

STATE OF NORTH CAROLINA

UTILITIES COMMISSION
RALEIGH

DOCKET NO. W-354, SUB 360

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of)	
Application by Carolina Water Service, Inc. of North Carolina, 4944 Parkway Plaza Boulevard, Suite 375, Charlotte, North Carolina 28217, for Authority to Adjust and Increase Rates for Water and Sewer Utility Service in All of Its Service Areas in North Carolina)	REPORT ON CUSTOMER COMMENTS FROM PUBLIC HEARING IN ASHEVILLE, NORTH CAROLINA, HELD ON SEPTEMBER 26, 2018

NOW COMES Carolina Water Service, Inc. of North Carolina (“CWSNC” or “Company”) and files this report in response to customer concerns raised at the Asheville public hearing.

The hearing was convened at 7:00 p.m. on September 26, 2018 at the Buncombe County Courthouse in Asheville, North Carolina. Chairman Edward Finley presided on behalf of the North Carolina Utilities Commission (“NCUC” or “Commission”), and was joined by Commissioners James G. Patterson, Jerry C. Dockham, Lyons Gray, Daniel Clodfelter, and Charlotte A. Mitchell.

Staff Attorney Gina Holt appeared for the Public Staff on behalf of the using and consuming public, accompanied by Public Staff Water Engineer Gina Casselberry. Matthew Klein, President of CWSNC, was accompanied by other

Company personnel who were available to assist customers with questions or requests. They included: Tony Konsul, Regional Manager; Neal Reece, Stacy Adcock, Gary Peacock, and Philip Murphy, Area Managers; Renee Guay, Health, Safety and Environmental Officer; Dewayne Lightle, Lead Operator; and Deborah Clark, Communications Coordinator. Jo Anne Sanford of Sanford Law Office, PLLC appeared as counsel for CWSNC.

GENERAL RESPONSES TO CUSTOMER ISSUES

CWSNC believes it important to explain some principles and facts that impact both the Company's service obligation and the rules that apply to the rate-setting process for public utilities such as CWSNC, assuring protections to customers. The Company appreciates this opportunity to speak to concerned customers across its service areas and to its regulators. These general principles were set forth in the Company's *Response to Customer Concerns* from the New Bern and Wilmington Public Hearing, filed in this docket on September 18, 2018. They are attached hereto as Appendix A and are referred to throughout as "General Responses."

OVERVIEW OF THE ASHEVILLE PUBLIC HEARING

Five (5) witnesses testified, including two (2) witnesses from the Fairfield Mountain of Lake Lure community, one (1) from the Mt. Carmel community and one (1) from the Woodhaven community. Generally, customers who testified expressed concern about: (1) the proposed percentage increase in rates; and---in one instance---(2) water quality.

SPECIFIC RESPONSES TO CUSTOMER TESTIMONY FROM ASHEVILLE

Jack Zinselmeier, 157 Bluebird Road, Fairfield Community of Lake Lure. *Tr. Vol. 5, pp. 11-15.*

Mr. Zinselmeier noted that there have been six rate increases since 2004, adding up to a 120% increase. He stated that a guaranteed profit margin does nothing to increase the Company's productivity and noted that there have been increases in salaries for the Company's employees as a result of prior rate increases. Finally, Mr. Zinselmeier stated that the rate increases are not resulting in better service and raised an issue about a road in his subdivision that had a hole in it from a major water leak. Mr. Zinselmeier submitted a photo of the road and stated that it took the Company six months to repair it.

Company Response:

First, it should be reiterated that neither CWSNC nor any other regulated utility in North Carolina is guaranteed a specific return or profit. Chapter 62 of the North Carolina General Statutes provides, generally, that after a contested case evaluation in a rate case and upon a decision by the Commission, a utility has the *opportunity* to earn an "authorized" return. It is an opportunity, not a guarantee.

