

**DRAFT**  
**ANALYTE BENCHMARKS**

From the various water quality criteria available, the attached table provides recommended storm water analytical benchmarks for outfalls discharging to the Pacific Ocean (California Ocean Discharge), discharging to inland saltwater (Enclosed Bays and Estuary Discharge) and inland freshwater discharges (Inland Surface Water Discharge). Currently there is no one comprehensive regulatory list of storm water quality goals that can be used to judge storm water analytical results. The attached analyte benchmark tables show selected water quality criteria from a variety of sources could be utilized for storm water analytical comparison purposes. It should be noted that water quality goals from these sources were established to maintain water quality for different risk objectives; for example risk of adversely affecting aquatic life versus risk of causing cancer in humans. None of these sources, except the EPA Multi-Sector General Permit, have goals that apply directly to the maintenance of quality of storm water runoff. The water quality goals of the other sources are intended to maintain the quality of receiving waters.

The priority of the following reference sources was established to use the most appropriate water quality goal. A blank space reflects that no criterion has been established. The USEPA Multi-Sector General Permit values are source discharge limits, however, both the California Toxics Rule and the California Ocean Plan values are receiving water limits. Therefore, if an analyte has a USEPA Multi-Sector General Permit value, it was compared separately to the California Toxics Rule value (both saltwater and freshwater) and the California Ocean Plan value and the lesser of the two values of each comparison was used as the Benchmark. If no benchmark value was established within the California Toxics Rule, Ocean Plan, or USEPA Multi-Sector Permit, benchmark values were recommended in the order of references 4A through 9.

- (1A, 1B) Numeric Criteria for Priority Toxic Pollutants for the State of California; California Toxics Rule, USEPA, 60 Federal Register (FR) 31681-31719, May 18, 2000. (Values are “30-day Average Concentration for Human Health Protection [consumption of aquatic organisms only for both Saltwater and Freshwater],” unless indicated (IM) for (Instantaneous Maximum or (1-H) for 1-Hour Average Maximum Concentration for Saltwater or Freshwater Aquatic Life Protection”). The Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California [Phase 1 of the Inland Surface Waters Plan and the Enclosed Bays and Estuaries Plan] was adopted by the State Water Resources Control Board on March 2, 2000 and became effective on May 18, 2000.
- (2) Water Quality Control Plan for Ocean Waters of California (California Ocean Plan), California State Water Resources Control Board, July 23, 1997. (Values are 30-day Average Concentration for Human Health Protection [consumption of aquatic organisms only], unless indicated “(IM)” for “Instantaneous Maximum Concentration or (IM) for Marine Aquatic Life Protection.”)
- (3) USEPA National Pollutant Discharge Elimination System (NPDES) Storm Water Multi-Sector General Permit for Industrial Activities, 65 Federal Register (FR) 64746, Final Reissuance, October 30, 2000. Values are from water quality criteria for Freshwater Aquatic life Protection and Human Health Protection [consumption of water and organisms], federal and state storm water discharge limits, and laboratory detection limits.
- (4A, 4B) USEPA National Recommended Ambient Water Quality Criteria – Saltwater or Freshwater Aquatic Life Protection, Ambient Water Quality Criteria, various dates. (Values are “Lowest Observed Effect Level (LOEL) concentrations for Acute Toxicity, ”unless indicated “(IM)” for Instantaneous Maximum Concentration or “(1-H)” for 1-Hour Average Maximum Concentration.)
- (5) USEPA Integrated Risk Information System (IRIS) Reference Dose (RfD) as a Drinking Water Level.
- (6) Drinking Water Standards, Maximum Contaminant Levels - California (California Department of Health Services), California Code of Regulations (CCR), Title 22, Division 4, Chapter 15, Domestic Water Quality and Monitoring.
- (7) Drinking Water Standards, Maximum Contaminant Levels - Federal (USEPA), 40 Code of Federal Regulations (CFR) Parts 141 and 143.
- (8) San Diego Regional Water Quality Control Board Basin Plan Water Quality Objectives.
- (9) Where sources 1-8 do not have a water quality goal for an analyte, the laboratory’s Method Detection Limit (MDL) is used.

Analytes	Units	Benchmarks			Water Quality Criteria										
					California Toxics Rule		California Ocean Plan (2) Consumption of Aquatic Organisms Only	USEPA Multi-Sector General Permit (3)	USEPA Ambient Criteria		USEPA IRIS Reference Dose as a Drinking Water Level (5)	California Drinking Water Standard (6)	USEPA Drinking Water Standard (7)	Basin Plan (8)	Lab. MDL (9)
		Enclosed Bay & Estuary Discharge (Saltwater)	Pacific Ocean Discharge	Inland Surface Water Discharge (Freshwater)	Saltwater (1A) Consumption of Aquatic Organisms Only	Freshwater (1B) Consumption of Aquatic Organisms Only			Saltwater Aquatic Life Protection (4A)	Freshwater Aquatic Life Protection (4B)					
1,1,1-Trichloroethane (1,1,1-TCA)	ug/L	31,200	540,000	18,000			540,000		31,200	18,000		200	200	200	0.19
1,1,2,2-Tetrachloroethane	ug/L	11	1,200	11	11	11	1,200		9,020	9,320	21	1		1	0.065
1,1,2-Trichloroethane (1,1,2-TCA)	ug/L	42	43,000	42	42	42	43,000			18,000	2.8	5	5	5	0.078
1,1-Dichloroethane (1,1-DCA)	ug/L	5	5	5								5		5	0.23
1,1-Dichloroethene (1,1-DCE)	ug/L	3.2	7,100	3.2	3.2	3.2	7,100		224,000	11,600	6	6	7	6	0.098
1,2-Dichloroethene (Total) (1,2-DCE)	ug/L	140,000	224,000	140,000	140,000	140,000			224,000	11,600	140	16*	170*		0.29
1,1-Dichloropropene	ug/L	0.28	0.28	0.28											0.28
1,2,3-Trichlorobenzene (vic-Trichlorobenzene)	ug/L	0.23	0.23	0.23											0.23
1,2,3-Trichloropropane (Allyl trichloride)	ug/L	42	42	42							42				1.1
1,2,4,5-Tetrachlorobenzene	ug/L	160	160	250					160	250	2				1.0
1,2,4-Trichlorobenzene (Pseudocumene)	ug/L	160	160	250					160	250	70	70	70	70	0.12
1,2,4-Trimethylbenzene	ug/L	0.36	0.36	0.36											0.36
1,2,5-Trimethylbenzene	ug/L	0.24	0.24	0.24											0.24
1,2-Dibromo-3-chloropropane (DBC)	ug/L	0.2	0.2	0.2										0.2	2.3
1,2-Dibromoethane (EDB) (Ethylene dibromide)	ug/L	0.05	0.05	0.05								0.05	0.05	0.05	0.0027
1,2-Dichlorobenzene (o-DCB)	ug/L	17,000	5,100*	17,000	17,000	17,000	5,100*		1,970	1,120	630	600	600	600	1.4
1,2-Dichloropropane (1,2-DCA)	ug/L	99	130	99	99	99	130		113,000	118,000		0.5	5	0.5	0.19
1,2-Dichloropropane	ug/L	39	10,300	39	39	39			10,300	23,000		5	5	5	0.14
1,2-Diphenylhydrazine	ug/L	0.54	0.16	0.54	0.54	0.54	0.16			270					1.1
1,3,5-Trinitrobenzene	ug/L	210	210	210							210				0.035
1,3-Dichlorobenzene (m-DCB)	ug/L	2,600	5,100*	2,600	2,600	2,600	5,100*		1,970	1,120					1.2
1,3-Dichloropropane	ug/L	0.5	0.5	0.5										0.5	0.23
1,3-Dinitrobenzene	ug/L	0.7	0.7	0.7							0.7				0.088
1,4-Dichlorobenzene (p-DCB)	ug/L	2,600	18	2,600	2,600	2,600	18		1,970	1,120		5	75	5	0.18
1-Chloronaphthalene	ug/L	1.2	1.2	1.2											1.2
1-Naphthylamine	ug/L	4.3	4.3	4.3											4.3
2,2-Dichloropropane	ug/L	0.22	0.22	0.22											0.22
2,3,4,6-Tetrachlorophenol	ug/L	440	10(IM)	210			10(IM)		440		210				1.4

