

We are pleased to report that our drinking water surpasses state and federal drinking water standards.

2018
CITY OF
BOCA RATON
ANNUAL

WATER Quality REPORT



Community at Work

Water plays an integral part in our everyday lives. The City of Boca Raton Utility Services Department continues to remain in the forefront of new and emerging water treatment technology as well as alternative water supply technologies in support of water conservation. Water conservation is the most cost-effective and environmentally sound way to reduce our demand for water. To promote environmental stewardship and public awareness, the Utility Services Department offers public outreach and education programs. These programs are offered to local schools, homeowners associations, civic groups, and through other venues. Some of the programs include tours of the Water Treatment Facility, Water Conservation programs, Water Pollution programs, and Water Quality programs including the use of our EnviroScape® Coastal Ecosystem model. For more information about our programs or to schedule a tour, please call 561-338-7306.

CONGRATULATIONS Drop Savers



DIVISION 1 **K-1: Blake Weiner**
1st grade, Pine Crest School



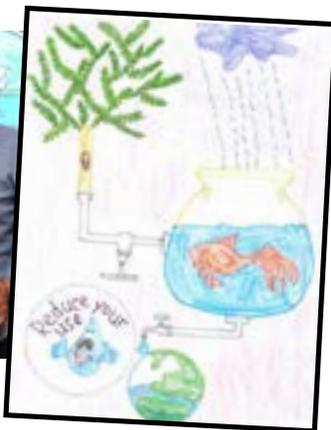
DIVISION 2 **2-3: Nora Qiao***
3rd grade, Pine Crest School
*(*Placed 2nd in Division 2 FSAWWA statewide competition!)*



Mayor Scott Singer proclaimed April 2019 as Water Conservation Month and May 5th - May 11th as National Drinking Water Week during the April 23, 2019 City Council meeting. Along with this proclamation, the Utility Services Department held a Drop Savers Water Conservation Poster Contest in which over 800 children participated from 5 local schools grades K-8. The children designed amazing water conservation themed posters. Four of the children's posters were selected for entry in the Florida Section of the American Water Works Association (FSAWWA) statewide poster contest. One of these children was also chosen by the FSAWWA as the 2nd place winner for the grade 2-3 division.



DIVISION 3 **4-5: Jeremy Babcock**
4th grade, Pine Crest School



DIVISION 4 **6-8: Ava Rodriguez**
7th grade, St. Joan of Arc

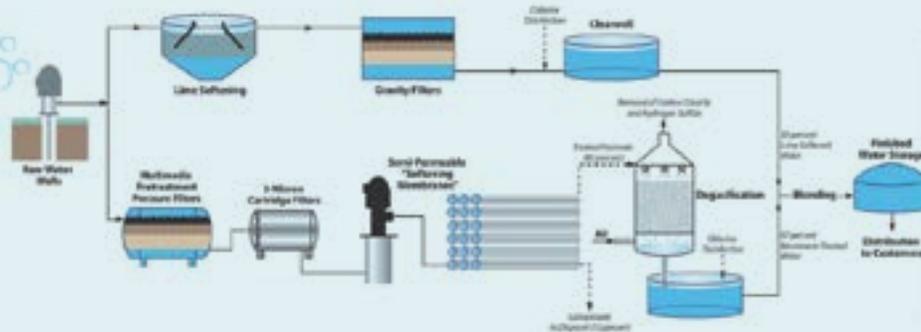


Source Water Assessments

In 2018, the Florida Department of Environmental Protection (DEP) performed a Source Water Assessment on the City's wellfield system in order to ensure our source water is protected. The assessment was conducted to provide information about any potential sources of contamination in the vicinity of the City's wells. Potential sources of contamination are those facilities, sites, and activities that have the potential to affect the underlying ground water aquifers or nearby surface waters used for public drinking water supply. Many of these potential sources are regulated by DEP and the location and status of these sites are maintained within DEP databases. By utilizing in-house databases and a geographical information system (GIS), DEP can access and illustrate the relationships of potential contaminant sources to the approximately 12,000 public water supply intakes in Florida. It should be noted that the potential sources of contamination identified by this assessment project are just that; potential sources. Many of these facilities are regulated and operate under stringent construction and maintenance requirements designed to protect both human health and the environment. The purpose of conducting the source water assessments is to provide information that will lead to actions to reduce current risks or avoid future problems. The DEP has identified thirty-eight unique potential sources of contamination for the City's wellfield system with a moderate or a low susceptibility level. The assessment results and more information are available on the DEP Source Water Assessment and Protection Program website at www.dep.state.fl.us/swapp or can be obtained by calling the Utility Services Department at 561-338-7310.