Second, the Company's employees experienced a salary increase based on the cost of living and performance, which is in accordance with comparable utilities. Employee retention is a concern and to keep certified, professional employees in most areas, the Company must pay competitive wages. Additionally,

the reference to concern about “increases” in “salaries and wages” could be attributed to the Company hiring new staff (i.e., the Company’s Communications Coordinator and Health, Safety and Environmental Compliance Manager).

The Company’s records indicate that there was a fire hydrant tee that was leaking at 197 Obrien, the leak was repaired on January 16, 2018, and paving for the repair was completed on or before January 31, 2018.

Finally, the investments to the Fairfield Mountain water system included: (1) meter repairs and installations; (2) pump replacements; (3) daily required chemical treatments; and (4) water main repairs, including associated paving of roads, required tests, and inspections.

Phil Reitano, 135 Hawk’s Nest Trail, Fairfield Communities of Lake Lure, Tr. Vol. 5, pp. 16-20.

Mr. Reitano, representing the Property Owner’s Association, indicated that residents of the community, many of whom are retired and on fixed incomes, object strongly to another rate increase. He added that the Company has not provided justification or quantitative information regarding infrastructure improvements or long-range plans for improved water resources that could justify the increase. He noted that there have been six rate increases in ten years, and that this requested increase of approximately 15% exceeds any increase in inflation. He stated that information about the Apple Valley project would help the residents understand more about the Company’s investments in the area.

Company's Response:

First, CWSNC's rates require approval from the Commission, which are set after a contested rate hearing. The base rates for each customer support the maintenance and operational costs associated with the water or wastewater facilities, respectively, across the CWSNC systems. Customers from each community pay the base rate according to the Commission-approved rate structure.

Second, the investments to the Fairfield Mountain water system included: (1) meter repairs and installations; (2) pump replacements; (3) daily required chemical treatments; and (4) water main repairs, including associated paving of roads, required tests, and inspections.

Third, the Company recently completed a major capital project within the community. The Apple Valley Radium Treatment System capital project was a \$325,000 radium treatment system, concluded in August 2018. The purpose of this capital project was to install a permanent treatment system to remove radium from Apple Valley Well No. 8. The treatment consists of softening by ion exchange using two 36" diameter softeners and one 50" diameter brine tank.

Other work performed included the addition of a new well/filter building, well pump, booster pumps, associated piping, new electrical installation, and the addition of a 15,000-gallon back wash tank. The Company has worked closely with POA Member Helen Martin for approximately two (2) years regarding the design, construction, and implementation of this capital project.

Gerard Worster, 107 Friendly Lane, Mt. Carmel Community, Tr. Vol.5, pp. 20-26.

Mr. Worster, who receives sewage collection services from the Company, objected to the rate increase. He stated that many residents of his community are on fixed incomes and are struggling. He stated that the Company's rates for sewage collection (only) have gone up four times as quickly as the City of Asheville's water charges, and further stated that the Company has not made improvements that would justify the rate increase. Mr. Worster objected to the impact of consolidated rates and requested that his community be removed from the consolidated ratemaking structure because they only receive partial services. He requested that the Commission do a study on whether it would be possible for the Company to consolidate rates based on costs that are allocated into categories based on the level and kinds of services required. Mr. Worster said that he did not have any service problems.

Company Response:

The Commission allowed CWSNC to move towards a consolidated rate structure for reasons that were and are solidly supportive of rational management and administration of this company. The essential support for this kind of rate structure is found in the fact that virtually every system will sooner or later require significant investment, and a consolidated rate structure smooths the financial

result of that fact and mitigates the impact---potentially catastrophic---on any one system at any given time.

In 2017, the Commission approved a consolidated rate structure for the Company. In 2018, approximately \$112,000 has been expended for general maintenance of the sewer collection system within the community. More specifically, in 2018, the Company completed a \$172,000 collection system rehabilitation capital project within the community.

