

ATTACHMENT 7

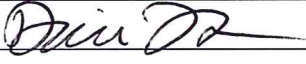
Consumer Confidence Report Certification Form (to be submitted with a copy of the CCR)

(to certify electronic delivery of the CCR, use the certification form on the State Board's website at http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/CCR.shtml)

Water System Name: FOOTHILL MUNICIPAL WATER DISTRICT

Water System Number: 1910032

The water system named above hereby certifies that its Consumer Confidence Report was distributed on April 18, 2017 (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 State Water Resources Control Board, Division of Drinking Water.

Certified by: Name: Daniel Drugan
Signature: 
Title: Water Program Technician
Phone Number: (818) 790-4036 Date: April 18, 2017

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

- CCR was distributed by mail or other direct delivery methods. Specify other direct delivery methods used: Foothill MWD emailed the Metropolitan Water District of Southern California (MWD) CCR as an electronic file attachment to the District's Retail Agencies. Foothill MWD only distributes one source of water (full-service treated MWD imported water) to 7 retailing water agencies. Foothill MWD does not operate a retail water distribution system.
- "Good faith" efforts were used to reach non-bill paying consumers. Those efforts included the following methods:
- Posting the CCR on the Internet
 - 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)
 - 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 address: www._____
- For privately-owned utilities: Delivered the CCR to the California Public Utilities Commission

This form is provided as a convenience and may be used to meet the certification requirement of section 64483(c), California Code of Regulations.

Daniel Drugan

From: Daniel Drugan
Sent: Tuesday, April 18, 2017 11:22 AM
To: Bob Fan; Bob Hayward; Christy Scott; Doug Caister; Lisa Lopez; Tim Flynn; Tom Flynn; Mel Matthews; Tom Love; Bill Kimberling; Armando De La Paz; Jennifer Betancourt
Cc: Nina Jazmadarian
Subject: FW: MWD 2016 Annual Water Quality Report/Consumer Confidence Report (.CCR Only as of 20170314)
Attachments: 2016_Annual_Water_Quality_Report_Final-032817.xlsx; 2016 Annual Water Quality Report-Rev032817.pdf

Hello Managers,

Attached is data that will be factored into MWD's 2016 Annual Water Quality Report / CCR. The final report (covering **January – December 2016**) will be posted on MWD's website before July 1. FMWD staff will forward the final report when available.

Best,

Dan

From: Dymally, Edgar G [<mailto:edymally@mwdh2o.com>]
Sent: Tuesday, March 28, 2017 3:24 PM
To: Catrece Bragg**; Daniel Drugan; Lori A. Johnson**; Martin Manucharyan ; Scott Hallimore; Tarrah Henrie
Cc: Yun, Tae I
Subject: MWD 2016 Annual Water Quality Report/Consumer Confidence Report (.CCR Only as of 20170314)

Annual Water Quality Report to Member Agencies

As a wholesale water system, Metropolitan is required to provide its member agencies with the previous year's water quality monitoring data and relevant information by April 1. Metropolitan's **Annual Water Quality Report (AWQR) to Member Agencies** for the period **January – December 2016** is presented in PDF files **Plant Effluent, Source Water** and **Plant Influent** as well as in an Excel file with **three worksheets** of the same names. Metropolitan's compliance with state or federal regulations is determined at the treatment plant effluent locations and/or distribution system.

Additional information or monitoring data may also be found on the Water Quality Reports website (exclusive to member agencies) at <http://www.mwdh2o.com/wqinternet/index.asp>. The AWQR serves as the basis for the Consumer Confidence Report (CCR) that will be published on Metropolitan's website by July 1.

The State Water Resources Control Board, Division of Drinking Water has published a guidance and related documents that can help water systems prepare the CCRs at http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/CCR.shtml.

Should you have any questions or need information not found in the attached report or in the Water Quality Reports website, please contact Water Quality Section's QA Officer, Socorro Baldonado at sbaldonado@mwdh2o.com. If you need help with graphics or photos that you want to include in your CCR, please contact Debra Sass of the External Affairs Group at dsass@mwdh2o.com or (213) 217-7230.

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2016 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California

Parameter	Units	State or Federal MCL	PHG	State DLR	Range Average	Treatment Plant Effluent					Major Sources in Drinking Water
						Weymouth Plant	Diemer Plant	Jensen Plant	Skinner Plant	Mills Plant	
Percent State Project Water	%	NA	NA	NA	Range Average	0-100 13	0-100 10	100 100	0-31 8	100 100	
PRIMARY STANDARDS—Mandatory Health-Related Standards											
CLARITY											
Combined Filter Effluent Turbidity	NTU %	TT = 1 TT (a)	NA	NA	Highest % ≤ 0.3	0.03 100	0.07 100	0.05 100	0.09 100	0.10 100	Soil runoff
MICROBIOLOGICAL											
Total Coliform Bacteria (b) State Total Coliform Rule	%	5.0	MCLG = 0	NA	Range Average	Distribution System-wide: ND-0.3 Distribution System-wide: ND					Naturally present in the environment
<i>E. coli</i> (Acute Total Coliform) State Total Coliform Rule	(c)	(c)	MCLG = 0	NA	Distribution System-wide: ND						Human and animal fecal waste
Total Coliform Bacteria Federal Revised Total Coliform Rule	%	TT (d)	NA	NA	Range Average	Distribution System-wide: ND-0.3 Distribution System-wide: 0.1					Naturally present in the environment
<i>E. coli</i> Federal Revised Total Coliform Rule	(e)	(e)	MCLG = 0	NA	Distribution System-wide: ND						Human and animal fecal waste
Heterotrophic Plate Count (HPC) (f)	CFU/mL	TT	NA	NA	Range Average	Distribution System-wide: TT Distribution System-wide: TT					Naturally present in the environment
<i>Cryptosporidium</i>	oocysts/ 200 L	TT	MCLG = 0	NA	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Human and animal fecal waste
<i>Giardia</i>	cysts/ 200 L	TT	MCLG = 0	NA	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Human and animal fecal waste
ORGANIC CHEMICALS											
Pesticides/PCBs (g)											
Alachlor	ppb	2	4	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff from herbicide used on row crops
Atrazine	ppb	1	0.15	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff from herbicide used on row crops and along highways
Bentazon	ppb	18	200	2	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/leaching from herbicide used on rice, alfalfa, and grapes
Carbofuran	ppb	18	0.7	5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Leaching of soil fumigant used on rice, alfalfa, and grapes
Chlordane	ppt	100	30	100	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Residue of banned insecticide
2,4-D	ppb	70	20	10	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff from herbicide used on row crops, rangeland, lawns, and aquatic weeds
Dalapon	ppb	200	790	10	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff from herbicide used on rights-of-way, crops, and landscapes
Dibromochloropropane (DBCP)	ppt	200	1.7	10	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Banned nematocide that may still be present in soils
Dinoseb	ppb	7	14	2	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff from herbicide used on soybeans, vegetables, and fruits
Diquat	ppb	20	6	4	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff from herbicide used for terrestrial and aquatic weeds
Endothall	ppb	100	94	45	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff from herbicide used for terrestrial and aquatic weeds
Endrin	ppb	2	0.3	0.1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Residue of banned insecticide and rodenticide
Ethylene Dibromide (EDB)	ppt	50	10	20	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Petroleum refinery discharges; underground gas tank leaks
Glyphosate	ppb	700	900	25	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff from herbicide use
Heptachlor	ppt	10	8	10	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Residue of banned insecticide
Heptachlor Epoxide	ppt	10	6	10	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Breakdown product of heptachlor
Lindane	ppt	200	32	200	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/leaching from insecticide used on cattle, lumber, and gardens
Methoxychlor	ppb	30	0.09	10	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/leaching from insecticide uses
Molinate (Ordram)	ppb	20	1	2	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/leaching from herbicide used on rice
Oxamyl (Vydate)	ppb	50	26	20	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/leaching from insecticide uses
Pentachlorophenol	ppb	1	0.3	0.2	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from wood preserving factories other insecticidal and herbicidal uses

