DEPARTMENT OF ENVIRONMENTAL QUALITY

DIVISION 41

WATER QUALITY STANDARDS: BENEFICIAL USES, POLICIES, AND CRITERIA FOR OREGON

PROPOSED CHANGES TO TABLES 20, 33, 33A, AND 33B AND NEW TABLE 40

DEQ is proposing a new Table 40 which will only contain criteria applicable to human health. For this reason, the human health criteria will be deleted from Table 20, Table 33A, and Table 33B. These tables will remain a part of Oregon's water quality standards and only contain the aquatic life criteria. The proposed table revisions will become effective upon EPA approval.

TABLE 40: Human Health Water Quality Criteria for Toxic Pollutants

Human Health Criteria Summary

The concentration for each pollutant listed in Table 40 was derived to protect Oregonians from potential adverse health impacts associated with long-term exposure to toxic substances associated with consumption of fish, shellfish, and water. The "organism only" criteria are established to protect fish and shellfish consumption and apply to waters of the state designated for fishing. The "water + organism" criteria are established to protect the consumption of drinking water, fish, and shellfish, and apply where both fishing and domestic water supply (public and private) are designated uses. All criteria are expressed as micrograms per liter (µg/L), unless otherwise noted. Pollutants are listed in alphabetical order. Additional information includes the Chemical Abstract Service (CAS) number, whether the criterion is based on carcinogenic effects (can cause cancer in humans), and whether there is an aquatic life criterion for the pollutant (i.e. "y"= yes, "n" = no). All the human health criteria were calculated using a fish consumption rate of 175 grams per day unless otherwise noted. A fish consumption rate of 175 grams per day is approximately equal to 23 8-ounce fish meals per month. For pollutants categorized as carcinogens, values represent a cancer risk of one additional case of cancer in one million people (i.e. 10^{-6}), unless otherwise noted. All metals criteria are for total metal concentration, unless otherwise noted. Italicized pollutants represent non-priority pollutants. The human health criteria revisions established by OAR 340-041-0033 and shown in Table 40 do not become applicable for purposes of ORS chapter 468B or the federal Clean Water Act until approved by EPA pursuant to 40 CFR 131.21 (4/27/2000).

No.	Pollutant	CAS No.	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
1	Acenaphthene	83329	n	n	95	99
2	Acrolein	107028	n	n	0.88	0.93
3	Acrylonitrile	107131	y	n	0.018	0.025
4	Aldrin	309002	y	y	0.0000050	0.0000050
5	Anthracene	120127	n	n	2900	4000
6	Antimony	7440360	n	n	5.1	64
7	Arsenic (inorganic)[A]	7440382	y	n	2.1	2.1(freshwater) 1.0 (saltwater)
	[A] The arsenic criteria are expressed as total inorganic arsenic. The "organism only" criteria are based on a risk level of approximately of 1.1 x 10^{-5}, and the "water + organism" criterion is based on a risk level of 1 x 10^{-4}					
8	Asbestos[B]	1332214	y	n	7,000,000 fibers/L	--
	[B] The human health risks from asbestos are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.					
9	*Barium*[C]	7440393	n	n	1000	--
	[C] The human health criterion for barium is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.					
10	Benzene	71432	y	n	0.44	1.4
11	Benzidine	92875	y	n	0.000018	0.000020
12	Benz(a)anthracene	56553	y	n	0.0013	0.0018
13	Benzo(a)pyrene	50328	y	n	0.0013	0.0018
14	Benzo(b)fluoranthene 3,4	205992	y	n	0.0013	0.0018
15	Benzo(k)fluoranthene	207089	y	n	0.0013	0.0018
16	BHC Alpha	319846	y	n	0.00045	0.00049
17	BHC Beta	319857	y	n	0.0016	0.0017
18	BHC Gamma (Lindane)	58899	n	y	0.17	0.18
19	Bromoform	75252	y	n	3.3	14
20	Butylbenzyl Phthalate	85687	n	n	190	190
21	Carbon Tetrachloride	56235	y	n	0.10	0.16
22	Chlordane	57749	y	y	0.000081	0.000081
23	Chlorobenzene	108907	n	n	74	160
24	Chlorodibromomethane	124481	y	n	0.31	1.3
25	Chloroethyl Ether bis 2	111444	y	n	0.020	0.05
26	Chloroform	67663	n	n	260	1100
27	Chloroisopropyl Ether bis 2	108601	n	n	1200	6500
28	*Chloromethyl ether, bis*	542881	y	n	0.000024	0.000029
29	Chloronaphthalene 2	91587	n	n	150	160
30	Chlorophenol 2	95578	n	n	14	15
31	*Chlorophenoxy Herbicide (2,4,5,-TP)*[D]	93721	n	n	10	--
	[D] The Chlorophenoxy Herbicide (2,4,5,-TP) criterion is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established					

No.	Pollutant	CAS No.	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
	under the Safe Drinking Water Act.					
32	*Chlorophenoxy Herbicide (2,4-D)* [E]	94757	n	n	100	--
	[E] *The Chlorophenoxy Herbicide (2,4-D) criterion is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.*					
33	Chrysene	218019	y	n	0.0013	0.0018
34	Copper [F]	7440508	n	y	1300	--
	[F] *Human health risks from copper are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.*					
35	Cyanide [G]	57125	n	y	130	130
	[G] *The cyanide criterion is expressed as total cyanide (CN)/L.*					
36	DDD 4,4'	72548	y	n	0.000031	0.000031
37	DDE 4,4'	72559	y	n	0.000022	0.000022
38	DDT 4,4'	50293	y	y	0.000022	0.000022
39	Dibenz(a,h)anthracene	53703	y	n	0.0013	0.0018
40	Dichlorobenzene(m) 1,3	541731	n	n	80	96
41	Dichlorobenzene(o) 1,2	95501	n	n	110	130
42	Dichlorobenzene(p) 1,4	106467	n	n	16	19
43	Dichlorobenzidine 3,3'	91941	y	n	0.0027	0.0028
44	Dichlorobromomethane	75274	y	n	0.42	1.7
45	Dichloroethane 1,2	107062	y	n	0.35	3.7
46	Dichloroethylene 1,1	75354	n	n	230	710
47	Dichloroethylene trans 1,2	156605	n	n	120	1000
48	Dichlorophenol 2,4	120832	n	n	23	29
49	Dichloropropane 1,2	78875	y	n	0.38	1.5
50	Dichloropropene 1,3	542756	y	n	0.30	2.1
51	Dieldrin	60571	y	y	0.0000053	0.0000054
52	Diethyl Phthalate	84662	n	n	3800	4400
53	Dimethyl Phthalate	131113	n	n	84000	110000
54	Dimethylphenol 2,4	105679	n	n	76	85
55	Di-n-butyl Phthalate	84742	n	n	400	450
56	Dinitrophenol 2,4	51285	n	n	62	530
57	*Dinitrophenols*	25550587	n	n	62	530
58	Dinitrotoluene 2,4	121142	y	n	0.084	0.34
59	Dioxin (2,3,7,8-TCDD)	1746016	y	n	0.00000000051	0.00000000051
60	Diphenylhydrazine 1,2	122667	y	n	0.014	0.020
61	Endosulfan Alpha	959988	n	y	8.5	8.9
62	Endosulfan Beta	33213659	n	y	8.5	8.9
63	Endosulfan Sulfate	1031078	n	n	8.5	8.9
64	Endrin	72208	n	y	0.024	0.024
65	Endrin Aldehyde	7421934	n	n	0.030	0.030

No.	Pollutant	CAS No.	Carcinogen	Aquatic Life Criterion	Human Health Criteria for the Consumption of:	
					Water + Organism (µg/L)	Organism Only (µg/L)
66	Ethylbenzene	100414	n	n	160	210
67	Ethylhexyl Phthalate bis 2	117817	y	n	0.20	0.22
68	Fluoranthene	206440	n	n	14	14
69	Fluorene	86737	n	n	390	530
70	Heptachlor	76448	y	y	0.0000079	0.0000079
71	Heptachlor Epoxide	1024573	y	y	0.0000039	0.0000039
72	Hexachlorobenzene	118741	y	n	0.000029	0.000029
73	Hexachlorobutadiene	87683	y	n	0.36	1.8
74	*Hexachlorocyclo-hexane-Technical*	608731	y	n	0.0014	0.0015
75	Hexachlorocyclopentadiene	77474	n	n	30	110
76	Hexachloroethane	67721	y	n	0.29	0.33
77	Indeno(1,2,3-cd)pyrene	193395	y	n	0.0013	0.0018
78	Isophorone	78591	y	n	27	96
79	*Manganese* [H]	7439965	n	n	--	100
	[H] *The "fish consumption only" criterion for manganese applies only to salt water and is for total manganese. This EPA recommended criterion predates the 1980 human health methodology and does not utilize the fish ingestion BCF calculation method or a fish consumption rate.*					
80	*Methoxychlor* [I]	72435	n	y	100	--
	[I] *The human health criterion for methoxychlor is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.*					
81	Methyl Bromide	74839	n	n	37	150
82	Methyl-4,6-dinitrophenol 2	534521	n	n	9.2	28
83	Methylene Chloride	75092	y	n	4.3	59
84	Methylmercury (mg/kg) [J]	22967926	n	n	--	0.040 mg/kg
	[J] *This value is expressed as the fish tissue concentration of methylmercury. Contaminated fish and shellfish is the primary human route of exposure to methylmercury*					
85	Nickel	7440020	n	n	140	170
86	*Nitrates* [K]	14797558	n	n	10000	--
	[K] *The human health criterion for nitrates is the same as originally published in the 1976 EPA Red Book which predates the 1980 methodology and did not utilize the fish ingestion BCF approach. This same criterion value was also published in the 1986 EPA Gold Book. Human health risks are primarily from drinking water, therefore no "organism only" criterion was developed. The "water + organism" criterion is based on the Maximum Contaminant Level (MCL) established under the Safe Drinking Water Act.*					
87	Nitrobenzene	98953	n	n	14	69
88	*Nitrosamines*	35576911	y	n	0.00079	0.046
89	*Nitrosodibutylamine, N*	924163	y	n	0.0050	0.022
90	*Nitrosodiethylamine, N*	55185	y	n	0.00079	0.046
91	Nitrosodimethylamine, N	62759	y	n	0.00068	0.30
92	Nitrosodi-n-propylamine, N	621647	y	n	0.0046	0.051
93	Nitrosodiphenylamine, N	86306	y	n	0.55	0.60
94	*Nitrosopyrrolidine, N*	930552	y	n	0.016	3.4
95	*Pentachlorobenzene*	608935	n	n	0.15	0.15
96	Pentachlorophenol	87865	y	y	0.15	0.30