According to the Company's records, Mr. Worster has not complained about the level of service received from the Company

Chuck Van Rens, 109 Woodhaven Dr., Woodhaven Subdivision. *Tr. Vol. 5, pp. 26-30.*

Mr. Van Rens objected to "year-on-year double-digit rate increases" and submitted a document into evidence providing detailed information about previous rate increases. He commended several employees of the Company for providing exceptional service and responding to problems efficiently and effectively.

Company Response:

As Mr. Van Rens acknowledged, the Company works diligently with the Woodhaven community to provide the customers with a very high level of service. The Company listened to and followed up on Woodhaven's suggestions on many issues, including planting vegetation to shield a water tank from view of an adjacent customer, moving a security light to keep it from shining into a window, and moving a water main pipe to assist with a legal issue in the community.

Connie Brown, 15 Lynwood Circle, Lee's Ridge Subdivision, Mt. Carmel Service Area. *Tr. Vol. 5, pp. 30-36.*

Ms. Brown, a sewer and wastewater customer of the Company, discussed a service issue in her neighborhood resulting from the frequent Saturday morning pumping by an Asheville Metropolitan Service District ("MSD") truck of a septic line at a location at Erwin Drive. She stated that the lines have sunk too low and do not drain properly, resulting in an offensive smell, and explained that one of her neighbors sometimes flushes the line himself if the MSD truck does not come. Asserting that this issue should have been fixed years ago, Ms. Brown noted that she rarely sees the Company's trucks in the neighborhood. She also objected to the requested rate increase, noting that her sewer bill is twice as high as her water bill, and questioned whether there is a less expensive way for Mt. Carmel residents to receive these services.

Company Response:

First, the Company initially believed its recently-completed sewer collection system capital project addressed Ms. Brown's concerns. However, upon a lengthy discussion with Ms. Brown after the public hearing, the Company realized that the area of concern for Ms. Brown was on a different street. The Company is preparing a capital project to resolve the issue identified by Ms. Brown.

Second, consistent with the Company's maintenance guidelines, 10% of the Company's sewers are cleaned on an annual basis. The Company has "jetted" or

cleaned the sewer line of concern by Ms. Brown to prevent the line from clogging.

Third, the Company is concerned that a well-intended individual is accessing the collection system and will contact him to address the safety and security issue and to provide a Company contact for concerns.

Fourth, concerning rates, the City of Asheville provides water to several thousand customers, thereby employing a significant economy of scale for the rates charged for the service.

Finally, the Company's records do not indicate the receipt of any report of offensive smells by Ms. Brown; that said, CWSNC recognizes and is acting on the issue.

CWSNC appreciates the willingness of its customers to participate in this process, and the Company understands customers' opposition to rate increases. However, this is a capital-intensive industry and since the last rate case, CWSNC has spent \$18,235,630 in North Carolina. Therefore, if the investments made by CWSNC are proved to be necessary and prudent, recovery of those costs is required in order for the Company to continue to provide good service. The public's assurance of fairness is found in the strict, highly skilled oversight of the Public Staff and the Commission.

Respectfully submitted, this the 15th day of October 2018.

SANFORD LAW OFFICE, PLLC

Electronically Submitted

/s/Jo Anne Sanford

State Bar No. 6831

Post Office Box 28085

Raleigh, North Carolina 27611

T: 919-210-4900

e-mail: sanford@sanfordlawoffice.com

Robert H. Bennink, Jr.

