

# ANNUAL DRINKING WATER QUALITY REPORT

Woodruff-Roebuck Water District (4220007)

June, 2018

P. O. Box 182, Woodruff, S.C. 29388

This report is intended to provide you with important information about your drinking water and the efforts made by the water system to provide safe drinking water.

**The source of drinking water used by the Woodruff- Roebuck Water District is surface water.**

Este informe contiene informacion muy importante. Traduscalo o hable con alguien que lo entienda bien.

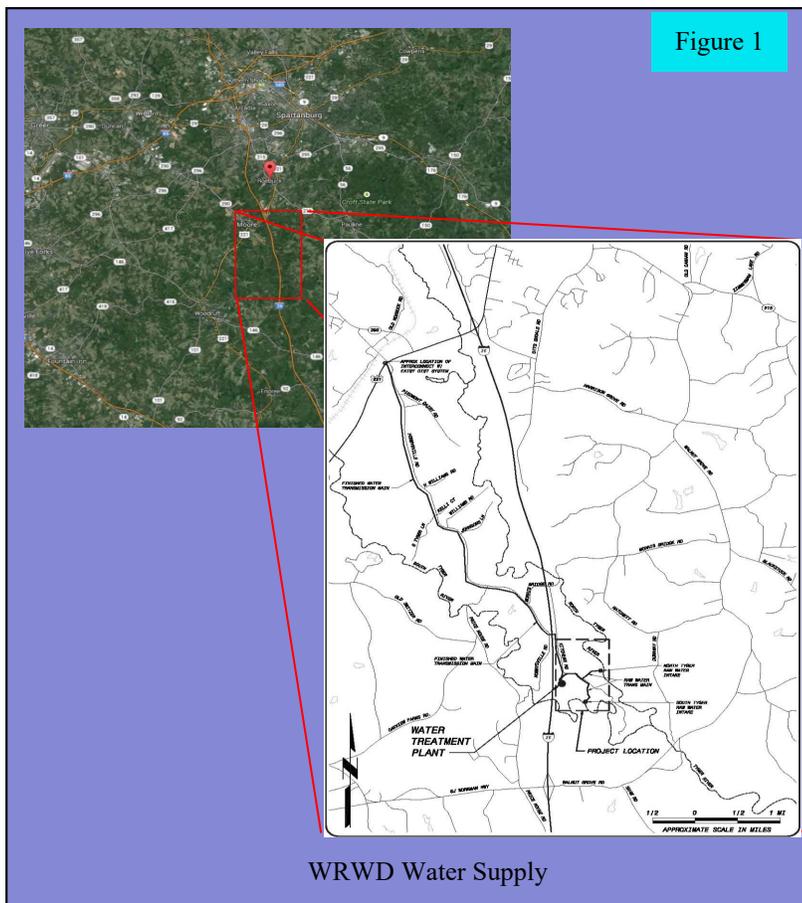
## CONSUMER CONFIDENCE REPORT

On August 6, 1998, the Environmental Protection Agency promulgated the Consumer Confidence Report regulation. This rule requires public water systems to publish an annual report for distribution to their customers and other water consumers which gives detailed information about water sources, water treatment, water quality and regulatory compliance. The annual reports, covering the calendar year 2017, must be prepared and distributed by July 1, 2018.

## SOURCE WATER INFORMATION

The Woodruff-Roebuck Water District (WRWD) supplies water to its distribution system from its drinking water treatment plant. The Woodruff- Roebuck Water District Water Treatment Plant uses surface water from the North and South Tyger Rivers just before the rivers come together to form the Tyger River (Figure 1).

The North Tyger River is formed from the Middle and South Tyger Rivers and all of their tributaries. The rivers originate in Spartanburg County in South Carolina. The South Tyger River forms in Northern Greenville County in South Carolina and passes through Spartanburg County. There is an intake on each river capable of delivering the full plant capacity from either river.



