STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH

DOCKET NO. W-218 SUB 573

IN THE MATTER OF APPLICATION BY AQUA NORTH CAROLINA, INC., FOR AUTHORITY TO ADJUST AND INCREASE RATES FOR WATER AND SEWER UTILITY SERVICE IN ALL SERVICE AREAS IN NORTH CAROLINA	DIRECT TESTIMONY OF SHANNON V. BECKER ON BEHALF OF AQUA NORTH CAROLINA, INC.

APPENDIX 3
SCHEDULE 1

STATE OF NORTH CAROLINA
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DOCKET NO. W-218, SUB 573

BEFORE THE NORTH CAROLINA UTILITIES COMMISSION

IN THE MATTER OF
APPLICATION BY AQUA NORTH CAROLINA, INC.,
202 MACKENAN COURT, CARY, NORTH CAROLINA 27511,
FOR AUTHORITY TO ADJUST AND INCREASE RATES FOR WATER
AND SEWER UTILITY SERVICE IN ALL SERVICE AREAS IN
NORTH CAROLINA

PREFILED DIRECT TESTIMONY OF
SHANNON V. BECKER
ON BEHALF OF
AQUA NORTH CAROLINA, INC.

June 30, 2022

Q. PLEASE STATE YOUR NAME, POSITION WITH AQUA NORTH CAROLINA, INC., AND BUSINESS ADDRESS.

A. My name is Shannon V. Becker and I am President of Aqua North Carolina, Inc. (Aqua or Company). My business address is 202 Mackenan Court, Cary, North Carolina 27511, and my responsibilities include oversight of the operation and maintenance of Aqua's water and wastewater systems located throughout the state.

Q. PLEASE PROVIDE A BRIEF DESCRIPTION OF YOUR BACKGROUND AND EXPERIENCE.

A. I graduated from the State University of New York at Buffalo in 1993 with a Bachelor of Science degree in accounting. I received a CPA certification after joining Deloitte & Touche, LLP, where I led financial audits for public and private organizations. Since leaving public accounting, I have held management level positions at multiple Fortune 500 Companies in addition to being a small business owner in Raleigh, NC. In 2009, I joined Aqua as the State Controller and was named President of Aqua Virginia in April 2012. I was promoted to my current role as President of Aqua North Carolina in August 2016.

Q. WHAT ROLE HAVE YOU PLAYED IN THE PREPARATION OF THIS FILING FOR AN INCREASE IN WATER AND WASTEWATER RATES?

A. The Application was assembled with my participation, in conjunction with Aqua's legal, accounting, compliance and engineering resources.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. My testimony includes:

(A) Introduction of Witnesses
(B) Characteristics of Aqua Operations in North Carolina
(C) Need for Rate Increase
(D) Request to Implement a Water and Sewer Investment Plan (WSIP) Pursuant to N.C.G.S § 62-133.1B
(E) Rule R1-17A Requirements for the Utility's Application for a WSIP
(F) Performance-Based Metrics (PBMs)
(G) System Improvement Plan (SIP)
(H) Water Quality
(I) Water System Improvement Charges (WSIC) and Sewer System Improvement Charges (SSIC)
(J) W-218 Sub 526 Order Requirements
(K) Customer Assistance Program (CAP) Pilot Project Proposal
(L) Pre-treatment Program – Sewer Use Rule Proposal
(M) Reporting Requirements
(N) Lobbying and Advertising Attestation

A. INTRODUCTION OF WITNESSES

Q. PLEASE INTRODUCE THE WITNESSES PROVIDING PRE-FILED DIRECT TESTIMONY ON AQUA'S BEHALF AND DESCRIBE THEIR TOPICS.

A. The following witnesses provide pre-filed direct testimony on Aqua's behalf:

- Dave Haddad of Regulated Capital Consultants discusses capital structure, rate design and the continued use of the conservation rate pilot program. Mr. Haddad additionally discusses the potential implementation of a Consumption Adjustment Mechanism (CAM).

- Dean Gearhart, Rates and Planning Manager, describes proforma adjustments to O&M line items, along with the related cost drivers used to project WSIP Rate Years 1 – 3 expenses and capital projections.
- Dylan W. D'Ascendis, of ScottMadden, Inc., supports Aqua's proposed rate of return and capital structure.
- John Spanos of Gannett Fleming Valuation and Rate Consultants, LLC, supports Aqua's determination of a new depreciation rate for large software applications proposed.

B. CHARACTERISTICS OF AQUA'S OPERATIONS IN NORTH CAROLINA

Q. PLEASE DESCRIBE THE AQUA NORTH CAROLINA OPERATIONS.

A. Aqua operates and maintains small systems spread out across many counties. The Company consists of 738 water systems consisting of nearly 1600 wells along with 59 wastewater plants and 201 collection systems across 51 counties in North Carolina. The average customer count of each Aqua water system is 115, while the median customer count of Aqua's water systems is only 48. The Company's five largest water systems encompass 33% of Aqua's water customers. The Company employs approximately 185 people and is geographically dispersed across the state; its operators drive in excess of four million miles annually to service its water and wastewater systems. The various operating centers are responsible for the operation

and maintenance of defined systems in relatively close geographic proximity to their offices.

Aqua is composed of five rate divisions: 1) Aqua Water (ANC Water), 2) Aqua Sewer (ANC Sewer), 3) Brookwood Water (BW Water), 4) Fairways Water (FW Water), and 5) Fairways Sewer (FW Sewer). With certain exceptions, all customers within each rate division are subject to the same rates; however, the rates among rate divisions vary.

C. NEED FOR RATE REQUEST

Q. WHY HAS AQUA APPLIED FOR THIS REQUEST IN WATER AND WASTEWATER RATES?

A. Aqua has applied for this rate request to update its rates for increased operating expenses and costs related to capital that have exceeded incremental revenues from new customer growth. The increased O&M and dollars related to capital carrying costs for added infrastructure decreases net income, while increased capital costs increase Aqua's equity. Both have resulted in the erosion of Aqua's rate of return on common equity (ROE) since its last rate case and support the need for Aqua to apply for updated rates.

Q. PLEASE DESCRIBE THE CAPITAL PROJECT ACTIVITY SINCE THE LAST RATE CASE.

A. The incurrence of capital and related costs necessary to replace aged infrastructure and prudently invest in system assets is much greater than

the rate by which assets are being depreciated or removed from rate base. This results in significant rate lag that contributes to the dilution of Aqua's ROE between rate cases. Several factors contribute to the increasing capital balances included in rate base and primarily include: 1) replacing - at current prices - historic original cost system assets that are or were in rate base, 2) replacing contributed assets (Contribution in Aid of Construction, or CIAC) that are not in rate base, and 3) updating or adding infrastructure and equipment necessary to meet compliance standards, improve water quality and service reliability, or facilitate process improvements.

In addition to the heightened current replacement cost necessary to replace assets included in rate base at their original cost, Aqua maintains a significant portfolio of historic infrastructure assets that were initially contributed by developers and are not included in rate base, as noted above. Nearly one third of Aqua's Utility Plant In Service (UPIS) is contributed. This CIAC is being replaced at current costs, which increases rate base and drives a higher revenue requirement.

Aqua's growing capital investment in its utility infrastructure, along with increased operating costs since the last rate case, has prevented the Company from earning the Commission authorized return on equity under current rates. Despite the proactive use of the Water System Improvement Charge and Sewer System Improvement Charges (WSIC and SSIC) that help minimize lag on certain eligible capital projects to promote targeting

secondary water quality issues and other infrastructure needs, the historic ratemaking mechanism invariably results in regulatory lag. In the face of the persistent need to invest significantly in infrastructure to achieve good customer service, this lag creates an inefficiency in cost recovery opportunities, which then drives expensive and sequential rate cases because the Company is chronically unable to earn its authorized return on equity, even under good management.

Aqua's operational footprint covers hundreds of stand-alone water and wastewater systems, widely dispersed across North Carolina. As such, few projects are individually material in terms of financial impact, but the volume and cumulative cost of small projects necessary to replace or upgrade each system is significant.

See Application Exhibits Aw and As, and W-1, Item 10 Rate Base Adjustments for Original Cost Rate Base and pro forma adjustments, including projections of assets to be placed in service for the Base Year (2022), and WSIP Rate Years 1 – 3.

Q. PLEASE DESCRIBE THE CHANGES TO AQUA'S OPERATIONS AND MAINTENANCE (O&M) EXPENSES SINCE THE LAST RATE CASE.

A. Aqua's test year O&M has increased approximately 5% ($1.7M) from the O&M authorized in Aqua's last rate Order, Docket No. W-218, Sub 526.

See Application Exhibits Aw and As, and W-1, Item 10 Rate Base Adjustments for Original Cost Rate Base and pro forma adjustments,

including projections of assets to be placed in service for the Base Year (2022), and WSIP Rate Years 1 – 3.

See Application Exhibits Dw and Ds, and W-1, Item 10 Revenue and Expense Adjustments, including O&M for the Base Year (2022), and WSIP Rate Years 1 – 3.

Q. WHAT ROE DOES AQUA RECOMMEND BE USED TO CALCULATE ITS REVENUE REQUIREMENT?

A. Aqua proposes that an ROE of 10.4%, which is the midpoint of Witness D'Ascendis' recommended ROE range of 9.9% and 10.9%, be authorized for use in establishing Aqua's revenue requirements. As discussed in Mr. D'Ascendis' direct testimony, the use of a WSIP does not affect the risk used to calculate ROE, and therefore, Aqua proposes utilization of a 10.4% ROE regardless of whether a historic test year rate case or WSIP is approved for use by the NCUC. See Witness D'Ascendis' testimony for support of the proposed authorized ROE.

Q. PLEASE DESCRIBE AQUA'S LEVEL OF EARNINGS DURING THE TEST YEAR FOR THIS APPLICATION.

A. During the test year ending December 31, 2021, Aqua achieved a consolidated per books ROE of 7.50%, or an ROE of 7.88% when adjusted to remove goodwill. For comparison, the October 26, 2020, rate case order in Docket No. W-218, Sub 526, authorized a rate of return on common equity of 9.40%.

D. REQUEST TO IMPLEMENT A WATER AND SEWER INVESTMENT PLAN (WSIP) PURSUANT TO N.C.G.S. § 62-133.1B [ALSO CALLED THE MULTI-YEAR RATE PLAN (MYRP)]

Q. PLEASE DISCUSS AQUA'S PROPOSED USE OF A WSIP.

A. Aqua requests Commission approval to utilize the recently approved WSIP rate-making mechanism under Rule R1-17A, "Procedure For Water And Sewer Investment Plan Rate Adjustments Under G.S. 62-133.1B," that sets forth the guidance and requirements for the use of a WSIP.

Aqua submits that use of a WSIP will allow the Company to further reduce regulatory lag, maintain its prudent capital plan, decrease the frequency of rate case filings, and continue to promote the provision of reliable and cost-effective service to customers. The Company has strived to file all the required data, with the understanding that this is a case of first impression and will be a learning process for all. Aqua looks forward to implementing a WSIP jointly with the parties and Commission.

For general background, a WSIP is intended to provide a rate-making mechanism that will: encourage prudent infrastructure and rehabilitation of critical water and wastewater infrastructure; reduce the frequency of rate cases; reduce ROE dilution by helping address rate lag; and provide timely regulatory oversight by the Utilities Commission and Public Staff. Rates under a WSIP must be just and reasonable and in the public interest. The WSIP mechanism was developed collaboratively to ensure guardrails are included to protect the interests of customers.

