

**ANNUAL DRINKING WATER
QUALITY REPORT**

Covering the reporting period
of January - December 2018


Water Quality Excellence

**20
19**

Metropolitan's water quality
is equal to or better than
what is required to safeguard
public health.



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA



Metropolitan is a regional wholesaler that provides water for 26 member public agencies to deliver—either directly or through their sub-agencies—to nearly 19 million people living in Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura counties. The district imports water from the Colorado River and Northern California to supplement local supplies, and helps its members develop increased water conservation, recycling, storage and other resource-management programs.

Colorado River water is conveyed via Metropolitan's 242-mile Colorado River Aqueduct from Lake Havasu on the California-Arizona border, to Lake Mathews near Riverside. Water supplies from Northern California are released from Lake Oroville and drawn from the crossroads of the Sacramento and San Joaquin rivers. They are transported in the State Water Project's 444-mile California Aqueduct and serve urban and agricultural customers in the San Francisco Bay Area, as well as Central and Southern California.

Frequent sampling helps protect water quality at Diamond Valley Lake, Metropolitan's largest reservoir.



A LETTER FROM THE GENERAL MANAGER

On behalf of the Metropolitan Water District of Southern California, I am pleased to present this Annual Drinking Water Quality Report, which provides a summary of water quality and monitoring data for 2018.

To help ensure the delivery of a safe and reliable water supply to the nearly 19 million people in its service area, Metropolitan tests its water for almost 400 constituents and performs nearly 250,000 water quality tests annually on samples gathered throughout its vast distribution system. Analyses of these samples are undertaken at Metropolitan's Water Quality Laboratory.

Metropolitan has been a national leader in providing safe drinking water that meets increasingly stringent standards. Cyanotoxins (produced by cyanobacteria) were an emerging nationwide issue. Although tests confirmed elevated levels of cyanotoxins at Diamond Valley Lake in 2018, the quality of Metropolitan's drinking-water supply remained unaffected. Metropolitan's Water Quality Laboratory in La Verne and smaller laboratories at the five water treatment plants received high marks in a comprehensive audit conducted under the state's Environmental Laboratory Accreditation Program. Metropolitan also worked on a testing and monitoring plan for the Regional Recycled Water Advanced Purification Center, a demonstration facility that will take cleaned wastewater from the Sanitation Districts of Los Angeles County's Joint Water Pollution Control Plant in Carson and apply a rigorous purification process to ensure the water is safe to reuse in the future.

A core feature of this report is a detailed table that begins on page 10, which illustrates monitoring results. Additionally, a Readers' Guide is included to help explain the data reported. To learn about other water quality and supply issues, visit Metropolitan's website at mwdh2o.com and go to the "About Your Water" section. You may also contact Dr. Mic Stewart, Metropolitan's manager of water quality, at (213)217-5696 or mstewart@mwdh2o.com.

I trust you will find this report to be informative.

Sincerely,

Jeffrey Kightlinger
GENERAL MANAGER



DRINKING WATER AND YOUR HEALTH

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by visiting the U.S. Environmental Protection Agency's website at www.epa.gov/safewater.

Sedimentation basins, like the one shown here at Joseph Jensen Water Treatment Plant, are a key part of the water treatment process.

B
Boron

F⁻
Fluoride

NO₃⁻
Nitrate

Color

Mg
Magnesium

Ca
Calcium

Turbidity

Total
Dissolved
Solids
(TDS)

K
Potassium

Na
Sodium

SO₄²⁻
Sulfate

Threshold
Odor
Number
(TON)

CONTAMINANTS THAT MAY BE PRESENT

Water agencies are required to use the following language to discuss the source of contaminants that may reasonably be expected to be found in drinking water, including tap water and bottled water.

Contaminants that may be present in source water include:

MICROBIAL CONTAMINANTS, such as viruses and bacteria, that may come from wastewater treatment plants, septic systems, agricultural livestock operations and wildlife

INORGANIC CONTAMINANTS, such as salts and metals, that can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming



Salt (total dissolved solids): A perennial challenge.

PESTICIDES AND HERBICIDES that may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses



Farm operations can be a source of both pesticides and organic contaminants.

ORGANIC CHEMICAL CONTAMINANTS, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural applications and septic systems



While not a source of Metropolitan supply, the Los Angeles River can generate significant stormwater runoff during wet winters.