No.	Pollutant	CAS No.	Carcinogen	Aquatic Life Criterion	*Human Health Criteria for the Consumption of:*	
					Water + Organism (µg/L)	Organism Only (µg/L)
97	Phenol	108952	n	n	9400	86000
98	Polychlorinated Biphenyls (PCBs) [L]	NA	y	y	0.0000064	0.0000064
	[L] *This criterion applies to total PCBs (e.g. determined as Aroclors or congeners).*					
99	Pyrene	129000	n	n	290	400
100	Selenium	7782492	n	n	120	420
101	*Tetrachlorobenzene, 1,2,4,5-*	95943	n	n	0.11	0.11
102	Tetrachloroethane 1,1,2,2	79345	y	n	0.12	0.40
103	Tetrachloroethylene	127184	y	n	0.24	0.33
104	Thallium	7440280	n	n	0.043	0.047
105	Toluene	108883	n	n	720	1500
106	Toxaphene	8001352	y	y	0.000028	0.000028
107	Trichlorobenzene 1,2,4	120821	n	n	6.4	7.0
108	Trichloroethane 1,1,2	79005	y	y	0.44	1.6
109	Trichloroethylene	79016	y	n	1.4	3.0
110	Trichlorophenol 2,4,6	88062	y	n	0.23	0.24
111	*Trichlorophenol, 2, 4, 5-*	95954	n	n	330	360
112	Vinyl Chloride	75014	y	n	0.023	0.24
113	Zinc	7440666	n	n	2100	2600

Table 20 Redline/Strikethrough

TABLE 20

AQUATIC LIFE WATER QUALITY CRITERIA SUMMARY[1]

The concentration for each compound listed in Table 20 is a criterion not to be exceeded in waters of the state in order to protect aquatic life ~~and human health~~. All values are expressed as micrograms per liter (µg/L) except where noted. Compounds are listed in alphabetical order with the corresponding designations as to whether EPA has identified it as a priority pollutant and a carcinogen, aquatic life freshwater acute and chronic criteria, aquatic life marine acute and chronic criteria~~, human health water & organism and fish consumption only criteria, and Drinking Water Maximum Contaminant Level (MCL).~~ The acute criteria refer to the average concentration for one (1) hour and the chronic criteria refer to the average concentration for 96 hours (4 days), and that these criteria should not be exceeded more than once every three (3) years.

Compound Name (or Class)	Priority Pollutant	~~Carcinogen~~	Concentration in Micrograms Per Liter for Protection of Aquatic Life				~~Concentration in Units Per Liter for Protection of Human Health~~		
			Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria	~~Water and Fish Ingestion~~	~~Fish Consumption Only~~	~~Drinking Water M.C.L.~~
ACENAPTHENE	Y	~~N~~							
ACROLEIN	Y	~~N~~					~~320ug~~	~~780ug~~	

Compound Name (or Class)	Priority Pollutant	~~Carcinogen~~	Concentration in Micrograms Per Liter for Protection of Aquatic Life				~~Concentration in Units Per Liter for Protection of Human Health~~		
			Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria	~~Water and Fish Ingestion~~	~~Fish Consumption Only~~	~~Drinking Water M.C.L.~~
ACRYLONITRILE	Y	~~Y~~					~~0.058ug**~~	~~0.65ug**~~	
ALDRIN	Y	~~Y~~	3		1.3		~~0.074ng**~~	~~0.079ng**~~	
ALKALINITY	N	~~N~~		20,000					
AMMONIA	N	~~N~~	CRITERIA ARE pH AND TEMPERATURE DEPENDENT—SEE DOCUMENT USEPA JANUARY 1985 (Fresh Water) CRITERIA ARE pH AND TEMPERATURE DEPENDENT—SEE DOCUMENT USEPA APRIL 1989 (Marine Water)						
ANTIMONY	Y	~~N~~					~~146ug~~	~~45,000ug~~	
ARSENIC	Y	~~Y~~					~~2.2ng**~~	~~17.5ng**~~	~~0.05mg~~
ARSENIC (PENT)	Y	~~Y~~							
ARSENIC (TRI)	Y	~~Y~~	360	190	69	36			
ASBESTOS	Y	~~Y~~					~~30K f/L**~~		
BARIUM	N	~~N~~					~~1mg~~		~~1.0mg~~
BENZENE	Y	~~Y~~					~~0.66ug**~~	~~40 ug**~~	
BENZIDINE	Y	~~Y~~					~~0.12ng~~	~~0.53ng**~~	
BERYLLIUM	Y	~~Y~~					~~6.8ng**~~	~~117ng**~~	
BHC	Y	~~N~~							

Compound Name (or Class)	Priority Pollutant	~~Carcinogen~~	Concentration in Micrograms Per Liter for Protection of Aquatic Life				~~Concentration in Units Per Liter for Protection of Human Health~~		
			Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria	~~Water and Fish Ingestion~~	~~Fish Consumption Only~~	~~Drinking Water M.C.L.~~
CADMIUM	Y	~~N~~	3.9+	1.1+	43	9.3	~~10ug~~		~~0.010mg~~
CARBON TETRACHLORIDE	Y	~~Y~~					~~0.4ug**~~	~~6.94ug**~~	
CHLORDANE	Y	~~Y~~	2.4	0.0043	0.09	0.004	~~0.46ng**~~	~~0.48ng**~~	
CHLORIDE	N	~~N~~	860 mg/L	230 mg/L					
CHLORINATED BENZENES	Y	~~Y~~					~~488 ug~~		
CHLORINATED NAPHTHALENES	Y	~~N~~							
CHLORINE	N	~~N~~	19	11	13	7.5			
CHLOROALKYL ETHERS	Y	~~N~~							
CHLOROETHYL ETHER (BIS-2)	Y	~~Y~~					~~0.03 ug~~	~~1.36 ug**~~	
CHLOROFORM	Y	~~Y~~					~~0.19ug**~~	~~15.7ug**~~	
CHLOROISOPROPYL ETHER (BIS-2)	Y	~~N~~					~~34.7ug~~	~~4.36mg~~	
CHLOROMETHYL ETHER (BIS)	N	~~Y~~					~~0.00000376ng**~~	~~0.00184ug**~~	
CHLOROPHENOL 2	Y	~~N~~							
CHLOROPHENOL 4	N	~~N~~							

Compound Name (or Class)	Priority Pollutant	~~Carcinogen~~	Concentration in Micrograms Per Liter for Protection of Aquatic Life				~~Concentration in Units Per Liter for Protection of Human Health~~		
			Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria	~~Water and Fish Ingestion~~	~~Fish Consumption Only~~	~~Drinking Water M.C.L.~~
CHLOROPHENOXY HERBICIDES (2,4,5,-TP)	N	~~N~~					~~10ug~~		
CHLOROPHENOXY HERBICIDES (2,4-D)	N	~~N~~					~~100ug~~		
CHLORPYRIFOS	N	~~N~~	0.083	0.041	0.011	0.0056			
CHLORO-4 METHYL-3 PHENOL	N	~~N~~							
CHROMIUM (HEX)	Y	~~N~~	16	11	1,100	50	~~50ug~~		~~0.05mg~~
CHROMIUM (TRI)	N	~~N~~	1,700.+	210.+			~~170mg~~	~~3,433mg~~	~~0.05mg~~
COPPER	Y	~~N~~	18.+	12.+	2.9	2.9			
CYANIDE	Y	~~N~~	22	5.2	1	1	~~200ug~~		
DDT	Y	~~Y~~	1.1	0.001	0.13	0.001	~~0.024ng**~~	~~0.024ng**~~	
(TDE) DDT METABOLITE	Y	~~Y~~							
(DDE) DDT METABOLITE	Y	~~Y~~							
DEMETON	Y	~~N~~		0.1		0.1			
DIBUTYLPHTHALATE	Y	~~N~~					~~35mg~~	~~154mg~~	

