Metropolitan’s water quality is equal to or better than what is required to safeguard public health.
Metropolitan is a regional wholesaler that provides water for 26 member public agencies to deliver—either directly or through their sub-agencies—to 19 million people living in Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura counties. Metropolitan 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.
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 2019.

As I submit this report, the COVID-19 pandemic has demonstrated the importance of delivering a safe and reliable water supply to the 19 million people in Metropolitan’s service area – water that can be used for crucial life-saving functions. To that end, Metropolitan tests its water for over 400 constituents and performs nearly 200,000 water quality tests annually on samples gathered throughout its vast distribution system. Metropolitan’s Water Quality Laboratory analyzes these samples to ensure that Metropolitan’s delivered water meets or surpasses all state and federal drinking water standards. A core feature of this report is a detailed table that begins on page 10 and provides testing results. Additionally, a Reader’s Guide helps explain the data reported.

Metropolitan remains a national leader in providing safe drinking water that meets increasingly stringent standards. Per- and polyfluoroalkyl substances (PFAS) were a growing nationwide issue in 2019. This family of over 7,800 chemicals has been used in products that resist or repel heat, oil, stains and water. The two types of PFAS of greatest concern in the U.S., perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), have not been detected in Metropolitan’s imported or treated water supplies. Metropolitan has recently detected low levels of perfluorohexanoic acid (PFHxA) in our source and treated waters, but this PFAS is not acutely toxic or carcinogenic and is not currently regulated in California or at the federal level.

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/ground-water-and-drinking-water.

Chemistry staff examine analytical standards to ensure they meet specifications.
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 sources of drinking 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.

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

**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.

**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.
Per- and polyfluoroalkyl substances (PFAS) are a family of more than 7,800 chemicals widely used in products that resist heat, oils, stains and water. They are not currently regulated in California or at the federal level. Two types of PFAS – perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) – are the most commonly used, studied and regulated PFAS in the U.S. The health effects of PFOA and PFOS continue to be studied. According to the International Agency for Research on Cancer,

**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.

**PFAS**

Per- and polyfluoroalkyl substances (PFAS) are a family of more than 7,800 chemicals widely used in products that resist heat, oils, stains and water. They are not currently regulated in California or at the federal level. Two types of PFAS – perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) – are the most commonly used, studied and regulated PFAS in the U.S.

The health effects of PFOA and PFOS continue to be studied. According to the International Agency for Research on Cancer,

**Instruments like this automated extractor help look for PFAS in water samples in ever-smaller amounts, making it possible to detect compounds in the parts-per-trillion range.**
PFOA is a possible human carcinogen. High concentrations in the body of PFOA and PFOS have also been linked to high cholesterol, thyroid and liver disease, lower birth rates, decreased response to vaccines, decreased fertility and pregnancy-induced hypertension.

After being generated elsewhere, PFAS have entered the water cycle through landfills; sites where the chemicals were used in manufacturing; treated wastewater discharge; and facilities where the chemicals were used in firefighting training, like airports and military bases.

Metropolitan has been monitoring its water supplies for the presence of PFAS since 2013. The two types of PFAS of greatest concern in the U.S., PFOA and PFOS, have not been detected in Metropolitan’s imported or treated water supplies.

Metropolitan has recently detected in its supplies low levels of perfluorohexanoic acid (PFHxA), which is not acutely toxic or carcinogenic. No other PFAS have been detected in Metropolitan supplies. See the table on page 12 for results.

PFOA and PFOS have, however, been detected in groundwater wells in the region. Metropolitan is working with its member agencies to build understanding about how PFAS have affected the region’s water supplies to ensure Southern California continues to have safe, reliable water.

State and federal lawmakers and regulators are moving toward stricter standards and guidelines for the detection, public notification and removal of PFOA and PFOS in drinking water. Other PFAS chemicals may be considered for future regulations.

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. The USEPA and Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by microbial contaminants can be found at their respective websites, www.epa.gov/ground-water-and-drinking-water and www.cdc.gov/healthywater/drinking/public/water_diseases.html

This automated platemaker prepares stacks of media plates used for coliform bacteria detection.
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 2019.
By reading the table on pages 10 through 12 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. The letters correspond to row and column headings on the water quality 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.