2016 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California

Parameter	Units	State or Federal MCL	PHG	State DLR	Range Average	Treatment Plant Effluent					Major Sources in Drinking Water
						Weymouth Plant	Diemer Plant	Jensen Plant	Skinner Plant	Mills Plant	
Picloram	ppb	500	166	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Herbicide runoff
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	ppb	70	42	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	3	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 (g)											
Acrylamide	NA	TT	MCLG = 0	NA	Range Average	TT TT	TT TT	TT TT	TT TT	TT TT	Water treatment chemical impurities Leaching from water storage tank linings and distribution lines
Benzo(a)pyrene	ppt	200	7	100	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from chemical factories
Di(2-ethylhexyl)adipate	ppb	400	200	5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Chemical factory discharge; inert ingredient in pesticides
Di(2-ethylhexyl)phthalate	ppb	4	12	3	Range Average	TT TT	TT TT	TT TT	TT TT	TT TT	Water treatment chemical impurities
Epichlorohydrin	NA	TT	MCLG = 0	NA	Range Average	TT TT	TT TT	TT TT	TT TT	TT TT	Discharge from metal refineries & agrichemicals factories; wastewater chlorination reaction byproduct
Hexachlorobenzene	ppb	1	0.03	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from chemical factories
Hexachlorocyclopentadiene	ppb	50	2	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Waste incineration emissions; chemical factory discharge
2,3,7,8-TCDD (Dioxin)	ppq	30	0.05	5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Plastics factory discharge; gas tanks and landfill leaching
Volatile Organic Compounds											
Benzene	ppb	1	0.15	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from chemical plants and other industrial waste
Carbon Tetrachloride	ppt	500	100	500	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial chemical factories
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	Extraction and degreasing solvent; fumigant
1,1-Dichloroethane	ppb	5	3	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial chemical factories
1,2-Dichloroethane	ppt	500	400	500	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Industrial chemical factory discharge; byproduct of TCE and PCE biodegradation
1,1-Dichloroethylene	ppb	6	10	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Industrial chemical factory discharge; byproduct of TCE and PCE biodegradation
cis-1,2-Dichloroethylene	ppb	6	100	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from pharmaceutical and chemical factories
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; primary component of some fumigants
Dichloromethane (Methylene Chloride)	ppb	5	4	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/leaching from nematocide used on croplands
1,2-Dichloropropane	ppb	5	0.5	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Petroleum refinery discharge; industrial chemical factories
1,3-Dichloropropene	ppt	500	200	500	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Gasoline discharge from watercraft engines
Ethylbenzene	ppb	300	300	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial, agricultural, and chemical factories, and dry cleaners
Methyl-tert-butyl ether (MTBE)	ppb	13	13	3	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Rubber and plastics factories discharge; landfill leaching
Monochlorobenzene	ppb	70	70	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from industrial, agricultural, and chemical factories; solvent uses
Styrene	ppb	100	0.5	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from factories, dry cleaners, and auto shops
1,1,1,2-Tetrachloroethane	ppb	1	0.1	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Tetrachloroethylene (PCE)	ppb	5	0.06	0.5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	

2016 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California

Parameter	Units	State or Federal MCL	PHG	State DLR	Range Average	Treatment Plant Effluent					Major Sources in Drinking Water
						Weymouth Plant	Diemer Plant	Jensen Plant	Skinner Plant	Mills Plant	
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	Metal degreasing site discharge; manufacture of food wrappings
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
Trichlorofluoromethane (Freon-11)	ppb	150	1,300	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	Discharge from metal degreasing sites and other factories; dry cleaning solvent; refrigerant
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	Discharge from petroleum and chemical refineries; fuel solvent
INORGANIC CHEMICALS											
Aluminum	ppb	1,000	600	50	Range Highest RAA	77–220 159	120–240 168	ND–130 100	52 52	93–150 122	Residue from water treatment process; natural deposits erosion
Antimony	ppb	6	1	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	3.1 3.1	ND ND	2.5 2.5	Natural deposits erosion, glass and electronics production wastes
Asbestos (h)	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	144 144	138 138	ND ND	129 129	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	MCLG = 100	10	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Chromium VI (i)	ppb	10	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
Copper (i)	ppm	AL = 1.3	0.3	0.05	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Cyanide	ppb	150	150	100	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Discharge from steel/metal, plastic, and fertilizer factories
Fluoride (k) Treatment-related	ppm	2.0	1	0.1	Control Range	0.6–1.2	0.6–1.2	0.6–1.2	0.6–1.2	0.6–1.2	
					Optimal Fluoride Level	0.7	0.7	0.7	0.7	0.7	
Lead (j)	ppb	AL = 15	0.2	5	Range	0.6–1.0	0.6–0.9	0.6–0.8	0.6–0.9	0.5–0.8	House pipes internal corrosion; erosion of natural deposits
					Average	0.7	0.7	0.7	0.7	0.7	
Mercury	ppb	2	1.2	1	Range	Distribution System-wide: 0.6–1.0					Erosion of natural deposits; factory discharge; landfill runoff
					Average	ND	ND	ND	ND	ND	
Nickel	ppb	100	12	10	Range	ND	ND	0.6–0.9	ND	0.4–1.1	Erosion of natural deposits; discharge from metal factories
					Average	ND	ND	ND	ND	ND	
Nitrate (as Nitrogen)	ppm	10	10	0.4	Range	ND	ND	0.8	ND	0.8	Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion
					Average	ND	ND	ND	ND	ND	
Nitrite (as Nitrogen)	ppm	1	1	0.4	Range	ND	ND	ND	ND	ND	Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion
					Average	ND	ND	ND	ND	ND	
Perchlorate (l)	ppb	6	1	4	Range	ND	ND	ND	ND	ND	Industrial waste discharge
					Average	ND	ND	ND	ND	ND	
Selenium	ppb	50	30	5	Range	ND	ND	ND	ND	ND	Refineries, mines, and chemical waste discharge; runoff from livestock lots
					Average	ND	ND	ND	ND	ND	
Thallium	ppb	2	0.1	1	Range	ND	ND	ND	ND	ND	Leaching from ore processing; electronics factory discharge
					Average	ND	ND	ND	ND	ND	

