

Water Quality Criteria Comparison Table

The attached document is provided for information only. It was prepared by Mr. John Hankins of Fuss & O'Neill and is intended to show a comparison between water quality criteria in the 2002 Water Quality Standards and those proposed in the December 22, 2009 proposed revisions to the Water Quality Standards.

Please consult the Proposed Water Quality Standards, public noticed on December 22, 2009, when conducting any reviews or providing any comment. This courtesy document is intended to be a fair representation of changes but in the case of any errors or omissions, the official document as public noticed should be followed.

Comparison of 2002 Adopted Water Quality Standards to Proposed Revisions in the Criteria for Chemical Constituents

New Criteria	Aquatic Life Criteria (µg/L)						Human Health Designation (µg/L)					
	Freshwater		Saltwater		Organisms Only	Consumption of:	Water and Organisms		Health Designation			
Lower Criteria	Acute	Chronic	Acute	Chronic			2002	Proposed		2002	Proposed	
Higher Criteria										2002	Proposed	
Revised Health Designation										2002	Proposed	
Compound	2002	Proposed	2002	Proposed	2002	Proposed	2002	Proposed	2002	Proposed		
Toxic Metals, Cyanides												
Aluminum (Total)	750	87	233	233	35	35	168000	---	2074	---	TT	
Ammonia	---	---	---	---	---	35	11200	---	138	---	TT	
Antimony	900	190	---	---	---	---	4300	280	6	2.8	TT	
Arsenic*	340	150	69	69	36	36	0.021	0.05	0.011	0.02	A	
Asbestos	---	---	---	---	---	---	7 million fibers/L	7 million fibers/L	---	---	A	
Barium	2000	220	---	---	---	---	112000	7	0.0077	1	TT	
Beryllium	30.6	3.6	---	---	---	---	0.13	---	---	---	TT	
Boron	8500	950	---	---	---	---	112000	---	---	---	TT	
Cadmium	2.02	1	42	40	9.3	8.8	10769	11.2	5	0.14	TT	
Chloride	860000	230000	---	---	---	---	---	---	---	---	---	
Chlorine	19	19	11	11	7.5	---	---	56000	---	691	TT	
Chromium, hexavalent	16	16	11	11	50	50	2019	0.28	100	0.038	TT	
Chromium, trivalent	323	323	42	42	---	---	1009615	65625	100	9052	TT	
Cobalt	---	220	---	24	---	---	---	168	---	2	TT	
Copper	14.3	14.3	4.8	4.8	3.1	3.1	---	194	1300	51	TT	
Copper (Site specific)	25.7	25.7	18.1	18.1	---	---	---	194	1300	51	TT	
Cyanide ²	22	22	5.2	5.2	1	1	220000	14000	200	139	TT	
Iron	---	---	---	1000	---	---	---	---	---	---	---	
Lead	30	30	1.2	1.2	8.1	8.1	---	---	15	15	TT	
Lithium	---	---	---	---	---	---	---	1120	---	14	TT	
Manganese	---	---	---	---	---	---	---	39200	---	484	TT	
Mercury - inorganic*	1.4	1.4	0.77	0.77	0.94	0.94	0.051	0.00029	0.05	0.00029	TT-HB	
Nickel	260.5	260	28.9	29	8.2	8.2	4600	30	610	9.5	TT	
Selenium (Total) ¹	20	20	5	5	71	71	14000	729	50	33	TT	
Silver	1.02	1	---	0.06	---	---	107692	7000	175	35	TT	
Thallium	---	79	---	17	---	---	6.3	0.48	1.7	0.26	TT	
Tin	---	1600	---	180	---	---	---	---	---	---	TT	
Uranium	---	---	---	---	---	---	---	1680	---	21	TT	
Vanadium	---	150	---	44	---	---	---	46	---	6	TT	
Zinc (Total) ⁵	65	65	65	65	90	90	68740	4468	9100	1429	TT	
Volatile Substances												
Acetone	15000	---	1700	---	---	---	---	504000	---	6222	TT	
Acetonitrile	73705	---	8189	---	---	---	---	2800	---	35	TT	

