

## Your Annual Water Report

We are pleased to present to you the 2016 Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about from where your water comes, what it contains, and how it compares to standards set by regulatory agencies. 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 and to providing you with this information, because informed customers are our best allies.

### **When You Turn on Your Tap, Consider the Source**

We purchase your water from the City of Hendersonville, which draws surface water from the Mills River by two intakes at Bradley Creek and North Fork in addition to the Main Stem of the Mills River. The City has installed a 30-inch raw water line from the French Broad River to the City's water treatment plant. Though this line is not actively in service, it is available in situations that require more water than current sources can provide, such as drought conditions.

### **Water Conservation**

Please be reminded that all our water systems in North Carolina are always in some stage of either voluntary or mandatory water conservation restriction. These restrictions may vary weekly due to drought conditions and are dictated by a system established by the North Carolina Utilities Commission in an order dated May 23, 2008. The customers are encouraged to keep informed of current restrictions by checking the Commission's web page at [www.ncuc.commerce.state.nc.us/](http://www.ncuc.commerce.state.nc.us/) and clicking on the "Drought! Non-essential water usage restrictions" in the right hand margin or if you do not have access to a computer by calling the customer service number shown on this report.



Help put a stop to the more than **1 trillion gallons of water lost annually** due to household leaks. These easy-to-fix leaks waste the average family the amount of water used to fill a backyard swimming pool each year.

Plumbing leaks can run up your family's water bill an extra 10 percent plus, but chasing down these water- and money-wasting culprits is as easy as 1—2—3. Simply check, twist, and replace your way to fewer leaks and more water savings:

- **Check** for silent leaks in the toilet with a few drops of food coloring in the tank, and check your sprinkler system for winter damage.
- **Twist** faucet valves; tighten pipe connections; and secure your hose to the spigot. For additional savings, twist a WaterSense labeled aerator onto each bathroom faucet to save water without noticing a difference in flow. They can save a household more than 500 gallons each year—equivalent to the amount water used to shower 180 times!
- **Replace** old plumbing fixtures and irrigation controllers that are wasting water with WaterSense labeled models that are independently certified to use 20 percent less water and perform well.

### **Message From Matthew Klein, President**

Dear Carolina Water Service, Inc. of NC Customer,

I am pleased to share your Annual Water Report for 2016. As the local President of your community water utility, this communication is part of our continuing effort to emphasize to our customers that we fully understand our role in the local community. Additionally, I'm also pleased to let you know that we continue to provide tailored customer service with personnel dedicated to your area and that we now have created a new, more 'user friendly' website just for our state at [www.uiwater.com](http://www.uiwater.com).

Our team is committed to providing safe, reliable and cost effective service to our customers. All of our employees share in our commitment to act with integrity, protect the environment, and enhance the local community.

**We are proud to share this report which is based on water quality testing through December 2016. You will find that we supply water that meets or exceeds all federal and state water quality regulations.**

These results don't happen by chance. Our dedicated local team of water quality experts is working in the community everyday ensuring that you, our customer, are our top priority and providing the highest quality drinking water and service - now and in the years to come.

Best regards,



Sign up for e-billing now at [www.uiwater.com](http://www.uiwater.com)

**The Safe Drinking Water Act** was passed in 1974 due to congressional concerns about organic chemical contaminants in drinking water and the inefficient manner by which states supervised and monitored drinking water supplies. Congress' aim was to assure that all citizens served by public water systems would be provided high quality water. As a result, the EPA set enforceable standards for health-related drinking water contaminants. The Act also established programs to protect underground sources of drinking water from contamination.

## EPA Wants You To Know:

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 may pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- (i) Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- (ii) Inorganic contaminants, such as salts and metals, that may be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- (iii) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- (iv) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff, and septic systems.
- (v) Radioactive contaminants, which may be naturally-occurring or be the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, U.S. EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. U.S. FDA regulations establish limits for contaminants in bottled water that shall 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 may be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 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 microbial contaminants are available from the Safe Drinking Water Hotline (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. Carolina Water Service, Inc. of NC 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>.

Water that remains stationary within your home plumbing for extended periods of time can leach lead out of pipes joined with lead-containing solder as well as brass fixtures or galvanized pipes. Flushing fixtures has been found to be an effective means of reducing lead levels. The flushing process could take from 30 seconds to 2 minutes or longer until it becomes cold or reaches a steady temperature. Faucets, fittings, and valves, including those advertised as "lead-free," may contribute lead to drinking water. Consumers should be aware of this when choosing fixtures and take appropriate precautions. Visit the NSF Web site at [www.nsf.org](http://www.nsf.org) to learn more about lead-containing plumbing fixtures.

The Environmental Protection Agency requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the tables below are the only contaminants detected in your drinking water.