Analytes	Units	Benchmarks			Water Quality Criteria											
					California Toxics Rule		California Ocean Plan (2) Consumption of Aquatic Organisms Only	USEPA Multi-Sector General Permit (3)	USEPA Ambient Criteria		USEPA IRIS Reference Dose as a Drinking Water Level (5)	California Drinking Water Standard (6)	USEPA Drinking Water Standard (7)	Basin Plan (8)	Lab. MDL (9)	
		Enclosed Bay & Estuary Discharge (Saltwater)	Pacific Ocean Discharge	Inland Surface Water Discharge (Freshwater)	Saltwater (1A) Consumption of Aquatic Organisms Only	Freshwater (1B) Consumption of Aquatic Organisms Only			Saltwater Aquatic Life Protection (4A)	Freshwater Aquatic Life Protection (4B)						
2,4,5-Trichlorophenoxyacetic acid (2,4,5-T)	ug/L	70	70	70							70					2.0
2,4,5-Trichlorophenoxypropionic acid (2,4,5-TP) (Silvex)	ug/L	53	53	53							53					2.0
2,4,5-Trichlorophenol	ug/L	10(IM)	10(IM)	700			10(IM)				700	50	50			1.5
2,4,6-Trichlorophenol	ug/L	6.5	10(IM)	6.5	6.5	6.5	10(IM)									1.8
2,4,6-Trinitrotoluene (TNT)	ug/L	0.35	0.35	0.35							0.35					0.075
2,4-Dichlorophenoxyacetic acid (2,4-D)	ug/L	70	70	70							70			70		0.15
2,4-Dichlorophenoxybutric acid (2,4-DB)	ug/L	56	56	56							56	70	70			0.33
2,4-Dichlorophenol	ug/L	790	10(IM)	790	790	790	10(IM)			2,020	21					1.7
2,4-Dimethylphenol	ug/L	2,300	300(IM)	2,300	2,300	2,300	300(IM)				140					1.5
2,4-Dinitrophenol	ug/L	14,000	300(IM)	14,000	14,000	14,000	300(IM)			4,850	230	14				6.2
2,4-Dinitrotoluene	ug/L	9.1	2.6	9.1	9.1	9.1	2.6			590	330	14				0.058
2,6-Dichlorophenol	ug/L	10(IM)	10(IM)	10(IM)			10(IM)									1.3
2,6-Dinitrotoluene	ug/L	590	590	330						590	330					1.8
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	4,200	4,200	4,200							4,200					100
2-Chloroethyl vinyl ether	ug/L	2.3	2.3	2.3												2.3
2-Chloronaphthalene	ug/L	4,300	7.5	4,300	4,300	4,300				7.5	1,600	560				1.7
2-Chlorophenol (o-Chlorophenol)	ug/L	400	10(IM)	400	400	400	10(IM)				4,380	35				1.3
2-Chlorotoluene (o-Chlorotoulene)	ug/L	140	140	140							140					0.43
2-Hexanone (Methyl-n-butyl ketone)	ug/L	1.3	1.3	1.3												1.3
2-Methylnaphthalene	ug/L	1.5	1.5	1.5												1.5
2-Methylphenol (o-Cresol)	ug/L	300(IM)	300(IM)	35			300(IM)				35					1.3
2-Naphthylamine	ug/L	5.3	5.3	5.3												5.3
2-Nitroaniline	ug/L	6.7	6.7	6.7												6.7
2-Nitrophenol (o-Nitrophenol)	ug/L	4,850	300(IM)	230			300(IM)			4,850	230					1.5
2-Picoline	ug/L	1.2	1.2	1.2												1.2
3,3'-Dichlorobenzidine	ug/L	0.077	0.0081	0.077	0.077	0.077	0.0081									6.8
3/4-Methylphenol (m/p-Cresol)	ug/L	300(IM)	300(IM)	35			300(IM)				35					1.1

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3-Hydroxycarbofuran	ug/L	0.49	0.49	0.49											0.49
3-Methylcholanthrene	ug/L	1.8	1.8	1.8											1.8
3-Methylphenol (m-Cresol)	ug/L	300(IM)	300(IM)	35			300(IM)				35				1.8
3-Nitroaniline	ug/L	4.3	4.3	4.3											4.3
4,4'-DDD (DDD)	ug/L	0.00083	0.00017*	0.00083	0.00083	0.00083	0.00017*			3.6	0.6				0.00012
4,4'-DDE (DDE)	ug/L	0.00059	0.00017*	0.00059	0.00059	0.00059	0.00017*			14	1,050				0.00018
4,4'-DDT (DDT)	ug/L	0.13(IM)	0.00017*	1.1(IM)	0.13(IM)	1.1(IM)	0.00017*			0.13(IM)	1.1(IM)	3.5			0.00026
4,6-Dinitro-2-methylphenol (4,6-Dinitro-o-cresol)	ug/L	765	300(IM)	765	765	765	300(IM)			4,850	230				3.4
4-Aminobiphenyl	ug/L	1.4	1.4	1.4											1.4
4-Bromophenyl phenyl ether	ug/L	360	360	360							360				1.8
4-Chloro-3-methylphenol (4-Chloro-m-cresol)	ug/L	10(IM)	10(IM)	30			10(IM)				30				2.3
4-Chloroaniline (p-Chloroaniline)	ug/L	28	28	28								28			5.7
4-Chlorophenyl phenyl ether	ug/L	1.8	1.8	1.8											1.8
4-Chlorotoluene (p-Chlorotoluene)	ug/L	0.30	0.30	0.30											0.30
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	0.30	0.30	0.30											0.30
4-Nitroaniline (p-Nitroaniline)	ug/L	7.5	7.5	7.5											7.5
4-Nitrophenol (p-Nitrophenol)	ug/L	4,850	300(IM)	230			300(IM)			4,850	230				1.6
7,12-Dimethylbenz(a)anthracene	ug/L	300	300	300						300					2.1
aa-Dimethylphenylamine	ug/L	1.2	1.2	1.2											1.2
Acenaphthene	ug/L	2,700	970	2,700	2,700	2,700				970	1,700	420			1.5
Acenaphthylene	ug/L	300	0.0088	300			0.0088			300					0.020
Acetaldehyde	ug/L	280	280	280								280			50
Acetone	ug/L	700	700	700								700			2.8
Acetophenone	ug/L	700	700	700								700			1.4
Acidity	ug/L	1,200	1,200	1,200											1,200
Acrolein (Propenal)	ug/L	780	220	780	780	780	220			55	68				0.59
Acrylonitrile	ug/L	0.66	0.10	0.66	0.66	0.66	0.10	7,550 <sup>(2)</sup>			7,550				0.34
Aldicarb (Temik)	ug/L	7	7	7								7	7		0.63
Aldicarb sulfone	ug/L	7	7	7								7	7		0.63

