

SANFORD LAW OFFICE, PLLC

Jo Anne Sanford, Attorney at Law

November 15, 2021

Ms. A. Shonta Dunston, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

Via Electronic Delivery

Re: Docket No. W-354, Sub 384
Application by Carolina Water Service, Inc. of North Carolina for
Authority to Adjust and Increase Rates for Water and Sewer Utility
Service in All Service Areas in North Carolina
Response to Customer Concerns from Public Hearings of November
1, 2021

Dear Ms. Dunston:

Attached for filing please find CWSNC's responses to the comments and concerns expressed by thirty-five (35) customers during the November 1, 2021 public hearings.

As always, thank you and your staff for your assistance; please feel free to contact me if there are any questions or suggestions.

Sincerely,

Electronically Submitted

/s/Jo Anne Sanford

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c: Parties of Record

CERTIFICATE OF SERVICE

I hereby certify that the foregoing filing, captioned Report on Customer Comments from Public Hearings, has been served on the parties of record to Docket No. W-354, Sub 384, in accordance with North Carolina Utilities Commission Rule R1-39, either: by United States mail, first class postage pre-paid; by hand delivery; or by means of electronic delivery upon agreement of the receiving party.

This the 15th day of November, 2021.

Electronically Submitted
/s/Jo Anne Sanford
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STATE OF NORTH CAROLINA

UTILITIES COMMISSION
RALEIGH

DOCKET NO. W-354, SUB 384

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

In the Matter of	
Application by Carolina Water Service,)	
Inc. of North Carolina, 4944 Parkway)	REPORT ON CUSTOMER
Plaza Boulevard, Suite 375, Charlotte,)	COMMENTS FROM PUBLIC
North Carolina 28217, for Authority to)	HEARINGS HELD VIRTUALLY
Adjust and Increase Rates for Water)	ON NOVEMBER 1, 2021
and Sewer Utility Service in All of Its)	
Service Areas in North Carolina)	

NOW COMES Carolina Water Service, Inc. of North Carolina (“CWSNC” or “Company”) and files this report in response to customer concerns raised at the two-part, virtual public hearing, held on November 1, 2021 by the North Carolina Utilities Commission (“Commission” or “NCUC”) on its WebEx platform.

The first session of the public hearing convened at 1:30 p.m. on November 1, 2021. Chair Charlotte A. Mitchell presided, joined by Commissioners Jeffrey A. Hughes and Floyd M. McKissick. The second session began at 6:30 p.m. and ended at 7:48 p.m. Commissioner ToNola D. Brown-Bland presided, joined by Commissioners Daniel G. Clodfelter and Kimberly W. Duffley. Staff Attorneys John D. Little, William E. Grantmyre, and Munashe Magarira appeared for the Public Staff on behalf of the using and consuming public, accompanied by Lindsay Q. Darden, engineer with the Public Staff, Water Division. Jo Anne Sanford of Sanford Law Office, PLLC and Kay Pashos and Mark Alson of Ice Miller LLP appeared on behalf of the Company. CWSNC State President Donald Denton was joined by Company personnel who were available to respond to requests by the

Commission and to investigate customer concerns. They included Philip Drennan, Regional Director of Financial Planning and Analysis; Tony Konsul and Dana Hill, Regional Operations Directors; Matthew Schellinger, Financial Planning and Analysis Manager; and Deborah Clark, Communications and Community Engagement Manager.

A. INTRODUCTION AND ORGANIZATION OF REPORT

The Company values this opportunity to hear from concerned customers across its service areas and appreciates its responsibility to investigate and respond. This report will discuss a number of 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 and fair compensation to the utility. These general principles are addressed in Appendix A and are referred to throughout as "General Responses." The Company's General Responses pertain to important topics such as proposed rates, "cost of service ratemaking," the rigorous audit process underway in this proceeding, rate comparisons among providers, legal compliance regarding notice, level of service inquiries, investment in replacing aging infrastructure, and water quality (both primary and secondary).

B. CATEGORIES OF PRIMARY CONCERNS EXPRESSED BY CUSTOMERS ON NOVEMBER 1, 2021, AND GENERAL RESPONSES

Specific to these hearings were the following primary concerns:

- Objections to rate increases---amounts and frequency;

- Comparisons of rates for service by CWSNC to rates of other---non-comparable---providers;
- Demands for thorough examination of the rate increase request;
- Service issues---principally associated with water quality; and
- Communication.

Company's Response to Primary Concerns¹

- **Rate increases:** Objections to rate increases are clearly understood by all, including the Company. Rate increases are, however, necessary for the maintenance and operation of a complex network of capital-intensive facilities that assure quality, compliance and availability of essential services such as water and wastewater. CWSNC's ongoing investment requirements for operation of these systems are significant and are associated with responsibility for 116 distinct water and wastewater systems and 38,015 customer connections, located across 38 counties in North Carolina. They include 76 water-only systems, 12 wastewater-only systems, and 28 combined water and wastewater systems. CWSNC's responsibilities also include compliance with environmental obligations enforced by the Environmental Protection Agency ("EPA"), the North Carolina Department of Environmental Quality ("DEQ"), and the Department of Health and Human Services ("DHHS"). The Company also

¹ See also, Appendix A

discharges the responsibility to serve upon demand within its franchised service territories and the extensive obligations of accountability to the oversight of the Commission and the Public Staff. Many of the systems, originally installed by developers and transferred by various means to CWSNC, are old and necessitate significant attention to repair, maintenance, and – in an increasing number of instances – replacement. Much of the infrastructure is underground and is distributed across the state from coast to mountains, so work required across the system is often not obvious to an individual customer.

- **Comparisons to government-run utilities:** Comparisons of the rates charged by a regulated water and wastewater company to the rates charged by various governmental providers is an exercise that may be tempting yet is inapt as a meaningful examination of the fairness of rates. As discussed in more detail in the General Response, governmental providers differ significantly from companies like CWSNC in their financing structure, rate-making process, access to governmental assistance, economies of scale (particularly the municipalities, which are more densely populated than the suburban areas generally served by CWSNC), tax-favored status, and recourse to surface water sources, including impoundments. Further, many of the governmental providers assess ancillary taxes on their customers/constituents, which can serve to

reduce the rates charged for utilities service. Finally, these governmental providers are not held to the same requirements of rigorous investigation, proof, and audit that accompany any request by CWSNC for a rate increase. CWSNC is regulated under a strict “cost of service” ratemaking paradigm; governmental utilities are not.

- **Comprehensive nature of rate review process:** From the filing of an Application and supporting testimony---which can take several months to analyze and prepare, and involves personnel from across the Company, plus outside consultants---to the issuance of a final Commission order setting rates, the rate review process can take 300 days. During this time, the Public Staff conducts an extensive, rigorous, granular audit. To date the discovery process in this proceeding has consisted of answering over 340 questions from 87 data requests and submitting more than 1400 invoices to the Public Staff in response to its inquiries on numerous topics. Over 1332 hours of work was needed to address the various aspects of this case, including preparing the filing, providing detailed testimony and supporting financial documentation, and responding to Public Staff’s discovery questions.² The Company’s application for rate relief is

² Specifically, over the last 5 five months, the Company has responded to 87 data requests consisting of over 343 questions. The Company has provided over 1400 invoices to Public Staff and completed support packages (Project Plans, AFUDC, Captive, Invoices, etc.) for an additional 22 pro-forma projects. Company personnel have spent over 1,332 internal hours related to the preparation and discovery in this rate case. Public Staff has extensively audited the Company’s expenses and books for prudently incurred expenses necessary to provide service to customers. Further, the Company has had a number of clarifying discussions with Public Staff regarding specifics related to the accounting of the Company’s books and records.

subjected to examination by the Public Staff's highly skilled team of accountants, economists, attorneys, and financial analysts. The discovery process is thorough and the entire matter is handled under the strict oversight of the Commission, which conducts a meticulous judicial proceeding. Regulated utilities such as CWSNC function under a requirement of proof of reasonable cost of service. Expressed in general terms, to qualify for a rate increase, the utility must show that it provided an adequate level of service quality through proper investment and operations, and that it spent no more than it was reasonably required to spend on the activities it was required to undertake to provide that service.

- **Service quality**: General water quality and service can be impacted by, among other things, unplanned water main breaks, unexpected malfunctioning of equipment, challenges when implementing capital projects, damage caused by others' construction projects, naturally occurring and emergent constituents in the groundwater, and weather. CWSNC strives for operational excellence and focuses on continuous improvement in all aspects of its operations, from customer interactions, to project management, to asset management.
- **Customer assistance and communications**: Arising from several comments are concerns about the impact on customers of rising rates. Combining issues of assistance to customers who need it and

the role of communications in CWSNC's operation, the Company includes, in its Appendix A General Response, sections on "Customer Communications---General" and "Customer Assistance." CWSNC has undertaken aggressive efforts both to anticipate and to follow up on the customer concerns expressed in this docket. However, under the circumstances---which include pandemic constraints and the compressed timeframe in which to complete this formal response----the Company has been unable to fully investigate all concerns in the way it has traditionally done. In previous general rate cases, a series of in-person public hearings were held throughout the state over the course of several weeks, often well in advance of the date of the expert witness hearing. Following each public witness hearing, CWSNC provided a written report, based on careful investigation of the specific circumstances surrounding each testifying customer's comments or complaints. The in-person hearings also afforded CWSNC leadership and operations team members and its customers the opportunity to personally discuss concerns immediately following the testimony. This practice supported a better early understanding of the basis for testimony and the responses.

Pursuant to the procedural schedule in this proceeding – specifically, a pandemic-driven one-day virtual public hearing for all customers throughout the state, in which the deadline to file this

responsive document is ten business days following the date of the hearing – CWSNC has neither had the opportunity to meet with all testifying customers in person, nor the time to thoroughly investigate and contact each testifying customer in order to resolve (if possible) their concerns in advance of filing this response.

In addition to researching the complaints, the Company has already contacted nine of the customers who testified at the November 1st hearing to seek to address their operations service quality concerns. CWSNC commits to contacting the remainder of the thirty-five witnesses, in the reasonably near future, to discuss their concerns and seek to address them.

C. CUSTOMER TESTIMONY AT TWO-PART PUBLIC HEARING

(1:30 – 3:49 p.m. & 6:30 – 7:48 p.m., November 1, 2021, Via Videoconference)

Seventy-two witnesses signed up to speak by the Commission's deadline of October 25th and thirty-five witnesses actually testified on November 1st, in the afternoon and evening sessions combined. The speakers' list included: one from Abington, three from Amber Acres, one from Amber Ridge, two from Amherst, one from Belvedere, two from Brandywine Bay, three from Carolina Pines, two from Carolina Trace, one from Connestee Falls, seven from Danby, one from Elk River, one from Fairfield Harbour, one from Fairfield Mountain, one from Fairfield/Sapphire Valley, two from Hound Ears, one from Powder Horn Mountain,

one from Riverpoint, one from Sandy Trail, two from Sugar Mountain, and one from Treasure Cove.³

CWSNC notes that most customer complaints were about the level of rates, comparisons of CWSNC's rates to those of other providers, and concerns about the existence of regulatory oversight. These issues are dealt with extensively in this document and the responses will not be repeated with reference to each customer, in the interest of avoiding duplication. The Company also notes that actual service quality issues were fewer in number, and they are dealt with specifically in response to named customer complaints.

Abington

Approximately \$350,000 has been spent at Abington since April 2020 on projects that include a new generator at the wastewater treatment plant, rehabilitation of manholes, lift station wet wells in the wastewater collection system in an effort to reduce groundwater infiltration.

1. James Whited, 6055 Habersham Drive, Kernersville, NC (water and wastewater customer), *Tr. Vol. 1, pp. 48--55.*

Mr. Whited, a CWSNC customer for two years: opposes the rate increase; cites the sharp difference between the rates he paid in Randleman, North Carolina at his prior residence and those charged by CWSNC; describes the efforts made by his family of four to economize; and complains of the incidence of sequential

³ For purposes of this report, customers are arranged by subdivision, rather than by order of appearance.

rate increases. He requested the Commission to verify the Company's costs before approving any further increases.

