2002 303(d) List Update
Ref. #57

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS in ug/l (ppb) unless noted

INORGANIC CONSTITUENT	Drinking Water Standards (California & Federal) Maximum Contaminant Levels (MCLs)					California Public Health Goal (PHG) in Drinking Water (Office of Environmental Health Hazard Assessment)	California State Action Levels (Department of Health Services)		Other Taste & Odor Thresholds
	California Dept. of Health Services		U.S. Environmental Protection Agency				Toxicity	Taste & Odor	
	Primary MCL	Secondary MCL	Primary MCL	Secondary MCL	MCL Goal				
Alkalinity									
Aluminum	1000	200		50 to 200		60 (100)			
Aluminum phosphide									
Ammonia									500 (146)
Ammonium sulfamate									
Antimony	6		6		6	20			
Arsenic	50		50 / 5 (100)		zero (100)				
Arsine									0.35 (126)
Asbestos	7 MFL (101)		7 MFL (101)		7 MFL (101)				
Barium	1000		2000		2000				
Beryllium	4		4		4				
Beryllium oxide									
Beryllium sulfate									
Boron							1000		
Bromate	10 (100)		10 (147)		zero (147)				
Bromide									
Bromine									6.3 (126)
Cadmium	5		5		5	0.07			
Carbon disulfide									0.39 (126)
Chloramine	4000 (66,100)		4000 (66)		4000 (66)				
Chlorate									
Chloride		250,000 (73)		250,000					
Chlorine	4000 (66,100)		4000 (66)		4000 (66)				2 (126)
Chlorine dioxide	800 (67,100)		800 (67)		300 (67)				670 (126)
Chlorite	1000 (100)		1000 (147)		800 (147)				
Chromium (III)						200,000			
Chromium (VI)						0.2			
Chromium (total)	50		100		100	2.5 (134)			
Cobalt									
Color		15 units		15 units					
Copper	1300 (111)	1000	1300 (111)	1000	1300	170			
Copper cyanide									
Corrosivity		Non-corrosive		Non-corrosive					
Cyanide	200 / 150 (100)		200 (137)		200 (137)	150			170 (126)
Cyanogen bromide									
Cyanogen chloride									
Fluoride	2000 (109)		4000	2000	4000	1000			
Hydrazine									160,000 (126)
Hydrazine sulfate									
Hydrogen selenide									2.1 (126)
Hydrogen sulfide									0.029 (126)
Iodide									
Iron		300		300					
Lead	15 (111)		15 (111)		zero	2			
Manganese		50		50					
Mercuric chloride									
Mercury, inorganic	2		2		2	1.2			
Molybdenum									
Nickel	100					1 (100)			
Nickel carbonyl									0.072 (126)
Nickel subsulfide									
Nitrate	45,000 (72)		10,000 (103)		10,000 (89)	10,000 (103)			

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS in ug/l (ppb) unless noted

INORGANIC CONSTITUENT	USEPA Integrated Risk Information System (IRIS) Reference Dose as a Drinking Water Level (60)	Drinking Water Health Advisories or Suggested No-Adverse-Response Levels (SNARLs) for toxicity other than cancer risk		One-in-a-Million Incremental Cancer Risk Estimates for Drinking Water				California Proposition 65 Regulatory Level as a Drinking Water Level (14)	Agricultural Water Quality Goals (78)
		USEPA	National Academy of Sciences (NAS)	Cal/EPA Cancer Potency Factor as a Drinking Water Level (102)	USEPA Integrated Risk Information System (IRIS)	USEPA Drinking Water Health Advisory or SNARL	National Academy of Sciences (NAS) *Drinking Water and Health*		
Alkalinity									
Aluminum			5000 (7-day)						5000
Aluminum phosphide	2.8								
Ammonia		30,000 (68)				(D,68)			
Ammonium sulfamate	1400	2000				(D)			
Antimony	2.8	6				(D)			
Arsenic	2.1			0.023	0.02 (A)	0.02 (A,68)		5 #R	100
Arsine									
Asbestos				(15)	(A)	7 MFL (A,101)		# (15)	
Barium	490	2000 (68)	4700		(D)	(D,68)			
Beryllium	14	30,000 (10-day)			(B1,119)			# (15)	100
Beryllium oxide				0.005	(B2)			(15)	
Beryllium sulfate				0.000012				(15)	
Boron	630	600 (68)				(D,68)			700 / 750 (91)
Bromate		200 (24-hr)			0.05 (B2)	0.05 (B2,68)			
Bromide			2300						
Bromine									
Cadmium	3.5	5	5	0.092 (153)	(B1,119)	(D)		#R (15)	10
Carbon disulfide	700							300 R (5,68)	
Chloramine	700	3000 (68)	166 / 581 (7)		(D)				
Chlorate		(D)	7 / 24 (7)						
Chloride									106,000
Chlorine	700	4000 (68)				(D,68)			
Chlorine dioxide		800 (68)	60 / 210 (7)		(D)	(D,68)			
Chlorite	21	800 (68)	7 / 24 (7)		(D)	(D,68)			
Chromium (III)					10,500 (D)				
Chromium (VI)	21			0.18	(A / D,155)			# (15)	100
Chromium (total)		1000 (10-day)				(D)			
Cobalt									50
Color									
Copper					(D)	(D,68)			200
Copper cyanide	35								
Corrosivity									
Cyanide	140	200			(D)	(D)			
Cyanogen bromide	630								
Cyanogen chloride	350	50 (10-day)				(D)			
Fluoride	420								1000
Hydrazine				0.012	0.01 (B2)			0.02 #	
Hydrazine sulfate				0.012	0.01 (B2)			0.1 #	
Hydrogen selenide									
Hydrogen sulfide	21								
Iodide			1190						
Iron									5000
Lead				4.1	(B2)	(B2)		0.25 #R (5)	5000
Manganese	330				(D)				200
Mercuric chloride	0.2				(C)			R	
Mercury, inorganic		2			(D)	(D)		R	
Molybdenum	35	40 (68)				(D,68)			10
Nickel	140	100		(15)				# (15)	200
Nickel carbonyl					(B2)			#R	
Nickel subsulfide				0.021	(A)			# (15)	
Nitrate	11,000 (89)	10,000 (10-day,89)							

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS in ug/l (ppb) unless noted