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		Enclosed Bay & Estuary Discharge (Saltwater)	Pacific Ocean Discharge	Inland Surface Water Discharge (Freshwater)	Saltwater (1A) Consumption of Aquatic Organisms Only	Freshwater (1B) Consumption of Aquatic Organisms Only			Saltwater Aquatic Life Protection (4A)	Freshwater Aquatic Life Protection (4B)						
Aldicarb sulfoxide	ug/L	7	7	7						7	7			0.63		
Aldrin (Aldrec)	ug/L	1.3(IM)	0.000022	3(IM)	1.3(IM)	3(IM)	0.000022			1.3(IM)	3(IM)			0.00013		
Alkalinity	ug/L	1,200	1,200	1,200										1,200		
alpha-Benzene hexachloride (alpha-BHC)	ug/L	0.013	0.012(IM)	0.013	0.013	0.013	0.012(IM)							0.00013		
Aluminum (A1), Total	ug/L	750 <sup>(1)</sup>	750 <sup>(1)</sup>	750 <sup>(1)</sup>				750 <sup>(1)</sup>		750(1H)		1,000	50-200*	1,000	27	
Aluminum (A1), Dissolved	ug/L	750 <sup>(1)</sup>	750 <sup>(1)</sup>	750 <sup>(1)</sup>				750 <sup>(1)</sup>		750(1H)		1,000	50-200*		27	
Ammonia-N (NH <sub>3</sub> -N)	ug/L	6,000(IM)	6,000(IM)	19,000 <sup>(1)</sup>			6,000(IM)	19,000 <sup>(1)</sup>		233(1H)	12,100			25	62	
Aniline	ug/L	77(1H)	77(1H)	28(1H)						77(1H)	28(1H)				1.3	
Anthracene	ug/L	110,000	0.0088	110,000	110,000	110,000	0.0088			300		2,100			0.00028	
Antimony (Sb), Total	ug/L	636 <sup>(9)</sup>	636 <sup>(9)</sup>	636 <sup>(9)</sup>	4,300	4,300	1,200	636 <sup>(9)</sup>			9,000	2.8	6	6	6	2.1
Antimony (Sb), Dissolved	ug/L	636 <sup>(9)</sup>	636 <sup>(9)</sup>	636 <sup>(9)</sup>	4,300	4,300	1,200	636 <sup>(9)</sup>			9,000	2.8	6	6		2.1
Aroclor-1016 (PCB-1016)	ug/L	0.127 <sup>(9)</sup>	0.127 <sup>(9)</sup>	0.127 <sup>(9)</sup>				0.127 <sup>(9)</sup>								0.43
Aroclor-1221 (PCB-1221)	ug/L	100 <sup>(10)</sup>	100 <sup>(10)</sup>	100 <sup>(10)</sup>				100 <sup>(10)</sup>								0.64
Aroclor-1232 (PCB-1232)	ug/L	0.318 <sup>(9)</sup>	0.318 <sup>(9)</sup>	0.318 <sup>(9)</sup>				0.318 <sup>(9)</sup>								0.16
Aroclor-1242 (PCB-1242)	ug/L	0.200 <sup>(10)</sup>	0.200 <sup>(10)</sup>	0.200 <sup>(10)</sup>				0.200 <sup>(10)</sup>								0.31
Aroclor-1248 (PCB-1248)	ug/L	2.54 <sup>(9)</sup>	2.54 <sup>(9)</sup>	2.54 <sup>(9)</sup>				2.54 <sup>(9)</sup>								0.11
Aroclor-1254 (PCB-1254)	ug/L	100 <sup>(10)</sup>	100 <sup>(10)</sup>	100 <sup>(10)</sup>				100 <sup>(10)</sup>								0.11
Aroclor-1260 (PCB-1260)	ug/L	0.477 <sup>(9)</sup>	0.477 <sup>(9)</sup>	0.477 <sup>(9)</sup>				0.477 <sup>(9)</sup>								0.18
Arsenic (As), Total	ug/L	69(1H)	80(1M)	340(1H)	69(1H)	340(1H)	80(IM)	168 <sup>(9)</sup>				2.1	50	50	50	2.2
Arsenic (As), Dissolved	ug/L	69(1H)	80(1M)	340(1H)	69(1H)	340(1H)	80(IM)			69(1H)	340(1H)					2.2
Asbestos	mf/liter	7	7	7		7							7	7	7	1
Barium (Ba), Total	ug/L	490	490	490								490	1,000	2,000	1,000	1.1
Barium (Ba), Dissolved	ug/L	490	490	490								490	1,000	2,000		1.1
Baygon (Propoxur)	ug/L	2.8	2.8	2.8								2.8				0.34
Benz(a)anthracene	ug/L	0.049	0.0088	0.049	0.049	0.049	0.0088			300						0.00078
Benzaldehyde	ug/L	700	700	700								700				50
Benzene	ug/L	10 <sup>(10)</sup>	5.9	10 <sup>(10)</sup>	71	71	5.9	10 <sup>(10)</sup>		5,100	5,300		1	5	1	0.06
Benzdine	ug/L	0.00054	0.000069	0.00054	0.00054	0.00054	0.000069				2,500					5.1
Benzo(a)pyrene	ug/L	0.049	0.0088	0.049	0.049	0.049	0.0088			300			0.2	0.2	0.2	0.00057
Benzo(b)fluoranthene	ug/L	0.049	0.0088	0.049	0.049	0.049	0.0088			300						0.00037
Benzo(g,h,i)perylene	ug/L	0.0088	0.0088	0.0088			0.0088			300						0.014
Benzo(k)fluoranthene	ug/L	0.049	0.0088	0.049	0.049	0.049	0.0088			300						0.00054
Benzoic acid	ug/L	28,000	28,000	28,000								28,000				50
Benzyl alcohol	ug/L	1.4	1.4	1.4												1.4
Beryllium (Be), Total	ug/L	0.033	0.033	130 <sup>(2)</sup>			0.033	130 <sup>(2)</sup>			130	14	4	4	4	0.08

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		Enclosed Bay & Estuary Discharge (Saltwater)	Pacific Ocean Discharge	Inland Surface Water Discharge (Freshwater)	Saltwater (1A) Consumption of Aquatic Organisms Only	Freshwater (1B) Consumption of Aquatic Organisms Only			Saltwater Aquatic Life Protection (4A)	Freshwater Aquatic Life Protection (4B)						
Beryllium (Be), Dissolved	ug/L	0.033	0.033	130 <sup>(2)</sup>			0.033	130 <sup>(2)</sup>		130	14	4	4		0.08	
beta-BHC	ug/L	0.046	0.012(IM)	0.046	0.046	0.046	0.012(IM)								0.00019	
Bicarbonate	ug/L	1,200	1,200	1,200											1,200	
Biological Oxygen Demand (Biochemical Oxygen Demand) (BOD 5-day)	ug/L	30,000 <sup>(4)</sup>	30,000 <sup>(4)</sup>	30,000 <sup>(4)</sup>				30,000 <sup>(4)</sup>							260	
Bis(2-chloroethoxy) methane	ug/L	4.4	4.4	4.4			4.4								1.4	
Bis (2-chloroethyl) ether	ug/L	1.4	0.045	1.4	1.4	1.4	0.045			238,000					1.1	
Bis(2-chloroisopropyl) ether	ug/L	170,000	1,200	170,000	170,000	170,000	1,200			238,000	280				1.4	
Bis(2-ethylhexyl) phthalate (Di[2-ethylhexyl]phthalate)	ug/L	5.9	3.5	5.9	5.9	5.9	3.5		2,944	2,000		4	6		1.7	
Boron	ug/L	750	750	750										(17)		
Bromide	ug/L	320	320	320											320	
Bromobenzene	ug/L	0.30	0.30	0.30											0.30	
Bromodichloromethane (Dichlorobromomethane)	ug/L	46	130	46	46	46	130			12,000	11,000	140	100	100	0.056	
Bromoform (Tribromomethane)	ug/L	360	130	360	360	360	130			12,000	11,000	140	100	100	0.39	
Bromomethane (Methyl bromide)	ug/L	4,000	130	4,000	4,000	4,000	130			12,000	11,000	9.8			0.56	
Butyl benzyl phthalate (BBP)	ug/L	3,000 <sup>(3)</sup>	3,000 <sup>(3)</sup>	3,000 <sup>(3)</sup>	5,200	5,200		3,000 <sup>(3)</sup>	2,944	940	140				1.0	
C11-C22 (Diesel)	ug/L	20	20	20											20	
C23-C30 (Motor oil)	ug/L	19	19	19											19	
C23-C40	ug/L	100	100	100											100	
C31-C40 (Heavy oil)	ug/L	500	500	500											500	
C8-C10 (Gasoline)	ug/L	500	500	500											500	
C8-C40	ug/L	100	100	100											100	
Cadmium (Cd), Total	ug/L	15.9 <sup>(9)</sup>	10(IM)	4.6(1H)	44(1H)	4.6(1H)	10(IM)	15.9 <sup>(9)</sup>			3.5	5	5	5	0.38	
Cadmium (Cd), Dissolved	ug/L	15.9 <sup>(9)</sup>	9.4(IM)	4.3(1H)	42(1H)	4.3(1H)	9.4(IM)			42(1H)	4.3(1H)				0.38	
Calcium (Ca), Total	ug/L	150	150	150											150	
Calcium (Ca), Dissolved	ug/L	150	150	150											150	
Carbaryl (Sevin)	ug/L	0.81(1H)	0.81(1H)	0.02(1M)						0.81(1H)	0.02(IM)	700			0.56	
Carbofuran (Furadan)	ug/L	0.5(IM)	0.5(IM)	0.5(IM)							0.5(IM)	35	18	40	18	0.75
Carbonate	ug/L	730	730	730											730	
Carbon disulfide		700	700	700							700				0.23	
Carbon tetrachloride (Tetrachloromethane)	ug/L	4.4	0.90	4.4	4.4	4.4	0.90			50,000	35,200	4.9	0.5	5	0.5	0.08