A WSIP provides a process for setting water or sewer base rates and revenue requirements through banding of authorized returns on a forward-looking basis. It is designed to better match rate revenues with corresponding investments and expenses, rather than only using the historic test year ratemaking model. While the first year (Rate Year 1) must allow flexibility to capture material changes in its revenue requirement since the utility's previous rate filing result, the rates for Rate Years 2 and 3 under the plan are capped at 5%. The WSIP rules require quarterly and annual utility reporting and annual regulatory reviews. Overearnings by the utility under a WSIP, if any, are to be refunded to customers on an annual basis via an Experience Modification Factor (EMF) process.

A WSIP must include performance-based metrics (PBMs) that benefit customers, drive utility performance, or support Commission policy goals that ensure the provision of safe, reliable, and cost-effective service by the water or sewer utility.

Q. ARE PROPOSED RATES UNDER AQUA'S WSIP PLAN JUST AND REASONABLE AND IN THE PUBLIC INTEREST?

A. Yes. Aqua believes its application and utilization of the WSIP, along with its witness testimony, support a Commission finding that its proposed rates are just and reasonable and in the public interest. The use of a WSIP establishes a process for stakeholders to obtain insight and greater transparency in the future needs of a water or sewer utility.

Aqua's use of a WSIP to calculate forward-looking rates over a three-year period will provide recovery of representative operating costs based on actual costs incurred within a historic test year foundation, updated with reasonably known and measurable investments, and anticipated reasonable and prudent expenditures. These projected costs are intended to represent Aqua's operations more closely over the three-year term. The corresponding rates help ensure the continuation of safe and reliable utility services through the availability of funds that support necessary infrastructure investment and increasing O&M expenses.

Utilization of the WSIP rate-making mechanism will better match the timing of cost incurrence with cost recovery over a future period of three Rate Years and minimizes the potential for lag. This in turn both reduces the need for the Company to file more frequent rate cases and maintains strong regulatory oversight through added periodic reporting and review requirements. Assuming the WSIP is approved, Aqua anticipates not having to file a rate case for at least three years, which is one of the benefits of the mechanism.

The utilization of a WSIP requires the establishment of meaningful performance measures that are developed with the input of the Commission and Public Staff. Performance measures will enhance transparency and utility accountability. As more fully explained later in my testimony, the water and wastewater industries are different from other utility sectors in evaluating performance. Standards or measures of performance vary and

are not as well defined for water and wastewater utilities as they are for electric utilities [e.g., System Average Interruption Duration Index (SAIDI), System Average Interruption Frequency Index (SAIFI), and Customer Average Interruption Duration Index (CAIDI)]. The Company has endeavored to propose appropriate evidence-based performance measures.

Finally, the WSIP incorporates controls to limit the remote possibility that a water or wastewater utility would earn more than its authorized return on equity. Similar restrictions to protect the public interest do not exist under a historic test year rate-making model. While Aqua seeks to utilize a WSIP to provide timely recovery of its actual expenses and costs related to investment, the WSIP reporting and reviews provide significant regular oversight (quarterly) and add rigorous insight into the Company's operations.

Q. DOES AQUA ADDRESS ALL REQUIREMENTS IN ITS APPLICATION ACCORDING TO THE WSIP RULES?

A. Yes. Rule R1-17A, "Procedure For Water And Sewer Investment Plan Rate Adjustments Under G.S. 62-133.1B," sets forth the guidance and requirements that apply to the use of a WSIP. The Company's application adheres to all requirements under Rule R1-17A. See ***Becker Exhibit 2***.

Aqua developed its revenue requirements for each of its five rate entities based on projections of reasonably known and measurable capital and expense investments and anticipated reasonable and prudent expenditures

for the three Rate Years of the WSIP plan. The projected increases in revenue requirements for Rate Years 2 and 3 do not exceed 5% of Aqua's retail jurisdictional gross revenues for the preceding plan year. Aqua has additionally proposed four PBMs that measure utility operations and management and meet the requirement of the WSIP plan rules. These PBMs benefit customers and promote the provision of safe, reliable, and cost-effective service by Aqua. I describe them later in my testimony.

E. RULE R1-17A REQUIREMENTS FOR THE UTILITY'S APPLICATION FOR A WISP

Q. WHAT IS THE MULTI-YEAR RATE PLAN TEST YEAR AND THREE RATE YEAR PERIODS?

A. Aqua's test year starts January 1, 2021, and ends December 31, 2021. Rule R1-17A(c)(1) requires "the first Rate Year shall begin no later than the first day of the month which includes the end of the statutory suspension period under G.S. 62-134." In this case, considering the importance of the cutoff dates to be used for reporting on required detailed activity for specific future periods, Aqua prepared its WSIP plan and related application utilizing a Rate Year 1 that starts January 1, 2023, with anticipated rates effective the first of the month in which the Final Order is received. Rate Year 2 starts January 1, 2024, with approved rates effective on this same date. Rate Year 3 begins January 1, 2025, with rates effective on this same date. See ***Becker Exhibit 1*** for a projected timeline of the WSIP Plan.

Q. DOES THE PROPOSED WSIP ADDRESS THE SPECIFIC REQUIREMENTS SET FORTH UNDER RULE R1-17A, (c)(2) – (c)(8) AND (c)10?

A. Yes. See ***Becker Exhibit 2*** for a summary of application references for each of the specific minimum filing requirements under Rule R1-17A, (c)(2) – (c)(8) and (c)10.

Q. DOES THE PLAN INCLUDE A PROPOSED BANDING RANGE FOR THE UTILITY'S REQUESTED RATE OF RETURN ON EQUITY, AS REQUIRED BY RULE R1-17A(c)(9)?

A. Yes**.** Aqua proposes that the Commission approve a banding of 100 basis points above or below the Commission authorized ROE. Rule R1-17A does not prescribe a specific, numerical ROE banding range. However, as discussed in the January 7, 2022, *Order Adopting Commission Rule R1-17A* (R1-17A Order), p 15, the Public Staff noted that "[a]ny banding of the water utility's authorized return shall not exceed 100 basis points above or below the midpoint." This is consistent with N.C.G.S. § 62-133.1B(g), and Aqua believes a 100-basis point margin above or below the authorized ROE is a reasonable banding that should be applied in this rate case.

Q. RULE R1-17A(e). DOES THE UTILITY EXPECT TO NEED A GENERAL RATE INCREASE BEFORE THE END OF THE PLAN DUE TO UNDER-EARNING?

A. The Company believes that if the WSIP is implemented properly, there would be no need to apply for a general rate increase prior to the end of the Plan.

While various factors could contribute to the Company's ROE falling below the Commission approved ROE band for any one Rate Year, Aqua prepared its application with the intent to provide a revenue requirement that meets its reasonable and measurable projected costs and is expected to result in the Company being able to earn an ROE that falls within the authorized ROE range.

Q. RULE R1-17A(h). DOES THE COMPANY ANTICIPATE THE EFFECTIVE DATE FOR YEAR ONE OF THE MULTI-YEAR RATE PLAN TO BE BEFORE THE COMMISSION'S ORDER APPROVING THE PLAN?

A. Yes. Rule R1-17A (c)(1) states "The first Rate Year shall begin no later than the first day of the month which includes the end of the statutory suspension period under G.S. 62-134." As previously noted in my testimony, Aqua prepared its WSIP plan and related application utilizing a Rate Year 1 that starts January 1, 2023. Based on a June 2022 filing date of Aqua's application, Aqua estimates a Commission Order would be received in approximately 300 days (April or May of 2023), which is after the start of the Company's proposed Rate Year 1.

Rule R1-17A(h) provides that "[i]f the effective date of Rate Year One is before the date of the Commission's Order approving the Plan, the Commission may establish an EMF to account for a delay between the

implementation of Rate Year One tariff rates and the effective date of Rate Year One." Since Aqua's proposed Rate Year One is likely to begin prior to the Commission's order date, an EMF would be appropriate. Aqua, however, will seek to place rates under bond 180 days from the date rates are suspended in this case to help minimize lag in revenue resulting from the gap between the start of Rate Year One and the ordered effective date of rates. The use of rates under bond in this scenario minimizes the need for an EMF to account for the shortfall in revenues that would likely result from the difference between the start of Rate Year 1 and the effective date of rates using the Order date.

Q. IF THE COMMISSION DOES NOT APPROVE AQUA'S APPLICATION FOR THE WSIP, WHAT IS THE COMPANY'S RECOMMENDATION?

A. As discussed in the Order Adopting Commission Rule R1-17A, p 11, "…should the Commission reject an application for a WSIP, the underlying rate case proceeding would proceed with the rates for the utility being established using the Commission's traditional ratemaking practices under N.C.G.S. § 62-133 using the historic test year adjusted for known and measurable changes." Thus, if the Commission rejects Aqua's application to utilize a WSIP, Aqua requests that it be granted a rate increase under N.C.G.S. § 62-133.

F. PERFORMANCE-BASED METRICS (PBMs)

Q. PLEASE PROVIDE AN OVERVIEW OF THE PURPOSE AND

REQUIREMENTS FOR PERFORMANCE-BASED METRICS?

A. The multi-year rate plan statute, N.C. Gen. Stat. § 62-133.1B(i)(2), includes PBMs to "ensure the utility continues to perform in a safe, reliable and cost-effective manner." In Rule R1-17A(c)(10), the Commission has created four categories for PBMs: 1) operational compliance, 2) customer service, 3) service reliability, and 4) workplace health and safety. The Rule requires at least one metric be selected and established for each of these four categories.

PBMs are required to benefit customers, drive utility performance, or support Commission policy goals that ensure the provision of safe, reliable, and cost-effective service by the water or sewer utility. The metrics must also be clearly defined, measurable, and easily verified by stakeholders. I believe that our proposed PBMs in this case meet the applicable requirements set forth by Rule R1-17A.

N.C. Gen. Stat. § 62-133.1B does not mention incentives or penalties based on the results of PBMs. Rule R1-17A(b)(1), in part, states that "[t]he Commission may approve penalties or incentives based on the results of approved metrics. Some metrics may be tracking metrics with or without targets or benchmarks to measure utility achievement." At this time with the first filing of an Aqua WSIP application, Aqua recommends that the parties focus on the development of baseline PBMs to be used as its tracking metrics. The PBM process is new, and we lack history in calculating, recording, and monitoring the metrics. Thus, Aqua believes the

establishment of a target and related penalty or incentive associated with that target would be premature due to the lack of well-recognized and consistently calculated industry metric standards or the lack of established Company-specific trends or patterns for the proposed metrics. At this time there is not a good basis to determine the point at which under- or over-performance on specific metrics represents superior or inferior management. This is especially true, inasmuch as some metrics may be affected by external factors out of the utility's control, or even by the change from historic test year ratemaking to a WSIP.

PBMs may be useful in future rate cases to assess the reasonableness of costs incurred by the utility or the performance of its management outside a normal range, and thus may serve as an accountability tool notwithstanding the absence of an automatic incentive or penalty. For any metrics that may eventually lend themselves to the establishment of a strict metric value to use in determining incentives or penalties, this first WSIP rate case and the prospective tracking of an approved PBM will help identify relevant trends or patterns that may be eventually used to condition a certain desired change.

