

**STATE OF NORTH CAROLINA
UTILITIES COMMISSION
RALEIGH**

DOCKET NO. W-218, SUB 526

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

REBUTTAL TESTIMONY OF
AMANDA BERGER
ON BEHALF OF
AQUA NORTH CAROLINA, INC.

June 12, 2020

1 **Q. PLEASE STATE YOUR NAME, YOUR POSITION WITH AQUA NORTH**
2 **CAROLINA, INC. (“AQUA”, “AQUA NORTH CAROLINA”, OR**
3 **“COMPANY”) AND YOUR BUSINESS ADDRESS.**

4 A. My name is Amanda Berger and my business address is 202 MacKenan
5 Court, Cary, North Carolina. I currently serve as Aqua’s Director of
6 Environmental Compliance. My responsibilities include oversight of water
7 and wastewater environmental compliance within the Company.

8 **Q. PLEASE DESCRIBE YOUR BACKGROUND AND EXPERIENCE.**

9 A. I have twenty years of progressive experience in the water and wastewater
10 industry and have been employed with Aqua since January 2018. Prior to
11 that I was employed by American States Utility Services (“American States”)
12 as the Operations Support/Environmental Health and Safety Manager.
13 My duties at American States included direct oversight of all environmental,
14 health, and safety requirements for the utility at nine military installations
15 throughout the United States. I was also responsible for the development
16 and administration of their Geographic Information System (“GIS”) and
17 Computerized Maintenance Management System (“CMMS”) programs.
18 In my career I have worked for large centralized water and wastewater
19 treatment facilities (>100 million gallons per day, or “MGD”) and managed
20 various environmental programs. As a regulator, I administered the
21 National Pollution Discharge Elimination System (“NPDES”) Stormwater

1 and Agricultural Waste Management programs in two different states.¹
2 I previously held multiple licenses that include Grade IV Wastewater
3 Operator, Grade A Water Treatment Operator, Grade A Water Distribution
4 Operator, Class C Wastewater Collections Operator, Licensed Compost
5 Operator, and Grade 2 Erosion Prevention and Sedimentation Control
6 Professional. I am currently an Authorized Occupational Safety and Health
7 Administration “OSHA” trainer, certified CPR trainer, and hold a Manager of
8 Environmental, Safety, and Health Programs certificate. I graduated from
9 the University of Wisconsin-Oshkosh with a Bachelor’s degree in
10 Environmental Science.

11 **Q. WHAT ISSUES DO YOU PLAN TO ADDRESS IN YOUR REBUTTAL**
12 **TESTIMONY?**

13 A. I rebut the testimony of Public Staff witness Darden on pump maintenance
14 expense and Public Staff witness Franklin regarding water quality reporting,
15 on behalf of Aqua.

16 **AQUA NC PUMP MAINTENANCE EXPENSE**

17 **Q. PLEASE GENERALLY DESCRIBE PUMP MAINTENANCE**
18 **REQUIREMENTS FOR WASTEWATER COLLECTION SYSTEMS IN**
19 **NORTH CAROLINA.**

20 A. North Carolina Administrative Code 15A NCAC 02T.0403 (a) (1) requires
21 that the “...sewer system is effectively maintained and operated at all times
22 to prevent discharge to land or surface waters, and to prevent any

¹ Tennessee and Wisconsin.

1 contravention of groundwater standards or surface water standards.” To
2 ensure compliance and that routine maintenance is performed, the
3 North Carolina Department of Environmental Quality (“NCDEQ”) has
4 established a minimum maintenance requirement that 10% of gravity sewer
5 mains within a collection system are cleaned annually. That cleaning
6 process is referred to as jetting. Local jurisdictions, such as public health
7 departments, can establish more stringent minimums. Certainly, utilities
8 throughout North Carolina can and should properly maintain gravity sewer
9 mains; moreover, in the exercise of their professional, operational and
10 management judgment and responsibility, they may determine a need to do
11 more than the bare minimum requirements.

12 **Q. PLEASE GENERALLY DESCRIBE AQUA NORTH CAROLINA’S PUMP**
13 **MAINTENANCE PROGRAM.**

14 A. Aqua North Carolina’s maintenance program is determined by the needs of
15 each individual system to ensure the protection of the environment. Aqua
16 adheres to the established jurisdictional minimums and performs additional
17 routine jetting or pump maintenance based on the need of the specific
18 system. Operators, duly licensed by the State of North Carolina, perform
19 routine inspections of wastewater facilities and if a system requires
20 additional maintenance activities to ensure compliance, the licensed
21 operator will coordinate the activity with his or her supervisor. Aqua does

1 not limit an operator to minimum maintenance requirements if there are
2 compliance risks or potential environmental impacts.