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		Enclosed Bay & Estuary Discharge (Saltwater)	Pacific Ocean Discharge	Inland Surface Water Discharge (Freshwater)	Saltwater (1A) Consumption of Aquatic Organisms Only	Freshwater (1B) Consumption of Aquatic Organisms Only			Saltwater Aquatic Life Protection (4A)	Freshwater Aquatic Life Protection (4B)					
Chemical Oxygen Demand (COD)	ug/L	120,000 <sup>(5)</sup>	120,000 <sup>(5)</sup>	120,000 <sup>(5)</sup>				120,000 <sup>(5)</sup>							6,800
Chlordane	ug/L	0.09(IM)	0.000023	2.4(IM)	0.09(IM)	2.4(IM)	0.000023		0.09	2.4	0.42	0.1	2	0.1	0.00012
Chloride (Cl <sup>-</sup> )	ug/L	860,000 <sup>(1)</sup>	860,000 <sup>(1)</sup>	860,000 <sup>(1)</sup>				860,000 <sup>(1)</sup>		860,000		250,000*	250,000*	(18)	140
Chlorine Residual (total)	ug/L	13(1H)	60(IM)	19(1H)			60(IM)		13(1H)	19(1H)	700		4,000		50
Chlorobenzene (Monochlorobenzene)	ug/L	21,000	570	21,000	21,000	21,000	570		160	250	140	70	100	70	0.29
Chloroethane (Ethyl chloride)	ug/L	0.45	0.45	0.45											0.45
Chloroform (Trichloromethane)	ug/L	470	130	470	470	470	130		12,000	28,900		100	100		0.31
Chloromethane (Methyl chloride)	ug/L	12,000	130	11,000			130		12,000	11,000					0.34
Chromium III (CrIII), Total	ug/L	10,300	190,000	1,738(1H)		1,738(1H)	190,000		10,300						0.95
Chromium III (CrIII), Dissolved	ug/L	10,300	190,000	550(1H)		550(1H)				550(1H)					0.95
Chromium (Cr), Total	ug/L	20*(IM)	20*(IM)	20*(IM)			20*(IM)					50	100	50	0.95
Chromium (Cr), Dissolved	ug/L	20*(IM)	20*(IM)	20*(IM)			20*(IM)					50	100		0.95
Chromium VI (CrVI), Total	ug/L	1,111(1H)	20(IM)	16.3(1H)	1,111(1H)	16.3(1H)	20(IM)				21				4.5
Chromium VI (CrVI), Dissolved	ug/L	1,100(1H)	19.9(IM)	16(1H)	1,100(1H)	16(1H)	19.9(IM)		1,100(1H)	16(1H)					4.5
Chrysene	ug/L	0.049	0.0088	0.049	0.049	0.049	0.0088		300						0.00036
cis-1,2-Dichloroethene (c-1,2-DCE)	ug/L	140,000	224,000	140,000	140,000	140,000			224,000	11,600	140	6	70	6	0.29
cis-1,3-Dichloropropene	ug/L	1,700	8.9	1,700	1,700	1,700	8.9		790	6,060	210	0.5			0.29
Copper (Cu), Total	ug/L	5.8(1H)	30(IM)	13.5(1H)	5.8(1H)	13.5(1H)	30(IM)	64 <sup>(9)</sup>				1,300	1,300		1.3
Copper (Cu), Dissolved	ug/L	4.8(1H)	25(IM)	13(1H)	4.8(1H)	13(1H)	25(IM)		4.8(1H)	13(1H)					1.3
Cyanide (total)	ug/L	1(1H)	10(IM)	22(1H)	1(1H)	22(1H)	10(IM)	64 <sup>(9)</sup>	1(1H)	22(1H)	140	200	200	200	8.6
Dalapon (Dichloroacetic acid)	ug/L	110	110	110						110	210	200	200	200	1.0
delta-BHC	ug/L	0.012(IM)	0.012(IM)	0.012(IM)			0.012(IM)								0.00062
Dibenz(a,h)anthracene	ug/L	0.049	0.0088	0.049	0.049	0.049	0.0088		300						0.0023
Dibenz(a,j)acridine	ug/L	4.1	4.1	4.1											4.1
Dibenzofuran	ug/L	1.7	1.7	1.7											1.7
Dibromochloromethane (Chlorodibromomethane)	ug/L	34	130	34	34	34	130		12,000	11,000		100	100		0.047
Dibromomethane (Methylene bromide)	ug/L	0.66	0.66	0.66											0.66