Aqua anticipates that additional PBMs will be identified and refined over time and the Commission may decide to replace Aqua's proposed metrics with others. Aqua looks forward to the development of relevant, specific, and measurable metrics that may be used to best pursue Commission policy goals.

Q. WHAT DETAILED INFORMATION IS INCLUDED IN THE DISCUSSION OF THE COMPANY'S PBMs?

A. Each PBM discussed below includes an explanation of the metric and its value in providing safe, reliable, efficient service; a basis for measurement of the metric; and an explanation of how the measurement is conducted and verified.

Q. WHAT OPERATIONAL COMPLIANCE METRIC DOES THE COMPANY PROPOSE TO USE?

A. The Company proposes to use compliance with the Safe Drinking Water Act (SDWA) and the Clean Water Act (CWA) for its operational compliance metric.

For background, the Company presently uses the Environmental Protection Agency (EPA) Enforcement and Compliance History Online (ECHO) database to monitor overall operational compliance at the national and state level[1]. The database contains national and state PBMs for EPA regulatory requirements. The water metric data is contained within the EPA/State Drinking Water Dashboard; wastewater metrics are identified by the EPA/State Dashboard.

Q. HOW DOES THE USE OF THIS OPERATIONAL COMPLIANCE METRIC BENEFIT CUSTOMERS?

A. Ensuring compliance with the EPA-established guidelines for water and

[1] EPA ECHO Wastewater Dashboard - https://echo.epa.gov/trends/comparative-maps-dashboards/state-water-dashboard; EPA ECHO Safe Drinking Water Dashboard - https://echo.epa.gov/trends/comparative-maps-dashboards/drinking-water-dashboard

wastewater serves Aqua's core purpose of protecting the health and safety of our customers. The EPA dashboards document regulatory compliance with the SDWA (for drinking water) and CWA (for wastewater) for all water and wastewater utilities throughout the United States, respectively. The SDWA, administered by the EPA, has resulted in protective drinking water standards for more than 90 contaminants. SDWA authorizes the EPA to set national health-based standards for drinking water (Maximum Contaminant Levels, or MCLs) to protect against both naturally occurring and man-made contaminants. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Under the CWA, EPA has implemented pollution control programs and sets wastewater standards for the industry. EPA has also developed national water quality criteria recommendations for pollutants discharged to surface waters. Compliance with EPA regulatory requirements is the national standard for operational performance. Compliance with the SDWA and CWA requires utilities to effectively operate the utility, monitor and treat for pollutants, and invest in infrastructure to protect drinking water and drinking water sources from pollutants that impact human health and the environment. Continuous or severe non-compliance with these regulations is an indication of substandard operation of a utility.

Q. HOW DOES THE COMPANY PROPOSE TO MEASURE, TRACK AND EVALUATE OPERATIONAL COMPLIANCE FOR WATER SYSTEMS?

A. The degree of compliance with the drinking water legal standards is determined by the number of SDWA violations per water system. Aqua's compliance rate for this metric uses the MCL standard for health-based violations and is calculated by dividing the health-based violations by the number of Public Water Systems[2] operated by Aqua and regulated by EPA. In Calendar Year 2021, 5.1% of public water systems had one or more reported health-based violations. For Aqua, 0.13% (1) of Aqua's 703 stand-alone water systems had a health-based exceedance.

Aqua plans to report Health Based violation system percentages for Aqua and those for public water systems within the required Annual Review [per R1-17A(g)] process at the end of each Rate Year. The reports will also be accessible to stakeholders on the Commission's website.

Q. HOW DOES THE COMPANY PLAN TO MEASURE, TRACK AND EVALUATE OPERATIONAL COMPLIANCE FOR WASTEWATER SYSTEMS?

A. The Company proposes to utilize the Significant Non-Compliance (SNC) rate developed by the EPA to measure operational wastewater compliance. SNC is a national metric that EPA established to record non-compliance events. An example of a SNC event would be multiple months exceeding

[2] EPA has defined three types of public water systems:
- Community Water System (CWS): A public water system that supplies water to the same population year-round.
- Non-Transient Non-Community Water System (NTNCWS): A public water system that regularly supplies water to at least 25 of the same people at least six months per year. Some examples are schools, factories, office buildings, and hospitals which have their own water systems.
- Transient Non-Community Water System (TNCWS): A public water system that provides water in a place such as a gas station or campground where people do not remain for long periods of time.

limitations established in the National Pollutant Discharge Elimination System (NDPES) permit.[3] The Company's metric is determined by comparing its compliance rates to similarly sized – minor[4] – treatment facilities nationwide. All Aqua's 87 NPDES permitted facilities are defined as "minor." In calendar year 2021, 7.4% of minor wastewater treatment facilities nationwide were in significant non-compliance for one or more quarters. The Company's non-compliance rate was 2.3% for 2021, which was calculated by dividing the number of SNC violations (2) by our total number of wastewater systems (87).

Aqua plans to report the SNC for Aqua and "minor" treatment facilities within the required Annual Review [per R1-17A(g)] process at the end of each Rate Year. The reports will also be accessible to stakeholders on the Commission's website.

Q. HOW IS THE OPERATIONAL COMPLIANCE METRIC VERIFIABLE BY STAKEHOLDERS?

A. The Company evaluates this compliance metric quarterly after the EPA releases its statistics to the ECHO Drinking Water Dashboard and Water dashboard. The EPA ECHO dashboards are accessible via EPA's website provided above. Customers and others may also view the Annual Review filings, which contain this metric, on the Commission's website.

[3] https://www.epa.gov/enforcement/national-compliance-initiative-reducing-significant-non-compliance-national-pollutant

[4] EPA defines a minor Wastewater Treatment Facility as having an average daily flow < 1 Million Gallons per Day (MGD)

Q. WHAT CUSTOMER SERVICE METRIC DOES THE COMPANY PROPOSE TO USE FOR ITS WATER RATE ENTITIES?

A. For this metric, the Company proposes to focus on secondary water quality, both in support of its commitment to delivering good quality water to all Aqua customers and in recognition of historical and ongoing concerns about naturally occurring iron and manganese located in the ground water that Aqua utilizes to serve customers.

In Docket W-218, Sub 363, and reconfirmed in Dockets W-218, Sub 497, and W-218, Sub 526, the Company was directed to provide semi-annual reports on its secondary water quality concerns that affect 10% of the customers in an individual subdivision service area or 25 billing customers in an individual service area, whichever is less. Aqua proposes to replace this semi-annual reporting requirement with a modified version of the American Water Works Association (AWWA) benchmark to monitor water quality. AWWA has established utility performance indicators for utilities to determine operational efficiency and effectiveness. The performance indicators utilized include Customer Service. Within the Customer Service area, Technical Service Complaints are identified as an important customer service metric and are equivalent to Laboratory D (LAB D) discolored service calls that Aqua has previously tracked in the Semi-Annual Secondary Water Quality Report. The AWWA performance indicator is calculated by multiplying the total number of technical service complaints by 1000 and then dividing by the number of connections. Most of the utilities

that participate in the annual survey are large municipal systems (>50,000 connections) that contain water towers, ground storage tanks, and/or have been designed for isolation or repairs under pressure. The Company currently has six systems that exceed 1,000 service connections where utilization of this calculation is appropriate. The Company utilizes a modified version of this metric – number of complaints multiplied by the number of connections divided by 100 – to track the remaining 732 systems since the Company's average connection count is 118 connections per system. This normalizes the data to capture all systems regardless of size.

Similar to the current semi-annual report on its secondary water quality concerns, the Company proposes to track and report secondary water quality concerns---as measured by verified customer Lab D work orders---that surpass the normalized threshold of 25 customers or more on an annual basis. The thresholds were updated to continue the existing requirement to report for 25 billing customers and accommodate annual reporting requirement, versus the current semi-annual reporting requirement.

Q. HOW DOES THIS CUSTOMER SERVICE METRIC BENEFIT CUSTOMERS?

A. Secondary water quality has been perhaps the most prominent customer service issue for Aqua customers. This metric actively monitors and provide insight into the specific systems with issues and helps prioritize plans necessary to address the water quality issues within each.

Q. HOW DOES THE COMPANY PLAN TO MEASURE AND TRACK ITS CUSTOMER SERVICE METRIC AND PROVIDE VERIFIABLE INFORMATION TO THE STAKEHOLDERS?

A. The Company's plan is to continue to measure and track the data using the same guidelines and process to facilitate the existing semi-annual reports on its secondary water quality concerns. The reports will be modified from semi-annual to the proposed annual reporting but will utilize the normalized benchmark of 25 customers or greater in an individual public water supply. The original reports were developed with assistance from the Public Staff and have been a proven method of tracking and prioritizing systems with secondary water quality issues.

Aqua plans to provide the applicable reports within the required Annual Review [per R1-17A(g)] process at the end of each Rate Year. The reports will also be accessible to stakeholders on the Commission's website.

Q. CAN YOU PROVIDE SOME CONTEXT ON THE ABILITY TO PROPOSE CUSTOMER SERVICE METRICS FOR WASTEWATER SERVICE?

A. The AWWA Utility Performance Indicators do include wastewater metrics for technical service complaints, compliance performance, and disruption of service. A review of the Company's data indicates that most wastewater technical service calls are related to maintenance of individual home grinder pump stations. Most municipal utilities neither operate, nor maintain individual home grinder stations as they are typically the responsibility of the individual homeowner and not the utility. The remaining indicators are

compliance indicators that are incorporated into the operational metric above. At the present time, there are very few wastewater benchmarks in the industry, and those that are available do not easily correlate to the Company's wastewater operations.

To the extent a customer service metric is required for wastewater service, Aqua proposes that it be the same as the service reliability metric, discussed below.

Q. WHAT METRICS DOES THE COMPANY PROPOSE TO USE TO DEMONSTRATE THE SERVICE RELIABILITY METRIC FOR WATER AND SEWER?

A. The Company proposes to use the number of unplanned water service disruptions per 1000 connections per year. Similarly, Aqua proposes to use the number of unplanned sewer service disruptions per 1000 connections per year, not inclusive of grinder pump failures.

Q. HOW DOES TRACKING THE NUMBER OF UNPLANNED WATER AND SEWER SERVICE DISRUPTIONS METRIC BENEFIT CUSTOMERS?

A. As noted above, Aqua is comprised of many small, stand-alone, single well water systems serving small areas of customers. As a result, Aqua endeavors, out of an abundance of caution, to notify customers when these instances occur.

During potential low-pressure incidents, Aqua issues System Pressure Advisories (SPA) and records the number of customers impacted by low pressure. These are important notifications to customers and the Company

utilizes these in varying circumstances.

It should be noted that an SPA is a non-mandatory notice sent to customers that recommends that customers boil water prior to consumption. This is done when pressure has dropped below 20 psi and out an abundance of caution. Contrast this with a Boil Water Notice (BWN), which is a mandatory notice that is required to be sent to customers because an individual compliance sample collected from the distribution system, where the property is not owned or controlled by the water supplier, tests positive for coliform bacteria or exceeds an action level [Maximum Contaminant Level (MCL) or Maximum Residual Disinfectant Level (MRDL)]. In this instance, the water system must inform the person authorizing the sample about their water quality results and the potential health effects, in writing.

