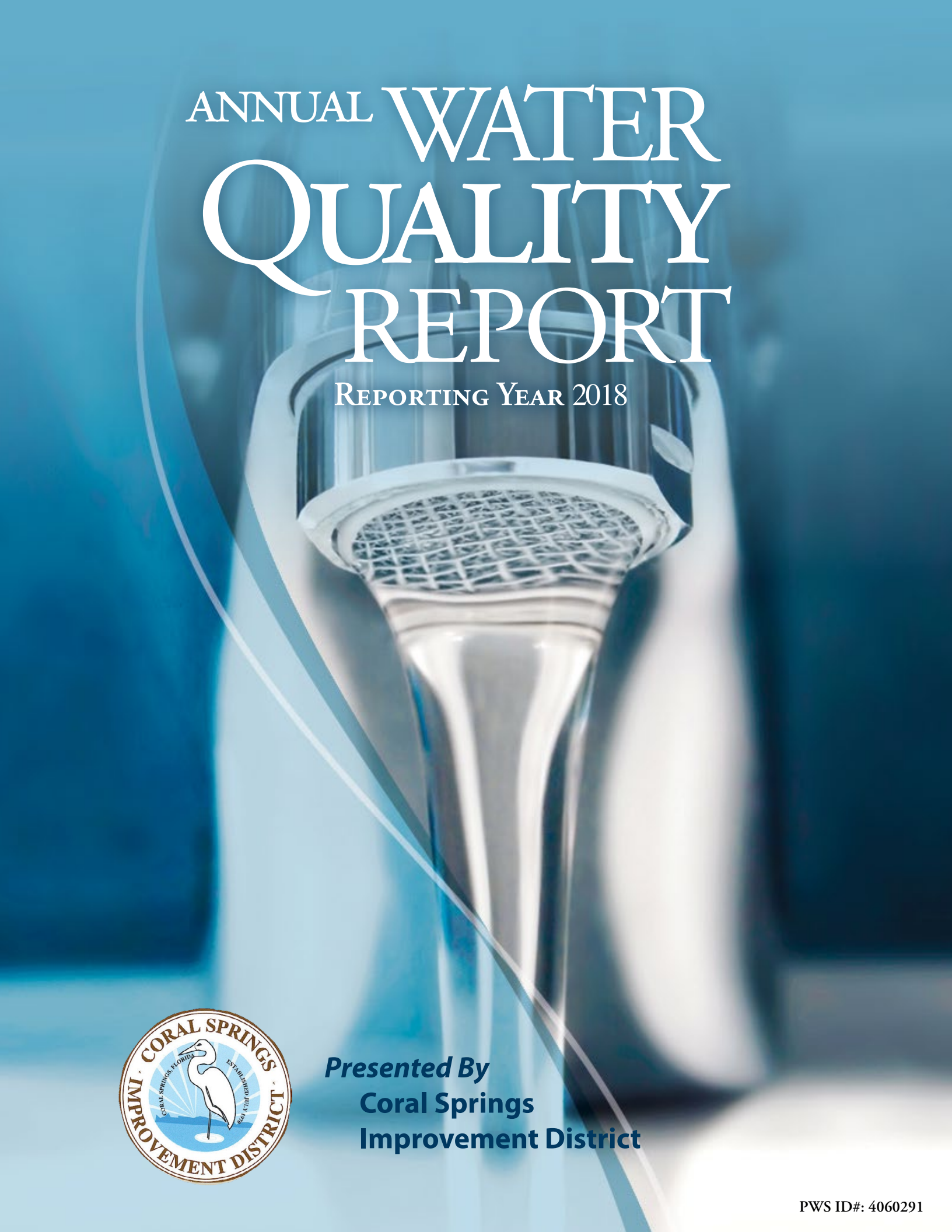
ANNUAL WATER QUALITY REPORT

Reporting Year 2018



Presented By
Coral Springs Improvement District

PWS ID#: 4060291

Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2018. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available should you ever have any questions or concerns about your water.

Community Participation

Our home owners are invited to attend the monthly Board Meetings with your comments and ideas about anything relating to our utility. We meet the 3rd Monday of each month, beginning at 4:00 p.m. at the Coral Springs Improvement District, Administration Building Board Room, 10300 N.W. 11th Manor, Coral Springs, Florida. The meeting schedule is also on our web site at www.csidfl.org under meeting dates, as dates may need to be changed due to holidays, etc.