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Dicamba (Banvel)	ug/L	200(IM)	200(IM)	200(IM)						200(IM)	210					2.0
Dichlorodifluoromethane	ug/L	12,000	12,000	11,000						12,000	11,000	1,400				0.40
Dichloroprop	ug/L	0.90	0.90	0.90												0.90
Dieldrin	ug/L	0.71(IM)	0.00004	0.24(1H)	0.71(IM)	0.24(1H)	0.00004			0.71(IM)	0.024(1H)					0.00010
Diethyl phthalate (DEP)	ug/L	120,000	33,000	120,000	120,000	120,000	33,000			2,944	940	5,600				1.9
Dimethyl phthalate (DMP)	ug/L	1,000 <sup>(11)</sup>	1,000 <sup>(11)</sup>	1,000 <sup>(11)</sup>	2,900,000	2,900,000	820,000	1,000 <sup>(11)</sup>		2,944	940					1.9
Di-n-butyl phthalate (DBP)	ug/L	12,000	3,500	12,000	12,000	12,000	3,500			2,944	940	700				1.7
Di-n-octyl phthalate (DOP)	ug/L	2,944	2,944	940						2,944	940					1.9
Di(2-ethylhexyl)adipate	ug/L	400	400	400											400	
Di(2-ethylhexyl)phthalate	ug/L	5.9	3.5	1.8	5.9	1.8	3.5								4	
Dinoseb (DNBP)	ug/L	7	7	7							7	7	7	7	7	0.36
Diphenylamine	ug/L	180	180	180							180					1.5
Diquat	ug/L	0.5	0.5	0.5							0.5	16	20	20	20	
Electrical conductivity (SC)	umhos/cm	900	900	900									900*			1
Endosulfan I (alpha-Endosulfan)	ug/L	0.034(IM)	0.027(IM)	0.22(IM)	0.034(IM)	0.22(IM)	0.027(IM)			0.034(IM)	0.22(IM)	42				0.0035
Endosulfan II (beta-Endosulfan)	ug/L	0.034(IM)	0.027(IM)	0.22(IM)	0.034(IM)	0.22(IM)	0.027(IM)			0.034(IM)	0.22(IM)	42				0.0016
Endosulfan sulfate	ug/L	240	0.027(IM)	240	240	240	0.027(IM)									0.0015
Endothall	ug/L	100	100	100											100	
Endrin	ug/L	0.037(IM)	0.006(IM)	0.086(1H)	0.037(IM)	0.086(1H)	0.006(IM)			0.037(IM)	0.086(1H)	2	2	2	2	0.0012
Endrin aldehyde	ug/L	0.0018	0.0018	0.0018												0.0018
Endrin ketone	ug/L	0.0014	0.0014	0.0014												0.0014
Ethanol (Ethyl alcohol)	ug/L	860	860	860												860
Ethyl methacrylate	ug/L	0.14	0.14	0.14												0.14
Ethyl methanesulfonate	ug/L	5.7	5.7	5.7												5.7
Ethyl benzene	ug/L	3,100 <sup>(3)</sup>	3,100 <sup>(3)</sup>	3,100 <sup>(3)</sup>	29,000	29,000	4,100	3,100 <sup>(3)</sup>		430	32,000	700	700	700	700	0.26
Ethylene glycol	ug/L	14,000	14,000	14,000							14,000					3.7
Fecal Coliform	mpn/100 ml	200(IM)	200(IM)	200(IM)				200(IM)								2
Fecal Streptococci	mpn/100 ml	20	20	20												20
Fluoranthene	ug/L	42 <sup>(3)</sup>	15	42 <sup>(3)</sup>	370	370	15	42 <sup>(3)</sup>		40	3,980	280				0.017
Fluorene	ug/L	14,000	0.0088	14,000	14,000	14,000	0.0088			300		280				0.0069
Fluoride	ug/L	1,800	1,800	1,800					1,800 <sup>(6)</sup>			420	2,000	4,000	(20)	86
gamma-BHC (Lindane)	ug/L	0.16(IM)	0.012(IM)	0.95(1H)	0.16(IM)	0.95(1H)	0.012(IM)			0.16(IM)	0.95(1H)	0.2	0.2	0.2	0.2	0.00010
Glyphosate	ug/L	700	700	700								700	700	700	700	

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Heptachlor	ug/L	0.053(IM)	0.00072	0.52(IM)	0.053(IM)	0.52(IM)	0.00072		0.053(IM)	0.52(IM)		0.01	0.4	0.01	0.00016
Heptachlor epoxide	ug/L	0.053(IM)	0.00072	0.52(IM)	0.053(IM)	0.52(IM)	0.00072		0.053(IM)	0.52(IM)		0.01	0.2	0.01	0.00010
Hexachlorobenzene	ug/L	0.00077	0.00021	0.00077	0.00077	0.00077	0.00021		160	250		1	1		0.02
Hexachlorobutadiene (Perchlorobutadiene)	ug/L	50	14	50	50	50	14		32	90					0.014
Hexachlorocyclopentadiene	ug/L	17,000	58	17,000	17,000	17,000	58		7.0	7.0	49	50	50	50	3.5
Hexachloroethane	ug/L	8.9	2.5	8.9	8.9	8.9	2.5		940	980	0.7				1.4
Hydroxide	ug/L	10	10	10											10
HMX (Octogen)	ug/L	350	350	350							350				0.05
Indeno(1,2,3-cd)pyrene	ug/L	0.049	0.0088	0.049	0.049	0.049	0.0088		300						0.0010
Iodomethane (Methyl iodide)	ug/L	0.25	0.25	0.25											0.25
Iron (Fe), Total	ug/L	1,000(IM)	1,000(IM)	1,000(IM)				1,000 <sup>(12)</sup>		1,000(IM)		300*	300*	(22)	8.2
Iron (Fe), Dissolved	ug/L	1,000(IM)	1,000(IM)	1,000(IM)				1,000 <sup>(12)</sup>		1,000(IM)		300*	300*		8.2
Isophorone	ug/L	600	150,000	600	600	600	150,000		12,900	117,000	140				1.4
Isopropanol (Isopropyl alcohol)	ug/L	500	500	500											500
Isopropylbenzene (Cumene)	ug/L	0.26	0.26	0.26											0.26
JP-5	ug/L	17	17	17											17
Lead (Pb), Total	ug/L	82 <sup>(1)</sup>	20(IM)	82(1H)	220(1H)	82(1H)	20(IM)	82 <sup>(1)</sup>				15	15		1.3
Lead (Pb), Dissolved	ug/L	82 <sup>(1)</sup>	19(IM)	65(1H)	210(1H)	65(1H)	19(IM)		210(1H)	65(1H)					1.3
m/p-Xylene	ug/L	14,000	14,000	14,000							14,000	1,750	10,000		0.22
Magnesium (Mg), Total	ug/L	64 <sup>(9)</sup>	64 <sup>(9)</sup>	64 <sup>(9)</sup>				64 <sup>(9)</sup>							34
Magnesium (Mg), Dissolved	ug/L	64 <sup>(9)</sup>	64 <sup>(9)</sup>	64 <sup>(9)</sup>				64 <sup>(9)</sup>							34
MCPA	ug/L	11	11	11							11				2.3
MCCP (Mecoprop)	ug/L	7	7	7							7				2.4
Mercury (Hg), Total	ug/L	2.1(1H)	0.40(IM)	1.6(1H)	2.1(1H)	1.6(1H)	0.40(IM)	2.4 <sup>(1)</sup>				2	2	2	0.02
Mercury (Hg), Dissolved	ug/L	1.8(1H)	0.34(IM)	1.4(1H)	1.8(1H)	1.4(1H)	0.34(IM)		1.8(1H)	1.4(1H)					0.2
Methanol (Methyl alcohol)	ug/L	3,500	3,500	3,500							3,500				1,100
Methiocarb (Mesurol)	ug/L	0.35	0.35	0.35											0.35
Methomyl (Lannate)	ug/L	180	180	180							180				0.52
Methoxychlor	ug/L	0.03	0.03	0.03					0.03(IM)	0.03(IM)	35	40	40	40	0.0014
Methyl methanesulfonate	ug/L	1.6	1.6	1.6											1.6
Methyl-tert-butyl-ether (MTBE)	ug/L	13	13	13								13			0.097
Methylene chloride (Dichloromethane)	ug/L	1,600	450	1,600	1,600	1,600	450		12,000	11,000	420	5	5	5	0.5
Molinate	ug/L	20	20	20										20	