RADIOACTIVE CONTAMINANTS that can be naturally occurring or be the result of oil and gas production and mining activities

To ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the State Water Resources Control Board, Division of Drinking Water, prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. California Department of Public Health and U.S. Food and Drug Administration regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

PROTECTING WATER QUALITY AT THE SOURCE

Source water protection is an important issue for all of California. Large water utilities are required by the Division of Drinking Water to conduct an initial source water assessment, which is then updated through watershed sanitary surveys every five years. Watershed sanitary surveys examine possible sources of drinking water contamination and recommend actions to better protect these source waters. The most recent surveys for Metropolitan's source waters are the Colorado River Watershed Sanitary Survey – 2015 Update, and the State Water Project Watershed Sanitary Survey – 2016 Update.

Source waters used by Metropolitan — the Colorado River and State Water Project — each have different water quality challenges. Both are exposed to stormwater runoff, recreational activities, wastewater discharges, wildlife, fires and other watershed-related factors that could affect water quality. Treatment to remove specific contaminants can be more expensive than measures to protect water at the source, which is why Metropolitan and other water agencies invest resources to support improved watershed protection programs.





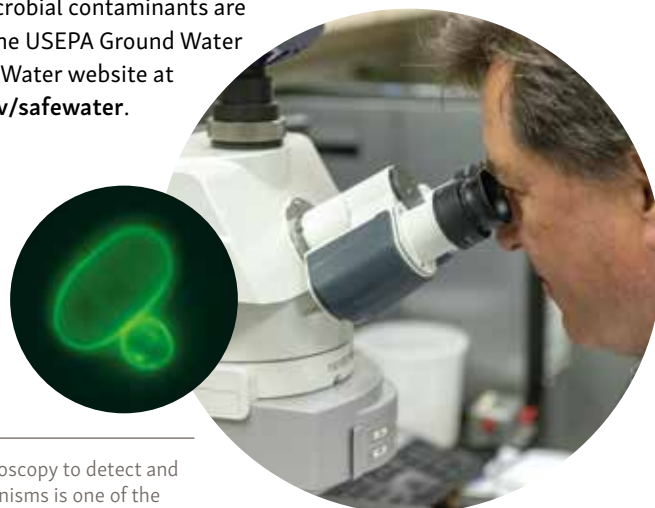
Wildfires, such as the Camp Fire seen near Lake Oroville in November 2018, can pose challenges for watersheds.



In order to protect water quality, boaters and anglers enjoying the world-class fishery at Metropolitan's Diamond Valley Lake are strictly prohibited from making body contact with the water.

HEALTH ADVISORY FOR PEOPLE WITH WEAKENED IMMUNE SYSTEMS

Although Metropolitan treats water to meet drinking water standards, some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, including those with cancer undergoing chemotherapy, persons who have undergone organ transplants or have HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These individuals should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available at the USEPA Ground Water and Drinking Water website at www.epa.gov/safewater.



Fluorescence microscopy to detect and identify microorganisms is one of the many Water Quality Lab functions.

READERS' GUIDE TO THE WATER QUALITY TABLE

The cornerstone of the water quality report is a table that lists the results of year-round monitoring for nearly 400 constituents. Only the constituents that are found in the water monitored by Metropolitan above the state detection limit for reporting are listed in the table.

Metropolitan met all primary drinking water standards in 2018.

By reading the table on Page 10 from left to right, you will learn the level of a constituent found in Metropolitan's water and how that compares with the allowable state and federal limits. You will also see the measured range and average of the constituent and where it likely originated. The questions and answers on this and the following page, lettered A through I, will explain the important elements of the table.

A. What are the sources of water Metropolitan delivers?

Metropolitan imports water from Northern California through the Sacramento-San Joaquin Delta via the State Water Project, and from the Colorado River through its Colorado River Aqueduct. The table shows the percentage of the total water delivered by Metropolitan that is from the State Water Project. The remainder is from the Colorado River.

This autosampler can confirm the presence of certain taste-and-odor constituents detected by Metropolitan's Flavor Profile Panel.



Highly-trained staff members taste and smell samples at the Water Quality Laboratory in La Verne as part of Metropolitan's Flavor Profile Analysis.



B. What is in my drinking water?

Your water may contain different types of chemicals (organic and inorganic), microscopic organisms (e.g., bacteria, algae, protozoa, and viruses) and radioactive materials (radionuclides), many of which are naturally occurring. Health agencies require monitoring for these constituents because at certain levels they could result in short- and long-term health risks. The column marked "Parameter" lists the constituents found in the water from Metropolitan's treatment plants.