3 **Q. PLEASE EXPLAIN THE REGULATORY REQUIREMENTS TO MAINTAIN**
4 **A WASTEWATER SYSTEM.**

5 A. As stated earlier, NCDEQ requires that a system be maintained at all times
6 to prevent discharge to either land or surface waters. Each system is
7 different in contributory loadings and maintenance requirements vary.
8 Operators identify areas during their routine inspections that require
9 additional maintenance based on customer contributions to the system and
10 collection system layout (e.g., bends, dips). In my experience, it is not
11 uncommon to have multiple areas in a system that contain excess rags
12 and/or grease accumulations that, without proper attention, result in
13 sanitary sewer overflows either in the pipes or pump stations within the
14 system. Additional conditions like joints and bends or dips in collection
15 system pipes that result from settling promote accumulations of these items
16 that customers regularly flush. A sanitary sewer overflow is a violation of
17 the NCDEQ permit and the Company can be fined when they occur. Aqua
18 has instituted a proactive cleaning and jetting program that prevents these
19 types of discharges and maintains compliance with regulatory code. That
20 program is not designed to simply meet the bare minimum standard. Again,
21 it is designed to prevent discharges to land or surface waters and is based

1 on our professional experience, gained specifically in the operation of the
2 Company's wastewater systems.

3 **Q. WHY IS THE PUBLIC STAFF ASKING SHAREHOLDERS TO PAY FOR**
4 **A PORTION OF THE COMPANY'S JETTING COSTS?**

5 A. It appears that the Public Staff believes that any expenses incurred over the
6 bare minimum are not reasonable and/or prudent and should be borne by
7 shareholders. Simply put, witness Darden's jetting adjustment does not
8 allow the Company to recover its actual jetting expense. Aqua asserts that
9 these actual expenses are based on the reality of the needs assessed by
10 the licensed, experienced operators of the Company's wastewater systems.
11 Though observant of models and regulatory minimum standards, the
12 operators who are responsible for proper maintenance of the systems are
13 required to deal with the reality and idiosyncrasies of each individual
14 system, as it sits on or below the ground. If the Company attempted to
15 defend inattention to a specific system's needs based on adherence to a
16 minimum standard, I would expect NCDEQ and the Public Staff to allege
17 fault to Aqua. This issue is about the extent to which, based on reasonable
18 field judgments, Aqua is to be allowed the latitude in cost recovery that is
19 commensurate with the responsibility it bears for proper, compliant
20 operation of its systems and equipment.

21 At pages 12 and 13 of her prefiled testimony, witness Darden calculated a
22 jetting cost based on the total length of the gravity sewer for each region
23 and the jetting goal of 10%, with the exception of two systems that require

1 100% jetting. She determined that the Company's overall rate based on the
2 linear footage minimum requirement is 14% overall. Her calculations
3 indicated the "actual jetting rate during the test period was 17%" and she
4 adjusted the expense based on the minimum requirements for a system
5 versus the regulatory requirement to maintain the system. The Public
6 Staff's proposed accounting adjustment to Aqua's actual test year jetting
7 expense of \$188,294 is an inappropriate reduction of \$16,993
8 (approximately 9 percent) of the Company's legitimate test year costs.

9 **Q. DO YOU DISPUTE WITNESS DARDEN'S ADJUSTMENTS?**

10 A. Yes. Initially, I note that the Company is only requesting that it recover its
11 actual jetting costs spent in the test year. It is the Company's position that
12 these costs are reasonable and prudent. Whether or not a state jurisdiction
13 sets a minimum standard does not take away a utility's need and duty to
14 use its professional judgment to perform the tasks necessary to provide safe
15 and reliable service. Witness Darden's calculations are based on minimum
16 requirements versus what is actually required for Aqua to effectively
17 maintain and operate the Company's collections systems.

18 **Q. DO YOU AGREE THAT SHAREHOLDERS SHOULD BE RESPONSIBLE**
19 **FOR JETTING COSTS REQUIRED TO MAINTAIN RELIABLE**
20 **WASTEWATER SERVICE?**

21 A. No, I do not. Aqua opposes witness Darden's recommended calculation as
22 it neither serves our customers' interests nor aligns with the Company's
23 environmental standards and commitments. The Public Staff's position

1 should be understood to mean that regulated, professional utilities in North
2 Carolina should be restricted to simply meeting the bare minimum jetting
3 standard, because to oppose cost recovery of measures undertaken
4 beyond that is to incent that lower level of response by the Company. The
5 issue, again, is whether after-the-fact regulatory review and blanket
6 standards are to dictate cost recovery, or whether the professional judgment
7 of the licensed operators, on the job day after day, is to prevail as the
8 determinant of reasonable standards of operation, and thus of costs. The
9 Company owns the systems, assumes the risk and liability for systems'
10 compliance with the Clean Water Act, and is required to meet the
11 expectations of its environmental regulators and customers. I recommend
12 that the Company's \$188,294 test year calculation for jetting expense be
13 included in the rate calculation as it is reflective of actual costs, necessarily
14 and prudently-incurred over the test year, and is reflective of prior year
15 spends. In addition, the Company's actual on-going expense for jetting for
16 the updated test year for the period from April 1, 2019, through March 31,
17 2020, was \$192,473 or \$2,653 greater than the Company's claimed test
18 year expense for purposes of setting rates in this proceeding.