Bennink Law Office

State Bar No. 6502

130 Murphy Drive

Cary, North Carolina 27513

e-mail: benninklawoffice@aol.com

**ATTORNEYS FOR CAROLINA WATER SERVICE, INC.
OF NORTH CAROLINA**

APPENDIX A
CWSNC RESPONSE TO CUSTOMER CONCERNS-
ASHEVILLE PUBLIC HEARING: W-354 SUB 360

GENERAL RESPONSES TO CUSTOMER ISSUES

1. Proposed Rates – The legal principles that govern ratemaking are set forth in North Carolina General Statutes, Chapter 62, and in rules promulgated by the North Carolina Utilities Commission under those statutes. By law, CWSNC receives a rate increase only if it proves, in the face of an investigation by the Public Staff (and any Intervenor opposition), that such an increase is authorized under the law, based on the actual cost and level of prudent and reasonable investment in plant and operation. Further, investment in plant is *only* recoverable after it has been made, placed into service, and audited by the Public Staff. This principle—referred to as the “used and useful” requirement—applies whether costs are recovered in a general rate case or under a system improvement charge.
2. Rate Comparisons – An attempt to make meaningful comparisons between statewide average costs for all water and wastewater service providers and the costs of a provider like CWSNC often results in an “apples to oranges” assessment. The core distinction is found in the concept of “economies of scale.” The costs of serving an individual customer in Raleigh or Charlotte,

by a governmental utility enterprise, will likely on average be less than the cost of serving the typical CWSNC customer. The urban areas are densely populated, they generally source water from large surface impoundments or rivers, they treat waste in large central treatment facilities, governmental entities tax their citizens, and they are often not required to utilize “cost-of-service” ratemaking, as are the utilities regulated under Chapter 62 of the General Statutes. Contrast this to the areas served by CWSNC and others like it: often rural, far less densely populated, and frequently served by smaller waste treatment plants and by hundreds of wells, drawing water up from rock and dispersed across the state. The difference in cost attributes are obvious and should inform any conversation about comparisons in respective average costs.

3. Legal Compliance Regarding Notice – In a general rate case, the Public Notice to customers is prescribed by the requirements of statute and is issued by the Commission, based upon the input of CWSNC and the Public Staff. It is a joint effort to provide specific information to all customers about current and proposed rates. In a general rate case like this, the length and complexity of the Public Notice serves the purpose of detail and transparency yet is likely daunting to many customers who attempt to understand all its contents and the personal impact.
4. Investment in Replacing Aging Infrastructure – As documented by the U.S. Environmental Protection Agency (“EPA”) and the American Water Works

Association (“AWWA”), significant investment is needed throughout North Carolina—more than \$20 billion—to replace aging water and wastewater infrastructure, including drinking water pipes, wastewater collection pipes, lift stations, and wastewater treatment facilities.

5. Water Quality – Water quality can be impacted by, among other things, unplanned water main breaks, unexpected malfunctioning of equipment, and challenges when implementing capital projects. CWSNC’s primary focus is on providing the highest level of service related to compliance with primary drinking water quality standards. The Company’s latest Annual Water Quality Reports for Fairfield Mountain, Fairfield Apple Valley, and Woodhaven reflect “no violations.”



Carolina Water Service of North Carolina™

Fairfield Mountain Water System

PWS ID# 01-81-126

Annual Water Quality Report 2017

quality of water we delivered to you over the past year. As the President of your water utility, I fully appreciate our role in the local community. We want you to understand the investments and other efforts we undertake to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable, and cost-effective service to you. 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 2017. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our local dedicated team of water quality experts is working within your community every day ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

Sign up for e-billing now at
www.carolinawaterservicenc.com

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

The Safe Drinking Water Act

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.

Source of Drinking Water

Your water comes from several wells located in Rutherford County which draw water from a fractured bedrock aquifer. An aquifer is a geological formation that contains water.

Water Conservation

Please be reminded that 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 CWSNC web page at www.carolinawaterservicenc.com and clicking on the "Community Drought Status" link on the front page. CWSNC posts drought conditions on our Twitter account at [@CarolinaWaterNC](https://twitter.com/CarolinaWaterNC) and on Facebook at [@CarolinaWaterNC](https://www.facebook.com/CarolinaWaterNC). If you do not have access to a computer, call our customer service at (800) 525-7990.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide 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 or more, 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.

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.

OFFICIAL COPY

Oct 15 2018

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:

- 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 also 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.

What measures are in place to ensure water is safe to drink?

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 .

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

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).

Information Concerning Lead in Water

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 to learn more about lead-containing plumbing fixtures.

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.