INORGANIC CONSTITUENT	USEPA National Recommended Ambient Water Quality Criteria											
	Human Health and Welfare Protection					Freshwater Aquatic Life Protection						
	Non-Cancer Health Effects		One-in-a-Million Cancer Risk Estimate			Recommended Criteria				Toxicity Information (Lowest Observed Effect Level)		
	Sources of Drinking Water (water+organisms)	*Other Waters* (aquatic organism consumption only)	*Sources of* Drinking Water (water+organisms)	Other Waters (aquatic organism consumption only)	Taste & Odor or Welfare	Continuous Concentration (4-day Average)	24-hour Average	Maximum Concentration (1-hour Average)	Instantaneous Maximum	Acute	Chronic	Other
Alkalinity						≥20,000 (9,51)						
Aluminum						87 (2,62)		750 (2,62)				
Aluminum phosphide												
Ammonia						see page 13		see page 13				
Ammonium sulfamate												
Antimony	14 (2)	4300 (2)								9000	1600	610 (38)
Arsenic			0.018 (2,94)	0.14 (2,94)		150 (1)		340 (1)				
Arsine												
Asbestos			7 MFL (101)									
Barium	1000 (51)											
Beryllium										130	5.3	
Beryllium oxide												
Beryllium sulfate												
Boron												
Bromate												
Bromide												
Bromine												
Cadmium						see page 15 (1)		see page 15 (1)				
Carbon disulfide												
Chloramine												
Chlorate												
Chloride						230,000 (4)		860,000 (4)				
Chlorine						11 (98)		19 (98)				
Chlorine dioxide												
Chlorite												
Chromium (III)						see page 17 (1)		see page 17 (1)				
Chromium (VI)						11 (1)		16 (1)				
Chromium (total)												
Cobalt												
Color					(51,130)				(51,131)			
Copper	1300				1000	see page 18 (1)		see page 18 (1)				
Copper cyanide												
Corrosivity												
Cyanide	700	220,000				5.2 (137)		22 (137)				
Cyanogen bromide												
Cyanogen chloride												
Fluoride												
Hydrazine												
Hydrazine sulfate												
Hydrogen selenide												
Hydrogen sulfide									2 (51)			
Iodide												
Iron					300 (51)				1000 (51)			
Lead						see page 19 (1)		see page 19 (1)				
Manganese		100 (51,127)			50 (51)							
Mercuric chloride												
Mercury, inorganic	0.050 (2)	0.051 (2)				0.77 (1,140)		1.4 (1,140)				
Molybdenum												
Nickel	610 (2)	4600 (2)				see page 20 (1)		see page 20 (1)				
Nickel carbonyl												
Nickel subsulfide												
Nitrate	10,000 (51,89)											

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS in ug/l (ppb) unless noted

INORGANIC CONSTITUENT	California Toxics Rule Criteria (USEPA)								
	Inland Surface Waters					Enclosed Bays & Estuaries			
	Human Health (30-day Average)		Freshwater Aquatic Life Protection			Human Health (30-day Average) aquatic organism consumption only	Saltwater Aquatic Life Protection		
	Drinking Water Sources (consumption of water and aquatic organisms)	Other Waters (aquatic organism consumption only)	Continuous Concentration (4-day Average)	Maximum Concentration (1-hour Average)	Instantaneous Maximum		Continuous Concentration (4-day Average)	Maximum Concentration (1-hour Average)	Instantaneous Maximum
Alkalinity									
Aluminum									
Aluminum phosphide									
Ammonia									
Ammonium sulfamate									
Antimony	14 (2)	4300 (2)				4300 (2)			
Arsenic			150 (1,142)	340 (1,142)			36 (1,142)	69 (1,142)	
Arsine									
Asbestos	7 MFL (101,143)								
Barium									
Beryllium									
Beryllium oxide									
Beryllium sulfate									
Boron									
Bromate									
Bromide									
Bromine									
Cadmium			see page 15 (1,142)	see page 15 (1,142)			9.3 (1,142)	42 (1,142)	
Carbon disulfide									
Chloramine									
Chlorate									
Chloride									
Chlorine									
Chlorine dioxide									
Chlorite									
Chromium (III)			see page 16 (1,143)	see page 16 (1,143)					
Chromium (VI)			11 (1,142)	16 (1,142)			50 (1,142)	1100 (1,142)	
Chromium (total)									
Cobalt									
Color									
Copper	1300 (2,142)		see page 18 (1,142)	see page 18 (1,142)			3.1 (1,142)	4.8 (1,142)	
Copper cyanide									
Corrosivity									
Cyanide	700 (142)	220,000 (142)	5.2 (142,143)	22 (142,143)		220,000 (142)	1 (142,143)	1 (142,143)	
Cyanogen bromide									
Cyanogen chloride									
Fluoride									
Hydrazine									
Hydrazine sulfate									
Hydrogen selenide									
Hydrogen sulfide									
Iodide									
Iron									
Lead			see page 19 (1,142)	see page 19 (1,142)			8.1 (1,142)	210 (1,142)	
Manganese									
Mercuric chloride									
Mercury, inorganic	0.05 (2,142)	0.051 (2,142)				0.051 (2,142)			
Molybdenum									
Nickel	610 (2,142)	4600 (2,142)	see page 20 (1,142)	see page 20 (1,142)		4600 (2,142)	8.2 (1,142)	74 (1,142)	
Nickel carbonyl									
Nickel subsulfide									
Nitrate									

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS in ug/l (ppb) unless noted

INORGANIC CONSTITUENT	California Ocean Plan Numerical Water Quality Objectives						USEPA National Recommended Ambient Water Quality Criteria Saltwater Aquatic Life Protection						
	Human Health (30-day Average) aquatic organism consumption only	Marine Aquatic Life Protection					Recommended Criteria				Toxicity Information (Lowest Observed Effect Level)		
		6-month Median	30-day Average	7-day Average	Daily Maximum	Instantaneous Maximum	Continuous Concentration (4-day Average)	24-hour Average	Maximum Concentration (1-hour Average)	Instantaneous Maximum	Acute	Chronic	Other
Alkalinity													
Aluminum													
Aluminum phosphide													
Ammonia		600 (89)			2400 (89)	6000 (89)	35 (112)		233 (112)				
Ammonium sulfamate													
Antimony	1200												
Arsenic		8			32	80	36 (1)		69 (1)				
Arsine													
Asbestos													
Barium													
Beryllium	0.033 #												
Beryllium oxide													
Beryllium sulfate													
Boron													
Bromate													
Bromide													
Bromine													
Cadmium		1			4	10	9.3 (1)		42 (1)				
Carbon disulfide													
Chloramine													
Chlorate													
Chloride													
Chlorine		2 (90)			8 (90)	60 (90)	7.5 (99)		13 (99)				
Chlorine dioxide													
Chlorite													
Chromium (III)	190,000										10,300 (96)		
Chromium (VI)		2 (12)			8 (12)	20 (12)	50 (1)		1100 (1)				
Chromium (total)		2 (12)			8 (12)	20 (12)							
Cobalt													
Color										(51,131)			
Copper		3			12	30	3.1 (1)		4.8 (1)				
Copper cyanide													
Corrosivity													
Cyanide		1			4	10	1 (137)		1 (137)				
Cyanogen bromide													
Cyanogen chloride													
Fluoride													
Hydrazine													
Hydrazine sulfate													
Hydrogen selenide													
Hydrogen sulfide										2 (51)			
Iodide													
Iron													
Lead		2			8	20	8.1 (1)		210 (1)				
Manganese													
Mercuric chloride													
Mercury, inorganic		0.04			0.16	0.4	0.94 (1,140)		1.8 (1,140)				
Molybdenum													
Nickel		5			20	50	8.2 (1)		74 (1)				
Nickel carbonyl													
Nickel subsulfide													
Nitrate													