2016 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California

Parameter	Units	State or Federal MCL	PHG	State DLR	Range Average	Treatment Plant Effluent					Major Sources in Drinking Water
						Weymouth Plant	Diemer Plant	Jensen Plant	Skinner Plant	Mills Plant	
RADIOLOGICALS (m)											
Gross Alpha Particle Activity	pCi/L	15	MCLG = 0	3	Range Average	ND-4 ND	ND-4 ND	ND-5 3	ND-5 ND	ND-4 ND	Erosion of natural deposits
Gross Beta Particle Activity	pCi/L	50 (n)	MCLG = 0	4	Range Average	4-6 5	4-6 5	ND-5 ND	5 5	ND ND	
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	pCi/L	5	MCLG = 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	
Tritium	pCi/L	20,000	400	1,000	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Decay of natural and man-made deposits
Uranium	pCi/L	20	0.43	1	Range Average	2-3 3	2-3 3	2-3 2	1-2 2	ND-4 2	
DISINFECTION BYPRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BYPRODUCT PRECURSORS											
Total Trihalomethanes (TTHM)	ppb	80	NA	1.0	Range Average	24-45 32	16-24 20	13-19 16	14-19 17	18-30 24	Byproduct of drinking water chlorination
Total Trihalomethanes (TTHM) (o)	ppb	80	NA	1.0	Range Highest LRAA	26-61 42	21-25 30	19-28 33	16-22 21	16-29 34	
Total Trihalomethanes (TTHM) (p)	ppb	80	NA	1.0	Range Highest LRAA	Distribution System-wide: 16-62 Distribution System-wide: 42					Byproduct of drinking water chlorination
Haloacetic Acids (five) (HAA5)	ppb	60	NA	1.0	Range Average	6.4-15 8.8	ND-2.3 1.2	2.7-5.3 4.3	1.6-7.2 4.9	3.9-11 6.4	
Haloacetic Acids (five) (HAA5) (o)	ppb	60	NA	1.0	Range Highest LRAA	4.5-25 14	1.4-4.2 9.4	3.0-6.7 9.0	3.5-7.5 6.2	3.5-10 7.0	Byproduct of drinking water chlorination
Haloacetic Acids (five) (HAA5) (p)	ppb	60	NA	1.0	Range Highest LRAA	Distribution System-wide: ND-31 Distribution System-wide: 14					
Total Chlorine Residual	ppm	MRDL = 4.0	MRDLG = 4.0	NA	Range Highest RAA	Distribution System-wide: 0.9-3.1 Distribution System-wide: 2.4					Drinking water disinfectant added for treatment
Bromate (q)	ppb	10	0.1	1.0	Range Highest RAA	NA NA	ND-6.2 1.2	4.4-13 7.4	ND-9.1 4.2	ND-7 4.5	
DBP Precursors Control as Total Organic Carbon (TOC)	ppm	TT	NA	0.30	Range Average	TT TT	TT TT	TT TT	TT TT	TT TT	Various natural and man-made sources; TOC as a medium for the formation of disinfection byproducts
SECONDARY STANDARDS—Aesthetic Standards											
Aluminum	ppb	200	600	50	Range Highest RAA	77-220 159	120-240 168	ND-130 100	52 52	93-150 122	Residue from water treatment process; natural deposits erosion
Chloride	ppm	500	NA	NA	Range Average	103 103	102-103 103	89-97 93	102-104 103	78-89 84	
Color	Color Units	15	NA	NA	Range Average	1 1	1 1	1-2 2	1-2 2	1-2 2	Naturally-occurring organic materials
Copper (j)	ppm	1.0	0.3	0.05	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
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	
Manganese	ppb	50	NL = 500	20	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Leaching from natural deposits
MTBE	ppb	5	13	3	Range Average	ND 2	ND 3	ND 3	ND 3	ND 2	
Odor Threshold	TON	3	NA	1	Range Average	2 2	3 3	3 3	3 3	2 2	Naturally-occurring organic materials
Silver	ppb	100	NA	10	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Specific Conductance	µS/cm	1,600	NA	NA	Range Average	1,020-1,050 1,035	1,030-1,050 1,040	652-721 687	965-1,030 998	475-570 522	Substances that form ions in water; seawater influence
Sulfate	ppm	500	NA	0.5	Range Average	256-259 258	257-262 260	86-104 95	229-238 234	29-72 50	
Thiobencarb	ppb	1	42	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/leaching from rice herbicide