Your Coral Springs Improvement District Board of Supervisors

Dr. Martin Shank, President

Duane Holland, Vice President

Nick St. Cavish, Secretary

Count on Us

Delivering high-quality drinking water to our customers involves far more than just pushing water through pipes. Water treatment is a complex, time-consuming process. Because tap water is highly regulated by state and federal laws, water treatment plant and system operators must be licensed and are required to undergo long-term, on-the-job training before becoming fully qualified. Our licensed water professionals have a basic understanding of a wide range of subjects, including mathematics, biology, chemistry, and physics. Some of the tasks they complete on a regular basis include:

- Operating and maintaining equipment to purify and clarify water;
- Monitoring and inspecting machinery, meters, gauges, and operating conditions;
- Conducting tests and inspections on water and evaluating the results;
- Maintaining optimal water chemistry;
- Applying data to formulas that determine treatment requirements, flow levels, and concentration levels;
- Documenting and reporting test results and system operations to regulatory agencies; and
- Serving our community through customer support, education, and outreach.

So, the next time you turn on your faucet, think of the skilled professionals who stand behind each drop.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or http://water.epa.gov/drink/hotline.

Substances That Could Be in 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.

> "We remain vigilant in delivering the best-quality drinking water"

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 stormwater 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 stormwater 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 stormwater runoff, and septic systems.

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

In order to ensure that tap water is safe to drink, the U.S. EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

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 calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

Where Does Our Water Come From?

The source water for the Coral Springs Improvement District comes from a stable groundwater supply called the Biscayne Aquifer. This aquifer is the source of fresh water for all of Broward, Dade, and parts of Palm Beach Counties. The Biscayne Aquifer is a relatively thin layer of semipermeable coral rock, sand, and limestone that ranges from a few feet in thickness on its western side to about 240 feet thick as water flows slowly southeast towards the ocean. The Biscayne Aquifer is replenished by rainfall that percolates down through soil and rock into the aquifer. Because south Florida receives a great deal of rainfall each year, the Biscayne Aquifer is a stable supply of water. CSID pumps water from the Biscayne Aquifer, utilizing eleven wells located throughout the District, to the treatment plant. We have seven wells on standby generator power to ensure we can provide drinking water even during severe storm events when power from FP&L may not be available. CSID has spent over a million dollars in the last couple of years on improvements in the well field, including rehabilitations, as well as two new replacement wells. The wells, an essential part of our process, are where it all begins. The water is pumped from the wells to the Reverse Osmosis water treatment plant, where it is treated and distributed.

Source Water Assessment

In 2018, the Department of Environmental Protection performed a Source Water Assessment on our system. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of our wells. According to the assessment, 7 potential sources of contamination were identified for this system. All sources have low susceptibility levels that range between 0.01 and 8.33. The assessment results are available on the F.D.E.P. Source Water Assessment and Protection Program Web site at www.dep.state.fl.us/swapp.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Joe Stephens, Chief of Water Operations, at (954) 796-6665, or he can be reached via email at joes@csidfl.org. You can also visit our Web site at www.csidfl.org, which contains helpful information about our utility.

Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we 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 2 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

The Coral Springs Improvement District Water Treatment Process

We have been operating our Reverse Osmosis (RO) process for over five years now. In this low pressure reverse osmosis system, we purify water using cross-linked, fully aromatic polyamide composite membranes. This design and process combination provides the greatest level of protection for the public water supply. In fact, starting in 2016, we became one of only a few certified 4-log virus inactivation facilities in Broward County.

Our source water comes from the Biscayne Aquifer. It is pumped to the plant from our 11 wells throughout the District. Once the water arrives at the plant, it flows through three stainless steel Sand Strainers. Each strainer is equipped with six stainless steel filter elements that filter out any particulate larger than 50 microns. (The eye of an average needle is 1,230 microns.) After leaving the sand strainers, the water flows to the next pretreatment process, known as Cartridge Filtration. Just before the water flows to the cartridge filters, it is chemically conditioned to optimize treatment. Each of the three cartridge filter vessels contains 176 individual filter elements that filter out impurities that are 5 microns or larger in size. These three cartridge filter vessels are capable of processing a total flow rate of over 10 million gallons per day of what is then known as pretreated water.

Next, the water flows to the front of the Membrane Vessels, where 250 hp Feed Pumps increase the system pressure to about 100 pounds per square inch (psi). This pressure provides the driving force needed to overcome the natural osmotic pressure of the water and allows the RO process to begin. As this process continues, Membrane Elements inside the vessels separate out impurities down to 0.0005 microns in size to produce water with little or no physical contaminants. Each membrane element measures 8" in diameter and is 40" long. There are 7 elements in each vessel, and 50 vessels per Process Train (350 elements per train). The plant is equipped with 3 process trains that are capable of producing a total of 6.75 million gallons of potable water per day. This treated water is known as permeate. We bypass 10 to 15 percent of our water to blend with our permeate in order to raise the alkalinity and hardness back up to desirable drinking water standards. This stream receives all of the same pre- and post-treatment benefits as the water that is treated through the membranes.