The South Carolina Department of Health and Environmental Control (SCDHEC) is required by the Safe Drinking Water Act Amendments of 1996 to perform a delineation and assessment of each watershed in South Carolina which is used as a drinking water source. A Source Water Assessment has not been conducted for the entire WRWD Watershed, however, assessments can be found for water providers just above us. For the North Tyger River Source you can refer to the SJWD Source Water Assessment in the Spartanburg County section. The Greer CPW Source Water Assessment can be referenced for the South Tyger River and is located in the Greenville County Section. Additional information about SCDHEC's Source Water Assessment Program and the specific Assessments are no longer on the SCHEC website but may be found through the following website; [www.scdhec.gov/homeandenvironment/water/sourcewaterprotection/](http://www.scdhec.gov/homeandenvironment/water/sourcewaterprotection/)

## TREATMENT PROCESS

Conventional water treatment is used at the Woodruff- Roebuck Water District Water Treatment Plant (WTP). “Raw” water from the rivers is first passed through a screen to prevent large objects from entering the treatment process. The water is pumped from each intake to the WTP where alum and lime are then added. In a process called coagulation, these substances combine with each other and with fine particles in the water to form a substance called “floc” which is heavier than water. The water then passes through basins equipped with “plates” where the floc settles to the bottom and is removed, taking unwanted substances with it. Clear “settled” water is skimmed from the top of the basins and chlorine is added to this water to remove iron and manganese, two natural substances in the water which would stain clothing and plumbing fixtures if not removed, as well as, lead to dirty water being experienced in the distribution system. The chlorine also acts as a disinfectant, destroying bacteria, viruses, algae, and other organisms, some of which could cause illness. The water then passes through filters to remove still more unwanted material. Additional chlorine disinfectant and lime are added as needed to meet state requirements. A corrosion inhibitor containing phosphate is added to preserve distribution piping and prevent lead and copper contamination. Finally, fluoride is added to prevent tooth decay.

Each step of the treatment process represents a barrier which prevents chemical contaminants and disease organisms from passing through the treatment plant into the drinking water. EPA has established standards for the performance of each of these barriers.

The effectiveness of coagulation, sedimentation and filtration in removing particles from the water is determined by measuring the turbidity of the water as it leaves the filters. Turbidity is a measure of the quantity of finely divided particles suspended in the water, and is reported in units called NTU. The EPA standard for the turbidity of filtered water states that turbidity may not exceed 0.3 NTU in more than 5% of all the measurements taken, and must never exceed 1 NTU. 1 NTU turbidity cannot be seen by the human eye. Turbidity measurement is required every 4 hours. WRWD was in full compliance with this requirement in 2017.

Regulations also require maintenance of a minimum level of disinfection throughout the distribution system.

WRWD used chlorine as its only disinfectant during 2017. The MRDL for chlorine is 4 parts per million. The MRDLG for chlorine is also 4 ppm. Public water systems performing water treatment are required to monitor Total Organic Carbon (TOC) levels in their source and finished water. TOC provides a measure of available organic precursors, the natural raw material that reacts with chlorine to form disinfection byproducts. By limiting the amount of this raw material available, as well as the level of disinfectant used, the potential for forming disinfection byproducts can be limited. A minimum percent removal of TOC through the treatment process is required. What is reported is the ratio of the actual removal percentage achieved and the minimum requirement. A running annual average (average of four consecutive quarterly averages ) ratio of 1.0 or higher indicates compliance with the requirements.

## 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.
- 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.

## CHEMICAL MONITORING

Public water systems are required to monitor their drinking water for a large number of chemical contaminants. These include inorganic chemicals, synthetic organic chemicals, volatile organic chemicals, disinfection byproducts, and radioactive contaminants. For some of these contaminants, EPA has established and SCDHEC has adopted maximum contaminant levels and maximum contaminant level goals. These contaminants are referred to as regulated contaminants. For other contaminants, EPA and SCDHEC require monitoring as a means of building a base of occurrence data, but there are not at this time any enforceable limits on the concentration of these contaminants. These are referred to as unregulated contaminants. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health. 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 1-800-426-4791**. Public water systems are required to report only those contaminants which have been detected during the calendar year 2017, or in the most recent sample taken for parameters measured less frequently than once per year. The information must include the contaminant name, the MCLG and MCL, the highest level found (or the average for substances subject to secondary MCL's) and the range of measurements if multiple samples were taken, the date samples were taken, and the typical source or sources of the contaminants detected. Normal levels of trihalomethanes and haloacetic acids, which are the expected byproducts of chlorine disinfection, were observed, but these are not regulated at the treatment plant. All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. These substances can be microbes, inorganic or organic chemicals and radioactive substances. All 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. Woodruff-Roebuck Water District 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

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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>.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day for a lifetime at the MCL level to have a one-in-a-million chance of having the described health effect.