C. How are constituents reported?

"Units" describe how a constituent is reported. Usually constituent levels are measured in extremely tiny quantities such as parts per million, parts per billion and, in some cases, parts per trillion. Even small



concentrations of certain constituents can be a health concern. That is why regulatory standards are set at extremely low levels for certain constituents.

D. What are the maximum allowed levels for constituents in drinking water?

Regulatory agencies have maximum contaminant levels (MCLs) for constituents so that drinking water is safe and looks, tastes and smells good. A few constituents have the letters “TT” (treatment technique) in the MCL column because they do not have a numerical MCL. Instead, they have certain treatment requirements that have to be met to reduce their levels in drinking water. One of the constituents, total chlorine residual, has an MRDL (maximum residual disinfectant level) instead of an MCL.

The MRDL is the level of a disinfectant added for water treatment that may not be exceeded at the consumer’s tap. While disinfectants are necessary to kill harmful microbes, drinking water regulations protect against too much disinfectant being added. Another constituent, turbidity, has a requirement that 95 percent of the measurements taken must be below a certain number. Turbidity is a measure of the cloudiness of the water. Metropolitan monitors turbidity because it is a good indicator of the effectiveness of our filtration system.

E. Why are some of the constituents listed in the section labeled “Primary Standards” and others in the “Secondary Standards” section?

Primary standards are developed for the purpose of protecting the public from possible health risks associated with exposure to health-compromising constituents. In general, no health hazard is reasonably expected to occur when levels of a constituent are below a primary MCL.

Constituents that are grouped under the secondary standards section can affect the aesthetics (e.g., appearance, taste and smell) of water. These substances are not reasonably expected to have any potential health-related impacts unless they also have a primary standard. Some constituents (e.g., aluminum) have two different MCLs, one to protect against health-related impacts, and another to protect against non-health-related impacts.

F. What are Public Health Goals (PHGs) and Maximum Contaminant Level Goals (MCLGs)?

PHGs and MCLGs are targets or goals set by regulatory agencies for the water industry. They define a constituent level in the water that does not pose any known or expected risk to health. Often, it is not possible to remove or reduce constituents to the level of PHGs and MCLGs because it is technologically impossible or the cost for treatment is so expensive that it would make tap water unaffordable. That is why PHGs and MCLGs are considered goals to work toward, and not realistic standards that can be enforced. Similar goals exist for Maximum Residual Disinfectant Level Goals (see MRDLG, page 11, Abbreviations and Definitions).

G. How do I know how much of a constituent is in my water and if it is at a level that is safe?

With a few exceptions, regulatory requirements are considered satisfied if the average amount of a constituent found in tap water over the course of a year is no greater than the MCL. Some constituents do have special rules, described in the footnotes to the water quality table. These constituents do not have a numerical MCL, but instead a required treatment technique that when satisfied is listed in the column for the treatment plant effluent and distribution system (Column “H” of the table). The highest and lowest levels measured over a year are shown in the range. Requirements for safety, appearance, taste and smell are based on the average levels recorded and not the range.

Water agencies have specific procedures to follow if a constituent is found at levels higher than the MCL and considered a potential threat to public health. Information is shared immediately with the regulatory agencies. The regulatory agencies will determine when and how this information is shared with the public.