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Molybdenum (Mo), Total	ug/L	35	35	35							35				1.1	
Molybdenum (Mo), Dissolved	ug/L	35	35	35							35				1.1	
m-Nitrotoluene (3-Nitrotoluene)	ug/L	0.24	0.24	0.24											0.24	
Naphthalene (Naphtalin)	ug/L	2,350	2,350	2,300						2,350	2,300	14			1.3	
Nickel (Ni), Total	ug/L	75(1H)	50(IM)	470(1H)	75(1H)	470(1H)	50(IM)	1,417 <sup>(1)</sup>				140	100		100	1.2
Nickel (Ni), Dissolved	ug/L	74(1H)	49(IM)	470(1H)	74(1H)	470(1H)	49(IM)			74(1H)	470(1H)					1.2
Nitrate+Nitrite-N (NO <sub>3</sub> <sup>-</sup> +NO <sub>2</sub> <sup>-</sup> -N)	ug/L	680	680	680				680 <sup>(7)</sup>				11,700	11,000	11,000	10,000	38
Nitrate-N (NO <sub>3</sub> <sup>-</sup> -N)	ug/L	11,000	11,000	11,000								11,000	10,000	10,000	45,000	38
Nitrite-N (NO <sub>2</sub> <sup>-</sup> -N)	ug/L	700	700	700								700	1,000	1,000	1,000	3.6
Nitrobenzene	ug/L	1,900	4.9	1,900	1,900	1,900	4.9			6,680	27,000	3.5				0.08
n-Butylbenzene (1-Phenylbutane)	ug/L	0.34	0.34	0.34												0.34
n-Propylbenzene	ug/L	0.13	0.13	0.13												0.13
N-Nitrosodimethylamine	ug/L	8.1	7.3	8.1	8.1	8.1	7.3			3,300,000	5,850					0.80
N-Nitroso-di-n-butylamine	ug/L	3,300,000	3,300,000	5,850						3,300,000	5,850					2.4
N-Nitroso-di-n-propylamine	ug/L	1.4	0.59	1.4	1.4	1.4	0.59			3,300,000	5,850					1.4
N-Nitrosodiphenylamine	ug/L	16	2.5	16	16	16	2.5			3,300,000	5,850					1.8
N-Nitrosopiperidine	ug/L	1.6	1.6	1.6												1.6
Oil and Grease	ug/L	15,000 <sup>(8)</sup>	15,000 <sup>(8)</sup>	15,000 <sup>(8)</sup>				75,000(IM)	15,000 <sup>(8)</sup>						(24)	92
o-Nitrotoluene (2-Nitrotoluene)	ug/L	0.24	0.24	0.24												0.24
Oxamyl (Vydate)	ug/L	180	180	180								180	200	200	200	0.96
Orthophosphate-Phosphorus (o-Phosphate-P)	ug/L	50	50	50												50
o-Xylene	ug/L	14,000	14,000	14,000								14,000	1,750	10,000		0.12
p-Dimethylaminoazobenzene (4-Dimethylaminoazobenzene)	ug/L	1.2	1.2	1.2												1.2
p-Isopropyltoluene (4-Isopropyltoluene)	ug/L	0.24	0.24	0.24												0.24
Pentachlorobenzene	ug/L	160	160	250						160	250	6				0.84
Pentachlorophenol (PCP)	ug/L	13(1H)	10(IM)	19(1H)	13(1H)	19(1H)	10(IM)			13(1H)	19(1H)		1	1	1	0.07
pH	s.u.	6.0-9.0(IM)	6.0-9.0(IM)	6.0-9.0(IM)			6.0-9.0(IM)	6.0-9.0 <sup>(4)</sup>		6.5-8.5(IM)	6.5-9.0(IM)			6.5-8.5*	(21)	0.01
Phenacetin	ug/L	1.6	1.6	1.6												1.6
Phenanthrene	ug/L	0.0088	0.0088	0.0088				0.0088		300						0.0088

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Phenol	ug/L	4,600,000	300(IM)	4,600,000	4,600,000	4,600,000	300(IM)		5,800	10,200	4,200				0.70
Phenols (Phenolics)	ug/L	1,000 <sup>(11)</sup>	1,000 <sup>(11)</sup>	1,000 <sup>(11)</sup>				1,000 <sup>(11)</sup>							30
Phosphorus (total)	ug/L	2,000 <sup>(6)</sup>	2,000 <sup>(6)</sup>	2,000 <sup>(6)</sup>				2,000 <sup>(6)</sup>	0.10(IM)		0.14				24
Picloram	ug/L	500	500	500							490	500	500	500	
p-Nitrotoluene (4-Nitrotoluene)	ug/L	0.52	0.52	0.52											0.52
Potassium (K), Total	ug/L	62	62	62											62
Potassium (K), Dissolved	ug/L	62	62	62											62
Pronamide (Kerb)	ug/L	53	53	53							53				1.5
Pyrene	ug/L	10 <sup>(10)</sup>	10 <sup>(10)</sup>	10 <sup>(10)</sup>	11,000	11,000	0.0088	10 <sup>(10)</sup>	300		210				0.0025
RDX (Cyclonite)	ug/L	2.1	2.1	2.1							2.1				0.13
Rhenium (Re), Total	ug/L	0.2	0.2	0.2											0.2
Rhenium (Re), Dissolved	ug/L	0.2	0.2	0.2											0.2
sec-Butylbenzene (2-Phenylbutane)	ug/L	0.15	0.15	0.15											0.15
Selenium (Se), Total	ug/L	238 <sup>(9)</sup>	150(IM)	20(1H)	290(1H)	20(1H)	150(IM)	238 <sup>(9)</sup>			35	50	50	50	3
Selenium (Se), Dissolved	ug/L	238 <sup>(9)</sup>	150(IM)	20(1H)	290(1H)	20(1H)	150(IM)		290(1H)	20(1H)					3
Silver (Ag), Total	ug/L	2.2(1H)	7(IM)	4.0(1H)	2.2(1H)	4.0(1H)	7(IM)	32 <sup>(9)</sup>			35	100	100		1.1
Silver (Ag), Dissolved	ug/L	1.9(1H)	5.9(IM)	3.4(1H)	1.9(1H)	3.4(1H)	5.9(IM)		1.9(1H)	3.4(1H)					1.1
Sodium (Na), Total	ug/L	720	720	720										(25)	720
Sodium (Na), Dissolved	ug/L	720	720	720											720
Specific Conductance (EC)	umhos/cm	900	900	900								900			1
Styrene	ug/L	100	100	100							140	100	100	100	0.2
Sulfate (SO <sub>4</sub> <sup>2-</sup> )	ug/L	250,000*	250,000*	250,000*								250,000*	250,000*	(30)	500
Sulfides (S <sup>2-</sup> )	ug/L	76	76	76											76
Sulfite (SO <sub>3</sub> <sup>2-</sup> )	ug/L	500	500	500											500
Surfactants (MBAS)	ug/L	500	500	500								500			36
tert-Butanol (tert-Butyl alcohol)	ug/L	500	500	500											500
tert-Butylbenzene	ug/L	0.40	0.40	0.40											0.40
Tetrachloroethene (PCE)	ug/L	8.8	99	8.8	8.8	8.8	99		10,200	5,280	70	5	5	5	0.088
Tetryl	ug/L	0.034	0.034	0.034											0.034
Thallium (Tl), Total	ug/L	6.3	14	6.3	6.3	6.3	14		2,130	1,400	0.6	2	2	2	0.98
Thallium (Tl), Dissolved	ug/L	6.3	14	6.3	6.3	6.3	14		2,130	1,400	0.6	2	2		0.98
Titanium (Ti), Total	ug/L	0.42	0.42	0.42											0.42
Titanium (Ti), Dissolved	ug/L	0.42	0.42	0.42											0.42
Toluene	ug/L	10,000 <sup>(3)</sup>	10,000 <sup>(3)</sup>	10,000 <sup>(3)</sup>	200,000	200,000	85,000	10,000 <sup>(3)</sup>	6,300	17,500	1,400	150	1,000	150	0.21