Response: The responses to Mr. Whited's concerns about rate levels, rate comparisons, and rate design are discussed previously and in Appendix A. In summary, (a) the cost, service and taxation structures are very different between companies like CWSNC and municipalities like Randleman, and; (b) the base rates are designed to help recover the fixed costs of the infrastructure required to serve customers. Rates must be designed to recover all reasonable costs of the systems. Thus, whether they are skewed towards a higher fixed rate for facilities or towards a higher volumetric rate, reflecting usage, some customers will benefit more and others less. The Company simply requires recovery of authorized costs allocated across the customer population by some fair means, and the Commission and the Public Staff exert strict regulatory control over the examination of all rate increase requests, including the allocation of cost recoverability between fixed and variable mechanisms.

No previous complaints have been received by CWSNC from Mr. Whited. CWSNC Operations employees checked his water on November 5, 2021, and the hardness was 6 grains per gallon, or 102 mg/L. This is considered moderately hard water, which is the range between 60-120 mg/L. Water hardness is not regulated in North Carolina and water softeners are commonly used to mitigate the issue.

Amber Acres North

New tanks at Amber Acres North were installed at Wells 1 & 2 in 2015; the Company replaced a receiving manhole on Walton Road in 2019, and a \$75,000 filter media replacement was completed in 2021 to reduce iron/manganese.

2. Alex Yandukin, 5413 Swordsman Court, Knightdale NC (water and wastewater customer), Tr. Vol. 1, pp. 42---48.

Mr. Yandukin, a CWSNC customer for approximately one year, testified of poor service because he held on the phone for 45 minutes as he applied for service and while the Company established his account. He testified about comparisons between CWSNC's billing structure and that of the City of Raleigh and expressed a lack of understanding as to why the rates are at the levels they are, as well as an objection to the frequency of the rate increases.

Response: With respect to the hold time experienced by Mr. Yandukin during his phone call, CWSNC has been unable to pinpoint the reasons therefor. However, the average length of a phone call –from receipt of the call to resolution of the customer's issue – is approximately six minutes.

As explained herein, comparisons of rates among disparate types of providers ignore the material differences in the configuration and funding of those different systems, as well as in the actual costs of service of each. Unlike the case with governmental utilities, rates are set for a company like CWSNC based on extensively and rigorously audited costs of service. Unlike many governmental utilities, CWSNC does not have economies of scale due to high density of population, tax support from customers (whose providers benefit from city or

county taxes), robust access to governmental grant and loan programs, surface impoundments, or access to rivers for supply.

Audits and examinations are conducted by the Commission and the Public Staff (and sometimes other Intervenors) in every rate case, and in twice yearly proceedings pursuant to Water System Improvement Charge and Sewer System Improvement Charge (“WSIC” and “SSIC”) proceedings. Additional oversight is also conducted on an ongoing basis via a variety of measures, including various reporting and filing requirements. Rate increases occur in two contexts: general rate cases, which can extend over a 300-day period from application to decision, and WSIC/SSIC cases, which extend over a six-month cycle. General rate cases, such as this proceeding, are rigorous examinations of virtually every aspect of a utility’s jurisdictional activities---adequacy of service, environmental and public health compliance, water quality, prudence in expenditures, least cost investment in necessary facilities and infrastructure, etc. WSIC/SSIC proceedings allow incremental rate increases if, upon strict examination, certain qualifying facilities have been constructed in compliance with all obligations and placed into service.

3. Jennifer Nelson, Smithfield Road, Knightdale, NC (water and wastewater), Tr. Vol. 2, pp. 34---37.

Ms. Nelson, speaking for customers from the 103 residences in the Covington Cross Homeowners’ Association, directed some of her remarks to the existence and impact of the “Fair Value” legislation that was enacted in North Carolina in 2018 [G.S. 62-133.1(A)]. See also *Docket No. W-100 Subs 60 and*

60A and NCUC Rules R7-41 and R10-28.⁴ This legislation allows a regulated public utility (such as CWSNC) to elect to determine “rate base” by a “fair value” methodology in a rate case, when the utility acquires a governmental water or wastewater system.

On behalf of the homeowners, Ms. Nelson objects to the rate increase, asserts that repairs and investment have not been adequately made, and calls upon CWSNC to utilize its expertise and its existing revenues to make repairs without a rate increase.

Response: Ms. Nelson’s general objections to the rate increases are addressed elsewhere in this Report and are incorporated herein by reference. With respect to the Fair Value statute to which she referred, it has not yet been utilized in a rate case in North Carolina and is not part of the request in this rate case.

4. Anna Valdez, 5400 Swordsman Ct, Knightdale, NC (water and wastewater customer), Tr. Vol. 2, pp. 60--64.

Ms. Valdez objects to the rate increase, questions the price comparison between her CWSNC service and her parents’ service from another, unnamed provider, and discusses the hardship imposed by steadily increasing rates. Concerned about the occasional “boil water” notices, she declines to drink the water.

⁴ https://ncleg.gov/EnactedLegislation/Statutes/PDF/BySection/Chapter_62/GS_62-133.1A.pdf
<https://www.ncuc.net/ncrules/Chapter07.pdf>
<https://www.ncuc.net/ncrules/Chapter10.pdf>

Response: The Company understands and has addressed herein concerns about price increases----it recognizes the hardships that can ensue for some customers and seeks to provide information about billing and payment options as well as sources of assistance. See Appendix A. Customers are also encouraged to contact the “Customer Experience” personnel for payment arrangements and payment plan options at (800)525-7990 (phone), (866)842-8348 (fax), or by email at customerservice@carolinawaterservicenc.com.

Amber Ridge

5. Lucilla Morales Vargas, 5909 Presentation St., Knightdale, NC (water and wastewater customer), *Tr. Vol. 2, pp. 64---66.*

A fifteen (15) year customer of CWSNC, Ms. Vargas and her daughter are the only occupants of her house, and her water bill has been as much as \$150/month. She objects to the fairness of not allowing a concession on the sewer bill for having power-washed her house, which she observes does not impose any actual service requirement for sewer. She compares CWSNC’s rates and service policies to the City of Raleigh’s, and says, should the rate increase be approved, she will make plans to sell her house.

Response: The Company does not have a policy to adjust sewer bills for power-washing and is unaware of other utilities that adjust for this reason. CWSNC does has payment arrangement policies that allow a customer to spread payments over 12-18 months; more information can be found by calling (800) 525-7990, or by email at customerservice@carolinawaterservicenc.com. CWSNC regrets the financial impact of the necessary recovery of the costs to serve and assures

customers that the Company, as required, seeks to minimize all costs necessary to comply with its service and regulatory compliance obligations. Recently, a corporate restructuring reduced allocated overhead, and examples of some of the Company's conservation measures include cuts to non-essential travel, cancellation of holiday events, postponement of discretionary employee training, and leveraging corporate resources to gain economies of scale for material and supply purchases. This commitment to prudent use of funds is further enforced through rate cases and other types of review by the Commission and Public Staff.

Amherst Subdivision

6. Rachel Miller, 2713 Glastonbury Road, Apex, NC (water and wastewater customer), *Tr. Vol. 1, pp. 18—21.*

Ms. Miller expresses frustration at the level of her bills, particularly citing the base charge as objectionable. She protests the fact that CWSNC is a monopoly provider and that customers have no choice; she also asks to be heard and for the Commission to analyze the request and to consider the impact on customers of rising rates. Finally, she states that CWSNC utilizes homeowners' property for its operational purposes.

Response: CWSNC understands the concerns about rising rates and reiterates the extent to which it is required to prove, in a context that is a combination audit and judicial proceeding, the reasonableness and prudence of its operations and its requests for rate relief. The water and wastewater industry is increasingly capital intensive and the ongoing cost of maintaining environmental and public

health standards across the state in these widely dispersed systems is extremely significant.

It should be noted that the Company, like all other capital intensive, regulated public utilities, is allowed to be legal monopoly in its service territory. The theory is that essential services (water, wastewater, and electricity, for example) are necessary to the health and economy of society, that they are so capital intensive that there should not be duplicate providers in a specific territory, and that the private providers of those services should be regulated by the government to ensure adequate service and prices that are fair, and cost based. The proxy for competition---the restriction the utilities accept for operating in this space---is compliance with the strict regulatory oversight of the Commission, which governs service and rates and enforces the requirement that utilities are limited to only a reasonable return on their actual, proven, necessary investment.

Regarding the objection to the level of the base charge, rate design decisions, which govern how costs are recovered through rates, are required to allow for recovery of prudent, reasonable, approved costs. The “rate design” can include more costs in the fixed, “base rate” category or it can recover them in the “usage” or volumetric category of charges. But they must be recoverable by one means or the other. Thus, some customers will prefer higher base charges, and others will prefer that more of the costs be recovered in a usage charge.

Finally, the Company’s investigation determined that it owns the property where its facilities are housed, but it uses homeowner association (“HOA”) property for vehicle access.

7. David Bass, 4500 Matlock Court, Apex, NC (water and wastewater customer), *Tr. Vol. 1, pp. 80---83.*

Mr. Bass, a 28-year resident of his home in Amherst, objects to the repeated increases and questions the justification for them. He submits that the water quality “is fine,” but alleges that the Company imposes charges without reading his meter and states that people are leaving the neighborhood due to the cost of water.

Response: CWSNC thanks Mr. Bass for his participation in the proceeding, understands his concerns about the increased costs, and respectfully refers him to preceding parts of this report as well as Appendix A, which in combination address most of his complaints.

Meters in this community are read by a contractor and any reported discrepancy or suspected mis-read is checked by CWSNC staff to verify readings. While no foreign object blocking the meter has been reported by the contractor, State Operations Director Dana Hill has contacted the contractor to be sure that any foreign object is removed from the meter in the future. Company records show no office or system estimates for this customer’s accounts in the last two years, which means that his meter was read.

Belvedere

Relatively recent repairs made at Belvedere, as well as ones planned, include:

- installation of three additional automatic flushers in 2019, for a cost of \$10,000;

- replacement of ground storage tank #2 in 2019-2020, to reduce rust / debris introduction to system, costing \$222,474;
- replacement of gravel packs at both wells to reduce iron and sediment introduction to system, costing \$150,000; and
- Well # 2 will be cleaned in the 4th quarter of 2021 and the casing will be replaced, at an approximate cost of \$30,000.

Belvedere was designed with numerous “dead-end” lines that experience low flow rates. Many are equipped with auto-flushers that are programmed to run every four (4) hours for thirty (30) minutes to maintain clarity, reduce biofilm, and prevent bacteria buildup. Manual flushing devices are operated every two weeks for twenty (20) minutes. An intensive flushing program has been established that completely flushes the system every two months.

8. John Foster, 2514 Country Club Drive, Hampstead, NC (water customer only), *Tr. Vol. 1, pp. 97—101.*

Mr. Foster, a CWSNC customer since 2003, was the only customer from Belvedere to testify. He states that the base rate and the usage rate had increased 95% and 84.5% (respectively) in ten (10) years, that the water is turbid and stains appliances, and that the pressure fluctuates. He observes that many customers have installed whole-house filters, and he responded to questions about water quality with the example of experiencing “brown water” for three minutes of flow after a three-week absence. He has not personally communicated this to CWSNC but he has participated in group discussions through the Belvedere HOA, including a large meeting that he believes took place some years ago.

Response: Initially, the basis for rate relief and the requirement to prove the need for it is discussed elsewhere in this document, and the requirement to run the tap for a few minutes after an extended absence is a relatively common practice across systems.

That said, Belvedere has a history of issues and customer complaints about discolored water, possibly related to elevated iron concentrations (0.2 mg/l-secondary limit of 0.3 mg/l) that have been frequent at Belvedere. Though not specifically required by regulators, CWSNC feeds an iron sequestering agent to mitigate the impact on customers. The Company has requested an evaluation from its iron sequestering agent supplier to make sure that current feed rates match raw water quality, and results are expected by January 1, 2022. There have also been concerns about smells that are likely associated with in-home filtration units stripping chlorine from the water supply. Hardness is 208 mg/l, which is enough to lead to calcium deposits on fixtures. As a result, many of the customers use water softening systems, a common practice in the eastern part of the state. CWSNC has exerted great effort to address both odor and hardness complaints. A remote meeting was scheduled with all homeowners' association representatives and held on October 13, 2021, to present the offer of a system-wide softener in order to better address the hardness of the water. CWSNC explained the regulatory requirements and cost and the nature of a Commission-approved surcharge that would be sought if the HOA wished to proceed. Only one customer attended the meeting. A similar proposal was rejected in 2019.

