

2012 Water Quality Report to MWD Member Agencies--The Metropolitan Water District of Southern California

Parameter	Units	State or Federal MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Treatment Plant Effluent					Major Sources in Drinking Water
						Wey-mouth Plant	Diemer Plant	Jensen Plant	Skinner Plant	Mills Plant	
Percent State Project Water	%	NA	NA	NA	Range	7 - 99	9 - 98	100	33 - 84	100	
					Average	46	43	100	63	100	
PRIMARY STANDARDS--Mandatory Health-Related Standards											
CLARITY											
Combined Filter Effluent Turbidity	NTU	TT=1	NA	NA	Highest	0.04	0.04	0.06	0.06	0.07	
	%	TT (a)			% ≤ 0.3	100	100	100	100	100	Soil runoff
MICROBIOLOGICAL											
Total Coliform Bacteria (b)	%	5.0	(0)	NA	Range	Distribution System-wide: ND - 0.5					
					Average	Distribution System-wide: 0.1					Naturally present in the environment
<i>E. coli</i>	(c)	(c)	(0)	NA		Distribution System-wide: ND					Human and animal fecal waste
Heterotrophic Plate Count (HPC) (d)	CFU/mL	TT	NA	NA	Range	Distribution System-wide: TT					
					Average	Distribution System-wide: TT					Naturally present in the environment
<i>Cryptosporidium</i>	Oocysts/200 L	TT	(0)	NA	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Human and animal fecal waste
<i>Giardia</i>	Cysts/200 L	TT	(0)	NA	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Human and animal fecal waste
ORGANIC CHEMICALS											
Pesticides/PCBs											
Alachlor	ppb	2	4	1	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Runoff from herbicide used on row crops
Atrazine	ppb	1	0.15	0.5	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Runoff from herbicide used on row crops and along highways
Bentazon	ppb	18	200	2	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Runoff/leaching from herbicide used on rice, alfalfa, and grapes
Carbofuran	ppb	18	1.7	5	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Leaching of soil fumigant used on rice, alfalfa, and grapes
Chlordane	ppt	100	30	100	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Residue of banned insecticide
2,4-D	ppb	70	20	10	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Runoff from herbicide used on row crops, rangeland, lawns, and aquatic weeds
Dalapon	ppb	200	790	10	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Runoff from herbicide used on rights-of-way, crops, and landscapes
Dibromochloropropane (DBCP)	ppt	200	1.7	10	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Banned nematocide that may still be present in soils
Dinoseb	ppb	7	14	2	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Runoff from herbicide used on soybeans, vegetables, and fruits
Diquat	ppb	20	15	4	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Runoff from herbicide used for terrestrial and aquatic weeds
Endothall	ppb	100	580	45	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Runoff from herbicide used for terrestrial and aquatic weeds
Endrin	ppb	2	1.8	0.1	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Residue of banned insecticide and rodenticide
Ethylene Dibromide (EDB)	ppt	50	10	20	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Petroleum refinery discharges; underground gas tank leaks
Glyphosate	ppb	700	900	25	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Runoff from herbicide use
Heptachlor	ppt	10	8	10	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Residue of banned insecticide
Heptachlor Epoxide	ppt	10	6	10	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Breakdown product of heptachlor
Lindane	ppt	200	32	200	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Runoff/leaching from insecticide used on cattle, lumber, and gardens
Methoxychlor	ppb	30	0.09	10	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Runoff/leaching from insecticide uses
Molinate (Ordram)	ppb	20	1	2	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Runoff/leaching from herbicide used on rice
Oxamyl (Vydate)	ppb	50	26	20	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Runoff/leaching from insecticide uses
Pentachlorophenol	ppb	1	0.3	0.2	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Discharge from wood preserving factories other insecticidal and herbicidal uses
Picloram	ppb	500	500	1	Range	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	Herbicide runoff

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Polychlorinated Biphenyls (PCBs)	ppt	500	90	500	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff from landfills; discharge of waste chemicals
Simazine	ppb	4	4	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Herbicide runoff
Thiobencarb (e)	ppb	70	70	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff leaching from rice herbicide
2,4,5-TP (Silvex)	ppb	50	25	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Residue of banned herbicide
Toxaphene	ppb	3	0.03	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/leaching from insecticide used on cotton and cattle
Semi-Volatile Organic Compounds											
Acrylamide	NA	TT	(0)	NA	Range Average	TT TT	TT TT	TT TT	TT TT	TT TT	Water treatment chemical impurities
Benzo(a)pyrene	ppt	200	7	100	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Leaching from water storage tank linings and distribution lines
Di(2-ethylhexyl)adipate	ppb	400	200	5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from chemical factories
Di(2-ethylhexyl)phthalate	ppb	4	12	3	Range Average	ND TT	ND TT	ND TT	ND TT	ND TT	Chemical factory discharge; inert ingredient in pesticides
Epichlorohydrin	NA	TT	(0)	NA	Range Average	TT ND	TT ND	TT ND	TT ND	TT ND	Water treatment chemical impurities
Hexachlorobenzene	ppb	1	0.03	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from metal refineries & agricultural factories; wastewater chlorination reaction by-product
Hexachlorocyclopentadiene	ppb	50	50	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from chemical factories
2,3,7,8-TCDD (Dioxin)	ppq	30	0.05	5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Waste incineration emissions; chemical factory discharge
Volatile Organic Compounds											
Benzene	ppb	1	0.15	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Plastics factory discharge; gas tanks and landfill leaching
Carbon Tetrachloride	ppt	500	100	500	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from chemical plants and other industrial waste
1,2-Dichlorobenzene	ppb	600	600	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial chemical factories
1,4-Dichlorobenzene	ppb	5	6	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial chemical factories
1,1-Dichloroethane	ppb	5	3	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Extraction and degreasing solvent; fumigant
1,2-Dichloroethane	ppt	500	400	500	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial chemical factories
1,1-Dichloroethylene	ppb	6	10	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial chemical factories
cis-1,2-Dichloroethylene	ppb	6	100	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Industrial chemical factory discharge; by-product of TCE and PCE biodegradation
trans-1,2-Dichloroethylene	ppb	10	60	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Industrial chemical factory discharge; by-product of TCE and PCE biodegradation
Dichloromethane (Methylene Chloride)	ppb	5	4	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from pharmaceutical and chemical factories
1,2-Dichloropropane	ppb	5	0.5	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Industrial chemical factory discharge; primary component of some fumigants
1,3-Dichloropropene	ppt	500	200	500	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/leaching from nematocide used on croplands
Ethylbenzene	ppb	300	300	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Petroleum refinery discharge; industrial chemical factories
Methyl-tert-butyl ether (MTBE) (e.f)	ppb	13	13	3	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Gasoline discharge from watercraft engines
Monochlorobenzene	ppb	70	200	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial, agricultural, and chemical factories, and dry cleaners
Styrene	ppb	100	0.5	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Rubber and plastics factories discharge; landfill leaching
1,1,2,2-Tetrachloroethane	ppb	1	0.1	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial, agricultural, and chemical factories; solvent uses
Tetrachloroethylene (PCE)	ppb	5	0.06	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from factories, dry cleaners, and auto shops

