years past, the water delivered to your home meets the standards required by the state and federal regulatory agencies. In some cases, the City goes beyond what is required by testing for unregulated contaminants that may have known health risks.

**SOURCES OF SUPPLY**

Your drinking water is a blend of surface water imported by the Metropolitan Water District of Southern California (MWDSC) and local groundwater. MWDSC imported water sources are the Colorado River and the State Water Project which draws water from the Sacramento-San Joaquin Delta. Beginning in 2017, the City began to receive water from the Irvine Ranch Water District processed through the Baker Water Treatment Plant as an additional source of water to further ensure a constant water supply to its customers.

**INFORMATION ABOUT DRINKING WATER CONTAMINANTS**

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 land or through the layers of the ground it dissolves naturally occurring minerals and, in some cases, radioactive material and can pick up substances resulting from the presence of animal and human activity.

**Contaminants that may be present in source water include:**

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production or mining activities.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of
CRYPTOSPORIDIUM

Cryptosporidium is a microscopic organism that, when ingested, can cause diarrhea, fever, and other gastrointestinal symptoms. The organism comes from animal and/or human wastes and may be in surface water. The MWSDC tested their source water and treated surface water for Cryptosporidium in 2017 but did not detect it. If it ever is detected, Cryptosporidium is eliminated by an effective treatment combination including sedimentation, filtration and disinfection.

The USEPA and the federal Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Disease Control recommends effective treatment combination include filtration and disinfection. The USEPA and the federal Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Disease Control recommends effective treatment combination include filtration and disinfection.

IMMUNO-COMPROMISED

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as those with cancer who are undergoing chemotherapy, have had organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons and infants can be particularly at risk. These people should seek advice about drinking water from their health care providers.

LEAD IN TAP WATER

If present, elevated levels of lead can cause serious problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of San Clemente is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. The City of San Clemente recently completed lead sampling for the Capistrano Unified School District. A total of 40 samples were collected from eight public schools. Of the 40 samples, lead was detected in only one of the samples, and the result was well below the State Action Level of 15 parts per billion which required no corrective action from the Capistrano Unified School District or the City of San Clemente.

When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water. If you are concerned about lead in your water, you may wish to have your water tested.

If you have any questions about your water, please contact us for answers:

For information about this report, or your water quality in general, please contact Assistant Utilities Manager Kevin Lussier, at (949) 366-1553.

For more information about the health effects of the listed contaminants in the following tables, call the U.S. Environmental Protection Agency hotline at [800] 426-4791.

For further information about the City, please visit our website: www.san-clemente.org
Information on testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

**DRINKING WATER FLUORIDATION**

Fluoride has been added to U.S. drinking water supplies since 1945. Of the 50 largest cities in the U.S., 43 fluoridate their drinking water. In December 2007, the MWDSC joined a majority of the nation’s public water suppliers in adding fluoride to drinking water in order to prevent tooth decay. In line with recommendations from the DDW, and the U.S. Centers for Disease Control and Prevention, MWDSC adjusted the natural fluoride level in imported treated water from the Colorado River and State Project water to the optimal range for dental health of 0.6 to 1.2 parts per million. Fluoride levels in drinking water are limited under California State regulations at a maximum dosage of 2 parts per million. There are many places to go for additional information about the fluoridation of drinking water.

U.S. Centers for Disease Control and Prevention  
1-800-232-4636  
cdc.gov/Oralhealth/publications/factsheets

American Dental Association  
cada.org/en/public-programs/advocating-for-the-public-drinking-water-advocacy

American Water Works Association  
cada.org/en/public-programs/advocating-for-the-public-drinking-water-advocacy

2017 METROPOLITAN WATER DISTRICT  
OF SOUTHERN CALIFORNIA TREATED SURFACE WATER

### Chemicals

<table>
<thead>
<tr>
<th>Chemical</th>
<th>MCL (ppm)</th>
<th>PHG (MCLG)</th>
<th>Average Amount</th>
<th>Range of Detections</th>
<th>MCL Violation?</th>
<th>Typical Source of Chemical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumina (ppm)</td>
<td>1</td>
<td>0.6</td>
<td>0.16</td>
<td>ND-0.13</td>
<td>No</td>
<td>Treatment Process Residue, Natural Deposits</td>
</tr>
<tr>
<td>Fluoride (ppm) treatment-related</td>
<td>1</td>
<td>0.6</td>
<td>0.7</td>
<td>0.6-0.9</td>
<td>No</td>
<td>Water Additive for Dental Health</td>
</tr>
</tbody>
</table>