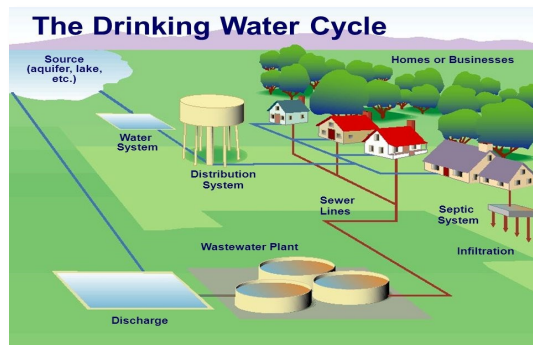
Drain Disposal Information

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. **Do not 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: www.epa.gov/hw/household-hazardous-waste-hhw.



Key to Water Quality Terms

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.
- **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 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.
- **mrem/year** - millirems per year (a measure of radiation absorbed by the body).
- **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.
- **Parts per trillion (ppt) or Nanograms per liter (nanograms/L)** - One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.
- **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.
- **AvG** - Regulatory compliance with some MCLs is based on running annual average of monthly samples.

Source Water Assessment Program (SWAP)

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 Fairfield Mountain 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 (PCSs)

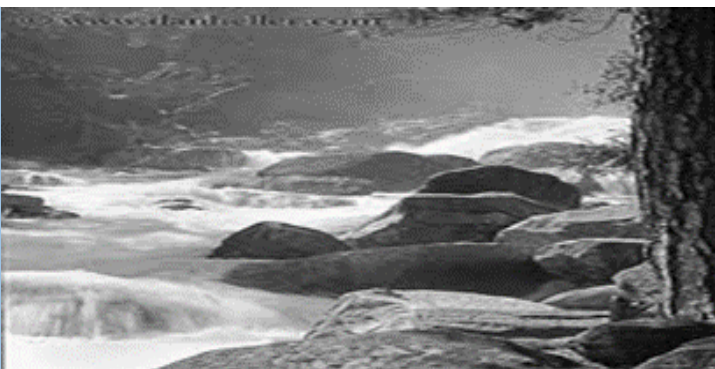
Source Name	Susceptibility Rating	SWAP Report Date
Well #1	Lower	04/26/2017
Well #2	Lower	04/26/2017
Well #3	Lower	04/26/2017
Well #4	Lower	04/26/2017
Well #5	Lower	04/26/2017

The complete SWAP Assessment report for Fairfield Mountain may be viewed on the Web at: <https://deq.nc.gov/swap-nextgen>. 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 27699-1634, or email request to 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.

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, 2017.** 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.



Note: The Environmental Protection Agency (EPA) requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the table below are the only contaminants detected in your drinking water.

Water Quality Test Results

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Inorganics Contaminants							
Fluoride (ppm)	4/13/15	N	1.7	ND - 1.7	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.

Radioactive Contaminants							
Alpha emitters (pCi/L)	2013 - 2016	N	6.5	ND - 6.5	0	15	Erosion of natural deposits
Combined radium (pCi/L)	2013 - 2016	N	2.30	ND - 2.30	0	5	Erosion of natural deposits
Uranium (pCi/L)	2013 - 2016	N	7.04	ND - 7.04	0	20.1	Erosion of natural deposits

Disinfectant Residuals Summary							
Contaminant (units)	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range Low High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	2017	N	0.72	0.3-1.2	4	4.0	Water additive used to control microbes.

Stage 2 Disinfection Byproduct Compliance								
Contaminant (units)	Sample Location Code	Year Sampled	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb) [Total Trihalomethanes]	B01	2017	N	8.3	N/A	N/A	80	Byproduct of drinking water disinfection.
HAA5 (ppb) [Total Haloacetic Acids]	B01	2017	N	3.7	N/A	N/A	60	Byproduct of drinking water disinfection.

Lead and Copper Contaminants						
Contaminant (units)	Sample Date	Your Water	Number of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90 th percentile)	Jun 2015	0.108	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits.

Secondary Contaminants. 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.

