section promulgates human health criteria for priority toxic pollutants in surface waters in Washington.
- (b) **Criteria for priority toxic pollutants in Washington.** The applicable human health criteria are shown in table 1 to this paragraph (b).

Table 1 to Paragraph (b)—Human Health Criteria for Washington

A		B					C		
Chemical	CAS Number	Cancer Slope Factor, CSF (per mg/kg·d) (B1)	Relative Source Contribution, RSC (-) (B2)	Reference Dose, RfD (mg/kg·d) (B3)	Bio-accumulation Factor (L/kg tissue) (B4)	Bio-concentration Factor (L/kg tissue) (B5)	Water & Organisms (µg/L) (C1)	Organisms Only (µg/L) (C2)	
1	1,1,1-Trichloroethane	71556	-	0.50	2	10	-	20,000	50,000
2	1,1,2,2-Tetrachloroethane	79345	0.2	-	-	8.4	-	0.1	0.3
3	1,1,2-Trichloroethane	79005	0.057	-	-	8.9	-	0.35	0.90
4	1,1-Dichloroethylene	75354	-	0.50	0.05	2.6	-	700	4,000
5	1,2,4-Trichlorobenzene	120821	0.029	-	-	430	-	0.036	0.037
6	1,2-Dichlorobenzene	95501	-	0.50	0.3	82	-	700	800
7	1,2-Dichloroethane	107062	0.0033	-	-	1.9	-	8.9	73
8	1,2-Diphenylhydrazine	122667	0.8	-	-	27	-	0.01	0.02
9	1,2-Trans-Dichloroethylene	156605	-	0.50	0.02	4.7	-	200	1,000
10	1,3-Dichlorobenzene	541731	-	0.50	0.002	190	-	2	2
11	1,3-Dichloropropene	542756	0.122	-	-	3.0	-	0.22	1.2
12	1,4-Dichlorobenzene	106467	-	0.50	0.07	84	-	200	200
13	2,4-Dichlorophenol	120832	-	0.50	0.003	48	-	10	10
14	2,4-Dinitrophenol	51285	-	0.50	0.002	4.4	-	30	100
15	2-Chloronaphthalene	91587	-	0.80	0.08	240	-	100	100
16	2-Methyl-4,6-Dinitrophenol	534521	-	0.50	0.0003	10	-	3	7
17	4,4'-DDD	72548	0.24	-	-	240,000	-	7.9E-06	7.9E-06
18	4,4'-DDE	72559	0.167	-	-	3,100,000	-	8.8E-07	8.8E-07
19	4,4'-DDT	50293	0.34	-	-	1,100,000	-	1.2E-06	1.2E-06
20	Acenaphthene	83329	-	0.50	0.06	510	-	30	30
21	Aldrin	309002	17	-	-	650,000	-	4.1E-08	4.1E-08
22	alpha-BHC	319846	6.3	-	-	1,500	-	4.8E-05	4.8E-05
23	alpha-Endosulfan	959988	-	0.50	0.006	200	-	6	7
24	Anthracene	120127	-	0.50	0.3	610	-	100	100
25	Antimony	7440360	-	0.50	0.0004	-	1	6	90
26	Arsenic*	7440382	1.75	-	-	-	44	*0.018	*0.14

Revision of certain Federal water quality criteria applicable to...