Brandywine Bay

A 2020 project for this system included changing the disinfection method from free chlorine to chloramines to eliminate the historical high levels of disinfection by-products for total trihalomethanes and haloacetic acids (“TTHM/HAA5”). In addition, five auto-flushers were installed on dead-ends and a mixer was installed in the elevated storage tank to eliminate stratification. The combined project costs were approximately \$210,000.

Automatic flushers are programmed to run for 30 minutes to 1 hour each day, and intensive system-wide flushing is performed annually.

9. Kimberley Dunwiddie, 410 Hillcrest Drive, Morehead City, NC (water and wastewater customer), *Tr. Vol. 1, pp. 38—42.*

Ms. Dunwiddie strongly opposes the rate increase and complains of a yellow color in the water, which her family does not drink. She is relatively new to the neighborhood and understands from some of her neighbors that the yellow color results from tannins in the water.

Response: CWSNC investigation discovered that there have been several complaints in 2021 from this system: six for discoloration, nine regarding odor, and some regarding TTHM concerns. Most are attributed to in-home filtration systems either not being maintained or stripping chlorine; some may be related to elevated iron concentrations. Brandywine iron levels average 0.06 mg/l, which is low when compared with a secondary allowable limit of 0.3 mg/l. Though not specifically required by regulators, CWSNC feeds an iron sequestering agent to mitigate potential impact on customers. The Company has requested an

evaluation from its iron sequestering agent supplier to make sure that current feed rates match raw water quality; the results are expected by January 1, 2022.

Hardness, however, is high at 269 mg/l, which can lead to calcium build-up on fixtures. Many homeowners opt to purchase their own softening systems to address this common issue. Some water quality issues reported are likely associated with limescale formation due to hard water and CWSNC will contact customers to suggest that use of a water softener might help. Additionally, stains can often be removed with a mixture of ¼ cup of baking soda to ¼ cup of white vinegar. With respect to odor, the “rotten egg” smell naturally occurs in some groundwater, with no adverse health risk. Chlorine introduced for disinfection masks the odor, but many homeowners have installed filtration systems that completely strip the chlorine upon entering the residence, thus revealing the odor. In addition, smells can be caused by reactions between naturally occurring sulfates in the water and corroded magnesium or aluminum anode rods in water heaters. To get rid of the odor, customers should flush and disinfect water heater tanks and consider replacing the anode rod with a zinc or aluminum-zinc alloy rod, as they do not react negatively to sulfates.

10. Paul Becton, 134 Carefree Lane, Morehead City, NC (water and wastewater customer), *Tr. Vol. 1, pp. 107---111.*

Mr. Becton objects strongly to the rates, which he believes to be too high at current levels. However, his main concerns are with the water quality, which he is unable to successfully address even with the use of a whole-house filter, water softeners, a refrigerator filter, and a Brita filter for the tap. He describes sludge

collection in the back of his toilet and complains of a smell that is like something “decomposing” in the sink or faucet. He states that the CWSNC technician – who declined to enter the house due to COVID restrictions – advised him that his filter contributed to the sludge accumulation. He objects to the rate hike, particularly in light of concerns about water quality as well as recent notices of harmful ingredients in the water treatment plant.

Response: The information provided in response to Ms. Dunwiddie is also applicable to Mr. Becton. The source of the sludge he mentions is likely a biofilm that can develop within home filtration systems that are not serviced or flushed properly. In reference to Mr. Becton’s comment on recent notices of harmful ingredients, recently the system experienced levels of total trihalomethanes and haloacetic acids that were above the North Carolina Department of Environmental Quality limit. These are by-products of disinfection which form as a result of free chlorine and natural organics staying in contact too long. The Company undertook measures to eliminate that formation and the system is back in compliance.

Carolina Pines

In 2021, CWSNC spent approximately \$80,000 for wastewater treatment plant rehabilitation, including structural repairs, site drainage, and tank coating.

11. Jessica Felter, 304 Wadkins Boulevard, New Bern, NC (flat rate sewer customer), *Tr. Vol. 1, pp. 27-31.*

Ms. Felter objects strongly to the rate increase and believes the flat-rate users are more disadvantaged than others, as they have no way to alter their

usage patterns. She also criticizes the policy that imposes constraints and a service fee for drafting payment from her checking account.

Response: The issue of rate design has been discussed and is the subject of perennial debate in rate cases. The Company's interest is in full recovery of its allowable costs, whether that is accomplished through flat rates, usage rates, or a combination thereof.

CWSNC sympathizes with Ms. Felter's objections about being charged additional fees when making payments with debit/credit cards, electronic checks, or through direct checking account drafts. Her aggravation is shared by many of CWSNC's customers. In this proceeding, the Company proposes to eliminate electronic payment fees borne by the customer at the point of payment in an attempt to improve the user experience and increase customer satisfaction. CWSNC is proposing fee-free electronic payments which will allow customers to freely select the best method of payment for their particular situation, without a penalty for choosing the most convenient payment option. Folding electronic service fees into the Company's cost of service provides customers with better options for paying their bill, encourages the adoption of paperless billing practices by removing electronic payment disincentives, and otherwise lowers the need for calls and contracts with the Company's Customer Experience team.

12. John Gumbel, 107 Forest Landing, New Bern, NC (flat rate sewer customer), *Tr. Vol. 1, pp. 31---38.*

Mr. Gumbel lists the amount and cumulative effect of recent rate increases and revises them by projecting the impact of the current rate request. He calculates

that this would result in a 155% compounded increase since 2009 and he compares that to the increase in the Consumer Price Index during that same period. He argues that the examination of rate requests should incorporate an analysis of the aggregate of increases over time.

Response: While understanding the appeal of Mr. Gumble's theory, CWSNC respectfully suggests that it would ignore the core principles of regulatory oversight of the Company, which require it to provide an essential service within its franchised territory, in compliance with environmental and public health standards, and at rates that hold it strictly accountable for proof of the actual, reasonable, audited cost of service. Regulated utilities are required to invest reasonably, prudently and adequately, and are entitled to the opportunity to earn a reasonable, Commission-authorized return on the investment they are required to make. Decisions about investment in infrastructure and operations necessary to ensure environmental and public safety standards cannot reasonably or safely be predicated upon funding levels that are driven by returns solely fixed to an external economic index.

13. Nancy Deane, 200 Mahaffey Ct, New Bern, NC (flat rate sewer customer), *Tr. Vol. 2, pp. 26---29.*

Ms. Deane, self-described as a senior, on a fixed income, and with no possibility of additional income, states that if this rate increase is fully approved, her sewer charges will be \$1000/year. She questions the lack of correlation between the rate of inflation and CWSNC's rate increases, notes the stability of

the Craven County water rates compared to CWSNC's, and urges the Commission to consider the impact of rate increases on customers.

Response: The Company appreciates Ms. Dean's participation in the hearing and respectfully submits that her issues concerning the rate increase and the rate design are addressed elsewhere in this Report.

Carolina Trace

Important service-related information applicable to Carolina Trace stems from the impact of Hurricane Florence, in 2017. One of the wastewater treatment tanks at the Carolina Trace wastewater treatment plant floated off the concrete foundation due to high flood levels in a nearby river during the hurricane. The tank could neither be placed back onto the foundation nor repaired. The metal was warped, cracked, and/or fully broken in multiple locations. The new tank design calls for a thicker foundation and improved anchoring to ensure the tank does not float again in the future, should another flooding event occur. The new tank is expected to be completed in February 2022; all project related costs are expected to be reimbursed by insurance.

14. David Smoak, 96 North Ridge Trail, Sanford, NC (water and wastewater customer), *Tr. Vol. 1, pp. 102---107.*

Noting that, with more time, he would have positive things to say about CWSNC, in the interest of limited time Mr. Smoak, speaking for the Carolina Trace Association, testifies that he:

- objects to the limited time for response to the Commission's notice; the limited time available to speak; difficulty in understanding the notice; and

the proposal to absorb payment processing fees into base service charges unless the Company can demonstrate that these services will be provided at a cost savings to all customers;

- complains of CWSNC's failure to supply a map of the development's sewer lines and manholes, as well as a requested plan for renovation or upgrade of the system sewer lines;
- requests information on how customers can help lower costs;
- expresses frustration that the base facilities charge is required even during months when homes are not occupied; and
- asks the NCUC to speak on behalf of customers of private, regulated water and wastewater companies regarding allocation of some of the federal infrastructure money.

Response: In order of the comments, CWSNC submits:

- COVID accommodation ultimately required that these hearings be conducted virtually, which meant that customers were required to sign up in advance to speak. The period between delivery of notice and the date of sign-up was limited, and the problem was exacerbated by concerns about delays with United States Postal Service delivery. In an effort to enhance the opportunity for notice, CWSNC voluntarily posted the Commission's notice on its website, alerted its contacts in the various HOAs, and utilized its "MyUtilityConnect" app to further communicate with customers about the rate case and public witness hearing process.

- The complexity of the notice is a function of the number of systems and separate rates. It would be very difficult to provide individually labeled rate sheets for the 100 systems in uniform rates.
- The Company strongly believes it does support its case, on the record, that spreading the cost of payment processing across the customer base is in the public interest.
- CWSNC hesitates to make system maps widely available due to security concerns, but neighborhood representatives have been provided direct contact information for operations staff and management for availability inquiries. The Company does not currently have a formal plan to replace service lines in this community in their entirety.
- Base facilities charges reflect, as much as possible, the fixed costs of the facilities required to provide service. These are static amounts and do not disappear when residents are away. The system must be able to provide service on demand, whether or not the customer is there to exert a demand for usage.

15. Frank Piras, 4015 Deer Track Trail, Sanford, NC (water/wastewater customer), *Tr. Vol. 2, pp. 53---56.*

A six-year resident of Carolina Trace, Mr. Piras complains of poor water quality, specifically citing numerous water line breaks as the cause, with the resulting “boil water” notices. He contrasts the CWSNC rates and service to his prior experience in Hickory, and asserts that no rate increase is deserved.

Response: Some main breaks and resultant Boil Water Advisories (“BWAs”) are triggered by mains that were installed in shallow trenches under previous ownership, often with improper bedding, resulting in breaks due to settling and traffic vibration. Repairs are scheduled---when possible---to allow for customer notification and reduced inconvenience. However, some have to be immediately repaired to mitigate further damage or to restore pressure. BWAs are required after a pressure loss to protect public health. Currently, the Company is adding valves at every opportunity to reduce the number of customers impacted by leaks.

Connestee Falls

A new, \$8,100,000 wastewater treatment plant was placed in service in September, 2019. The Company has spent \$2,200,000 on the sewer collection system and lift station replacements since January 2019 and has spent \$1,100,000 on the water distribution system during the same period. The capital plan for 2022-2024 projects \$1,300,000 on the water system and \$751,000 on the sewer system. The December 31, 2020 SSIC application included additional Connestee Falls plant in service for four lift station replacements, at a cost of \$340,252.

16. Jan Bennett, 154 Sedi Lane, Brevard, NC (water and wastewater customer), *Tr. Vol. 1, pp. 12--15.*

Ms. Bennett contests the rate increase, contending it is not shown to be warranted and because other service providers charge less. She objects to frequent water breaks, with resultant disruptions, inconvenience and risk as evidenced by the requirement of boiling water. Citing the existence of the

WSIC/SSIC charges, she contends that the Company should use existing revenues to improve the quality of service.

Response: During 2021, CWSNC experienced a total of sixteen leaks that would have required a Boil Water Advisory in the Connestee system. Out of the sixteen advisories, three of them would have affected Ms. Bennett's address. The Company's investigation of these matters remains ongoing.