Comparison of 2002 Adopted Water Quality Standards to Proposed Revisions in the Criteria for Chemical Constituents

New Criteria Lower Criteria Higher Criteria Revoked Health Designation	Aquatic Life Criteria (µg/L)				Human Health Designation (µg/L)					
	Freshwater		Saltwater		Consumption of:		Health Designation			
	Acute	Chronic	Acute	Chronic	Organisms Only	Water and Organisms	2002	Proposed		
Compound	2002 Proposed	2002 Proposed	2002 Proposed	2002 Proposed	2002	Proposed	2002	Proposed	2002 Proposed	
Acrolein	0.8	0.1			780	0.16	320	0.1	TT	TT
Acrylonitrile	369	41			0.66	0.22	0.059	0.049	C	C
Benzene	700	160			71	6.73	1.2	0.38	A	C
Bromomethane	0.04	0.005			4000	93	48	3.37	TT	TT
2-Butanone	123077	13752				336000		4148		TT
n-Butylbenzene										TT
sec-Butylbenzene										TT
t-Butylbenzene										TT
Carbon disulfide	130	15				28544		683		TT
Carbon tetrachloride	2200	240			4.4	1.44	0.25	0.23	C	C
Chlorobenzene	420	47			21000	1359	100	127	TT	TT
Chloroethane						752		7.37		C
2-Chloroethylvinyl ether (mixed)										
Chloroform	1300	140			470	187	5.7	6.75	C	TT
Chloromethane					470	199	5.7	17.54	TT	C
2-Chloronaphthalene	79	9			4300	277	1700	185	TT-HB	TT
2-Chlorotoluene						41		10		TT
4-Chlorotoluene	64	7				19		8		TT
Cyclohexane	2480	276				33922		8810		TT
Dibenzofuran	36	4								TT
1,2-Dichlorobenzene	130	23			17000	1133	2700	405	TT-HB	TT
1,3-Dichlorobenzene	79	22			2600	13	400	4.5	TT-HB	TT
1,4-Dichlorobenzene	57	9.4			2600	2.6	400	0.94	TT-HB	C
Dichlorobromomethane					46	15	0.56	0.54	C	C
1,4-Dichlorobutene										
Dichlorodifluoromethane						9642		338		TT
1,1-Dichloroethane	3700	410				3723		69		TT
1,2-Dichloroethane	9600	2000			99	32	0.38	0.38	C	C
1,2-Dichloroethylene (1,2-Dichloroethene)	8800	970				2564		68		TT
1,1-Dichloroethylene (1,1-Dichloroethene)	1900	210			3.2	625	0.057	33	C	TT

Comparison of 2002 Adopted Water Quality Standards to Proposed Revisions in the Criteria for Chemical Constituents