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



**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.**

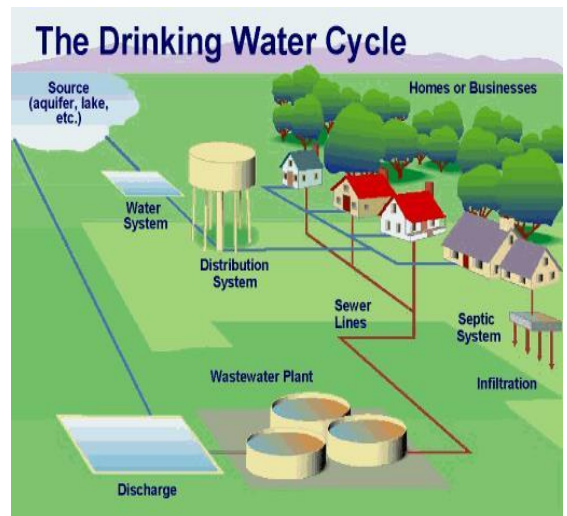
**Drain Disposal Information:** Sewer overflows and backups can cause health hazards, damage home interiors, and threaten the environment. A common cause is sewer pipes blocked by grease, which gets into the sewer from household drains. Grease sticks to the insides of pipes. Over time, the grease can build up and block the entire pipe. Help solve the grease problem by keeping this material out of the sewer system in the first place:

- Never pour grease down sink drains or into toilets. Scrape grease into a can or trash.
- Put strainers in sink drains to catch food scraps/solids for disposal.

**Prescription Medication and Hazardous Waste** - Household products such as paints, cleaners, oils, and pesticides, are considered to be household hazardous waste. Prescription and over-the-counter drugs poured down the sink or flushed down the toilet can pass through the wastewater treatment system and enter rivers and lakes (or leach into the ground and seep into groundwater in a septic system). Follow the directions for proper disposal procedures.

**Don't flush hazardous waste or prescription and over-the-counter drugs down the toilet or drain.** They may flow downstream to serve as sources for community drinking water supplies. Many communities offer a variety of options for conveniently and safely managing these items. For more information, visit the EPA website at:

<http://www.epa.gov/epawaste/conservematerials/hhw.htm>



### Understanding This Report:

In order to help you understand this report, we want you to understand a few terms and abbreviations that are contained in it.

- Action level (AL) - action level is 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 contaminant level is the highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's 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 health risk. MCLG's allow for a margin of safety.
- Maximum Residual Disinfectant Level (MRDL): The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- Maximum Residual Disinfectant 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 contamination.
- Locational Running Annual Average (LRAA) - The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters under the Stage 2 Disinfectants and Disinfection Byproducts Rule.
- Nephelometric Turbidity Units (NTU) - Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person
- Non-Detects (ND) - laboratory analysis indicates that the constituent is not present.
- Not-Applicable (N/A) - Information not applicable/not required for that particular water system or for that particular Rule.
- 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 (ug/l) - 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.
- Running Annual Average (RAA) - Average of four consecutive quarters of sample analytical results used to determine compliance.
- Treatment Technique (TT) - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.
- Turbidity - A measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system. The turbidity rule requires that 95% or more of the monthly samples must be less than or equal to 0.3 NTU
- Avg - Regulatory compliance with some MCLs is based on running annual average of monthly samples.

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The table below lists all the drinking water contaminants that we detected in the last round of sampling for the particular contaminant group. The presence of contaminants does not necessarily indicate that water poses a health risk. **Unless otherwise noted, the data presented in this table is from testing done January 1 through December 31, 2016.** The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

### If You Have Questions Or Want To Get Involved?

Carolina Water Service, Inc. of NC does not hold regular public meetings. If you have any questions about this report or would like a company representative to attend an upcoming homeowners association meeting, please contact Customer Service at 1-800-525-7990.

### Source Water Assessment Program (SWAP) Results

The North Carolina Department of Environment and Natural Resources (DENR), Public Water Supply (PWS) Section, Source Water Assessment Program (SWAP) conducted assessments for all drinking water sources across North Carolina. The purpose of the assessments was to determine the susceptibility of each drinking water source (well or surface water intake) 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 the source for the City of Hendersonville was determined by combining the contaminant rating (number and location of PCS's within the assessment area) and the inherent vulnerability rating (i.e., characteristics or existing conditions of the well or watershed and its delineated assessment area.). The assessment findings are summarized in the table below:

Susceptibility of Sources to Potential Contaminant Sources (PCS's)

Source Name	Susceptibility Rating	Swap Report Date
Bradley Creek	Moderate	July 8, 2015
North Fork of Mills River	Moderate	July 8, 2015
Main Stem of Mills River	Moderate	July 8, 2015

The complete SWAP Assessment report for City of Hendersonville may be viewed on the Web at: [www.ncwater.org/pws/swap](http://www.ncwater.org/pws/swap). Please note that because SWAP results and reports are periodically updated by the PWS Section, the results available on this web site may differ from the results that were available at the time this CCR was prepared. To obtain a printed copy of this report, please mail a written request to: Source Water Assessment Program - Report Request, 1634 Mail Service Center, Raleigh NC 27699-1634, or email request to [swap@ncdenr.gov](mailto:swap@ncdenr.gov). Please indicate your system name, PWSID, 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.

