

Appendix B
Water Quality and
Marine Environment

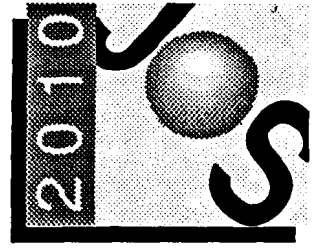


Table B-1. Local Industrial Wastewater Discharge Limits

Constituent	24-Hour Composite Daily Maximum Limits (mg/l) ^a		Instantaneous Maximum Limits (mg/l)	
	Proposed	Existing	Proposed	Existing
Arsenic	4.92	--	3	3
Cadmium	0.87	--	9	15
Chromium	3.71	--	10	10
Copper	7.75	--	15	15
Cyanide	1.90	--	10	10
Lead	3.74	--	32	40
Mercury	0.667	--	2	2
Nickel	3.72	--	12	12
Silver	2.17	--	5	5
TICH ^b	--	--	essentially none	essentially none
Zinc	14.73	--	25	25

Note: -- = no limit.

^a mg/l = milligrams per liter.

^b TICH = total identifiable chlorinated hydrocarbons (which include Aldrin, dieldrin, chlordane, heptachlor, DDT, endrin, hexachlorocyclohexane, toxaphene, and polychlorinated biphenyls).

Source: County Sanitation Districts of Los Angeles County 1993b.

Table B-2. Water Quality Objectives for Surface Waters in the JOS Service Area

Stream/Station	Objective (mg/l) ^a				
	TDS ^b	Sulfate	Chloride	Boron	Nitrogen ^c
San Gabriel River and tributaries - above Morris Dam as measured at Azusa Powerhouse	250	30	10	0.6	2
San Gabriel River and tributaries - Firestone Boulevard to Morris Dam	750	300	150	none	8
San Gabriel River and tributaries - Firestone Boulevard to tidal prism (approximately at Willow Street)	none specified (groundwater recharge is not a beneficial use in this reach)				
Rio Hondo and tributaries above spreading grounds (approximately at Santa Ana Freeway)	750	300	150	none	8

^a mg/l = milligrams per liter.

^b TDS = total dissolved solids.

^c nitrogen = nitrate and nitrite.

Source: California Regional Water Quality Control Board 1994.

Table B-3. Water Quality Objectives for Groundwater in the JOS Service Area

Area	Objective (mg/l) ^a			
	TDS ^b	Sulfate	Chloride	Boron
Coastal Plain hydrologic area				
West Coast basin	800	250	250	1.5
Santa Monica basin	1,000	250	250	0.5
Hollywood basin	750	100	100	1.0
Central basin	700	250	250	1.0
San Gabriel Valley hydrologic area				
Puente basin	1,000	300	150	1.0
Main San Gabriel basin - overall	550	150	100	1.0
Westerly portion	450	100	100	0.5
Easterly portion	600	100	100	0.5
Spadra Hydro hydrologic area				
Spadra hydrologic subarea	550	200	120	1.0
Pomona hydrologic subarea	300	100	50	0.5
Live Oak hydrologic subarea	450	150	100	0.5

^a mg/l = milligrams per liter.

^b TDS = total dissolved solids.

Source: California Regional Water Quality Control Board 1994.

Table B-4. Objectives for Surface Waters and Groundwater Designated as Municipal Supply: Limiting Concentrations of Pesticides

Pesticides	Limiting Concentrations (mg/l) ^a
Chlorinated Hydrocarbons	
Endrin	0.0002
Lindane	0.004
Methoxychlor	0.100
Toxaphene	0.005
Chlorophenoxys	
2, 4-D	0.10
2, 4, 5-TP-Silvex	0.01

^a mg/l = milligrams per liter.

Source: California Regional Water Quality Control Board 1994.

Table B-5. Objectives for Surface Waters and Groundwater Designated as Municipal Supply: Limiting Concentrations of Inorganic Chemicals

Constituent	Limiting Concentration (mg/l) ^a
Arsenic	0.05
Barium	1.00
Cadmium	0.01
Chromium	0.05
Lead	0.05
Mercury	0.002
Nitrate (as NO ₃)	45.00
Selenium	0.01
Silver	0.05

^a mg/l = milligrams per liter.