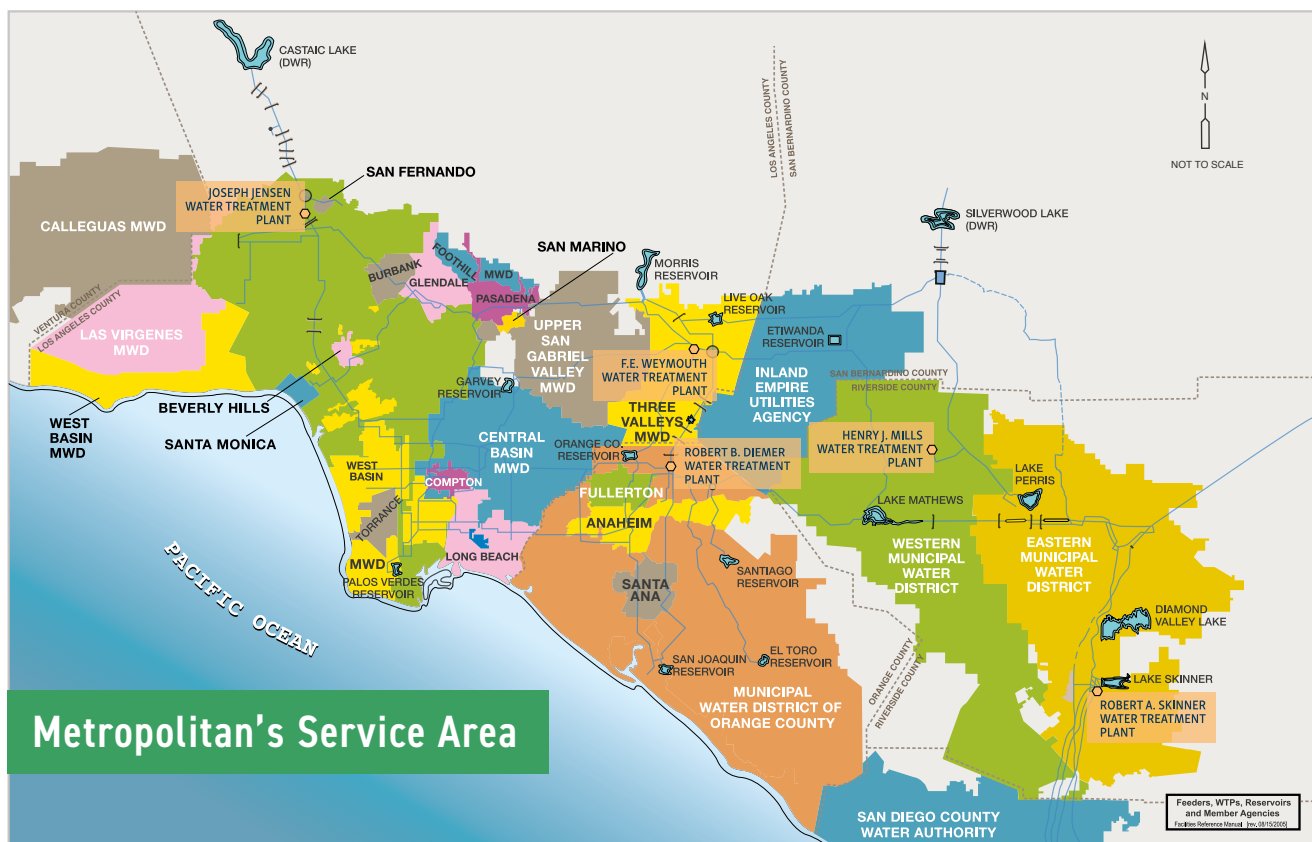
H. What are the areas served by each of Metropolitan’s treatment plants and its distribution system?

Metropolitan operates five water treatment plants, and the monitoring results for the supplies delivered by each

of the plants are listed. Typically, the F.E. Weymouth Water Treatment Plant serves parts of Los Angeles County, the San Gabriel Valley and areas of Orange County. The Robert B. Diemer Water Treatment Plant also provides treated water to areas of Orange County and coastal Los Angeles. The Joseph Jensen Water Treatment Plant supplements local water supplies in the San Fernando Valley, Ventura County and central Los Angeles. The Robert A. Skinner Water Treatment Plant serves western Riverside County, Moreno Valley and San Diego County. Finally, the Henry J. Mills Water Treatment Plant also serves western Riverside County and Moreno Valley.

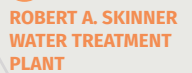
I. How do constituents get into the water supply?

The most likely source for each constituent is listed in the last column of the table. Some constituents are natural and come from the environment, others come from cities and farms, and some result from the water disinfection process itself. Some chemicals have found their way into California’s water supplies, making water treatment more difficult. Certain industrial processes — like dry cleaning, fireworks and rocket fuel manufacturing — have left constituents in the environment, as has the use of certain fertilizers and pesticides. Many of these chemicals have since been banned from use.



Metropolitan's five water treatment plants serve a six-county area with a combined capacity of more than 2 billion gallons per day.