2016 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California

Parameter	Units	State or Federal MCL	PHG	State DLR	Range Average	Treatment Plant Effluent					Major Sources in Drinking Water
						Weymouth Plant	Diemer Plant	Jensen Plant	Skinner Plant	Mills Plant	
Total Dissolved Solids (TDS)	ppm	1,000	NA	NA	Range Average	650–659 655	650–658 654	377–423 400	615–632 624	261–326 294	Runoff/leaching from natural deposits; seawater influence
Turbidity (a)	NTU	5	NA	0.1	Range Average	ND ND	ND ND	ND ND	ND 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
OTHER PARAMETERS											
MICROBIOLOGICAL											
HPC (f)	CFU/mL	NA	NA	NA	Range Median	ND–1 ND	ND–1 ND	ND–1 ND	ND–1 ND	ND ND	Naturally present in the environment
Total Coliform Bacteria (r)	%	NA	NA	NA	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Naturally present in the environment
<i>E. coli</i> (r)	%	NA	NA	NA	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Human and animal fecal waste
CHEMICAL											
Alkalinity (as CaCO ₃)	ppm	NA	NA	NA	Range Average	113–124 118	115–124 120	92–95 94	118–125 122	64–78 71	
Boron	ppb	NL = 1,000	NA	100	Range Average	150 150	150 150	270 270	140 140	240 240	Runoff/leaching from natural deposits; industrial wastes
Calcium	ppm	NA	NA	NA	Range Average	75–79 77	75–76 76	30–36 33	70–74 72	17–27 22	
Chlorate	ppb	NL = 800	NA	20	Range	Distribution System-wide: 26-60					Byproduct of drinking water chlorination; industrial processes
Corrosivity (s) (as Aggressiveness Index)	AI	NA	NA	NA	Range Average	12.4–12.5 12.5	12.4–12.5 12.5	12.2 12.2	12.4–12.5 12.5	12.0 12.0	Elemental balance in water; affected by temperature, other factors
Corrosivity (t) (as Saturation Index)	SI	NA	NA	NA	Range Average	0.54–0.60 0.57	0.55–0.56 0.56	0.35–0.40 0.38	0.62–0.66 0.64	0.22–0.26 0.24	Elemental balance in water; affected by temperature, other factors
Hardness (as CaCO ₃)	ppm	NA	NA	NA	Range Average	293–306 300	292–300 296	126–132 129	274–294 284	87–112 100	
Magnesium	ppm	NA	NA	NA	Range Average	25–27 26	26–27 27	12 12	24–25 25	10 10	
pH	pH Units	NA	NA	NA	Range Average	8.1 8.1	8.1 8.1	8.3 8.3	8.1–8.2 8.1	8.3–8.6 8.4	
Potassium	ppm	NA	NA	NA	Range Average	5.0–5.1 5.1	5.0–5.1 5.1	2.9–3.2 3.1	4.8–4.9 4.9	2.7–2.8 2.8	
Radon (m)	pCi/L	NA	NA	100	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	
Sodium	ppm	NA	NA	NA	Range Average	104–106 105	99–107 103	84–94 89	101–104 102	62–75 68	
TOC	ppm	TT	NA	0.30	Range Highest RAA	1.7–2.8 2.5	2.1–2.6 2.5	1.8–2.8 2.2	2.2–2.7 2.5	1.6–3.7 2.5	Various natural and man-made sources; TOC as a medium for the formation of disinfection byproducts
Vanadium	ppb	NL = 50	NA	3	Range Average	ND ND	ND ND	7.4 7.4	ND ND	8.9 8.9	Naturally-occurring; industrial waste discharge
N-Nitrosodimethylamine (NDMA)	ppt	NL = 10	3	2	Range	Distribution System-wide: ND-5.1					Byproduct 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	Industrial waste discharge
Ethyl- <i>tert</i> -butyl ether (ETBE)	ppb	NA	NA	3	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Used as gasoline additive
<i>tert</i> -Amyl-methyl ether (TAME)	ppb	NA	NA	3	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Used as gasoline additive
<i>tert</i> -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

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Parameter	Units	State or Federal MCL	PHG	State DLR	Range Average	Treatment Plant Effluent					Major Sources in Drinking Water
						Weymouth Plant	Diemer Plant	Jensen Plant	Skinner Plant	Mills Plant	