An unplanned service disruption for water typically means that the water pressure in the distribution system has dropped below 20 pounds per square inch (psi). When water pressure is reduced in the distribution system, the risk increases of contaminants outside the pipe potentially entering the distribution system. Some of the contaminants may have adverse customer health impacts. Low pressure also limits customer access to water. Use of this metric will promote Aqua's efforts to target areas needing improvement for reliability and, therefore, improve customer satisfaction.

An unplanned service disruption for wastewater typically means that customers have been requested to stop all use of the sewer system. While

this is a rare event, it would become necessary if the utility is unable to bypass a portion of a failed wastewater collection system or a failed wastewater treatment plant. Any such disruption would be a major inconvenience to customers and should be remedied as soon as possible. Notification of customers to stop sewer use and the number of impacted customers will also be recorded.

Q. HOW DOES THE COMPANY PLAN TO MEASURE, TRACK, AND EVALUATE UNPLANNED WATER AND SEWER SERVICE INTERRUPTIONS?

A. During a low-pressure event, customers typically have water supply, but it is recommended that they boil their water for potable purposes. This is a disruption of water service and is indicative of service reliability. Due to the time required for bacteriological sampling to be completed, most system pressure advisories are greater than 24 hours in duration. The 2019 AWWA Utility Benchmarks for water service disruptions for populations less than 50,000 is a 25th percentile of 2.76 outages/1000 population, a median of 1.61 outages per population, and a 75th percentile of 0.25 outages/1000 population. Aqua's performance in 2021 was at a rate of approximately 7.2 outages/1000 connections. If a connection is considered equivalent to three people, this equates to a rate of 2.4 outages/1000 population, which is slightly better than the lowest 25th percentile of the AWWA Benchmark. While Aqua references the AWWA Benchmark to assess this metric's relevance, the AWWA Benchmarks themselves are not likely to be an

appropriate benchmark for Aqua systems. Aqua operates many single-well water systems for which a line break results in an outage for the entire community as these systems do not have water towers or significant ground storage volumes. It is worth noting that AWWA tracking is not necessarily focused on small stand-alone systems like those in Aqua's North Carolina footprint. Also, the Aqua rate of 7.2 outages per 1000 connections was during a year without a significant hurricane event, and hurricanes lead to an increase in service disruptions. As such, a baseline marker that considers the unique disposition of Aqua's large footprint of small, stand-alone systems, normalized for service outages due to significant weather events must be established over time to accurately assess progress using this metric.

With respect to wastewater service reliability, Aqua proposes that unplanned sewer outages be monitored and as they occur, a plan to prevent recurrence, where feasible, be developed, and implemented.

Aqua will measure and track these quantities throughout the year and file its summary report of unplanned water and sewer service interruptions within the required Annual Review [per R1-17A(g)] process at the end of each Rate Year.

Q. HOW WILL THE METRIC FOR UNPLANNED WATER AND SEWER SERVICE INTERRUPTIONS BE VERIFIABLE BY STAKEHOLDERS?

A. Customers and others may view the Annual Review filings, which contain this metric, on the Commission's website.

Q. WHAT METRIC DOES THE COMPANY PROPOSE TO USE TO DEMONSTRATE WORKPLACE HEALTH AND SAFETY?

A. Aqua proposes to use OSHA recordable work-related injuries and illness cases.

Q. HOW DOES THE PROPOSED METRIC BENEFIT CUSTOMERS?

A. A safe and healthy workplace benefits the customer by reducing the risk of insufficient qualified staff to complete the work necessary to operate the utility. A safe and healthy workplace also improves employee satisfaction and retention, reduces insurance costs, and reduces labor overtime costs which are additional benefits for the customers. It is also worth highlighting vehicle safety because of the number of miles our valued employees spend in their vehicles. On average, Aqua employees drive over 4 million miles per year.

Q. HOW DOES THE COMPANY PLAN TO MEASURE, TRACK AND EVALUATE THIS METRIC?

A. OSHA recordable work-related injuries and illnesses cases are reported to OSHA and are summarized annually in OSHA Form 300A. The Company will extract the number of cases from this report and provide a case percentage per employee. This information will be included within the required Annual Review [per R1-17A(g)] process at the end of each Rate Year.

Q. HOW WILL THIS METRIC BE VERIFIABLE BY STAKEHOLDERS?

A. This information is derived from the sum of OSHA Form 300A Item G (Total

Number of Deaths), Item H (Total Number of Cases with Days Away from Work), Item I (Total Number of Cases of Job Transfer or Restriction) and Item J (Total Number of Other Recordable Cases) divided by the Annual OSHA Form 300A Average Number of Employees. Aqua completes this form for multiple facilities within the state, but for this evaluation a cumulative total will be used. The metric will be accessible to stakeholders on the Commission website as part of the Annual Review filed by Aqua.

G. SYSTEM IMPROVEMENT PLAN (SIP)

Q. ARE THERE ANY PARTICULAR TECHNOLOGY INFRASTRUCTURE IMPROVEMENTS YOU WOULD LIKE TO HIGHLIGHT?

A. Yes, the Company has and will continue to implement an enterprise resource planning software solution which the Company refers to as its system improvement project (SIP). Aqua believes it is one of the last larger utility providers that has not implemented an enterprise resource planning solution.

Aqua has been on the Lawson financial platform since 1999 and on the Banner customer service platform since approximately 2007. Replacement of these two dated systems is needed and is the primary investment goal of the SIP project. The SIP project will create a new business software platform for Aqua. The Company's Lawson and Banner systems are reaching the end of their useful life; some of the functions will no longer be supported by the vendors who own and service the software. Aqua is

investing in the next generation of software to function effectively. Faced with the imperative to invest in new software systems, Aqua has made the decision to implement SAP, which is a proven, fully integrated system.

Q. WHAT BENEFITS DOES THE COMPANY EXPECT FROM SAP AND THE SIP PROJECT?

A. SAP has several characteristics that are inherently attractive. These include the ability to support a multi-company and multi-utility corporate framework, integration with other commercially sold software, and the ability to utilize custom developed applications. SAP has a significant number of proven implementations at other utilities, shows a commitment to supporting utility-type businesses, and has a track record of improving customer service.

Q. WHAT IS AQUA'S TIMEFRAME FOR MOVING TO SAP?

A. The Company began using the new platform at the beginning of 2022 so that the entire year will be on one platform. Significant testing and training occurred prior to the end of the year and Aqua began using the platform starting January 2022. This phase of the SIP project includes financial reporting, purchasing, inventory and time reporting.

H. WATER QUALITY

Q. PLEASE DISCUSS AQUA'S CONTINUING EFFORTS TO ADDRESS THE PRESENCE OF NATURALLY OCCURRING IRON AND MANGANESE IN THE GROUNDWATER SUPPLY AT SEVERAL OF ITS

WATER SYSTEMS.

A. Aqua remains very focused on this issue---operationally and financially---which is one of the reasons the Company viewed it important to include as a PBM. Continuous progress is being made on the Company's Secondary Water Quality Plan. The main challenge has been iron and manganese. Since Aqua initiated its Water Quality Plan in 2018, and continued it through 2021, it has installed 39 manganese dioxide filters at an approximate cost of $13.4M. In 2021 alone, Aqua spent approximately $4.6M on the installation of twelve secondary water quality filters and appurtenances to continue to address secondary water quality issues in various systems. The number of discolored water quality complaints from systems where Aqua has installed secondary water quality filters as part of its secondary water quality plan has decreased significantly.

I. WATER AND SEWER SYSTEM IMPROVEMENT CHARGES – WATER (WSIC) AND SEWER (SSIC)

Q. PLEASE DISCUSS THE COMPANY'S USE OF THE WATER/SEWER SYSTEM IMPROVEMENT CHARGE MECHANISMS.

A. The Commission authorized the WSIC/SSIC mechanisms in its prior rate cases beginning in 2014 with the rate case Order in Docket No. W-218, Sub 363. Aqua similarly seeks that approval herein, in accordance with and subject to N.C.G.S.§ 62-133.12 (which authorizes the WSIC/SSIC) and N.C.G.S. 62-133.1B, (which limits the use of a WSIC/SSIC ratemaking

mechanism during the term of a WSIP).

The Company has used this mechanism to accelerate infrastructure replacement, particularly for secondary water quality issues. Because WSIC/SSIC is discontinued during a WSIP, the Aqua WSIC/SSIC will be dormant through its Rate Year 3. The Company, therefore, asks that the WSIC/SSIC be approved for use on eligible projects not included in the WSIP Plan for rates effective after completion of Rate Year 3 and in accordance with N.C.G.S. 62-133.1B.

If a WSIP is not approved for use by the Commission, then upon the effective date of new base rates in this proceeding, the WSIC and SSIC surcharges will be reset to zero. Aqua would immediately initiate the use of the WSIC/SSIC mechanism with the reset limits immediately following the Order.

Under either scenario, the Company believes it requires approval from the Commission in the present rate case to continue its use of the WSIC/SSIC mechanism following an Order in this rate case.

Q. PLEASE INDICATE HOW THE COMPANY WILL ADJUST THE WSIC/SSIC SURCHARGES IF THE MULTI-YEAR RATE PLAN IS APPROVED.

A. Upon the effective date of new base rates and through Rate Years 1 – 3, the WSIC and SSIC surcharges will be reset to, and remain, zero.

It is the Company's expectation that it will initiate its first application for recovery of eligible WSIC/SSIC projects that are not recovered in the WSIP

Plan as early as allowed to reduce the lag that may result from projects placed in service but not yet included in rates.

Q. WHAT DOES AQUA PROPOSE TO ADDRESS THROUGH WSIC/SSIC FUNDING, GOING FORWARD?

A. Aqua filed its Ongoing Three-Year WSIC/SSIC Plan on March 1, 2022, which details eligible capital projects totaling $30,762,013 for the 2022–2024 period. This WSIC/SSIC Plan is included as Appendix 2 to the Application for a General Increase in Rates.

Aqua's WSIC/SSIC Plan projects identified to be completed through 2024 are also included in Aqua's WSIP Plan.

J. W-218 SUB 526 ORDER REQUIREMENTS

Q. DID AQUA NORTH CAROLINA COMPLY WITH THE REQUIREMENTS OF THE OCTOBER 26, 2020, ORDER IN DOCKET NO. W-218, SUB 526?

A. Yes. Please see attached ***Becker Exhibit 4.***

K. CUSTOMER ASSISTANCE PROGRAM PILOT PROJECT (CAP)

Q. PLEASE DESCRIBE THE COMPANY'S PROPOSAL TO HELP ASSIST LOW-INCOME CUSTOMERS.

A. First, I will describe the needs analysis for low-income programming conducted for Aqua. Then I will provide my recommendation for a pilot program to assist low-income customers with arrears.

Aqua recommends the CAP project be approved to be installed and remain in place until an Order is received approving its continuance or discontinuance in Aqua's next rate case. Aqua proposes that it include a report on its annual program activity be included in its annual WSIP reporting requirements, if approved.

Q. PLEASE BEGIN WITH THE NEEDS ANALYSIS, DESCRIBING THE DATA USED AND PROCESS UNDERTAKEN TO IDENTIFY THE POTENTIAL LOW-INCOME POPULATION WITHIN AQUA'S SERVICE TERRITORY.

A. Aqua used census data to identify the percentage of households in poverty for every county that includes Aqua service territories. We also obtained information from our customer information system regarding the number of customers served in each of those counties. By applying the percentage in poverty to the number of customers served in the county, we obtained a projected number of Aqua households in poverty. We performed this calculation separately for water and wastewater customers. For water customers, we estimated 12% or 10,058 met the definition of poverty under federal guidelines. For wastewater, this figure is 11% or 2,247 households. The needs analysis is provided in ***Becker Exhibit 5***.