### Secondary Standards* • Tested in 2017

<table>
<thead>
<tr>
<th>Chemical</th>
<th>MCL (ppm)</th>
<th>PHG (MCLG)</th>
<th>Average Amount</th>
<th>Range of Detections</th>
<th>MCL Violation?</th>
<th>Typical Source of Chemical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum (ppm)</td>
<td>200*</td>
<td>600</td>
<td>160</td>
<td>ND-130</td>
<td>No</td>
<td>Treatment Process Residue, Natural Deposits</td>
</tr>
<tr>
<td>Chloride (ppm)</td>
<td>500*</td>
<td>500</td>
<td>50</td>
<td>34-66</td>
<td>No</td>
<td>Runoff or Leaching from Natural Deposits</td>
</tr>
<tr>
<td>Color (color units)</td>
<td>15*</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>No</td>
<td>Naturally-occurring Organic Materials</td>
</tr>
<tr>
<td>Odor (threshold odor number)</td>
<td>3*</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>No</td>
<td>Naturally-occurring Organic Materials</td>
</tr>
<tr>
<td>Specific Conductivity (μmhos/cm)</td>
<td>1600*</td>
<td>490</td>
<td>350</td>
<td>630</td>
<td>No</td>
<td>Substances that form ions in Water</td>
</tr>
<tr>
<td>Sulfate (ppm)</td>
<td>500*</td>
<td>96</td>
<td>65</td>
<td>17</td>
<td>No</td>
<td>Runoff or Leaching from Natural Deposits</td>
</tr>
<tr>
<td>Total Dissolved Solids (ppm)</td>
<td>1000*</td>
<td>294</td>
<td>213</td>
<td>374</td>
<td>No</td>
<td>Runoff or Leaching from Natural Deposits</td>
</tr>
</tbody>
</table>

### Unregulated Chemicals • Tested in 2017

<table>
<thead>
<tr>
<th>Chemical</th>
<th>MCL (ppm)</th>
<th>PHG (MCLG)</th>
<th>Average Amount</th>
<th>Range of Detections</th>
<th>MCL Violation?</th>
<th>Typical Source of Chemical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkalinity total as CaCO3 (ppm)</td>
<td>NR</td>
<td>61</td>
<td>48-74</td>
<td>n/a</td>
<td>Runoff or Leaching from Natural Deposits</td>
<td></td>
</tr>
<tr>
<td>Boron (ppm)</td>
<td>NR</td>
<td>1</td>
<td>0.1</td>
<td>0.1</td>
<td>Runoff or Leaching from Natural Deposits</td>
<td></td>
</tr>
<tr>
<td>Calcium (ppm)</td>
<td>NR</td>
<td>28</td>
<td>20-36</td>
<td>n/a</td>
<td>Runoff or Leaching from Natural Deposits</td>
<td></td>
</tr>
<tr>
<td>Hardness, total as CaCO3 (ppm)</td>
<td>NR</td>
<td>119</td>
<td>82-156</td>
<td>n/a</td>
<td>Runoff or Leaching from Natural Deposits</td>
<td></td>
</tr>
<tr>
<td>Hardness, total (grains/gal)</td>
<td>NR</td>
<td>7</td>
<td>4.8-9.1</td>
<td>n/a</td>
<td>Runoff or Leaching from Natural Deposits</td>
<td></td>
</tr>
<tr>
<td>Magnesium (ppm)</td>
<td>NR</td>
<td>7</td>
<td>8.1-16</td>
<td>n/a</td>
<td>Runoff or Leaching from Natural Deposits</td>
<td></td>
</tr>
<tr>
<td>pH (H units)</td>
<td>NR</td>
<td>8.4</td>
<td>8.2-8.6</td>
<td>Hydrogen Ion Concentration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Potassium (ppm)</td>
<td>NR</td>
<td>2.8</td>
<td>2.4-3.2</td>
<td>leaching from Natural Deposits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sodium (ppm)</td>
<td>NR</td>
<td>51</td>
<td>39-63</td>
<td>leaching from Natural Deposits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Organic Carbon (ppm)</td>
<td>TT</td>
<td>2.4</td>
<td>1.8-3.0</td>
<td>leaching from Natural Deposits</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Turbidity - Combined Filter Effluent