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS in ug/l (ppb) unless noted

INORGANIC CONSTITUENT	Chemical Abstracts Service Registry Number	Synonyms and Abbreviations		
Alkalinity				
Aluminum	7429-90-5	Al		
Aluminum phosphide	20859-73-8	Celphos	Phostoxin	
Ammonia	7664-41-7	NH3	NH4+ (ammonium)	
Ammonium sulfamate	7773-06-0			
Antimony	7440-36-0	Sb		
Arsenic	7440-38-2	As		
Arsine	7784-42-1	AsH3		
Asbestos	1332-21-4			
Barium	7440-39-3	Ba		
Beryllium	7440-41-7	Be		
Beryllium oxide	1304-56-9			
Beryllium sulfate	13510-49-1			
Boron	7440-42-8	B		
Bromate	15541-45-4			
Bromide		Br-		
Bromine	7726-95-6			
Cadmium	7440-43-9	Cd		
Carbon disulfide	75-15-0	Carbon bisulfide	CS2	
Chloramine	127-65-1	NH2Cl	Monochloramine	
Chlorate		ClO3-		
Chloride	16887-00-6	Cl-		
Chlorine	7782-50-5	Cl2		
Chlorine dioxide	10049-04-4	ClO2		
Chlorite	7758-19-2	ClO2-		
Chromium (III)	16065-83-1	Cr (III)	Chromium, trivalent	
Chromium (VI)	7440-47-3	Cr (VI)	Chromium, hexavalent	
Chromium (total)	7440-47-3	Cr		
Cobalt	7440-48-4	Co		
Color				
Copper	7440-50-8	Cu		
Copper cyanide	544-92-3	Cupricin	Cuprous cyanide	Cyanide, copper
Corrosivity				
Cyanide	57-12-5	CN-	HCN	Hydrogen cyanide
Cyanogen bromide	506-68-3	Bromine cyanide		
Cyanogen chloride	506-77-4	Chlorine cyanide		
Fluoride	7782-41-4	F-	Fluorine, soluble	
Hydrazine	302-01-2	H2NNH2	Diamine	
Hydrazine sulfate	10034-93-2			
Hydrogen selenide	7783075	H2Se		
Hydrogen sulfide	7783064	H2S		
Iodide		I-		
Iron	7439-89-6	Fe		
Lead	7439-92-1	Pb		
Manganese	7439-96-5	Mn		
Mercuric chloride	7487-94-7	HgCl2		
Mercury, inorganic	7439-97-6	Hg		
Molybdenum	7439-98-7	Mo		
Nickel	7440-02-0	Ni		
Nickel carbonyl	13463-39-3			
Nickel subsulfide	12035-72-2			
Nitrate	14797-55-8	NO3-		

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS in ug/l (ppb) unless noted

INORGANIC CONSTITUENT	Drinking Water Standards (California & Federal) Maximum Contaminant Levels (MCLs)					California Public Health Goal (PHG) in Drinking Water (Office of Environmental Health Hazard Assessment)	California State Action Levels (Department of Health Services)		Other Taste & Odor Thresholds
	California Dept. of Health Services		U.S. Environmental Protection Agency						
	Primary MCL	Secondary MCL	Primary MCL	Secondary MCL	MCL Goal		Toxicity	Taste & Odor	
Nitrite	1000 (103)		1000 (103)		1000 (89)	1000 (103)			
Odor		3 threshold units		3 threshold units					
Osmium tetroxide									12 (126)
Oxygen, dissolved									
Ozone									0.28 (126)
Perchlorate							18		
pH				6.5 to 8.5 units					
Phosphate phosphorus									
Phosphine									0.2 (126)
Phosphorus									
Potassium bromate									
Potassium cyanide									
Potassium silver cyanide									
Radioactivity, Gross Alpha	15 pCi/L (110)		15 pCi/L (110)		zero (100)				
Radioactivity, Gross Beta	50 pCi/L		4 mrem/yr		zero (100)				
Radium-226 + Radium-228	5 pCi/L		5 pCi/L		zero (100)				
Radon			300 pCi/L (100)		zero (100)				
Selenium	50		50		50				
Settleable solids									
Silver		100		100					
Silver cyanide									
Sodium									
Sodium azide									
Sodium cyanide									
Specific conductance (EC)		900 umhos/cm (74)							
Strontium									
Strontium-90	8 pCi/L								
Sulfate		250,000 (73)	500,000 (100)	250,000	500,000 (100)				
Sulfur dioxide									110 (126)
Thallium	2		2		0.5	0.1			
Total dissolved solids (TDS)		500,000 (75)		500,000					
Tritium	20,000 pCi/L								
Turbidity		5 units	1.0/0.5/0.3 NTU (84)						
Uranium	20 pCi/L		20ug/L = 30pCi/L (100)		zero (100)	0.2ug/L = 0.2pCi/L (100)			
Vanadium									
Zinc		5000		5000					
Zinc cyanide									
Zinc phosphide									

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS in ug/l (ppb) unless noted