Detection and average time to repair. Notifications of water leaks generally come from CWSNC personnel, Connestee Falls Security, Connestee Falls customers or from grounds maintenance staff. Water main breaks are typically fixed the same day and are considered emergency repairs. Service line leaks can take 1-3 days to repair, depending on the severity of the leak and Utility Locate status.

Prevention measures. CWSNC uses a pressure relief valve to test areas for pressure increases and has used a pressure recording device at the wells to ensure steady pressure in the system. During repairs, entire service lines are replaced to ensure against another leak on that line.

Communication of Boil Water Advisories. The notices are sent via "My Utility Connect" through email, text, and phone calls. The notices are also posted on Facebook and the Service Alerts tab on the top right of the main website.

Danby

CWSNC developed new Well #7 in 2020. In addition, the Company installed additional water softeners on two older wells (#'s 5 & 6) in 2018.

17. Luz Velez-Salem, 13706 Dealtry Lane, Pineville, NC (water and wastewater customer), Tr. Vol. 1, pp. 21---27.

Ms. Velez-Salem complains of poor water quality and of the cost of water, which she says approaches \$200/month for herself and her husband, plus the money she spends on purchasing water to drink. She describes a film on the water, visible on ice cubes, and says the bathrooms smell like feces. Despite the unpleasant smell and taste, the tests run by CWSNC show no violations of standards and others she has hired have been unable to solve the quality issues.

Response: Operations met with the customer on November 5, 2021 and tested the chlorine and pH of the water at the customer's residence. The results were 0.97 mg/L chlorine, pH 7.6, and hardness 7 grains per gallon----which is considered moderately hard water. CWSNC also flushed the water main and the customer's outside spigot to ensure the water is fresh and "turned over," since this customer's home is located in a cul-de-sac at the end of the line.

18. Lucas Medwell, 14801 Pomerol Ln, Pineville, NC (water and wastewater customer), Tr. Vol. 1, pp. 87---91.

Mr. Medwell complains that the current rates for water are too high, objects to a "\$2.25 fee for paying online" and notes that because much of the bill is a fixed cost, he cannot effect savings by changing behavior. He compares his bills to a nearby neighbor's, who is served by Charlotte, and calculates a 77% difference, which supports his request that CWSNC be purchased by the City of Charlotte.

Response: Regulatory oversight and level of rates have been discussed earlier in this Report and are also the subject of Appendix A. CWSNC notes that there

are generally significant differences in tax obligations for those within city limits and thus served by the city, versus those outside city limits who are served by a provider like CWSNC. Consequently, many cities charge a much higher rate for extra-territorial service, if they even provide it. Finally, the “convenience fee” would be omitted if the Company’s proposal to recover those costs in the general cost of service is approved.

19. Nathan Hartley, 14300 Blue Granite Road, Pineville, NC (water and wastewater customer), *Tr. Vol. 1, pp. 91---94.*

Mr. Hartley, a customer since 2016, objects to: the current level of rates; the inability to economize; the high base rate as an impediment to economizing; the cycle of increasing rates; and the lack of transparency regarding the use of the revenues.

Response: CWSNC appreciates Mr. Hartley’s participation in this proceeding and submits that his issues---all important---have been addressed in several places in this Report.

20. Audrey Smith, 12312 Danby Road, Pineville, NC (water and wastewater customer), *Tr. Vol. 2, pp. 17---21.*

Ms. Smith protests that her bills have been increasing for the 20 years she has lived in Danby and she asserts that she has seen no improvements to the Danby system unless a water line breaks. She objects to her average water bill, for a 1300 square foot house, of approximately \$115, and describes the measures undertaken to try to conserve.

She also complains of the service, noting that she buys bottled water to drink because of the quality, and that she has replaced her toilets to try to conserve water.

Response: CWSNC has received no complaints about service from Ms. Smith, and a test of her water for hardness on November 5, 2021 showed results of six (6) grains per gallon, which is considered to be moderately hard. The water in the Danby water system is blended from some wells which are softened and some wells which are not, and include purchased water from the Town of Lancaster.

21. Aubrey Pham, 12301 Woodside Falls Road, Pineville, NC (water and wastewater customer), *Tr. Vol. 2, pp. 21---23.*

Ms. Pham, a resident of Danby since 2007, compares her former Charlotte water bill of \$40/month to her current CWSNC bill of \$145/month, noting that her family does not use water excessively. She objects to the cost, does not understand how the increases can result in sustainable rates, and requests transparency and some explanation of why the rate increases are justified and for how long they will continue.

Response: CWSNC recognizes the impact of rising costs and has addressed the reasons for the rate requests elsewhere in this filing. The central answers to customers' concerns about rates are: (a) the Company fully understands its obligation to operate as economically as possible while providing good service; (b) the costs associated with operating these systems to provide safe drinking water and wastewater systems that are compliant with environmental and public health regulations are very high; and (c) the Commission and the Public Staff are

empowered and directed to be sure the rates charged are strictly a function of only the necessary cost of the service provided. On the latter point, it is important for customers to understand the rigorous challenges posed to the rate application by the Public Staff's painstakingly thorough audit and the Commission's deliberate scrutiny. Again, the burden of proof, in this fully judicial proceeding, is on CWSNC and appeals from these cases are to the North Carolina Supreme Court.

22. Renee Davey, 12316 Delcorte Ln Pineville, NC (water and wastewater customer), Tr. Vol. 2, pp. 23---26.

Ms. Davey, an eighteen (18) year resident of Danby, testified that her family of three pays \$87.83 a month for "access to water," which presumably is for the base facilities charge. She states that if this rate increase is approved, her fee for monthly access becomes \$95.09, she questions how that is affordable, and she quantifies and protests the percentage increases since 2017. Ms. Davey describes water quality issues, including a "horrible taste" and debris in the water, which cause her to purchase three 2.5-gallon bottles of water a week. She has also replaced faucets and appliances, which she submits was required due to the hardness of the water and the calcium buildup. Questioning whether improvements have been made that justify the percentage increase in rates she has experienced, she contends that until there is a showing of how the revenues from previous rate increases have been spent, the Commission should not allow additional rate increases.

Response: With appreciation for Ms. Davey's participation, the Company refers to other parts of this report for its response to her concerns and questions. A check

for water hardness was made at her residence on November 3, 2021, with a result of 7 grains per gallon, which is considered moderately hard water.⁵ The water in the Danby system is blended water from wells which are softened and wells which are not, including purchased water from the Town of Lancaster.

23. Joe Mahaffey, 14517 Limestone Ln, Pineville, NC (water and wastewater customer), *Tr. Vol. 2, pp. 45--53.*

Mr. Mahaffey, a twenty-seven (27) year customer of CWSNC, commends other customers for some of the points they made and elaborates on the following: a water main break in the front of the neighborhood which, unrepaired for two months, drained water and damaged the streets; a faulty repair to that main break that left a “speed bump” in the street; the waste of resources arising from delays in repairs; meter reading inaccuracies that account for dramatic fluctuations in bills and which persist despite multiple complaints and some meter replacements; and hard water that damages appliances. He notes the rate differential with nearby Charlotte service territories and reflects an understanding that there is a tax rate differential as well. Finally, he complains of the lack of improvement in infrastructure, quality, and customer care, and asks the Commission to not “rubber stamp” the increase.

Response: CWSNC Operations was contacted on June 21, 2021, about two leaks at the Woodside falls entrance. The two leaks were in 3/4” service lines and were caused by rocks cutting into the pipe. The leaks occurred during a busy part of the summer and were repaired on June 27th and 29th. Repaving was delayed due to

⁵ Note there is no regulation governing hardness in the water.

a Covid outbreak within the paving contractor's team; CWSNC Operations secured another paving contractor, and the work was completed August 21, 2021.

The concerns about rate increases and comparisons to other providers are addressed elsewhere in this Report.

Elk River

Approximately \$610,000 in capital improvements have been made within Elk River since April 2020 when the last rate case increases went into effect. This includes expenditures for installation of a new well building, radiological filters, a well pump and motor at Well # 7, and a new well pump and motor replacement at Well # 8.

24. Robert Harris, 78 Summit Park, Banner Elk, NC (water and wastewater customer), *Tr. Vol. 2, pp. 11—16.*

Mr. Harris---speaking for the homeowners' association---describes service issues, citing the Company for six recent main breaks and testifying that sometimes customers were without water for six to eight hours and then faced pressure problems afterwards. He observes that several of the breaks seemed to be concentrated in one area and that road obstructions were involved. He also describes commitments that appeared to be delayed, noting two issues: his observation that no progress had been made on a promised new well, despite site availability for over a year; and his belief that a required pump replacement had not been completed.

Mr. Harris concludes with his assertion that the residents do not object to rate increases so long as they are receiving good service, but that they are not. He

submits that the general manager had directly communicated with CWSNC about the problems with main breaks and discusses the inconvenience of insufficient pressure, especially during important holiday times when there are visitors.

Response: On July 1, 2021, Mr. Harris's meter was checked for accuracy and for leaks; the meter was reading correctly and there were no leaks.

Some of the pressure problems discussed resulted from Well #7 being out of service to install required radiological treatment filters, mandated by the North Carolina Division of Water Resources. Though the Company attempted to perform construction in the off season to avoid any system demand problems, the project ran over due to complications with obtaining parts because of shortages and Covid-19. The project took longer than expected and extended into summer. The Company sent out a voice reach asking for customers to voluntarily conserve water until such time as the project could be finished and the well placed back in service. This project is now completed and online.

With regard to well capacity, CWSNC welcomes the opportunity to discuss how it has worked in a pro-active manner, to the neighborhood's benefit. The water system currently has an approved well yield of 201 gallons per minute with an approved connection count of 361 homes. CWSNC currently serves 336 customers in the Elk River Community; thus, twenty-five (25) homes can still be built with the existing water supply currently in place. Further, CWSNC has taken the initiative to work with the Elk River POA to identify potential future well sites and have those approved by NCDWR-Public Water Supply Section, as a means of remaining ahead of schedule at the time when another well will be needed.

Fairfield Harbour

25. Michael Kahrimanian, 913, Sea Holly Court, New Bern, NC (water and wastewater customer), *Tr. Vol. 2, pp. 83—87.*

Mr. Kahrimanian strongly opposes the rate increase and believes that rates should be rolled back. He recites figures that demonstrate large percentage rate increases, objects to flat wastewater rates because he thinks rates should be based on usage, and objects to paying a service fee for drafts from his checking account for payment of bills.

Response: With appreciation to Mr. Kahrimanian for his participation, CWSNC refers to preceding parts of the Report and to Appendix A for responses to his concerns, including those about paying additional electronic service fees for drafts made directly from his checking account. (As indicated, the Company proposes to eliminate those electronic service customer fees.

Fairfield Mountain

26. Elizabeth Geary, 112 Mountains Blvd, Fairfield Mountain, NC (water and wastewater customer), *Tr. Vol. 1, pp. 94---96.*

Ms. Geary, representing the Fairfield Mountain Property Owners' Association, which is a customer of CWSNC, ⁶ asserts that the customer notice did not provide enough data to justify the rate increase and that the Company should be required to account for the revenue that has been generated from

⁶ Which includes the service areas of Fairfield Mountain, Apple Valley also known as Rumbling Bald, Highland Shores subdivision, and Laurel Mountain Estates.

previous double-digit rate increases. She draws parallels between CWSNC rate increases and the Consumer Price Index, as well as the Construction Cost Index.

Response: In this roughly nine-month investigatory and deliberative process, enormous amounts of electronic data, invoices, policies, accounting and economic data, environmental and public health data, and Data Requests and answers are exchanged, as the Public Staff performs an intensive audit of all aspects of the Company's operation in North Carolina as well as of the interactions between the North Carolina subsidiary and the parent company. The Commission's orders in the last two rate cases ran 128 pages in Docket No. W-354 Sub 364 and 146 pages in Docket No. W-354 Sub 360, respectively. See <https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=4b3a75c1-eb78-44fb-9f45-09bae2f1e1d0> and <https://starw1.ncuc.net/NCUC/ViewFile.aspx?Id=cf3c5acd-923b-4ac1-8432-f3ff42b2d929>. The Public Staff is staffed with experts in the highly specialized fields of regulatory accounting, economics, engineering, service, and operations----representatives of all disciplines participate in a rate case over the protracted period of examination. The Company has filed its application and extensive testimony, and has supplemented that initial filing with updates, as well as having responded to numerous requests for additional data. The Public Staff filed the testimony of four expert staff members on Friday, November 5th and the Company intends to file Rebuttal. The Commission has set the matter for hearing on December 7th, and that will be conducted as a fully judicial proceeding. Appeals from rate case decisions, should there be any, are made directly to the North Carolina Supreme Court.