Compound Name (or Class)	Priority Pollutant	~~Carcinogen~~	Concentration in Micrograms Per Liter for Protection of Aquatic Life				~~Concentration in Units Per Liter for Protection of Human Health~~		
			Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria	~~Water and Fish Ingestion~~	~~Fish Consumption Only~~	~~Drinking Water M.C.L.~~
DICHLOROBENZENES	Y	~~N~~					~~400ug~~	~~2.6mg~~	
DICHLOROBENZIDINE	Y	~~Y~~					~~0.01ug**~~	~~0.020ug**~~	
DICHLOROETHANE 1,2	Y	~~Y~~					~~0.94ug**~~	~~243ug**~~	
DICHLOROETHYLENES	Y	~~Y~~					~~0.033ug**~~	~~1.85ug**~~	
DICHLOROPHENOL 2,4	N	~~N~~					~~3.09mg~~		
DICHLOROPROPANE	Y	~~N~~							
DICHLOROPROPENE	Y	~~N~~					~~87ug~~	~~14.1mg~~	
DIELDRIN	Y	~~Y~~	2.5	0.0019	0.71	0.0019	~~0.071ng**~~	~~0.076ng**~~	
DIETHYLPHTHALATE	Y	~~N~~					~~350mg~~	~~1.8g~~	
DIMETHYL PHENOL 2,4	Y	~~N~~							
DIMETHYL PHTHALATE	Y	~~N~~					~~313mg~~	~~2.9g~~	
DINITROTOLUENE 2,4	N	~~Y~~					~~0.11ug**~~	~~9.1ug**~~	
DINITROTOLUENE	Y	~~N~~					~~70ug~~	~~14.3mg~~	
DINITROTOLUENE	N	~~Y~~							
DINITRO-O-CRESOL 2,4	Y	~~N~~					~~13.4~~	~~765ug~~	
DIOXIN (2,3,7,8-TCDD)	Y	~~Y~~					~~0.000013ng**~~	~~0.000014ng**~~	

Compound Name (or Class)	Priority Pollutant	~~Carcinogen~~	Concentration in Micrograms Per Liter for Protection of Aquatic Life				~~Concentration in Units Per Liter for Protection of Human Health~~		
			Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria	~~Water and Fish Ingestion~~	~~Fish Consumption Only~~	~~Drinking Water M.C.L.~~
DIPHENYLHYDRAZINE	Y	~~N~~					~~42ng**~~	~~0.56ug**~~	
DIPHENYLHYDRAZINE 1,2	Y	~~N~~							
DI-2-ETHYLHEXYL PHTHALATE	Y	~~N~~					~~15mg~~	~~50mg~~	
ENDOSULFAN	Y	~~N~~	0.22	0.056	0.034	0.0087	~~74ug~~	~~159ug~~	
ENDRIN	Y	~~N~~	0.18	0.0023	0.037	0.0023	~~1ug~~		~~0.0002mg~~
ETHYLBENZENE	Y	~~N~~					~~1.4mg~~	~~3.28mg~~	
FLUORANTHENE	Y	~~N~~					~~42ug~~	~~54ug~~	
GUTHION	N	~~N~~		0.01		0.01			
HALOETHERS	Y	~~N~~							
HALOMETHANES	Y	~~Y~~					~~0.19ug**~~	~~15.7ug**~~	
HEPTACHLOR	Y	~~Y~~	0.52	0.0038	0.053	0.0036	~~0.28ng**~~	~~0.29ng**~~	
HEXACHLOROETHANE	N	~~Y~~					~~1.9ug~~	~~8.74ug~~	
HEXACHLOROBENZENE	Y	~~N~~					~~0.72ng**~~	~~0.74ng**~~	
HEXACHLOROBUTADIENE	Y	~~Y~~					~~0.45ug**~~	~~50ug**~~	
HEXACHLOROCYCLOHEXANE (LINDANE)	Y	~~Y~~	2	0.08	0.16				~~0.004mg~~

Compound Name (or Class)	Priority Pollutant	~~Carcinogen~~	Concentration in Micrograms Per Liter for Protection of Aquatic Life				~~Concentration in Units Per Liter for Protection of Human Health~~		
			Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria	~~Water and Fish Ingestion~~	~~Fish Consumption Only~~	~~Drinking Water M.C.L.~~
HEXACHLOROCYCLOHEXANE-ALPHA	Y	~~Y~~					~~9.2ng**~~	~~31ng**~~	
HEXACHLOROCYCLOHEXANE-BETA	Y	~~Y~~					~~16.3ng**~~	~~54.7ng**~~	
HEXACHLOROCYCLOHEXANE-GAMA	Y	~~Y~~					~~18.6ng**~~	~~62.5ng**~~	
HEXACHLOROCYCLOHEXANE-TECHNICAL	Y	~~Y~~					~~12.3ng**~~	~~41.4ng**~~	
HEXACHLOROCYCLOPENTADIENE	Y	~~N~~					~~206ug~~		
IRON	N	~~N~~		1,000			~~0.3mg~~		
ISOPHORONE	Y	~~N~~					~~5.2mg~~	~~520mg~~	
LEAD	Y	~~N~~	82.+	3.2+	140	5.6	~~50ug~~		~~0.05mg~~
MALATHION	N	~~N~~		0.1		0.1			
MANGANESE	N	~~N~~					~~50ug~~	~~100ug~~	
MERCURY	Y	~~N~~	2.4	0.012	2.1	0.025	~~144ng~~	~~146ng~~	~~0.002mg~~
METHOXYCHLOR	N	~~N~~		0.03		0.03	~~100ug~~		~~0.1mg~~
MIREX	N	~~N~~		0.001		0.001			
MONOCHLOROBENZENE	Y	~~N~~					~~488ug~~		
NAPHTHALENE	Y	~~N~~							

Compound Name (or Class)	Priority Pollutant	~~Carcinogen~~	Concentration in Micrograms Per Liter for Protection of Aquatic Life				~~Concentration in Units Per Liter for Protection of Human Health~~		
			Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria	~~Water and Fish Ingestion~~	~~Fish Consumption Only~~	~~Drinking Water M.C.L.~~
NICKEL	Y	~~N~~	1,400.+	160+	75	8.3	~~13.4ug~~	~~100ug~~	
NITRATES	N	~~N~~					~~10mg~~		~~10mg~~
NITROBENZENE	Y	~~N~~					~~19.8mg~~		
NITROPHENOLS	Y	~~N~~							
NITROSAMINES	Y	~~Y~~					~~0.8ng**~~	~~1,240ng**~~	
NITROSODIBUTYLAMINE N	Y	~~Y~~					~~6.4ng**~~	~~587ng**~~	
NITROSODIETHYLAMINE N	Y	~~Y~~					~~0.8ng**~~	~~1,240ng**~~	
NITROSODIMETHYLAMINE N	Y	~~Y~~					~~1.4ng**~~	~~16,000ng**~~	
NITROSODIPHENYLAMINE N	Y	~~Y~~					~~4,900ng**~~	~~16,100ng**~~	
NITROSOPYRROLIDINE N	Y	~~Y~~					~~16ng**~~	~~91,900ng**~~	
PARATHION	N	~~N~~	0.065	0.013					
PCB's	Y	~~Y~~	2	0.014	10	0.03	~~0.079ng**~~	~~0.079ng**~~	
PENTACHLORINATED ETHANES	N	~~N~~							
PENTACHLOROBENZENE	N	~~N~~					~~74ug~~	~~85ug~~	
PENTACHLOROPHENOL	Y	~~N~~	***20	***13	13		~~1.01mg~~		

Compound Name (or Class)	Priority Pollutant	~~Carcinogen~~	Concentration in Micrograms Per Liter for Protection of Aquatic Life				~~Concentration in Units Per Liter for Protection of Human Health~~		
			Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria	~~Water and Fish Ingestion~~	~~Fish Consumption Only~~	~~Drinking Water M.C.L.~~
PHENOL	Y	~~N~~					~~3.5mg~~		
PHOSPHORUS ELEMENTAL	N	~~N~~				0.1			
PHTHALATE ESTERS	Y	~~N~~							
POLYNUCLEAR AROMATIC HYDROCARBONS	Y	~~Y~~					~~2.8ng**~~	~~31.1ng**~~	
SELENIUM	Y	~~N~~	260	35	410	54	~~10ug~~		~~0.01mg~~
SILVER	Y	~~N~~	4.1+	0.12	2.3		~~50ug~~		~~0.05mg~~
SULFIDE HYDROGEN SULFIDE	N	~~N~~		2		2			
TETRACHLORINATED ETHANES	Y	~~N~~							
TETRACHLOROBENZENE 1,2,4,5	Y	~~N~~					~~38ug~~	~~48ug~~	
TETRACHLOROETHANE 1,1,2,2	Y	~~Y~~					~~0.17ug**~~	~~10.7ug**~~	
TETRACHLOROETHANES	Y	~~N~~							
TETRACHLOROETHYLENE	Y	~~Y~~					~~0.8ug**~~	~~8.85ug**~~	
TETRACHLOROPHENOL 2,3,5,6	Y	~~N~~							
THALLIUM	Y	~~N~~					~~13ug~~	~~48ug~~	
TOLUENE	Y	~~N~~					~~14.3mg~~	~~424mg~~	

Compound Name (or Class)	Priority Pollutant	~~Carcinogen~~	Concentration in Micrograms Per Liter for Protection of Aquatic Life				~~Concentration in Units Per Liter for Protection of Human Health~~		
			Fresh Acute Criteria	Fresh Chronic Criteria	Marine Acute Criteria	Marine Chronic Criteria	~~Water and Fish Ingestion~~	~~Fish Consumption Only~~	~~Drinking Water M.C.L.~~
TOXAPHENE	Y	~~Y~~	0.73	0.0002	0.21	0.0002	~~0.71ng**~~	~~0.73ng**~~	~~0.005mg~~
TRICHLORINATED EtHANES	Y	~~Y~~							
TRICHLOROETHANE 1,1,1	Y	~~N~~					~~18.4mg~~	~~1.03g~~	
TRICHLOROETHANE 1,1,2	Y	~~Y~~					~~0.6ug**~~	~~41.8ug**~~	
TRICHLOROETHYLENE	Y	~~Y~~					~~2.7ug**~~	~~80.7ug**~~	
TRICHLOROPHENOL 2,4,5	N	~~N~~					~~2,600ug~~		
TRICHLOROPHENOL 2,4,6	Y	~~Y~~					~~1.2ug**~~	~~3.6ug**~~	
VINYL CHLORIDE	Y	~~Y~~					~~2ug**~~	~~525ug**~~	
ZINC	Y	~~N~~	120+	110+	95	86			

MEANING OF SYMBOLS:

g = grams

~~M.C.L = Maximum Contaminant Level~~

mg = milligrams

\+ = Hardness Dependent Criteria (100 mg/L used).

The freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. Criteria values for hardness may be calculated from the following formulae (CMC refers to Acute Criteria; CCC refers to Chronic Criteria):

$CMC = (\exp(m_A*[\ln(hardness)] + b_A))*CF$

$CCC = (\exp(m_C*[\ln(hardness)] + b_C))*CF$

Chemical	m_A	b_A	m_C	b_C
Cadmium	1.128	-3.828	0.7852	-3.49
Chromium III	0.819	3.688	0.819	1.561
Copper	0.9422	-1.464	0.8545	-1.465
Lead	1.273	-1.46	1.273	-4.705
Nickel	0.846	3.3612	0.846	1.1645
Silver	1.72	-6.52		
Zinc	0.8473	0.8604	0.8473	0.7614

ug = micrograms

* = Insufficient data to develop criteria; value presented is the L.O.E.L – Lower Observed Effect Level.

ng = nanograms

pg = picograms

~~f = fibers~~

Y = Yes

N = No

~~** = Human health criteria for carcinogens reported for three risk levels. Value presented is the 10-6 risk level, which means the probability of one concern case per million people at the stated concentration.~~

*** = pH Dependent Criteria (7.8 pH used).

1 = Values in Table 20 are applicable to all basins.

~~***Water and Fish Ingestion***~~

~~Values represent the maximum ambient water concentration for consumption of both contaminated water and fish or other aquatic organisms.~~

~~***Fish Ingestion***~~

~~Values represent the maximum ambient water concentrations for consumption of fish or other aquatic organisms~~

Table 33A Redline/Strikethrough

TABLE 33A

Note: The Environmental Quality Commission adopted the following criteria on May 20, 2004 to become effective February 15, 2005. However, EPA has not yet (as of June 2006) approved the criteria. Thus, Table 33A criteria may be used in NPDES permits, but not for the section 303(d) list of impaired waters.

AQUATIC LIFE WATER QUALITY CRITERIA SUMMARY[A]

The concentration for each compound listed in Table 33A is a criterion not to be exceeded in waters of the state in order to protect aquatic life ~~and human health~~. All values are expressed as micrograms per liter (µg/L) except where noted. Compounds are listed in alphabetical order with the corresponding EPA number (from National Recommended Water Quality Criteria: 2002, EPA-822-R-02-047), the Chemical Abstract Service (CAS) number, aquatic life freshwater acute and chronic criteria, aquatic life saltwater acute and chronic criteria~~, human health water & organism and organism only criteria, and Drinking Water Maximum Contaminant Level (MCL)~~. The acute criteria refer to the average concentration for one (1) hour and the chronic criteria refer to the average concentration for 96 hours (4 days), and that these criteria should not be exceeded more than once every three (3) years.

EPA No.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~				
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism~~[B]	~~Effective~~	~~Organism only~~[B]	~~Effective Date~~	~~Drinking Water M.C.L.~~
56	Acenaphthene			83329									~~670~~		~~990~~		
57	Acenaphthylene			208968													

EPA NO.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~				
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective~~	~~Organism only[B]~~	~~Effective Date~~	~~Drinking Water M.C.L.~~
17	Acrolein			107028									~~190~~		~~290~~		
18	Acrylonitrile			107131									~~0.051~~		~~0.250~~		
102	Aldrin			309002	3 O	X			1.3 O	X			~~0.000049~~		~~0.000050~~		
1 N	Alkalinity						20,000 P										
2 N	Aluminum (pH 6.5 - 9.0)			7429905													
3 N	Ammonia			7664417					D	X	D	X					
58	Anthracene			120127									~~8300~~		~~40000~~		
1	Antimony			7440360									~~5.6~~		~~640~~		
2	Arsenic			7440382													~~0.05mg~~
15	Asbestos			1332214													

EPA No.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~				
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective~~	~~Organism only[B]~~	~~Effective Date~~	~~Drinking Water M.C.L.~~
6 N	Barium			7440393									~~1000~~				~~1.0mg~~
19	Benzene			71432													
59	Benzidine			92875									~~0.000086~~		~~0.00020~~		
60	Benzo(a)Anthracene			56553									~~0.0038~~		~~0.018~~		
61	Benzo(a)Pyrene			50328									~~0.0038~~		~~0.018~~		
62	Benzo(b)Fluoranthene			205992									~~0.0038~~		~~0.018~~		
63	Benzo(g,h,i)Perylene			191242													
64	Benzo(k)Fluoranthene			207089									~~0.0038~~		~~0.018~~		
3	Beryllium			7440417													
103	BHC alpha-			319846									~~0.0026~~		~~0.0049~~		
104	BHC beta-			319857									~~0.0091~~		~~0.017~~		
106	BHC delta-			319868													
105	BHC gamma- (Lindane)			58899	0.95		0.08	X	0.16 O								~~0.004 mg~~
7 N	Boron			7440428													

EPA No.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~				
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective~~	~~Organism only[B]~~	~~Effective Date~~	~~Drinking Water M.C.L.~~
20	Bromoform			75252									~~4.3~~		~~140~~		
69	Bromophenyl Phenyl Ether 4-																
70	Butylbenzyl Phthalate			85687									~~1500~~		~~1900~~		
4	Cadmium			7440439													~~0.010 mg~~
21	Carbon Tetrachloride			56235									~~0.23~~		~~1.6~~		
107	Chlordane			57749	2.4 O	X	0.0043 O	X	0.09 O	X	0.004 O	X					
8 N	Chloride			16887006	860000		230000										
9 N	Chlorine			7782505	19	X	11	X	13	X	7.5	X					
22	Chlorobenzene			108907									~~130~~		~~1600~~		
23	Chlorodibromomethane			124481									~~0.40~~		~~13~~		
24	Chloroethane			75003													

EPA NO.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~				
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective~~	~~Organism only[B]~~	~~Effective Date~~	~~Drinking Water M.C.L.~~
65	ChloroethoxyMethane Bis2-			111911													
66	ChloroethylEther Bis2-			111444									~~0.030~~		~~0.53~~		
25	Chloroethylvinyl Ether 2-			110758													
26	Chloroform			67663													
67	ChloroisopropylEther Bis2-			108601													
15 N	ChloromethylEther, Bis			542881											~~0.00029~~		
71	Chloronaphthalene 2-			91587									~~1000~~		~~1600~~		
45	Chlorophenol 2-			95578									~~81~~		~~150~~		
10 N	Chlorophenoxy Herbicide (2,4,5,-TP)			93721									~~10 H~~				
11 N	Chlorophenoxy Herbicide (2,4-D)			94757									~~100 H~~				
72	Chlorophenyl Phenyl Ether 4-			7005723													
12 N	Chloropyrifos			2921882	0.083	X	0.041	X	0.011	X	0.0056	X					

EPA NO.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~				
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective~~	~~Organism only[B]~~	~~Effective Date~~	~~Drinking Water M.C.L.~~
																	~~0.05mg~~
5a	Chromium (III)																~~0.05mg~~
5b	Chromium (VI)			18540299													~~0.05mg~~
73	Chrysene			218019									~~0.0038~~		~~0.018~~		
6	Copper			7440508									~~1300 H~~				
14	Cyanide			57125	22 S	X	5.2 S	X	1 S	X	1 S	X	~~140~~		~~140~~		
108	DDT 4,4'-			50293	1.1 O,T	X	0.001 O,T	X	0.13 O,T	X	0.001 O,T	X					
109	DDE 4,4'-			72559									~~0.00022~~		~~0.00022~~		
110	DDD 4,4'-			72548									~~0.00031~~		~~0.00031~~		
14 N	Demeton			8065483			0.1	X			0.1	X					
74	Dibenzo(a,h)Anthracene			53703									~~0.0038~~		~~0.018~~		

EPA No.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~				~~Drinking Water M.C.L.~~
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective~~	~~Organism only[B]~~	~~Effective Date~~	
75	Dichlorobenzene 1,2-			95501									~~420~~		~~1300~~		
76	Dichlorobenzene 1,3-			541731									~~320~~		~~960~~		
77	Dichlorobenzene 1,4-			106467									~~63~~		~~190~~		
78	Dichlorobenzidine 3,3'-			91941									~~0.021~~		~~0.028~~		
27	Dichlorobromomethane			75274									~~0.55~~		~~17~~		
28	Dichloroethane 1,1-			75343													
29	Dichloroethane 1,2-			107062									~~0.38~~		~~37~~		
30	Dichloroethylene 1,1-			75354									~~330~~		~~7100~~		
46	Dichlorophenol 2,4-			120832									~~77~~		~~290~~		
31	Dichloropropane 1,2-			78875									~~0.50~~		~~15~~		
32	Dichloropropene 1,3-			542756									~~0.34~~		~~21~~		
111	Dieldrin			60571	0.24				0.71 O	X	0.0019 O	X	~~0.000052~~		~~0.000054~~		
79	DiethylPhthalate			84662									~~17000~~		~~44000~~		
47	Dimethylphenol 2,4-			105679									~~380~~		~~850~~		