INORGANIC CONSTITUENT	USEPA Integrated Risk Information System (IRIS) Reference Dose as a Drinking Water Level (60)	Drinking Water Health Advisories or Suggested No-Adverse-Response Levels (SNARLs) for toxicity other than cancer risk		One-in-a-Million Incremental Cancer Risk Estimates for Drinking Water				California Proposition 65 Regulatory Level as a Drinking Water Level (14)	Agricultural Water Quality Goals (78)
		USEPA	National Academy of Sciences (NAS)	Cal/EPA Cancer Potency Factor as a Drinking Water Level (102)	USEPA Integrated Risk Information System (IRIS)	USEPA Drinking Water Health Advisory or SNARL	National Academy of Sciences (NAS) Drinking Water and Health		
Nitrite	700	1000 (10-day,89)							
Odor									
Osmium tetroxide									
Oxygen, dissolved									
Ozone									
Perchlorate		20 - 40 (68)							
pH									
Phosphate phosphorus									
Phosphine	2				(D)				
Phosphorus	0.14 (40)	0.1 (40)			(D)	(D)			
Potassium bromate				0.071				0.5 #	
Potassium cyanide	350								
Potassium silver cyanide	1400								
Radioactivity, Gross Alpha						0.15 pCi/L (A,110)			
Radioactivity, Gross Beta						0.04 mrem/yr (A)			
Radium-226 + Radium-228						(A)			
Radon						1.5 pCi/L (A)			
Selenium	35	50			(D)	(D)			20
Settleable solids									
Silver	35	100			(D)	(D)			
Silver cyanide	700								
Sodium		2000 (57)							
Sodium azide	28								
Sodium cyanide	280								
Specific conductance (EC)									700 µmhos/cm
Strontium	4200	4000 (68)	8400 (7-day)			(D,68)			
Strontium-90						(A)			
Sulfate									
Sulfur dioxide									
Thallium	0.6	0.5			(D)				
Total dissolved solids (TDS)									450,000
Tritium						(A)		#	
Turbidity									
Uranium	21		35			(A)		#	
Vanadium	63 (123)					(D)			100
Zinc	2100	2000 (68)			(D)	(D,68)			2000
Zinc cyanide	350								
Zinc phosphide	2								

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS in ug/l (ppb) unless noted

INORGANIC CONSTITUENT	USEPA National Recommended Ambient Water Quality Criteria											
	Human Health and Welfare Protection					Freshwater Aquatic Life Protection						
	Non-Cancer Health Effects		One-in-a-Million Cancer Risk Estimate			Recommended Criteria				Toxicity Information (Lowest Observed Effect Level)		
	Sources of Drinking Water (water+organisms)	Other Waters (aquatic organism consumption only)	Sources of Drinking Water (water+organisms)	Other Waters (aquatic organism consumption only)	Taste & Odor or Welfare	Continuous Concentration (4-day Average)	24-hour Average	Maximum Concentration (1-hour Average)	Instantaneous Maximum	Acute	Chronic	Other
Nitrite												
Odor												
Osmium tetroxide												
Oxygen, dissolved						see page 21	see page 21					
Ozone												
Perchlorate												
pH					5 to 9 units (51)				6.5 to 9.0 units (51)			
Phosphate phosphorus						(141)						
Phosphine												
Phosphorus												
Potassium bromate												
Potassium cyanide												
Potassium silver cyanide												
Radioactivity, Gross Alpha												
Radioactivity, Gross Beta												
Radium-226 + Radium-228												
Radon												
Selenium	170 (2)	11,000 (2)				5.0 (135)		(135,136)				
Settleable solids									(51,131)			
Silver									see page 22 (1)			
Silver cyanide												
Sodium												
Sodium azide												
Sodium cyanide												
Specific conductance (EC)												
Strontium												
Strontium-90												
Sulfate					250,000 (51,133)							
Sulfur dioxide												
Thallium	1.7 (2)	6.3 (2)								1400	40	20 (16)
Total dissolved solids (TDS)					250,000 (51,133)							
Tritium												
Turbidity									(51,131)			
Uranium												
Vanadium												
Zinc	9100 (2)	69,000 (2)			5000	see page 23 (1)		see page 23 (1)				
Zinc cyanide												
Zinc phosphide												

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS in ug/l (ppb) unless noted

INORGANIC CONSTITUENT	California Toxics Rule Criteria (USEPA)								
	Inland Surface Waters					Enclosed Bays & Estuaries			
	Human Health (30-day Average)		Freshwater Aquatic Life Protection			Human Health (30-day Average) aquatic organism consumption only	Saltwater Aquatic Life Protection		
	Drinking Water Sources (consumption of water and aquatic organisms)	Other Waters (aquatic organism consumption only)	Continuous Concentration (4-day Average)	Maximum Concentration (1-hour Average)	Instantaneous Maximum		Continuous Concentration (4-day Average)	Maximum Concentration (1-hour Average)	Instantaneous Maximum
Nitrite									
Odor									
Osmium tetroxide									
Oxygen, dissolved									
Ozone									
Perchlorate									
pH									
Phosphate phosphorus									
Phosphine									
Phosphorus									
Potassium bromate									
Potassium cyanide									
Potassium silver cyanide									
Radioactivity, Gross Alpha									
Radioactivity, Gross Beta									
Radium-226 + Radium-228									
Radon									
Selenium			5.0 (97,142)	20 (85,142)			71 (1,142)	290 (1,142)	
Settleable solids									
Silver				see page 22 (1,142)				1.9 (1,142)	
Silver cyanide									
Sodium									
Sodium azide									
Sodium cyanide									
Specific conductance (EC)									
Strontium									
Strontium-90									
Sulfate									
Sulfur dioxide									
Thallium	1.7 (2,143)	6.3 (2,143)				6.3 (2,143)			
Total dissolved solids (TDS)									
Tritium									
Turbidity									
Uranium									
Vanadium									
Zinc			see page 23 (1,142)	see page 23 (1,142)			81 (1,142)	90 (1,142)	
Zinc cyanide									
Zinc phosphide									

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS in ug/l (ppb) unless noted

INORGANIC CONSTITUENT	California Ocean Plan Numerical Water Quality Objectives						USEPA National Recommended Ambient Water Quality Criteria Saltwater Aquatic Life Protection						
	Human Health (30-day Average) aquatic organism consumption only	Marine Aquatic Life Protection					Recommended Criteria				Toxicity Information (Lowest Observed Effect Level)		
		6-month Median	30-day Average	7-day Average	Daily Maximum	Instantaneous Maximum	Continuous Concentration (4-day Average)	24-hour Average	Maximum Concentration (1-hour Average)	Instantaneous Maximum	Acute	Chronic	Other
Nitrite													
Odor													
Osmium tetroxide													
Oxygen, dissolved													
Ozone													
Perchlorate													
pH						6.0 to 9.0 units (117)				6.5 to 8.5 units (51,132)			
Phosphate phosphorus							(141)						
Phosphine													
Phosphorus										0.1 (51,79)			
Potassium bromate													
Potassium cyanide													
Potassium silver cyanide													
Radioactivity, Gross Alpha													
Radioactivity, Gross Beta													
Radium-226 + Radium-228													
Radon													
Selenium		15			60	150	71 (1)		290 (1)				
Settleable solids			1000 (117)	1500 (117)		3000 (117)							
Silver		0.7			2.8	7				1.9 (1)			
Silver cyanide													
Sodium													
Sodium azide													
Sodium cyanide													
Specific conductance (EC)													
Strontium													
Strontium-90													
Sulfate													
Sulfur dioxide													
Thallium	14										2130		
Total dissolved solids (TDS)													
Tritium													
Turbidity			75 NTU (117)	100 NTU (117)		225 NTU (117)							
Uranium													
Vanadium													
Zinc		20			80	200	81 (1)		90 (1)				
Zinc cyanide													
Zinc phosphide													