Analytes	Units	Benchmarks			Water Quality Criteria										
					California Toxics Rule		California Ocean Plan (2) Consumption of Aquatic Organisms Only	USEPA Multi-Sector General Permit (3)	USEPA Ambient Criteria		USEPA IRIS Reference Dose as a Drinking Water Level (5)	California Drinking Water Standard (6)	USEPA Drinking Water Standard (7)	Basin Plan (8)	Lab. MDL (9)
		Enclosed Bay & Estuary Discharge (Saltwater)	Pacific Ocean Discharge	Inland Surface Water Discharge (Freshwater)	Saltwater (1A) Consumption of Aquatic Organisms Only	Freshwater (1B) Consumption of Aquatic Organisms Only			Saltwater Aquatic Life Protection (4A)	Freshwater Aquatic Life Protection (4B)					
Total Coliform	colf/100 mL	1,000(IM)	1,000(IM)	1,000(IM)			1,000(IM)							(15)	2
Total Fuel Hydrocarbons (C6-C24)	ug/L	20	20	20											20
Total Organic Carbon (TOC)	ug/L	840	840	840											840
Total Suspended Solids (TSS)	ug/L	60,000(IM)	60,000(IM)	100,000 <sup>(7)</sup>			60,000(IM)	100,000 <sup>(7)</sup>							2,000
Toxaphene	ug/L	0.21(1H)	0.00021	0.73(1H)	0.21(1H)	0.73(1H)	0.00021		0.21(1H)	0.73(1H)		3	3		0.042
Toxicity, acute	TUa	(35)	(35)	0			(35)							0 (34)	
Toxicity, chronic	TUc			1										1 (34)	
TPH (IR)	ug/L	92	92	92											92
trans-1,2-Dichloroethene (t-1,2-DCE)	ug/L	140,000	224,000	140,000	140,000	140,000			224,000	11,600	140	10	100	100	0.29
trans-1,3-Dichloropropene	ug/L	1,700	8.9	1,700	1,700	1,700	8.9		790	6,060	210	0.5			0.29
Trichloroethene (TCE)	ug/L	2.7 <sup>(3)</sup>	2.7 <sup>(3)</sup>	2.7 <sup>(3)</sup>	81	81	27	2.7 <sup>(3)</sup>	2,000	45,000		5	5	5	0.057
Trichlorofluoromethane (Freon 11)	ug/L	12,000	12,000	11,000					12,000	11,000	2,100	150		150	0.26
Vanadium (V), Total	ug/L	63	63	63							63				0.49
Vanadium (V), Dissolved	ug/L	63	63	63							63				0.49
Vinyl acetate	ug/L	1.4	1.4	1.4											1.4
Vinyl chloride (Chloroethene)	ug/L	525	36	525	525	525	36				21	0.5	2		0.068
Xylenes (Total)	ug/L	14,000	14,000	14,000							14,000	1,750	10,000		0.22
Zinc (Zn), Total	ug/L	95(1H)	117 <sup>(1)</sup>	122(1H)	95(1H)	122(1H)	200(IM)	117 <sup>(1)</sup>			2,100	5,000*	5,000*		3.8
Zinc (Zn), Dissolved	ug/L	90(1H)	117 <sup>(1)</sup>	120(1H)	90(1H)	120(1H)	189(IM)		90(1H)	120(1H)					3.8

**Notes:****Metals**

- For metals (Ag, Al, As, Ba, Be, Ca, Cd, Cr, Cu, Fe, Hg, K, Mg, Mo, Na, Ni, Pb, Re, Sb, Se, Ti, Tl, V, and Zn), “Total” is the “Total Fraction” value and “Dissolved” is the “Dissolved Fraction” value. Source 1 (California Toxics Rule) is the only source that provides conversion factors (translators) for calculating both Total and Dissolved Fraction metal values and only for the following metals: Ag, As, Cd, Cr III, Cr VI, Cu, Hg, Ni, Pb, Se, and Zn. For the other sources listed, except as discussed below for the California Ocean Plan, the Dissolved Fraction values for metals are the Total Fraction values.
- Freshwater receiving water assumptions for the dissolved fraction for the metals Ag, Cd, Cr III, Cu, Ni, and Zn are: temperature 20° C, pH 7.8, hardness as CaCO<sub>3</sub> 100mg/L, and salinity 20g/kg.
- Values for CTR Total Metal Fractions were calculated from CTR Dissolved Metal Fraction values using the reciprocal of the conversion factor (translator) used to calculate Dissolved Metal Fraction values from Total Metal Fraction values.
- This California Ocean Plan value was developed for Chromium (Cr)VI, but may be applied to Chromium (Cr) Total, if valence (III or VI) of Chromium is unknown.
- Dissolved Fraction values for California Ocean Plan metals (Ag, As, Cd, Cr VI, Cu, Hg, Ni, Pb, Se, and Zn) were calculated from California Ocean Plan total metal values using the CTR metal conversion factors. For all other California Ocean Plan metals, the Total Fraction value is also for the Dissolved Fraction value.

**California Ocean Plan**

- Values for both 1,2- and 1,3-Dichlorobenzene are the sum of 1,2- and 1,3-Dichlorobenzene.
- Value for 4,4'DDT is the sum of 4,4'DDT and 2,4'DDT; value for 4,4'DDE is the sum of 4,4'DDE and 2,4'DDE; and value for 4,4'DDD is the sum of 4,4'DDD and 2,4'DDD.
- Value for Heptachlor is the sum of Heptachlor and Heptachlor Epoxide.

**USEPA Multi-sector General Permit**

- (1) USEPA Recommended Ambient Water Quality Criteria – Acute (Instantaneous Maximum or 1-Hour Average Maximum) Concentration, Freshwater Aquatic Life Protection.
- (2) USEPA Recommended Ambient Water Quality Criteria – Lowest Observed Effect Level (LOEL) Concentration for Acute Toxicity, Freshwater Aquatic Life Protection.
- (3) USEPA Recommended Ambient Water Quality Criteria – Human Health Protection (consumption of water and organisms).
- (4) Secondary Treatment Regulations – 40 CFR 133.
- (5) Factor of 4 times Biological Oxygen Demand (BOD-5day) concentration – North Carolina benchmark.
- (6) North Carolina storm water benchmark derived from North Carolina Water Quality Standards.
- (7) National Urban Runoff Program (NURP) median concentration.
- (8) Median concentration of Storm Water Effluent Limitation Guideline – 40 CFR Part 419.
- (9) Minimum Level (ML) based upon highest laboratory Method Detection Limit (MDL) times a factor of 3.18.
- (10) Laboratory derived Minimum Level (ML).
- (11) Discharge limitations and compliance data.
- (12) USEPA Recommended Ambient Water Quality Criteria – Chronic (24-Hour or 4-Day Average) Concentration, Freshwater Aquatic Life Protection.
- (13) Colorado Water Quality Criteria - Chronic (24-Hour or 4-Day Average) Concentration, Freshwater Aquatic Life Protection.
- (14) Selenium limit established for oil and gas exploration and production facilities only.

California and USEPA Drinking Water Standards

- Values for 1,2-Dichloroethene (total) for California and USEPA Drinking Water Standards are the sum of cis- and trans-1,2-Dichloroethene. Because there are no water quality criteria for 1,2-Dichloroethene (total) for the sources used, 1,2-Dichloroethene (total) values listed are values for trans-1,2-Dichloroethene.
- Values in italic type (e.g. Aluminum [Total] 50-200 ug/L) are Secondary Standards; all other USEPA and California Drinking Water Standards listed are Primary Standards.