Q. DO YOU THEREFORE CONCLUDE THAT ROUGHLY 12,000 AQUA HOUSEHOLDS ARE LOW-INCOME?

A. No. Those households that need support to maintain basic needs such as housing, utilities, and food exceed those classified as living in poverty under

the federal definition. This distinction is reflected in the fact that the federal Low Income Household Water Assistance Program (LIHWAP) currently underway in North Carolina provides benefits for customers with incomes at or below 150% of the federal poverty level. The roughly 12,000 customers identified as living at or below poverty represent the neediest of potentially low-income customers served by Aqua.

Q. DO YOU HAVE A RECOMMENDATION REGARDING HOW AQUA CAN ASSIST LOW-INCOME CUSTOMERS WITH THEIR WATER AND WASTEWATER BILLS?

A. I do. I believe a grant program that provides assistance to income eligible households at risk of termination or without water service would provide an important resource for low-income families and seniors. Such a grant could use 150% of federal poverty level as the income guideline, similar to LIHWAP. Annual funding would provide a sustainable resource for families in need.

Q. WHAT IS YOUR PROPOSAL FOR FUNDING THIS PROGRAM?

A. I recommend repurposing $45,000, or approximately 5%, of non-utility funds received from antenna revenues. Antenna revenues are approximately $900,000 annually and the Company proposes to use $45,000 for its program to assist low-income customers with their water and sewer utility bills.

Q. HOW WOULD YOU ASSESS ELIGIBILITY AND APPLY FUNDS TO CUSTOMERS BILLS?

A. If approved, Aqua plans to work with Dollar Energy Fund, a non-profit 501c(3) organization that administers low-income utility programs for more than 40 utilities across the country, including for Essential utilities in several other states. Dollar Energy Fund provides software and training to local social service agencies to allow those agencies to receive applications and income documentations on behalf of customers who are seeking assistance. Additionally, they offer an online application option. Customers interested in participating will complete the application process and provide their income documentation to verify their eligibility. Dollar Energy Fund will review and qualify the customers for assistance. Aqua will receive the qualified accounts, approve the grant amounts, and ensure the grants are posted appropriately to the customer's account.

Q. HOW DO YOU PLAN TO REPORT ON THE ACTIVITY AND APPLICATION OF ASSISTANCE AWARDED TO CUSTOMERS?

A. Dollar Energy Fund's software provides tracking and reporting tools that will allow us to access funding levels along with details on the number of applications received and processed. We will be able to provide regular reporting to external stakeholders as well as our internal leadership team on the utilization of the fund.

Q. ARE THERE COSTS TO ADMINISTER THE PROGRAM?

A. Yes. Aqua proposes to make its annual contribution of the approved grant amount to Dollar Energy Fund that would include their operating fee, which has historically been 8.75% of the grant amount, plus an agency

renumeration fee paid to the agency for each application they process. The agency renumeration fees range between $5 and $10 per application processed, and Aqua expects a similar fee for the North Carolina project.

L. PRETREATMENT PROGRAM – SEWER USE RULE

Q. PLEASE DESCRIBE THE INCLUSION OF WASTEWATER PRE-TREATMENT REQUIREMENTS UNDER AQUA'S PROPOSED SEWER USE RULE?

A. The Company has included in its wastewater tariffs a provision to allow control over wastewater users who discharge pollutants that may damage or inhibit the wastewater treatment process, result in the discharge of harmful pollutants, endanger the health of the public and employees, or contaminate the sludge byproduct. The Company requests Commission approval of both the proposed Sewer Use Rule and related tariff wording applicable to customers who discharge nondomestic or industrial waste into Aqua's wastewater systems. The related tariff wording incorporates the Sewer Use Rule by reference, and states that the customers who violate the Sewer Use Rule may be disconnected and that reconnection of service requires payment by the customer of Aqua's actual costs incurred because of the violation.

See ***Becker Exhibit 3*** – Aqua NC Sewer Use Rule for the proposed Company rule on pretreatment and sewer use control requirements.

Q. PLEASE ELABORATE ON WHY THESE REQUIREMENTS ARE NEEDED AND HOW THEY BENEFIT THE COMPANY AND CUSTOMERS.

A. Wastewater collection and treatment involve physical, biological, and chemical processes. Wastewater discharges, especially from non-domestic users, may contain materials which damage the physical equipment, inhibit or kill the wastewater treatment plant biology, and reduce the effectiveness of the chemical processes. In 2021, a discharge into Aqua's Killian's Wastewater Treatment Plant inhibited the biological processes. Quick action by the operator, the supervisor, and Aqua's contractors prevented the discharge of potentially toxic effluent to a tributary of Lake Norman. Aqua surveyed the larger commercial establishments and the pump stations but was unable to discover the source. Moreover, the Company would have had minimal ability to control the discharge, if located, as no Aqua-specific prohibitions exist.

In addition to the obvious threat to the operation of the wastewater collection and treatment system, certain wastewater discharges pose a risk to customers, the public and Aqua employees. Such discharges include flammable materials and chemicals that may volatilize and create a toxic atmosphere.

The Company, its customers, the environment, and the public will benefit from these proposed requirements by reducing the risk of problematic wastewater discharges and providing a mechanism for stopping the

discharge. These requirements are similar to those placed upon certain Publicly Owned Treatment Works (POTWs) by the federal requirements of 40 CFR 403 and the North Carolina requirements of NCAC 15A NCAC 02H.0900. Investor-owned utilities, however, are not subject to 40 CFR 403 and 15A NCAC 02H.0900.

The Company seeks Commission approval of its Sewer Use Rule and related new tariff wording to create these requirements.

M. REPORTING REQUIREMENTS

Q. PLEASE GIVE AN OVERVIEW OF THE REPORTING REQUIREMENTS IN PLACE FOR THE COMPANY.

A. Aqua files many reports with the Commission. The Commission issued an Order on June 16, 2022, terminating the requirement for filing the Bi-Monthly Report, and Aqua appreciates this decision. Others remain that the Company believes should be similarly re-evaluated for usefulness.

- *Semi-Annual Report Regarding Secondary Water Quality Concerns* – This semi-annual report was developed by Aqua and the Public Staff, at the direction of the Commission in the Sub 363 Order, to identify and respond to secondary water quality concerns that occur in significant numbers in individual subdivisions. This reporting requirement was reaffirmed by the Commission in its December 18, 2018, *Order Granting Partial Rate Increase* in the Sub 497 case, and in the October 26, 2020,

Order Granting Partial Rate Increase in Docket No. W-218, Sub 526, reported under Docket No. W-218 Sub 526A.

Aqua requests that this report be eliminated and replaced with the applicable reporting as proposed with the Customer Service PBM discussed previously.

- *Notice of Deficiency (NOD), Quarterly Update* – This quarterly written status report is filed with the Department of Environmental Quality (DEQ) for well sites where the Public Water Supply (PWS) division has issued an NOD based on iron and manganese monitoring data for a well or water system, and where treatment is required to reduce the concentrations below specified levels for each mineral. A requirement to include a copy of this filing with the Chief Clerk's Office was added in the Commission's December 18, 2018, *Order Granting Partial Rate Increase in Sub 497*, and repeated in the October 26, 2020, *Order Granting Partial Rate Increase* in Docket No. W-218, Sub 526, reported under Docket No. W-218, Sub 526A.

  Aqua is not requesting any change to this requirement if the Commission finds this report useful.

- *Ongoing Three-Year WSIC/SSIC Plan* – Aqua's Ongoing Three-Year WSIC/SSIC Plan is filed with the Commission on an annual basis.

The WSIC/SSIC will be dormant if Aqua's multi-year rate plan is

approved. Therefore, this report is not necessary because all WSIC/SSIC eligible spending will be included and subsumed in the multi-year rate plan. The Company will file an affidavit in its next WSIC/SSIC filing to confirm that no double recovery will occur or be included for recovery in both the multi-year rate plan and any WSIC/SSIC filing. As a result, the Company requests that this report not be required during the period of the multi-year rate plan. It is Aqua's expectation that it will need to reinstate its three-year WSIC/SSIC plan in Rate Year 3 for capital investments not recovered in the multi-year rate plan.

- *Quarterly Earnings, WSIC/SSIC Revenue, and Construction Status Reports* – These reports have been filed with the Commission on a quarterly basis. Going forward, and under a WSIP, Aqua will be subject to new quarterly and annual reporting requirements on its financials and construction projects. If the Commission authorizes the Company to utilize a WSIP, Aqua proposes that these reports be discontinued in favor of the reporting required under Rule R1-17A(j)-Reporting Requirements.
- *Annual Heater Acquisition Incentive Account Report* - This is an annual filing detailing the amount of acquisition incentive activity. Aqua is not requesting any change to this requirement if the Commission finds this report useful.

- *Secondary Water Quality Filtration Request Executive Summary*

  This is a report developed in collaboration with the Public Staff to streamline the request for pre-approval by the Public Staff for WSIC-eligible water filtration installations necessary to address secondary water quality issues.

  The use of this report will be suspended under a WSIP and until pre-approval of WSIC eligible secondary water quality projects is reinitiated for WSIC recovery outside of a WSIP. Aqua is not requesting any change to this requirement.

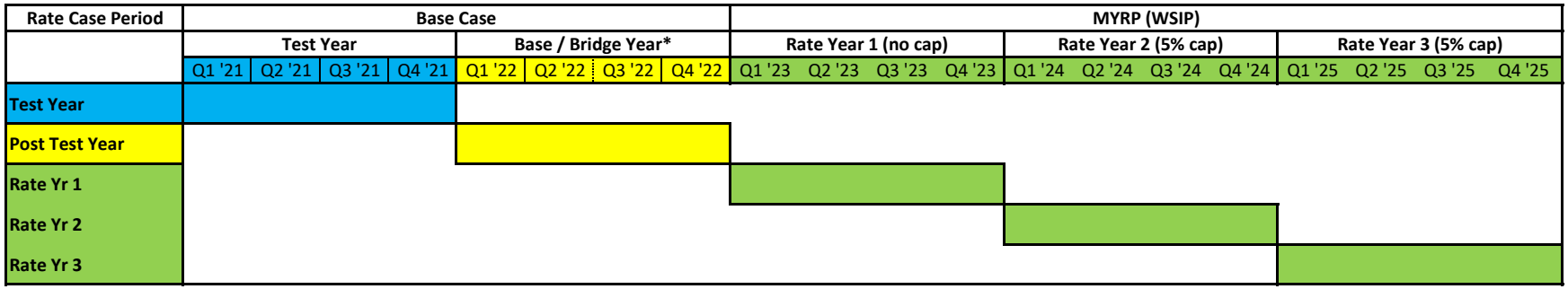
N. LOBBYING AND ADVERTISING ATTESTATION

Q. DOES YOUR APPLICATION INCLUDE COSTS IDENTIFIED UNDER DOCKET M-100, SUB 150?

A. The Company has not included any lobbying, political, political contribution, charitable contribution or promotional advertising costs in its rate application filing.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes, it does.



* Projected Post Test Year used as a base or bridge year for WSIP Rate Years 1-3 projections.

