

# City of Brooksville 2016 Water Quality Report

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PWS 6272180

## Overview:

The City of Brooksville is pleased to present the Annual Water Quality Report for Calendar Year 2016. This report is designed to inform you about the quality of water and services delivered to you every day. Staff's constant goal is to provide you with a safe and dependable supply of drinking water. The City is proud to report that our water quality meets or exceeds all State and Federal regulations. It might be noted, that in 2015 the City of Brooksville was judged by the Florida Rural Water Association, to have the best tasting water in the State of Florida.

## Water Source Assessment:

In 2016, the Florida Department of Environmental Protection (FDEP) performed a Source Water Assessment on our water system. The assessment was conducted to provide information about potential sources of contamination in the vicinity of our water wells. There are no potential sources of contamination identified for this system. Assessment results are available on the FDEP Source Water Assessment and Protection Program website at [www.dep.state.fl.us/swapp](http://www.dep.state.fl.us/swapp)

## Floridan Aquifer:

The water source for the City is the Floridan aquifer. The Floridan aquifer is one of the most productive aquifers in the world and is said to be one of the five cleanest sources of water on Earth, according to the Florida Water Atlas, University of South Florida. Approximately three billion gallons of water are pumped from the Floridan each day. The Floridan aquifer spans approximately 100,000 square miles and underlies parts of five states (Florida, Georgia, South Carolina, Alabama, and a small portion of Mississippi). The Floridan underlies all of Florida. Hernando County receives its water from the Northern West-Central Florida Groundwater Basin. This basin is a portion of the Floridan aquifer and is approximately 4,500 square miles.

Rainfall recharges the Floridan. It is estimated that 20 inches of annual rainfall recharge the aquifer in the Brooksville area of Hernando County. Rain water is cleansed by filtration through sand and rock. Water drains internally in the aquifer through permeable limestone and dolomite which are susceptible to solution. Over tens of thousands of years, the solution process has created caverns that allow underground circulation, which promotes further solution. Beneath Brooksville, the depth of the Floridan aquifer is estimated at 900 feet and it is estimated to contain 113 trillion gallons.

## Water Supply and Treatment:

Water is supplied to the City of Brooksville by six (6) deep wells from the Floridan aquifer. Each is approximately 600 feet deep. The water quality from the Floridan is of excellent quality. Water quality is of such high quality, required treatment is minimal. Your water is chlorinated to destroy any microorganisms that may be present. To help prevent tooth decay, fluoride is added to the water. Water is delivered to each customer by a water distribution system. At times, water could become stale. To ensure that water delivered is fresh, the water is aerated prior to being pumped in the distribution system and lines are flushed periodically.

## Water Quality Monitoring:

The City of Brooksville routinely monitors for contaminants in your drinking water according to Federal and State laws, rules, and regulations. Except where indicated otherwise, this report is based on the results of our monitoring for the period of January 1 to December 31, 2016. Data obtained before January 1, 2016, and presented in this report, are from the most recent testing in accordance with the laws, rules, and regulations.

**Definitions:** The following definitions are provided for this report and the tables below:

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

**Contaminant:** Any physical, chemical, biological, or radiological substance or matter in the water.

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

**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 allow for a margin of safety.

**Not Detected (ND):** The substance was not found by laboratory analysis.

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

**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.

**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.

**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.

**Parts per billion (ppb) or Micrograms per liter (µg/l) –** One part by weight of analyte to 1 billion parts by weight of the water sample.

**Picocurie per liter (pCi/L) –** Measure of the radioactivity in water.

**Point of entry (POE).**

| <b>Stage 2 Disinfectants and Disinfection By-Products</b>  |                                  |                                  |                               |                         |                      |                    |   |
|--|----------------------------------|----------------------------------|-------------------------------|-------------------------|----------------------|--------------------|---|
| <b>Disinfectant or Contaminant and Unit of Measurement</b> | <b>Dates of Sampling (mo/yr)</b> | <b>MCL or MRDL Violation Y/N</b> | <b>Highest Level Detected</b> | <b>Range of Results</b> | <b>MCLG or MRDLG</b> | <b>MCL or MRDL</b> | <b>Likely Source of Contamination</b>     |
| TTHM [Total Trihalomethanes] (ppb)                         | 7/16                             | N                                | 18.96                         | 4.90-18.96              | N/A                  | MCL=80             | By-product of drinking water disinfection |
| Haloacetic Acids (haa5)(ppb)                               | 7/16                             | N                                | ND                            | ND                      | N/A                  | MCL=60             | By-product of drinking water disinfection |
| Chlorine (ppm)   | 01-12/2016                       | N                                | 1.5                           | 0.9-1.5                 | MRDLG=4.0            | MRDL=4.0           | Water additive used to control microbes   |

| <b>Radioactive Contaminants</b>             |                                  |                          |                               |                         |             |            |                                       |
|---|----------------------------------|--------------------------|-------------------------------|-------------------------|-------------|------------|---------------------------------------|
| <b>Contaminant and Unit of Measurement</b>  | <b>Dates of Sampling (mo/yr)</b> | <b>MCL Violation Y/N</b> | <b>Highest Level Detected</b> | <b>Range of Results</b> | <b>MCLG</b> | <b>MCL</b> | <b>Likely Source of Contamination</b> |
| Radium 226 + 228 or combined radium (pCi/L) | 02/13-7/13                       | N                        | 1.6                           | 0.3-1.6                 | 0           | 5          | Erosion of natural deposits           |
| Uranium (ug/L)                              | 02/13-7/13                       | N                        | 1.4                           | 1.3-1.4                 | 0           | 30         | Erosion of natural deposits           |