Source: California Regional Water Quality Control Board 1994.

Table B-6. Objectives for Surface Waters and Groundwater Designated as Municipal Supply: Limiting and Optimum Concentrations of Fluoride

Annual Average of Maximum Daily Air Temperature	Fluoride Concentration (mg/l) ^a			Maximum Contaminant Level
	Lower	Optimum	Upper	
53.7 and below	0.9	1.2	1.7	2.4
53.8 to 58.3	0.8	1.1	1.5	2.2
58.4 to 63.8	0.8	1.0	1.3	2.0
63.9 to 70.6	0.7	0.9	1.2	1.8
70.7 to 79.2	0.7	0.8	1.0	1.6
79.3 to 90.5	0.6	0.7	0.8	1.4

^a mg/l = milligrams per liter.

Source: California Regional Water Quality Control Board 1994.

Table B-7. Comparison of the California Ocean Plan Limits with the 1993 Annual Average Concentrations and Properties of Major Wastewater Constituents Discharged by the JWPCP

Constituents	Effluent Average	California Ocean Plan Limits ^a
Oil and grease (milligrams/liter)	11	25 monthly
Suspended solids (milligrams/liter)	69	119 monthly ^b
Settleable solids (milligrams/liter)	0.3	1.0 monthly
Turbidity (NTU)	53	75 monthly
pH	6.86	6.0-9.0 at all times
Acute toxicity (TUa)	0.8	1.5 monthly

^a Monthly limit = 30-day average.

^b Limit is based on minimum removal limit of 75% and average raw sewage concentration of 477 milligrams/liter.

Table B-8. Comparison of the California Ocean Plan Limits with the 1993 Annual Median Concentrations and Properties of Marine Aquatic Life Toxicants Discharged by the JWPCP

Constituents	Units	Effluent Median	6-Month Median Limit ^a
Arsenic	mg/l	0.003	1.336
Cadmium	mg/l	< 0.001	0.167
Chromium	mg/l	0.0105	0.334
Copper	mg/l	0.023	0.501
Cyanide	mg/l	< 0.010	0.167
Lead	mg/l	< 0.008	0.334
Mercury	mg/l	< 0.0005	0.0067
Nickel	mg/l	0.0375	0.835
Selenium	mg/l	0.014	2.505
Silver	mg/l	0.006	0.117
Zinc	mg/l	0.080	3.34
Total chlorine residual	mg/l	0.13	0.334
Ammonia nitrogen	mg/l	35.6	100 _f
Chronic toxicity	TUc		
Phenolic compounds (nonchlorinated) ^b	μg/l	376	5,010
Chlorinated phenolics ^c	μg/l	4	167
Endosulfan ^d	μg/l	ND	1.5
Endrin	μg/l	< 0.02	0.334
HCH ^e	μg/l	0.045	0.668
Radioactivity, gross alpha	pCi/l	1.15	15
Radioactivity, gross beta	pCi/l	15	50

Notes: mg/l = milligrams per liter.
 μg/l = micrograms per liter.
 pCi/l = picocuries per liter.
 ND = below detection limit.
 HCH = hexachlorocyclohexane.

^a Limits equal California Ocean Plan Table B objectives multiplied by minimum probable dilution of 167.

^b Difference between total phenols (colorimetric) and nonchlorinated phenols.

^c Sum of five chlorinated phenols.

^d Sum of endosulfan I and endosulfan II.

^e Sum of four isomers.

^f None of the samples exceeded the daily maximum chronic toxicity limit of 1 TUc. There is no 6-month median limit.

Table B-9. Comparison of the California Ocean Plan Limits with the 1993 Median Concentrations of Noncarcinogenic Toxicants Discharged by the JWPCP