EPA NO.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~				
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective~~	~~Organism only[B]~~	~~Effective Date~~	~~Drinking Water M.C.L.~~
80	DimethylPhthalate			131113									~~270000~~		~~1100000~~		
81	Di-n-Butyl Phthalate			84742									~~2000~~		~~4500~~		
49	Dinitrophenol 2,4-			51285									~~69~~		~~5300~~		
27 N	Dinitrophenols			2555058 7									~~69~~		~~5300~~		
82	Dinitrotoluene 2,4-			121142									~~0.11~~		~~3.4~~		
83	Dinitrotoluene 2,6-			606202													
84	Di-n-Octyl Phthalate			117840													
16	Dioxin (2,3,7,8-TCDD)			1746016									~~5.0E-09~~		~~5.1E-09~~		
85	Diphenylhydrazine 1,2-			122667									~~0.036~~		~~0.20~~		
68	EthylhexylPhthalate Bis2-			117817									~~1.2~~		~~2.2~~		

EPA NO.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~				
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective~~	~~Organism only[B]~~	~~Effective Date~~	~~Drinking Water M.C.L.~~
	Endosulfan				0.22 I,P	X	0.056 I,P	X	0.034 I,P	X	0.0087 I,P	X	~~62 I~~		~~89 I~~		
112	Endosulfan alpha-			959988	0.22 O		0.056 O		0.034 O		0.0087 O		~~62~~		~~89~~		
113	Endosulfan beta-			33213659	0.22 O		0.056 O		0.034 O		0.0087 O		~~62~~		~~89~~		
114	Endosulfan Sulfate			1031078									~~62~~		~~89~~		
115	Endrin			72208	0.086				0.037 O		0.0023 O		~~0.059~~		~~0.060~~		~~0.0002 mg~~
116	Endrin Aldehyde			7421934									~~0.29~~		~~0.30~~		
33	Ethylbenzene			100414									~~530~~		~~2100~~		
86	Fluoranthene			206440													
87	Fluorene			86737									~~1100~~		~~5300~~		
17N	Guthion			86500			0.01	X			0.01	X					

EPA NO.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health~~ ~~For Consumption of:~~				
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective~~	~~Organism only[B]~~	~~Effective Date~~	~~Drinking Water M.C.L.~~
117	Heptachlor			76448	0.52 O	X	0.0038 O	X	0.053 O	X	0.0036 O	X	~~0.000079~~		~~0.000079~~		
118	Heptachlor Epoxide			1024573	0.52 O		0.0038 O		0.053 O		0.0036 O		~~0.000039~~		~~0.000039~~		
88	Hexachlorobenzene			118741									~~0.00028~~		~~0.00029~~		
89	Hexachlorobutadiene			87683									~~0.44~~		~~18~~		
91	Hexachloroethane			67721									~~1.4~~		~~3.3~~		
19 N	Hexachlorocyclo-hexane-Technical			319868									~~0.0123 J~~		~~0.0414 J~~		
90	Hexachlorocyclopentadiene			77474									~~40~~		~~1100~~		
92	Ideno1,2,3-(cd)Pyrene			193395									~~0.0038~~		~~0.018~~		

EPA NO.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~				
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective~~	~~Organism only[B]~~	~~Effective Date~~	~~Drinking Water M.C.L.~~
20 N	Iron			7439896			1,000	X									
93	Isophorone			78591									~~35~~		~~960~~		
7	Lead			7439921													~~0.05mg~~
21 N	Malathion			121755			0.1	X			0.1	X					
22 N	Manganese			7439965													
8a	Mercury			7439976	2.4	X	0.012	X	2.1	X	0.025	X					~~0.002 mg~~
23 N	Methoxychlor			72435			0.03	X			0.03	X	~~100 J~~				~~0.1mg~~
34	Methyl Bromide			74839									~~47~~		~~1500~~		
35	Methyl Chloride			74873													
48	Methyl-4,6-Dinitrophenol 2-			534521									~~13~~		~~280~~		
52	Methyl-4-Chlorophenol 3-			59507													
36	Methylene Chloride			75092									~~4.6~~		~~590~~		

EPA No.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health~~ ~~For Consumption of:~~				
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective~~	~~Organism only[B]~~	~~Effective Date~~	~~Drinking Water M.C.L.~~
8b	Methylmercury			22967926											~~300ug/kg L~~		
24 N	Mirex			2385855			0.001	X			0.001	X					
94	Naphthalene			91203													
9	Nickel			7440020													
25 N	Nitrates			14797558									~~10000 J~~				~~10mg~~
95	Nitrobenzene			98953									~~17~~		~~690~~		
50	Nitrophenol 2-			88755													
51	Nitrophenol 4-			100027													
26 N	Nitrosamines			35576911									~~0.0008 J~~		~~1.24 J~~		
28 N	Nitrosodibutylamine,N			924163									~~0.0063~~		~~0.22~~		

EPA NO.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~				
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective~~	~~Organism only[B]~~	~~Effective Date~~	~~Drinking Water M.C.L.~~
29 N	Nitrosodiethylamine,N			55185									~~0.0008 J~~		~~1.24 J~~		
96	N-Nitrosodimethylamine			62759									~~0.00069~~		~~3.0~~		
98	N-Nitrosodiphenylamine			86306									~~3.3~~		~~6.0~~		
30 N	Nitrosopyrrolidine,N			930552									~~0.016~~		~~34~~		
97	N-Nitrosodi-n-Propylamine			621647									~~0.0050~~		~~0.51~~		
32 N	Oxygen, Dissolved			7782447													
33 N	Parathion			56382	0.065	X	0.013	X									
119	Polychlorinated Biphenyls PCBs:			1336363	2 U	X	0.014 U	X	10 U	X	0.03 U	X	~~0.000064 U~~		~~0.000064 U~~		
34 N	Pentachlorobenzene			608935									~~1.4~~		~~1.5~~		
53	Pentachlorophenol			87865	M				13		7.9		~~0.27~~		~~3.0~~		
99	Phenanthrene			85018													

EPA No.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~				
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective~~	~~Organism only[B]~~	~~Effective Date~~	~~Drinking Water M.C.L.~~
54	Phenol			108952											~~1700000~~		
36 N	Phosphorus Elemental			7723140							0.1						
100	Pyrene			129000									~~830~~		~~4000~~		
10	Selenium			7782492											~~4200~~		~~0.01mg~~
11	Silver			7440224													~~0.05mg~~
40 N	Sulfide-Hydrogen Sulfide			7783064			2	X			2	X					
43 N	Tetrachlorobenzene,1,2,4,5			95943									~~0.97~~		~~1.1~~		
37	Tetrachloroethane 1,1,2,2-			79345									~~0.17~~		~~4.0~~		
38	Tetrachloroethylene			127184									~~0.69~~		~~3.3~~		

EPA No.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~				~~Drinking Water M.C.L.~~
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective~~	~~Organism only[B]~~	~~Effective Date~~	
12	Thallium			7440280									~~0.24~~		~~0.47~~		
39	Toluene			108883									~~1300~~		~~15000~~		
120	Toxaphene			8001352	0.73	X	0.0002	X	0.21	X	0.0002	X	~~0.00028~~		~~0.00028~~		~~0.005 mg~~
40	Trans-Dichloroethylene 1,2-			156605									~~140~~		~~10000~~		
44 N	Tributyltin (TBT)			688733													
101	Trichlorobenzene 1,2,4-			120821									~~35~~		~~70~~		
41	Trichloroethane 1,1,1-			71556													
42	Trichloroethane 1,1,2-			79005									~~0.59~~		~~16~~		
43	Trichloroethylene			79016									~~2.5~~		~~30~~		
45 N	Trichlorophenol 2,4,5			95954									~~1800~~		~~3600~~		
55	Trichlorophenol 2,4,6-			88062											~~2.4~~		
44	Vinyl Chloride			75014									~~0.025~~		~~2.4~~		
13	Zinc			7440666									~~7400~~		~~26000~~		

Footnotes for Tables 33A and 33B:

A Values in Table 20 are applicable to all basins.

~~B Human Health criteria values were calculated using a fish consumption rate of 17.5 grams per day (0.6 ounces/day) unless otherwise noted.~~

C Ammonia criteria for freshwater may depend on pH, temperature, and the presence of salmonids or other fish with ammonia-sensitive early life stages. Values for freshwater criteria (of total ammonia nitrogen in mg N/L) can be calculated using the formulae specified in *1999 Update of Ambient Water Quality Criteria for Ammonia* (EPA-822-R-99-014; http://www.epa.gov/ost/standards/ammonia/99update.pdf):

Freshwater Acute:

salmonids present….CMC = $\frac{0.275}{1+10^{7.204-pH}}+\frac{39.0}{1+10^{pH-7.204}}$

salmonids not present…CMC= $\frac{0.411}{1+10^{7.204-pH}}+\frac{58.4}{1+10^{pH-7.204}}$

Freshwater Chronic:

fish early life stages present

CCC = $\left(\frac{0.0577}{1+10^{7.688-pH}}+\frac{2.487}{1+10^{pH-7.688}}\right)*MIN(2.85,1.45*10^{0.028*(25-T)})$

fish early life stages not present

CCC= $\left(\frac{0.0577}{1+10^{7.688-pH}}+\frac{2.487}{1+10^{pH-7.688}}\right)*1.45*10^{0.028*(25-MAX(T,7))}$

Note: these chronic criteria formulae would be applied to calculate the 30-day average concentration limit; in addition, the highest 4-day average within the 30-day period should not exceed 2.5 times the CCC.

D Ammonia criteria for saltwater may depend on pH and temperature. Values for saltwater criteria (total ammonia) can be calculated from the tables specified in *Ambient Water Quality Criteria for Ammonia (Saltwater)--1989* (EPA 440/5-88-004; http://www.epa.gov/ost/pc/ambientwqc/ammoniasalt1989.pdf).