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Toluene	ppb	150	150	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from petroleum and chemical refineries
1,2,4-Trichlorobenzene	ppb	5	5	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
1,1,1-Trichloroethane	ppb	200	1,000	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial chemical factories Discharge from metal degreasing sites and other factories
1,1,2-Trichloroethane	ppb	5	0.3	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Trichloroethylene (TCE)	ppb	5	1.7	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from metal degreasing sites and other factories Leaching from PVC piping; plastic factory discharge; by-product of TCE and PCE biodegradation
Trichlorofluoromethane (Freon-11)	ppb	150	700	5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	ppm	1.2	4	0.01	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Leaching from PVC piping; plastic factory discharge; by-product of TCE and PCE biodegradation
Vinyl Chloride	ppt	500	50	500	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Xylenes	ppm	1,750	1.8	0.0005	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
INORGANIC CHEMICALS											
Aluminum (e)	ppb	1,000	600	50	Range Highest RAA	ND - 210 120	ND - 340 150	60 - 110 83	ND ND	65 - 160 120	Residue from water treatment process; natural deposits erosion
Antimony	ppb	6	20	6	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Arsenic	ppb	10	0.004	2	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Natural deposits erosion, glass and electronics production wastes
Asbestos	MFL	7	7	0.2	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Barium	ppb	1,000	2,000	100	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Oil and metal refineries discharge; natural deposits erosion
Beryllium	ppb	4	1	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Cadmium	ppb	5	0.04	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Internal corrosion of galvanized pipes; natural deposits erosion
Chromium	ppb	50	(100)	10	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Copper (e.g)	ppm	AL = 1.3	0.3	0.05	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Internal corrosion of household pipes; natural deposits erosion
Cyanide	ppb	150	150	100	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Fluoride (h)					Control Range Optimal Fluoride Level	0.7 - 1.3 0.8	0.7 - 1.3 0.8	0.7 - 1.3 0.8	0.7 - 1.3 0.8	0.6 - 1.2 0.7	Erosion of natural deposits; water additive that promotes strong teeth
Treatment-related	ppm	2.0	1	0.1	Range Average	0.6 - 1.1 0.8	0.7 - 0.8 0.8	0.7 - 0.8 0.8	0.7 - 0.9 0.8	0.3 - 0.9 0.7	
Lead (g)	ppb	AL = 15	0.2	5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	House pipes internal corrosion; erosion of natural deposits
Mercury	ppb	2	1.2	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Nickel	ppb	100	12	10	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Erosion of natural deposits; discharge from metal factories
Nitrate (as N) (i)	ppm	10	10	0.4	Range Average	ND ND	ND ND	ND ND	ND ND	0.7 0.7	
Nitrite (as N)	ppm	1	1	0.4	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion
Perchlorate (i)	ppb	6	6	4	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Selenium	ppb	50	30	5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Refineries, mines, and chemical waste discharge; runoff from livestock lots
Thallium	ppb	2	0.1	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
RADIOLOGICALS (k)											
Gross Alpha Particle Activity	pCi/L	15	(0)	3	Range Average	ND - 3 ND	ND - 3 3	ND ND	ND - 3 ND	ND ND	Erosion of natural deposits
Gross Beta Particle Activity (l)	pCi/L	50	(0)	4	Range Average	ND - 6 4	ND - 4 ND	ND - 4 ND	ND - 5 ND	ND ND	

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Radium-226	pCi/L	NA	0.05	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Erosion of natural deposits
Radium-228	pCi/L	NA	0.019	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Combined Radium-226 + 228 (m)	pCi/L	5	(0)	NA	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Erosion of natural deposits
Strontium-90	pCi/L	8	0.35	2	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Decay of natural and man-made deposits
Tritium	pCi/L	20,000	400	1,000	Range Average	ND 1 - 2	ND 2	ND ND - 2	ND ND - 2	ND ND - 1	Decay of natural and man-made deposits
Uranium	pCi/L	20	0.43	1	Range Average	2 2	2 2	1 1	1 1	1 1	Erosion of natural deposits
DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BY-PRODUCT PRECURSORS (n)											
Total Trihalomethanes (TTHM) (o)	ppb	80	NA	1.0	Range Average	42 - 48 45	40 - 50 45	8.0 - 19 11	10 - 19 14	12 - 18 15	By-product of drinking water chlorination
Total Trihalomethanes (TTHM) (o)	ppb	80	NA	1.0	Range RAA	Distribution System-wide: 7.6 - 70			Distribution System-wide: 35		
Haloacetic Acids (five) (HAA5) (p)	ppb	60	NA	1.0	Range Average	12 - 18 14	11 - 19 16	1.1 - 3.2 2.2	1.4 - 6.1 2.7	1.5 - 5.6 3.6	By-product of drinking water chlorination
Haloacetic Acids (five) (HAA5) (p)	ppb	60	NA	1.0	Range RAA	Distribution System-wide: 1.3 - 23			Distribution System-wide: 16		
Total Chlorine Residual	ppm	[4.0]	[4.0]	NA	Range Highest RAA	Distribution System-wide: 2.3			Distribution System-wide: 1.5 - 2.8		Drinking water disinfectant added for treatment
Bromate (q)	ppb	10	0.1	1.0	Range Highest RAA	NA NA	NA NA	3.7 - 6.9 5.2	1.2 - 11 6.5	ND - 11 3.4	
DBP Precursors Control (TOC)	ppm	TT	NA	0.30	Range Average	TT TT	TT TT	TT TT	TT TT	TT TT	Various natural and man-made sources
SECONDARY STANDARDS--Aesthetic Standards											
Aluminum (e)	ppb	200	600	50	Range Highest RAA	ND - 210 120	ND - 340 150	60 - 110 83	ND ND	65 - 160 120	Residue from water treatment process; natural deposits erosion
Chloride	ppm	500	NA	NA	Range Average	85 - 95 90	87 - 93 90	50 - 63 56	75 - 77 76	80 - 100 92	
Color	Units	15	NA	NA	Range Average	1 1	1 1	1 - 2 2	1 1	1 1	Naturally-occurring organic materials
Copper (e.g)	ppm	1.0	0.3	0.05	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Internal corrosion of household pipes; natural deposits erosion; wood preservatives leaching
Foaming Agents (MBAS)	ppb	500	NA	NA	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Municipal and industrial waste discharges
Iron	ppb	300	NA	100	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Leaching from natural deposits; industrial wastes
Manganese	ppb	50	NL = 500	20	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Leaching from natural deposits
MTBE (e,f)	ppb	5	13	3	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Gasoline discharge from watercraft engines
Odor Threshold (r)	TON	3	NA	1	Range Average	2 2	2 2	2 2	1 - 2 2	2 2	Naturally-occurring organic materials
Silver	ppb	100	NA	10	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Industrial discharges
Specific Conductance	µS/cm	1,600	NA	NA	Range Average	350 - 930 740	340 - 930 780	400 - 500 440	440 - 780 640	380 - 600 490	Substances that form ions in water; seawater influence
Sulfate	ppm	500	NA	0.5	Range Average	130 - 160 140	160 160	46 - 50 48	96 - 120 110	27 - 44 36	Runoff/leaching from natural deposits; industrial wastes
Thiobencarb (e)	ppb	1	70	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/leaching from rice herbicide
Total Dissolved Solids (TDS)	ppm	1,000	NA	NA	Range Average	450 - 490 470	490 - 500 500	240 - 280 260	360 - 400 380	280 - 290 290	Runoff/leaching from natural deposits; seawater influence
Turbidity (a)	NTU	5	NA	0.1	Range Average	ND ND	ND ND	ND - 0.1 ND	ND - 0.1 ND	ND ND	Soil runoff
Zinc	ppm	5.0	NA	0.05	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/leaching from natural deposits; industrial wastes
FEDERAL UNREGULATED CONTAMINANTS MONITORING RULE (UCMR2) (s)											
List 1 - Assessment Monitoring											
Dimethoate	ppb	NA	NA	0.7	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff from insecticide used on crops and residential uses