Becker Exhibit 2
Summary of Filing Requirements and Application References

R1-17A Summary Requirements: A request for a Water and Sewer Investment Plan must be consistent with Rule R1-17 unless otherwise noted in this Section. A utility's application for a Water and Sewer Investment Plan must include the following:

R1-17A Par Reference	Description	W-218 Sub 573 Application Reference
R1-17A (a)	Purpose	NA
R1-17A (b)	Definitions	NA
R1-17A (c)(1)	Identification of the Test Year and three Rate Year periods. The first Rate Year shall begin no later than the first day of the month which includes the end of the statutory suspension period under G.S. 62-134	Becker Direct; pg. 13
R1-17A (c)(2)	*A three-year capital investment plan by rate division that includes the following:*	
R1-17A (c)(2)(a)	All proposed capital investment projects expected to be placed in service in the period starting on the date immediately following the end date specified by the Commission for the update of utility plant in service and continuing through the conclusion of the Plan for which the utility seeks cost recovery through the Plan mechanism.	W-1 Item 10 – Rate Base
R1-17A (c)(2)(b)	A detailed description, including the reason for and scope of, each proposed capital investment project.	W-1 Item 10 – Rate Base
R1-17A (c)(2)(c)	The estimated in-service date of each proposed capital investment project.	W-1 Item 10 – Rate Base
R1-17A (c)(2)(d)	The asset account per the National Association of Regulatory Utility Commissioners (NARUC) Uniform System of Accounts and the annual depreciation rate for each proposed capital investment project.	W-1 Item 10 – Rate Base
R1-17A (c)(3)	Calculations of rate base, as included for Rate Year revenue requirements, by rate division, with exhibits setting forth the specific method utilized for the calculations.	W-1 Item 10 – Rate Base
R1-17A (c)(4)	All proposed expenses expected to be incurred during each Rate Year by rate division including the following:	W-1 Item 10 - Expenses
R1-17A (c)(4)(a)	Any forecasts, including all calculations and assumptions, of changes in each expense account.	W-1 Item 10 – Expenses
R1-17A (c)(4)(b)	Justification for any variation from expense levels proposed in the utility's rate case application	W-1 Item 10 – Expenses

Becker Exhibit 2
Summary of Filing Requirements and Application References

R1-17A Par Reference	Description	W-218 Sub 573 Application Reference
R1-17A (c)(5)	To the extent an inflation factor is used to forecast costs included in Rate Year revenue requirements, identification of the GDP index and the inflation rate used in such forecasts	W-1 Item 10 – Expenses - Gearhart Exhibit 1 - Gearhart Testimony
R1-17A (c)(6)	Proposed revenue requirements, pro forma revenues, and base rates for each Rate Year by rate division, including supporting calculations and exhibits	Exhibit G
R1-17A (c)(7)	Proposed Schedule of Rates by rate division for each Rate Year	Exhibit O
R1-17A (c)(8)	A calculation of the proposed percent increase for each Rate Year, if applicable	Exhibit J
R1-17A (c)(9)	A proposed banding range for the utility's requested rate of return on equity	Becker Direct; pg. 14
R1-17A (c)(10)	At least one proposed performance-based metric in each of the following categories: Operational Compliance, Customer Service, Service Reliability, and Workplace health and safety	Becker Direct; pgs. 16-31
R1-17A (d)	Establishment of Annual Revenue Requirement	Exhibit G
R1-17A (e)	Banding of Authorized Rate of Return on Equity	Becker Direct; pg. 14
R1-17A (f)	Modification	NA – Post Rate Case
R1-17A (g)	Annual Review	NA – Post Rate Case
R1-17A (h)	Experience Modification Factor	Becker Direct; pgs. 15-16
R1-17A (i)	Credit for Excess Earnings	NA – Post Rate Case
R1-17A (j)	Reporting Requirements	NA – Post Rate Case
R1-17A (k)	Continuation of Rates	NA – Post Rate Case

AQUA NORTH CAROLINA, INC.
SEWER USE RULE

1. DEFINITIONS

- ***Nondomestic waste or industrial waste*** shall mean any wastewater resulting from any process of industry, manufacturing, trade, or business or from the development or recovery of any natural resource, or any mixture of such waste with water or domestic wastewater, as distinct from domestic wastewater.

- ***Domestic wastes*** shall mean a combination of water-carried wastes, consisting of wash water, culinary wastes and liquid wastes containing only human excreta and similar matter flowing in or from a building drainage system or sewer originating from residences, business buildings, institutions, and commercial establishments.

- ***Industrial waste permit or contract*** shall mean a wastewater permit or contract issued as required by the Company to an industrial user.

- ***Industrial waste pretreatment program*** shall mean a program established by the Company that requires dischargers to monitor, test, treat and control as necessary pollutants in their wastewater prior to discharge into the sanitary and/or combined sewer.

- ***Pretreatment*** shall mean the reduction or elimination of pollutants, or the alteration of the nature of pollutant properties prior to discharging into the public sewer system. This reduction or alteration can be obtained by physical, chemical, or biological processes, by process changes, or by other means, except by diluting the concentration of the pollutants unless allowed by an applicable pretreatment standard.

- ***User or Discharger*** shall mean any person that discharges, causes or permits the discharge of wastewater into a Company sanitary sewer system.

- ***Person*** shall mean any individual, firm, company, association, society, corporation, institution, group, or any other legal entity.

- ***Shall*** is mandatory; ***may*** is permissive.

- ***Company*** shall mean Aqua North Carolina, Inc.

- ***Waste*** shall mean rejected, unutilized or superfluous substances in liquid, gaseous, or solid form resulting from domestic and nondomestic activities.

- ***Wastewater*** shall mean a combination of the water-carried waste from residences, businesses, buildings, institutions, and industrial establishments, together with any ground, surface, and stormwater that may be present, whether treated or untreated, discharged into or permitted to enter a sanitary sewer system.

- ***Maximum allowable industrial loading*** shall mean the maximum mass of pollutants that is allowed to be discharged to the treatment works from all contributory industrial users.

- ***Contributory industrial user*** shall mean any user that the Company has determined discharges specific pollutants to the treatment works at concentrations greater than typical domestic/commercial wastewaters.

- ***Sanitary Sewer System*** shall refer to all mains, laterals, treatment plants and all appurtenances or infrastructure necessary to convey and treat wastewater.

2. GENERAL REQUIREMENTS

   A. The User shall cooperate with the Company in its efforts to implement or enforce its sewer use rule, including any monitoring, reporting and treatment that the Company may deem necessary to ensure that discharges into its system are compatible with the capability of its wastewater treatment and collection system. Every User who knows or should know it will discharge Nondomestic Waste or Industrial Waste into a Sanitary Sewer System of the Company shall notify the Company in advance and obtain a permit or contract from the Company if required by the Company.

   B. It is agreed and understood that the Company's facility is not a Publicly Owned Treatment Works (POTW), and that the User is not entitled to, and may not claim or otherwise take advantage of, any statutory or regulatory exemptions that may apply to discharges into the sewage collection system of a Publicly Owned Treatment Works (POTW).

   C. The User is required to install and maintain, at their own expense, all interconnecting lines, grease traps, pretreatment equipment, sampling wells and any lift stations required to collect sewage at connecting points per Company approval.

   D. It is agreed and understood that User may not dispose of or permit disposal of waste generated offsite by the User, or any other party, by discharge through the User's sanitary sewer system connection.

E. Grease and oil traps shall be provided when necessary for the proper handling of liquid wastes containing grease or oil when required by the Company. All traps and drains shall be located so as to be readily and easily accessible for cleaning and inspection. All grease and oil traps shall be maintained by the User, at the User's expense. Prior to installation, plans shall be submitted to the Company for approval.

F. User shall install and maintain a waste interceptor, grease trap or pre-treatment unit of sufficient design to prevent the discharge or introduction of trash, debris, grease, oil or any other solid material having maximum dimensions equal to or greater than one and one-half inches (1½") into the sewage collection system, and that the design of such interceptor or pre-treatment unit shall be subject to approval by the Company prior to commencement of discharge into the sewage collection system or wastewater treatment plant.

G. The User will indemnify and hold harmless the Company from any and all claims, demands, damages, costs, fines, expenses (including attorney's fees), judgements or liabilities arising out any damage, injury, or loss sustained by Company ("Losses") on account of or in consequence of the introduction of any Prohibited Discharge, violation of any permit or contract, failure to install required Pretreatment, or failure to otherwise comply with the Company's Sewer Use requirements by the User. The Company shall have the right to charge the User as a part of the User's wastewater service charges any expenses or costs incurred by the Company including but not limited to cleaning and removal on account of or in consequence of the introduction of any Prohibited Discharge, violation of any permit or contract, or failure to otherwise comply with the Company's Sewer Use Control requirements by the User.

H. The Company shall have the right to terminate or otherwise refuse service in accordance with its rules and regulations to any User on account of or in consequence of the introduction of any Prohibited Discharge, violation of any permit or contract, failure to install required Pretreatment, or failure to otherwise comply with the Company's Sewer Use requirements by the User.

I. The Company shall not be liable to the User for a failure to provide sanitary sewage collection services. It is understood and agreed that service interruptions may, from time to time, occur. The Company agrees to use its best efforts to provide continuous service.

J. If any measurement, test, inspection or analysis determines that a User has created a situation which is in violation of any statute, ordinance,

rule or regulation, the User shall be required to pay all costs incurred to remedy the situation.

K. Where necessary in the Company's opinion, the User shall provide, at the User's expense, preliminary treatment as may be necessary to reduce the characteristics or constituents to within the maximum limits provided for in these sewer use control program or to control the quantities or rates of discharge of water or wastes. Plans and specifications and other pertinent information shall be submitted for the approval of the Company and no construction of such facilities shall commence until said approvals are obtained in writing. Preliminary treatment facilities shall be maintained continuously to satisfactory and effective operations. Solely the User is responsible for meeting the compliance limits herein.

L. The Company reserves the right to refuse connection to its sanitary sewer system or to compel the discontinuance of the use of the sanitary sewer where the Company deems the discharge of the waste harmful to the sewer system or have an adverse effect on the sewage treatment processes or Company personnel.

3. PROHIBITED DISCHARGES

It is prohibited for any User to discharge or permit the discharge or infiltration into any Company sewer any of the following:

A. Any liquid or vapor having a temperature higher than 150 degrees Fahrenheit or any substance which causes the temperature of the total wastewater treatment plant influent to exceed 104 degrees Fahrenheit. Allowable temperatures may vary by facility and will be addressed in permit or contract between the User and the Company.

B. Any liquid containing fats, wax, grease or oils of mineral or petroleum origin, whether emulsified or not, in excess of 100 mg/l, or of animal or vegetable origin in excess of 300 mg/l. Lower limits may be applied to mineral oils where necessary to prevent interference with treatment plant operations or pass through. Allowable grease levels may vary by facility and will be addressed in permit or contract between the User and the Company.

C. Wastes containing any substances that may affect the effluent or may cause violation of the National Pollutant Discharge Elimination System permit, Non-Discharge permit, or local health department permit, or the ability to meet sludge standards or beneficial reuse of sludge.

D. Any wastewater that imparts color that may affect the effluent or may cause violation of the National Pollutant Discharge Elimination System permit, Non-Discharge permit, or local health department permit, or the ability to meet sludge standards or beneficial reuse of sludge.