**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 low 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.

» Water Quality chemists teaming up to test water samples for emerging constituents of concern.
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.
### 2019 Water Quality Table

<table>
<thead>
<tr>
<th>B</th>
<th>C</th>
<th>D</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parameter</td>
<td>Units</td>
<td>State and Federal MCL</td>
<td>PHG</td>
<td>Treatment Plant Effluents and Distribution System</td>
<td>Diemer Plant</td>
<td>Jensen Plant</td>
</tr>
<tr>
<td>---</td>
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<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td><strong>Percent State Water Project</strong></td>
<td>%</td>
<td>NA</td>
<td>NA</td>
<td>Range Average</td>
<td>Diemer</td>
<td>Jensen</td>
</tr>
<tr>
<td><strong>PRIMARIES STANDARDS - Mandatory Health-Related Standards</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>CLARITY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined Filter Effluent (CFE) Turbidity</td>
<td>NTU</td>
<td>TT</td>
<td>NA</td>
<td>Highest % ≤ 0.3</td>
<td>0.05</td>
<td>0.06</td>
</tr>
<tr>
<td><strong>MICROBIOLOGICAL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Coliform Bacteria</td>
<td>% Positive Monthly Samples</td>
<td>5.0</td>
<td>MCLG = 0</td>
<td>Range Average</td>
<td>Distribution Systemwide: 0.0 – 0.2</td>
<td>Distribution Systemwide: 0.0</td>
</tr>
<tr>
<td>Heterotrophic Plate Count (HPC) Bacteria</td>
<td>CFU/mL</td>
<td>TT</td>
<td>NA</td>
<td>Range Median</td>
<td>ND - 1</td>
<td>ND - 64</td>
</tr>
<tr>
<td><strong>ORGANIC CHEMICALS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toluene</td>
<td>ppb</td>
<td>150</td>
<td>150</td>
<td>Range Average</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td><strong>INORGANIC CHEMICALS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aluminum</td>
<td>ppb</td>
<td>1,000</td>
<td>600</td>
<td>Range Highest RAA</td>
<td>ND - 65</td>
<td>ND - 290</td>
</tr>
<tr>
<td>Fluoride</td>
<td>ppm</td>
<td>2.0</td>
<td>1</td>
<td>Range Average</td>
<td>0.1 - 0.9</td>
<td>0.4 - 0.8</td>
</tr>
<tr>
<td>Nitrate (as Nitrogen)</td>
<td>ppm</td>
<td>10</td>
<td>10</td>
<td>Range Average</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td><strong>RADIONUCLIDES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross Alpha Particle Activity</td>
<td>pCi/L</td>
<td>15</td>
<td>MCLG = 0</td>
<td>Range Average</td>
<td>ND</td>
<td>ND - 3</td>
</tr>
<tr>
<td>Gross Beta Particle Activity</td>
<td>pCi/L</td>
<td>50</td>
<td>MCLG = 0</td>
<td>Range Average</td>
<td>ND</td>
<td>ND</td>
</tr>
<tr>
<td>Uranium</td>
<td>pCi/L</td>
<td>20</td>
<td>0.43</td>
<td>Range Average</td>
<td>ND</td>
<td>ND - 1</td>
</tr>
<tr>
<td><strong>DISINFECTION BYPRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BYPRODUCT PRECURSORS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Trihalomethanes (TTHM) (Plant Core Locations and Distribution System)</td>
<td>ppb</td>
<td>80</td>
<td>NA</td>
<td>Range Highest RAA</td>
<td>16 - 30</td>
<td>12 - 21</td>
</tr>
<tr>
<td>Sum of Five Haloacetic Acids (HAAS) (Plant Core Locations and Distribution System)</td>
<td>ppb</td>
<td>60</td>
<td>NA</td>
<td>Range Highest RAA</td>
<td>2.2 - 8.9</td>
<td>2.0 - 5.0</td>
</tr>
<tr>
<td>Bromate</td>
<td>ppb</td>
<td>10</td>
<td>0.1</td>
<td>Range Highest RAA</td>
<td>ND - 5.9</td>
<td>1.6 - 8.4</td>
</tr>
<tr>
<td>Total Chlorine Residual</td>
<td>ppm</td>
<td>MRDL=4.0</td>
<td>MRDLG=4.0</td>
<td>Range Highest RAA</td>
<td>Distribution Systemwide: 0.5 – 2.9</td>
<td>Distribution Systemwide: 2.4</td>
</tr>
<tr>
<td>Total Organic Carbon (TOC)</td>
<td>ppm</td>
<td>TT</td>
<td>NA</td>
<td>Range Highest RAA</td>
<td>1.8 - 2.6</td>
<td>2.0 - 2.5</td>
</tr>
</tbody>
</table>
**SECONDARY STANDARDS - Aesthetic Standards**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Range Average</th>
<th>Highest RAA</th>
<th>Treatment Plant Effluents and Distribution System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>ppb</td>
<td>200 - 600</td>
<td>ND - 65</td>
<td>Residue from water treatment process; runoff/leaching from natural deposits</td>
</tr>
<tr>
<td>Chloride</td>
<td>ppm</td>
<td>500 - NA</td>
<td>53 - 58</td>
<td>Runoff/leaching from natural deposits; seawater influence</td>
</tr>
<tr>
<td>Color</td>
<td>Color</td>
<td>15 - NA</td>
<td>ND - 1</td>
<td>Naturally-occurring organic materials</td>
</tr>
<tr>
<td>Iron</td>
<td>ppb</td>
<td>300 - NA</td>
<td>ND</td>
<td>Leaching from natural deposits; industrial wastes</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>TON</td>
<td>3 - NA</td>
<td>ND - 1</td>
<td>Naturally-occurring organic materials</td>
</tr>
<tr>
<td>Specific Conductance</td>
<td>µS/cm</td>
<td>1,600 - NA</td>
<td>508 - 514</td>
<td>Substances that form ions in water; seawater influence</td>
</tr>
<tr>
<td>Sulfate</td>
<td>ppm</td>
<td>500 - NA</td>
<td>89 - 93</td>
<td>Runoff/leaching from natural deposits; industrial wastes</td>
</tr>
<tr>
<td>Total Dissolved Solids (TDS)</td>
<td>ppm</td>
<td>1,000 - NA</td>
<td>296 - 312</td>
<td>Runoff/leaching from natural deposits</td>
</tr>
</tbody>
</table>