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Terbufos sulfone	ppb	NA	NA	0.4	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/leaching from breakdown product of terbufos used as soil fumigant and nematocide
2,2',4,4'-tetrabromodiphenyl ether	ppb	NA	NA	0.3	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial chemical factories; use of flame retardant additives
2,2',4,4',5-pentabromodiphenyl ether	ppb	NA	NA	0.9	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial chemical factories; use of flame retardant additives
2,2',4,4',5,5'-hexabromodiphenyl ether	ppb	NA	NA	0.8	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial chemical factories; use of flame retardant additives
2,2',4,4',6'-pentabromodiphenyl ether	ppb	NA	NA	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial chemical factories; use of flame retardant additives
2,2',4,4',5,5'-hexabromobiphenyl	ppb	NA	NA	0.7	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial chemical factories; use of flame retardant additives
2,4,6-trinitrotoluene (TNT)	ppb	NA	NA	0.8	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/residue from explosives, dyes, and chemical manufacturing and applications
1,3-dinitrobenzene	ppb	NA	NA	0.8	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/residue from explosives, dyes, and chemical manufacturing and applications; TNT by-product
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	ppb	NA	NA	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/residue from explosives industrial applications; also used as a rodenticide
List 2 - Screening Survey											
Acetochlor	ppb	NA	NA	2	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Herbicide runoff
Alachlor	ppb	NA	NA	2	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Herbicide runoff
Metolachlor	ppb	NA	NA	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Herbicide runoff
Acetochlor ethane sulfonic acid	ppb	NA	NA	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Breakdown product of acetochlor
Acetochlor oxanilic acid	ppb	NA	NA	2	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Breakdown product of acetochlor
Alachlor ethane sulfonic acid	ppb	NA	NA	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Breakdown product of alachlor
Alachlor oxanilic acid	ppb	NA	NA	2	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Breakdown product of alachlor
Metolachlor ethane sulfonic acid	ppb	NA	NA	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Breakdown product of metolachlor
Metolachlor oxanilic acid	ppb	NA	NA	2	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Breakdown product of metolachlor
N-Nitrosodiethylamine (NDEA)	ppb	NA	NA	0.005	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	By-product of drinking water chloramination; industrial processes
N-Nitrosodimethylamine (NDMA)	ppb	NA	NA	0.002	Range Average	ND - 0.003 ND	ND ND	ND - 0.005 0.003	ND - 0.004 ND	ND - 0.01 0.004	By-product of drinking water chloramination; industrial processes
N-Nitroso-di-n-butylamine (NDBA)	ppb	NA	NA	0.004	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	By-product of drinking water chloramination; industrial processes
N-Nitroso-di-n-propylamine (NDPA)	ppb	NA	NA	0.007	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	By-product of drinking water chloramination; industrial processes
N-Nitrosomethylethylamine (NMEA)	ppb	NA	NA	0.003	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	By-product of drinking water chloramination; industrial processes
N-Nitrosopyrrolidine (NPYR)	ppb	NA	NA	0.002	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	By-product of drinking water chloramination; industrial processes
OTHER PARAMETERS											
MICROBIOLOGICAL											
HPC (d)	CFU/mL	TT	NA	NA	Range Median	ND - 1 ND	ND - 1 ND	ND ND	ND - 1 ND	ND - 1 ND	Naturally present in the environment
CHEMICAL											
Alkalinity	ppm	NA	NA	NA	Range Average	61 - 120 95	53 - 120 98	72 - 93 79	75 - 110 93	64 - 86 75	
Boron	ppb	NL = 1,000	NA	100	Range Average	130 130	130 130	170 170	130 130	150 150	Runoff/leaching from natural deposits; industrial wastes
Calcium	ppm	NA	NA	NA	Range Average	45 - 48 46	49 - 53 51	23 - 24 24	34 - 41 38	16 - 23 20	
Chlorate	ppb	NL = 800	NA	20	Range	Distribution System-wide:			ND - 80		By-product of drinking water chlorination; industrial processes
Chromium VI (t)	ppb	NA	0.02	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/leaching from natural deposits; discharge from industrial waste factories

2012 Water Quality Report to MWD Member Agencies--The Metropolitan Water District of Southern California

Parameter	Units	State or Federal MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Treatment Plant Effluent					Major Sources in Drinking Water
						Wey-mouth Plant	Diemer Plant	Jensen Plant	Skinner Plant	Mills Plant	
Corrosivity (u) (as Aggressiveness Index)	AI	NA	NA	NA	Range Average	12.1 12.1	12.2 12.2	11.9 - 12.0 12.0	12.2 - 12.3 12.2	11.9 - 12.1 12.0	Elemental balance in water; affected by temperature, other factors
Corrosivity (v) (as Saturation Index)	SI	NA	NA	NA	Range Average	0.24 - 0.32 0.28	0.35 - 0.38 0.36	0.19 - 0.22 0.20	0.35 - 0.50 0.42	0.19 - 0.25 0.22	
Hardness	ppm	NA	NA	NA	Range Average	80 - 270 200	84 - 270 210	98 - 110 100	120 - 220 170	78 - 110 100	
Magnesium	ppm	NA	NA	NA	Range Average	19 - 20 20	21 21	11 11	15 - 17 16	12 - 13 12	
pH	pH Units	NA	NA	NA	Range Average	7.9 - 8.6 8.1	7.9 - 8.4 8.1	7.9 - 8.4 8.3	8.1 - 8.5 8.3	8.2 - 8.6 8.4	
Potassium	ppm	NA	NA	NA	Range Average	3.7 - 4.1 3.9	4.0 4.0	2.3 - 2.5 2.4	3.4 - 3.6 3.5	2.8 - 2.9 2.8	
Radon (k)	pCi/L	NA	NA	100	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Sodium	ppm	NA	NA	NA	Range Average	74 - 82 78	80 - 81 80	43 - 53 48	65 - 66 66	60 - 67 64	
TOC	ppm	TT	NA	0.30	Range Highest RAA	1.8 - 2.6 2.3	2.0 - 2.7 2.4	1.7 - 2.1 1.9	1.8 - 2.3 2.1	1.7 - 2.5 2.1	Various natural and man-made sources
Vanadium	ppb	NL = 50	NA	3	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
N-Nitrosodimethylamine (NDMA)	ppt	NL = 10	3	2	Range	ND - 2.5	ND	ND - 2.0	ND - 2.8	ND - 5.8	By-product of drinking water chloramination; industrial processes
Dichlorodifluoromethane (Freon 12)	ppb	NL = 1,000	NA	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Ethyl-tert-butyl ether (ETBE)	ppb	NA	NA	3	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Used as gasoline additive
tert-Amyl-methyl ether (TAME)	ppb	NA	NA	3	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
tert-Butyl alcohol (TBA)	ppb	NL = 12	NA	2	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	MTBE breakdown product; used as gasoline additive