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS in ug/l (ppb) unless noted

INORGANIC CONSTITUENT	Chemical Abstracts Service Registry Number	Synonyms and Abbreviations		
Nitrite	14797-65-0	NO2-		
Odor				
Osmium tetroxide	20816-12-0	OsO4		
Oxygen, dissolved	7782447	Dissolved Oxygen	O2	DO
Ozone	10028-15-6	O3		
Perchlorate		ClO4-		
pH		negative log of H+ concentration		
Phosphate phosphorus				
Phosphine	7803-51-2	Hydrogen phosphide		
Phosphorus	7723-14-0	P		
Potassium bromate	7758012			
Potassium cyanide	151-50-8	Cyanide, potassium		
Potassium silver cyanide	506-61-6	Silver potassium cyanide		
Radioactivity, Gross Alpha		Gross Alpha radioactivity		
Radioactivity, Gross Beta		Gross Beta radioactivity		
Radium-226 + Radium-228	7440-14-4	226Ra + 228Ra		
Radon	14859-67-7	Rn		
Selenium	7782-49-2	Se		
Settleable solids				
Silver	7440-22-4	Ag		
Silver cyanide	506-64-9	Cyanide, silver		
Sodium	7440-23-5	Na		
Sodium azide	26628-22-8	Azide, sodium		
Sodium cyanide	143-33-9	Cyanide, sodium		
Specific conductance (EC)		Electrical Conductivity	Conductivity	EC
Strontium	7440-24-6	Sr		
Strontium-90		^{90}Sr		
Sulfate		SO4=		
Sulfur dioxide	7446095			
Thallium	7440-28-0	Th		
Total dissolved solids (TDS)		TDS		
Tritium	10028-17-8	^{3}H		
Turbidity				
Uranium	7440-61-1	U		
Vanadium	7440-62-2	V		
Zinc	7440-66-6	Zn		
Zinc cyanide	557-21-1	Cyanide, zinc		
Zinc phosphide	1314-84-7			

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS
FRESHWATER AQUATIC LIFE - AMMONIA

USEPA National Ambient Water Quality Criteria to Protect Freshwater Aquatic Life

Total Ammonia Nitrogen

Continuous Concentration, 30-day Avg. (mg N/L)‡

pH	Fish Early Life Stages Present — Temperature, C										Fish Early Life Stages Absent — Temperature, C										Maximum Concentration 1-hour Avg. (mg N/L)		pH
	0	14	16	18	20	22	24	26	28	30	0-7	8	9	10	11	12	13	14	15 †	16 †	Salmonids Present	Salmonids Absent	
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46	10.8	10.1	9.51	8.92	8.36	7.84	7.35	6.89	6.46	6.06	32.6	48.8	6.5
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36	5.97	31.3	46.8	6.6
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	2.37	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25	5.86	29.8	44.6	6.7
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10	5.72	28.0	42.0	6.8
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93	5.56	26.2	39.2	6.9
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73	5.37	24.1	36.1	7.0
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15	21.9	32.9	7.1
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22	4.90	19.7	29.5	7.2
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92	4.61	17.5	26.2	7.3
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59	4.30	15.3	23.0	7.4
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23	3.97	13.3	19.9	7.5
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85	3.61	11.4	17.0	7.6
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47	3.25	9.64	14.4	7.7
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.52	1.33	1.17	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	8.11	12.1	7.8
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71	2.54	6.77	10.1	7.9
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21	5.62	8.41	8.0
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03	1.91	4.64	6.95	8.1
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74	1.63	3.83	5.73	8.2
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39	3.15	4.71	8.3
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17	2.59	3.88	8.4
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06	0.990	2.14	3.20	8.5
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892	0.836	1.77	2.65	8.6
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754	0.707	1.47	2.20	8.7
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.641	0.601	1.23	1.84	8.8
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548	0.513	1.04	1.56	8.9
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471	0.442	0.885	1.32	9.0

Notes:

† At 15 C and above, the criterion for fish early life stages absent is the same as the criterion for fish early life stages present.

‡ In addition, the highest four-day average within the 30-day period should not exceed 2.5 times the Criteria Continuous Concentration shown in the above table.

Criteria Continuous Concentration

30-day average total ammonia nitrogen (in mg N/L) ‡

when fish early life stages are present:

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

when fish early life stages are absent:

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

where T = temperature in degrees C

Criteria Maximum Concentration

1-hour average total ammonia nitrogen (in mg N/L)

where salmonid fish are present:

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

where salmonid fish are not present:

$$CMC = \frac{0.411}{1+10^{7.204-pH}} + \frac{58.4}{1+10^{pH-7.204}}$$

WATER QUALITY GOALS FOR INORGANIC CONSTITUENTS
SALTWATER AQUATIC LIFE - AMMONIA

USEPA *National* Ambient Water Quality Criteria to Protect Saltwater Aquatic Life