**Abbreviations and Definitions**

- **CFE**: Combined Filter Effluent
- **CFU**: Colony-Forming Units
- **HAAS**: Sum of five haloacetic acids
- **HPC**: Heterotrophic Plate Count
- **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.
- **MCL**: Maximum Contaminant Level - The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close as possible to the PHGs (or MCLGs) as economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.
- **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).
- **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.
- **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.
- **ND**: Not Detected
- **NTU**: Nephelometric Turbidity Units
- **ppb (picocuries per liter)**
- **ppm (parts per billion or micrograms per liter)**
- **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.
- **TDS**: Total Dissolved Solids
- **TN**: Threshold Odor Number
- **TT**: Treatment Technique - A required process intended to reduce the level of a contaminant in drinking water.

**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 monthly samples from treatment plant effluents and the distribution system.

(d) All distribution system samples had detectable total chlorine residuals, so no HPC analysis was required. Metropolitan monitors HPC bacteria to ensure treatment process efficacy.

(e) Compliance with the state MCL for aluminum is based on RAA. No secondary standard MCL exceedance occurred in the Jensen treatment plant effluent.

(f) Metropolitan was in compliance with all provisions of the state’s fluoridation system requirements. Fluoride feed systems were temporarily out of service during treatment plant shutdowns and/or maintenance work in 2019, resulting in occasional fluoride levels below 0.6 mg/L.

(g) Data are from samples collected in 2017 for the required triennial monitoring (2017-2019) until the next samples are collected.

(h) Compliance with the state and federal MCLs is based on RAA or LRAA, as appropriate. Plant core locations for TTHM and HAAS 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 Skinner treatment plant effluent.

(j) Compliance with odor threshold secondary MCL is based on RAA. Both Diemer and Jensen treatment plants returned to compliance during the first quarter of 2019 with reduced monitoring frequency from quarterly to annual.

(k) Metropolitan’s TDS compliance data are based on flow-weighted monthly composite samples collected 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”.