Woodruff-Roebuck Water District & the South Carolina Department of Health & Environmental Control routinely monitor for 81 contaminants in your drinking water according to federal and state laws. The tables below show the results of monitoring for contaminants which have been detected during the period of January 1st to December 31st, 2017.

**Regulated Substances Detected in the WRWD Finished Drinking Water**

| Substance                      | MCLG   | MCL  | Highest Level        | Range of Levels Detected  | Year Sampled | MCL exceeded ? | Typical Source  |
|--------------------------------|--------|--|----------------------|---------------------------|--------------|----------------|---|
| Nitrate (measured as Nitrogen) | 10 ppm | 10 ppm   | 0.46 ppm             | 0.46-0.46 ppm             | 2017         | NO             | Runoff from fertilizer use. Leaching from septic tanks and sewage. Erosion from natural deposits.     |
| Turbidity                      | 0      | TT= 1NTU<br><br>TT= % of Samples below 0.3 NTU | 0.06 NTU<br><br>100% | 0.04-0.08NTU<br><br>NA    | 2017         | NO             | Soil runoff   |
| Total Organic Carbon (TOC) **  | N A    | TT= Removal Ratio of 1 or greater              | Removal Ratio= 1.14  | Removal Ratio= 1.00 -2.21 | 2017         | NO             | Naturally Occurring   |
| Fluoride *                     | 4 ppm  | 4.0 ppm  | 0.59 ppm             | 0.59-0.59 ppm             | 2017         | NO             | Erosion of natural deposit. Water additive which promotes strong teeth. Added to prevent tooth decay. |

\*Only fluoride samples taken by DHEC are given in table. Daily monitoring of fluoride levels by the WRWD certified laboratory during 2017 showed a range of 0.00—0.71 ppm.

**\*\* Total Organic Carbon**

The percentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements set.

**Woodruff– Roebuck Water District Distribution Monitoring for Lead and Copper Rule**

| Contaminant Unit | Action Level (AL) | MCLG    | 90th Percentile | # of Sites Over Action Level | Year Sampled | Violation | Typical Source of Contamination          |
|------------------|-------------------|---------|-----------------|------------------------------|--------------|-----------|--|
| Copper           | 1.3 ppm           | 1.3 ppm | 0.169 ppm       | 0                            | 2015         | NO        | Corrosion of household plumbing systems. |
| Lead             | 0.015 ppb         | 0 ppb   | 0 ppb           | 1                            | 2015         | NO        | Corrosion of household plumbing systems. |

| Woodruff– Roebuck Water District Disinfection and Disinfection Byproducts |                   |              |                                       |                                   |              |                |  |
|---|-------------------|--------------|---------------------------------------|-----------------------------------|--------------|----------------|--|
| Disinfection and Disinfection Byproducts                                  | MCLG              | MCL          | Highest Level                         | Range of Levels Detected          | Year Sampled | MCL exceeded ? | Typical Source                             |
| Chlorine  | MRDLG = 4 ppm     | MRDL = 4 ppm | 1.62 ppm (DHEC Sample)                | 0.21-1.79 ppm<br>Average 0.76 ppm | 2017         | NO             | Water additive used to control microbes    |
| Haloacetic Acids (HAA5)   | No Goal for Total | 60 ppb       | 35 ppb (highest LRAA at site DBP-22 ) | 9.7-43.4 ppb                      | 2017         | NO             | By-product of drinking water disinfection. |
| Total Trihalomethanes (TTHM)*   | No Goal for Total | 80 ppb       | 72 ppb (highest LRAA at site DBP-1A)  | 23.4-91.9 ppb                     | 2017         | NO             | By-product of drinking water disinfection. |

**What do all those symbols mean?**

**Distribution System (Dist)**-Sample locations are located in the service are of the Woodruff– Roebuck Water District

**Non-Detects (ND)**-laboratory analysis indicates that the constituent is not present.

**Parts per million (ppm) or Milligrams per liter (mg/l)**-one part per million corresponds to one minute in two years or a single penny in \$10,000.