DEFINITION OF TERMS AND FOOTNOTES

Definition of Terms

AI	Aggressiveness Index	MCL	Maximum Contaminant Level	ppq	parts per quadrillion or picograms per liter (pg/L)
AL	Action Level	MCLG	Maximum Contaminant Level Goal	ppt	parts per trillion or nanograms per liter (ng/L)
Average	Result based on arithmetic mean	MFL	Million Fibers per Liter	RAA	Running Annual Average; highest RAA is the highest of all
CaCO ₃	Calcium Carbonate	MRDL	Maximum Residual Disinfectant Level		Running Annual Averages calculated as average of all the
CFU	Colony-Forming Units	MRDLG	Maximum Residual Disinfectant Level Goal		samples collected within a 12-month period
DBP	Disinfection Byproducts	NA	Not Applicable	Range	Results based on minimum and maximum values
DLR	Detection Limits for Purposes of Reporting	ND	Not Detected	SI	Saturation Index (Langelier)
LRAA	Locational Running Annual Average; highest	NL	Notification Level to SWRCB	SWRCB	State Water Resources Control Board
	LRAA is the highest of all Locational Running	NTU	Nephelometric Turbidity Units	TON	Threshold Odor Number
	Annual Averages calculated as average of	pCi/L	picoCuries per Liter	TT	Treatment Technique is a required process intended to reduce
	all samples collected within a 12-month	PHG	Public Health Goal		the level of a contaminant in drinking water
	period	ppb	parts per billion or micrograms per liter (µg/L)	µS/cm	microSiemen per centimeter; or micromho per centimeter
MBAS	Methylene Blue Active Substances	ppm	parts per million or milligrams per liter (mg/L)	(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.</p> <p>(b) Total coliform MCL: No more than 5.0% total coliform-positive samples in a month. Compliance is based on the combined distribution system sampling from all of the treatment plants. Three total coliform-positive samples were found out of the 7,106 samples analyzed in 2016. The MCL was not violated.</p> <p>(c) Acute total coliform (<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. No samples were <i>E. coli</i>-positive and the MCL was not violated.</p> <p>(d) Total coliform TT trigger, Level 1 assessments, and total coliform TT violations: More than 5.0% total coliform-positive samples in a month trigger Level 1 assessments. Failure to conduct assessments and correct findings within 30 days is a total coliform violation. No triggers, Level 1 assessments, or violations occurred.</p> <p>(e) <i>E. coli</i> MCL and Level 2 TT triggers for assessments: Routine and repeat samples are total coliform-positive and either sample is <i>E. coli</i>-positive or system fails to collect all repeat samples following an <i>E. coli</i>-positive sample, or fails to test for <i>E. coli</i> when the repeat sample is total coliform-positive. No samples were <i>E. coli</i>-positive. No MCLs violations or no assessments occurred.</p> <p>(f) All distribution system samples collected had detectable total chlorine residuals and no HPC was required. (f) HPC reporting level is 1 CFU/mL. Values are based on monthly median per State guidelines and recommendations.</p> <p>(g) Data are from samples collected in 2015. Metropolitan's required triennial monitoring (2017-2019) will be performed in 2018.</p> <p>(h) Data are from samples collected in 2011 and reported once every nine-year compliance cycle until the next samples are collected.</p> | <p>(i) Metropolitan's chromium VI reporting level is 0.03 ppb, which is below the state DLR of 1 ppb. Data above Metropolitan's reporting level but below the DLR are reported as ND in this report. These data are available upon request.</p> <p>(j) As a wholesaler, Metropolitan has no retail customers and is not required to collect samples at the consumers' tap under the Lead and Copper Rule. Results are based from annual compliance monitoring.</p> <p>(k) Metropolitan was in compliance with all provisions of the State's Fluoridation System Requirements.</p> <p>(l) Metropolitan's perchlorate reporting level is 0.1 ppb, which is below the state DLR of 4 ppb. Data above Metropolitan's reporting level but below the DLR are reported as ND in this report. These data are available upon request.</p> <p>(m) Data are from samples collected (triennially) during four consecutive quarters of monitoring in 2014 and reported for three years until the next samples are collected.</p> <p>(n) SWRCB considers 50 pCi/L to be the level of concern for beta particles.</p> <p>(o) These data represent the treatment plant specific core locations per the State approved monitoring plan. For the Jensen service area, the data for the B-5 location were excluded when served by the Weymouth treatment plant.</p> <p>(p) These data represent the Locational Running Annual Average (LRAA) of all data collected at distribution system-wide monitoring locations.</p> <p>(q) No MCL exceedance occurred. Compliance with State and Federal Bromate MCL is based on RAA.</p> <p>(r) Noncompliance monthly percentage of coliform-positive samples analyzed at each treatment plant.</p> <p>(s) AI ≥ 12.0 = Non-aggressive water
AI (10.0–11.9) = Moderately aggressive water
AI ≤ 10.0 = Highly aggressive water
Reference: ANSI/AWWA Standard C400-93 (R98)</p> <p>(t) 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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Parameter	Units	State or Federal MCL	PHG	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	
2,4,5-TP (Silvex)	ppb	50	3	1	Range	ND	ND	ND	ND	ND	ND	ND	Residue of banned herbicide
					Average	ND	ND	ND	ND	ND	ND	ND	
Toxaphene	ppb	3	0.03	1	Range	ND	ND	ND	ND	ND	ND	ND	Runoff/leaching from insecticide used on cotton and cattle
					Average	ND	ND	ND	ND	ND	ND	ND	
Semi-Volatile Organic Compounds (a)													
Benzo(a)pyrene	ppt	200	7	100	Range	ND	ND	ND	ND	ND	ND	ND	Leaching from water storage tank linings and distribution lines
					Average	ND	ND	ND	ND	ND	ND	ND	
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 & agrichemicals factories; wastewater chlorination reaction byproduct
					Average	ND	ND	ND	ND	ND	ND	ND	
Hexachlorocyclopentadiene	ppb	50	2	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; byproduct 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; byproduct 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)	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	70	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	
1,1,2,2-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	

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Parameter	Units	State or Federal MCL	PHG	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	
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	1,300	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; byproduct of TCE and PCE biodegradation
					Average	ND	ND	ND	ND	ND	ND	ND	
Xylenes	ppm	1.750	1.8	0.0005	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from petroleum and chemical refineries; fuel solvent
					Average	ND	ND	ND	ND	ND	ND	ND	
INORGANIC CHEMICALS													
Aluminum	ppb	1,000	600	50	Range	ND	ND	99	ND	ND	ND	93	Residue from water treatment process; natural deposits erosion
					Average	ND	ND	99	ND	ND	ND	93	
Antimony	ppb	6	1	6	Range	ND	ND	ND	ND	ND	ND	ND	Petroleum refinery discharges; fire retardants; solder; electronics
					Average	ND	ND	ND	ND	ND	ND	ND	
Arsenic	ppb	10	0.004	2	Range	2.3	2.4	4.8	5.0	2.3	2.4	ND	Natural deposits erosion, glass and electronics production wastes
					Average	2.3	2.4	4.8	5.0	2.3	2.4	ND	
Asbestos (b)	MFL	7	7	0.2	Range	ND	ND	ND	ND	ND	ND	ND	Asbestos cement pipes internal corrosion; natural deposits erosion
					Average	ND	ND	ND	ND	ND	ND	ND	
Barium	ppb	1,000	2,000	100	Range	141	140	ND	ND	ND	ND	132	Oil and metal refineries discharges; natural deposits erosion
					Average	141	140	ND	ND	ND	ND	132	
Beryllium	ppb	4	1	1	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from metal refineries, aerospace, and defense industries
					Average	ND	ND	ND	ND	ND	ND	ND	
Cadmium	ppb	5	0.04	1	Range	ND	ND	ND	ND	ND	ND	ND	Internal corrosion of galvanized pipes; natural deposits erosion
					Average	ND	ND	ND	ND	ND	ND	ND	
Chromium	ppb	50	MCLG = 0	10	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from steel and pulp mills; natural deposits erosion
					Average	ND	ND	ND	ND	ND	ND	ND	
Chromium VI (c)	ppb	10	0.02	1	Range	ND	ND	ND	1.0	ND	ND	ND	Runoff/leaching from natural deposits; discharge from industrial waste factories
					Average	ND	ND	ND	1.0	ND	ND	ND	
Copper	ppm	AL = 1.3	0.3	0.05	Range	ND	ND	ND	ND	ND	ND	ND	Internal corrosion of household pipes; natural deposits erosion
					Average	ND	ND	ND	ND	ND	ND	ND	
Cyanide	ppb	150	150	100	Range	ND	ND	ND	ND	ND	ND	ND	Discharge from steel/metal, plastic, and fertilizer factories
					Average	ND	ND	ND	ND	ND	ND	ND	
Fluoride (naturally-occurring)	ppm	2.0	1	0.1	Range	0.3	0.3	0.2	ND-0.2	0.2	0.1-0.2	0.3	Erosion of natural deposits; discharge from fertilizer and aluminum factories
					Average	0.3	0.3	0.2	0.1	0.2	0.2	0.3	
Lead	ppb	AL = 15	0.2	5	Range	ND	ND	ND	ND	ND	ND	ND	House pipes internal corrosion; erosion of natural deposits
					Average	ND	ND	ND	ND	ND	ND	ND	
Mercury	ppb	2	1.2	1	Range	ND	ND	ND	ND	ND	ND	ND	Erosion of natural deposits; factory discharge; landfill runoff
					Average	ND	ND	ND	ND	ND	ND	ND	
Nickel	ppb	100	12	10	Range	ND	ND	ND	ND	ND	ND	ND	Erosion of natural deposits; discharge from metal factories
					Average	ND	ND	ND	ND	ND	ND	ND	
Nitrate (as Nitrogen)	ppm	10	10	0.4	Range	ND-0.4	ND	0.6-0.9	ND-0.8	ND	ND	ND	Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion
					Average	ND	ND	0.7	0.4	ND	ND	ND	
Nitrite (as Nitrogen)	ppm	1	1	0.4	Range	ND	ND	ND	ND	ND	ND	ND	Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion
					Average	ND	ND	ND	ND	ND	ND	ND	
Perchlorate (d)	ppb	6	1	4	Range	ND	ND	ND	ND	ND	ND	ND	Industrial waste discharge
					Average	ND	ND	ND	ND	ND	ND	ND	
Selenium	ppb	50	30	5	Range	ND	ND	ND	ND	ND	ND	ND	Refineries, mines, and chemical waste discharge; runoff from livestock lots
					Average	ND	ND	ND	ND	ND	ND	ND	