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2018 WATER QUALITY TABLE

	B	C	D	F	G	H					I
	Parameter	Units	State (Federal) MCL	PHG	Range Average	Diemer Plant	Jensen Plant	Mills Plant	Skinner Plant	Weymouth Plant	Major Sources in Drinking Water
A	Percent State Water Project	%	NA	NA	Range Average	0–96 34	100	100	0–84 34	0–100 36	NA
E	PRIMARY STANDARDS - Mandatory Health-Related Standards										
	CLARITY										
	Combined Filter Effluent (CFE) Turbidity ^a	NTU %	TT	NA	Highest % ≤ 0.3	0.07 100	0.06 100	0.08 100	0.08 100	0.06 100	Soil runoff
	MICROBIOLOGICAL ^b										
	Total Coliform Bacteria ^c	% Positive Monthly Samples	5.0 (TT)	MCLG = 0	Range Average	Distribution Systemwide: 0-0.3 Distribution Systemwide: 0.1					Naturally present in the environment
	Heterotrophic Plate Count (HPC) Bacteria ^d	CFU/mL	TT	NA	Range Median	ND–1 ND	ND	ND–1 ND	ND	ND–1 ND	Naturally present in the environment
	Giardia ^e	cysts/200 L	TT	MCLG = 0	Range Average	ND	ND	ND	ND–1 ND	ND	Human and animal fecal waste
	INORGANIC CHEMICALS										
	Aluminum	ppb	1,000	600	Range Highest RAA	ND–310 124	ND–75 ND	ND–120 58	ND–100 51	ND–220 105	Residue from water treatment process; natural deposits erosion
	Barium	ppb	1,000	2,000	Range Average	117	ND	ND	ND	118	Oil and metal refineries discharge; natural deposits erosion
	Fluoride ^f	ppm	2.0	1	Range	0.6–0.9	0.4–0.8	0.6–0.9	0.6–0.9	0.6–0.9	Water additive for dental health
					Average	Distribution Systemwide: 0.4-0.9					
						0.7	0.7	0.7	0.7	0.7	
						Distribution Systemwide: 0.7					
	Nitrate (as Nitrogen)	ppm	10	10	Range Average	ND	0.5	0.6	ND	ND	Runoff and leaching from fertilizer use; sewage; natural deposits erosion
	RADIONUCLIDES ^g										
	Gross Alpha Particle Activity	pCi/L	15	MCLG = 0	Range Average	ND	ND–3 ND	ND	ND–4 ND	ND	Erosion of natural deposits
	Gross Beta Particle Activity	pCi/L	50	MCLG = 0	Range Average	ND	ND	ND	ND–5 ND	ND	Decay of natural and man-made deposits
	Uranium	pCi/L	20	0.43	Range Average	ND	ND–1 ND	ND	ND–3 ND	ND	Erosion of natural deposits
	DISINFECTION BYPRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BYPRODUCT PRECURSORS ^h										
	Total Trihalomethanes (TTHM) (Plant Core Locations and Distribution System)	ppb	80	NA	Range	20–25	11–28	16–32	15–35	21–30	Byproduct of drinking water chlorination
					Highest LRAA	Distribution Systemwide: 11-35					
						23	23	25	24	34	
						Distribution Systemwide: 38					
	Sum of Five Haloacetic Acids (HAA5) (Plant Core Locations and Distribution System)	ppb	60	NA	Range	ND–7.2	1.5–5.0	3.4–21	1.2–18	1.8–9.5	Byproduct of drinking water chlorination
Highest LRAA					Distribution Systemwide: ND-21						
					5.8	6.0	9.4	8.6	16		
					Distribution Systemwide: 17						
Bromate ⁱ	ppb	10	0.1	Range	ND–4.7	ND–6.4	ND–10	ND–5.9	ND–10	Byproduct of drinking water ozonation	
				Highest RAA	2.0	5.2	3.7	3.7	5.0		
Total Chlorine Residual	ppm	MRDL=4.0	MRDLG=4.0	Range Highest RAA	Distribution Systemwide: 1.4-2.9 Distribution Systemwide: 2.4					Drinking water disinfectant added for treatment	
Total Organic Carbon (TOC)	ppm	TT	NA	Range Highest RAA	2.1–2.7 2.4	2.0–2.6 2.6	1.6–3.2 2.3	2.0–2.7 2.4	2.1–2.8 2.4	Various natural and man-made sources; TOC is a precursor for the formation of disinfection byproducts	