E Freshwater and saltwater criteria for metals are expressed in terms of "dissolved" concentrations in the water column, except where otherwise noted (e.g. aluminum).

F The freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. Criteria values for hardness may be calculated from the following formulae (CMC refers to Acute Criteria; CCC refers to Chronic Criteria):

$$CMC = (\exp(m_A*[\ln(hardness)] + b_A))*CF$$

$$CCC = (\exp(m_C*[\ln(hardness)] + b_C))*CF$$

where CF is the conversion factor used for converting a metal criterion expressed as the total recoverable fraction in the water column to a criterion expressed as the dissolved fraction in the water column.

Chemical	m_A	b_A	m_C	b_C
Cadmium	1.0166	-3.924	0.7409	-4.719
Chromium III	0.8190	3.7256	0.8190	0.6848
Copper	0.9422	-1.700	0.8545	-1.702
Lead	1.273	-1.460	1.273	-4.705
Nickel	0.8460	2.255	0.8460	0.0584
Silver	1.72	-6.59		
Zinc	0.8473	0.884	0.8473	0.884

Conversion factors (CF) for dissolved metals (the values for total recoverable metals criteria were multiplied by the appropriate conversion factors shown below to calculate the dissolved metals criteria):

Chemical	Freshwater		Saltwater	
	Acute	Chronic	Acute	Chronic
Arsenic	1.000	1.000	1.000	1.000
Cadmium	1.136672-[(ln hardness)(0.041838)]	1.101672-[(ln hardness)(0.041838)]	0.994	0.994
Chromium III	0.316	0.860	--	--
Chromium VI	0.982	0.962	0.993	0.993
Copper	0.960	0.960	0.83	0.83
Lead	1.46203-[(ln hardness)(0.145712)]	1.46203-[(ln hardness)(0.145712)]	0.951	0.951
Nickel	0.998	0.997	0.990	0.990
Selenium	0.996	0.922	0.998	0.998
Silver	0.85	0.85	0.85	--
Zinc	0.978	0.986	0.946	0.946

~~G Human Health criterion is the same as originally published in the 1976 EPA Red Book (Quality Criteria for Water, EPA-440/9-76-023) which predates the 1980 methodology and did not use the fish ingestion BCF approach.~~

~~H This value is based on a Drinking Water regulation.~~

I This value is based on criterion published in Ambient Water Quality Criteria for Endosulfan (EPA 440/5-80-046) and should be applied as the sum of alpha- and beta-endosulfan.

~~J No BCF was available; therefore, this value is based on that published in the 1986 EPA Gold Book.~~

~~K Human Health criterion is for "dissolved" concentration based on the 1976 EPA Red Book conclusion that adverse effects from exposure at this level are aesthetic rather than toxic.~~

~~L This value is expressed as the fish tissue concentration of methylmercury.~~

M Freshwater aquatic life values for pentachlorophenol are expressed as a function of pH, and are calculated as follows: CMC=(exp(1.005(pH)-4.869); CCC=exp(1.005(pH)-5.134).

N This number was assigned to the list of non-priority pollutants in National Recommended Water Quality Criteria: 2002 (EPA-822-R-02-047).

O This criterion is based on EPA recommendations issued in 1980 that were derived using guidelines that differed from EPA's 1985 Guidelines for minimum data requirements and derivation procedures. For example, a "CMC" derived using the 1980 Guidelines was derived to be used as an instantaneous maximum. If assessment is to be done using an averaging period, the values given should be divided by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.

P Criterion shown is the minimum (i.e. CCC in water should not be below this value in order to protect aquatic life).

Q Criterion is applied as total arsenic (i.e. arsenic (III) + arsenic (V)).

~~R Arsenic criterion refers to the inorganic form only.~~

S This criterion is expressed as µg free cyanide (CN)/L.

T This criterion applies to DDT and its metabolites (i.e. the total concentration of DDT and its metabolites should not exceed this value).

U This criterion applies to total PCBs (e.g. the sum of all congener or all isomer or homolog or Arochlor analyses).

V The CMC=1/[(f1/CMC1)+(f2/CMC2)] where f1 and f2 are the fractions of total selenium that are treated as selenite and selenate, respectively, and CMC1 and CMC2 are 185.9 µg/L and 12.82 µg/L, respectively.

W The acute and chronic criteria for aluminum are 750 µg/L and 87 µg/L, respectively. These values for aluminum are expressed in terms of "total recoverable" concentration of metal in the water column. The criterion applies at pH<6.6 and hardness<12 mg/L (as $CaCO_3$).

X The effective date for the criterion in the column immediately to the left is 1991.

Y No criterion.

Table 33B Redline/Strikethrough

TABLE 33B

Note: The Environmental Quality Commission adopted the following criteria on May 20, 2004 to become effective on EPA approval. EPA has not yet (as of June 2006) approved these criteria. The Table 33B criteria may not be used until they are approved by EPA.

AQUATIC LIFE WATER QUALITY CRITERIA SUMMARY[A]

The concentration for each compound listed in Table 33A is a criterion not to be exceeded in waters of the state in order to protect aquatic life ~~and human health~~. All values are expressed as micrograms per liter (µg/L) except where noted. Compounds are listed in alphabetical order with the corresponding EPA number (from National Recommended Water Quality Criteria: 2002, EPA-822-R-02-047), the Chemical Abstract Service (CAS) number, aquatic life freshwater acute and chronic criteria, aquatic life saltwater acute and chronic criteria~~, human health water & organism and organism only criteria, and Drinking Water Maximum Contaminant Level (MCL)~~. The acute criteria refer to the average concentration for one (1) hour and the chronic criteria refer to the average concentration for 96 hours (4 days), and that these criteria should not be exceeded more than once every three (3) years.

EPA NO.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~			
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective Date~~	~~Organism only[B]~~	~~Effective Date~~
2 N	Aluminum (pH 6.5 - 9.0)			7429905	W		W									
3 N	Ammonia			7664417	C		C									
2	Arsenic			7440382									~~0.018 R~~		~~0.14 R~~	
15	Asbestos			1332214									~~7.0E+06 fibers/Liter~~			
19	Benzene			71432									~~2.2~~		~~51~~	

EPA No.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~			
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective Date~~	~~Organism only[B]~~	~~Effective Date~~
3	Beryllium			7440417									~~¥~~		~~¥~~	
105	BHC gamma- (Lindane)			58899									~~0.98~~		~~1.8~~	
4	Cadmium			7440439	E,F		E,F		40 E		8.8 E		~~¥~~			
107	Chlordane			57749									~~0.00080~~		~~0.00081~~	
	CHLORINATED BENZENES												~~¥~~		~~¥~~	
26	Chloroform			67663									~~5.7~~		~~470~~	
67	ChloroisopropylEther Bis2-			108601									~~1400~~		~~65000~~	
15 N	ChloromethylEther, Bis			542881									~~0.00010~~			
5a	Chromium (III)				E,F		E,F						~~¥~~			
5b	Chromium (VI)			18540299	16 E		11 E						~~¥~~		~~¥~~	
6	Copper			7440508	E,F		E,F		4.8 E		3.1 E					
108	DDT 4,4'-			50293									~~0.00022~~		~~0.00022~~	
	DIBUTYLPHTHALATE												~~¥~~		~~¥~~	
	DICHLOROBENZENES												~~¥~~		~~¥~~	

EPA NO.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~			
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective Date~~	~~Organism only[B]~~	~~Effective Date~~
	DICHLOROBENZIDINE												~~¥~~		~~¥~~	
	DICHLOROETHYLENES												~~¥~~		~~¥~~	
	DICHLOROPROPENE												~~¥~~		~~¥~~	
111	Dieldrin			60571			0.056									
	DINITROTOLUENE												~~¥~~		~~¥~~	
	DIPHENYLHYDRAZINE												~~¥~~		~~¥~~	
115	Endrin			72208			0.036									
86	Fluoranthene			206440									~~130~~		~~140~~	
	HALOMETHANES												~~¥~~		~~¥~~	
20 N	Iron			7439896									~~300 K~~			
7	Lead			7439921	E,F		E,F		210 E		8.1 E		~~¥~~			
22 N	Manganese			7439965									~~50 K~~		~~100 K~~	
8a	Mercury			7439976									~~¥~~		~~¥~~	
	MONOCHLOROBENZENE												~~¥~~		~~¥~~	

EPA No.	Compound			CAS Number	Freshwater				Saltwater				~~Human Health For Consumption of:~~			
					Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	Acute (CMC)	Effective Date	Chronic (CCC)	Effective Date	~~Water + Organism[B]~~	~~Effective Date~~	~~Organism only[B]~~	~~Effective Date~~
9	Nickel			7440020	E,F		E,F		74 E		8.2 E		~~610~~		~~4600~~	
53	Pentachlorophenol			87865			M									
54	Phenol			108952									~~21000~~			
	POLYNUCLEAR AROMATIC HYRDOCARBONS												~~¥~~		~~¥~~	
10	Selenium			7782492	E,V		5 E		290 E		71 E		~~170~~			
11	Silver			7440224	E,F,P		0.10 E		1.9 E,P				~~¥~~			
44 N	Tributyltin (TBT)			688733	0.46		0.063		0.37		0.01					
41	Trichloroethane 1,1,1-			71556									~~¥~~		~~¥~~	
55	Trichlorophenol 2,4,6-			88062									~~1.4~~			
13	Zinc			7440666	E,F		E,F		90 E		81 E					

Footnotes for Tables 33A and 33B:

A Values in Table 20 are applicable to all basins.

