This report is a summary of the quality of water San Antonio Water System (SAWS) provides its customers. The analysis was made by using the 2019 data from the most recent U.S. Environmental Protection Agency (EPA) required tests and is presented in this report. We hope this information helps you become knowledgeable about what is in your drinking water.

**SOURCE OF DRINKING WATER**

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.

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. SAWS samples eight sites in the Castle Hills distribution system for bacteria each month, and no *E. coli* positives were found in our drinking water in 2019. There was one positive *E. coli* raw water sample for a well in the system following a total coliform positive in the distribution. The well was placed out of service, disinfected and re-sampled before being placed back into service. SAWS followed all public notice posting requirements for this positive sample.

**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, or farming.

**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 industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

**Radioactive contaminants**, which can be naturally-occurring or be the result of oil and gas production and mining activities.

**WHERE DO WE GET OUR DRINKING WATER?**

The source of SAWS Castle Hills drinking water originated as groundwater from the Edwards Aquifer. The Texas Commission on Environmental Quality has completed an assessment of your source water, and the results indicate that some of our sources are susceptible to certain contaminants. The sampling requirements for your water system is based on this susceptibility and previous sample data. Any detections of these contaminants will be found in this Water Quality Report. For more information on source water assessments and protection efforts, please contact us.

The information contained in the assessment allows us to better focus our source water protection strategies. Some of this source water assessment information is available on Texas Drinking Water Watch at [http://dww2.tceq.texas.gov/DWW/](http://dww2.tceq.texas.gov/DWW/).

For more information on source water assessments and protection efforts at our systems, please contact us.

**ALL DRINKING WATER MAY CONTAIN CONTAMINANTS**

When drinking water meets federal standards, there may not be any health benefits to purchasing bottled water or point of use devices. 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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA’s Safe Drinking Water Hotline (800-426-4791).

**SECONDARY CONSTITUENTS**

Many constituents (such as calcium, sodium, or iron), which are found in drinking water, can cause taste, color, and odor problems. The taste and odor constituents are called secondary constituents and are regulated by the State of Texas, not the EPA. These constituents are not causes for health concern. Therefore, secondaries are not required to be reported in this document, but they may affect the appearance and taste of your water. The secondary constituents results are available for this System on Texas Drinking Water Watch at [http://dww2.tceq.texas.gov/DWW/](http://dww2.tceq.texas.gov/DWW/).

**HEALTH INFORMATION ABOUT LEAD**

If present, elevated levels of lead can cause serious health 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. San Antonio Water System is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. 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 two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at [http://www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).
### SPECIAL NOTICE

You may be more vulnerable than the general population to certain microbial contaminants, such as *Cryptosporidium*, in drinking water. Infants, some elderly or immuno-compromised such as those undergoing chemotherapy for cancer; those who have undergone organ transplants; those who are undergoing treatment with steroids; and people with HIV/AIDS or other immune system disorders can be particularly at risk from infections. You should seek advice about drinking water from your physician or health care provider. Additional guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline at 800-426-4791.

### VIOLATIONS

SAWS Castle Hills received no violations in 2019.

### HOW TO READ YOUR WATER QUALITY REPORT

<table>
<thead>
<tr>
<th>CONTAMINANTS</th>
<th>Collection Date</th>
<th>Highest Level Detected</th>
<th>Concentration Range Found</th>
<th>MCLG</th>
<th>MCL</th>
<th>AL</th>
<th>Units</th>
<th>Violation</th>
<th>Likely Source of Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance 1</td>
<td>2018</td>
<td>0.112</td>
<td>0.024 – 0.112</td>
<td>2</td>
<td>2</td>
<td>1.5</td>
<td>ppm</td>
<td>No</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td>Substance 2</td>
<td>2017</td>
<td>0.15</td>
<td>0.03 – 0.15</td>
<td>50</td>
<td>50</td>
<td>15</td>
<td>ppb</td>
<td>No</td>
<td>Erosion of natural deposits</td>
</tr>
</tbody>
</table>