Your Drinking Water Process

Once the water is pumped from our wells to our Glades Road facility, the City of Boca Raton uses two types of water treatment processes. Traditional Lime Softening: involves the use of calcium oxide and other chemicals to remove minerals and particles. The water is then filtered to remove smaller impurities and then disinfected with a chlorine compound to destroy bacteria and other microorganisms. State-of-the-Art Membrane Softening: involves pumping the water through multimedia pretreatment pressure filters, 1-micron cartridge filters, and finally semi-permeable membranes. Next, hydrogen sulfide and carbon dioxide are removed using a degasifying technology. The membrane softened water is also disinfected with a chlorine compound and blended with the lime softened water. The combined processes produce high quality water that is pumped through the distribution system to our customers. The City of Boca Raton does not add fluoride to their water treatment process.



Your Drinking Water Source... The Biscayne Aquifer

The Biscayne aquifer is the primary source of drinking water for over six million people in South Florida and is the source of the drinking water for the City of Boca Raton. The City of Boca Raton's 52 wells pump water from the Biscayne aquifer to our water treatment facility located on Glades Road by the I-95 interchange.



City of Boca Raton Utility Services Quality Control Lab Staff Right to left: Mark Liburdi, Ashtan Wydock, and Devin Dykes.

An Explanation of the Water Quality Data Table

The City of Boca Raton Utility Services department routinely monitors for contaminants in your drinking water according to Federal and State laws, rules, and regulations. The table on the next page shows the results of our water quality analysis. Unless otherwise indicated, this report is based on the results of our monitoring for the period of January 1, 2018 to December 31, 2018. Data obtained before January 1, 2018 and presented in this report are from the most recent testing done in accordance with laws, rules, and regulations. The table contains: the name of each substance; the maximum contaminant level (MCL) or the highest level allowed by regulation; the ideal goals for public health; the amount detected; the usual sources of such contamination; footnotes that explain our findings; and a key to units of measurement. The MCLs are set at very stringent levels.

Immuno- Compromised

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, those with 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. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline 1-800-426-4791.

2018 Water Quality Data Table

Inorganic Contaminants							
Contaminant and Unit of Measurement	Dates of sampling (mo/yr)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
* Fluoride (ppm)	2/17	N	0.15	N/A	4	4	Erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate (as Nitrogen) (ppm)	2/18	N	0.02	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (as Nitrogen) (ppm)	2/18	N	0.04	N/A	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	2/17	N	37.8	N/A	N/A	160	Salt water intrusion, leaching from soil
* Fluoride is naturally occurring in our source water, the Biscayne Aquifer. The City of Boca Raton does not add fluoride to their water treatment process.							
Synthetic Organic Contaminants including Pesticides and Herbicides							
Contaminant and Unit of Measurement	Dates of sampling (mo/yr)	MCL Violation Y/N	Level Detected	Range of Results	MCLG	MCL	Likely Source of Contamination
* Dalapon (ppb)	2/17,5/17	N	1.4	1.0-1.4	200	200	Runoff from herbicide used on rights of way
Stage 1 Disinfectants and Disinfection By-Products							
Disinfectant or Contaminant and Unit of Measurement	Dates of sampling (mo/yr)	MCL or MCLG Violation Y/N	Level Detected RAA1 ¹	Range of Results	MRDLG	MRDL	Likely Source of Contamination
Chlorine and Chloramines (ppm)	1/18-12/18	N	2.76	0.74-3.5	4	4	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 Y/N	Level Detected RAA1 ²	Range of Results ³	MCLG	MCL	Likely Source of Contamination
Haloacetic Acids (HAA5) (ppb)	1/18-12/18	N	34.1	21.8-41.7	N/A	60	By-product of drinking water disinfection
Total Trihalomethanes (TTHM) (ppb)	1/18-12/18	N	57.4	29.2-67.0	N/A	80	By-product of drinking water disinfection
Lead and Copper (Tap Water)							
Contaminant and Unit of Measurement	Dates of sampling (mo/yr)	AL Exceeded Y/N	90th Percentile Result	No. of sampling sites exceeding the AL	MCLG	AL (Action Level)	Likely Source of Contamination
Copper (tap water) (ppm)	8/17-9/17	N	1.21	0	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (tap water) (ppb)	8/17-9/17	N	1.80	2	0	15	Corrosion of household plumbing systems; erosion of natural deposits
1. RAA-Running Annual Average 2. Highest LRAA (Location Running Annual Average) of all quarterly report for HAA5 & TTHM 3. Range includes all locational values used to calculate 2017 LRAA's 4. As authorized by EPA, the State has reduced monitoring requirements for certain contaminants to less often than once per year because the concentration of the contaminants are not expected to vary significantly from year to year.							