Water Characteristics Contaminants				
Contaminant (units)	Sample Date	Your Water	Range Low High	Secondary MCL
Sulfate (ppm)	2015	36.3	ND - 36.3	250 mg/l

Violations

In 2017, Carolina Water Service, Inc. of North Carolina performed all required monitoring for contaminants. In addition, no violations from the North Carolina Department of Environmental Quality were received and we were in compliance with applicable testing and reporting requirements.





Carolina Water Service of North Carolina™

Fairfield Mountain – Apple Valley

PWS ID #01-81-133

Annual Water Quality Report 2017

quality of water we delivered to you over the past year. As the President of your water utility, I fully appreciate our role in the local community. We want you to understand the investments and other efforts we undertake to continually improve the water treatment process and protect our water resources.

Our team is committed to providing safe, reliable, and cost-effective service to you. 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 2017. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our local dedicated team of water quality experts is working within your community every day ensuring that you, our customer, are our top priority and that we are providing the highest quality service - now and in the years to come.

Best regards,

Sign up for e-billing now at
www.carolinawaterservicenc.com

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

The Safe Drinking Water Act

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.

Source of Drinking Water

Your water comes from several wells located in Rutherford County which draw water from a fractured bedrock aquifer. An aquifer is a geological formation that contains water.

Water Conservation

Please be reminded that 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 CWSNC web page at www.carolinawaterservicenc.com and clicking on the "Community Drought Status" link on the front page. CWSNC posts drought conditions on our Twitter account at [@CarolinaWaterNC](https://twitter.com/CarolinaWaterNC) and on Facebook at [@CarolinaWaterNC](https://www.facebook.com/CarolinaWaterNC). If you do not have access to a computer, call our customer service at (800) 525-7990.

Help Protect our Resources

Help put a stop to the more than **1 trillion gallons of water lost annually** nationwide 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 or more, 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.

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.

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Oct 15 2018

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:

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

What measures are in place to ensure water is safe to drink?

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 .

Special notice from EPA for the elderly, infants, cancer patients and people with HIV/AIDS or other immune system problems

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).

Information Concerning Lead in Water

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 to learn more about lead-containing plumbing fixtures.

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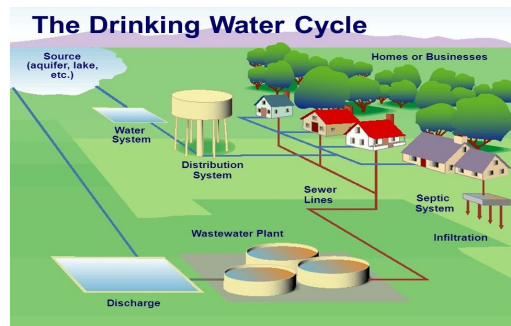
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Key to Water Quality Terms

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.
- **mrem/year** - millirems per year (a measure of radiation absorbed by the body)
- **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.
- **Avg** - Regulatory compliance with some MCLs is based on running annual average of monthly samples.

Source Water Assessment Program (SWAP)

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 Fairfield Mountain – Apple Valley 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 (PCSs)

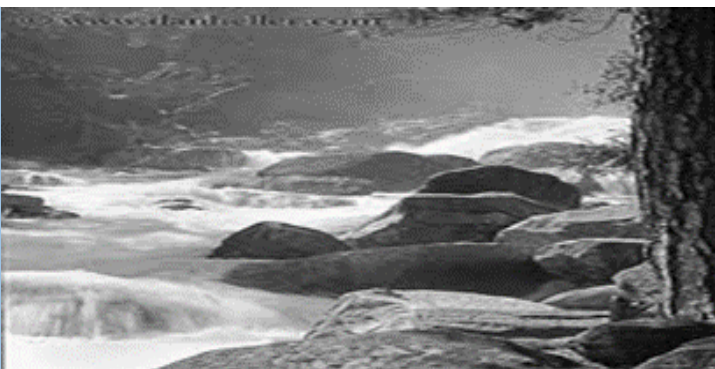
Source Name	Susceptibility Rating	SWAP Report Date
Well #8	Moderate	04/26/2017
Well #12	Moderate	04/26/2017
Well #13	Lower	04/26/2017
Well #14	Lower	04/26/2017

The complete SWAP Assessment report for Fairfield Mountain – Apple Valley may be viewed on the Web at: <https://deq.nc.gov/swap-nextgen>. 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 27699-1634, or email request to 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.