The Company wishes for Ms. Geary and other customers to understand that their position is thoroughly defended and advanced by highly skilled experts, in a very granular, demanding process---one in which the utility must bear the burden of proof and which is required to produce a result which can sustain review by the highest court in the State of North Carolina.

Finally, in CWSNC's application narrative, the Company included a paragraph about the justification/drivers for this rate case. Customers are certainly not expected generally to check regulatory websites, but the Company would like to include here the statement it made when filing the case:

These requested rate increases are primarily driven by significant capital investments and increased operating expenses incurred to enable the Company to continue to provide reliable, compliant water and wastewater services to its customers. The investments are required to replace and rehabilitate aging infrastructure and to modernize and increase efficiencies in the Company's systems. More specifically, since its last general rate case, CWSNC has made (or is in the process of making) over \$20 million in water and wastewater system investments in North Carolina. These investments, along with associated operating and maintenance expenses, enable CWSNC to improve water and wastewater service to its North Carolina customers by more efficiently deploying resources and alleviating environmental concerns.

See page 2 of <https://starw1.ncuc.net/NCUC/ViewFile.aspx?id=4123cbe8-ab4f-40b1-8b71-996d6add83be>

Fairfield/Sapphire Valley

Over \$1,000,000 has been spent in the last thirty-three (33) months on the water system, largely on small items/repairs. Some well work was completed, including systems to aid in uranium removal. Near term investment plans include additional well work on the water side, with a \$1,300,000 spend planned over the next three (3) years, largely on the sewer collection system.

25. Ron Mellow 1162 Crays Highland Road, Sapphire, NC (*Water and wastewater customer*), *Tr. Vol. 1, pp. 55---60.*

Mr. Mellow, a summer resident of Fairfield Sapphire Valley since 1999 and a CWSNC customer since around 2007, chronicles a series of rate increases and states that his monthly base rate for water is \$102, which he pays during the six months that he is not in residence. With usage, during the months of occupancy, the bill is around \$130—140/month. He states that the system is old and in need of maintenance beyond patching, and that they have experienced eleven (11) boil water notices in the recent past. The fiber optic installers, who have damaged some of the pipes, reported to him their view that the old water pipes can break from the fiber installation work, even when they are not directly hit.

He states that because the isolating valves in his neighborhood are inoperable, the entire neighborhood has to be cut off when there is a leak. He has heard that the valves had been paved over and suggests that the Company repair the valves so they can use them. Noting the system improvement charges, he complains of seeing no improvements as a result of their use.

Response: The contracted fiber company is Global Fiber, and CWSNC has a good working relationship with the company. CWSNC Operations staff has spoken with Global Fiber and asked them to be careful when boring and to hand-dig to locate, if possible, to avoid water main breaks. Although CWSNC worked closely with the boring crew (Global Fiber), the boring company hit and broke a pipe while CWSNC was off on another locate. CWSNC attempted to isolate the water main and turn off the water by closing the valve on Eagles Ridge but the valve had been

paved over (by the property owners' association paving company) so they used the next valve upstream on Trays Island. CWSNC repaired the water main, dug up the paved-over valve, and replaced the valve box and cover so it would be accessible and operational in case it is needed in the future. Mr. Mellow reported no water on July 28, 2021; this was due to a line break caused by an electrical contractor and it was repaired on the same day.

Upon Mr. Mellow's complaint of a high bill on May 27, 2020, CWSNC's operator explained to him how to read the meter and check for leaks. The CWSNC operator answered his questions and assured him he had no leak, offering to do a meter test if the next bill also seemed high.

Hound Ears

A Hound Ears water main replacement of 2,000 linear feet was completed on June 30, 2021 at a cost of \$158,000. Additional improvements to both water and sewer are planned over the next two (2) years and are expected to cost \$1,007,000.

28. Randy Bently, 328 Shoals Mill Road, Boone, NC (Director of Property Services, Hound Ears Club); (water and wastewater customer), *Tr. Vol. 1, pp. 60---63.*

Speaking on behalf of the Hound Ears Club, Mr. Bentley observed that a lot of the customers are on fixed incomes, the cost of living increase this coming year is expected to be 5.9%, and that the rate increase should not be an "obscene" amount---but rather should only happen if it is reasonable and justified.

Response: In addition to the requirements of proof before there can be any increase, the Company notes that the last base rate increase was effective March 31, 2020, and any increase that may be ordered in this case is expected no sooner than around April 2022, which is a two-year period.

29. James Taylor, 151 Cascades, Blowing Rock, NC (water and wastewater customer), *Tr. Vol. 1, pp. 15---18.*

Facing retirement, Mr. Taylor is concerned about how he can afford these essential services, given the monthly costs. Despite limited personal use and no car washing or irrigation, he states his current monthly bill is between \$105---111/month, plus a \$2.25 convenience fee. He is paying twice what he paid in Charlotte, where he lived two years prior to moving to Fairfield/Sapphire Valley. He asserts that the rates are excessive and asks the Commission to deny the increase request.

Response: With thanks to Mr. Taylor for his appearance and his input, CWSNC believes it has addressed most of his issues elsewhere in the Report, with two additional comments. The comparison to City of Charlotte rates omits several considerations, including the difference in tax rates; and the Company reports that the fee to which Mr. Taylor refers (electronic service fee for e-check and debit/credit payments) would be omitted if the Company's request therefor in this case is granted.

Powder Horn Mountain

30. Trip Stallings, 1088 Powderhorn Mountain Road, Deep Gap, NC (water customer), *Tr. Vol. 1, pp. 63---72.*

Mr. Stallings describes his water system as "...PVC pipe run in a thin spiderweb network about one to two feet underground and often with no major protection. Some segments are old, and they were installed when the community was first established in the '80s." CWSNC has completed numerous repairs and is on site frequently; however, Mr. Stallings suggests that his best opportunity for a uniform upgrade to the water system is if a big enough leak is discovered. The pressure at his street connection is at the minimum and he has spent approximately \$1000 in verifying that the issue is not on his property.

He requests the Commission to deny CWSNC's rate increase request unless the Company signs a binding commitment to begin uniformly upgrading out-of-date systems like his. He has been in contact with the Company over these issues for six months and has had weekly contact for the past two months. The Company has replaced 200-300 feet of pipe about a quarter mile from his house.

Response: As Mr. Stallings stated, the Company made numerous trips to his premises and to the lines serving him in an intense effort to address and solve the pressure problems. By October, with the pressure relief valve having been replaced and Mr. Stallings having exhausted the efforts from his side, Company Operations personnel settled on the problem and replaced the entire 1" main in front of Mr. Stallings' residence, a distance of approximately 600', which increased the customers' pressure at his meter box from 32 psi to 100 psi. A plan is underway to make additional improvements, which are targeted for 2022. These mains were not installed or bedded properly in the late 1980's to early 1990's, prior

to CWSNC's ownership. Mains are installed atop on rock boulders in some cases, which can cause water main breaks.

Riverpoint

31. Dr. Sara Hornby, 16317 Woolwine Road, Charlotte, NC (water and wastewater customer) *Tr. Vol. 2, pp. 41—44.*

A 22-year resident of Riverpoint, Dr. Hornby was on the Water Committee that was instituted by the homeowners' association in 2005, to attempt to find solutions for service and water quality problems. She alleges that CWSNC's refusal to allow sale of the sewer service to CMUD ("Charlotte Municipal Utilities Department") at that time prevented a solution, which would have required transfer of water and sewer in order to make an arrangement with Charlotte. She recites the percentages and frequency of increases, compares the CWSNC rates to those of Charlotte, and opposes the grant of any rate increase.

Response: This is a purchased water system wherein CWSNC purchases water from the City of Charlotte. The water system was once served by two wells located within the system and the water was treated for hardness. The wells were low producers and in the summer months it was difficult to keep up with demand. To better serve the Riverpointe community, in 2012 CWSNC invested in a connection with Charlotte Water and now purchases all water required to serve the community.

CWSNC has no record of water quality complaints from Dr. Hornby, and with appreciation for her engagement in the issues and her testimony, CWSNC

submits that the issues associated with rate comparisons to and service by municipal systems are addressed elsewhere in this Report.

Sandy Trail

32. Capri McDonald, 5204 Mylady Court, Knightdale, NC (water and wastewater customer), *Tr. Vol. 1, pp. 72---80.*

A customer of CWSNC for ten (10) years, Ms. McDonald recites significant increases in rates from July 2013 until the present, indicating that she and her young son are the only users. She states that her water and sewer bills are higher than her electric bills, and that she has retained a plumber to be sure there are no problems on her side of the meter. She has updated her appliances to energy efficient models, including her washer, and has replaced faucets in the kitchen and bath. She states she had complained to CWSNC and requested re-reads of her meter, and she complains that it is hard to get in touch with the Company. Her request is for the Commission to make a fair decision, in light of comparable rates, and to essentially deny the rate increase request.

Response: Ms. McDonald has historically brought her complaints to the Company and to the Public Staff. On January 3, 2018, she filed a complaint with Public Staff to dispute bills for water and wastewater. Upon investigation it was determined that Ms. McDonald's usage remained within her average and that it was a rate increase that increased her bill--- not the usage and not a meter mis-read. In July 2020, she requested a meter test, which was accomplished and found to be in order. In August of 2020, Ms. McDonald reported that she did not believe the meter reader was reading her meter and that she detected a different reading than

the one the Company submitted. CWSNC personnel re-read the meter; there were no leaks and no issues with the read.

Ms. McDonald's 2021 average usage is 4,506 gallons/month, thus far. There is no indication in CWSNC's records of any estimated reads for her home, and by the Company's records, all reads are verified. Her 2020 average usage was 3,958 gallons, all reflected in verified reads.

Sugar Mountain

33. Brenda Robertson, 1502 Sugartop Drive, Sugar Mountain, NC (water and wastewater customer), *Tr. Vol. 2, pp. 29--33.*

Ms. Robertson testified that, despite conservation measures that include purchase of new toilets and shower heads, her water and sewer bill (combined) in her approximately 1000 square foot condominium averages about \$100. She compares these bills to those she experiences in her other home, served by a community water system in Duplin County, where more expansive use produces an average water bill of approximately \$25.00. She objects to the persistently increasing prices and questions how the money from the increasing rates is used.

Response: With thanks to Ms. Robertson for her appearance and testimony at the hearing, the Company respectfully refers to other parts of this Report for more complete responses to her concerns. Thus far in 2021, Ms. Robertson's bill averages \$108 per month for her water and wastewater services. Upon review of the customer experience records, the customer has not contacted the Company to report a high bill or any other issues in 2020 or 2021. The Area Manager for this community has worked with the maintenance staff to address leaks within the

unoccupied units or when residents are away for several months. This proactive approach has prevented higher bills by fixing leaking toilets, dripping water faucets, and leaking shower fixtures.

34. Elmer Purkey, 303 Sugartop Drive, Sugar Mountain, NC (water and wastewater customer), *Tr. Vol. 2, pp. 56—60.*

Mr. Purkey and his wife own two condominiums at Sugar Top on Sugar Mountain and he states that his water and wastewater bills are already too high, that they exceed his electric bill, that there is no explanation for the repeated increases, that they experience Boil Water notices, and that no one is happy with service or rates.

Response: CWSNC appreciates the opportunity to serve Mr. Purkey and his wife and thanks him for participating in this hearing. The Company also appreciates the opportunity to speak with customers in this fashion to explain why the costs are increasing, the necessary uses to which the revenues are put, and the strict nature of the regulatory oversight which works to assure quality service at the lowest reasonable costs, even if those costs are objectionable to customers. Issues that Mr. Purkey addresses are addressed previously in this Report and in Appendix A.