New Criteria Lower Criteria Higher Criteria Revoked Criteria Revised Health Designation	Aquatic Life Criteria (µg/L)				Human Health Designation (µg/L)					
	Freshwater		Saltwater		Consumption of:		Water and Organisms	Health Designation		
	Acute	Chronic	Acute	Chronic	Organisms Only	2002			Proposed	
Compound	2002 Proposed	2002 Proposed	2002 Proposed	2002 Proposed	2002	Proposed	2002	Proposed	2002 Proposed	
cis-1,2-Dichloroethylene (cis-1,2-Dichloroethene)	5500	620	---	---	---	4430	---	69	---	TT
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)	5000	560	---	---	140000	4430	100	69	---	TT
1,2-Dichloropropane	847	94	---	---	39	24	0.52	0.93	---	TT
1,3-Dichloropropene	15	1.7	---	---	1700	18	10	0.34	---	TT
Ethyl acetate	14375	1597	---	---	---	504000	---	6222	---	TT
Ethylbenzene	550	61	---	---	29000	187	700	51	---	TT
Ethylene dibromide	---	---	---	---	---	0.69	---	0.017	---	TT
n-Hexane	---	---	---	---	---	177	---	78	---	TT
Isopropylbenzene	193	21	---	---	---	1351	---	461	---	TT
4-Isopropyltoluene	148	16.5	---	---	---	169	---	94	---	TT
Methyl isobutyl ketone	---	---	---	---	---	70000	---	556	---	TT
Methyl methacrylate	---	---	---	---	---	107692	---	972	---	TT
Methyl tert butyl ether	151000	51000	---	---	---	5600	---	69	---	TT
Methylene chloride	11000	1900	---	---	1600	519	4.7	4.63	---	C
2-Methylnaphthalene	42	4.7	---	---	---	38	---	16	---	TT
Nitrobenzene	1989	221	---	---	1900	121	17	3.4	---	TT
2-Nitrophenol	650	73	---	---	---	---	---	---	---	TT
4-Nitrophenol	---	---	---	---	---	---	---	---	---	TT
n-Propylbenzene	---	---	---	---	---	---	---	---	---	TT
Pyridine	236	26	---	---	---	168	---	2	---	TT
Styrene	214	24	---	---	---	951	---	122	---	TT
1,1,1,2-Tetrachloroethane	770	85	---	---	---	9.48	---	1.18	---	C
1,1,2,2-Tetrachloroethane	1455	655	---	---	11	3.5	0.17	0.17	---	C-HB
Tetrachloroethylene	430	53	---	---	8.85	0.21	0.8	0.05	---	C
Tetrahydrofuran	74000	11000	---	---	---	368	---	4.55	---	C
Toluene	560	62	---	---	200000	438	1000	42	---	TT
1,1,2-Trichloro-1,2,2-trifluoroethane	---	---	---	---	---	98315	---	17303	---	TT
1,2,4-Trichlorobenzene	---	5	---	---	940	7.75	70	4.31	---	C
1,1,1-Trichloroethane	690	76	---	---	---	9500	---	504	---	TT

Comparison of 2002 Adopted Water Quality Standards to Proposed Revisions in the Criteria for Chemical Constituents

New Criteria Lower Criteria Higher Criteria Revoked Criteria Revised Health Designation	Aquatic Life Criteria (µg/L)				Human Health Designation (µg/L)					
	Freshwater		Saltwater		Consumption of:		Water and Organisms		Health Designation	
	Acute	Chronic	Acute	Chronic	Organisms Only	2002	Proposed			
Compound	2002 Proposed	2002 Proposed	2002 Proposed	2002 Proposed	2002	Proposed	2002	Proposed	2002 Proposed	
1,1,2-Trichloroethane	3300	740			42	13,655	0.6	0.59	C	C
Trichloroethylene	2000	220			81	3,71	2.7	0.36	C	C
Trichlorofluoromethane						30045		1963		TT
1,2,4-Trimethylbenzene	142	16				712		235		TT
1,3,5-Trimethylbenzene	237	26				1010		260		TT
Vinyl acetate						11200		138		TT
Vinyl chloride	8400	930			525	2	2	0.023	C	C
Xylenes	240	27				6554		1154		TT
Semi-volatile Substances										
Aceanaphthene	19	15			6.1	174	2.7	123	TT-HB	TT
Aceanaphthylene	120	13			49.2	1400	4.37	323	C-HB	TT
Aniline	11.4	1.3				491		6		C
Anthracene	0.18	0.02			4.92	5633	0.44	1544	C-HB	TT
Benzidine	38	4			0.00054	0.00017	0.00012	0.000081	A	C
Benzol(a)anthracene	42	4.7			0.49	0.003	0.044	0.003	C-HB	C
Benzol(a)pyrene	0.54	0.06			0.049	0.0002	0.0044	0.0002	C-HB	C
Benzol(b)fluoranthene	23	2.6			0.49	0.003	0.044	0.003	C-HB	C
Benzol(g,h,i)perylene					4.92	0.016	0.44	0.015	C-HB	C
Benzol(k)fluoranthene					0.49	0.004	0.044	0.004	C-HB	C
Benzoic Acid						224000		27654		TT
Bis(2-chloroethoxy)methane	7077	786								TT
Bis(2-chloroethyl)ether	9231	1026			1.4	0.2	0.031	0.013	C	C
Bis(2-chloroisopropyl)ether					170000	20	1400	0.49	TT	C
Bis(2-ethylhexyl)phthalate	5	1			5.9	0.02	1.8	0.02	C-HB	C
Bromoform	1115	124			360	117	4.3	4.22	C	C
4-Bromophenylphenylether										
Butyl benzyl phthalate	130	23			5200	24	3000	21	TT-HB	TT
Carbazole	48	5.3				3		1.11		C
4-Chloroaniline	9	1				32		0.64		TT
Chlorodibromomethane					34	11	0.41	0.4	C	C
2-Chlorophenol	290	32			400	26	120	15	TT	TT