2012 Water Quality Report to MWD Member Agencies--The Metropolitan Water District of Southern California

Parameter	Units	State or Federal MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Treatment Plant Effluent					Major Sources in Drinking Water
						Wey-mouth Plant	Diemer Plant	Jensen Plant	Skinner Plant	Mills Plant	

ABBREVIATIONS AND FOOTNOTES

Abbreviations

AI	Aggressiveness Index	MRDL	Maximum Residual Disinfectant Level	ppq	parts per quadrillion or picograms per liter (pg/L)
AL	Action Level	MRDLG	Maximum Residual Disinfectant Level Goal	ppt	parts per trillion or nanograms per liter (ng/L)
CDPH	California Department of Public Health	N	Nitrogen	RAA	Running Annual Average; highest RAA is the highest of all
CFU	Colony-Forming Units	NA	Not Applicable		Running Annual Averages calculated as average of all the
DBP	Disinfection By-Products	ND	Not Detected		samples collected within a 12-month period
DLR	Detection Limits for purposes of Reporting	NL	Notification Level	SI	Saturation Index (Langelier)
MBAS	Methylene Blue Active Substances	NTU	Nephelometric Turbidity Units	TOC	Total Organic Carbon
MCL	Maximum Contaminant Level	pCi/L	picoCuries per Liter	TON	Threshold Odor Number
MCLG	Maximum Contaminant Level Goal	PHG	Public Health Goal	TT	Treatment Technique is a required process intended to reduce the level
MFL	Million Fibers per Liter	ppb	parts per billion or micrograms per liter (µg/L)		of a contaminant in drinking water
		ppm	parts per million or milligrams per liter (mg/L)	µS/cm	microSiemen per centimeter; or micromho per centimeter (µmho/cm)

Footnotes

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| <p>(a) As a Primary Standard, the turbidity levels of the filtered water were less than or equal to 0.3 NTU in 95% of the online measurements taken each month and did not exceed 1 NTU for more than one hour. Turbidity, a measure of the cloudiness of the water, is an indicator of treatment performance. The turbidity levels for grab samples at these locations were in compliance with the Secondary Standard. Per 2012 Consumer Confidence Report Guidance, the state DLR for turbidity is 0.1 NTU.</p> <p>(b) Total coliform MCLs: No more than 5.0% of the monthly samples may be total coliform-positive. Compliance is based on the combined distribution system sampling from all the treatment plants. In 2012, 8,037 samples were analyzed and six samples were positive for total coliforms. The MCL was not violated.</p> <p>(c) <i>E. coli</i> MCL: The occurrence of two consecutive total coliform-positive samples, one of which contains <i>E. coli</i>, constitutes an acute MCL violation. The MCL was not violated.</p> <p>(d) All distribution system samples collected had detectable total chlorine residuals and no HPC was required. HPC reporting level is 1 CFU/mL. Values are based on monthly median per State guidelines and recommendations.</p> <p>(e) Aluminum, copper, MTBE, and thiobencarb have both primary and secondary standards.</p> <p>(f) MTBE was not detected at Metropolitan's reporting level of 0.5 ppb, which is below the state DLR of 3 ppb.</p> <p>(g) As a wholesaler, Metropolitan is not required to collect samples at the consumers' tap under the Lead and Copper Rule.</p> <p>(h) Metropolitan was in compliance with all provisions of the State's Fluoridation System Requirements.</p> <p>(i) State MCL is 45 mg/L as nitrate, which is the equivalent of 10 mg/L as N.</p> <p>(j) Perchlorate was not detected at Metropolitan's reporting level of 2 ppb, which is below the state DLR of 4 ppb.</p> <p>(k) Data are from samples collected (triennially) during four consecutive quarters of monitoring in 2011 and reported for three years until the next samples are collected.</p> | <p>(l) CDPH considers 50 pCi/L to be the level of concern for beta particles; the gross beta particle activity MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ.</p> <p>(m) State MCL is 5 pCi/L for combined radium-226 and -228.</p> <p>(n) Metropolitan was in compliance with all provisions of the Stage 1 and Stage 2 Disinfectants and Disinfection By-Products Rules (D/DBPR). Stage 2 D/DBPR monitoring began in the 2nd quarter of 2012. Compliance was based on the RAA.</p> <p>(o) Metropolitan's reporting level is 0.5 ppb for each of the trihalomethanes (bromodichloromethane, bromoform, chloroform, and dibromochloromethane) which is lower than the state DLR of 1.0 ppb.</p> <p>(p) State DLR is 1.0 ppb for each of the following: dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid; and 2.0 ppb for monochloroacetic acid.</p> <p>(q) Metropolitan used EPA method 326.0 which has a state DLR of 1.0 ppb. Compliance was based on the RAA.</p> <p>(r) In May 2012, monitoring frequency for Skinner was reduced from quarterly to annual when RAA returned to <3 TON. Per CDPH requirements, quarterly monitoring was conducted following a secondary MCL exceedance in April 2008.</p> <p>(s) Data were collected from February 2009 to August 2009 and reported per UCMR guidance. Minimum reporting levels are as stipulated in the Federal UCMR 2. List 1 - Assessment Monitoring consists of 10 chemical contaminants for which standard analytical methods were available. List 2 - Screening Survey consists of 15 contaminants for which new analytical methods were used. All analyses conducted by contract laboratories. Values listed in state DLR column are federal minimum reporting levels.</p> <p>(t) Metropolitan's chromium VI reporting level is 0.03 ppb, which is below the state DLR of 1 ppb. Annual treatment plant effluent concentrations were 0.14 ppb for Weymouth, 0.07 ppb for Diemer, 0.08 ppb for Jensen, 0.06 ppb for Skinner and 0.19 ppb for Mills.</p> <p>(u) AI <10.0 = Highly aggressive and very corrosive water
AI ≥12.0 = Non-aggressive water
AI (10.0 - 11.9) = Moderately aggressive water</p> <p>(v) Positive SI index = non-corrosive; tendency to precipitate and/or deposit scale on pipes
Negative SI index = corrosive; tendency to dissolve calcium carbonate</p> |
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2012 Water Quality Report to MWD Member Agencies--The Metropolitan Water District of Southern California

