



2018 WATER QUALITY REPORT  
Amick's Ferry Water System  
SCDHEC System No. 3250077



**2018 Water Quality Report**  
Amick's Ferry Water System - DHEC System # 3250077  
Town of Chapin, South Carolina



Once again, the Town of Chapin is proud to present our annual water quality report. This report covers the period between January 1 and December 31, 2018. As in years past, we are committed to delivering the best-quality drinking water possible. In but a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. To that end, we remain vigilant in meeting the challenges of new regulations, water conservation, and community outreach and education while continuing to serve the needs of all of our water users. Our exceptional staff continues to work hard every day—at any hour—to deliver the highest quality drinking water without interruption. Although the challenges are many, we feel that by relentlessly investing in customer outreach, education, and service, system upgrades, and training, the payoff is reliable, high-quality drinking water delivered to you and your family.



The Environmental Protection Agency (EPA) and the South Carolina Department of Health and Environmental Control (DHEC) have established strict standards for all drinking water. These criteria are designed to protect consumers from bacteria and water-borne illnesses. Additionally, EPA requires community water systems to publish an annual report to disclose to its customers important information about the drinking water provided. This report identifies the characteristics and performance of the Amick's Ferry Water System in compliance with the Consumer Confidence Reports Rule of the 1996 Safe Drinking Water Act Amendments.

The Staff of the Chapin Utilities Department hopes that you find this report informative, and comprehensive. We value your input, and are happy to address any concerns our customers may have. Please feel free to contact the Utilities Department with any questions or concerns you may have.

### Important Health Information

Some people may be more vulnerable to certain microbial contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their physician or health care provider. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or at:



<http://water.epa.gov/drink/hotline>.

## Source Water Assessment

The Town of Chapin currently buys its treated drinking water from the City of Columbia in bulk for distribution throughout the Chapin system. While Chapin owns several wells in the area, currently, those sources of water are used only on a standby basis. The City of Columbia gets its water from the Broad River Diversion Canal and Lake Murray. The Broad River collects water from a large portion of northern South Carolina through the Broad River Basin, while Lake Murray receives water from the Saluda River Basin. The South Carolina Department of Health and Environmental Control (SCDHEC) periodically assess the quality of source water for drinking water systems throughout the state. SCDHEC's Source Water Assessment Report is available and can be reviewed at City of Columbia offices located at 1136 Washington Street, or by calling 803-545-3400



## Your Water System

The Town of Chapin owns and operates the Amicks Ferry Water System. Customers of the Amicks Ferry Water System may voice questions and concerns at Town Council meetings, held at Town Hall on the first Tuesday of each month. Additionally, questions concerning daily operations and water quality issues can be directed to Town Hall at (803)345-2444.

Water for the Amick's Ferry Water System is provided through a combination of water purchased from the City of Columbia Water System. As noted above, wells are on standby throughout the system and can be placed into operation to supplement water supply on a moments notice. Seven (7) ground water wells are located throughout the water distribution system.



The drinking water purchased from the City of Columbia is treated surface water from the Broad River and/or Lake Murray. Drinking water wells are located throughout the Amick's Ferry Water System. Due to SCDHEC regulatory requirements concerning the blending of treated surface water and drinking water from groundwater wells, in the event that these wells are placed into operation, the ground water extracted from the wells receive no supplementary

treatment prior to being input into the system.

The following table identifies the location of each well.

Well Name	DHEC Source ID. Number	Location	Treatment Provided
Night Harbor Well #1	G32673	Behind Lot #136	None
Night Harbor Well #2	G32674	Behind Lot #25	None
Night Harbor Well #3	G32675	Behind Lot #30	None
Timberlake Well #1	G32528	Near No. 1 Tee Box	None
Timberlake Well #2	G32529	Near Entrance to	None
Timberlake Well #4	G32638	Near Ground Storage Tank	None
Oakbrook Well #2	G32656	Near Ground Storage Tank	None

The operation of the groundwater wells and water distribution system is rigidly maintained and monitored by State Certified Environmental Systems Operators who are thoroughly trained to make routine chemical and physical tests to maintain a high quality drinking water.

Our Source Water Assessment Plan is available for your review at

<http://www.scdhec.gov/HomeAndEnvironment/Water/SourceWaterProtection/>

## Quality of Your Drinking Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration 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 State of South Carolina and EPA require us to test and report on our water quality on a regular basis to ensure its safety. The Town of Chapin is constantly monitoring and testing water samples throughout the system in order to meet regulatory requirements, but also to provide water of a quality over and beyond meeting just the minimum requirements. We have always met, and will continue to meet or exceed all of these requirements to the absolute best of our ability. We want you to know that we pay attention every detail, and follow all the rules in order to provide the best drinking water possible.