<table>
<thead>
<tr>
<th>Metro Water District Diemer Filtration Plant</th>
<th>Treatment Technique</th>
<th>Turbidity Measurements</th>
<th>TT Violation?</th>
<th>Typical Source of Chemical</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Highest single turbidity measurement</td>
<td>0.3 NTU</td>
<td>0.08</td>
<td>No</td>
<td>Soil Runoff</td>
</tr>
<tr>
<td>2) Percentage of samples &lt;0.3 NTU</td>
<td>95%</td>
<td>100%</td>
<td>No</td>
<td>Soil Runoff</td>
</tr>
</tbody>
</table>

### Turbidity is a measure of the cloudiness of the water, an indication of particulate matter, some of which might include harmful microorganisms. Low turbidity in MWDS treated water is a good indicator of effective filtration. Filtration is called a "treatment technique" (TT). A treatment technique is a required process intended to reduce the level of chemicals in drinking water that are difficult and sometimes impossible to measure directly. NTU = nephelometric turbidity units.

### Unregulated Chemicals Requiring Monitoring

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Notification Level</th>
<th>PHG Average Amount</th>
<th>Range of Detections</th>
<th>Most Recent Sampling Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorate (ppm)</td>
<td>800</td>
<td>160</td>
<td>42-300</td>
<td>2014</td>
</tr>
<tr>
<td>Chromium, Hexavalent (ppm)</td>
<td>ND</td>
<td>0.042</td>
<td>0.035 - 0.053</td>
<td>2014</td>
</tr>
<tr>
<td>Molybdenum, Total (ppm)</td>
<td>ND</td>
<td>4.4</td>
<td>4.1 - 4.7</td>
<td>2014</td>
</tr>
<tr>
<td>Sulfate, Total (ppm)</td>
<td>ND</td>
<td>1.000</td>
<td>970 - 1100</td>
<td>2014</td>
</tr>
<tr>
<td>Vanadium, Total (ppm)</td>
<td>50</td>
<td>2.6</td>
<td>2.2 - 3.1</td>
<td>2014</td>
</tr>
</tbody>
</table>

**DISINFECTION AND DISINFECTION BYPRODUCTS**

Disinfection of drinking water was one of the major public health advances in the 20th century. Disinfection was a major factor in reducing waterborne disease epidemics caused by pathogenic bacteria and viruses, and it remains an essential part of drinking water treatment today.

Chlorine disinfection has almost completely eliminated the risks of microbial waterborne diseases. Chlorine is added to drinking water at the source of supply (groundwater well or surface water treatment plant). Enough chlorine is added so that it does not completely dissipate through the distribution system pipes. This “residual” chlorine helps to prevent the growth of bacteria in the pipes that carry drinking water from the source into your home.

However, chlorine can react with naturally-occurring materials in the water to form unintended chemical byproducts called disinfection byproducts (DBPs), which may pose health risks. A major challenge is how to balance the risks from microbial pathogens and DBPs. It is important to provide protection from these microbial pathogens while simultaneously ensuring decreasing health risks from disinfection byproducts. The Safe Drinking Water Act requires the U.S. Environmental Protection Agency (USEPA) to develop rules to achieve these goals.

Trihalomethanes (THMs) and Haloacetic Acids (HAAs) are the most common and most studied DBPs found in drinking water treated with chlorine. In 1979, the USEPA set the maximum amount of total THMs allowed in drinking water at 100 parts per billion as an annual running average. Effective in January 2002, the Stage 1 Disinfectants / Disinfection Byproducts Rule lowered the total THM maximum annual average level to 80 parts per billion and added HAAs to the list of regulated chemicals in drinking water.

Stage 2 of the regulation was finalized by USEPA in 2006, which further controls allowable levels of DBPs in drinking water without compromising disinfection itself. A required distribution system evaluation was completed in 2008 and full Stage 2 compliance began in 2012.
Every five years, MWDSC is required by DDW to examine possible sources of drinking water contamination in its State Water Project and Colorado River source waters. The most recent watershed sanitary surveys for MWDSC's source waters are the Colorado River Watershed Sanitary Survey - 2015 Update, and the State Water Project Watershed Sanitary Survey - 2016 Update. Water from the Colorado River is considered to be most vulnerable to contamination from recreation, urban/stormwater runoff, increasing urbanization in the watershed and wastewater. Water supplies from Northern California's State Water Project are most vulnerable to contamination from urban/stormwater runoff, wildlife, agriculture, recreation and wastewater. USEPA also requires MWDSC to complete one Source Water Assessment (SWA) that utilizes information collected in the watershed sanitary surveys. MWDSC completed its SWA in December 2012. The SWA is used to evaluate the vulnerability of water sources to contamination and helps determine whether more protective measures are needed. A copy of the most recent summary of either Watershed Sanitary Survey or the SWA can be obtained by calling MWDSC at (213) 217-6000.