Parameter	Units	State or Federal MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Source Water †						Major Sources in Drinking Water	
						Colorado River		State Project Water			Blended		
						Lake Havasu	Lake Mathews	Castaic Lake	Silverwood Lake	Lake Perris	Diamond Valley Lake		Lake Skinner
Di(2-ethylhexyl)adipate	ppb	400	200	5	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from chemical factories
					Average	ND	ND	ND	ND	ND	ND	ND	
Di(2-ethylhexyl)phthalate	ppb	4	12	3	Range	ND	ND	ND	ND	ND	ND	ND	Chemical factory discharge; inert ingredient in pesticides
					Average	ND	ND	ND	ND	ND	ND	ND	
Hexachlorobenzene	ppb	1	0.03	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from metal refineries & agricultural factories; wastewater chlorination reaction by-product
					Average	ND	ND	ND	ND	ND	ND	ND	
Hexachlorocyclopentadiene	ppb	50	50	1	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from chemical factories
					Average	ND	ND	ND	ND	ND	ND	ND	
2,3,7,8-TCDD (Dioxin)	ppq	30	0.05	5	Range	ND	ND	ND	ND	ND	ND	ND	Waste incineration emissions; chemical factory discharge
					Average	ND	ND	ND	ND	ND	ND	ND	
Volatile Organic Compounds													
Benzene	ppb	1	0.15	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Plastics factory discharge; gas tanks and landfill leaching
					Average	ND	ND	ND	ND	ND	ND	ND	
Carbon Tetrachloride	ppt	500	100	500	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from chemical plants and other industrial waste
					Average	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichlorobenzene	ppb	600	600	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories
					Average	ND	ND	ND	ND	ND	ND	ND	
1,4-Dichlorobenzene	ppb	5	6	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories
					Average	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethane	ppb	5	3	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Extraction and degreasing solvent; fumigant
					Average	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichloroethane	ppt	500	400	500	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories
					Average	ND	ND	ND	ND	ND	ND	ND	
1,1-Dichloroethylene	ppb	6	10	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories
					Average	ND	ND	ND	ND	ND	ND	ND	
cis-1,2-Dichloroethylene	ppb	6	100	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Industrial chemical factory discharge; by-product of TCE and PCE biodegradation
					Average	ND	ND	ND	ND	ND	ND	ND	
trans-1,2-Dichloroethylene	ppb	10	60	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Industrial chemical factory discharge; by-product of TCE and PCE biodegradation
					Average	ND	ND	ND	ND	ND	ND	ND	
Dichloromethane (Methylene Chloride)	ppb	5	4	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from pharmaceutical and chemical factories
					Average	ND	ND	ND	ND	ND	ND	ND	
1,2-Dichloropropane	ppb	5	0.5	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Industrial chemical factory discharge; primary component of some fumigants
					Average	ND	ND	ND	ND	ND	ND	ND	
1,3-Dichloropropene	ppt	500	200	500	Range	ND	ND	ND	ND	ND	ND	ND	Runoff/leaching from nematocide used on croplands
					Average	ND	ND	ND	ND	ND	ND	ND	
Ethylbenzene	ppb	300	300	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Petroleum refinery discharges; industrial chemical factories
					Average	ND	ND	ND	ND	ND	ND	ND	
Methyl-tert-butyl ether (MTBE) (a,b)	ppb	13	13	3	Range	ND	ND	ND	ND	ND	ND	ND	Gasoline discharge from watercraft engines
					Average	ND	ND	ND	ND	ND	ND	ND	
Monochlorobenzene	ppb	70	200	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from industrial, agricultural, and chemical factories, and dry cleaners
					Average	ND	ND	ND	ND	ND	ND	ND	
Styrene	ppb	100	0.5	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Rubber and plastics factories discharges; landfill leaching
					Average	ND	ND	ND	ND	ND	ND	ND	
1,1,1,2-Tetrachloroethane	ppb	1	0.1	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from industrial, agricultural, and chemical factories; solvent uses
					Average	ND	ND	ND	ND	ND	ND	ND	
Tetrachloroethylene (PCE)	ppb	5	0.06	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from factories, dry cleaners, and auto shops
					Average	ND	ND	ND	ND	ND	ND	ND	
Toluene	ppb	150	150	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from petroleum and chemical refineries
					Average	ND	ND	ND	ND	ND	ND	ND	
1,2,4-Trichlorobenzene	ppb	5	5	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from textile-finishing factories
					Average	ND	ND	ND	ND	ND	ND	ND	
1,1,1-Trichloroethane	ppb	200	1,000	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Metal degreasing site discharge; manufacture of food wrappings
					Average	ND	ND	ND	ND	ND	ND	ND	
1,1,2-Trichloroethane	ppb	5	0.3	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from industrial chemical factories
					Average	ND	ND	ND	ND	ND	ND	ND	
Trichloroethylene (TCE)	ppb	5	1.7	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from metal degreasing sites and other factories
					Average	ND	ND	ND	ND	ND	ND	ND	
Trichlorofluoromethane (Freon-11)	ppb	150	700	5	Range	ND	ND	ND	ND	ND	ND	ND	Industrial factory discharge; degreasing solvent; propellant
					Average	ND	ND	ND	ND	ND	ND	ND	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon-113)	ppm	1.2	4	0.01	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from metal degreasing sites and other factories; dry cleaning solvent; refrigerant
					Average	ND	ND	ND	ND	ND	ND	ND	
Vinyl Chloride	ppt	500	50	500	Range	ND	ND	ND	ND	ND	ND	ND	Leaching from PVC piping; plastic factory discharge; by-product of TCE and PCE biodegradation
					Average	ND	ND	ND	ND	ND	ND	ND	