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, 2017.** 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.



Note: The Environmental Protection Agency (EPA) requires monitoring of over 80 drinking water contaminants. Those contaminants listed in the table below are the only contaminants detected in your drinking water.

Water Quality Test Results

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Inorganic Contaminants							
Fluoride (ppm)	2015	N	1.5 (Highest result)	0.44 - 1.5	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Radioactive Contaminants (Highest AVG Result)							
Alpha emitters (pCi/L)	2015	N	10.4	N/A	0	15	Erosion of natural deposits
Combined radium (pCi/L)	2017	Y	5.7*	4.2 – 5.9*	0	5	Erosion of natural deposits
Uranium (pCi/L)	2015	N	12.3	N/A	0	20.1	Erosion of natural deposits
*The above table for the Radioactive Contaminants reports the highest annual average from any one of the three treatment plants (total of four active wells) in the water system. On February 16, 2017, our customers in Apple Valley were notified that one of the three treatment plants had exceeded the MCL for combined radium during the 1st quarter 2017 sampling with an average level of 5.7 pCi/L. The average level for combined radium returned to compliance after 2nd quarter 2017 monitoring, and has remained in compliance since that time. Installation of the treatment system to remove the combined radium has begun and will be completed in 2018. Please see the following EPA health effects for Combined Radium (Radium 226 and Radium 228): <i>Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.</i>							
Stage 2 Disinfection Byproduct Compliance							
TTHM [Total Trihalomethanes] (ppb) Location Code B01	2017	N	6.4	N/A	N/A	80	By-product of drinking water chlorination
Disinfectants Residuals (*highest RAA)							
Chlorine (ppm)	2017	N	0.81	0.4 - 1.4	MRDLG = 4	MRDL = 4	Water additive used to control microbes.

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

Contaminant (units)	Sample Date	Your Water	Range Low High	SMCL
Sulfate (mg/l)	2015	20.1	ND – 20.1	250 mg/l

Violations

During 2017, Carolina Water Service, Inc. of NC received a violation from the North Carolina Department of Environmental Quality for exceeding the MCL for Combined Radium. The level has since returned to compliance. The installation of the treatment system to remove combined radium continues and will be completed in 2018.





Carolina Water Service of North Carolina™

Woodhaven Water System

PWS ID# 01-45-147

Annual Water Quality Report 2017

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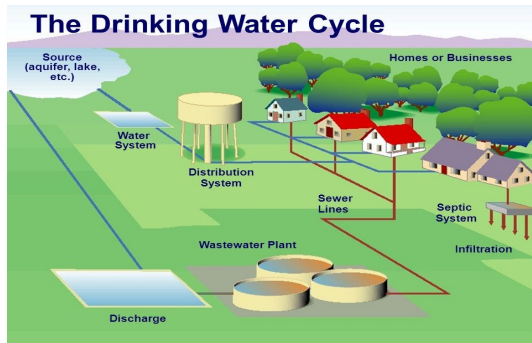
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- **Action level (AL)** - action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **Locational Running Annual Average (LRAA)** - The average of sample analytical 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 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.
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The relative susceptibility rating of each source for Woodhaven 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 (PCSs)