	B	C	D	F	G	H					I
	Parameter	Units	State (Federal) MCL	PHG	Range Average	Diemer Plant	Jensen Plant	Mills Plant	Skinner Plant	Weymouth Plant	Major Sources in Drinking Water
E	SECONDARY STANDARDS - Aesthetic Standards										
	Aluminum ^j	ppb	200	600	Range Highest RAA	ND-310 124	ND-75 ND	ND-120 58	ND-100 51	ND-220 105	Residue from water treatment process; natural deposits erosion
	Chloride	ppm	500	NA	Range Average	92-95 94	54-57 56	79-91 85	90-93 92	96-97 96	Runoff/leaching from natural deposits; seawater influence
	Color	Color Units	15	NA	Range Average	ND-1 ND	ND-1 ND	1	ND-1 ND	ND-1 ND	Naturally-occurring organic materials
	Manganese	ppb	50	NL = 500	Range Average	ND	ND	ND	22	ND	Leaching from natural deposits
	Odor Threshold ^k	TON	3	NA	Range Average	1-4 2	1-4 2	2	3	3	Naturally-occurring organic materials
	Specific Conductance	µS/cm	1,600	NA	Range Average	852-961 906	428-444 436	514-518 516	841-851 846	897-1,010 954	Substances that form ions in water; seawater influence
	Sulfate	ppm	500	NA	Range Average	178-220 199	43-46 44	34-46 40	168-175 172	190-236 213	Runoff/leaching from natural deposits; industrial wastes
	Total Dissolved Solids (TDS) ^l	ppm	1,000	NA	Range Average	523-607 565	239-244 242	272-283 278	510-526 518	553-639 596	Runoff/leaching from natural deposits; seawater influence

Abbreviations and Definitions

Average	Result based on arithmetic mean	NTU	Nephelometric Turbidity Units
CFE	Combined Filter Effluent	pCi/L	picoCuries per liter
CFU	Colony-Forming Units	PHG	Public Health Goal - The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.
HAA5	Sum of five haloacetic acids	ppb	parts per billion or micrograms per liter (µg/L)
HPC	Heterotrophic Plate Count	ppm	parts per million or milligrams per liter (mg/L)
LRAA	Locational Running Annual Average ; highest LRAA is the highest of all Locational Running Annual Averages calculated as average of all the samples collected within a 12-month period.	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.
MCL	Maximum Contaminant Level - The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.	Range	Results based on minimum and maximum values; range and average values are the same for samples collected once or twice annually.
MCLG	Maximum Contaminant Level Goal - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).	SWRCB	State Water Resources Control Board
MRDL	Maximum Residual Disinfectant Level - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.	TON	Threshold Odor Number
MRDLG	Maximum Residual Disinfectant Level Goal - The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.	TT	Treatment Technique - A required process intended to reduce the level of a contaminant in drinking water.
NA	Not Applicable	TTHM	Total Trihalomethanes
ND	Not Detected	µS/cm	microSiemen per centimeter; or micromho per centimeter (µmho/cm)
NL	Notification Level - Health-based advisory levels established by the state Division of Drinking Water for chemicals in drinking water that lack MCLs. When chemicals are found at concentrations greater than their notification levels, certain requirements and recommendations apply.	Primary Standards (Primary Drinking Water Standards) - MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.	
		Secondary Standards - Requirements that ensure the appearance, taste and smell of drinking water are acceptable.	

Footnotes

- (a) Metropolitan monitors turbidity at the CFE locations using continuous and grab samples. Turbidity, a measure of cloudiness of the water, is an indicator of treatment performance. Turbidity was in compliance with the TT primary drinking water standard and the secondary drinking water standard of less than 5 NTU.
- (b) Per the state's Surface Water Treatment Rule, treatment techniques that remove or inactivate *Giardia* cysts will also remove HPC bacteria, *Legionella*, and viruses. *Legionella* and virus monitoring is not required.
- (c) Compliance is based on at least 480 samples per month from treatment plant effluents and the distribution system.
- (d) All distribution system samples had detectable total chlorine residuals, so no HPC was required. Metropolitan monitors HPCs to ensure treatment process efficacy.
- (e) A single *Giardia* cyst was detected in one sample from the filter effluent at the Skinner water treatment plant, prior to the treated water reservoir and addition of final disinfectant. The monitoring method detects all cysts, regardless of whether they are alive or dead. The plant met all operational and regulatory requirements throughout the year, including at the time of this single sampling event, and there was no regulatory violation.
- (f) Metropolitan was in compliance with all provisions of the state's fluoridation system requirements.
- (g) Data are from samples collected in 2017. Metropolitan's required triennial monitoring (2020-2022) will be performed in 2020.
- (h) Compliance with the state and federal MCLs is based on RAA or LRAA, as appropriate. Plant core locations for TTHM and HAA5 are service connections specific to each of the treatment plant effluents.
- (i) Compliance with the state and federal bromate MCL is based on RAA. No MCL exceedance occurred in the Mills or Weymouth treatment plant effluents.
- (j) Compliance with the state MCL for aluminum is based on RAA. No secondary standard MCL exceedance occurred in the Diemer or Weymouth treatment plant effluents.
- (k) Compliance with odor threshold secondary MCL is based on RAA. Treatment plants begin quarterly monitoring if annual monitoring results are above 3.
- (l) Metropolitan's TDS compliance data are based on flow-weighted monthly composite samples reported twice per year (April and October). The 12-month statistical summary of flow-weighted data is reported in the "Other Detected Constituents That May be of Interest to Consumers."