E. Any waste containing toxic substances in quantities sufficient to interfere with the biological processes of the sewage treatment plant, will endanger Company personnel, will pass through the treatment works, or cause the treatment works to exceed any state or federal standards.

F. Wastes containing a toxic or poisonous substance that could constitute a hazard to human or animals or create any hazard in the sewer system operation.

G. Waste discharged into the sewage collection system shall not include any hazardous waste as defined in the Resource Conservation and Recovery Act, 42 U.S.C. 6901 et seq., as amended, and the regulations thereunto, or in those sections of the North Carolina Administrative Code governing solid and hazardous waste.

H. Any pollutants which create a fire or explosion hazard in the collection and treatment system including, but not limited to, waste streams with a closed cup flash point of less than 140 degrees Fahrenheit, using the test methods specified in 40 CFR 261.21.

I. Wastes containing any noxious or malodorous gas or substance that, in the opinion of the Company, may create a public nuisance or hazard to or prevent entry to sewers for maintenance or repair.

J. Wastes containing any solid or viscous material that may cause an obstruction to flow or interfere with proper operation of the system. Wastes containing other matter detrimental to the operation of the sanitary sewers, sewage treatment plant equipment or structures or facilities.

K. The Company reserves the right to set more stringent limitations by contract or permit with the User if the Company determines that the limitations in this section may not be sufficient to protect the operation of the system or to comply with the water quality standards or effluent limitations of the Company’s applicable permits.

4. GENERAL EFFLUENT LIMITATIONS

	Maximum Allowable Limits (Grab Sample)	Maximum Allowable Limits (Composite Sample)
BOD_5 (mg/l)	250	250
TSS (mg/l)	250	250
COD (mg/l)	750	750
TKN (mg/l)	80	80
pH (s.u.)	6-9	N/A
Arsenic (mg/l)	0.3	0.2
Barium (mg/l)	2.0	1.0
Boron (mg/l)	4.0	2.0
Cadmium (mg/l)	0.2	0.1
Chromium (Total) (mg/l)	3.0	1.0
Chromium (VI) (mg/l)	XX	XX
Copper (mg/l)	2.0	1.0
Lead (mg/l)	1.5	1.0
Manganese (mg/l)	3.0	2.0
Mercury (mg/l)	0.00001	
Nickel (mg/l)	2.0	2.0
Total Phosphorus	10	10
Selenium (mg/l)	0.2	0.1
Silver (mg/l)	0.2	0.1
Zinc (mg/l)	2.0	2.0

A. Notwithstanding the limitations set forth in the General Effluent Limitations, the Company may accept the discharge of wastewater with constituents in excess of such concentrations provided that the Company determines that such increased concentrations are compatible with the wastewater treatment process and such concentration variances do not create a total contributory industrial user loading allocation above the maximum allowable industrial loading.

B. Nothing in this Rule shall be construed as preventing or precluding any special agreement or arrangement between the Company and any User whereby an industrial waste of unusual strength or character may be accepted by the Company for treatment, subject to the requirements of the Categorical Standards for Industrial Users. For such waste, the Company may require the User to provide any additional documentation or to conduct any special studies, at the User's expense, as deemed

necessary to demonstrate that such waste complies with the limitations specified.

C. The discharge of constituents in excess of the concentration limits set forth under the General Effluent Guidelines may result in disconnection of sewer service, and reimbursement of costs incurred by the Company prior to reconnection, as established in the Company's tariffs approved by the North Carolina Utilities Commission. Repeat violations may result in permanent disconnection.

D. The Company hereby adopts the Categorical Standards for Industrial Users in 40 CFR 403.6., provided that such categorical standards are more stringent than the General Effluent Limitations established by the Company for the pollutant. Where Categorical Standards are less stringent than the General Effluent Limitations the General Effluent Limitations shall apply.

E. No User shall discharge radioactive materials into public sewers without a discharge permit. The Company may establish, in compliance with applicable state and federal regulations, regulations for discharge of radioactive wastes into public sewers. In no instance shall the active elements, or their local concentrations permitted to be discharged into the sewers, exceed the concentration limits established by the Company.

F. Dilution prohibited as substitute for treatment. Except as provided under federal law, the use of dilution as a partial or complete substitute for adequate treatment to achieve compliance with categorical or local limitations is prohibited. The Company may impose mass-based limitations or otherwise modify the limitations to account for dilution in each case.

5. SAMPLING AND ANALYSES

A. All measurements, tests and analyses must be determined in accordance with the state approved edition of "Standard Methods for the Examination of Water and Wastewater, by "Methods for Chemical Analysis of Water and Wastes" published by the USEPA, or by any method approved by the US Environmental Protection Agency. All compliance tests shall be completed by a lab certified by the state for the specific analysis.

B. Where the Company deems advisable, it may require any User discharging wastes to install and maintain, at their own expense, in a manner approved by the Company, a suitable device to continuously measure and records flow, pH, or other parameter of the wastes

discharged. The User shall install and maintain a suitable control manhole in the Users' sewer lateral to facilitate observation, sampling and measuring of wastes. Any manhole and sampling device shall be publicly accessible and in a safe location, constructed in accordance with plans approved by the Company and installed and maintained at the expense of the User of the premises or property to who sewer service is provided.

C. Samples for analyses shall be by either grab sample or composite samples or a 24 hour composite sample collected and proportioned, as directed by the Company.

D. Copies of all operational records, analyses, shall be filed with the Company unless otherwise directed by the Company.

AQUA'S RATE ORDER FILING REQUIREMENTS
DOCKET W-218 SUB 526, ORDER DATED 10/26/2020
DOCKET W-218 SUB 526A IS REPORTING REQUIREMENT DOCKET

Ordering Paragraph numbers (pp 169 - 173 of the Sub 526 order)	Description of Requirement	Completion Status / Comments
5	Mail Notice to Customers of the new Schedule of Rates	Customer notices were mailed in conjunction with the customers next scheduled billing.
6	File Certificate of Service for Notice to Customers	Certificate of Service filed 12/8/2020.
10	File a copy of updated AFUDC policy within **60** days of the Order. (**NOTE**: Discussion and Conclusions for this section, page 139, fourth paragraph has filing policy within 90 days the Order; however, Ordering para 10 has filing policy within 60 days).	Aqua's response filed 12/29/2020.
11	Aqua to conduct a review of current procedures and policies for determining when projects are complete, in-service, and booked to plant in service and file the Company's findings with respect to its internal accounting practices and policies and any plans or recommendations regarding changes in those procedures and policies within 90 days of the issuance date of the Order. Aqua NC shall consult with the Public Staff regarding the findings of its review and shall work collaboratively with the Public Staff regarding changes in those procedures and policies.	Aqua filed response on 1/25/2021. Public Staff filed report 3/2/2022.
12	File annual reports on the effect of the implementation of metered sewer rates on the monthly bills of residential customers in the Aqua NC Sewer and Fairways Sewer Rate Divisions within 45 days after the calendar year ends, beginning with the year ending December 31, 2021.	Report filed 2/16/2022.
13	Compile monthly consumption data of customer accounts by blocks of per 1,000 gallons to properly design and evaluate a tiered inclining block rate structure.	See quarterly reporting requirement below (Ordering para. 14)
14	File quarterly reports on the Conservation Pilot Program that include monthly historical and current consumption by blocks of 1,000 gallons and the corresponding number of bills and revenues for each customer group, and such reports shall be filed within 30 days of the end of each calendar quarter, beginning with the quarter ending March 31, 2021.	1st Qtr 2021 Rept - Filed 4/29/2021 2nd Qtr 2021 Rept - Filed 7/30/2021 3rd Qtr 2021 Rept - Filed 11/1/2021 4th Qtr 2021 Rept - Filed 1/31/2022 1st Qtr 2022 Rept - Filed 4/28/2022
14	The semiannual reconciliation report on the Conservation Pilot Program indicating the amount to date of any surcharge or surcredit to customers shall be filed within 30 days of the reporting period, beginning with the reporting period ending June 30, 2021.	Report filed 7/30/21 and 1/31/22
15	Aqua to file an annual revenue reconciliation request for the Conservation Pilot program at least 45 days prior to the annual adjustment effective date.	Report filed 2/14/2022.
16	Aqua NC and the Public Staff shall develop a mutually-agreeable purchased water loss standard based upon the methodology for purchased water systems set forth in Aqua NC's Pearce and Kunkle rebuttal testimony for implementation in the Company's next general rate case and report on the progress of those discussions to the Commission within nine months of this Order.	Reports filed 8/30/2021 and 2/28/2022.
17	Continue to file bi-monthly reports addressing secondary water quality concerns raised by customers in the Coachman's Trail, Barton's Creek Bluffs, and Lake Ridge Aero Park subdivisions in situations where the iron and manganese concerns remain pending further Order of the Commission. Such reports shall describe measures taken by Aqua NC to address water quality issues and shall include summaries of customer concerns raised, results of water laboratory analyses (including soluble and insoluble concentration levels of iron and manganese) to measure baseline concentration levels and the effectiveness of chemical sequestration treatment, flushing regimens, and cost estimates to install filtration systems (greensand or other filtration options deemed appropriate) or to procure alternate water sources.	Bi-monthly reports filed 5/24/2022, 3/28/2022, 1/11/2022, 11/19/2021, 9/27/2021, 7/28/2021, 5/19/2021, 3/8/2021, 1/6/2021 and 11/30/2020
18	Aqua NC and the Public Staff shall continue to work together regarding the development of appropriate recommendations and solutions to improve secondary water quality as impacted by the levels of iron and manganese at the Company's affected water systems.	On-going (E.G., Secondary Water Quality Executive Summary review process)
19	Public Staff and Aqua NC are required to file a written report with the Commission, on March 1 and September 1 each year in which the WSIC is in effect, on secondary quality concerns that are affecting its customers. If a particular secondary water quality concern has affected or is affecting 10% of the customers in an individual subdivision service area or 25 billing customers in an individual service area, whichever is less, the customers affected and the estimated expenditures that are necessary to eradicate to the extent practicable water quality issues related to iron and manganese through the use of projects that are eligible for recovery through the WSIC shall be detailed in the written report. The written report shall also contain a recommendation as to whether the Commission should order Aqua NC to pursue such corrective action and an underlying reason why the action should or should not be undertaken. If there are no secondary water issues or if the secondary water quality issues are below the 10%/25 threshold previously set forth, Aqua NC and the Public Staff shall so inform the Commission, but they need not report secondary water quality issues resolved by Aqua NC without the assistance or expectation of assistance of the WSIC.	14th Semi-Annual Rept - Filed 3/1/2021 15th Semi-Annual Rept - Filed 9/1/2021 16th Semi-Annual Rept - Filed 3/1/2022
20	Continue to file annual Three-Year WSIC and SSIC Plan, as well as Quarterly Earnings, WSIC/SSIC Revenues, and Construction Status reports, Annual Heater Acquisition Incentive Account Report, the DEQ Quarterly Notice of Deficiency filings, and the DEQ Secondary Water Quality Filtration Request Executive Summary	See Becker Exhibit 4B "Additional Filings Para 20"