Total Ammonia

Criteria Continuous Concentrations, 4-day Avg. (mg/L)

pH	Temperature, C 0	5	10	15	20	25	30	35
Salinity = 10 g/kg								
7.0	41	29	20	14	9.4	6.6	4.4	3.1
7.2	26	18	12	8.7	5.9	4.1	2.8	2.0
7.4	17	12	7.8	5.3	3.7	2.6	1.8	1.2
7.6	10	7.2	5.0	3.4	2.4	1.7	1.2	0.84
7.8	6.6	4.7	3.1	2.2	1.5	1.1	0.75	0.53
8.0	4.1	2.9	2.0	1.40	0.97	0.69	0.47	0.34
8.2	2.7	1.8	1.3	0.87	0.62	0.44	0.31	0.23
8.4	1.7	1.2	0.81	0.56	0.41	0.29	0.21	0.16
8.6	1.1	0.75	0.53	0.37	0.27	0.20	0.15	0.11
8.8	0.69	0.50	0.34	0.25	0.18	0.14	0.11	0.08
9.0	0.44	0.31	0.23	0.17	0.13	0.10	0.08	0.07
Salinity = 20 g/kg								
7.0	44	30	21	14	9.7	6.6	4.7	3.1
7.2	27	19	13	9.0	6.2	4.4	3.0	2.1
7.4	18	12	8.1	5.6	4.1	2.7	1.9	1.3
7.6	11	7.5	5.3	3.4	2.5	1.7	1.2	0.84
7.8	6.9	4.7	3.4	2.3	1.6	1.1	0.78	0.53
8.0	4.4	3.0	2.1	1.5	1.0	0.72	0.50	0.34
8.2	2.8	1.9	1.3	0.94	0.66	0.47	0.31	0.24
8.4	1.8	1.2	0.84	0.59	0.44	0.30	0.22	0.16
8.6	1.1	0.78	0.56	0.41	0.28	0.20	0.15	0.12
8.8	0.72	0.50	0.37	0.26	0.19	0.14	0.11	0.08
9.0	0.47	0.34	0.24	0.18	0.13	0.10	0.08	0.07
Salinity = 30 g/kg								
7.0	47	31	22	15	11	7.2	5.0	3.4
7.2	29	20	14	9.7	6.6	4.7	3.1	2.2
7.4	19	13	8.7	5.6	4.1	2.9	2.0	1.4
7.6	12	8.1	5.6	3.7	3.1	1.8	1.3	0.90
7.8	7.5	5.0	3.4	2.4	1.7	1.2	0.81	0.56
8.0	4.7	3.1	2.2	1.6	1.1	0.75	0.53	0.37
8.2	3.0	2.1	1.4	1.0	0.69	0.50	0.34	0.25
8.4	1.9	1.3	0.90	0.62	0.44	0.31	0.23	0.17
8.6	1.2	0.84	0.59	0.41	0.30	0.22	0.16	0.12
8.8	0.78	0.53	0.37	0.27	0.20	0.15	0.11	0.09
9.0	0.50	0.34	0.26	0.19	0.14	0.11	0.08	0.07

Criteria Maximum Concentrations, 1-hour Avg. (mg/L)

pH	Temperature, C 0	5	10	15	20	25	30	35
Salinity = 10 g/kg								
7.0	270	191	131	92	62	44	29	21
7.2	175	121	83	58	40	27	19	13
7.4	110	77	52	35	25	14	12	8.3
7.6	69	48	33	23	16	11	7.7	5.6
7.8	44	31	21	15	10	7.1	5.0	3.5
8.0	27	19	13	9.4	6.4	4.6	3.1	2.3
8.2	18	12	8.5	5.8	4.2	2.9	2.1	1.5
8.4	11	7.9	5.4	3.7	2.7	1.9	1.4	1.0
8.6	7.3	5.0	3.5	2.5	1.8	1.3	0.98	0.75
8.8	4.6	3.3	2.3	1.7	1.2	0.92	0.71	0.56
9.0	2.9	2.1	1.5	1.1	0.85	0.67	0.52	0.44
Salinity = 20 g/kg								
7.0	291	200	137	96	64	44	31	21
7.2	183	125	87	60	42	29	20	14
7.4	116	79	54	37	27	18	12	8.7
7.6	73	50	35	23	17	11	7.9	5.6
7.8	46	31	23	15	11	7.5	5.2	3.5
8.0	29	20	14	9.8	6.7	4.8	3.3	2.3
8.2	19	13	8.9	6.2	4.4	3.1	2.1	1.6
8.4	12	8.1	5.6	4.0	2.9	2.0	1.5	1.1
8.6	7.5	5.2	3.7	2.7	1.9	1.4	1.0	0.77
8.8	4.8	3.3	2.5	1.7	1.3	0.94	0.73	0.56
9.0	3.1	2.3	1.6	1.2	0.87	0.69	0.54	0.44
Salinity = 30 g/kg								
7.0	312	208	148	102	71	48	33	23
7.2	196	135	94	64	44	31	21	15
7.4	125	85	58	40	27	19	13	9.4
7.6	79	54	37	25	21	12	8.5	6.0
7.8	50	33	23	16	11	7.9	5.4	3.7
8.0	31	21	15	10	7.3	5.0	3.5	2.5
8.2	20	14	9.6	6.7	4.6	3.3	2.3	1.7
8.4	12.7	8.7	6.0	4.2	2.9	2.1	1.6	1.1
8.6	8.1	5.6	4.0	2.7	2.0	1.4	1.1	0.81
8.8	5.2	3.5	2.5	1.8	1.3	1.0	0.75	0.58
9.0	3.3	2.3	1.7	1.2	0.94	0.71	0.56	0.46

FOOTNOTES

FOOTNOTES

(7-day) For exposure of 7 days or less.
(10-day) For exposure of 10 days or less.
(24-hr) For exposure of 24 hours or less.

(A) Known human carcinogen; sufficient epidemiologic evidence in humans.
(B) Probable human carcinogen.
(B1) Probable human carcinogen; limited epidemiologic evidence in humans.
(B2) Probable human carcinogen; sufficient evidence from animal studies; no or inadequate human data.
(C) Possible human carcinogen; limited evidence from animal studies; no human data.
(D) Not classified as to human carcinogenicity; no data or inadequate evidence.
(E) Evidence of non-carcinogenicity for humans.