OTHER DETECTED CONSTITUENTS THAT MAY BE OF INTEREST TO CONSUMERS

TREATMENT PLANT EFFLUENTS AND DISTRIBUTION SYSTEM									
Parameter	Units	NL	Range Average	Diemer Plant	Jensen Plant	Mills Plant	Skinner Plant	Weymouth Plant	Major Sources in Drinking Water
Alkalinity (as CaCO ₃)	ppm	NA	Range Average	99–114 106	68–76 72	66–74 70	104–109 106	107–117 112	Runoff/leaching of natural deposits; carbonate, bicarbonate, hydroxide, and occasionally borate, silicate, and phosphate
Boron	ppb	1,000	Range Average	130	140	160	120	130	Runoff/leaching from natural deposits; industrial wastes
Calcium	ppm	NA	Range Average	52–65 58	19–21 20	16–20 18	54–58 56	57–69 63	Runoff/leaching from natural deposits
Calcium Carbonate Precipitation Potential (CCPP) (as CaCO ₃) ^a	ppm	NA	Range Average	1.6–9.2 5.3	1.0–1.9 1.4	0.4–1.5 1.1	0.8–11 6.0	0.9–9.1 5.2	Elemental balance in water; affected by temperature, other factors
Chlorate	ppb	800	Range Average	30	29	ND	43	32	Byproduct of drinking water chlorination; industrial processes
Corrosivity as Aggressiveness Index ^b	—	NA	Range Average	12.2–12.4 12.3	12.0	11.9–12.1 12.0	12.3–12.4 12.4	12.2–12.5 12.4	Elemental balance in water; affected by temperature, other factors
Corrosivity as Saturation Index ^c	—	NA	Range Average	0.47–0.51 0.49	0.26–0.28 0.27	0.15–0.31 0.23	0.54–0.59 0.56	0.43–0.57 0.50	Elemental balance in water; affected by temperature, other factors
Hardness (as CaCO ₃)	ppm	NA	Range Average	219–262 240	84–94 89	86–98 92	218–238 228	233–274 254	Runoff/leaching from natural deposits; sum of polyvalent cations, generally magnesium and calcium present in the water
Magnesium	ppm	NA	Range Average	21–25 23	9.5–9.9 9.7	11–12 12	21–22 22	23–26 24	Runoff/leaching from natural deposits
N-Nitrosodimethylamine (NDMA)	ppt	10 PHG=3	Range Range	ND	ND	ND	4.1	2.2	Byproduct of drinking water chloramination; industrial processes
				Distribution Systemwide: ND-3.2					
pH	pH Units	NA	Range Average	8.1	8.4–8.5 8.5	8.4–8.5 8.5	8.1–8.2 8.2	8.1–8.2 8.1	NA
Potassium	ppm	NA	Range Average	4.0–4.8 4.4	2.4–2.5 2.4	2.8–2.9 2.8	4.0–4.5 4.2	4.4–5.0 4.7	Salt present in the water; naturally occurring
Sodium	ppm	NA	Range Average	86–98 92	45–46 46	62–63 62	85–92 88	94–103 98	Salt present in the water; naturally occurring
Sum of Five Haloacetic Acids (HAA5) ^d	ppb	MCL = 60	Range Average	2.4–4.1 3.1	2.6–3.9 3.2	4.3–5.9 4.9	4.9–8.9 6.9	1.9–5.5 3.6	Byproduct of drinking water chlorination
Total Dissolved Solids (TDS) ^e	ppm	MCL = 1,000	Range Average	325–647 516	236–254 243	228–302 272	323–627 504	283–650 514	Runoff/leaching from natural deposits
Total Trihalomethanes (TTHM) ^d	ppb	MCL = 80	Range Average	15–24 19	7.7–46 15	15–61 25	13–41 21	12–58 23	Byproduct of drinking water chlorination

Abbreviations and Definitions

(please refer to the main table for other abbreviations and definitions)

AI	Aggressiveness Index
CaCO ₃	Calcium Carbonate
CCPP	Calcium Carbonate Precipitation Potential
NL	Notification Level - The level at which notification of the public water system to SWRCB is required.
ppt	parts per trillion or nanograms per liter (ng/L)
SI	Saturation Index

Footnotes

- Positive CCPP = non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative CCPP = corrosive; tendency to dissolve calcium carbonate. Reference: *Standard Methods (SM2330)*
- 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)*
- Positive SI = non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative SI = corrosive; tendency to dissolve calcium carbonate. Reference: *Standard Methods (SM2330)*
- HAA5 and TTHM noncompliance samples collected at treatment plant effluents.
- Statistical summary represents 12 months of flow-weighted data and values may be different than the TDS reported to meet compliance with secondary drinking water regulations.