The drinking water provided by the Town of Chapin in the Amick's Ferry Water System is considered safe by the South Carolina Department of Health and Environmental Control based upon testing performed by SCDHEC and routine monitoring performed by the Town. The presence of listed contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity.

The City of Columbia has also performed testing of the finished water produced and supplied to the Town of Chapin, with no violations having occurred during the period. Additional analyses are performed by SC DHEC, the state agency that regulates and oversees public water systems. Samples are tested at every stage of the treatment process and at many points throughout the Town's distribution system. The City of Columbia's Water Quality Report may be viewed at Department of Utilities and Engineering offices located at 1136 Washington Street or by calling 803-545-3400.

Substances that may be present in source water include:

### Potential Contaminants:

**Microbial Contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may 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 may also come from gas stations, urban storm-water runoff, and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

## Public Education

The Town of Chapin is vigilant in its efforts to keep its customers informed and educated about issues pertinent to the system. Boil water advisories are issued when water lines are compromised due to damage from breaks, resulting in potential contamination. The Town publishes a Utilities Newsletter, the *Chapin Utilities News Splash*, several times a year to keep customers up to date and informed. The newsletter includes educational information to provide helpful insight on utilities operation and potential cost savings tips for customers. In addition, customers are welcome and even encouraged to contact the Chapin Utilities Department for information or with questions regarding utility service.

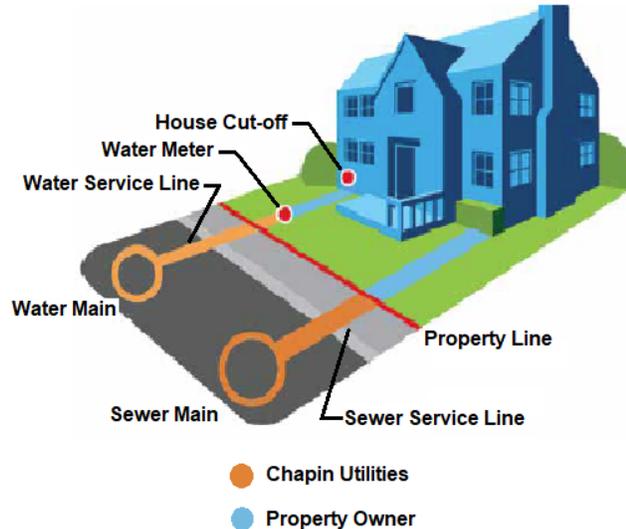


The Town of Chapin employs a flushing program, whereby hydrants are routinely flushed throughout the system to keep water moving and improve water quality.

## Water and Sewer Line Responsibility

The image below shows which portion of a customer's water and sewer service are the responsibility of Chapin Utilities and which are the responsibility of the property owner

**Chapin Utilities Department CANNOT repair private**



**The Property Owner OWNS and is RESPONSIBLE FOR MAINTAINING:**

- The water service line located between the meter and the building being served
- All plumbing attached to the water service line
- The sewer service line from the property line to the building being served

**Chapin Utilities owns and maintains:**

- The water main
- The water service line from the main to the meter
- The meter box
- The meter
- The sewer service line from the main to the property line or easement line
- The sewer main



### For additional information:

Your water meter should be located in your front or side yard along the public right-of-way. It can be used to help you find leaks!! Do you know where your meter is located?

**Chapin Utilities Customer Care, Billing, and Water Quality questions**  
803-575-8042 | [utilities@chapinnc.com](mailto:utilities@chapinnc.com)

**SCDHEC – Bureau of Water**  
803-898-4300

**US EPA Drinking Water Hotline**  
800-426-4791



**National Lead Information Clearinghouse**  
800-424-LEAD

**Consumer Product Safety Commission**  
800-638-2772

## Health Effects of Contaminants

**Copper:** Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilsons Disease should consult their personal doctor.

**Fluoride:** Some people who drink water containing fluoride in excess of the MCL over many years could get bone disease, including pain and tenderness of the bones. Children may get mottled teeth.

**Lead:** Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

**Nitrate:** Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

**Total Coliform:** Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. If coliforms were found in more samples than allowed, this would be a warning of potential problems.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Water Quality Report

The Town of Chapin and the City of Columbia constantly monitor for various contaminants in the water supply to meet all regulatory requirements. The tables list only those contaminants that had some level of detection. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment.