SDRWQCB Water Quality Control Plan for the San Diego Basin (Basin Plan)

- (15) Bacteria, Total and Fecal: (a) REC-1: based on minimum of at least five samples over 30 day period, fecal coliform concentration shall not exceed a log mean of 200/100 ml, or more than 10 samples over 30 day period exceed 400/100 ml. (b) REC-2: average fecal coliform concentrations for any 30-day period shall not exceed 2000/100 ml for more than 10 percent of samples, nor shall more than 10 percent of samples collected over a 30-day period exceed 4000/100 ml. (c) SHELL: median total coliform concentration for 30-day period shall not exceed 70/100 ml nor shall more than 10 percent of samples collected over 30-day period exceed 230/100 ml for a five-tube decimal dilution test or 300/100 ml when a three-tube decimal dilution test is used. (d) Bays and Estuaries: upper 60 feet of water column shall be less than 1,000/100 ml; provided that not more than 20 percent of samples at any sampling station in 30-day period not exceed 1,000/100 ml, and no single sample, when verified with a repeat sample within 48 hours shall exceed 10,000/100 ml.
- (16) Bacteria, E. coli and enterococci: (a) San Diego Bay: where bay waters are used for whole fish handling, E. coli shall not exceed 7 per ml in more than 20 percent of any 20 daily consecutive samples of bay water. (b) REC-1: (1) Enterococci in freshwater: steady state (33/100 ml), designated beach maximum (61/100 ml), moderately or lightly used area (108/100 ml), infrequently used area (151/100 ml); (2) E. coli in freshwater: steady state (126/100 ml), designated beach maximum (235/100 ml), moderately or lightly used area (406/100 ml), infrequently used area (576/100 ml); (3) Enterococci in saltwater: steady state (35/100 ml), designated beach maximum (104/100 ml), moderately or lightly used area (276/100 ml), infrequently used area (500/100 ml).
- (17) Boron: Varies from 0.75 mg/l to 1.0 mg/l depending upon the specific hydrologic area for inland waters. See Table 3-2 of the Basin Plan for the specific hydrologic area of interest for the water quality objective. Concentrations not to be exceeded more than 10% of the time over a one year period.
- (18) Chlorides: Varies from 50 mg/l to 400 mg/l depending upon the specific hydrologic area for inland waters. See Table 3-2 of the Basin Plan for the specific hydrologic area of interest for the water quality objective. Concentrations not to be exceeded more than 10% of the time over a one year period.
- (19) Dissolved oxygen: Not less than 5.0 mg/l for inland waters with MAR or WARM beneficial uses, or less than 6.0 mg/l in inland waters with COLD beneficial uses. Annual mean dissolved oxygen shall not be less than 7 mg/l more than 10% of the time.
- (20) Fluoride: Fluoride concentrations vary per hydrologic area and temperature. See Table 3-2 of the Basin Plan for the specific hydrologic area of interest for the water quality objective. Concentrations not to be exceeded more than 10% of the time over a one-year period. See Table 3-5 of the Basin Plan for limiting and optimum concentrations of fluoride.
- (21) pH: Changes in ambient pH levels shall not exceed 0.2 units in waters with MAR, EST, or SAL beneficial uses. Changes in ambient pH levels shall not exceed 0.5 units in freshwaters with COLD or WARM beneficial uses. In bays and estuaries, pH shall not be below 7.0 or above 9.0. In inland surface waters, pH shall not be below 6.5 or above 8.5.
- (22) Iron: Varies from 0.3 mg/l to 1.0 mg/l depending upon the specific hydrologic area for inland waters. See Table 3-2 of the Basin Plan for the specific hydrologic area of interest for the water quality objective. Concentrations not to be exceeded more than 10% of the time over a one-year period.
- (23) Methylene Blue Activated Substances (MBAS): 0.5 mg/l depending upon the specific hydrologic area for inland waters. See Table 3-2 of the Basin Plan for the specific hydrologic area of interest for the water quality objective. Concentrations not to be exceeded more than 10% of the time over a one-year period.
- (24) Oil and Grease: Concentrations will not result in a visible sheen in the water or on objects in the water, cause a nuisance, or adversely affect beneficial uses.
- (25) Sodium: The water quality objective in the Basin Plan is expressed as % Na where  $\% Na = Na / (Na + Ca + Mg + K) \times 100\%$  where Na, Ca, Mg, and K are expressed as meq/l. From Table 3-2, the sodium water quality object for % Na is 60.

- (26) Pesticides: No individual pesticide or combination of pesticides shall be present in water column, sediments or biota at concentrations that adversely affect beneficial uses, or bioaccumulate in aquatic organisms to levels that are harmful to human health, wildlife or aquatic organisms.
- (27) Phenolic compounds: Water with domestic or municipal supply (MUN) shall not contain concentrations of phenolics in excess of 1.0 ug/l.
- (28) Radioactivity: Waters with MUN beneficial use shall not contain concentrations of radionuclides in excess of the levels specified in Section 64441 of Title 22 of the California Code of Regulations (Natural Radioactivity) and the maximum contaminant levels specified in Table 4 of Section 64443 of Title 22 of the California Code of Regulations (Man-made Radioactivity). Levels specified in Table 4 of Section 64443 of Title 22 of the California Code of Regulations (Man-made Radioactivity) are as follows: Combined Ra-226 and Ra-228 (5 pCi/l), gross alpha particle activity including Ra-226 but excluding Radon and Uranium (15 pCi/l), Tritium (20,000 pCi/l), Strontium-90 (8 pCi/l), Gross beta particle activity (50 pCi/l), and Uranium (20 pCi/l).
- (29) Suspended and settleable solids: Concentrations should not cause nuisance or adversely affect beneficial uses.
- (30) Sulfate: Varies from 250 mg/l to 500 mg/l depending upon the specific hydrologic area for inland waters. See Table 3-2 of the Basin Plan for the specific hydrologic area of interest for the water quality objective. Concentrations not to be exceeded more than 10% of the time over a one-year period.
- (31) Tastes and Odors: Waters shall not contain taste and odor producing substances at concentrations that cause a nuisance or adversely affect beneficial uses.
- (32) Temperature: The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrate to the RWQCB that it does not adversely affect beneficial uses. At no time or place shall the temperature of any COLD water be increased by more than 5 degrees F. above the natural receiving water temperature.
- (33) Total Dissolved Solids: Varies from 500 mg/l to 1500 mg/l depending upon the specific hydrologic area for inland waters. See Table 3-2 of the Basin Plan for the specific hydrologic area of interest for the water quality objective. Concentrations not to be exceeded more than 10% of the time over a one-year period.
- (34) Toxicity, acute and chronic for freshwater for Basin Plan:  $TU_a = 0$ , and  $TU_c = 1$  where  $TU_c = 100/NOEL$  where NOEL is no observable effect level.
- (35) Toxicity, acute, from Ocean Plan: For 30-day average,  $TU_a = 1.5$  (LC50 at 67% seawater concentration); for weekly average,  $TU_a = 2.0$  (LC50 at 50% seawater concentration); for any single time,  $TU_a = 2.5$  (LC50 at 44% seawater concentration).
- (36) Trihalomethanes: Waters with MUN beneficial use shall not contain concentrations of trihalomethanes in excess of criteria in Section 64439, Title 22 of California Code of Regulations.
- (37) Turbidity: Waters shall be free of turbidity that causes nuisance or adversely affect beneficial uses. For inland surface waters, turbidity will not exceed the value specified by Table 3-2 of the Basin Plan of 20 NTU. The transparency of waters in lagoons and estuaries shall not be less than 50% of the depth at locations where measurement is made by means of a Secchi disk, except where lesser transparency is caused by rainfall runoff from undisturbed natural areas and dredging projects conforming to waste discharge requirements. With these two exceptions, increases in turbidity attributable to controllable water quality factors shall not exceed the following limits: natural turbidity of 0-50 NTU, 20% over natural turbidity level; natural turbidity of 50-100 NTU, 10 NTU increase; and natural turbidity greater than 100 NTU, 10 % increase over natural turbidity level. San Diego Bay, insofar as it may be influenced by any controllable factor, shall not be less than 8 feet in more than 20% of the readings in any zone with a Secchi disk; when bay depth is less than 10 feet, the Secchi disk reading shall not be less than 80% of the depth in more than 20% of the readings in any zone.