2012 Water Quality Report to MWD Member Agencies--The Metropolitan Water District of Southern California

Parameter	Units	State or Federal MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Source Water †						Major Sources in Drinking Water	
						Colorado River		State Project Water			Blended		
						Lake Havasu	Lake Mathews	Castaic Lake	Silverwood Lake	Lake Perris	Diamond Valley Lake		Lake Skinner
(MBAS)	ppb	500	NA	NA	Average	ND	ND	ND	ND	ND	ND	ND	Municipal and industrial waste discharges
Iron	ppb	300	NA	100	Range	ND	ND	ND	ND	ND	ND	ND	Leaching from natural deposits; industrial wastes
					Average	ND	ND	ND	ND	ND	ND	ND	
Manganese	ppb	50	NL = 500	20	Average	ND	ND	ND	23	ND	ND	ND	Leaching from natural deposits
					Range	ND	ND	ND	ND	ND	ND	ND	
MTBE (a,b)	ppb	5	13	3	Average	ND	ND	ND	ND	ND	ND	ND	Gasoline discharge from watercraft engines
					Range	20	12	6	12	12	8	12	
Odor Threshold	TON	3	NA	1	Average	20	12	6	12	12	8	12	Naturally-occurring organic materials
					Range	ND	ND	ND	ND	ND	ND	ND	
Silver	ppb	100	NA	10	Average	ND	ND	ND	ND	ND	ND	ND	Industrial discharges
					Range	910 - 930	930 - 940	380 - 470	430 - 500	430 - 460	500 - 510	630 - 640	
Specific Conductance	µS/cm	1,600	NA	NA	Average	920	930	420	470	440	500	630	Substances that form ions in water; seawater influence
					Range	220	210 - 220	43 - 49	19 - 37	19 - 41	61 - 70	100	
Sulfate	ppm	500	NA	0.5	Average	220	220	46	28	30	66	100	industrial wastes
					Range	ND	ND	ND	ND	ND	ND	ND	
Thiobencarb (a)	ppb	1	70	1	Average	ND	ND	ND	ND	ND	ND	ND	Runoff/leaching from rice herbicide
					Range	570 - 600	570 - 580	230 - 270	230 - 270	230 - 250	280 - 300	360	
Total Dissolved Solids (TDS)	ppm	1,000	NA	NA	Average	580	570	250	250	240	290	360	Runoff/leaching from natural deposits; seawater influence
					Range	0.5 - 0.6	0.3 - 0.5	0.7 - 0.9	1	0.7 - 1	0.3 - 0.4	0.5 - 0.8	
Turbidity (j)	NTU	5	NA	0.1	Average	0.5	0.4	0.8	1	1	0.3	0.6	Soil runoff
					Range	ND	ND	ND	ND	ND	ND	ND	
Zinc	ppm	5.0	NA	0.05	Average	ND	ND	ND	ND	ND	ND	ND	industrial wastes
OTHER PARAMETERS													
MICROBIOLOGICAL													
Total Coliform Bacteria (k)	CFU/100 mL	NA	NA	NA	Range	5 - 1,900	ND - 8,600	NC	31 - 11,000	420 - 24,000	19 - 2,700	29 - 1,800	Naturally present in the environment
					Median	160	500	NC	1,800	4,700	280	540	
<i>E. coli</i> (k)	CFU/100 mL	NA	NA	NA	Range	ND - 1	ND - 32	NC	ND - 8	1 - 120	ND - 7	1 - 12	Human and animal fecal waste
					Median	ND	1	NC	3	20	ND	5	
CHEMICAL													
Alkalinity	ppm	NA	NA	NA	Range	130 - 140	120	72 - 81	66 - 77	66 - 76	78 - 81	93 - 96	
					Average	130	120	76	72	71	80	94	
Boron	ppb	NL = 1,000	NA	100	Range	120	130	170	140	140	140	120	Runoff/leaching from natural deposits; industrial wastes
					Average	120	130	170	140	140	140	120	
Calcium	ppm	NA	NA	NA	Range	71	64 - 65	23 - 25	15 - 21	15 - 22	27 - 28	38	
					Average	71	64	24	18	18	28	38	
Chromium VI (l)	ppb	NA	0.02	1	Range	ND	ND	ND	ND	ND	ND	ND	Runoff/leaching from natural deposits; discharge from industrial waste factories
					Average	ND	ND	ND	ND	ND	ND	ND	
Hardness	ppm	NA	NA	NA	Range	280	260 - 270	100 - 110	84 - 100	84 - 100	120	160	
					Average	280	270	110	94	93	120	160	
Magnesium	ppm	NA	NA	NA	Range	24 - 25	24 - 25	11	11 - 12	11	12 - 13	16	
					Average	24	24	11	12	11	12	16	
pH	pH Units	NA	NA	NA	Range	8.0 - 8.1	8.2 - 8.4	7.8 - 7.9	8.0 - 8.4	7.9	7.9 - 8.0	8.2 - 8.3	
					Average	8.0	8.3	7.8	8.2	7.9	7.9	8.3	
Potassium	ppm	NA	NA	NA	Range	4.2 - 4.4	4.4 - 4.5	2.4 - 2.5	2.5 - 2.9	2.4 - 2.7	3.1 - 3.2	3.4 - 3.5	
					Average	4.3	4.4	2.4	2.7	2.6	3.2	3.4	
Radon (f)	pCi/L	NA	NA	100	Range	ND	ND	ND	ND	ND	ND	ND	
					Average	ND	ND	ND	ND	ND	ND	ND	
Sodium	ppm	NA	NA	NA	Range	81 - 84	85 - 88	39 - 47	49 - 56	47 - 48	51 - 52	58 - 60	
					Average	82	86	43	52	48	52	59	
TOC	ppm	TT	NA	0.30	Range	3.0	2.9 - 3.2	2.4 - 2.5	2.6 - 3.1	2.6 - 3.7	2.5	2.8	Various natural and man-made sources
					Average	3.0	3.1	2.4	2.9	3.1	2.5	2.8	
Vanadium	ppb	NL = 50	NA	3	Range	ND	ND	ND	ND	3	ND	ND	Naturally-occurring; industrial waste discharge
					Average	ND	ND	ND	ND	3	ND	ND	
Dichlorodifluoromethane (Freon 12)	ppb	NL = 1,000	NA	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Industrial waste discharge
					Average	ND	ND	ND	ND	ND	ND	ND	
Ethyl-tert-butyl ether (ETBE)	ppb	NA	NA	3	Range	ND	ND	ND	ND	ND	ND	ND	Used as gasoline additive
					Average	ND	ND	ND	ND	ND	ND	ND	
tert-Amyl-methyl ether (TAME)	ppb	NA	NA	3	Range	ND	ND	ND	ND	ND	ND	ND	Used as gasoline additive
					Average	ND	ND	ND	ND	ND	ND	ND	
tert-Butyl alcohol (TBA)	ppb	NL = 12	NA	2	Range	ND	ND	ND	ND	ND	ND	ND	MTBE breakdown product; used as gasoline additive
					Average	ND	ND	ND	ND	ND	ND	ND	

2012 Water Quality Report to MWD Member Agencies--The Metropolitan Water District of Southern California

Parameter	Units	State or Federal MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Source Water †						Major Sources in Drinking Water
						Colorado River		State Project Water			Blended	
						Lake Havasu	Lake Mathews	Castaic Lake	Silverwood Lake	Lake Perris	Diamond Valley Lake	

ABBREVIATIONS AND FOOTNOTES

Abbreviations

AL	Action Level	N	Nitrogen	ppb	parts per billion or micrograms per liter (µg/L)
CDPH	California Department of Public Health	NA	Not Applicable	ppm	parts per million or milligrams per liter (mg/L)
CFU	Colony-Forming Units	NC	Not Collected	ppq	parts per quadrillion or picograms per liter (pg/L)
DLR	Detection Limits for purposes of Reporting	ND	Not Detected	ppt	parts per trillion or nanograms per liter (ng/L)
MBAS	Methylene Blue Active Substances	NL	Notification Level	TOC	Total Organic Carbon
MCL	Maximum Contaminant Level	NTU	Nephelometric Turbidity Units	TT	Treatment Technique is a required process intended to reduce the level of a contaminant in drinking water
MCLG	Maximum Contaminant Level Goal	pCi/L	picoCuries per Liter		
MFL	Million Fibers per Liter	PHG	Public Health Goal	µS/cm	microSiemen per centimeter; or micromho per centimeter (µmho/cm)

† As a wholesale water system, Metropolitan provides its member agencies with relevant source water information and monitoring results that they may need for their annual water quality report. Metropolitan's compliance with state or federal regulations is determined at the treatment plant effluent locations.