## Unregulated Contaminants

The City of Brooksville has been monitoring for unregulated contaminants (UCs) as part of a study to help the U.S. Environmental Protection Agency (EPA) determine the occurrence in drinking water of UCs and whether or not these contaminants need to be regulated. At present, no health standards (for example, 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 EPA's Unregulated Contaminants Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

| Contaminant and Unit of Measurement | Dates of Sampling (mo/yr) | MCL Violation Y/N | Highest Level Detected | Range of Results | MCLG | MCL | Likely Source of Contamination  |
|-------------------------------------|---------------------------|-------------------|------------------------|------------------|------|-----|---|
| Chromium (ppb)                      | 10/8/14                   | N                 | 0.67                   | 0.43-0.67        | N/A  | N/A | Discharge from steel and pulp mills; erosion of natural deposits                              |
| Strontium (ppb)                     | 10/8/14                   | N                 | 1180.0                 | 178.0-1180.0     | N/A  | N/A | It is used in industry and medicine   |
| Molybdenum (ppb)                    | 10/8/14                   | N                 | 1.5                    | 0.831-1.5        | N/A  | N/A | It is used in manufacture of steel products, and in the treatment of agricultural fertilizers |
| Vanadium (ppb)                      | 10/8/14                   | N                 | 5.0                    | 2.9-5.0          | N/A  | N/A | Vanadium is found in many petroleum products. It occurs naturally in fuel oils and coal       |
| Chromium, Hexavalent (ppb)          | 10/8/14                   | N                 | 0.66                   | 0.42-0.66        | N/A  | N/A | It is used in the textile industry, and other manufacturing processes                         |

## Inorganic Contaminants

| Contaminant and Unit of Measurement | Dates of Sampling (mo/yr) | MCL Violation Y/N | Highest Level Detected | Range of Results | MCLG  | MCL   | Likely Source of Contamination   |
|-------------------------------------|---------------------------|-------------------|------------------------|------------------|-------|-------|--|
| Fluoride (ppm)                      | 02-05/2014                | N                 | 0.75                   | 0.51-0.75        | 4.0   | 4.0   | Erosion of natural deposits; discharge from fertilizer and aluminum factories. Water additive which promotes strong teeth when at optimum level of 0.7 ppm |
| Nitrate (as Nitrogen) (ppm)         | 04-16                     | N                 | 0.79                   | 0.30-0.79        | 10.0  | 10.0  | Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits  |
| Arsenic (ppb)                       | 02-05/2014                | N                 | 3.1                    | 1.7-3.1          | N/A   | 10.0  | Natural occurrence from soil leaching  |
| Barium (ppm)                        | 02-05/2014                | N                 | 0.0097                 | 0.0044-0.0097    | 2.0   | 2.0   | Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits   |
| Lead (ppb)                          | 02-05/2014                | N                 | 0.27                   | ND-0.27          | N/A   | 15.0  | Residue from man-made pollution such as auto emissions and paint; lead pipe, casing, and solder  |
| Nickel (ppb)                        | 02-05/2014                | N                 | 2.3                    | 1.8-2.3          | N/A   | 100.0 | Pollution from mining and refining operations. Natural occurrence in soil  |
| Selenium (ppb)                      | 02-05/2014                | N                 | 4.9                    | 2.0-4.9          | 50.0  | 50.0  | Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines   |
| Sodium (ppm)                        | 02-05/2014                | N                 | 9.4                    | 5.3-9.4          | N/A   | 160   | Salt water intrusion, leaching from soil   |
| Beryllium (ppb)                     | 02-05/2014                | N                 | 0.13                   | ND-0.13          | 4.0   | 4.0   | Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries                                   |
| Chromium (ppb)                      | 02-05/2014                | N                 | 5.2                    | 3.3-5.2          | 100.0 | 100.0 | Discharge from steel and pulp mills; erosion of natural deposits   |

## Lead and Copper (Tap Water)

| Contaminant and Unit of Measurement | Dates of Sampling (mo/yr) | AL Exceeded Y/N | 90 <sup>th</sup> Percentile Result | No. of Sampling Sites Exceeding the AL | MCLG | Action Level | Likely Source of Contamination   |
|-------------------------------------|---------------------------|-----------------|------------------------------------|--|------|--------------|--|
| Copper (POE tap water) (ppm)        | 7/14                      | N               | 0.69                               | 0                                      | 1.3  | 1.3          | Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives |

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 Brooksville 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 (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>

### **General Information:**

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:

- (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- (B) 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.
- (C) Pesticides and herbicides, which may come from a variety of sources such as agricultural, urban storm water runoff, and residential uses.
- (D) 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.
- (E) 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 Environmental Protection Agency (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).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people 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 microbiological contaminants are available from the Safe Drinking Water Hotline at (1-800-426-4791).

The City asks that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future. City Public Works staff operates 24 hours a day, 7 days a week to provide top-quality water to every tap.

If you have any questions about this report or your water utility, please contact Jon Dowler, Project Manager at (352-540-3860), Monday through Friday from 8:30 a.m. through 4:00 p.m.

You are a valued customer and staff wants you to be informed about your water utility. If you want to learn more, please attend any of our regularly scheduled City Council meetings. Meetings are generally held on the first and third Monday of each month, starting at 7:00 p.m., at 201 Howell Avenue. For more exact details, please contact the City Clerk at (352-540-3810).