Comparison of 2002 Adopted Water Quality Standards to Proposed Revisions in the Criteria for Chemical Constituents

New Criteria Lower Criteria Higher Criteria Revoked Criteria Revised Health Designation	Aquatic Life Criteria (µg/L)				Human Health Designation (µg/L)			
	Freshwater		Saltwater		Consumption of:			
	Acute	Chronic	Acute	Chronic	Organisms Only	Water and Organisms	Organisms	Health Designation
Compound	2002 Proposed	2002 Proposed	2002 Proposed	2002 Proposed	2002 Proposed	2002 Proposed	2002 Proposed	2002 Proposed
3-methyl-4-Chlorophenol	66	7						
4-Chlorophenyl-phenylether								
Chrysene	42	4.7			4.92	0.11	0.44	0.1
m-Cresol	560	62				4684		116
Dibenzo(a,h)anthracene					0.01	0.0001	0.0009	0.0001
1,2-Dibromo-3-chloropropane						0.033		0.004
3,3-Dichlorobenzidene	40	4.5			0.077	0.025	0.04	0.019
2,4-Dichlorophenol	110	11			790	17	93	5
Dichlorodifluoroethane								
Diethyl phthalate	980	220			12000	767	2300	323
Dimethyl phthalate	2788	310			2900000	1556	313000	412
2,4-Dimethylphenol	140	15				149		72
Di-n-butyl phthalate	34	4			1200	66	2700	34
2,4-Dinitrophenol	199	22			14000	93	70	1.4
2-methyl-4,6-Dinitrophenol	6.4	0.7			765	51	13.4	2.7
2,4-Dinitrotoluene	394	44			9.1	1.35	0.11	0.05
2,6-Dinitrotoluene	730	81				1.35		0.05
Di-n-octyl phthalate						2.8		2.7
1,4-Dioxane						1680		21
1,2-Diphenylhydrazine	10	1			0.54	0.18	0.04	0.035
Ethanol	20491	2277				37520		463
Ethylene glycol	1300000	140000				1120000		13827
Fluoranthene	3.7	0.8			1.28	5.7	1.01	5.6
Fluorene	110	19			49.2	848	4.37	211
Formaldehyde	4554	1178				11200		138
Hexachlorobenzene	0.34	0.04			0.00077	0.0000076	0.00075	0.0000076
Hexachlorobutadiene						50	0.44	0.43
Hexachloroethane						8.9	2.6	1.3
Indeno(1,2,3-cd)pyrene					0.49	0.0016	0.044	0.0016
Isophorone	7500	920			2600	841	36	35
Isopropanol						1848		1027

Comparison of 2002 Adopted Water Quality Standards to Proposed Revisions in the Criteria for Chemical Constituents