Footnotes

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| <p>(a) Aluminum, copper, MTBE, and thiobencarb have both primary and secondary standards.</p> <p>(b) MTBE was not detected at Metropolitan's reporting level of 0.5 ppb, which is below the state DLR of 3 ppb.</p> <p>(c) As a wholesaler, Metropolitan is not required to collect samples at the consumers' tap under the Lead and Copper Rule.</p> <p>(d) State MCL is 45 mg/L as nitrate, which equals 10 mg/L as N.</p> <p>(e) Perchlorate was not detected at Metropolitan's reporting level of 2 ppb, which is below the state DLR of 4 ppb. Results for Lake Havasu (1 ppb) and Lake Mathews (0.7 ppb) are based on Metropolitan's reporting level of 0.1 ppb for these source waters only.</p> <p>(f) Data are from samples collected (triennially) during four consecutive quarters of monitoring in 2011 and reported for three years until the next samples are collected.</p> | <p>(g) CDPH considers 50 pCi/L to be the level of concern for beta particles; the gross beta particle activity MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ.</p> <p>(h) State MCL is 5 pCi/L for combined radium-226 and -228.</p> <p>(i) State Secondary Standards apply to water supplied to the public by community water systems; annual monitoring is required for approved surface water sources or distribution system entry points representative of the effluent of source water treatment.</p> <p>(j) Per 2012 Consumer Confidence Report Guidance, the state DLR for turbidity is 0.1 NTU.</p> <p>(k) Reporting level is 1 CFU/100mL for total coliform and <i>E. coli</i>. Values are based on monthly median per State guidelines and recommendations.</p> <p>(l) Metropolitan's chromium VI reporting level is 0.03 ppb, which is below the state DLR of 1 ppb. Annual source water concentrations were ND for the Colorado River sources and Lake Perris, 0.06 ppb for Castaic Lake, 0.12 ppb for Silverwood Lake, and 0.04 ppb for the blended sources.</p> |
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2012 Water Quality Report to MWD Member Agencies--The Metropolitan Water District of Southern California

Parameter	Units	State or Federal MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Treatment Plant Influent ‡					Major Sources in Drinking Water
						Weymouth Plant	Diemer Plant	Jensen Plant	Skinner Plant	Mills Plant	
Percent State Project Water	%	NA	NA	NA	Range Average	7 - 99 46	9 - 98 43	100 100	33 - 84 63	100 100	
PRIMARY STANDARDS--Mandatory Health-Related Standards											
MICROBIOLOGICAL											
Total Coliform Bacteria (a)	CFU/100 mL	NA	NA	NA	Range Median	16 - 3,300 970	ND - 1,600 70	14 - 2,200 110	29 - 1,800 540	150 - 5,000 600	Naturally present in the environment
<i>E. coli</i> (a)	CFU/100 mL	NA	NA	NA	Range Median	ND - 2 1	ND - 1 ND	ND - 9 ND	1 - 12 5	ND - 51 1	Human and animal fecal waste
INORGANIC CHEMICALS											
Aluminum (b)	ppb	1,000	600	50	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Residue from water treatment process; natural deposits erosion
Antimony	ppb	6	20	6	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Petroleum refinery discharges; fire retardants; solder; electronics
Arsenic	ppb	10	0.004	2	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Natural deposits erosion, glass and electronics production wastes
Barium	ppb	1,000	2,000	100	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Oil and metal refineries discharges; natural deposits erosion
Beryllium	ppb	4	1	1	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Discharge from metal refineries, aerospace, and defense industries
Cadmium	ppb	5	0.04	1	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Internal corrosion of galvanized pipes; natural deposits erosion
Chromium	ppb	50	(100)	10	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Discharge from steel and pulp mills; natural deposits erosion
Copper (b,c)	ppm	AL = 1.3	0.3	0.05	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Internal corrosion of household pipes; natural deposits erosion
Fluoride (naturally-occurring)	ppm	2.0	1	0.1	Range Average	0.1 - 0.3 0.2	0.1 - 0.3 0.2	0.1 - 0.2 0.2	0.1 - 0.2 0.2	0.1 0.1	Erosion of natural deposits; discharge from fertilizer and aluminum factories
Lead (c)	ppb	AL = 15	0.2	5	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	House pipes internal corrosion; erosion of natural deposits
Mercury	ppb	2	1.2	1	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Erosion of natural deposits; factory discharge; landfill runoff
Nickel	ppb	100	12	10	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Erosion of natural deposits; discharge from metal factories
Perchlorate (d)	ppb	6	6	4	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Industrial waste discharge
Selenium	ppb	50	30	5	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Refineries, mines, and chemical waste discharge; runoff from livestock lots
Thallium	ppb	2	0.1	1	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Leaching from ore processing; electronics factory discharge
SECONDARY STANDARDS--Aesthetic Standards (e)											
Aluminum (b)	ppb	200	600	50	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Residue from water treatment process; natural deposits erosion
Copper (b,c)	ppm	1.0	0.3	0.05	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Internal corrosion of household pipes; natural deposits erosion; wood preservatives leaching
Iron	ppb	300	NA	100	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Leaching from natural deposits; industrial wastes
Manganese	ppb	50	NL = 500	20	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Leaching from natural deposits
Silver	ppb	100	NA	10	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Industrial discharges
Specific Conductance	µS/cm	1,600	NA	NA	Range Average	NC NC	NC NC	380 - 470 420	440 - 840 620	350 - 570 460	Substances that form ions in water; seawater influence
Turbidity (f)	NTU	5	NA	0.1	Range Average	0.2 - 1 0.4	0.3 - 2 0.7	0.2 - 1 0.7	0.2 - 4 0.7	0.3 - 5 0.7	Soil runoff
Zinc	ppm	5.0	NA	0.05	Range Average	ND ND	ND ND	ND ND	NC NC	ND ND	Runoff/leaching from natural deposits; industrial wastes

2012 Water Quality Report to MWD Member Agencies--The Metropolitan Water District of Southern California

Parameter	Units	State or Federal MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Treatment Plant Influent ‡					Major Sources in Drinking Water
						Weymouth Plant	Diemer Plant	Jensen Plant	Skinner Plant	Mills Plant	
OTHER PARAMETERS											
MICROBIOLOGICAL											
<i>Cryptosporidium</i>	Oocysts/10 L	TT	(0)	NA	Range	ND	ND	ND	ND	ND	Human and animal fecal waste
					Average	ND	ND	ND	ND	ND	
<i>Giardia</i>	Cysts/10 L	TT	(0)	NA	Range	ND	ND	ND	ND	ND	Human and animal fecal waste
					Average	ND	ND	ND	ND	ND	
CHEMICAL											
Alkalinity	ppm	NA	NA	NA	Range	66 - 130	78 - 120	72 - 84	74 - 120	64 - 85	
					Highest RAA	100	110	80	95	74	
Boron	ppb	NL = 1,000	NA	100	Range	130	130	170	NC	140	Runoff/leaching from natural deposits; industrial wastes
					Average	130	130	170	NC	140	
Chromium VI (g)	ppb	NA	0.02	1	Range	ND	ND	ND	NC	ND	Runoff/leaching from natural deposits; discharge from industrial waste factories
					Average	ND	ND	ND	NC	ND	
Hardness	ppm	NA	NA	NA	Range	80 - 270	140 - 270	98 - 110	110 - 230	80 - 110	
					Average	200	210	100	170	100	
pH	Units	NA	NA	NA	Range	8.1 - 8.5	8.0 - 8.5	7.4 - 8.1	7.5 - 8.4	7.7 - 8.6	
					Average	8.3	8.3	7.8	8.1	8.1	
TOC	ppm	TT	NA	0.30	Highest RAA	2.8	2.9	2.4	2.8	2.9	Various natural and man-made sources
					Range	ND	ND	ND	NC	3.1	
Vanadium	ppb	NL = 50	NA	3	Average	ND	ND	ND	NC	3.1	Naturally-occurring; industrial waste discharge

ABBREVIATIONS AND FOOTNOTES

Abbreviations

AL	Action Level	NC	Not Collected	RAA	Running Annual Average; highest RAA is the highest of all Running Annual Averages calculated as average of all the samples collected within a 12-month period.
CFU	Colony-Forming Units	ND	Not Detected	TOC	Total Organic Carbon
DLR	Detection Limits for purposes of Reporting	NL	Notification Level	TT	Treatment Technique is a required process intended to reduce the level of a contaminant in drinking water
MCL	Maximum Contaminant Level	NTU	Nephelometric Turbidity Units	µS/cm	microSiemen per centimeter; or micromho per centimeter (µmho/cm)
MCLG	Maximum Contaminant Level Goal	PHG	Public Health Goal		
NA	Not Applicable	ppb	parts per billion or micrograms per liter (µg/L)		
		ppm	parts per million or milligrams per liter (mg/L)		

‡ As a wholesale water system, Metropolitan provides its member agencies with relevant source water information and monitoring results that they may need for their annual water quality report. Metropolitan's compliance with state or federal regulations is determined at the treatment plant effluent locations.