Data Table Key, Definition and Abbreviations

- **Action Level (AL):** The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.
- **Maximum Contaminant Level or MCL:** 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.
- **Maximum Contaminant Level Goal or MCLG:** The level of contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **Maximum Residual Disinfectant Level or 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.
- **Maximum Residual Disinfectant Level Goal or 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.
- **Parts Per Billion (ppb) or Micrograms per Liter (ug/l):** One part by weight of analyte to 1 billion parts by weight of the water sample.
- **Parts Per Million (ppm) or Milligrams per Liter (mg/l):** One part by weight of analyte to 1 million parts by weight of the water sample.
- **Not Applicable (N/A):** Does not apply.

Protect Your Pipes

What not to Flush or Put down the Drain

The City of Boca Raton's Wastewater Treatment System is designed to dispose of human waste and toilet paper only. Many other commonly flushed items cause damage to the pipes in your home or business, as well as to the City's wastewater collection system and the treatment process. Flushing or putting the wrong things down the drain can also lead to the formation of what are called fatbergs, large coagulations of non-biodegradable sewage consisting of wipes, grease, and other items not meant to be flushed.

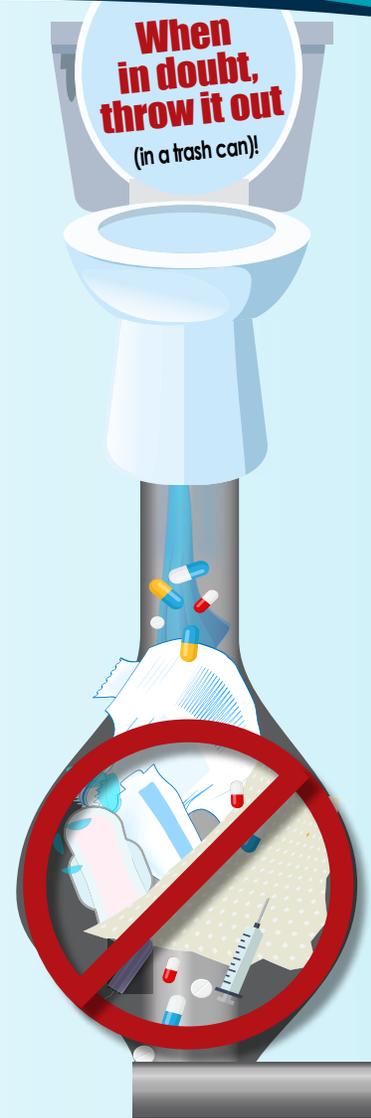
Fatbergs can lead to sewage backups, sewer overflows and groundwater/surface water contamination, which can be harmful to human health and our environment. They also can damage the City's wastewater treatment equipment and increase repair costs, which in turn could affect customer rates. Cooking fat, oil and grease (FOG) put down drains can clog the pipes at your home and in our system causing wastewater to back up into your home, or discharges into yards, streets, or waterways. These types of blockages lead to homeowner plumbing costs and increased operating costs to the City, which can lead to higher utility bills. Wipes, even flushable ones, will hang around in the wastewater collection system and combine with FOG materials to form a hard residue or fatberg. We recommend you keep them out of your toilet entirely and dispose of them in the trash.