Treasure Cove

The Treasure Cove system consists of two wells: #1 is the primary supplier and #2 is set to activate should pressure drop below 40 psi. Both wells have emergency power availability. Phosphates are fed to sequester iron.

35. Danny Conner, 231 Long John Silver Drive, Wilmington, NC (water customer), *Tr. Vol. 2, pp. 37---41.*

Mr. Conner challenges the justification for a 28 percent (28%) increase in the base charge or 34 percent (34%) increase per 1,000 gallons in this case, noting other recent increases in Docket W-354, Sub 364A (WSIC/SSIC).

He testifies that in his twenty (20) years in this forty (40) year old subdivision, he has seen no obvious improvements other than a generator on Well Number 1, construction of small buildings over the pumps, and chain-link fencing. He believes that no generator has been added to Well Number 2 and he states that Well Number 1 is in the flood zone and thus has the potential to be shut down in extreme weather events, with no backup available. Service complaints include inconsistent pressure and the levels of calcium, iron and manganese. He contends that there is no treatment other than occasional chlorine, and states that, due to heavy metal content, toilets and faucets need to be replaced frequently. He experienced two pipe breaks in the last eleven (11) months, costing approximately \$10,000. Because of the problem with deposits unless the vehicle is immediately dried, cars and boats cannot be washed, according to Mr. Conner. He estimates that he uses bottled water for drinking, at a cost of over \$50/month. His consumption, in a two-adult household, averages over 6,700 gallons per month, with no leaks, no car or boat washing, water-saving faucets, toilet, and shower heads, plus a rain barrel.

He seeks a profit and loss statement specific to Treasure Cove because he contends that Treasure Cove should not be used to offset other problems or losses

on other systems. Finally, he seeks information about testing for GenX and PFAS/PFOA (Per and Polyfluoroalkyl Substances),

Response: A Profit and Loss statement for Treasure Cove is neither available nor relevant, as these systems have been consolidated for ratemaking purposes. It is critical to understand that all infrastructure requires maintenance over time, and eventually will need replacement. A major replacement at any one facility could impose a catastrophic financial burden to those customers that benefit from the system; however, it is manageable when shared across the larger body of customers. With regard to GEN-X/PFAS, monitoring is completed on a yearly basis and results are disclosed in the annual Consumer Confidence Report, which is mailed to customers and which is available at <https://www.myutility.us/CarolinaWaterServiceNC/water-quality-reports/pfas-information> .

CONCLUSION

CWSNC appreciates the willingness of its customers to participate in this process and the Company understands customers' opposition to rate increases. The Company also understands the customers' pitched interest in a high level of customer service quality, and CWSNC continuously strives to provide the highest level of customer service, in the most efficient, cost-effective manner. However, this is a capital-intensive industry and, since the last rate case, CWSNC has invested more than \$20,000,000 in new water and sewer plant in North Carolina. Therefore, if the new, additional capital investments made by CWSNC are proved to be necessary and prudent, the opportunity to recover those costs is required by law and in order for the Company to continue to provide adequate service. The

assurance of fairness to customers is found in the strict, highly-skilled oversight and regulation by the Public Staff and the Commission.

Respectfully submitted, this the 15th day of November 2021.

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Electronically Submitted

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

APPENDIX A

CWSNC GENERAL RESPONSES TO CUSTOMER CONCERNS NOVEMBER 1, 2021 VIRTUAL PUBLIC HEARINGS

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, following 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. From filing of a rate increase application until issuance of a final Commission order can take 300 days; much of that time is spent in a rigorous audit by the Public Staff and a thorough review of all evidence, conducted in a judicial proceeding by the Commission. The burden of proof in support of the request is on the utility.
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 generally 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 wastewater 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 may be daunting to many customers who attempt to understand all its contents and the personal impact.

With respect to the timing and means of customer notice in this particular case, CWSNC undertook, on its own volition, to activate a series of its communications mechanisms to provide additional layers of notice to

customers and to owners' associations to alert them to their opportunity to be heard at the public hearing.

4. Investment in Replacing Aging Infrastructure – As documented by the U.S. Environmental Protection Agency (“EPA”) and the American Water Works Association (“AWWA”), and the American Society of Civil Engineers (“ASCE”), significant investment is needed throughout North Carolina—more than \$20 billion over the next 20 years—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 is intently focused on providing a high level of service and compliance with primary drinking water quality standards. The Company’s latest Annual Water Quality Reports for Treasure Cove, Fairfield Harbour, and Brandywine Bay are attached hereto as Exhibits 1, 2, and 3, respectively.
6. Secondary Water Quality – The Company is also committed to a high level of service regarding secondary water quality standards. Secondary water quality standards address substances that may impact the taste, odor, or color (i.e., the “aesthetics”) of a customer’s drinking water.
 - a. Iron – The Company’s testing for Iron reveals levels below the Maximum Contaminant Level (“MCL”) of 0.3 parts per million (“ppm”) for Treasure Cove, Fairfield Harbour, and Brandywine Bay.

- b. Hardness – Hardness reflects the relative amounts of calcium and magnesium ions within drinking water. Generally, “hard water” can be found throughout North Carolina, including in coastal areas served by groundwater. It is not uncommon for homeowners served by public and private drinking water systems to own and deploy drinking water softeners. However, hardness is not regulated by the North Carolina Department of Environmental Quality. The Company’s experience is that many drinking water customers possess their own drinking water softeners. Historically, the Company has heard from customers with in-home drinking water softeners that they do not wish to pay for—i.e., subsidize—an expensive system-wide water softener to support other customers within the community who do not have an in-home water softening system. In summary, traditionally, the Company leaves drinking water hardness solutions to the individual preferences of its customers, unless a clear and substantial demand for such a capital investment is made by a community.
- c. The Company’s On-Going Commitment to Water Quality – The Company is committed to providing the highest level of service to customers, especially regarding water quality. The Company continues to implement its annual flushing program.
7. Customer Assistance – The testimony objecting to rate increases raises the issue of affordability and of assistance to customers with paying bills.

CWSNC recognizes the difficulties that some customers face due both to the lingering financial impacts of the COVID 19 pandemic and to the continuing upward pressure on rates. The Company has undertaken a number of measures to help mitigate these concerns. Examples of some measures follow:

- Responding to the pandemic, CWSNC implemented an effective outreach program from the suspension of disconnects through the restart of them (which the Company delayed for a full two months beyond the Commission mandate). The effort targeted customers who needed assistance with bill payments, urging them to contact the Company, and the information was disseminated through the Company's website, social media accounts, and bills. CWSNC added an online portal on its *My Utility Connect* online application to assist customers in choosing the appropriate payment arrangements and payment plans, based on their ability to pay (this also eased the call volume for the Company's Customer Experience Department). CWSNC continues its outreach to customers as the need for assistance with payment options is ongoing.
- CWSNC maintains an extensive Homeowner Association, Property Owners Association, and Property Management Company database, used to send frequent email and phone updates. This database enhances the Company's ability to reach customers with messages, including the ability, in this rate case, to counter the possibility of delayed USPS delivery of notice of the public hearings. Specifically, CWSNC scheduled in-person

meetings with several HOA/POA communities, including The Farms, The Point, The Harbour, Fairfield Harbour, Brandywine Bay, and Carolina Trace. Several other Zoom video conferencing meetings were scheduled for Brandywine Bay, Fairfield Harbour, Forest Hills, Bradfield Farms, Sherwood Forest, and Belvedere Plantation HOAs. Phone calls were conducted throughout the year with POA/HOA presidents and property management companies such as Sugar Top, Sugar Mountain, Elk River, Skyleaf Condos, Connestee Falls, Sapphire Valley, and Lake Lure.

- CWSNC lengthened the payment arrangement timeframe from 12 months to 18 months. Note that a *payment arrangement* is an agreement with a customer requiring him or her to pay off their balance in combination with future bills. Under this arrangement, installments are reflected on monthly customer bills. It is differentiated from a *payment plan*, which is an agreement with a customer to make a specified payment by a certain date.
- Late fees related to payment arrangements and payment plans were suspended from March 2020 through November 2020, and payment arrangement periods were lengthened from 12 months to 18 months----all in efforts to assist customers with outstanding balances.
- CWSNC had implemented a “no disconnect for non-payment” policy for all customers prior to Governor Cooper’s March 31, 2020 issuance of Executive Order 124. Additionally, the Company provided an additional two months beyond that required by the NCUC to accommodate customers

experiencing difficulties paying their bills---this was accomplished by delaying disconnections until November 1, 2020.

- In addition to exceeding the requirements of the NCUC's orders in Dockets No. M-100, Sub 158 concerning disconnect, CWSNC raised the amount that triggers disconnection from \$100 to \$400.
- CWSNC participates in the NC HOPE Program. See <https://www.rebuild.nc.gov/hope-program>. The NC Housing Opportunities and Prevention of Evictions ("HOPE") Program is managed by the North Carolina Office of Recovery and Resiliency, a division of the state Department of Public Safety. HOPE provides rent and utility bill assistance to low-income renters who have been financially impacted by the COVID-19 pandemic. The program is committed to helping North Carolina renters stay safe in their homes by preventing evictions and loss of utility services. The Company received approximately \$37,418 on behalf of 65 customers to assist with their water and wastewater bills.
- The Company currently participates in the Low Income Water Assistance Program ("LIHWAP"). See <https://www.ncdhhs.gov/divisions/social-services/energy-assistance/low-income-household-water-assistance-program-lihwap>. LIHWAP is a federally-funded program that provides emergency assistance to low-income households, particularly those with the lowest incomes, that pay a high proportion of household income for drinking water and wastewater services. The State of North Carolina has submitted its plan for the creation of the LIHWAP program

and awaits approval from the federal Office of Community Services.

The webpage will be updated once the plan is approved.

- The Company provides to customers, through its website and social media, information on non-profit entities offering payment assistance, such as Crisis Assistance Ministries and United Way.
- Specific information concerning all aspects of customer assistance were developed for CWSNC's Customer Experience Team – the Company's first point of contact with the customers.
- CWSNC proposes two additional customer assistance measures in this rate case:
 - a Water Efficiency Program to provide customer rebates for installing efficient appliances; and
 - a proposal to include in cost-of-service credit card processing fees currently borne by customers who utilize credit cards to pay their bills.

8. Communications Generally

CWSNC invests significantly in a robust communications strategy, understanding the need for two-way interaction with customers for matters including customer assistance, and extending beyond that to service and internal operations. Components of this system and examples of its operation include the following:

- CWSNC maintains an extensive Homeowner Association, Property Owners Association, and Property Management Company database to send

frequent e-mail and phone call updates. This database enhances the Company's ability to reach customers with messages of all types.

- Information in the various databases is used to support contacts with customers about service issues, boil water notices, upcoming restrictions on service due to required maintenance or repairs, advice related to weather-related and other emergencies, billing assistance, and a variety of other matters.

The database, utilized to target e-mails and phone calls to individual customers as well as to the various representative organizations, is key to the Company's ability to provide critical and timely information to customers. For example, in this current proceeding, CWSNC initiated outreach through My Utility Connect via email and posted the public hearing information to the front page of the CWSNC website to supplement the required Commission notice of the virtual public hearings, which were held on November 1, 2021. The Customer Experience Team at the call center was prepared with helpful information in the event customers contacted the Company for the public hearing information. To attempt to insure notice was received more timely by a broader range of customers---particularly in light of the USPS's publicly known issues regarding timely delivery of even first class mail----the Company voluntarily activated various modes of information delivery to provide supplemental notice of the hearings to as many customers as possible.