~~B Human Health criteria values were calculated using a fish consumption rate of 17.5 grams per day (0.6 ounces/day) unless otherwise noted.~~

C Ammonia criteria for freshwater may depend on pH, temperature, and the presence of salmonids or other fish with ammonia-sensitive early life stages. Values for freshwater criteria (of total ammonia nitrogen in mg N/L) can be calculated using the formulae specified in *1999 Update of Ambient Water Quality Criteria for Ammonia* (EPA-822-R-99-014; http://www.epa.gov/ost/standards/ammonia/99update.pdf):

Freshwater Acute:

salmonids present….CMC = $\frac{0.275}{1+10^{7.204-pH}}+\frac{39.0}{1+10^{pH-7.204}}$

salmonids not present…CMC= $\frac{0.411}{1+10^{7.204-pH}}+\frac{58.4}{1+10^{pH-7.204}}$

Freshwater Chronic:

fish early life stages present

CCC = $\left(\frac{0.0577}{1+10^{7.688-pH}}+\frac{2.487}{1+10^{pH-7.688}}\right)*MIN(2.85,1.45*10^{0.028*(25-T)})$

fish early life stages not present

CCC= $\left(\frac{0.0577}{1+10^{7.688-pH}}+\frac{2.487}{1+10^{pH-7.688}}\right)*1.45*10^{0.028*(25-MAX(T,7))}$

Note: these chronic criteria formulae would be applied to calculate the 30-day average concentration limit; in addition, the highest 4-day average within the 30-day period should not exceed 2.5 times the CCC.

D Ammonia criteria for saltwater may depend on pH and temperature. Values for saltwater criteria (total ammonia) can be calculated from the tables specified in *Ambient Water Quality Criteria for Ammonia (Saltwater)--1989* (EPA 440/5-88-004; http://www.epa.gov/ost/pc/ambientwqc/ammoniasalt1989.pdf).

E Freshwater and saltwater criteria for metals are expressed in terms of “dissolved” concentrations in the water column, except where otherwise noted (e.g. aluminum).

F The freshwater criterion for this metal is expressed as a function of hardness (mg/L) in the water column. Criteria values for hardness may be calculated from the following formulae (CMC refers to Acute Criteria; CCC refers to Chronic Criteria):

$$CMC = (\exp(m_A*[\ln(hardness)] + b_A))*CF$$

$$CCC = (\exp(m_C*[\ln(hardness)] + b_C))*CF$$

where CF is the conversion factor used for converting a metal criterion expressed as the total recoverable fraction in the water column to a criterion expressed as the dissolved fraction in the water column.

Chemical	**m_A**	**b_A**	**m_C**	**b_C**
Cadmium	1.0166	-3.924	0.7409	-4.719
Chromium III	0.8190	3.7256	0.8190	0.6848
Copper	0.9422	-1.700	0.8545	-1.702
Lead	1.273	-1.460	1.273	-4.705
Nickel	0.8460	2.255	0.8460	0.0584
Silver	1.72	-6.59		
Zinc	0.8473	0.884	0.8473	0.884

Conversion factors (CF) for dissolved metals (the values for total recoverable metals criteria were multiplied by the appropriate conversion factors shown below to calculate the dissolved metals criteria):

Chemical	Freshwater		Saltwater	
	Acute	Chronic	Acute	Chronic
Arsenic	1.000	1.000	1.000	1.000
Cadmium	1.136672-[(ln hardness)(0.041838)]	1.101672-[(ln hardness)(0.041838)]	0.994	0.994
Chromium III	0.316	0.860	--	--
Chromium VI	0.982	0.962	0.993	0.993
Copper	0.960	0.960	0.83	0.83
Lead	1.46203-[(ln hardness)(0.145712)]	1.46203-[(ln hardness)(0.145712)]	0.951	0.951
Nickel	0.998	0.997	0.990	0.990
Selenium	0.996	0.922	0.998	0.998
Silver	0.85	0.85	0.85	--
Zinc	0.978	0.986	0.946	0.946

~~G Human Health criterion is the same as originally published in the 1976 EPA Red Book (Quality Criteria for Water, EPA-440/9-76-023) which predates the 1980 methodology and did not use the fish ingestion BCF approach.~~

~~H This value is based on a Drinking Water regulation.~~

I This value is based on criterion published in Ambient Water Quality Criteria for Endosulfan (EPA 440/5-80-046) and should be applied as the sum of alpha- and beta-endosulfan.

~~J No BCF was available; therefore, this value is based on that published in the 1986 EPA Gold Book.~~

~~K Human Health criterion is for "dissolved" concentration based on the 1976 EPA Red Book conclusion that adverse effects from exposure at this level are aesthetic rather than toxic.~~

~~L This value is expressed as the fish tissue concentration of methylmercury.~~

M Freshwater aquatic life values for pentachlorophenol are expressed as a function of pH, and are calculated as follows: CMC=(exp(1.005(pH)-4.869); CCC=exp(1.005(pH)-5.134).

N This number was assigned to the list of non-priority pollutants in National Recommended Water Quality Criteria: 2002 (EPA-822-R-02-047).

O This criterion is based on EPA recommendations issued in 1980 that were derived using guidelines that differed from EPA's 1985 Guidelines for minimum data requirements and derivation procedures. For example, a "CMC" derived using the 1980 Guidelines was derived to be used as an instantaneous maximum. If assessment is to be done using an averaging period, the values given should be divided by 2 to obtain a value that is more comparable to a CMC derived using the 1985 Guidelines.

P Criterion shown is the minimum (i.e. CCC in water should not be below this value in order to protect aquatic life).

~~Q Criterion is applied as total arsenic (i.e. arsenic (III) + arsenic (V)).~~

R Arsenic criterion refers to the inorganic form only.

S This criterion is expressed as µg free cyanide (CN)/L.

T This criterion applies to DDT and its metabolites (i.e. the total concentration of DDT and its metabolites should not exceed this value).

U This criterion applies to total PCBs (e.g. the sum of all congener or all isomer or homolog or Arochlor analyses).

V The CMC=1/[(f1/CMC1)+(f2/CMC2)] where f1 and f2 are the fractions of total selenium that are treated as selenite and selenate, respectively, and CMC1 and CMC2 are 185.9 µg/L and 12.82 µg/L, respectively.

W The acute and chronic criteria for aluminum are 750 µg/L and 87 µg/L, respectively. These values for aluminum are expressed in terms of "total recoverable" concentration of metal in the water column. The criterion applies at pH<6.6 and hardness<12 mg/L (as $CaCO_3$).

X The effective date for the criterion in the column immediately to the left is 1991.

Y No criterion.

Crosswalk Between Currently Effective Human Health Criteria and Proposed Criteria

Compound Name or Class [Table 40 Name, if different] *Criteria denoted in red indicate proposed additions to the human health criteria*	**Priority Pollutant**	**Carcinogen**	**Concentration in Units Per Liter for Protection of Human Health CURRENT**		**Concentration in Units Per Liter for Protection of Human Health PROPOSED TABLE 40**	
			Water and Fish Ingestion (µg/L)	**Fish Consumption Only (µg/L)**	**Water and Fish Ingestion (µg/L)**	**Fish Consumption Only (µg/L)**
ACENAPTHENE	Y	N	--	--	95	99
ACROLEIN	Y	N	320	780	0.88	0.93
ACRYLONITRILE	Y	Y	0.058	0.65	0.018	0.025
ALDRIN	Y	Y	0.000074	0.000079	0.0000050	0.0000050
ANTHRACENE	N	N	--	--	2900	4000
ANTIMONY	Y	N	146	45,000	5.1	64
ARSENIC	Y	Y	2.1	2.1 (freshwater) 1.0 (saltwater)	2.1	2.1 (freshwater) 1.0 (saltwater)
ASBESTOS	Y	Y	7,000,000 fibers/L	--	7,000,000 fibers/L	--
BARIUM	N	N	1000	--	1000	--
BENZENE	N	Y	0.66	40	0.44	1.4
BENZIDINE	N	Y	0.00012	0.00053	0.000018	0.000020
BENZ(A) ANTHRACENE	N	Y	--	--	0.0013	0.0018

Compound Name or Class [Table 40 Name, if different] *Criteria denoted in red indicate proposed additions to the human health criteria*	Priority Pollutant	Carcinogen	Concentration in Units Per Liter for Protection of Human Health CURRENT		Concentration in Units Per Liter for Protection of Human Health PROPOSED TABLE 40	
			Water and Fish Ingestion (µg/L)	Fish Consumption Only (µg/L)	Water and Fish Ingestion (µg/L)	Fish Consumption Only (µg/L)
BENZO(A)PYRENE	N	Y	--	--	0.0013	0.0018
BENZO(B)FLUORANTHENE 3,4	N	Y	--	--	0.0013	0.0018
BENZO(K)FLUORANTHENE	N	Y	--	--	0.0013	0.0018
BROMOFORM	N	Y	--	--	3.3	14
BUTYLBENZYL PHTHALATE	N	N	--	--	190	190
CARBON TETRACHLORIDE	Y	Y	0.4	6.94	0.10	0.16
CHLORDANE	Y	Y	0.00046	0.00048	0.000081	0.000081
CHLORINATED BENZENES [CHLOROBENZENE]	Y	N	488	--	74	160
CHLORODIBROMOMETHANE	N	Y	--	--	0.31	1.3
CHLOROETHYL ETHER (BIS-2)	Y	Y	0.03	1.36	0.020	0.05
CHLOROFORM	Y	N	0.19	15.7	260	1100
CHLOROISOPROPYL ETHER (BIS-2)	Y	N	34.7	4360	1200	6500
CHLOROMETHYL ETHER (BIS)	N	Y	0.00000376	0.00184	0.000024	0.000029
CHLORONAPHTHALENE 2	N	N	--	--	150	160
CHLOROPHENOL 2	Y	N	--	--	14	15