- **Collection Date:** The year or years tests were conducted.
- **Highest Level Detected:** The highest amount of a contaminant detected in SAWS drinking water.
- **Concentration Range Found:** The amount from lowest to highest of a contaminant detected in SAWS drinking water.
- **MCLG:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements SAWS must follow.
- **MCL:** The highest amount of a contaminant EPA allows in drinking water.
- **AL:** Parts per million – one ppm equals to one teaspoon in 1,302,000 gallons.
- **Units:** How a contaminant ends up in SAWS drinking water.
- **Violation:** Below this level, a contaminant has no known or expected health risks.
- **Likely Source of Contamination:** This describes some of the ways contaminants enter drinking water; wording is provided by EPA and may or may not apply to SAWS.
**2020 WATER QUALITY REPORT**

**CASTLE HILLS**

**PWS ID Number:** TX 0150045

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### COLIFORM BACTERIA – Monitored in the Distribution System

<table>
<thead>
<tr>
<th>Parameter/Substance</th>
<th>Date Sampled</th>
<th>MCLG</th>
<th>Total Coliform MCL</th>
<th>Highest No. of Positive</th>
<th>Fecal Coliform or E. Coli or Fecal</th>
<th>Total No. of Positive E. Coli or Fecal</th>
<th>Violation</th>
<th>Likely Source of Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coliform Bacteria</td>
<td>2018</td>
<td>0</td>
<td></td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>No</td>
<td>Naturally present in the environment</td>
</tr>
</tbody>
</table>

### LEAD AND COPPER – Monitoring Done at Customers’ Taps

<table>
<thead>
<tr>
<th>Parameter/Substance</th>
<th>Date Sampled</th>
<th>MCLG</th>
<th>AL</th>
<th>90th Percentile</th>
<th>Number of Sites Over AL</th>
<th>Units</th>
<th>Violation</th>
<th>Likely Source of Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>2017</td>
<td>1.3</td>
<td>1.3</td>
<td>0.358</td>
<td>0</td>
<td>ppm</td>
<td>No</td>
<td>Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives</td>
</tr>
<tr>
<td>Lead</td>
<td>2017</td>
<td>0</td>
<td>15</td>
<td>3.17</td>
<td>0</td>
<td>ppb</td>
<td>No</td>
<td>Corrosion of household plumbing systems; erosion of natural deposits</td>
</tr>
</tbody>
</table>

### DISINFECTANTS AND DISINFECTION BY-PRODUCTS – Monitored in the Distribution System

<table>
<thead>
<tr>
<th>Parameter/Substance</th>
<th>Collection Date</th>
<th>Highest Locational Running Annual Average</th>
<th>Concentration Range Found</th>
<th>MCLG</th>
<th>MCL</th>
<th>Units</th>
<th>Violation</th>
<th>Likely Source of Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Trihalomethanes (THMs)</td>
<td>2019</td>
<td>9</td>
<td>6 – 9.4</td>
<td>NA</td>
<td>80</td>
<td>ppm</td>
<td>No</td>
<td>By-product of drinking water disinfection</td>
</tr>
<tr>
<td>Total Haloacetic Acids (HAAs)</td>
<td>2019</td>
<td>3</td>
<td>1.2 – 4.3</td>
<td>NA</td>
<td>60</td>
<td>ppb</td>
<td>No</td>
<td>By-product of drinking water disinfection</td>
</tr>
</tbody>
</table>

