2018 Annual Drinking Water Quality Report
Town of Biltmore Forest
PWSID # 01-11-030

We are pleased to present to you this year's Annual Quality Water Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water. We purchase our water from the City of Asheville, which is treated surface water. The City of Asheville's water comes from the North Fork Reservoir and the Bee Tree Reservoir.

The Town of Biltmore Forest is pleased to report that our drinking water is safe and meets federal and state requirements.

If you have any questions about this report or concerning your water utility, please contact Terry Crouch at the Biltmore Forest Public Works Department at 274-3919. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the second Tuesday of the month at 4:30 p.m. in the Biltmore Forest Town Hall.

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 (800-426-4791).

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 agriculture, urban stormwater 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 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, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. 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 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 (800-426-4791).

Biltmore Forest is considered a purchase surface system and routinely monitors for certain contaminants in your drinking water according to Federal and State laws. The City of Asheville tests for other contaminants that Biltmore Forest is not required to test since the source of water is located at the City of Asheville. Both systems together test for over 120 contaminants and out of those contaminants this table shows the results of our monitoring for the period of **January 1st to December 31st, 2018** and the last test results of contaminants that were not due to be tested in **2018** in which contaminants were detected.

In this table, you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we have provided the following definitions:

Not Applicable (N/A) – does not apply for this contaminant.

Not Regulated (NR) – contaminants not yet regulated by EPA.

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.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Million Fibers per Liter (MFL) – million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level - The "Maximum Allowed" (MCL) is 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 - The "Goal"(MCLG) 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.

Disinfection By-Products (DBP) – Biltmore Forest 2018

Substance and Unit Of Measurement	Ideal Goal MCLG	Highest Level Allowed MCL	Sample Date	EPA Definition of Potential Source(s) of Substance	Results		Individual Plant Results
TTHM, ppb [Total Trihalmethanes]	0	80	2/5/18 5/1/18 8/6/18 11/5/18	By Product of Drinking Water Chlorination	Range .024 To .046	Highest LRAA .046	NA
HAA5, ppb Total Haloacetic Acid	NA	60	2/5/18 5/1/18 8/6/18 11/5/18	Total Haloacetic Acid	Range .016 To .025	Highest LRAA .025	NA

Town of Biltmore Forest
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2018 Drinking Water Report

The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. If you would like more information on unregulated chemicals, you may call the EPA Hot Line at 1-800-426-4791.

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

As you can see by the table, our system had no violations. We are proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some constituents have been detected. The EPA has determined that your water IS SAFE at these levels.

Thank you for allowing us to continue providing your family with clean, quality water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. These improvements are sometimes reflected as rate structure adjustments. Thank you for understanding.

Please call our office if you have questions.

We at the Town of Biltmore Forest work around the clock to provide top quality water to every tap. We ask 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.

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 Town of Biltmore Forest 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.

City Of Asheville's 2018 Test Results

Our Water Quality Surpasses All Requirements

Out of more than 150 possible substances tested only 8 were detected – making our drinking water one of the best sources of water in the country. The following regulated substances were detected (within very safe limits) in our "finished" drinking water as analyzed between January 1 and December 31, 2018. "Finished" water is the water that leaves our treatment plant and is distributed throughout the system.

Substance and Unit of Measurement	Ideal Goal– MCLG	Highest Level Allowed – MCL	Sample Date	EPA Definition of Potential Source(s) of Substance	Results	Individual Plant Results
REGULATED AT THE TREATMENT PLANT						
Fluoride, ppm	4	4	1/2/18 & 1/3/18	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories.	High 0.70 Range: (0.60 - 0.70)	Mills River (MR) = 0.70 North Fork (NF) = 0.70 William DeBruhl (WD) = 0.60
Turbidity, NTU	N/A	TT = 1 NTU Maximum limit for any measurement	N/A	The likely source is soil runoff. Monitoring turbidity (cloudiness of water) ensures the effectiveness of our filtration system.	High 0.21	MR = 0.18 NF = 0.21 WD = 0.17
	N/A	TT = 95% of samples <0.3 NTU	N/A		98.9% of samples < 0.3 NTU	MR = 100% NF = 100% WD = 100%
Total Organic Carbon (Source), ppm	N/A	TT	NF, WD, MR Quarterly	Naturally present in the environment.	Average = 0.19 Range: (ND - 1.1)	MR = ND -1.1 NF = ND-1.1 WD = ND = ND Compliance Method Alt #2
Total Organic Carbon (Treated), ppm	N/A	TT	NF, WD, MR Quarterly	Naturally present in the environment.	Average= ND Range: (ND – ND)	MR = ND NF = ND WD = ND - ND Compliance Method Alt #2
REGULATED AT THE CUSTOMER'S TAP						
Copper, ppm	1.3	AL = 1.3	Jun - Sept 2018	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.	<0.050 at 90th percentile	None of the 50 targeted sampling sites exceeded the Action Level.
Lead, ppb	0	AL = 15	Jun - Sept 2018	Corrosion of household plumbing systems; erosion of natural deposits.	< 3 at 90th percentile	One of the 50 targeted sampling sites exceeded the Action Level.
REGULATED IN THE DISTRIBUTION SYSTEM						
Total Coliform Bacteria (presence or absence)	0	N/A	06/06/18	Naturally occurring in the environment.	1	One positive sample for the year 2018
Fecal Coliform or E. Coli (presence or absence)	0	N/A	N/A	Human or animal fecal waste	0	No positive samples for 2018