Ordering Paragraph numbers (pp 169 - 173 of the Sub 526 order)	Description of Requirement	Completion Status / Comments
21	Continue to promptly provide to and share with the Public Staff written reports to DEQ, written communication between Aqua NC and DEQ; and the written recommendations of DEQ regarding secondary water quality concerns being evaluated and addressed in Aqua NC's systems. Such communication to the Public Staff shall not be considered or treated as a formal report authored by Aqua NC, but rather as notification of the occurrence of written communications between the Company and DEQ and shall continue to contain a description of the salient topic and content points, shall be in a written format and shall be provided, at a minimum, on a bi-monthly basis until otherwise ordered by the Commission. Without limitation on the foregoing, Aqua NC shall provide the Public Staff copies of: (a) Aqua NC's reports and letters to DEQ concerning secondary water quality concerns in its systems; (b) written responses from DEQ concerning reports, letters, or other written communication received from Aqua NC concerning secondary water quality issues; (c) DEQ's specific written recommendations to Aqua NC, by system, concerning each of the secondary water quality concerns being evaluated by DEQ; and (d) written communications from DEQ to Aqua NC indicating DEQ's dissatisfaction with Aqua NC's response to DEQ's concerns, directions or recommendations concerning water quality affected by iron and manganese.	Written correspondence between Aqua and NCDEQ is provided to the Public Staff when the bi-monthly reports are filed.
22	Aqua NC shall strive to return to its pre-COVID-19 level of flushing activities as soon as reasonably possible to improve water quality for its customers experiencing secondary water quality issues; that Aqua NC's general flushing plan filed on June 17, 2019, in Docket No W-218, Sub 497, shall be subordinate to the manufacturer's recommended flushing schedule whenever a sequestering agent, including SeaQuest® is introduced into a Company water system. Aqua NC shall follow the manufacturer's recommended flushing schedule, and any time Aqua NC does not follow the manufacturer's recommendation, the Company shall make a filing with the Commission if the recommended flushing does not occur within 60 days of the recommended time for flushing; such filing shall be made within 60 days of departing from the original recommended schedule, explaining the reasons the flushing schedule could not be followed.	Aqua NC suspended its flushing campaigns during the Covid-19 epidemic in response to customer concerns and our concerns about water service interruption during the period of increased handwashing and sanitation. As the pandemic waned in the fall of 2020, Aqua restarted its flushing campaigns and returned to a normal flushing schedule in the Spring of 2021. Aqua NC follows the manufacturer's recommendation for flushing when a sequestering agent is introduced into a water system. No exceptions were made; therefore, no filings were made by the Company in this regard.
23	Any time after a year from the issuance of this Order, Aqua NC may request that the Commission revise or eliminate the regular and periodic reporting requirements ordered herein due to demonstrated and significant progress in customer satisfaction with improvements made in water quality related to levels of iron and manganese.	Aqua requested the bi-monthly reporting requirement be eliminated in its reports filed 3/28/2022 and 5/24/2022. On 6/13/2022 an Order was issued terminating this reporting requirement; no filings by the company for this purpose were made or necessary.
24	Aqua NC shall take the appropriate measures to share the 40-day meter read history collected by the Company's AMR technology with the AMR-metered customers upon request and shall track when such information is being shared, including how such information is being provided to customers. This tracked information should be made available in a timely manner at the request of either the Commission or the Public Staff.	Aqua shares the 40-Day meter read data on an ad hoc manual basis with customers contacting the Call Center. Effective February 14, 2022, Customer Service Representatives (CSR) have been provided upgraded functionality to access and verbally share and/or send usage data to customers. Both Aqua CSR's widely use this data and resulting graphs as troubleshooting and communication tools. When requested, a graph for the relevant time period is exported and emailed to the customer. Aqua continues its path toward development of a platform for customers to access daily usage via a self-service customer portal through Aqua's corporate website. System functionality to access daily usage information is performed via a look up screen that does not have a built in reporting/tracking mechanism - at this time. While CSR's may make comments in customer "Notes" fields that the usage information is/was shared, reporting on descriptors in "Notes" fields is inconsistent and not easily accommodated. Tracking of shared daily usage information with customers is still under development; however, Aqua is able to report on customer calls received for billing inquiries, zero usage, leaks, and high consumption. Considering the directive, quality review checks, and CSR training, it is reasonable to assume that daily usage data is regularly accessed and utilized during the course of the aforementioned calls. This approach does not capture the details around what data was shared with customers or if it was sent to the customer. Work necessary to close this reporting gap from both a system and process perspective is ongoing. Additionally, Aqua initiated the Aqua Smart Leak Detection Program that utilizes the daily usage data to identify potential customer-side leaks and to proactively notify those customers using our Aqua Alert system. The details of customers notified via this program are being tracked and maintained.
25	Upon its completion, Aqua NC shall file with the Commission the Strategic Plan for Meter Data Management and Advanced Analytics.	The Service Improvement Plan (SIP) project work commenced in January 2020. As part of SIP, Aqua in North Carolina will convert to SAP in two phases, and the Data Management project requirements are included in the SIP program. During SIP, Essential Utilities will enable a solution,such that all Aqua North Carolina customers will have access to a new, much-improved self-service customer portal through Aqua's corporate website. Using that portal, Aqua's North Carolina customers will be able to view their billing and payment details, view usage data, make payments, start/stop service, and utilize other services. Aqua's customers in North Carolina who have been converted to AMR technology, will then be able to view daily usage data through that portal, including their 40-day meter read data. The target implementation date for this new portal is the end of 2023. The usage data maintained in AMR is now currently available for internal use in table and graphic form. It is currently used for customer dispute resolution, provided upon customer request, and for other ad hoc requests. Field staff can also readily access the 40-day usage information on their tablets, which includes a link to the daily usage graph for a specific customer for help in troubleshooting work orders (e.g., high consumption).
26	Aqua NC shall refund all partial, temporary rates and charges in excess of the final rates and charges found to be appropriate by the Commission, if any, in the Aqua NC Water, Aqua NC Sewer, and Brookwood Water Rate Divisions with interest at 10% compounded annually.	See Ordering paragraph 27
27	Aqua NC shall file a refund plan for the excess partial, temporary rates and charges collected from the customers, if any, in the Aqua NC Water, Aqua NC Sewer, and Brookwood Water Rate Divisions within 30 days of the date of this Order and the Public Staff shall file a response to said refund plan no later than 60 days from the date of this Order	Aqua filed response 11/23/2020. Public Staff filed response to Aqua's response on 1/28/2021.

AQUA'S RATE ORDER FILING REQUIREMENTS
DOCKET W-218 SUB 526, ORDER DATED 10/26/2020
ADDITIONAL FILINGS - PARAGRAPH 20

	Description of Reporting Requirement	Date Repts Filed
1	Annual Three-Year WSIC/SSIC Plan - Filed	3/1/21
		3/1/22
2	Quarterly Earnings, WSIC/SSIC Revenue and Construction Status Reports - Filed	
	3rd Qtr 2020	11/16/2020
	4th Qtr 2020	2/12/2021
	1st Qtr 2021	5/14/2021
	2nd Qtr 2021	8/16/2021
	3rd Qtr 2021	11/15/2021
	4th Qtr 2021	2/15/2022
	1st Qtr 2022	5/13/2022
3	Annual Heater Acquisition Incentive Account Report - Filed	6/30/2021
4	NCDEQ Quarterly Notice of Deficiency Reports - Filed	
	4th Qtr 2020	1/11/2021
	1st Qtr 2021	4/5/2021
	2nd Qtr 2021	7/20/2021
	3rd Qtr 2021	10/6/2021
	4th Qtr 2021	1/11/2022
	1st Qtr 2022	4/13/2022
5	Appllication for Approval of WSIC/SSIC Rate Adjustments - Filed	10/29/20
		4/28/21
		11/1/21
		4/27/22
	Appllication for Approval of WSIC/SSIC Rate Adjustments - Grinder Pumps - Filed	12/29/2020
6	WSIC/SSIC Annual Report& EMF Calculations	6th Rept Filed 3/1/22
		7th Rept Filed 2/25/22
		Revised 7th Rept Filed 3/8/22
7	Secondary Water Quality Filtration Request Executive Summaries Filed	3/12/21
		9/1/21
		3/1/22
		3/2/22

County	Water Cust # 07/21	Sewer Cust # 07/21	Census Data by County: % poverty	Census Data by County: per capita income*	Projected Households in Poverty - Water	Projected Households in Poverty - Sewer
Alamance	320		14.6%	$ 27,312	47	-
Alexander	173		11.7%	$ 26,688	20	-
Alleghany	179	83	16.9%	$ 23,267	30	14
Ashe	196		14.6%	$ 24,814	29	-
Avery	1		16.4%	$ 21,167	0	-
Buncombe	111		12.2%	$ 32,426	14	-
Burke	140		18.4%	$ 24,481	26	-
Cabarrus	1,052		7.9%	$ 32,255	83	-
Carroll Co, VA	26		13.9%	$ 25,449	4	-
Carteret	231	285	10.4%	$ 33,722	24	30
Caswell	43		16.2%	$ 23,901	7	-
Catawba	3,325	155	13.3%	$ 28,224	442	21
Chatham	1,275	3,237	8.7%	$ 40,967	111	282
Cumberland	14,011		18.0%	$ 24,936	2,522	-
Davidson		671	15.2%	$ 25,988	-	102
Davie	30		10.9%	$ 31,173	3	-
Durham	1,309	131	15.9%	$ 34,329	208	21
Forsyth	617	697	15.2%	$ 30,769	94	106
Franklin	171		11.6%	$ 27,294	20	-
Gaston	5,841		11.6%	$ 27,352	678	-
Granville	21		14.6%	$ 27,131	3	-
Guilford	3,805		16.0%	$ 30,767	609	-
Henderson	502		10.6%	$ 31,564	53	-
Hoke	36		16.9%	$ 20,991	6	-
Iredell	3,387	721	8.2%	$ 33,194	278	59
Johnston	5,563	3,672	12.5%	$ 27,924	695	459
Lincoln	393		9.0%	$ 31,771	35	-
McDowell	41		13.6%	$ 24,281	6	-
Mecklenburg	1,439	1,342	10.3%	$ 38,819	148	138
Mitchell	66		14.8%	$ 25,009	10	-
Moore	904	579	11.3%	$ 34,606	102	65
Nash			16.4%	$ 27,406	-	-
New Hanover	5,115	3,139	13.0%	$ 34,288	665	408
Northampton	111		21.6%	$ 22,002	24	-
Onslow	21	416	12.5%	$ 24,413	3	52
Orange	653		13.4%	$ 42,231	88	-
Pender	299	483	11.5%	$ 29,266	34	56
Person	44		15.4%	$ 27,329	7	-
Polk	60	41	12.1%	$ 30,756	7	5
Randolph	552	58	14.1%	$ 24,397	78	8
Rockingham	546		18.4%	$ 24,209	100	-
Rowan	922	44	13.9%	$ 25,630	128	6
Rutherford	126		18.5%	$ 23,978	23	-
Stokes	42	123	13.0%	$ 26,279	5	16
Surry	1,575		16.0%	$ 25,500	252	-
Transylvania	259		13.1%	$ 29,549	34	-
Union		1,618	7.3%	$ 36,362	-	118
Vance	75		18.5%	$ 23,049	14	-
Wake	27,198	3,516	8.0%	$ 40,981	2,176	281
Warren	396		21.7%	$ 23,432	86	-
Watauga	31		21.4%	$ 26,882	7	-
Yadkin	151		13.9%	$ 25,218	21	-
Grand Total	**83,384**	**21,011**			**10,058**	**2,247**
					12%	**11%**

*per capita income in past 12 months (in 2019 dollars), 2015-2019; source census.gov