You can help to prevent fatbergs in the wastewater system by avoiding flushing the following items:

- **Wipes of any kind**
(even if labeled "flushable")
- **Fats, Oils, and Grease**
- **Paper Towels/Tissues**
- **Condoms**
- **Pads/Rags/Cloth/Chemicals/ Disposable Gloves**
- **Diapers**
- **Cotton Balls/Q-tips/Dental Floss**
- **Feminine Products**
(including applicators)
- **Hair/Hair Weave**
- **Medications/Pharmaceuticals/ Syringes/Needles**

When unsure, follow a simple rule:

If it is not human waste or toilet paper, it should be thrown out in the trash can!



Take a Trip to MARS!

The City's innovative water wagon, Mobile Aqua Refreshing Station or MARS, built by the Utility Services Department, is the first proto-type for the City and provides a cost-effective and sustainable solution for City event attendees to enjoy chilled City tap water in their own refillable water bottles. The MARS unit is all stainless steel, includes an insulated enclosure, and has three hundred feet of 7/8" copper coils that maintain a water temperature of about 45 degrees over an eight-hour period. The MARS unit also has four spigots and a water fountain faucet, requires no electric power, has provisions for connecting to a hose bibb, and can provide a continuous cold glass of superior quality water for up to 24 hours. One spigot accessible for children and the water fountain faucet was designed for ADA accessibility.

The MARS has a positive impact on the City's environmental resources and efforts because it encourages event attendees to think sustainably. Residents are encouraged to "go green and bring their canteen" to City events where the MARS station is available for free. By using the MARS, there is a reduction in the purchase of bottled water and the likelihood of plastic water bottles ending up in our waterways. We have received great feedback from residents and visitors and to date ~ 2,000 bottles of water have been replaced by the MARS unit. Look for the MARS unit at the next City event and enjoy some superior quality chilled tap water!



INNOVATIVE SUSTAINABLE INFRASTRUCTURE PROGRAM



Broad Vision and Advanced Planning

The Innovative Sustainable Infrastructure Program (iSIP), is a new initiative by the Boca Raton Utility Services Department. This long-term initiative uses technology and data to evaluate, prioritize and improve critical underground areas throughout the City. By using a mapping inventory system, areas will be identified and prioritized based on the age, location, and deterioration of the water and sewer pipes and neighborhood roads.

Progressive Action

The Utility Services Department will coordinate with other City Departments on the timing and installation of underground work in conjunction with road resurfacing projects, which will help save money and minimize disruption to residents. The Utility Services Department will install new, larger pipes to provide better water service while continuing to deliver clean, fresh City tap water to customers. Neighborhoods will also benefit from improved roads, sidewalks and stormwater systems. The program will maintain the stability of Boca Raton's infrastructure by defending against potential failures through proactive, collaborative planning.

Sustainable Future

Six neighborhoods in the City will be included in the first initial project phase with an estimated completion time of five years. Construction of the first two neighborhoods will begin in September 2019. Future projects will be continuous, as a preventative maintenance program throughout the City for decades. Through this proactive and innovative approach, iSIP will enhance neighborhoods and improve the overall quality of life for residents in the City of Boca Raton.



INITIAL NEIGHBORHOOD PROJECTS

- Chatham Hills
- Country Club Village
- Tunison Palms, Old Floresta, & Lake Floresta Park
- Boca Raton Square
- Boca Villas
- Boca Woods & Winfield Park



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WATER Quality REPORT



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Potential Contaminants in Source 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.
- **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. To ensure that tap water is safe to drink, the EPA prescribes regulations, which 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, which 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 1-800-426-4791.

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. The City of Boca Raton Utility Services Department 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 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 or at <http://www.epa.gov/safewater/lead>.