2016 Annual Drinking Water Quality Report
Saluda, City of

Water System Number: NC 01-75-020

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about your source(s) of water, what it contains, and how it compares to standards set by regulatory agencies. 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 and to providing you with this information because informed customers are our best allies. **If you have any questions about this report or concerning your water, please contact our City Manager, Mr. Jonathan Cannon, at (828) 749-2581. We want our valued customers to be informed about their water utility.**

What EPA Wants You to Know

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).

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. The City of Saluda 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.

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; and 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 which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

When You Turn on Your Tap, Consider the Source

The water that is used by the City of Saluda is purchased from the City of Hendersonville (NC 01-45-010). The following information about the City of Hendersonville's water source comes directly from their 2016 Consumer Confidence Report: "The water used by the City of Hendersonville comes from the Mills River Watershed. We have two intakes located within Pisgah National Forest and they can supply up to 50% of the current usage in the City of Hendersonville and customers located within Henderson County. Water needed to provide the balance of the water demand is pumped from the main stem of the Mills River. The City (Hendersonville) has installed a 30-inch raw water line from the French Broad River to the City's (Hendersonville) water treatment plant. Though this line is not actively in service, it is available in situations that require more water than current sources provide, such as drought conditions." You may view the 2016 CCR for the City of Hendersonville by typing the following link into your search engine: http://www.hendersonvillenc.gov/Data/Sites/1/media/2016-water-quality-report_20170210.pdf

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 each source for the City of Saluda was determined by combining the contaminant rating (number and location of PCSs 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 (PCSs)

Source Name	Susceptibility Rating	SWAP Report Date
North Fork Mills River	Moderate	July 8, 2015
Mills River	Moderate	July 8, 2015
Bradley Creek	Moderate	July 8, 2015

The complete SWAP Assessment report for the City of Saluda may be viewed on the Web at: www.ncwater.org/pws/swap. Note that you will be redirected to the SWAP report for the City of Hendersonville (NC 01-45-010). 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. If you are unable to access your SWAP report on the web, you may mail a written request for a printed copy to: Source Water Assessment Program – Report Request, 1634 Mail Service Center, Raleigh, NC 27699-1634, or email requests to swap@ncdenr.gov. Please indicate your system name, number, 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 system's potential to become contaminated by PCSs in the assessment area.

Help Protect Your Source Water

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source(s) in several ways: recycling, pick up after your pets, limit or eliminate the use of harsh lawn and garden fertilizers and pesticides, dispose of chemicals properly, take used motor oil to a recycling center, repair fluid leaks from your automobiles, volunteer in your community to participate in group efforts to protect your source. These are just a few ways you can help make a difference. You can find more information on environmental conservation at the EPA website and through the North Carolina Department of Environmental Quality.

Violations that Your Water System Received for the Report Year

During 2016, or during any compliance period that ended in 2016, we received a monitoring violation that covered the time period of April 1 – April 30, 2016. We failed to monitor for Disinfection By-Products during our required compliance month. We collected the required samples the following month and returning the system to compliance, and we have maintained monitoring compliance since then.

Water Quality Data Tables of Detected Contaminants

We routinely monitor for over 150 contaminants in your drinking water according to Federal and State laws. The tables below list all the drinking water contaminants that we detected in the last round of sampling for each 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 and the State allow 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.

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulations are warranted.

Important Drinking Water Definitions:

Not-Applicable (N/A) – Information not applicable/not required for that particular water system or for that particular rule.
Non-Detects (ND) - Laboratory analysis indicates that the contaminant is not present at the level of detection set for the particular methodology used.
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.
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.
Maximum Residual Disinfection 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 Disinfection 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.

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.

Maximum Contaminant Level (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 (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.

Tables of Detected Contaminants

Turbidity* City of Hendersonville

Contaminant (units)	Treatment Technique (TT) Violation Y/N	Your Water	MCLG	Treatment Technique (TT) Violation if:	Likely Source of Contamination
Turbidity (NTU) - Highest single turbidity measurement	N	0.03 – 0.07 NTU	N/A	Turbidity > 1 NTU	Soil runoff
Turbidity (NTU) - Lowest monthly percentage (%) of samples meeting turbidity limits	N	100%	N/A	Less than 95% of monthly turbidity measurements are $\leq$ 0.3 NTU	

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

Inorganic Contaminants: City of Hendersonville

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Arsenic (ppb)	July 13, 2016	N	ND	N/A	0	10	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Fluoride (ppm)	July 13, 2016	N	0.65	0.65 / 0.65	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