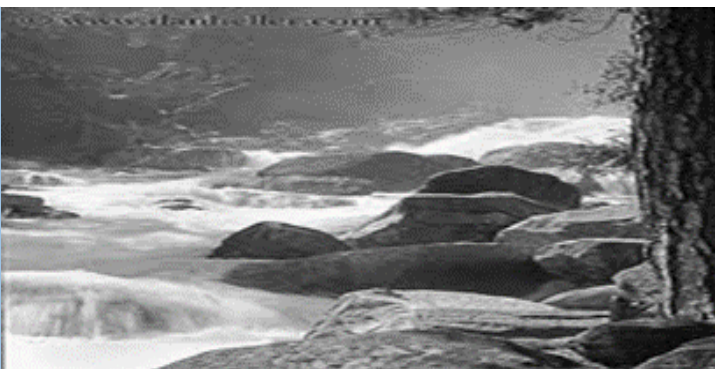
Source Name	Susceptibility Rating	SWAP Report Date
Well #1	Moderate	04/20/2017
Well #2	Moderate	04/20/2017

The complete SWAP Assessment report for Woodhaven may be viewed on the Web at: <https://deq.nc.gov/swap-nextgen>. 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.

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Water Quality Test Results

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Inorganics Contaminants							
Fluoride (ppm)	2015	N	0.16	N/A	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Volatile Organic Chemical (VOC) Contaminants							
Xylenes, Total (ppm)	2017	N	0.00023	ND - 0.0007	10	10	Discharge from petroleum factories; discharge from chemical factories
Radioactive Contaminants							
Uranium (pCi/L)	2013	N	1.10	N/A	0	20.1	Erosion of natural deposits
Nitrate/Nitrite Contaminants							
Nitrate (as Nitrogen) (ppm)	Apr 10th 2017	N	1.69	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Disinfectant Residuals Summary							
Contaminant (units)	Year Sampled	MRDL Violation Y/N	Your Water (highest RAA)	Range Low High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	2017	N	1.14	0.8-1.5	4	4.0	Water additive used to control microbes.
Lead and Copper Contaminants							
Contaminant (units)	Sample Date	Your Water	Number of sites found above the AL	MCLG	AL	Likely Source of Contamination	
Copper (ppm) (90 th percentile)	2017	0.288	0	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	

Violations

In 2017, Carolina Water Service, Inc. of North Carolina performed all required monitoring for contaminants. In addition, no violations from the North Carolina Department of Environmental Quality were received and we were in compliance with applicable testing and reporting requirements.



VERIFICATION

Deborah Clark, being duly sworn, deposes and says:

That she is the Communications Coordinator for Carolina Water Service, Inc. of North Carolina; that she is familiar with the facts set out in this **REPORT ON CUSTOMER COMMENTS FROM NCUC PUBLIC HEARINGS IN ASHEVILLE, NORTH CAROLINA**, filed in Docket No. W-354, Sub 360; that she has read the foregoing Report and knows the contents thereof; and that the same is true of her knowledge except as to those matters stated therein on information and belief, and as to those she believes them to be true.

Deborah Clark
Deborah Clark

Sworn to and subscribed before me this
the 12 day of October 2018.

Donna Stegall
Donna Stegall

Notary Public



My commission expires: 01/08/2019

CERTIFICATE OF SERVICE

I hereby certify that on this the 15th day October 2018, a copy of the foregoing **REPORT ON CUSTOMER COMMENTS FROM ASHEVILLE PUBLIC HEARING** has been duly served upon all parties of record by electronic service, as follows:

Gina C. Holt
Staff Attorney, Legal Division
North Carolina Utilities Commission - Public Staff
gina.holt@psncuc.nc.gov

John Little
Staff Attorney, Legal Division
North Carolina Utilities Commission – Public Staff
John.little@psncuc.nc.gov

Dwight Allen
Britton Allen
Brady Allen
The Allen Law Firm
dallen@theallenlawoffices.com

Margaret A. Force
Assistant Attorney General
NC Department of Justice
pforce@ncdoj.gov

Electronically Submitted
/s/Jo Anne Sanford
State Bar No. 6831
SANFORD LAW OFFICE, PLLC
Post Office Box 28085
Raleigh, North Carolina 27611-8085
Tel: (919) 210-4900
sanford@sanfordlawoffice.com