Metropolitan's Water Quality Laboratory in La Verne has a national reputation for excellence.

ADDITIONAL INFORMATION

Additional information about drinking water safety and standards can be found at:

STATE WATER RESOURCES CONTROL BOARD DIVISION OF DRINKING WATER

1001 I Street
Sacramento, CA 95814
(916) 449-5577
www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Chemicalcontaminants.html

U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF GROUND WATER AND DRINKING WATER

1200 Pennsylvania Avenue, NW
Mail Code 4606M
Washington, DC 20460-0003
<https://www.epa.gov/ground-water-and-drinking-water>

CONSUMER INFORMATION

www.epa.gov/ccr

INFORMATION ON HOW DRINKING WATER STANDARDS ARE ESTABLISHED

<https://www.epa.gov/dwstandardsregulations>

ANNUAL DRINKING WATER QUALITY REPORT

Covering the reporting period of January - December 2018

This report is very important to read or have translated. The sentences below reflect the diversity of Metropolitan's service area and read, "This report contains important information about your drinking water. Translate it, or speak with someone who understands it."

Arabic

هامة عن نوعية مياه الشرب. يرجى ترجمته أو مناقشته مع شخص يفهمه جيداً. يحتوي هذا التقرير على معلومات

Chinese

这份报告中含有关于饮用水的重要信息。请您找人翻译，或者请能看得懂这份报告的朋友给您解释一下。

French

Cé rapport contient des information importantes concernant votre eau potable. Veuillez traduire, ou parlez avec quelqu'un qui peut le comprendre.

German

Dieser Bericht enthält wichtige Informationen über die Wasserqualität in Ihrer Umgebung. Der Bericht sollte entweder offiziell übersetzt werden, oder sprechen Sie mit Freunden oder Bekannten, die gute Englischkenntnisse besitzen.

Greek

Αυτή η αναφορά περιέχει σημαντικές πληροφορίες σχετικά με το πόσιμο νερό. Μεταφράστε την ή ζητήστε να σας την εξηγήσει κάποιος που την κατανοεί.

Hindi

इस रिपोर्ट में पीने के पानी के बारे में महत्वपूर्ण जानकारी दी गई है। इसका अनुवाद करें, या किसी ऐसे व्यक्ति से बात करें, जो इसे समझता हो।

Japanese

この資料には、あなたの飲料水についての大切な情報が書かれています。内容をよく理解するために、日本語に翻訳して読むか説明を受けてください。

Khmer

របាយការណ៍នេះមានព័ត៌មានសំខាន់អំពីទឹកសម្រាប់ផឹក។ សូមបកប្រែ ឬពិគ្រោះជាមួយអ្នកដែល មើលយល់របាយការណ៍នេះ។

Korean

이 보고서에는 귀하가 거주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다. 이 보고서를 번역하시거나, 내용을 이해하는 분과 상의하십시오.

Polish

Sprawozdanie zawiera ważne informacje na temat jakości wody w Twojej miejscowości. Poproś kogoś o przelustrnienie go lub porozmawiaj z osobą która je dobrze rozumie.

Russian

Отчет содержит важную информацию о питьевой воде. Переведите его или попросите кого-нибудь, кто хорошо понимает текст, объяснить вам его содержание.

Spanish

Este informe contiene información importante acerca de su agua potable. Tradúzcalo o hable con alguien que lo entienda.

Tagalog

Ang ulat na ito ay naglalaman ng mahahalagang impormasyon tungkol sa pag-inom ng tubig. Mangyaring ipasalin ito, o kumausap sa isang taong nakakaintindi nito.

Vietnamese

Bản báo cáo này có chứa các thông tin quan trọng về nước uống. Hãy dịch, hoặc nói chuyện với ai đó hiểu bản báo cáo này.



THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

Metropolitan's Board of Directors typically meets on the second Tuesday of each month at the district's downtown Los Angeles headquarters building at 700 N. Alameda Street, Los Angeles, adjacent to historic Union Station. More information is available at www.mwdh2o.com.

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