A		B					C		
	Chemical	CAS Number	Cancer Slope Factor, CSF (per mg/kg·d) (B1)	Relative Source Contribution, RSC (-) (B2)	Reference Dose, RfD (mg/kg·d) (B3)	Bio-accumulation Factor (L/kg tissue) (B4)	Bio-concentration Factor (L/kg tissue) (B5)	Water & Organisms (µg/L) (C1)	Organisms Only (µg/L) (C2)
27	Benzo(a) Anthracene	56553	0.73	-	-	3,900	-	0.00016	0.00016
28	Benzo(a) Pyrene	50328	7.3	-	-	3,900	-	1.6E-05	1.6E-05
29	Benzo(b) Fluoranthene	205992	0.73	-	-	3,900	-	0.00016	0.00016
30	Benzo(k) Fluoranthene	207089	0.073	-	-	3,900	-	0.0016	0.0016
31	beta-BHC	319857	1.8	-	-	180	-	0.0013	0.0014
32	Bis(2-Chloro-1-Methylethyl) Ether**	108601	-	0.50	0.04	10	-	400	900
33	Bis(2-Ethylhexyl) Phthalate	117817	0.014	-	-	710	-	0.045	0.046
34	Bromoform	75252	0.0045	-	-	8.5	-	4.6	12
35	Butylbenzyl Phthalate	85687	0.0019	-	-	19,000	-	0.013	0.013
36	Chlordane	57749	0.35	-	-	60,000	-	2.2E-05	2.2E-05
37	Chlorobenzene	108907	-	0.50	0.02	22	-	100	200
38	Chlorodibromomethane	124481	0.04	-	-	5.3	-	0.60	2.2
39	Chloroform	67663	-	0.50	0.01	3.8	-	100	600
40	Chrysene	218019	0.0073	-	-	3,900	-	0.016	0.016
41	Cyanide	57125	-	0.50	0.0006	-	1	9	100
42	Dibenzo(a,h) Anthracene	53703	7.3	-	-	3,900	-	1.6E-05	1.6E-05
43	Dichlorobromomethane	75274	0.034	-	-	4.8	-	0.73	2.8
44	Dieldrin	60571	16	-	-	410,000	-	7.0E-08	7.0E-08
45	Diethyl Phthalate	84662	-	0.50	0.8	920	-	200	200
46	Dimethyl Phthalate	131113	-	0.50	10	4,000	-	600	600
47	Di-n-Butyl Phthalate	84742	-	0.50	0.1	2,900	-	8	8
48	Endosulfan Sulfate	1031078	-	0.50	0.006	140	-	9	-
49	Endrin	72208	-	0.80	0.0003	46,000	-	0.002	0.002
50	Ethylbenzene	100414	-	0.50	0.022	160	-	29	31
51	Fluoranthene	206440	-	0.50	0.04	1,500	-	6	6
52	Fluorene	86737	-	0.50	0.04	710	-	10	10
53	gamma-BHC; Lindane	58899	-	0.50	0.0047	2,500	-	0.43	0.43
54	Heptachlor	76448	4.1	-	-	330,000	-	3.4E-07	3.4E-07
55	Heptachlor Epoxide	1024573	5.5	-	-	35,000	-	2.4E-06	2.4E-06
56	Hexachlorobenzene	118741	1.02	-	-	90,000	-	5.0E-06	5.0E-06
57	Hexachlorobutadiene	87683	0.04	-	-	1,100	-	0.01	0.01
58	Hexachlorocyclopentadiene	77474	-	0.50	0.006	1,300	-	1	1
59	Hexachloroethane	67721	0.04	-	-	600	-	0.02	0.02
60	Indeno(1,2,3-cd) Pyrene	193395	0.73	-	-	3,900	-	0.00016	0.00016
61	Methyl Bromide	74839	-	0.50	0.02	1.4	-	300	-
62	Methylene Chloride	75092	0.002	-	-	1.6	-	10	100
63	Methylmercury	22967926	-	2.7E-05	0.0001	-	-	-	^b 0.03 (mg/kg)
64	Nickel	7440020	-	0.50	0.02	-	47	80	100