Constituents	Effluent Median ($\mu\text{g/l}$)	Ocean Plan Limit ($\mu\text{g/l}$) ^a (30-Day Average)
Acrolein	< 75	36,740
Antimony	0.002	200,400
Bis(2-Chloroethoxy) methane	< 3	735
Bis(2-Chloroisopropyl) ether	< 3	200,400
Chlorobenzene	< 5	95,190
Chromium III (using total chromium)	0.0105	31,730,000
Di-N-butyl phthalate	< 4.0	584,500
Dichlorobenzenes ^b	ND	851,700
1, 1-Dichloroethene	< 2.5	1,185,700
Diethyl phthalate	4.50	5,511,000
Dimenthyl phthalate	< 3.0	136,940,000
2-Methyl-4, 6 dinitrophenol	< 17	36,740
2, 4-Dinitrophenol	< 39	668
Ethylbenzene	< 3.1	684,700
Fluoranthene	< 2.0	2,505
Hexachlorocyclopentadiene	< 100	9,686
Isophorone	< 3.0	25,050,000
Nitrobenzene	< 2.0	818
Thallium	< 0.05	2,338
Toluene	52	14,195,000
1, 1, 2, 2-Tetrachloroethane	< 5.0	200,400
Tributyl tin	< 0.1	0.23
1, 1, 2-Trichloroethane	< 2.5	7,181,000
1, 1, 1-Trichloroethane	< 5.0	90,180,000

Notes: ND = below the detection limit.

^a Limits equal California Ocean Plan Table B Objectives multiplied by the minimum probable initial dilution of 167.

^b Sum of 1, 2-dichlorobenzene and 1, 3-dichlorobenzene.

Table B-10. Comparison of the California Ocean Plan Limits with the 1993 Median Concentrations of Carcinogenic Toxicants Discharged by the JWPCP

Constituents	Effluent Median ($\mu\text{g/l}$)	Ocean Plan Limit ($\mu\text{g/l}$) ^a (30-Day Average)
Acrylonitrile	< 100	17
Aldrin	< 0.01	0.004
Benzene	23	985
Benzidine	< 0.10	0.012
Beryllium	< 0.001	5.51
Bis(2-Chloroethyl) ether	< 5.0	7.52
Bis(2-Ethylhexyl) phthalate	10.0	585
Chloroform	13.5	21,710
Carbon tetrachloride	< 2.5	150.30
Chlordanes ^b	ND	0.004
1, 4-Dichlorobenzene	< 2.0	3,006
3, 3-Dichlorobenidine	< 0.10	1.35
1, 2-Dichloroethane	< 2.5	21,710
1, 3-Dichloropropene ^c	ND	1,486.30
Dichloromethane - (methylene chloride)	< 14.5	75,150
Dieldrin	< 0.02	0.007
DDT ^d	0.01	0.028
2, 4-Dinitrotoluene	< 3.0	434
1, 2-Diphenylhydrazine	< 1.0	27
Heptachlor ^e	ND	0.12
Halomethanes ^f	ND	21,710
Hexachlorobenzene	< 1.0	0.035
Hexachlorobutadiene	< 10.0	2,338
Hexachloroethane	< 12.0	418
N-Nitrosodimethylamine	< 30.0	1,219
N-Nitrosodiphenylamine	< 2.0	418
PCBs ^g	ND	0.003
PAHs ^h	ND	1.47
TCDD equivalents ⁱ	ND	0.0000007
Tetrachloroethylene	< 2.5	16,533
Toxaphene	< 0.30	0.035
Trichloroethylene	< 2.5	4,509
2, 4, 6-Trichlorophenol	4	48
Vinyl Chloride	< 5.0	6,012

^a Limits equal California Ocean Plan Table B objectives multiplied by minimum probable initial dilution of 167.

^b Sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

^c Sum of cis- and trans-1,3-dichloropropene.

^d Sum of 4,4'DDT, 2,4'DDT, 4,4'DDE, 2,4'DDE, 4,4'DDD, and 2,4'DDD.

^e Sum of heptachlor and heptachlor epoxide.

Table B-10. Continued

- ^f Sum of bromodichloromethane, dibromochloromethane, bromoform, bromomethane, and chloromethane.
- ^g Sum of aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260.
- ^h Sum of acenaphthylene, anthracene, benzo(A)anthracene, benzo(A)pyrene, benzo(B)fluoranthene, benzo(G.H.I)perylene, benzo(K)fluoranthene, chrysene, dibenzo(A,H)anthracene, fluorene, ideno(1,2,3-C,D)pyrene, phenanthrene.
- ⁱ Sum of chlorinated dibenzodioxins and chlorinated dibenzofurans multiplied by the toxicity equivalence factor.

Source: California State Water Resources Control Board 1990b.