AQUA NORTH CAROLINA WATER QUALITY REPORTING

Q. DID YOU REVIEW THE TESTIMONY OF PUBLIC STAFF WITNESS FRANKLIN IN REGARD TO THE PUBLIC STAFF'S RECOMMENDATIONS ON WATER QUALITY REPORTING?

A. Yes, I did.

Q. WHAT WERE HIS CONCLUSIONS AND RECOMMENDATIONS?

A. Witness Franklin recommends that Aqua continue:

- Bi-Monthly Secondary Water Quality Reporting on three (3) of the eighteen (18) systems as ordered in Rate Case Docket No. W-218, Sub 363 and Sub 497.
- Semi-Annual Reporting on water systems that have a secondary water quality concern that has affected or is affecting 10 percent of the customers in an individual subdivision service area or 25 billing customers, whichever is less, as ordered in Docket No. W-218, Sub 363 and continued in Docket No. W-218, Sub 497.
- Aqua DEQ communication bi-monthly reporting to include (1) Aqua's reports and letters to DEQ concerning water and wastewater quality concerns in its systems; (2) responses from DEQ concerning reports, letters, or other verbal or written communications received from Aqua; and (3) DEQ's specific recommendations to Aqua, by system, concerning each of the water quality concerns being evaluated by DEQ as ordered in Docket No. W-218, Sub 497.

1 Q. DID YOU DISCOVER DISCREPANCIES BETWEEN WITNESS
2 FRANKLIN'S RECOMMENDATIONS AND THE COMMISSION'S
3 ORDERS IN DOCKET NO. W-218, SUB 497 AND/OR DOCKET NO.
4 W-218, SUB 363?

5 A. Yes, I did. For background purposes, the Commission's Rate Case
6 Ordering Paragraph 14 in Docket No. W-218, Sub 497 required (1) Aqua's
7 reports and letters to DEQ concerning water quality concerns in its systems;
8 (2) responses from DEQ concerning reports, letters, or other verbal or
9 written communications received from Aqua; (3) DEQ's specific
10 recommendations to Aqua, by system, concerning each of the water quality
11 concerns being evaluated by DEQ; and (d) communications from DEQ to
12 Aqua NC indicating DEQ's dissatisfaction with Aqua NC's response to
13 DEQ's concerns, directions or recommendations concerning water quality
14 affected by iron and manganese.

15 Q. WHAT IS THE ACTUAL DISCREPANCY?

16 A. Item (d), highlighted for emphasis, was excluded from Public Staff witness
17 Franklin's recommendations. Item (d) has been a matter of dispute between
18 the Public Staff and the Company previously as Aqua infers the
19 Commission's Order to require the Company to produce documentation
20 **concerning water quality affected by iron and manganese** as Finding of
21 Fact No. 34 in the Order (Docket No. W-218, Sub 497) focuses on
22 secondary water quality standards, which has been the focal point of
23 customer complaints in prior rate cases. The Public Staff has interpreted,

1 and verbally stated, that the Order requires the Company to provide all
2 communication regarding **all water quality concerns in Aqua systems.**

3 **Q. WHAT IS YOUR CONCERN?**

4 A. Given the exclusion of Item (d) and previous conversations with Public Staff
5 personnel, it appears that witness Franklin is expanding the reporting
6 requirements of the Commission's previous Order to include **all water**
7 **quality concerns in Aqua systems versus the previous Order that**
8 **requires Aqua to report only on issues attributable to secondary water**
9 **quality.**

10 Also, witness Franklin included wastewater quality concerns in his initial
11 recommendation. I posed a clarifying question regarding wastewater
12 quality to Mr. Franklin during a call between Public Staff and the Company
13 on May 28, 2020, and he followed up with an email stating that the "inclusion
14 of wastewater quality concerns in the reporting was in error" and he would
15 correct that while on the witness stand.