### INORGANIC CONTAMINANTS – Monitored at the Water Plants

<table>
<thead>
<tr>
<th>Parameter/Substance</th>
<th>Collection Date</th>
<th>Highest Level Detected</th>
<th>Concentration Range Found</th>
<th>MCLG</th>
<th>MCL</th>
<th>Units</th>
<th>Violation</th>
<th>Likely Source of Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barium</td>
<td>2019</td>
<td>0.0381</td>
<td>0.0366 – 0.0381</td>
<td>2</td>
<td>2</td>
<td>ppm</td>
<td>No</td>
<td>Discharge from drilling wastes; discharge from metal refineries; erosion of natural deposits</td>
</tr>
<tr>
<td>Fluoride</td>
<td>2018</td>
<td>0.2</td>
<td>0.2 – 0.2</td>
<td>4</td>
<td>4</td>
<td>ppm</td>
<td>No</td>
<td>Erosion of natural deposits; discharge from fertilizer and aluminum factories; added for dental health</td>
</tr>
<tr>
<td>Nitrate</td>
<td>2019</td>
<td>2</td>
<td>2.13 – 2.28</td>
<td>10</td>
<td>10</td>
<td>ppm</td>
<td>No</td>
<td>Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits</td>
</tr>
</tbody>
</table>

### RADIOACTIVE CONTAMINANTS – Monitored at the Water Plants

<table>
<thead>
<tr>
<th>Parameter/Substance</th>
<th>Collection Date</th>
<th>Highest Level Detected</th>
<th>Concentration Range Found</th>
<th>MCLG</th>
<th>MCL</th>
<th>Units</th>
<th>Violation</th>
<th>Likely Source of Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined Radium 226/228</td>
<td>2017</td>
<td>1.5</td>
<td>1.5 – 1.5</td>
<td>0</td>
<td>5</td>
<td>pCi/L</td>
<td>No</td>
<td>Erosion of natural deposits</td>
</tr>
</tbody>
</table>

### MAXIMUM RESIDUAL DISINFECTANT LEVEL – Monitored in the Distribution System

<table>
<thead>
<tr>
<th>Parameter/Substance</th>
<th>Test Year</th>
<th>Average Concentration Found</th>
<th>Minimum Level</th>
<th>Maximum Level</th>
<th>MRDL</th>
<th>MRDLG</th>
<th>Units</th>
<th>Likely Source of Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlorine Residual, Free</td>
<td>2019</td>
<td>1.21</td>
<td>1.05</td>
<td>1.49</td>
<td>4</td>
<td>4</td>
<td>ppm</td>
<td>Disinfectant used to control microbes</td>
</tr>
</tbody>
</table>
DEFINITIONS
The preceding tables contain scientific terms and measures, some of which may require explanation.

**AL (Action Level)** — The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**ALG (Action Level Goal)** — The level of a contaminant in drinking water below which there is no known or expected risk to health. ALGs allow for a margin of safety.

**Avg (Average)** — Regulatory compliance with some MCLs are based on a running annual average of monthly samples.

**Level 1 Assessment** — A study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

**Level 2 Assessment** — A very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

**MCL (Maximum Contaminant Level)** — The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

**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 allow for a margin of safety.

**MFL** — Million fibers per liter (a measure of asbestos)

**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.

**mrem** — Millirems per year (a measure of radiation absorbed by the body)

**NA** — Not applicable

**ND** — Not detected

**NTU** — Nephelometric turbidity units (a measure of turbidity)

**pCi/L** — Picocuries per liter (a measure of radioactivity)

**ppb** — Parts per billion or micrograms per liter (µg/L) or one ounce in 7,350,000 gallons of water

**ppm** — Parts per million or milligrams per liter (mg/L) or one ounce in 7,350 gallons of water

**ppq** — Parts per quadrillion or picograms per liter (pg/L)

**ppt** — Parts per trillion or nanograms per liter (ng/L)

**TT (Treatment Technique)** — A required process intended to reduce the level of a contaminant in drinking water

**µmhos/cm** — Micromhos per centimeter (a measure of conductivity)

STATE WATER LOSS AUDIT
In the water loss audit submitted to the Texas Water Development Board for the time period of January through December 2019, San Antonio Water System lost an estimated total of 13,398,073,243 gallons of water through main breaks, leaks, inaccurate customer metering, theft and other causes.