(1) Expressed as dissolved.
(2) Expressed as total recoverable.
(3) Varies from 1.4 to 2.4 mg/L with air temperature; see Title 22, CCR, Section 64435, Table 4.
(4) For dissolved chloride associated with sodium; criterion probably will not be adequately protective when chloride is associated with potassium, calcium, or magnesium, rather than sodium.
(5) Based on reproductive toxicity; applies only to second value if more than one value is listed.
(6) Pentavalent arsenic [As(V)] effects on plants.
(7) Calculated for child / for adult.
(8) Advisory concentration; U.S. EPA Water Quality Advisory; Reference 13.
(9) As $CaCO_3$; minimum concentration except where natural concentrations are less.
(10) From Reference 11.
(11) For dinitrophenols.
(12) Value developed for chromium (VI); may be applied to total chromium if valence unknown.
(13) For sum of bromoform, bromomethane, chloromethane, dibromochloromethane, and bromodichloromethane.
(14) Regulatory dose level divided by 2 liters per day average consumption; represents a 1-in-100,000 incremental cancer risk estimate unless otherwise noted.
(15) Determined not to pose a risk of cancer through ingestion (Title 22, CCR, Section 12707).
(16) Toxicity to one species of fish after 2600 hours of exposure.
(17) Mortality in a fish species after 30 day exposure.
(18) Applies separately to endrin and endrin aldehyde.
(19) For total trihalomethanes (sum of bromoform, bromodichloromethane, chloroform and dibromochloromethane); based largely on technology and economics.
(20) For halomethanes.
(21) Based on limited evidence.
(22) For chlorinated benzenes.
(23) Toxicity to a fish species exposed for 7.5 days.
(24) For dichlorobenzenes.
(25) 1983 Suggested-No-Adverse-Response Level; to be reviewed in the future.
(26) From Reference 8.
(27) For dichloroethylenes.
(28) For dichloropropanes.
(29) For dichloropropenes.
(30) For heptachlor and heptachlor epoxde.
(31) Adverse behavioral effects occur to one species.
(32) As $CaCO_3$; minimum criterion except where natural concentrations are less.
(33) For sum of acenaphthylene, anthracene, benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluorene, indeno(1,2,3-c,d)pyrene, phenanthrene, and pyrene.
(34) Flavor impairment in a fish species occurs.
(35) Mortality to early life stages of a fish species occurs.
(36) Based on organoleptic considerations (taste, odor, color, laundry staining, etc.)
(37) For mononitrophenols.
(38) Toxicity to algae occurs.
(39) For chlorinated systems.
(40) For white phosphorus.
(41) For carcinogenic polynuclear aromatic hydrocarbons.
(42) For endosulfan-alpha, endosulfan-beta and endosulfan sulfate.
(43) For benzene hexachloride isomers.
(44) Calculated from corn oil gavage animal study / from drinking water animal study.
(45) For sum of phthalate esters.
(46) For chloroalkyl ethers.
(47) For tetrachloroethanes.
(48) For chlorinated naphthalenes.
(49) 1980 U.S. EPA Suggested-No-Adverse-Response Level.
(50) For DDT, DDD, and DDE.
(51) From Reference 9.
(52) For polynuclear aromatic hydrocarbons.
(53) For dinitrotoluenes.
(54) From Reference 20.
(55) From Reference 30.
(56) For nitrosamines.
(57) Guidance level assumes relative source contribution of 10% from drinking water; Reference 3.
(58) For haloethers.
(59) Chronic Suggested-No-Adverse-Response Level was estimated to be 100-fold lower than the listed 24-hour value in calculating this level.
(60) Assumes 70 kg body weight, 2 liters/day water consumption, and 20% relative source contribution from drinking water. An additional uncertainty factor of 10 is used for Class C carcinogens.
(61) 6-month median.
(62) For pH between 6.5 and 9.0.
(63) Average chain length, C12; approximately 60% chlorine by weight.
(64) Based on kepone.
(65) Value for the technical grade of chemical or mixture of isomers.
(66) As Cl; federal limit effective 12/17/01 for surface water systems serving >10,000 people; federal limit effective 12/17/03 for all other systems; maximum residual disinfectant level and goal; apply only if this disinfectant is used.
(67) As ClO2; federal limit effective 12/17/01 for surface water systems serving >10,000 people; federal limit effective 12/17/03 for all other systems; maximum residual disinfectant level and goal; apply only if this disinfectant is used.
(68) Draft / tentative / provisional; applies only to second value if more than one value listed.
(69) For Arochlor 1260.
(70) At pH 6.8, caused 50% reduction in growth of yearling sockeye salmon in 56-day test.
(71) May be present as a decomposition product in Ferbam, Maneb, Nabam, Thiram, Zineb, and Ziram.
(72) As NO3; in addition, MCL for total nitrate plus nitrite = 10,000 ug/L (as N).
(73) Recommended level; Upper level = 500 mg/L; Short-term level = 600 mg/L.
(74) Recommended level; Upper level = 1600 umhos/cm; Short-term level = 2200 umhos/cm.
(75) Recommended level; Upper level = 1000 mg/L; Short-term level = 1500 mg/L.
(76) For "TCDD equivalents" calculated as the sum of 2,3,7,8-chlorinated dibenzodioxin and dibenzofuran concentrations multiplied by their respecitve USEPA Toxicity Equivalency Factors.
(77) For 1,2- and 1-3-dichlorobenzenes.
(78) Unless otherwise noted, from Reference 19.
(79) For elemental phosphorus; marine or estuarine.
(80) Instantaneous maximum.
(81) For oxychlordane and alpha and gamma isomers of chlordane, chlordene and nonachlor.
(82) A decrease in the number of algal cells occurs.
(83) Adverse effects on a fish species exposed for 168 days.

FOOTNOTES

(84) At no time exceed 5 NTU; systems that filter must not exceed 1 NTU (0.5 NTU for conventional or direct filtration) in at least 95% of daily samples in any month. Effective December 2001, 0.3 NTU for conventional or direct filtration systems serving >10,000 people. Proposed 0.3 NTU 95th percentile and 1 NTU maximum for systems serving <10,000 people.

(85) Expressed as total recoverable; this National Toxics Rule criterion applies to SF Bay through Susuin Bay and Sacramento-San Joaquin Delta, Salt Slough, Mud Slough (north), and San Joaquin River,Sack Dam to mouth of Merced River; does not apply to San Joaquin River, mouth of Merced to Vernalis; see reference 23.

(86) For nonchlorinated phenolic compounds.

(87) For chlorinated phenolic compounds.

(88) For nitrophenols.

(89) Expressed as nitrogen.

(90) For total chlorine residual; for intermittent chlorine sources see Chapter IV, Table B of Reference 28.

(91) Second value from Reference 16.

(92) For 3,3'-Dichlorobenzidine and its salts.

(93) Based on toxicity of benzo(a)pyrene and Potency Equivalency Factors of Cal/EPA, OEHHA; see Reference 18.

(94) Criterion refers to the inorganic form only.

(95) For the pentavalent form.

(96) EC50 for eastern oyster embryos.

(97) Expressed as total recoverable; this National Toxics Rule criterion applies to SF Bay through Susuin Bay and Sacramento-San Joaquin Delta, Salt Slough, Mud Slough (north), and San Joaquin River,Sack Dam to mouth of Merced River; does not apply to Grassland Water District, San Luis National Wildlife Refuge, and Los Banos State Wildlife Refuge; see reference 23.

(98) For total residual chlorine.

(99) For sum of chlorine-produced oxidants.

(100) Proposed; applies only to second value if more than one value is listed.