New Criteria Lower Criteria Higher Criteria Revoked Criteria Revised Health Designation	Aquatic Life Criteria (µg/L)					Human Health Designation (µg/L)							
	Freshwater		Saltwater			Consumption of:		Water and Organisms		Health Designation			
	Acute	Chronic	Acute	Chronic	Proposed	Organisms Only	2002	Proposed	2002	Proposed			
Compound	2002	Proposed	2002	Proposed	2002	Proposed	2002	Proposed	2002	Proposed	2002	Proposed	
Methanol	---	3000	---	330	---	---	2002	Proposed	84000	---	1037	---	TT
2-Methylphenol	---	600	---	67	---	---	---	---	840	---	20	---	TT
4-Methylphenol	---	499	---	55.5	---	---	---	---	854	---	20	---	TT
Naphthalene	---	170	---	21	---	---	20513	---	133	677	13	---	TT
2-Nitroaniline	---	188	---	21	---	---	---	---	84	---	1.7	---	C
3-Nitroaniline	---	61	---	7	---	---	---	---	197	---	1.7	---	C
4-Nitroaniline	---	1063	---	118	---	---	---	---	188	---	1.7	---	C
n-Nitrosodimethylamine	---	---	---	---	---	---	---	---	---	---	---	---	C
n-Nitrosodi-n-propylamine	---	---	---	---	---	---	---	---	---	---	---	---	C
n-Nitrosodiphenylamine	---	220	---	25	---	---	1.4	0.44	1.4	0.44	0.005	0.005	C
Nonylphenol	---	28	---	6.6	---	---	16	5.3	---	---	5	3	C
Pentachloronitrobenzene	---	22	---	2.5	---	---	---	1.8	---	---	---	1.5	TT
Pentachlorophenol	19	19	15	15	13	13	8.2	0.83	0.28	0.28	0.22	0.22	C-HB
Phenanthrene	---	31	---	2.3	---	---	49.17	972	4.37	4.37	257	257	C-HB
Phenol	---	4700	---	160	---	---	4600000	15000	21000	21000	207	207	TT
Propylene glycol	---	640	---	71	---	---	---	280000	---	---	3457	---	TT
Pyrene	---	42	---	4.6	---	---	49.17	350	4.37	4.37	131	131	C-HB
Sodium acetate	---	---	---	---	---	---	---	---	---	---	---	---	TT
Tert-butyl alcohol	---	211692	---	23521	---	---	---	9520	---	---	118	---	TT
1,2,4,5-Tetrachlorobenzene	---	18	---	2	---	---	---	0.14	---	---	0.13	---	TT
2,3,7,8-Tetrachlorodibenzo-p-dioxin	---	---	---	---	---	---	0.000000014	5.38E-11	0.000000013	0.000000013	5.38E-11	---	C-HB
2,4,5-Trichlorophenol	---	25	---	2.8	---	---	---	64	---	---	33	---	TT
2,4,6-Trichlorophenol	---	30	---	3.3	---	---	6.5	0.3	2.1	2.1	0.2	---	C-HB
Pesticides and PCBs													
Alachlor	---	294	---	33	---	---	---	1.5	---	---	0.45	---	C
Aldicarb	---	11.4	---	1.3	---	---	---	1207	---	---	7	---	TT
Aldrin	1.5	0.45	---	0.05	0.65	0.65	0.00014	0.00000044	0.00013	0.00000044	0.00000044	---	C
Atrazine	---	14.5	---	1.6	---	---	---	18	---	---	0.67	---	TT
Chlordane	1.2	1.2	0.0043	0.00215	0.045	0.045	0.0022	0.0000084	0.0021	0.0000084	---	---	C-HB

Comparison of 2002 Adopted Water Quality Standards to Proposed Revisions in the Criteria for Chemical Constituents