11
### Other Detected Constituents That May be of Interest to Consumers

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>NL</th>
<th>Range Average</th>
<th>Diemer Plant</th>
<th>Jensen Plant</th>
<th>Mills Plant</th>
<th>Skinner Plant</th>
<th>Weymouth Plant</th>
<th>Major Sources in Drinking Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkalinity (as CaCO₃)</td>
<td>ppm</td>
<td>NA</td>
<td>Range Average</td>
<td>69 - 74</td>
<td>80 - 84</td>
<td>54 - 59</td>
<td>84 - 87</td>
<td>67 - 70</td>
<td>Runoff/leaching of natural deposits; carbonate, bicarbonate, hydroxide, and occasionally borate, silicate, and phosphate</td>
</tr>
<tr>
<td>Boron</td>
<td>ppb</td>
<td>1,000</td>
<td>Range Average</td>
<td>120</td>
<td>160</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>Runoff/leaching from natural deposits; industrial wastes</td>
</tr>
<tr>
<td>Calcium</td>
<td>ppm</td>
<td>NA</td>
<td>Range Average</td>
<td>29 - 30</td>
<td>26 - 28</td>
<td>14 - 16</td>
<td>33 - 39</td>
<td>23 - 27</td>
<td>Runoff/leaching from natural deposits</td>
</tr>
<tr>
<td>Calcium Carbonate Precipitation Potential (as CaCO₃)</td>
<td>ppm</td>
<td>NA</td>
<td>Range Average</td>
<td>1.2 - 7.7</td>
<td>1.1 - 3.5</td>
<td>0.2 - 2.4</td>
<td>1.4 - 5.6</td>
<td>1.1 - 7.3</td>
<td>Element balance in water; affected by temperature, other factors</td>
</tr>
<tr>
<td>Chlorate</td>
<td>ppb</td>
<td>800</td>
<td>Range Average</td>
<td>55</td>
<td>ND</td>
<td>28</td>
<td>35</td>
<td>42</td>
<td>Byproduct of drinking water chlorination; industrial processes</td>
</tr>
<tr>
<td>Corrosivity as Aggressiveness Index</td>
<td>Al</td>
<td>NA</td>
<td>Range Average</td>
<td>12.1 - 12.2</td>
<td>12.1 - 12.3</td>
<td>11.9 - 12.0</td>
<td>12.0</td>
<td>12.1 - 12.2</td>
<td>12.1</td>
</tr>
<tr>
<td>Corrosivity as Saturation Index</td>
<td>SI</td>
<td>NA</td>
<td>Range Average</td>
<td>0.33 - 0.52</td>
<td>0.28 - 0.46</td>
<td>0.43</td>
<td>2.0 - 0.25</td>
<td>0.34 - 0.38</td>
<td>0.36</td>
</tr>
<tr>
<td>Hardness (as CaCO₃)</td>
<td>ppm</td>
<td>NA</td>
<td>Range Average</td>
<td>124 - 130</td>
<td>112 - 117</td>
<td>139 - 164</td>
<td>101 - 116</td>
<td>108</td>
<td>Runoff/leaching from natural deposits; sum of polyvalent cations, generally magnesium and calcium present in the water</td>
</tr>
<tr>
<td>Magnesium</td>
<td>ppm</td>
<td>NA</td>
<td>Range Average</td>
<td>13 - 14</td>
<td>12 - 13</td>
<td>8.0 - 8.5</td>
<td>3.0</td>
<td>11 - 12</td>
<td>Runoff/leaching from natural deposits</td>
</tr>
<tr>
<td>N-Nitrosodimethylamine (NDMA)</td>
<td>ppt</td>
<td>10 PHG=3</td>
<td>Range Average</td>
<td>ND</td>
<td>ND</td>
<td>3.9</td>
<td>3.9</td>
<td>ND</td>
<td>Byproduct of drinking water chlorination; industrial processes</td>
</tr>
<tr>
<td>Perfluorohexanoic Acid (PFHxA)</td>
<td>ppt</td>
<td>NA</td>
<td>Range Average</td>
<td>2.2 - 2.3</td>
<td>2.6</td>
<td>2.7 - 3.0</td>
<td>2.2 - 2.4</td>
<td>2.5 - 2.6</td>
<td>2.6</td>
</tr>
<tr>
<td>pH</td>
<td>pH Units</td>
<td>NA</td>
<td>Range Average</td>
<td>8.4 - 8.5</td>
<td>8.4 - 8.5</td>
<td>8.6</td>
<td>8.1 - 8.2</td>
<td>8.5</td>
<td>NA</td>
</tr>
<tr>
<td>Potassium</td>
<td>ppm</td>
<td>NA</td>
<td>Range Average</td>
<td>2.6 - 2.9</td>
<td>2.7</td>
<td>1.8 - 2.2</td>
<td>3.3 - 3.6</td>
<td>2.2 - 2.7</td>
<td>2.4</td>
</tr>
<tr>
<td>Sodium</td>
<td>ppm</td>
<td>NA</td>
<td>Range Average</td>
<td>54 - 57</td>
<td>51 - 54</td>
<td>33 - 40</td>
<td>62 - 69</td>
<td>46 - 54</td>
<td>50</td>
</tr>
<tr>
<td>Sum of Five Haloacetic Acids (HAAS)</td>
<td>ppb</td>
<td>MCL = 60</td>
<td>Range Average</td>
<td>1.0 - 3.0</td>
<td>1.5 - 4.9</td>
<td>2.4 - 6.6</td>
<td>ND - 7.1</td>
<td>ND - 6.7</td>
<td>2.8</td>
</tr>
<tr>
<td>Total Dissolved Solids (TDS)</td>
<td>ppm</td>
<td>MCL = 1,000</td>
<td>Range Average</td>
<td>279 - 611</td>
<td>257 - 289</td>
<td>163 - 292</td>
<td>314 - 574</td>
<td>246 - 606</td>
<td>352</td>
</tr>
<tr>
<td>Total Trihalomethanes (TTHM)</td>
<td>ppb</td>
<td>MCL = 80</td>
<td>Range Average</td>
<td>13 - 21</td>
<td>8.2 - 39</td>
<td>8.6 - 33</td>
<td>12 - 44</td>
<td>9.7 - 30</td>
<td>17</td>
</tr>
</tbody>
</table>