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65	Nitrobenzene	98953	-	0.50	0.002	3.1	-	30	100
66	Pentachlorophenol (PCP)	87865	0.4	-	-	520	-	0.002	0.002
67	Phenol	108952	-	0.50	0.6	1.9	-	9,000	70,000
68	Polychlorinated Biphenyls (PCBs)		2	-	-	-	31,200	7E-06	7E-06
69	Pyrene	129000	-	0.50	0.03	860	-	8	8
70	Selenium	7782492	-	0.50	0.005	-	4.8	60	200
71	Tetrachloroethylene	127184	0.0021	-	-	76	-	2.4	2.9
72	Toluene	108883	-	0.50	0.0097	17	-	72	130
73	Trichloroethylene	79016	0.05	-	-	13	-	0.3	0.7
74	Vinyl Chloride	75014	1.5	-	-	1.7	-	-	0.18
75	Zinc	7440666	-	0.50	0.3	-	47	1,000	1,000
^a	This criterion refers to the inorganic form of arsenic only.								
^b	This criterion is expressed as the fish tissue concentration of methylmercury (mg methylmercury/kg fish). See <i>Water Quality Criterion for the Protection of Human Health: Methylmercury</i> (EPA-823-R-01-001, January 3, 2001) for how this value is calculated using the criterion equation in EPA's 2000 Human Health Methodology rearranged to solve for a protective concentration in fish tissue rather than in water.								
^c	This criterion applies to total PCBs (e.g., the sum of all congener or isomer or homolog or Aroclor analyses).								
[*]	These criteria were promulgated for Washington in the National Toxics Rule at § 131.36, and are moved into § 131.45 to have one comprehensive human health criteria rule for Washington.								
^{**}	Bis(2-Chloro-1-Methylethyl) Ether was previously listed as Bis(2-Chloroisopropyl) Ether.								

(c) Applicability.

- (1) The criteria in paragraph (b) of this section apply to waters with Washington's designated uses cited in paragraph (d) of this section and apply concurrently with other applicable water quality criteria.
- (2) The criteria established in this section are subject to Washington's general rules of applicability in the same way and to the same extent as are other federally promulgated and state-adopted numeric criteria when applied to the same use classifications in paragraph (d) of this section.
 - (i) For all waters with mixing zone regulations or implementation procedures, the criteria apply at the appropriate locations within or at the boundary of the mixing zones; otherwise the criteria apply throughout the waterbody including at the end of any discharge pipe, conveyance or other discharge point within the waterbody.
 - (ii) The state must not use a low flow value below which numeric non-carcinogen and carcinogen human health criteria can be exceeded that is less stringent than the harmonic mean flow for waters suitable for the establishment of low flow return frequencies (*i.e.*, streams and rivers). Harmonic mean flow is a long-term mean flow value calculated by dividing the number of daily flows analyzed by the sum of the reciprocals of those daily flows.
 - (iii) If the state does not have such a low flow value for numeric criteria, then none will apply and the criteria in paragraph (b) of this section herein apply at all flows.

(d) Applicable use designations.

- (1) All waters in Washington assigned to the following use classifications are subject to the criteria identified in paragraph (d)(2) of this section:
 - (i) Fresh waters—
 - (A) Miscellaneous uses: Harvesting (Fish harvesting);
 - (B) Recreational uses;
 - (C) Water supply uses: Domestic water (Domestic water supply);
 - (ii) Marine waters—
 - (A) Miscellaneous uses: Harvesting (Salmonid and other fish harvesting, and crustacean and other shellfish (crabs, shrimp, scallops, etc.) harvesting);
 - (B) Recreational uses;
 - (C) Shellfish harvesting: Shellfish harvest (Shellfish (clam, oyster, and mussel) harvesting)
- Note to paragraph (d)(1): The source of these uses is Washington Administrative Code 173-201A-600 for Fresh waters and 173-201A-610 for Marine waters.
- (2) For Washington waters that include the use classification of Domestic Water, the criteria in column C1 and the methylmercury criterion in column C2 of Table 1 in paragraph (b) of this section apply. For Washington waters that include any of the following use classifications but do not include the use classification of Domestic Water, the criteria in column C2 of Table 1 in paragraph (b) of this section apply: Harvesting (fresh and marine waters), Recreational Uses (fresh and marine waters), and Shellfish Harvesting.

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