New Criteria Lower Criteria Higher Criteria Revoked Criteria Revised Health Designation	Aquatic Life Criteria (µg/L)					Human Health Designation (µg/L)				
	Freshwater		Saltwater			Consumption of:		Water and Organisms		Health Designation
	Acute	Chronic	Acute	Chronic	Organisms Only	2002	Proposed	2002	Proposed	
Compound	2002 Proposed	2002 Proposed	2002 Proposed	2002 Proposed	2002 Proposed	2002	Proposed	2002	Proposed	
Chlorpyrifos	0.083	0.041	0.011	0.0056	---	---	---	---	---	
2,4-Dichlorophenoxyacetic acid (2,4-D)	47	5	---	---	560	---	6.91	---	TT	
4,4-DDD	---	---	---	---	0.00084	0.000004	0.00083	0.000004	C-HB C	
4,4-DDE	---	---	---	---	0.00059	0.000002	0.00059	0.000002	C-HB C	
4,4-DDT (Total)	0.55	0.005	0.065	0.001	0.00059	0.000002	0.00059	0.000002	C-HB C	
Diazinon	0.17	0.17	0.82	0.82	---	---	---	---	---	
Dicamba	1619	180	---	---	16800	---	---	207	TT	
Dichloroprop	105	12	---	---	2016	---	---	25	TT	
Dieldrin	0.24	0.056	0.355	0.0019	0.00014	0.000059	0.00014	0.000058	C C	
Endosulfan #	0.11	0.028	0.017	0.0087	240	0.52	110	0.38	TT TT	
Endosulfan sulfate	---	---	---	---	240	0.52	110	0.38	TT TT	
Endrin	0.086	0.036	0.185	0.0023	0.81	0.012	0.76	0.012	TT TT	
Endrin aldehyde	0.086	0.036	---	---	0.81	0.035	0.76	0.035	TT TT	
Endrin ketone	0.086	0.036	---	---	---	0.052	---	0.052	TT TT	
Heptachlor	0.26	0.0019	0.0265	0.0036	0.00021	0.0000093	0.00021	0.0000093	C C	
Heptachlor epoxide	0.26	0.0019	0.0265	0.0036	0.00011	0.000013	0.0001	0.000013	C C	
Hexachlorocyclohexane, alpha	---	---	---	---	0.013	0.0043	0.0039	0.0024	C-HB C	
Hexachlorocyclohexane, beta	---	---	---	---	0.046	0.015	0.014	0.0085	C-HB C	
Hexachlorocyclohexane, delta	---	---	---	---	0.014	---	---	0.008	---	
Hexachlorocyclopentadiene	2.8	0.3	---	---	17000	372	50	38	TT-HB TT	
Lindane	0.95	0.057	0.08	---	0.063	0.024	0.019	0.014	TT-HB C	
Methoxychlor	---	0.03	---	---	---	0.17	---	0.16	TT TT	
Simazine	5	1	---	---	---	194.44	---	3.44	TT TT	
Toxaphene	0.73	0.002	0.21	0.0002	0.00075	0.000052	0.00073	0.000052	C-HB C	
PCBs	---	0.014	---	0.03	0.00017	0.0000056	0.00017	0.0000056	C-HB C	
Radionuclides										
Alpha Particles	---	---	---	---	---	---	---	15 pCi/L	---	
Beta Particles	---	---	---	---	---	---	---	4 pCi/L	---	

Notes:

Comparison of 2002 Adopted Water Quality Standards to Proposed Revisions in the Criteria for Chemical Constituents

New Criteria Lower Criteria Higher Criteria Revoked Criteria Revised Health Designation Compound	Aquatic Life Criteria (µg/L)				Human Health Designation (µg/L)			
	Freshwater		Saltwater		Consumption of:		Water and Organisms	Health Designation
	Acute	Chronic	Acute	Chronic	Organisms Only	2002 Proposed		
----- Criteria Not Established	2002 Proposed	2002 Proposed	2002 Proposed	2002 Proposed	2002 Proposed	2002 Proposed	2002 Proposed	2002 Proposed

- + 2002 Criteria lists compound as Arsenic (Tri)
- > 2002 Criteria lists compound as Cyanide (HCN + CN⁻)
- * 2002 Criteria does not explicitly name compound as organic or inorganic Mercury
- ^ 2002 Criteria only lists the freshwater acute and freshwater chronic criteria for Selenium as (total)
- < 2002 Criteria does not list Zinc as (total)
- # 2002 Criteria lists endosulfan (alpha) and endosulfan (beta) separately. The values used are identical between the two listed endosulfan compounds for every category in

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http://www.ct.gov/deplib/deplwater/water_quality_standards/water_quality_standards_proposed_12_22_09.pdf