The following tables list the drinking water contaminants that were detected during the 2017 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in these tables is from testing done January 1 – December 31, 2017. The state requires Chapin 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, are more than one year old.

We are pleased to report to you that there were no detections of total coliforms or fecal coliforms in the monthly samples collected during the calendar year 2017. In fact, no violations were recorded in the system for any of the parameters tested for under EPA guidance and requirements.

## Town of Chapin

Substance	Highest Level	MCLL	MCLG	Range of Levels	Year	Possible Source of Contaminant	Violation
<b>Inorganic Compounds</b>							
Copper, (ppm)	1.3 ppm		1.3	0.06 (90th percentile)	2015	Corrosion of household Plumbing; Erosion of natural deposits.	None
Cadmium, (ppb)	0.1 ppb	5	5	0.10	2018	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; runoff from waste	None
Fluoride, (ppm)	0.1 ppm	4	4	0.1 ppm	2018	Erosion of natural deposits.	None
Nitrate, (ppm)	0.3 ppm	10	10	0.22-0.3 ppm	2018	Runoff from fertilizer use. Leaching from septic tanks. Erosion of natural deposits.	None
Nitrate, (ppm) 5/8/2013	0.043 ppm	1	10	0-0.043 ppm	2013	Runoff from fertilizer use. Leaching from septic tanks. Erosion of natural deposits.	None
Barium (ppm) 2015	0.05	2	2	0.0-0.05 ppm	2018	Discharge of drilling waters: discharge from metal refineries: erosion of natural deposits	None
HAA5 (ppb)	15.16 ppb	60	No Goal for total	3.02-15.16	2018	By product of drinking water disinfection	None
TTHM (ppb) 2015	24.36 ppb	80	No Goal for total	21.28-24.36	2018	By product of drinking water disinfection	None
<b>Radioactive Contaminants</b>							
Combined Radium 226/228	1.2 pCi/L	5	0	0-1.2 pCi/L	2017	Erosion of natural deposits.	None
Gross alpha excluding radon and uranium	5.8 pCi/L	15	0	0-5.8 pCi/L	2015	Erosion of natural deposits.	None
Uranium	1.2	30	0	1.20-1.20	2015	Erosion of natural deposits.	None
<b>Volatile Organic Contaminants</b>							
Tetrachloroethylene, (ppb)	0.50	5	0	0.75-0.83 ppb	2018	Discharge from factories and dry cleaners.	None
<b>Disinfectants</b>							
Chlorine (ppm)	2.00 ppm	MRDL G=4		0.04-2.00 ppm	2018	Water additive used to control microbes.	None
<b>Microorganisms</b>							
Total Coliform	1	0				Naturally present in the environment.	None

## City of Columbia

Substance	Highest Detected Level/Range	Detected Level	MCLG	RANGE	Year	Possible Source of Contaminant	Violation
<b>Inorganic Compounds</b>							
Copper (ppm) 2014	1.3 ppm	0.096 ppm (90th%)	0.0	0-0.45 ppm	2017	Corrosion of household plumbing systems and naturally occurring in the	None
Fluoride, (ppm) 2015	4 ppm	0.63	4	0.54-0.75 ppm	2017	Naturally occurring in the environment by erosion of natural deposits and added at the treatment plant as an aid in preventing tooth decay.	None
Nitrate/Nitrite, (ppm) 2015	10 ppm	1.42 ppm	10	0.02-1.42 ppm	2017	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural	None
Chlorite (ppm) 2015	0.449 ppm	0.171	0.8	0.270-0.862	2017	By-product of drinking water chlorination.	None
Lead (ppb) 2014	15 ppb (Action Level)	0.0 ppb (90%)	0.0	0-13 ppb	2017	Corrosion of household plumbing systems and naturally occurring in the environment. Lead in drinking water is primarily from materials and components associated with service line and home plumbing.	None
Substance	Highest Detected Level/Range	Detected Level	MCLG	MCL	Year	Possible Source of Contaminant	Violation
<b>Organic Compounds</b>							
Total Trihalomethanes (TTHMs) (Chloroform, Bromodichloro-methane, Dibromochloro-methane, Bromoform), (ppb) 2015	80 (Average) Range 21-30 ppb	25 ppb Locational running annual average (LRAA)	0	80	2017	By-product of drinking water chlorination formed when chlorine reacts with organic matter	None