**Parts per billion (ppb) or Micrograms per liter**-one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

**Parts per trillion (ppt) or Nanograms per liter**-one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

**Action Level**-the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

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

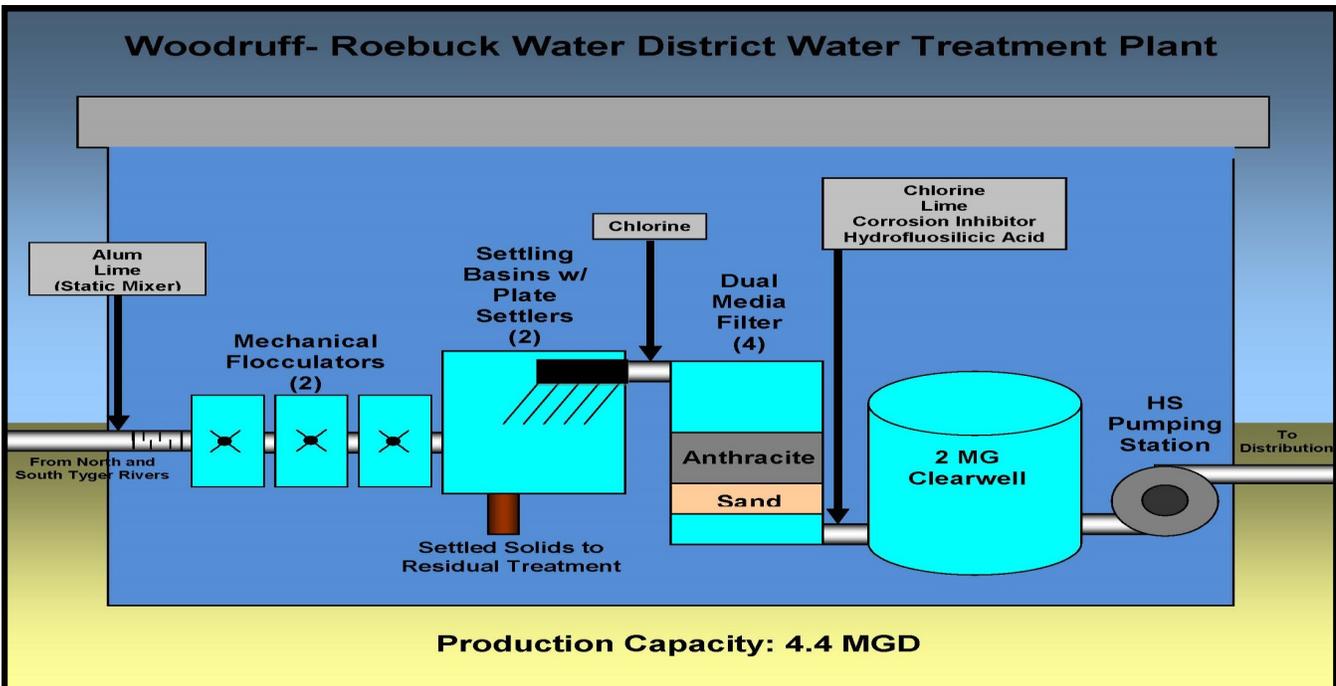
**Maximum Contaminant Level Goal (MCLG)** - The “**Goal**” is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**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.

**Water Treatment Plant (WTP)**-Woodruff– Roebuck Water District Water Treatment Plant located in Roebuck SC.

WOODRUFF-ROEBUCK WATER DISTRICT  
P. O. BOX 182  
WOODRUFF, SC 29388



If you have questions about this report, please call our office at 864-476-3188. Our District is governed by a Board of Commissioners who meet at the District Office on the third Thursday of each month at 12:45 p.m.