- CWSNC improves its capacity to communicate with customers by building and maintaining relationships with the various homeowner/property owners' ("HOA" and "POA") associations in its service territories, by regular postings on its website, and by maintaining 15 separate WordPress web-based pages for the largest HOA/POA communities.
- Additionally, the Company operates the aforementioned *My Utility Connect*, which is an application that allows customers to choose their preferred method of notifications---through e-mail, text, or phone call. Customers can also start/stop service, pay bills, and monitor monthly usage at any given time.
- State President Don Denton provided forty weekly reports to the Commission between March 13, 2020 and May 12, 2021, which addressed CWSNC's response to the Covid pandemic, across a range of topics.
- Finally, and most significantly, CWSNC communicates directly and on a 24/7 basis with its customers through the Customer Experience Team at its call center. This center is dedicated to providing support and assistance on a wide range of topics from billing and payment assistance, to work orders for main breaks. The team for North Carolina is located in the Charlotte, North Carolina office at 4944 Parkway Plaza Blvd. Operationally, the Company has developed a regionalized support model to offer more localized customer expertise and support. Prior to this change, a CWSNC customer calling for support might have been routed to a Corix customer support representative ("CSR") located in any Corix location. In contrast, now a CWSNC customer will be directed to a local CSR. The Company submits

this is a better model and provides improved customer service support for the current and future needs of customers. A closer connection to the communities CWSNC serves will enable the Company to provide better information and superior efforts to understand and solve customers' problems.



Carolina Water Service of North Carolina™

Treasure Cove Water System

PWS ID: NC0465165

OFFICIAL COPY

Nov 15 2021

Annual Water Quality Report 2020

Message from Don Denton, President

Dear Carolina Water Service, Inc. of North Carolina Customers,

I am pleased to share your Annual Water Quality Report for 2020. This report is designed to inform you of the quality of water we delivered to you over the past year.

As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. This report includes information to keep you informed of what's working and where we continue to work hard to deliver safe, reliable, and cost-effective service.

We are proud to share this report which is based on water quality testing through December 2020. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated team of local water quality experts works every day to ensure 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,

Visit us online at www.carolinawaterservicenc.com

Or Join us on Facebook and Twitter

@CarolinaWaterNC



COVID-19 Response

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Carolina Water Service, Inc. of North Carolina, should remove or inactivate the virus that causes COVID-19 as they do for other pathogens.

Based on current evidence, the risk to water supplies remains low. Customers can continue using and drinking tap water as usual. The EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. Disinfecting or other sanitary wipes, including those labeled as "flushable" and other non-toilet paper items, should NOT be flushed in toilets. For more information, visit the CDC at <https://www.cdc.gov/coronavirus/2019-ncov/php/water.html> and EPA at <https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater>.

Source of Drinking Water

Your water comes from several wells located in New Hanover County which draw water from Castle Hayne 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 visiting www.carolinawaterservicenc.com and clicking *Learn More under Water Conservation Tips* on the front page or 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.

For more information visit www.epa.gov/watersense.

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.

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

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

Contaminants that may be present in source water include:

- A. **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- B. **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- C. **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- D. **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can 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?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) 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 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).

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 North Carolina 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 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.

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.

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.

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

Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	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 risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant 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 Disinfectant 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.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Analysis or test results indicate the constituent is not detectable at minimum reporting limit.
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)	A measure of radioactivity in the water.
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.
Running Annual Average (RAA)	Calculated running annual average of all contaminant levels detected.

Source Water Assessment Program (SWAP)

The North Carolina Department of Environmental Quality (DEQ), 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 Treasure Cove 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
Well #1	Moderate	9/10/2020
Well #2	Lower	9/10/2020

The complete SWAP Assessment report for Treasure Cove may be viewed on the Web at: www.ncwater.org/?page=600. 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.

Monitoring Your Water

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, 2020.** 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.

If You Have Questions Or Want To Get Involved

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

Water Quality Test Results

Contaminant (units)	Sample Date	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Nitrate/Nitrite Contaminants							
Nitrate, as Nitrogen (ppm)	2020	N	2.17	1.84 - 2.17	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Lead and Copper Contaminants							
Contaminant (units)	Sample Date	Action Level Exceedance Y/N	Your Water	Number of sites found above the AL	MCLG	AL	Likely Source of Contamination
Copper (ppm) (90 th percentile)	Jun-Sept 2020	N	0.141	0	1.3	1.3	Corrosion of household plumbing systems; 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)	2020	N	1.05	0.08 - 2.2	4	4.0	Water additive used to control microbes.

PFAS Testing

Carolina Water Service, Inc. of North Carolina continues efforts to conduct statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion.

For more information visit <https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos>.

Carolina Water Service, Inc. of North Carolina is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

PFAS Results (All results reported as Nanograms per liter (ng/L))

Contaminant	Sample Date	Range of Detect	Average	EPA Advisory	Below HAL
PFOS	2020	10.0 - 12.0	11.0	70	Yes
PFOA	2020	3.6 - 3.9	3.8	70	Yes
Combined PFOS + PFOA	2020	13.6 - 15.9	14.8	70	Yes

Terms and Abbreviations:

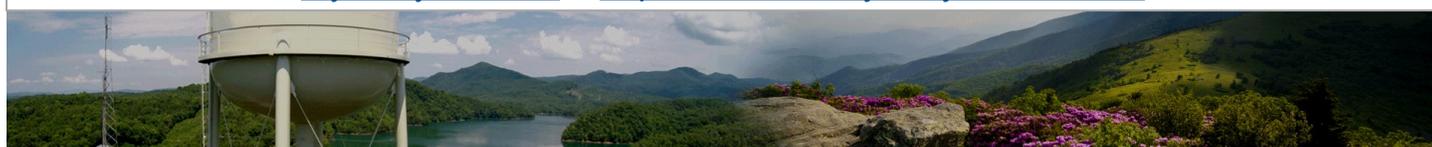
- **PFOS** – Perfluorooctane Sulfonate
- **PFOA** – Perfluorooctanoic Acid
- **Health Advisory Level (HAL)** – To provide Americans, including the most sensitive populations, with a margin of protection from a lifetime of exposure to PFOA and PFOS from drinking water, EPA established the health advisory levels at 70 parts per trillion.
- **Ng/L** – Nanograms per liter (ng/L) which equals Parts per trillion (ppt) – One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.
- **ND (No Detect)** - No detection means the constituent is not detectable at the minimum reporting limit. 2.0 ng/L is the minimum level the lab is reporting a detection for these parameters.

GenX Compound

Carolina Water Service, Inc. of North Carolina's (CWSNC) systems and customers within the Cape Fear area are served exclusively by well water. In late 2017, CWSNC proactively sampled several of our wells within this area, including wells within the Belvedere, Olde Point, Mason Landing, and Treasure Cove systems. The samples were sent to a certified laboratory capable of analyzing for the GenX compound. **CWSNC is pleased to report that the resulting analysis shows no detectable levels of GenX in our samples.**

Violations: In 2020, 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.

To access your utility account anytime, anywhere, please register for our customer portal & download MyUtilityConnect at <https://connect.myutility.us/connect/>



2019: Per- and Polyfluoroalkyl Substances (PFAS)

In 2019, North Carolina Department of Environmental Quality (NCDEQ) performed two sampling events at Well #2. These samples were analyzed for the presence of 33 different PFAS chemicals (including GenX, PFOA, and PFOS). The following table includes those results.

Contaminant (ppt)	Result (Average)	Range Low—High	EPA Health Advisory (if Applicable)	Contaminant (ppt)	Result (Average)	Range Low—High	EPA Health Advisory (if Applicable)
Perfluorooctanoic acid (PFOA)	3.2	3.14—3.26	70*	Perfluorotridecanoic Acid (PFTriA)	0	N/A	
Perfluorooctanesulfonic acid (PFOS)	11.55	11—12.1		Perfluoroheptanesulfonic acid (PFHpS)	0	N/A	
Perfluoroundecanoic acid (PFUnA)	0	N/A		Perfluorononanoic acid (PFNA)	0	N/A	
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0	N/A		Perfluorotetradecanoic acid (PFTA)	0	N/A	
Perfluoropentanoic acid (PFPeA)	2.445	2.33—2.56		Perfluoro-3-methoxypropanoic acid (PFMOPrA)	0	N/A	
Perfluoropentanesulfonic acid (PFPeS)	0	N/A		8:2 Fluorotelomer sulfonate (8:2 FTS)	0	N/A	
6:2 Fluorotelomer sulfonate (6:2 FTS)	0	N/A		Perfluoro(3,5-dioxahexanoic) acid (PFO2HxA)	0	N/A	
Nafion Byproduct 1 (PFESA BP1)	0	N/A		Perfluoro(3,5,7-trioxaoctanoic) acid (PFO3OA)	0	N/A	
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0	N/A		Perfluoro(3,5,7,9-tetraoxadecanoic) acid (PFO4DA)	0	N/A	
Perfluorohexanoic acid (PFHxA)	2.32	2.28—2.36		Perfluoro-2-methoxyacetic acid (PFMOAA)	0	N/A	
Perfluorododecanoic acid (PFDoA)	0	N/A		Perfluorononanesulfonic acid (PFNS)	0	N/A	
Perfluoro-2-methyl-3-oxahexanoic acid (GenX)	0	N/A		Perfluoroheptanoic acid (PFHpA)	1.33	1.26—1.4	
Perfluorodecanoic acid (PFDA)	0	N/A		Nafion Byproduct 2 (PFESA BP2)	0	N/A	
Perfluorodecanesulfonic acid (PFDS)	0	N/A		Perfluorooctanesulfonamide (PFOSA)	0	N/A	
Perfluorohexanesulfonic acid (PFHxS)	3.1	3.02—3.18		4:2 Fluorotelomer sulfonate (4:2 FTS)	0	N/A	
Perfluorobutanoic acid (PFBA)	1.98	1.9—2.06	Perfluoro-4-methoxybutanic acid (PFMOBA)	0	N/A		
Perfluorobutanesulfonic acid (PFBS)	1.875	1.84—1.91					

* **Health Advisory:** Health advisories provide information on contaminants that can cause human health effects and are known or anticipated to occur in drinking water. EPA's health advisories are non-enforceable and non-regulatory and provide technical information to states agencies and other public health officials on health effects, analytical methodologies, and treatment technologies associated with drinking water contamination. EPA's health advisory level for PFOA and PFOS offers a margin of protection for all Americans throughout their life from adverse health effects resulting from exposure to PFOA and PFOS in drinking water.





Carolina Water Service of North Carolina™

Fairfield Harbour Water System

PWS ID: NC0425132

OFFICIAL COPY

Nov 15 2021

Annual Water Quality Report 2020

Message from Don Denton, President

Dear Carolina Water Service, Inc. of North Carolina Customers,

I am pleased to share your Annual Water Quality Report for 2020. This report is designed to inform you of the quality of water we delivered to you over the past year.

As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. This report includes information to keep you informed of what's working and where we continue to work hard to deliver safe, reliable, and cost-effective service.

We are proud to share this report which is based on water quality testing through December 2020. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated team of local water quality experts works every day to ensure 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,

Visit us online at www.carolinawaterservicenc.com

Or Join us on Facebook and Twitter

@CarolinaWaterNC



COVID-19 Response

According to the Centers for Disease Control and Prevention (CDC) and the US Environmental Protection Agency (EPA), the virus that causes COVID-19 has not been detected in drinking water. Conventional water treatment methods that use disinfection, such as those provided by Carolina Water Service, Inc. of North Carolina, should remove or inactivate the virus that causes COVID-19 as they do for other pathogens.

Based on current evidence, the risk to water supplies remains low. Customers can continue using and drinking tap water as usual. The EPA also encourages the public to help keep household plumbing and our nation's water infrastructure operating properly by only flushing toilet paper. Disinfecting or other sanitary wipes, including those labeled as "flushable" and other non-toilet paper items, should NOT be flushed in toilets. For more information, visit the CDC at <https://www.cdc.gov/coronavirus/2019-ncov/php/water.html> and EPA at <https://www.epa.gov/coronavirus/coronavirus-and-drinking-water-and-wastewater>.

Source of Drinking Water

Your water comes from several wells located in Craven County, which draw water from Castle Hayne 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 visiting www.carolinawaterservicenc.com and clicking *Learn More under Water Conservation Tips* on the front page or 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.

For more information visit www.epa.gov/watersense.

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.

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

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

Contaminants that may be present in source water include:

- A. **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- B. **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- C. **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- D. **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can 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?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) 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 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).

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 North Carolina 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 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.

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.