Haloacetic Acids, ppb (HHA=s) (Monochloroacetic Acid, Monobromoacetic Acid, Dichloroacetic Acid, Dibromoacetic Acid) 2015	60 (Average) Range 31-45 ppb	36 ppb Locational running annual average (LRAA)	0	60	2017	By-product of drinking water chlorination formed when chlorine reacts with organic matter. EPA regulation requires us to monitor this contaminant while EPA considers setting a limit on it.	None
Total Organic Carbon, (ppm) 2015	TT 41%-50.30% removal	45.26% (36.25 % removal required)	None	Not Regulated	2017	Naturally occurring in the environment	None
<b>Microorganisms</b>							
Turbidity NTU 2015	<0.3 NTU	0.09 NTU	Not applicabl	<0.3	2017	Naturally occurring in the environment	None
Total Coliform Bacteria	<5% N/A	2.67%	0	0	2017	Naturally occurring in the environment	None
<b>Disinfectants</b>							
Chloramine ppm 2015	4 ppm/ 1.8-2.2	2.5 ppm	4 ppm	4 ppm	2017	Water additive to control microbial	None
Chlorine Dioxide ppb	800 ppb/ 0-250	143 ppb	800 ppb	0-143 ppb	2017	Water additive to control microbial growth.	None

## Additional Finished Water Parameters

### Secondary Drinking Water Standards

Some attributes of water, listed in the table to the right, affect the taste, odor, and hardness of our drinking water. Because these attributes of water do not impact a person's health, the US EPA has that are non-enforceable, recommended guidelines. The Town meets these guidelines in addition to the regulations set forth by the US EPA. See US EPA Regulated Secondary Drinking Water Standards for details.

US EPA REGULATED SECONDARY DRINKING WATER STANDARDS			
Parameter	Units	MCL	Noticeable effects above the MCL
Chloride	ppm	250	Salty taste
Color	Color units*	15	Visible tint
Iron (total)	ppm	0.3	Rusty color, sediment, metallic taste, reddish or orange staining
Manganese	ppm	0.05	Black to brown color, black staining, bitter metallic taste
pH	s.u.**	TT	Low pH: bitter metallic taste, corrosion High pH: slippery feel, soda taste, deposits
Sulfate	ppm	250	Salty taste

\*A standard scale that was developed for measuring color intensity in water samples.  
 \*\*Standard Unit (s.u.); pH is measured on a logarithmic scale ranging from 0 to 14 s.u., with 7 s.u. being neutral pH.

## Non-Regulated Parameters

The City also collects information about additional parameters that are not regulated by the US EPA. While these parameters do not impact a person's health, they may be useful for those using water for specialized purposes like brewing, or maintaining equipment like chillers and boilers. Customers who need additional water quality information should contact Columbia Water lab services at 803-733-8211

ADDITIONAL NON-REGULATED PARAMETERS	
Parameter	Unit
Sodium	ppm
Calcium	ppm
Magnesium	ppm
Total Hardness (CaCO <sub>3</sub> )	ppm
Nitrate	ppm
Total Alkalinity	ppm
Total Phosphate	ppm

## Definitions

**AL (Action Level):** A limit, that is not a MCL, that applies to contaminants such as lead and copper that enter the water after treatment. Action levels may trigger special monitoring, public education or treatment techniques.

**Detected Level :** The concentration of a substance detected in a water sample. The detected levels specified in the table to the left are the highest levels detected if multiple samples were collected, except for Total Organic Carbon (TOC) or unless specified otherwise. For TOC, the specified removal rate is the rate required by SC DHEC based on data reported by the City.

**HRL (Health Reference Level) — A US**  
EPA-defined benchmark for evaluating contaminant occurrence based on health effects information.

**LRAA (Locational Running Annual Average):** The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.

**MCL (Maximum Contaminant Level):** 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. MCLs are an enforceable standard.

**MCLG (Maximum Contaminant Level Goal):** The US EPA's target level for a contaminant below which there are no known or suspected health effects. The MCLG is not necessarily a level achievable with currently available treatment techniques and are non-enforceable public health goals.

**MRDL (Maximum Residual Disinfectant Level):** 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.

**MRDLG (Maximum Residual Disinfectant Level Goal):** 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.

**NA:** Not applicable.

**ND (Not Detected):** Not Detected in sample or below detection limits

**NTU (Nephelometric Turbidity Unit):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person

**pCi/l (Picocuries per liter):** The basis for the curie is the radioactivity of one gram of radium. A **picocurie** is one trillionth of a curie.

**PDWS (Primary Drinking Water Standard):** MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter). This is equivalent to 1 drop in 14,000 gallons (average swimming pool) or to one penny in \$10,000,000.

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter). This is equivalent to 3 drops in 42 gallons (large bathtub) or to one penny in \$10,000.

**RAA (running annual average)**

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