**SOURCE WATER ASSESSMENT**

**IMPORTED MWDSC WATER ASSESSMENT**

The City of San Clemente Utilities Department completed an assessment of drinking water sources for its water supply in October 2001 and again in 2008. The City’s wells are considered vulnerable to the following Possible Contamination Activities (PCAs) associated with some contaminants detected in the water supply: Maintenance yards, above-ground fuel tanks, an historic dump site, an electrical switching station, and a site for temporary deposition of street sweeper debris. Residences, parks, sewers, roads and storm drains represent additional PCAs. While PCAs exist within the source water assessment area, the water sources are protected from immediate contamination threats by the confining nature of the aquifer, and the significant depth of well perforations at each water source. Copies of each water assessment are located at the City of San Clemente Utilities Department administration office, 380 Avenida Pico, Building N, San Clemente, California. You may review these water source assessments by contacting the Utilities Manager at (949) 366-1553.
WHAT ARE WATER QUALITY STANDARDS?

Drinking water standards established by USEPA and DDW set limits for substances that may affect consumer health or aesthetic qualities of drinking water. The chart in this report shows the following types of water quality standards:

- **Maximum Contaminant Level (MCL):** 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.
- **Maximum Residual Disinfectant Level (MRDL):** 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.
- **Secondary MCLs** are set to protect the odor, taste, and appearance of drinking water.
- **Primary Drinking Water Standard:** MCLs for contaminants that affect health along with their monitoring and reporting requirements and water treatment requirements.
- **Regulatory Action Level (AL):** The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

WHAT IS A WATER QUALITY GOAL?

In addition to mandatory water quality standards, USEPA and DDW have set voluntary water quality goals for some contaminants. Water quality goals are often set at such low levels that they are not achievable in practice and are not directly measurable. Nevertheless, these goals provide useful direction for water management practices. The chart in this report includes three types of water quality goals:

- **Maximum Contaminant Level Goal (MCLG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by USEPA.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** 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.
- **Public Health Goal (PHG):** 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.

HOW ARE CONTAMINANTS MEASURED?

Water is sampled and tested throughout the year. Contaminants are measured in:

- parts per million (ppm) or milligrams per liter (mg/L)
- parts per billion (ppb) or micrograms per liter (μg/L)
- parts per trillion (ppt) or nanograms per liter (ng/L)

If this is difficult to imagine, think about these comparisons and equivalencies:

- 1 inch in 16 miles
- 1 second in 12 days
- 1 inch in 16 miles
- 3 drops of liquid in 42 gallons
- 1 second in 32 days
- 1 inch in 16,000 miles
- 3 drops of liquid in 14,000 gallons
- 1 inch in 16 million miles
- 10 drops of liquid in a Rose Bowl sized pool
- 1 second in 32,000 days
- 1 inch in 16 million miles
Where Does San Clemente's Water Come From?

IMPORTED WATER
80% Of the Total Water Supply

Imported drinking water (potable water) is purchased from the Metropolitan Water District of Southern California, and travels hundreds of miles to Southern California from two sources:
- Water from the Colorado River Basin at Lake Havasu is delivered through the Colorado River Aqueduct (CRA).
- Water from the State Water Project (SWP) is delivered from Northern California through the California Aqueduct.

LOCAL GROUNDWATER
7% Of the Total Water Supply

The City has two local wells that produce between 400 to 600 acre feet of groundwater a year to add to its potable water supplies. (An acre foot of water equals 325,900 gallons).

RECYCLED WATER
13% Of the Total Water Supply

The City's water reclamation plant treats wastewater while also producing recycled water for irrigation. It delivers approximately 1,000 acre feet of recycled water per year to as many as 140 irrigation customers that might otherwise rely on potable water. These customers are primarily homeowner associations and business parks, city parks, schools and traffic medians. Recycled water provides a new source of supply and reduces the City's reliability on imported water from the Metropolitan Water District.

City of San Clemente
Utilities Department
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San Clemente, CA 92672
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www.san-clemente.org