Our plant is permitted to produce up to 7.4 million gallons of potable drinking water per day, although it is capable of producing more to help neighboring cities in times of need with proper notification to our governing agencies.

Since the RO process does not remove dissolved gasses such as hydrogen sulfide and carbon dioxide, the permeate and bypass water flows upward to the next process, known as degasification. Water flows down these towers through a type of filter media resembling Whiffle balls. Air is forced upward through the cascading water to remove any volatile gasses.

The water then flows into a Transfer Pump Station. As the water is pumped out of the transfer pump station to the ground storage tanks, it is chemically treated with sodium hypochlorite, orthophosphate, sodium hydroxide, fluoride, and ammonium sulfate to provide disinfection and stabilization. The on-site storage tanks allow contact time and stabilization to occur. The water is then pumped out to the distribution system through our eight high-service pumps.

Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent, according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to $1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their Web site at https://goo.gl/Jxb6xG.

Water Conservation Tips

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

Test Results

Our water is monitored for many different types of substances on a very strict sampling schedule. The water we deliver must meet specific health standards. Here, we show only those substances that were detected in our water. (A complete list of all our analytical results is available upon request.) Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We have been monitoring for unregulated contaminants (UCs) as part of a study to help the U.S. Environmental Protection Agency (U.S. EPA) determine the occurrence in drinking water of UCs and whether or not these contaminants need to be regulated. For example, we participated in the 4th stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by performing additional tests on our drinking water. At present, no health standards (e.g., maximum contaminant levels) have been established for UCs. However, we are required to publish the analytical results of our UC monitoring in our annual water quality report. If you would like more information on the U.S. EPA's Unregulated Contaminant Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

Note: coliform bacteria were not detected in our water at any point during 2018.

PRIMARY REGULATED CONTAMINANTS

Inorganic Contaminants

CONTAMINANT AND UNIT OF MEASUREMENT	DATES OF SAMPLING (MO./YR.)	MCL VIOLATION (YES/NO)	LEVEL DETECTED	RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Fluoride (ppm)	1/2018–12/2018	No	0.82	0.56–0.82	4	4.0	Erosion of natural deposits; discharge from fertilizer and aluminum factories; water additive that promotes strong teeth when at the optimum level of 0.7 ppm

Stage 1 Disinfectants and Disinfection By-Products

CONTAMINANT AND UNIT OF MEASUREMENT	DATES OF SAMPLING (MO./YR.)	MCL VIOLATION (YES/NO)	LEVEL DETECTED	RANGE OF RESULTS	MRDLG	MRDL	LIKELY SOURCE OF CONTAMINATION
Chloramines (ppm)	1/2018–12/2018	No	2.80	2.4–3.15	4	4.0	Water additive used to control microbes

Stage 2 Disinfectants and Disinfection By-Products

CONTAMINANT AND UNIT OF MEASUREMENT	DATES OF SAMPLING (MO./YR.)	MCL VIOLATION (YES/NO)	LEVEL DETECTED	RANGE OF RESULTS	MCLG	MCL	LIKELY SOURCE OF CONTAMINATION
Haloacetic Acids (five) [HAA5] (ppb)	1/2018–12/2018	No	17	13–17	NA	60	By-product of drinking water disinfection
TTHM [Total trihalomethanes] (ppb)	1/2018–12/2018	No	23	17–23	NA	80	By-product of drinking water disinfection

Lead and Copper (Tap water samples were collected from sites throughout the community.)

CONTAMINANT AND UNIT OF MEASUREMENT	DATES OF SAMPLING (MO./YR.)	AL EXCEEDANCE (YES/NO)	90TH PERCENTILE RESULT	NO. OF SAMPLING SITES EXCEEDING THE AL	MCLG	AL (ACTION LEVEL)	LIKELY SOURCE OF CONTAMINATION
Copper [tap water] (ppm)	6/15/2017	No	0.0645	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead [tap water] (ppb)	6/15/2017	No	1.34	0	0	15	Corrosion of household plumbing systems; erosion of natural deposits

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

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.

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.

NA: Not applicable

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

UNREGULATED CONTAMINANT MONITORING RULE - PART 4 (UCMR4)

CONTAMINANT AND UNIT OF MEASUREMENT	DATES OF SAMPLING (MO./YR.)	LEVEL DETECTED	RANGE OF RESULTS
HAA5 (ppb)	2018	12.79	12.62–12.96
HAA6Br (ppb)	2018	2.49	2.42–2.56
HAA9 (ppb)	2018	14.74	14.62–14.86
Bromide[1] (ppb)	2018	138	NA
Total Organic Carbon[1] (ppb)	2018	6,330	NA

[1] The results for Total Organic Carbon and Bromide are from well water.