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						Lake Havasu	Lake Mathews	Castaic Lake	Silverwood Lake	Lake Perris	Diamond Valley Lake		Lake Skinner
Thallium	ppb	2	0.1	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	Leaching from ore processing; electronics factory discharge	
RADIOLOGICALS (e)													
Gross Alpha Particle Activity	pCi/L	15	MCLG = 0	3	Range Average	ND-3 ND	ND-4 3	ND-5 ND	ND-4 3	ND ND	ND ND	ND-6 ND	Erosion of natural deposits
Gross Beta Particle Activity	pCi/L	50 (f)	MCLG = 0	4	Range Average	4-6 6	4-6 5	ND-4 ND	ND ND	ND-4 ND	ND ND	ND-5 ND	Decay of natural and man-made deposits
Radium-226	pCi/L	NA	0.05	1	Range Average	ND ND	ND ND	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	ND ND	ND ND	Erosion of natural deposits
Combined Radium-226 + 228	pCi/L	5	MCLG = 0	NA	Range Average	ND ND	ND ND	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	ND ND	ND ND	Decay of natural and man-made deposits
Tritium	pCi/L	20,000	400	1,000	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	Decay of natural and man-made deposits
Uranium	pCi/L	20	0.43	1	Range Average	2-3 2	2-3 3	2-3 2	2-4 3	2 2	1 1	2-3 2	Erosion of natural deposits
SECONDARY STANDARDS—Aesthetic Standards (g) (for reference only)													
Aluminum	ppb	200	600	50	Range Average	ND ND	ND ND	99 99	ND ND	ND ND	ND ND	93 93	Residue from water treatment process; natural deposits erosion
Chloride	ppm	500	NA	NA	Range Average	92-93 93	97-98 98	89-97 93	68-83 76	104-106 105	79-82 81	93 93	Runoff/leaching from natural deposits; seawater influence
Color	Color Units	15	NA	NA	Range Average	3-4 4	2 2	4-7 6	7-12 10	7-10 9	4-5 4	3-4 4	Naturally-occurring organic materials
Copper	ppm	1.0	0.3	0.05	Range Average	ND ND	ND ND	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	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	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	ND ND	ND ND	Leaching from natural deposits
MTBE	ppb	5	13	3	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	Gasoline discharge from watercraft engines
Odor Threshold	TON	3	NA	1	Range Average	6 6	2 2	3 3	4 4	3 3	6 6	6 6	Naturally-occurring organic materials
Silver	ppb	100	NA	10	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	Industrial discharges
Specific Conductance	µS/cm	1,600	NA	NA	Range Average	1,000-1,020 1,010	1,000-1,050 1,025	618-680 649	388-605 497	665-685 675	562-594 578	934-993 964	Substances that form ions in water; seawater influence
Sulfate	ppm	500	NA	0.5	Range Average	244-247 246	250-251 251	73-86 80	22-74 48	70-76 73	68-71 70	217-231 224	Runoff/leaching from natural deposits; industrial wastes
Thiobencarb	ppb	1	42	1	Range Average	ND ND	ND ND	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	628-631 630	632-643 638	349-387 368	208-336 272	367-380 328	319-328 324	578-603 591	Runoff/leaching from natural deposits; seawater influence
Turbidity	NTU	5	NA	0.1	Range Average	0.4-1.0 0.7	0.8-1.7 1.2	1.9 1.9	1.0 1.0	1.0-2.1 1.6	0.6 0.6	0.6-0.8 0.7	Soil runoff
Zinc	ppm	5.0	NA	0.05	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/leaching from natural deposits; industrial wastes