Compound Name or Class [Table 40 Name, if different] *Criteria denoted in red indicate proposed additions to the human health criteria*	**Priority Pollutant**	**Carcinogen**	**Concentration in Units Per Liter for Protection of Human Health CURRENT**		**Concentration in Units Per Liter for Protection of Human Health PROPOSED TABLE 40**	
			Water and Fish Ingestion (µg/L)	**Fish Consumption Only (µg/L)**	**Water and Fish Ingestion (µg/L)**	**Fish Consumption Only (µg/L)**
CHLOROPHENOXY HERBICIDES (2,4,5,-TP)	N	N	10	--	10	--
CHLOROPHENOXY HERBICIDES (2,4-D)	N	N	100	--	100	--
CHRYSENE	N	Y	--	--	0.0013	0.0018
COPPER	Y	N	1300	--	1300	--
CYANIDE	Y	N	200	--	130	130
DDT [DDT 4,4']	Y	Y	0.000024	0.000024	0.000022	0.000022
DDD 4, 4'	Y	Y	--	--	0.000031	0.000031
DDE 4, 4'	Y	Y	--	--	0.000022	0.000022
DIBENZ(A,H)ANTHRACENE	N	Y	--	--	0.0013	0.0018
DIBUTYLPHTHALATE [DI-N-BUTYL PHTHALATE]	Y	N	35,000	154,000	400	450
DICHLOROBENZENES [DICHLOROBENZENE(O)1,2]	Y	N	400	2,600	110	130
DICHLOROBENZENE(P) 1,4	N	N	--	--	16	19

Compound Name or Class [Table 40 Name, if different] *Criteria denoted in red indicate proposed additions to the human health criteria*	**Priority Pollutant**	**Carcinogen**	**Concentration in Units Per Liter for Protection of Human Health CURRENT**		**Concentration in Units Per Liter for Protection of Human Health PROPOSED TABLE 40**	
			Water and Fish Ingestion (µg/L)	**Fish Consumption Only (µg/L)**	**Water and Fish Ingestion (µg/L)**	**Fish Consumption Only (µg/L)**
DICHLOROBENZIDINE [DICHLOROBENZIDINE 3,3']	Y	Y	0.01	0.020	0.0027	0.0028
DICHLOROBROMOMETHANE	N	Y	--	--	0.42	1.7
DICHLOROETHANE 1,2	Y	Y	0.94	243	0.35	3.7
DICHLOROETHYLENES [DICHLOROETHYLENE 1,1]	Y	N	0.033	1.85	230	710
DICHLOROETHYLENE TRANS 1,2	N	N	--	--	120	1000
DICHLOROPHENOL 2,4	N	N	3,090	--	23	29
DICHLOROPROPANE [DICHLOROPROPANE 1,2]	Y	Y	--	--	0.38	1.5
DICHLOROPROPENE [DICHLOROPROPENE 1,3]	Y	Y	87	14,100	0.30	2.1
DIELDRIN	Y	Y	0.000071	0.000076	0.0000053	0.0000054
DIETHYLPHTHALATE	Y	N	350,000	1,800,000	3800	4400
DIMETHYL PHENOL 2,4	Y	N	--	--	76	85
DIMETHYL PHTHALATE	Y	N	313,000	2,900,000	84,000	110,000
DINITROPHENOL 2,4	Y	N	--	--	62	530

Compound Name or Class [Table 40 Name, if different] *Criteria denoted in red indicate proposed additions to the human health criteria*	Priority Pollutant	Carcinogen	Concentration in Units Per Liter for Protection of Human Health CURRENT		Concentration in Units Per Liter for Protection of Human Health PROPOSED TABLE 40	
			Water and Fish Ingestion (µg/L)	Fish Consumption Only (µg/L)	Water and Fish Ingestion (µg/L)	Fish Consumption Only (µg/L)
DINITROPHENOLS	Y	N	--	--	62	530
DINITROTOLUENE 2,4	N	Y	0.11	9.1	0.084	0.34
DINITROTOLUENE	Y	N	70	14,300	No criteria	No criteria
DINITRO-O-CRESOL 2,4	Y	N	13.4	765	No criteria	No criteria
DIOXIN (2,3,7,8-TCDD)	Y	Y	0.000000013	0.000000014	0.00000000051	0.00000000051
DIPHENYLHYDRAZINE	Y	N	0.042	0.56	No criteria	No criteria
DIPHENYLHYDRAZINE 1,2	Y	Y	--	--	0.014	0.02
DI-2-ETHYLHEXYL PHTHALATE [BIS-2-ETHYLHEXYL PHTHALATE]	Y	Y	15,000	50,000	0.20	0.22
ENDOSULFAN	Y	N	74	159	No criteria	No criteria
ENDOSULFAN ALPHA	Y	N	--	--	8.5	8.9
ENDOSULFAN BETA	Y	N	--	--	8.5	8.9
ENDOSULFAN SULFATE	Y	N	--	--	8.5	8.9
ENDRIN	Y	N	1	--	0.024	0.024
ENDRIN ALDEHYDE	Y	N	--	--	0.03	0.03
ETHYLBENZENE	Y	N	1,400	3,280	160	210

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FLUORANTHENE	Y	N	42	54	14	14
FLUORENE	Y	N	--	--	390	530
HALOMETHANES	Y	Y	0.19	15.7	No criteria	No criteria
HEPTACHLOR	Y	Y	0.00028	0.00029	0.0000079	0.0000079
HEPTACHLOR EPOXIDE	Y	Y	--	--	0.0000039	0.0000039
HEXACHLOROETHANE	N	Y	1.9	8.74	0.29	0.33
HEXACHLOROBENZENE	Y	Y	0.00072	0.00074	0.000029	0.000029
HEXACHLOROBUTADIENE	Y	Y	0.45	50	0.36	1.8
HEXACHLOROCYCLOHEXANE-ALPHA [BHC ALPHA]	Y	Y	0.0092	0.031	0.00045	0.00049
HEXACHLOROCYCLOHEXANE-BETA [BHC BETA]	Y	Y	0.0163	0.0547	0.0016	0.0017
HEXACHLOROCYCLOHEXANE-GAMA [BHC GAMMA (LINDANE)]	Y	N	0.0186	0.0625	0.17	0.18
HEXACHLOROCYCLOHEXANE-TECHNICAL	Y	Y	0.0123	0.0414	0.0014	0.0015

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HEXACHLOROCYCLOPENTADIENE	Y	N	206	--	30	110
INDENO(1,2,3-CD)PYRENE	Y	Y	--	--	0.0013	0.0018
ISOPHORONE	Y	Y	5,200	520,000	27	96
MANGANESE	N	N	--	100	--	100
METHOXYCHLOR	N	N	100	--	100	--
METHYL BROMIDE	Y	N	--	--	37	150
METHYL-4,6-DINITROPHENOL 2	Y	N	--	--	9.2	28
METHYLENE CHLORIDE	Y	Y	--	--	4.3	59
METHYLMERCURY (MG/KG)	Y	N	--	--	--	0.040
MONOCHLOROBENZENE	Y	N	488	--	No criteria	No criteria
NICKEL	Y	N	13.4	100	140	170
NITRATES	N	N	10,000	--	10,000	--
NITROBENZENE	Y	N	19,800	--	14	69
NITROSAMINES	Y	Y	0.0008	1.24	0.00079	0.046
NITROSODIBUTYLAMINE N	Y	Y	0.0064	0.587	0.0050	0.02
NITROSODIETHYLAMINE N	Y	Y	0.0008	1.24	0.00079	0.046

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NITROSODIMETHYLAMINE N	Y	Y	0.0014	16	0.00068	0.30
NITROSODI-N-PROPYLAMINE, N	Y	Y	--	--	0.0046	0.051
NITROSODIPHENYLAMINE N	Y	Y	4.9	16.1	0.55	0.60
NITROSOPYRROLIDINE N	Y	Y	0.016	91.9	0.016	3.4
PCBS	Y	Y	0.000079	0.000079	0.0000064	0.0000064
PENTACHLOROBENZENE	N	N	74	85	0.15	0.15
PENTACHLOROPHENOL	Y	Y	1,010	--	0.15	0.30
PHENOL	Y	N	3,500	--	9,400	86,000
POLYNUCLEAR AROMATIC HYDROCARBONS	Y	Y	0.0028	0.0311	No criteria	No criteria
PYRENE	Y	N	--	--	290	400
SELENIUM	Y	N	10	--	120	420
TETRACHLOROBENZENE 1,2,4,5	Y	N	38	48	0.11	0.11
TETRACHLOROETHANE 1,1,2,2	Y	Y	0.17	10.7	0.12	0.40
TETRACHLOROETHYLENE	Y	Y	0.8	8.85	0.24	0.33
THALLIUM	Y	N	13	48	0.043	0.047

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TOLUENE	Y	N	14,300	424,000	720	1500
TOXAPHENE	Y	Y	0.00071	0.00073	0.000028	0.000028
TRICHLOROBENZENE 1,2,4	Y	N	--	--	6.4	7.0
TRICHLOROETHANE 1,1,2	Y	Y	0.6	41.8	0.44	1.6
TRICHLOROETHYLENE	Y	Y	2.7	80.7	1.4	3.0
TRICHLOROPHENOL 2,4,5	N	N	2,600	--	330	360
TRICHLOROPHENOL 2,4,6	Y	Y	1.2	3.6	0.23	0.24
VINYL CHLORIDE	Y	Y	2	525	0.02	0.24
ZINC	Y	N	--	--	2100	2600