Source Water Assessment Program (SWAP) Results

North Carolina Department of Environmental Quality,Public Water Supply Section, Source Water Assessment Program (SWAP) conducted an assessment of the drinking water sources across North Carolina. The purpose of the assessment was to determine the susceptibility of each drinking water source to Potential Contaminant Sources (PCSs). The results of the assessment are available in SWAP Assessment Reports that include maps, background information and a relative susceptibility rating of Higher, Moderate, or Lower. The relative susceptibility rating of each source for the City of Asheville is determined by
combining the contaminant rating (number and location of PCSs within the watershed) and the inherent vulnerability rating (geologic characteristics of the surface water source and the watershed area). The assessment findings are summarized below.It is important to understand that a susceptibility rating of Moderate or Higher does not imply poor water quality, only the systems' potential to become contaminated by PCS's in the assessment area. The complete SWAP Assessment report for the City of Asheville Water Resources Department may be viewed on the Web at: www.ncwater.org/pws/ swap. To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program – Report Request, 1634 Mail Center, Raleigh NC 27699-1634, or email request to

swap@ncdenr. gov. Please indicate the system name (City of Asheville), PWSID (01-11-010), and provide your name, mailing address and phone number. If you have any questions about the SWAP report please contact the Source Water Assessment staff by phone at 919-707-9098.

Susceptibility of Sources to Potential Contaminant Sources (PCSs)

Source Name	Susceptibility Rating
North Fork Reservoir	Higher
Mills River	Moderate
Bee Tree Reservoir	Moderate
French Broad River	Higher

(Found in SWAP Report Table 2, dated (April 2017)
French Broad River Intake is only used during extreme drought conditions.

						Individual Site Ranges*
Total Trihalomethanes, ppb	0	80	2/3/18, 5/9/18, 8/6/18, 11/5/18	By-product of drinking water chlorination.	43 (Highest LRAA) Range: (9-62)	B01 - (33 - 56) B02 - (19 –36) B03 - (9- 21) B04 - (22 –62) B05 - (25 - 50) B06 - (23 –38) B07 - (18 -40) B08 - (21 –40)
Total Haloacetic Acid HAA5, ppb	0	60		Total Haloacetic Acid - By-product of drinking water chlorination.	43 (Highest LRAA) Range: (18-64)	B01 - (32 - 56) B02 - (16 -42 B03 - (19 - 40) B04 - (31 -38 B05 - (23- 43) B06 - (35 -63 B07 - (28 – 64) B08 - (23 -44
Chlorine, ppm	MRDLG = 4	MRDL = 4	Daily	Water additive used to control microbes.	System Average 1.12 Range (0.03 - 1.76)	Sampled in Distribution

SOURCE WATER MONITORING

Our system monitored for Cryptosporidium in our source water at all three water treatment plants. North Fork and William DeBruhl did not detect any Cryptosporidium. Mills River detected some Cryptosporidium in ranges from 0.0 – 0.200 oocysts/L.

Cryptosporidium is a microbiological pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water and/or finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea and abdominal cramps.

Most healthy individuals can overcome the disease within a few weeks. However, immune-compromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immune-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through other means than drinking water.

This table summarizes results for calendar year 2018.

B01 – Pisgah Elementary
B02 – Fairview Downs
B03 – Bee Tree Junction
B04 – Crowning Way
B05 – CTS Exxon Mills Gap Rd
B06 – Challedon Subdivision
B07 – Town Mountain Rd
B08 – Fairview Fire Dept

2017 PHYSICAL AND MINERAL CHARACTERISTICS

The following constituents analyzed in your water are indicators of the appearance, taste, and mineral content of the drinking water delivered to your tap.

Constituent	**Annual Average**
pH, standard units	7.60
Alkalinity, mg/l	24..88
Hardness, mg/l	5.01
Sodium, mg/l	13.00

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

KEY TO UNIT ABBREVIATIONS

AL = Action Level; the concentration of a contaminant that triggers treatment or other requirements that a water system must follow. Action Levels are reported at the 90th percentile for homes at greatest risk.
MCL = Maximum Contaminant Level; the highest level of a contaminant that is allowed in drinking water.
MCLG = Maximum Contaminant Level Goal; the level of a contaminant in drinking water below which there is no known or expected risk to health.
MRDLG = Maximum Residual Disinfectant Level Goal; the level of a drinking water disinfectant below which there is no known or expected risk to health.

MRDL = Maximum Residual Disinfectant Level; the highest level of a disinfectant allowed in drinking water.
N/A = Not Applicable.
ND = Not Detected.
NR = Not Regulated.
NTU = Nephelometric Turbidity Unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is noticeable to the average person.
ppb = Parts per billion or micrograms per liter. ppm = Parts per million or milligrams per liter. ppt = Parts per trillion or nanograms per liter. RAA = Running Annual Average.
TT = Treatment Technique; a required process intended to reduce the level of a contaminant in drinking water.
< = Less than.