2016 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California

Parameter	Units	State or Federal MCL	PHG	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
OTHER PARAMETERS (for reference only)													
MICROBIOLOGICAL													
Total Coliform	CFU/100 mL	NA	NA	NA	Range	5–9,900	ND–8,800	NC (i)	30–17,000	34–40,000	10–1,600	120–20,000	Naturally present in the environment
Bacteria (h)					Median	340	310	NC (i)	580	1,800	150	390	
<i>E. coli</i> (h)	CFU/100 mL	NA	NA	NA	Range	ND–1	ND–61	NC (i)	ND–8	ND–250	ND–11	ND–5	Human and animal fecal waste
					Median	ND	3	NC (i)	2	10	ND	1	
CHEMICAL													
Alkalinity (as CaCO ₃)	ppm	NA	NA	NA	Range	127–136	120–131	88–90	57–86	91–96	84–92	119–129	
					Average	132	126	89	72	94	88	124	
Boron	ppb	NL = 1,000	NA	100	Range	130	150	270	250	260	180	140	Runoff/leaching from natural deposits; industrial wastes
					Average	130	150	270	250	260	180	140	
Calcium	ppm	NA	NA	NA	Range	74–77	71–76	30–34	14–28	26–30	27–31	66–72	
					Average	76	74	32	21	28	29	69	
Hardness (as CaCO ₃)	ppm	NA	NA	NA	Range	287–300	281–300	126–132	72–114	124–132	122–135	257–278	
					Average	294	291	129	93	128	128	268	
Magnesium	ppm	NA	NA	NA	Range	25	26	11-12	9-10	13-14	14	23-24	
					Average	25	26	12	10	14	14	24	
pH	pH Units	NA	NA	NA	Range	8.1–8.2	8.0–8.2	7.6	7.7–8.4	8.2	7.7–8.4	8.0–8.2	
					Average	8.1	8.1	7.6	8.0	8.2	8.0	8.1	
Potassium	ppm	NA	NA	NA	Range	4.7–4.8	4.9	2.8–3.2	2.4–2.8	3.4–3.6	3.6–3.8	4.7	
					Average	4.8	4.9	3.0	2.6	3.5	3.7	4.7	
Radon (e)	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	96–98	99–102	72–82	47–74	85–86	63–67	92–93	
					Average	97	100	77	60	86	65	92	
Total Organic Carbon (TOC)	ppm	TT	NA	0.30	Range	3.0–3.3	3.1	2.6–3.6	3.5–3.6	4.0–4.2	2.8–3.6	3.2–3.4	Various natural and man-made sources
					Average	3.2	3.1	3.1	3.6	4.1	3.2	3.3	
Vanadium	ppb	NL = 50	NA	3	Range	ND	ND	7.4	9.9	4.9	ND	ND	Naturally-occurring; industrial waste discharge
Dichlorodifluoromethane (Freon 12)	ppb	NL = 1,000	NA	0.5	Range	ND	ND	ND	ND	ND	ND	ND	Industrial waste discharge
Ethyl- <i>tert</i> -butyl ether (ETBE)	ppb	NA	NA	3	Range	ND	ND	ND	ND	ND	ND	ND	Used as gasoline additive
<i>tert</i> -Amyl-methyl ether (TAME)	ppb	NA	NA	3	Range	ND	ND	ND	ND	ND	ND	ND	Used as gasoline additive
<i>tert</i> -Butyl alcohol (TBA)	ppb	NL = 12	NA	2	Range	ND	ND	ND	ND	ND	ND	ND	MTBE breakdown product; used as gasoline additive
1,2,3-Trichloropropane (1,2,3-TCP)	ppt	NA	0.7	5	Range	NC	ND	ND	ND	NC	NC	NC	Used as cleaning and degreasing solvent
					Average	NC	ND	ND	ND	NC	NC	NC	

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Parameter	Units	State or Federal MCL	PHG	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	

DEFINITION OF TERMS AND FOOTNOTES

† 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 and/or distribution system, or plant influent as noted.

Definition of Terms

AL	Action Level	NTU	Nephelometric Turbidity Units
Average	Result based on arithmetic mean	pCi/L	picoCuries per Liter
CaCO ₃	Calcium Carbonate	PHG	Public Health Goal
CFU	Colony-Forming Units	ppb	parts per billion or micrograms per liter (µg/L)
DLR	Detection Limits for Purposes of Reporting	ppm	parts per million or milligrams per liter (mg/L)
MBAS	Methylene Blue Active Substances	ppq	parts per quadrillion or picograms per liter (pg/L)
MCL	Maximum Contaminant Level	ppt	parts per trillion or nanograms per liter (ng/L)
MCLG	Maximum Contaminant Level Goal	Range	Results based minimum and maximum values
MFL	Million Fibers per Liter	SWRCB	State Water Resources Control Board
NA	Not Applicable	TON	Threshold Odor Number
NC	Not Collected	TT	Treatment Technique is a required process intended to reduce the level of a contaminant in drinking water
ND	Not Detected		
NL	Notification Level to SWRCB	µS/cm	microSiemen per centimeter; or micromho per centimeter (µmho/cm)

Footnotes

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| <p>(a) Data are from samples collected in 2015. Metropolitan's required triennial monitoring (2017–2019) will be performed in 2018.</p> <p>(b) Data are from samples collected in 2011 and reported once every nine-year compliance cycle until the next samples are collected.</p> <p>(c) Metropolitan's chromium VI reporting level is 0.03 ppb, which is below the state DLR of 1 ppb. Data above Metropolitan's reporting level but below the DLR are reported as ND in this report. These data are available upon request.</p> <p>(d) Metropolitan's perchlorate reporting level is 0.1 ppb, which is below the state DLR of 4 ppb. Data above Metropolitan's reporting level but below the DLR are reported as ND in this report. These data are available upon request.</p> | <p>(e) Data are from samples collected (triennially) during four consecutive quarters of monitoring in 2014 and reported for three years until the next samples are collected.</p> <p>(f) SWRCB considers 50 pCi/L to be the level of concern for beta particles.</p> <p>(g) 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 of the effluent of source water treatment.</p> <p>(h) Reporting level is 1 CFU/100 mL for total coliform and <i>E. coli</i>.</p> <p>(i) Samples were not collected directly from Castaic Lake but collected from Jensen influent per State approved monitoring plan.</p> |
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2016 Water Quality Report to Member Agencies—The Metropolitan Water District of Southern California