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.

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

Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	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 risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant 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 Disinfectant 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.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Analysis or test results indicate the constituent is not detectable at minimum reporting limit.
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)	A measure of radioactivity in the water.
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.
Running Annual Average (RAA)	Calculated running annual average of all contaminant levels detected.
Treatment Technique (TT)	A required process intended to reduce the level of a contaminant in drinking water.

Source Water Assessment Program (SWAP)

The North Carolina Department of Environmental Quality (DEQ), 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 Harbour 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
Well #1	Moderate	9/10/2020
Well #2	Moderate	9/10/2020
Well #3	Moderate	9/10/2020

The complete SWAP Assessment report for Fairfield Harbour may be viewed on the Web at: www.ncwater.org/?page=600. 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.

Monitoring Your Water

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, 2020.** 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.

If You Have Questions Or Want To Get Involved

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

Water Quality Test Results

Inorganics Contaminants

Contaminant (units)	Year Sampled	Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	2019	N	0.22	N/A	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.

Disinfectant Residuals Summary

Disinfectant Residual	Year Sampled	Violation Y/N	Your Water (highest RAA)	Range Low High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	2020	N	0.72	0.2 - 1.7	4	4.0	Water additive used to control microbes.

Stage 2 Disinfection Byproduct Compliance - Based upon Locational Running Annual Average (LRAA)

Disinfection Byproduct (units)	Sample Location Code	Year Sampled	MCL Violation Y/N	Your Water (highest LRAA)	Range Low High	MCLG	MCL	Likely Source of Contamination
TTHM (ppb) [Total Trihalomethanes]	B01	2020	Y*	92.1*	7 - 121.9	N/A	80	Byproduct of drinking water disinfection.
TTHM (ppb) [Total Trihalomethanes]	B02	2020	Y*	83.5*	7 - 121	N/A	80	Byproduct of drinking water disinfection.
HAA5 (ppb) [Total Haloacetic Acids]	B01	2020	N	34.375	13 - 52	N/A	60	Byproduct of drinking water disinfection.
HAA5 (ppb) [Total Haloacetic Acids]	B02	2020	N	33.25	11 - 51	N/A	60	Byproduct of drinking water disinfection.

*We collect quarterly samples for disinfection byproducts (DBPs) from two sites in the distribution (B01 and B02). Compliance is based on a four-quarter average of results from each site. In November 2020, our customers were notified of a TTHM LRAA MCL exceedance after our 4th quarter 2020 monitoring. Additional sampling revealed that DBPs were forming in the storage tank (prior to the water entering the distribution system). To resolve the problem, engineering plans for the adjustment of the chlorine feeds were developed and the project is nearing completion, pending final approval from the state. For additional information, please see the following from the U.S. EPA: *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.*

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)	2018	0.624	1	1.3	1.3	Corrosion of household plumbing systems; erosion of natural deposits.
Lead (ppb) (90 th percentile)	2018	4	1	0	15	Corrosion of household plumbing systems; erosion of natural deposits.

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 Wilson's Disease should consult their personal doctor. 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.

Microbiological Contaminants in the Distribution System

Contaminant (units)	Date	Violation	Value	MCL/TT	MCLG	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	8/11/2020	No	Present (1 sample)	TT*	N/A	Naturally present in the environment

*If a system collecting fewer than 40 samples per month has two or more positive samples in one month, an assessment is required. We routinely collect five coliform samples per month, and in August 2020, one of five monthly compliance samples showed the presence of total coliform bacteria. Repeat samples were collected, none of which showed total coliform bacteria present. *Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system.*

PFAS Testing

Carolina Water Service, Inc. of North Carolina continues efforts to conduct statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion.

Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) were tested during 2020 with no detection. No detection means the constituent is not detectable at the minimum reporting limit. 2.0 ng/L is the minimum level the lab is reporting a detection for these parameters. Nanograms per liter (ng/L) equals Parts per trillion (ppt) – One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000. For more information visit <https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos>. Carolina Water Service, Inc. of North Carolina is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

Violations: In 2020, Carolina Water Service, Inc. of North Carolina performed all required monitoring for contaminants. Please see the section for Stage 2 Disinfection Byproduct Compliance for information regarding a violation we received for a TTHM LRAA MCL exceedance. We were in compliance for all other applicable testing and reporting requirements.

To access your utility account anytime, anywhere, please register for our customer portal & download MyUtilityConnect at <https://connect.myutility.us/connect/>



Carolina Water Service of North Carolina™

Brandywine Bay Water System

PWS ID: NC0416163

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Nov 15 2021

Annual Water Quality Report 2020

Message from Don Denton, President

Dear Carolina Water Service, Inc. of North Carolina Customers,

I am pleased to share your Annual Water Quality Report for 2020. This report is designed to inform you of the quality of water we delivered to you over the past year.

As your community water utility, we fully appreciate our role in the local community. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. This report includes information to keep you informed of what's working and where we continue to work hard to deliver safe, reliable, and cost-effective service.

We are proud to share this report which is based on water quality testing through December 2020. We continually strive to supply water that meets or exceeds all federal and state water quality regulations.

Our dedicated team of local water quality experts works every day to ensure 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,

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COVID-19 Response

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

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

Contaminants that may be present in source water include:

- A. **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- B. **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- C. **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- D. **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can 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?

In order to ensure that tap water is safe to drink, the EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) 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 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).

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 North Carolina 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 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.

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.

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.

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

Action level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
EPA	Environmental Protection Agency.
Maximum Contaminant Level (MCL)	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 risk to health. MCLG's allow for a margin of safety.
Maximum Residual Disinfectant 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 Disinfectant 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.
Not applicable (N/A)	Not applicable.
Not Detected (ND)	Analysis or test results indicate the constituent is not detectable at minimum reporting limit.
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)	A measure of radioactivity in the water.
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.
Running Annual Average (RAA)	Calculated running annual average of all contaminant levels detected.

Source Water Assessment Program (SWAP)

The North Carolina Department of Environmental Quality (DEQ), 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 Brandywine Bay 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
Well #1	Lower	9/10/2020
Well #3	Lower	9/10/2020

The complete SWAP Assessment report for Brandywine Bay may be viewed on the Web at: www.ncwater.org/?page=600. 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.

Monitoring Your Water

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, 2020.** 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.

If You Have Questions Or Want To Get Involved

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

Water Quality Test Results

Contaminant (units)	Sample Location Code	Year Sampled	MCL Violation Y/N	Your Water (highest LRAA)	Range Low High	MCLG	MCL	Likely Source of Contamination
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Stage 2 Disinfection Byproduct Compliance - Based upon Locational Running Annual Average (LRAA)

TTHM (ppb) [Total Trihalomethanes]	B01	2020	Y*	90.75	35 - 114	N/A	80	Byproduct of drinking water disinfection.
	B02	2020	Y*	80.5	24.5 - 108	N/A	80	Byproduct of drinking water disinfection.
HAA5 (ppb) [Total Haloacetic Acids]	B01	2020	N	42.5	8.4 - 49	N/A	60	Byproduct of drinking water disinfection.
	B02	2020	Y*	61.75	36 - 86	N/A	60	Byproduct of drinking water disinfection.

*We collect quarterly samples for disinfection byproducts at two sites in the distribution (B01 and B02). Our customers were notified of violations we received for a TTHM LRAA MCL exceedance during first quarter 2020, and TTHM and HAA5 LRAA exceedances during second quarter 2020. We are implementing plans to install additional equipment and alternate disinfection treatment to permanently reduce disinfection byproducts in the system. We estimate the project should be complete by June 2021. For additional information, please see the following from the U.S. EPA: TTHMs - *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.* HAA5s - *Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.*

Disinfectant Residuals Summary

Contaminant (units)	Year Sampled	MCL/MRDL Violation Y/N	Your Water (highest RAA)	Range Low High	MRDLG	MRDL	Likely Source of Contamination
Chlorine (ppm)	2020	N	0.79	0.2 - 2.2	4	4	Water additive used to control microbes

Microbiological Contaminants in the Distribution System

Contaminant (units)	Sample Date	Violation	Value	MCL/TT	MCLG	Likely Source of Contamination
Total Coliform Bacteria (presence or absence)	5/7/2020	No	Present (1 sample)	TT*	N/A	Naturally present in the environment

*If a system collecting fewer than 40 samples per month has two or more positive samples in one month, an assessment is required. We routinely collect two coliform samples per month, and in May 2020 one of the monthly compliance samples showed the presence of total coliform bacteria. Repeat samples were collected, none of which showed total coliform bacteria present. *Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system.*

Inorganic Contaminants

Contaminant (units)	Year Sampled	MCL Violation Y/N	Your Water	Range Low High	MCLG	MCL	Likely Source of Contamination
Fluoride (ppm)	2020	N	0.21	N/A	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

Lead and Copper Contaminants

Contaminant (units)	Sample Date	Your Water	# of sites found above the AL	MCLG	MCL	Likely Source of Contamination
Copper (ppm) (90 th percentile)	Aug 2018	0.208	0	1.3	AL= 1.3	Corrosion of household plumbing systems; Erosion of natural deposits

PFAS Testing

Carolina Water Service, Inc. of North Carolina continues efforts to conduct statewide drinking water testing for Per- and Polyfluoroalkyl Substances (PFAS). These man-made compounds are used in the manufacturing of products resistant to water, grease or stains including firefighting foams, cleaners, cosmetics, paints, adhesives and insecticides. PFAS can migrate into the soil, water, and air and is likely present in the blood of humans and animals all over the world. The Environmental Protection Agency (EPA) has established a health advisory level at 70 parts per trillion.

Perfluorooctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA) were tested during 2020 with no detection. No detection means the constituent is not detectable at the minimum reporting limit. 2.0 ng/L is the minimum level the lab is reporting a detection for these parameters. Nanograms per liter (ng/L) equals Parts per trillion (ppt) – One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

For more information visit <https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos>.

Carolina Water Service, Inc. of North Carolina is committed to providing safe, reliable, and cost-effective drinking water services to all of our customers.

Violations: In 2020, Carolina Water Service, Inc. of North Carolina performed all required monitoring for contaminants. Please see the section for Stage 2 Disinfection Byproduct Compliance for information regarding violations we received for TTHM and HAA5 LRAA MCL exceedances. We were in compliance for all other applicable testing and reporting requirements.

To access your utility account anytime, anywhere, please register for our customer portal & download MyUtilityConnect at <https://connect.myutility.us/connect/>



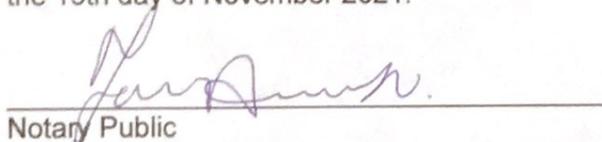
VERIFICATION

Philip J. Drennan, being duly sworn, deposes and says that he is the Regional Director of Financial Planning and Analysis Manager for Carolina Water Service, Inc. of North Carolina; that he is familiar with the facts set out in this **REPORT ON CUSTOMER COMMENTS FROM PUBLIC HEARINGS HELD VIRTUALLY ON NOVEMBER 1, 2021**, filed in Docket No. W-354, Sub 384; that he has read the foregoing Report and knows the contents thereof; and that the same is true of his knowledge except as to those matters stated therein on information and belief, and as to those he believes them to be true.



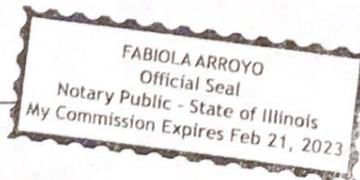
Philip J. Drennan

Sworn to and subscribed before me this
the 15th day of November 2021.



Notary Public

My Commission Expires: 02-21-2023



CERTIFICATE OF SERVICE

I hereby certify that on this the 15th day of November 2021, a copy of the foregoing **REPORT ON CUSTOMER COMMENTS FROM PUBLIC HEARINGS HELD VIRTUALLY ON NOVEMBER 1, 2021**, filed by Carolina Water Service, Inc. of North Carolina in Docket No. W-354, Sub 384, has been duly served upon all parties of record by electronic service, as follows:

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Electronically Submitted

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