### Abbreviations and Definitions

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AI</td>
<td>Aggressiveness Index</td>
</tr>
<tr>
<td>CaCO₃</td>
<td>Calcium Carbonate</td>
</tr>
<tr>
<td>CCP</td>
<td>Carbonate Carbon Precipitation Potential</td>
</tr>
<tr>
<td>NL</td>
<td>Notification Level - The level at which notification of the public water system to the State Water Resources Control Board is required.</td>
</tr>
<tr>
<td>ppt</td>
<td>parts per trillion or nanograms per liter (ng/L)</td>
</tr>
<tr>
<td>SI</td>
<td>Saturation Index</td>
</tr>
</tbody>
</table>

### Footnotes

(a) Positive CCP = non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative CCP = corrosive; tendency to dissolve calcium carbonate. Reference: Standard Methods (SM2330)

(b) AI ≥ 12.0 = Non-aggressive water; AI 10.0–11.9 = Moderately aggressive water; AI ≤ 10.0 = Highly aggressive water. Reference: Standard Methods (SM2320)

(c) 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)

(d) Data are from two analytical methods based on EPA 537.1 and a research method for 18 different perfluoroalkyl and polyfluoroalkyl substances (PFAS) that include Perfluorohexanoic Acid (PFHxA).

(e) HAAS and TTHM noncompliance samples collected at treatment plant effluents.

(f) 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.
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

CONSUMER INFORMATION
www.epa.gov/ccr

INFORMATION ON HOW DRINKING WATER STANDARDS ARE ESTABLISHED
https://www.epa.gov/dwstandardsregulations

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
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.

Chinese
这份报告中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 σάς 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 इससे 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
សេដ្ឋកិច្ចដែលស្វែងរកនៅស្តង់ដារអាចមានព្រឹត្តិការណ៍ដ៏អក្សរច្រើន។ ប្រើប្រាស់ប្រាស់ព្រឹត្តិការណ៍ដ៏អក្សរច្រើនបានបញ្ចេញ។

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 przeliterowanie 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.