Parameter	Units	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	Range Average	0–100 13	0–100 10	100 100	0–31 8	100 100	
LONG TERM 2 ENHANCED SURFACE WATER TREATMENT RULE (LT2ESWTR) (a)									
<i>Cryptosporidium</i>	oocysts/ 10 L	NA	Range	ND	ND	ND	ND	ND	Human and animal fecal waste
			Average	ND	ND	ND	ND	ND	
<i>E. coli</i>	CFU/ 100 mL	NA	Range	ND–2	ND	ND–2	1–20	ND–7	Human and animal fecal waste
			Average	ND	ND	ND	4	1	
Turbidity	NTU	0.1	Range	0.38–1.6	0.34–1.8	0.73–7.4	0.22–1.1	0.47–1.4	Human and animal fecal waste
			Average	0.85	0.90	2.4	0.55	0.90	
OTHER PARAMETERS (for reference only)									
<i>Giardia</i>	cysts/ 10 L	NA	Range	ND	ND	ND	ND	ND	Human and animal fecal waste
			Average	ND	ND	ND	ND	ND	
Total Coliform Bacteria (b)	CFU/ 100 mL	NA	Range	ND–28,000	ND–30,000	28–1,900	130–4,100	19–7,200	Naturally present in the environment
			Median	630	600	180	340	440	
<i>E. coli</i> (b)	CFU/ 100 mL	NA	Range	ND–1	ND–1	ND–1	ND–3	ND–6	Human and animal fecal waste
			Median	ND	ND	ND	1	ND	
Alkalinity (as CaCO ₃)	ppm	NA	Range	81–132	81–132	86–97	112–132	55–86	
			Highest RAA	128	129	94	127	85	
Aluminum	ppb	50	Range	ND	ND	99	93	ND	Residue from water treatment process; natural deposits erosion
			Average	ND	ND	99	93	ND	
Antimony	ppb	6	Range	ND	ND	ND	ND	ND	Petroleum refinery discharges; fire retardants; solder; electronics
			Average	ND	ND	ND	ND	ND	
Arsenic	ppb	2	Range	2.2	2.2	4.8	ND	4.9	Natural deposits erosion, glass and electronics production wastes
			Average	2.2	2.2	4.8	ND	4.9	
Barium	ppb	100	Range	141	142	ND	132	ND	Oil and metal refineries discharges; natural deposits erosion
			Average	141	142	ND	132	ND	
Beryllium	ppb	1	Range	ND	ND	ND	ND	ND	Discharge from metal refineries, aerospace, and defense industries
			Average	ND	ND	ND	ND	ND	
Boron	ppb	100	Range	140	140	270	140	230	Runoff/leaching from natural deposits; industrial wastes
			Average	140	140	270	140	230	
Cadmium	ppb	1	Range	ND	ND	ND	ND	ND	Internal corrosion of galvanized pipes; natural deposits erosion
			Average	ND	ND	ND	ND	ND	
Chromium	ppb	10	Range	ND	ND	ND	ND	ND	Discharge from steel and pulp mills; natural deposits erosion
			Average	ND	ND	ND	ND	ND	
Chromium VI (c)	ppb	1	Range	ND	ND	ND	ND	ND	Runoff/leaching from natural deposits; discharge from industrial waste factories
			Average	ND	ND	ND	ND	ND	
Copper	ppm	0.05	Range	ND	ND	ND	ND	ND	Internal corrosion of household pipes; natural deposits erosion
			Average	ND	ND	ND	ND	ND	
Fluoride (naturally-occurring)	ppm	0.1	Range	0.2–0.4	0.2–0.4	0.2	0.2–0.4	0.1–0.2	Erosion of natural deposits; discharge from fertilizer and aluminum factories
			Average	0.3	0.3	0.2	0.3	0.1	
Hardness (as CaCO ₃)	ppm	NA	Range	109–314	112–320	124–132	234–346	99	
			Average	282	280	128	284	64–124	
Iron	ppb	100	Range	ND	ND	ND	ND	ND	Leaching from natural deposits; industrial wastes
			Average	ND	ND	ND	ND	ND	
Lead	ppb	5	Range	ND	ND	ND	ND	ND	House pipes internal corrosion; erosion of natural deposits
			Average	ND	ND	ND	ND	ND	
Manganese	ppb	20	Range	ND	ND	ND	ND	ND	Leaching from natural deposits
			Average	ND	ND	ND	ND	ND	

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Parameter	Units	State DLR	Range Average	Treatment Plant Influent ‡					Major Sources in Drinking Water
				Weymouth Plant	Diemer Plant	Jensen Plant	Skinner Plant	Mills Plant	
Mercury	ppb	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Erosion of natural deposits; factory discharge; landfill runoff
Nickel	ppb	10	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Erosion of natural deposits; discharge from metal factories
Perchlorate (d)	ppb	4	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Industrial waste discharge
pH	pH Units	NA	Range Average	7.9–8.8 8.2	7.9–8.8 8.2	7.1–8.8 7.6	8.0–8.5 8.3	7.–8.5 8.0	
Selenium	ppb	5	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Refineries, mines, and chemical waste discharge; runoff from livestock lots
Silver	ppb	10	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Industrial discharges
Specific Conductance	µS/cm	NA	Range Average	NC NC	NC NC	582–684 644	876–1,052 964	368–668 552	Substances that form ions in water; seawater influence
Thallium	ppb	1	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Leaching from ore processing; electronics factory discharge
Total Organic Carbon (TOC)	ppm	0.30	Range Highest RAA	2.9–3.5 3.1	2.9–3.4 3.1	2.3–3.7 2.9	2.8–3.5 3.1	2.7–4.8 3.8	Various natural and man-made sources
Turbidity	NTU	0.1	Range Average	0.38–2.7 0.99	0.36–2.8 0.97	0.73–7.3 2.0	0.18–1.4 0.54	0.48–5.3 0.94	Soil runoff
Vanadium	ppb	3	Range Average	ND ND	ND ND	7.4 7.4	ND ND	9.3 9.3	Naturally-occurring; industrial waste discharge
Zinc	ppm	0.05	Range Average	ND ND	ND ND	ND ND	ND ND	ND ND	Runoff/leaching from natural deposits; industrial wastes

DEFINITION OF TERMS AND FOOTNOTES

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Definition of Terms

AL	Action Level	NTU	Nephelometric Turbidity Units
Average	Result based on arithmetic mean	ppb	parts per billion or micrograms per liter (µg/L)
CaCO ₃	Calcium Carbonate	ppm	parts per million or milligrams per liter (mg/L)
CFU	Colony-Forming Units	RAA	Running Annual Average; highest RAA is the highest of all Running Annual Averages calculated as average of the all samples collected within a 12-month period
DLR	Detection Limits for Purposes of Reporting	Range	Results based on minimum and maximum values
NA	Not Applicable	µS/cm	microSiemen per centimeter; or micromho per centimeter (µmho/cm)
NC	Not Collected		
ND	Not Detected		

Footnotes

- (a) Data are from samples collected during the second round of LT2ESWTR required monitoring of *Cryptosporidium* and *E. coli* in the plant influent.
- (b) Reporting level is 1 CFU/100 mL for total coliform and *E. coli*. Values are based on monthly median per State guidelines and recommendations.
- (c) Metropolitan's chromium VI reporting level is 0.03 ppb, which is below the state DLR of 1 ppb. Data above Metropolitan's reporting level but below the DLR are reported as ND in this report. These data are available upon request.
- (d) Metropolitan's perchlorate reporting level is 0.1 ppb, which is below the state DLR of 4 ppb. Data above Metropolitan's reporting level but below the DLR are reported as ND in this report. These data are available upon request.