Arsenic: ***Your drinking water meets EPA's standard for arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.***

Nitrate/Nitrite Contaminants: City of Hendersonville

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Nitrate (as Nitrogen) (ppm)	July 13, 2016	N	0.076	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (as Nitrogen) (ppm)	July 13, 2016	N	ND	N/A	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

Nitrate: ***Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.***

Lead and Copper Contaminants: City of Hendersonville

Contaminant (units)	Sample Date	Your Water	Number of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90^{th} percentile)	July 2014	0.090	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90^{th} percentile)	July 2014	0.001	0	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

Lead and Copper Contaminants: City of Saluda

Contaminant (units)	Sample Date	Your Water	Number of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90^{th} percentile)	July 2016	0	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) (90^{th} percentile)	July 2016	0	0	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

Your water is treated by disinfection. Disinfection involves the addition of chlorine to kill dangerous bacteria and microorganisms that may be in the water. Disinfection is considered to be one of the major public health advances of the 20^{th} century.

Disinfectant Residuals Summary: City of Hendersonville

	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range Low	Range High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	2016	N	1.47	0.41	2.2	4	4.0	Water additive used to control microbes

Disinfectant Residuals Summary: City of Saluda

	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range Low	Range High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	2016	N	0.85	0.2	1.19	4	4.0	Water additive used to control microbes

Stage 1 Disinfection Byproduct Compliance - Based upon Running Annual Average (RAA): **City of Hendersonville**

Disinfection Byproduct	Year Sampled	MCL Violation Y/N	Your Water (highest RAA)	Range Low	Range High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb)	2016	N	19	9	21	N/A	80	Byproduct of drinking water disinfection
HAA5 (ppb)	2016	N	23	19	24	N/A	60	Byproduct of drinking water disinfection

Stage 2 Disinfection Byproduct Compliance - Based upon Locational Running Annual Average (LRAA): **City of Hendersonville**

Disinfection Byproduct	Year Sampled	MCL Violation Y/N	Your Water (highest LRAA)	Range Low	Range High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb)	2016	N	31	8	31	N/A	80	Byproduct of drinking water disinfection
Location: B04 – FD Edneyville	2016	N	24	11	46	N/A	80	Byproduct of drinking water disinfection
HAA5 (ppb)	2016	N	22	13	28	N/A	60	Byproduct of drinking water disinfection
Location: B04 – FD Edneyville	2016	N	28	15	45	N/A	60	Byproduct of drinking water disinfection

Stage 2 Disinfection Byproduct Compliance - Based upon Locational Running Annual Average (LRAA): **City of Saluda**

Disinfection Byproduct	Year Sampled	MCL Violation Y/N	Your Water (highest LRAA)	Range Low High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb) B01 – 484 Ozone Drive Triangle Stop	2016	N	29	17 / 29	N/A	80	Byproduct of drinking water disinfection
HAA5 (ppb) B02 – Main Meter on Highway 176	2016	N	28	19 / 28	N/A	60	Byproduct of drinking water disinfection

For TTHM: ***Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.***

For HAA5: ***Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.***

The PWS Section requires monitoring for other misc. contaminants, some for which the EPA has set national secondary drinking water standards (SMCLs) because they may cause cosmetic effects or aesthetic effects (such as taste, odor, and/or color) in drinking water. The contaminants with SMCLs normally do not have any health effects and normally do not affect the safety of your water**.**

Other Miscellaneous Water Characteristics Contaminants: City of Hendersonville

Contaminant (units)	Sample Date	Your Water	Range Low High	SMCL
Sodium (ppm)	July 13, 2016	11.2	ND / 13.9	N/A
pH	July 13, 2016	7.5 Standard Units	7.5 / 7.7 Standard Units	6.5 to 8.5 Standard Units

Cryptosporidium and Giardia: City of Hendersonville

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

Our system began the second round of monitoring for Cryptosporidium and Giardia in our Raw Water. During the months of October 2015 through December 2016 analysis have detected Cryptosporidium or Giardia in our (untreated) Raw Water. The City of Hendersonville Water Department will complete this cycle of testing for Cryptosporidium and Giardia during 2017. The samples of raw water (untreated) collected during this time frame also yield Cryptosporidium and Giardia being present. The Cryptosporidium had a single positive sample of 0.091 oocysts Units in August 2016. Giardia was also detected and the samples ranged from zero to 1.636 cysts/L. 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).

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. 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, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing lifethreatening 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.