Footnotes

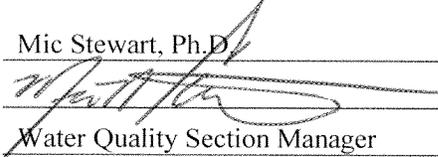
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| <p>(a) Reporting level is 1 CFU/100 mL for total coliform and <i>E. coli</i>. Values are based on monthly median per State guidelines and recommendations.</p> <p>(b) Aluminum and copper have both primary and secondary standards.</p> <p>(c) As a wholesaler, Metropolitan is not required to collect samples at the consumers' tap under the Lead and Copper Rule.</p> <p>(d) Perchlorate was not detected at Metropolitan's reporting level of 2 ppb, which is below the state DLR of 4 ppb.</p> | <p>(e) State Secondary Standards apply to water supplied to the public by community water systems; annual monitoring is required for approved surface water sources or distribution system entry points representative of the effluent of source water treatment.</p> <p>(f) Per 2012 Consumer Confidence Report Guidance, the state DLR for turbidity is 0.1 NTU. Metropolitan's chromium VI reporting level is 0.03 ppb, which is below the state DLR of 1 ppb.</p> <p>(g) Annual treatment plant influent concentrations were 0.13 ppb for Weymouth, ND for Diemer, 0.06 ppb for Jensen, and 0.20 ppb for Mills.</p> |
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**Consumer Confidence Report
Certification Form**
(To be submitted with a copy of the CCR)

Water System Name: Metropolitan Water District of Southern California

Water System Number: 1910087

The water system named above hereby certifies that its Consumer Confidence Report was distributed on March 18, 2013 (date) to customers (and appropriate notices of availability have been given). Further, the system certifies that the information contained in the report is correct and consistent with the compliance monitoring data previously submitted to the California Department of Public Health.

Certified by: Name: Mic Stewart, Ph.D.
Signature: 
Title: Water Quality Section Manager
Phone Number: (213) 217-5696 Date: June 27, 2013

To summarize report delivery used and good-faith efforts taken, please complete this page by checking all items that apply and fill-in where appropriate:

- CCR was distributed by mail or other direct delivery methods (attach description of other direct delivery methods used).
- CCR was distributed using electronic delivery methods described in the Guidance for Electronic Delivery of the Consumer Confidence Report (water systems utilizing electronic delivery methods must complete the second page). E-mail
- "Good faith" efforts were used to reach non-bill paying consumers. Those efforts included the following methods:
 - Posting the CCR at the following URL:
<http://www.mwdh2o.com/mwdh2o/pages/yourwater/WQ-Report/index.html>
 - Mailing the CCR to postal patrons within the service area (attach zip codes used)
 - Advertising the availability of the CCR in news media (attach copy of press release)
 - Publication of the CCR in a local newspaper of general circulation (attach a copy of the published notice, including name of newspaper and date published)
 - Posted the CCR in public places (attach a list of locations)
 - Delivery of multiple copies of CCR to single-billed addresses serving several persons, such as apartments, businesses, and schools
 - Delivery to community organizations (attach a list of organizations)
 - Publication of the CCR in the electronic city newsletter or electronic community newsletter or listserv (attach a copy of the article or notice)
 - Electronic announcement of CCR availability via social media outlets (attach list of social media outlets utilized)
 - Other (attach a list of other methods used)
- For systems serving at least 100,000 persons: Posted CCR on a publicly-accessible internet site at the following URL: www.
- For privately-owned utilities: Delivered the CCR to the California Public Utilities Commission

From: Gueco,Bing

Sent: Thursday, June 27, 2013 9:40 AM

To: Al Lopez* ; Alan Berndt** ; Albert Gastelum* ; Albert Magallon* ; Alex Santos* ; Amy Chen** ; Amy Maday* ; Amy Mora** ; Bill Mace** ; Brad Boman** ; Brad Glassman* ; Carlos Reyes* ; Chad Blais* ; Cheryl Ross* ; Chris Berch* ; Cynthia Andrews-Tate** ; Darcy M. Burke* ; Darren Giles* ; Dave Hill* ; Dave Massie* ; David Kimbrough* ; David Lippman** ; Dick Wilson** ; Don Christie* ; Gary Eaton* ; Gary Longwith** ; Hector Fred Molina* ; Jack Merluzzo** ; Jack van der Linden** ; James Saenz* ; Jayne Joy** ; Jim Johns* ; John Adams** ; John Aguiar* ; John Dulebohn * ; Jose Roberto Leon** ; Joseph Marcinko* ; Josette Descalzo** ; Justin Bailey* ; Karl W. Seckel** ; Karla Paterson** ; Keith Lyon** ; Kenneth Reed* * ; Kevin Smead* ; Kevin Watson* ; Khos Ghaderi* ; Larry Miller** ; LeAnne Hamilton** ; Lorrie Lausten** ; Mario Garcia** ; Martin Urquhart** ; Matt Elsner** ; Melinda Rho* ; Mike Jouhari * ; Moustafa Aly** ; MWD Operations Compliance Team ; Myriam Cardenas* ; Nira Yamachika* ; Paul Ruge** ; Raja Takidin** ; Ray Notario* ; Robert Hernandez** ; Roger Westergard* ; SDCWA Control Room ; Tai Tseng** ; Tim Suydam* ; Tom Dix* ; Tony Goff** ; Tony Salazar* ; Tony Umphenour* ; Uzi Daniel**

Cc: Arlene Rodriguez ; Chris Theisen ; Christy Hawkins ; David Pedersen ; David Schickling* ; Denise Watkins ; Donald Calkins ; Garry Hofer ; Gilbert Borboa ; James McDaniel ; Joseph (Joe) Grindstaff* ; Mahdi Aluzri ; Martin Freeman ; Matt Ballantyne ; Nabil Saba** ; Nina Jazmadarian* ; Paul Jones ; Phyllis Currie ; Ramon Abueg ; Richard (Rick) Hansen ; Richard Nagel ; Robert Beste ; Ron Ruiz* ; Ronald Davis ; Shane Chapman

Subject: 2012 Consumer Confidence Report Online

Importance: High

Hello Everyone,

Metropolitan's Consumer Confidence Report covering the period January – December 2012 is now online at the following URL:

<http://www.mwdh2o.com/mwdh2o/pages/yourwater/WQ-Report/index.html>. A printable version is also available on this website.

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