(101) MFL = million fibers per liter; limited to fibers longer than 10 um.

(102) Assumes 70 kg body weight and 2 liters/day water consumption.

(103) As nitrogen (N); in addition, limit for total nitrate + nitrite = 10,000 ug/L (as N).

(104) Based on endosulfan; USEPA Water Quality Advisory; Reference 13.

(105) No more than 0.05% monomer when dosed at 1 mg/L for drinking water treatment; see Reference 2.

(106) For five haloacetic acids (sum of mono-, di-, and trichloroacetic acids and mono- and dibromoacetic acids).

(107) Unleaded; based on benzene.

(108) For molecules with 60% chlorine or greater by molecular weight; applies only to second value if more than one value listed.

(109) Optimal fluoride level and (range) vary with annual average of maximum daily air temperature; 50.0 to 53.7 degrees F - 1.2 (1.1 - 1.7) mg/L; 53.8 to 58.3 degrees F - 1.1 (1.0 - 1.7) mg/L; 58.4 to 63.8 degrees F - 1.0 (0.9 - 1.5) mg/L; 63.9 to 70.6 degrees F - 0.9 (0.8 - 1.4) mg/L; 70.7 to 79.2 degrees F - 0.8 (0.7 - 1.3) mg/L; 79.3 to 90.5 degrees F - 0.7 (0.6 - 1.2) mg/L.

(110) Picocuries per liter; including Radium-226 but excluding Radon and Uranium.

(111) MCL includes this "Action level" to be exceeded in no more than 10% of samples at the tap.

(112) Criterion expressed as unionized ammonia; criteria based on total ammonia are shown on Inorganics Page 14.

(113) Based on carcinogenicity at 1-in-a-million risk level.

(114) Developed as 24-hour average usinig 1980 USEPA Guidelines; but applied as 4-day average in the National Toxics Rule, reference 22.

(115) Criterion most appropriately applied to the sum of alpha-Endosulfan and beta-Endosulfan. Reference 26.

(116) Applies separately to Aroclors 1242, 1254, 1221, 1232, 1248, 1260, and 1016; based on carcinogenicity at 1-in-a-million risk level.

(117) Effluent limitation for wastes discharged to waters.

(118) For the sum of Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

(119) Cancer classification not supported by ingestion data.

(120) For isomers with chlorines in 2,3,7 and 8 positions.

(121) Cancer risk may not be linear with dose above 60 ug/L.

(122) For the oxide form.

(123) For the pentoxide form.

(124) For the gas phase.

(125) Applies to first value if more than one value listed. From Reference 7.

(126) Applies to second value if more than one value listed. Water-dilution odor threshold calculated from air odor threshold using equilibrium distributions. From Reference 29.

(127) For protection of consumers of marine moluscs.

(128) Virtually free from oil and grease, particularly from the tastes and odors that emanate from petroleum products.

(129) 0.01 of the lowest continuous flow 96-hour LC50 to several important freshwater and marine species, each having a demonstrated high susceptibility to oils and petrochemicals; surface waters shall be virtually free from floating nonpetroleum oils of vegetable or animal origin, as well as petroleum derived oils.

(130) Waters shall be virtually free from substances producing objectionable color for aesthetic purposes; the source of supply should not exceed 75 color units on the platinum-cobalt scale for domestic water supplies.

(131) Increased color, in combination with turbidity (suspended and settleable solids) should not reduce the depth of the compensation point for photosynthetic activity by more than 10% from the seasonally established norm for aquatic life.

(132) For open ocean waters where depth is substantially greater than euphotic zone, pH should not be changed > 0.2 units from naturally occurring variation or in any case outside of range 6.5 to 8.5. For shallow highly productive coastal and estuarine areas where naturally occurring pH variations approach the lethal limits of some species, change in pH should be avoided but in any case should not exceed limits for freshwater., i.e., 6.5 to 9.0.

(133) For chlorides and sulfates in domestic water supplies.

(134) Based on the assumption that 7.2% of Cr is Cr(VI).

(135) Expressed as total recoverable; may be converted to a value expressed as dissolved by multiplying by 0.922.

(136) The Maximum Concentration is equal to 1/ [(f1/185.9) + (f2/12.83)], where f1 and f2 are the fractions of total selenium that are treated as selenite and selenate, respectively.

(137) Expressed as free cyanide (as CN).

(138) Not toxic to aquatic organisms at or below the solubility limit of this chemical. Reference 26.

(139) The derivation of this criterion did not consider exposure through the diet, which is probably important for aquatic life occupying upper trophic levels. Reference 26.

(140) Criterion derived from data for inorganic mercury (II), but is applied to total mercury. It will probably be underprotective if a substantial portion of mercury in the water column is methylmercury. Derivation of criterion did not consider exposure through the diet, which is probably important for aquatic life occupying upper trophic levels. Reference 26.

(141) See Reference 16.

(142) Criteria do not apply to waters subject to water quality objectives in Tables III-2A and III-2B of the San Francisco Bay Regional Water Quality Control Board's 1986 Basin Plan. See Reference 17.

(143) These criteria were promulgated for specific California waters in the National Toxics Rule, Reference 23.

(144) Applies to "TCDD Equivalents" calculated from the concentrations of 2,3,7,8-chlorinated dibenzodioxins and 2,3,7,8-chlorinated dibenzofurans and their corresponding toxic equivalency factors (TEFs); see Reference 27.

(145) No more than 0.01% monomer when dosed at 20 mg/L for drinking water treatment; see Reference 2.

(146) From Reference 31.

(147) Effective 12/17/01 for surface water systems serving >10,000 people; effective 12/17/03 for all other systems.

(148) Effective date postponed.

(149) 100 ug/L TTHM MCL effective until 12/17/01 for systems serving >10,000 people, then 80 ug/L MCL is effective; effective date for 80 ug/L MCL is 12/17/03 for all other systems.

(150) Applies to the lithium salt.

(151) Criterion derived by the California Department of Fish and Game; not a national recommended criterion. Applies to first value if more than one value is listed. From Reference 32.

(152) Interim criterion derived by the California Department of Fish and Game; not a national recommended criterion. Applies to first value if more than one value is listed. From Reference 32.

(153) For the (+2) valence state.

(154) Second and third values are draft criteria. Second value derived using nonlinear approach assuming a relative source contribution. Third value derived using linear approach without a relative source contribution.

(155) A based on inhalation exposure data / D based on oral exposure data.

(156) Adult exposure / exposure from birth.

(157) Action Level temporarily at 1-in-100,000 risk level.