It is important to understand that a susceptibility rating of "higher" does not imply poor water quality, only the systems' potential to become contaminated by PCS's in the assessment area.

Please see the following for results from sampling conducted by Carolina Water Service, Inc. of NC:

**Lead and Copper Contaminants**

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90th percentile)	2015	0.114	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

**Disinfectant Residuals Summary**

Disinfectant (unit)	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range Low High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	2016	N	1.49	1.2 – 1.6	4	4.0	Water additive used to control microbes
Chloramines (ppm)	2016	N	1.59	1.3 – 1.7	4	4.0	Water additive used to control microbes

**Stage 2 Disinfection Byproduct Compliance**

Disinfection Byproduct (unit)	Year Sampled	MCL Violation Y/N	Your Water (Highest Detection)	Range Low High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb) [Total Trihalomethanes]	2016	N	37.9 (Location B01)	21.0 – 37.9	N/A	80	Byproduct of drinking water disinfection
HAA5 (ppb) [Haloacetic Acids]	2016	N	42.6 (Location B01)	18.8 – 42.6	N/A	60	Byproduct of drinking water disinfection

Please see the following results from sampling conducted by the City of Hendersonville. If you have questions regarding the City of Hendersonville’s water quality, please contact Ronald L. Reid at (828) 891-7779.

**Regulated Substances**

Contaminants (unit)	Sample Date	MCL Violation Y/N	Your Water	Range Low - High	MCLG	MCL	Typical Source
Nitrate (ppm)	July 2016	N	0.076	N/A	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; erosion of natural deposits

**Turbidity\***

Contaminant (unit)	Year Sampled	Your Water	Treatment Technique (TT) Violation if:	Treatment Technique (TT) Violation	Typical Source
Turbidity (NTU) – Highest single turbidity measurement	2016	0.03 – 0.07	Turbidity >1 NTU	No	Soil Runoff
Turbidity (NTU) - Lowest monthly percentage (%) of samples meeting turbidity limits	2016	100%	Less than 95% of monthly turbidity measurements are ≤0.3 NTU	No	

\*Turbidity is a measure of the cloudiness of the water. Hendersonville monitors it because it is a good indicator of the effectiveness of the filtration system. The turbidity rule requires that 95% or more of the monthly samples must be less than or equal to 0.3 NTU.

**Total Organic Carbon (TOC)**

Substance (Unit of Measure)	Year Sampled	MCL	MCLG	Your Water (RAA Removal Ratio)	Range Monthly Removal Ratio Low-High	TT Violation	Typical Source	Compliance Method (Step 1 or ACC#)
Total Organic Carbon (removal ratio) (TOC)-TREATED (ppm)	2016	TT	N/A	0	ND	No	Naturally present in the environment	ACC #2

Depending on the TOC in our source water, the system must have a certain percent removal of TOC or must achieve alternative compliance criteria. If Hendersonville does not achieve that percent removal, there is an alternative percent removal. If the alternative percent removal is not met, the Treatment Technique would be in violation.

**Cryptosporidium in Drinking Water**

Between January 2006 and December 2007, the City of Hendersonville collected 24 samples from the Mills River (untreated and filtered) and detected levels of *Giardia* from zero (no detection) to 0.273 in cysts per liter. *Cryptosporidium* was found to be less than 0.095 to 1.0 in these samples.

A second round of monitoring for *Cryptosporidium* and *Giardia* in the raw (untreated) water began in October 2015. *Cryptosporidium* was found in a single positive sample of 0.091 oocyst units in August 2016. *Giardia* was also detected in raw (untreated) water samples at a range of zero (no detection) to 1.636 cysts per liter. In accordance with the Long Term 2 (LT2) Enhanced Surface Water Treatment Rule (ESWTR), the City is in compliance with §141.178 (a) and (b). This cycle of testing for *Cryptosporidium* and *Giardia* will be completed in 2017.

*Cryptosporidium* is a microbial pathogen found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal. Monitoring indicates the presence of these organisms in the 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, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-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 means other than drinking water.

*Giardia* is a microscopic parasite that causes the diarrheal illness known as giardiasis. *Giardia* (also known as *Giardia intestinalis*, *Giardia lamblia*, or *Giardia duodenalis*) is found on surfaces or in soil, food or water that has been contaminated with feces from infected humans or animals.