16 **Q. DO YOU AGREE WITH THE WATER QUALITY REPORTING**
17 **RECOMMENDATIONS MADE BY WITNESS FRANKLIN?**

18 A. No, I do not.

19 **Q. PLEASE EXPLAIN YOUR DISAGREEMENT WITH WITNESS**
20 **FRANKLIN'S POSITION AND RECOMMENDATIONS.**

21 A. First, if it is the intent of the Public Staff to expand the Aqua DEQ
22 communication requirement to include all primary and secondary water
23 quality concerns, Aqua believes that witness Franklin's position on required

1 reporting by Aqua of DEQ communications is largely inconsistent with his
2 prefiled testimony at page 26 which states that "...Aqua's water utility
3 systems are generally in compliance with federal and state regulations,
4 testing requirements, and primary water quality standards. Where
5 problems have been identified, Aqua has generally corrected the problems
6 or is actively working toward solutions. However, the Company continues
7 to contend with some water quality issues...." While it is true that Aqua
8 continues to address **secondary water quality** issues, it is clear that great
9 progress has been made by the Company in that endeavor and that the
10 Company is committed to continue down that road.

11 Furthermore, in reference to the level of ongoing reporting the Public Staff
12 proposes be placed on, or continued, by the Company, I posed the following
13 question to witness Franklin during the May 28, 2020 Aqua/Public Staff rate
14 case discussion: "Is this requirement an Aqua only requirement or is
15 Public Staff expanding to other regulated water utilities?" Witness Franklin
16 stated that it was "Aqua only".

17 **Q. PLEASE EXPLAIN AND JUSTIFY YOUR REASONING TO QUESTION**
18 **THIS REPORTING REQUIREMENT BY UTILITY.**

19 A. I questioned this reporting requirement as I regularly review and monitor
20 data from the United States Environmental Protection Agency ("USEPA")
21 regarding drinking water system compliance. USEPA statistics for the past
22 three(3) years indicate that 33% of Public Water Systems ("PWS") in
23 United States and 38% of Public Water Systems in North Carolina were

1 non-compliant for **primary drinking water** standards between 2017 and
2 2020. Aqua's non-compliance record over that time period was 0.7% over
3 the 3-year period for all primary drinking water violations. (See Berger
4 Rebuttal Exhibit 1). Therefore, I question the reporting requirement because
5 Aqua has a historically strong compliance record on primary water quality
6 concerns. Aqua is concerned that the Public Staff's reporting expectations
7 and recommendations have become punitive versus productive given that
8 the Company's primary drinking water compliance record is historically very
9 good when compared across North Carolina systems and other similarly
10 sized and regulated systems. The reporting requirements are extensive
11 and expensive, and Aqua requests the Commission to carefully review the
12 question of whether they are, as constituted, productive of information that
13 is necessary to sound regulatory review, or whether they are unproductively
14 excessive and can be modified or eliminated.

15 **Q. PLEASE EXPLAIN YOUR REFERENCE TO "PUNITIVE VERSUS**
16 **PRODUCTIVE."**

17 A. The Company has taken great strides in the past several years to improve
18 and resolve concerns and issues regarding secondary water quality. The
19 Company has instituted:

- 20 • Comprehensive Communications Program, including:
 - 21 ○ Maintenance of Water Quality web page with FAQ's and
 - 22 status of filter installations by system and distribution of
 - 23 periodic newsletters

1 ○ Customer letter notifications to communities where filters
2 are installed to improve water quality improvements in
3 their systems

- 4 • Hiring a dedicated employee for “Lab-D” calls (“Lab-D”
5 represents discolored water calls)
- 6 • Improved communication and submittal process for Executive
7 Summaries to Public Staff
- 8 • Installation of a Bayleaf Advisory Group to address concerns in
9 our largest Public Water System
- 10 • Implementation of Bayleaf Advisory Group recommendations re:
 - 11 ○ Adding operations updates to water outages/main breaks
12 to provide Customer Service Representatives and
13 customers with current status information
 - 14 ○ Adding “.bitly” links to Water Smart Alert texts to link to the
15 Aqua America website where customers can access
16 additional information regarding the outage
- 17 • Improved metrics and tracking for Lab-D calls, to include after-
18 hours calls

19 Furthermore, the data indicates that these efforts are working. I provide the
20 following information as evidence of this statement:

- 21 • 24.5% decline in Discolored Water Work Orders from 2017-2019
22 statewide (See Berger Rebuttal Exhibit 2)

- 1 ○ Projected 45% decline in 2020 (See Berger Rebuttal
- 2 Exhibit 2)
- 3 • 49% decline in Discolored Water Work Orders from 2017 to 2019
- 4 in Bayleaf Master System (See Berger Rebuttal Exhibit 3)
- 5 ○ Projected 72% decline in 2020 (See Berger Rebuttal
- 6 Exhibit 3)
- 7 • A reduction in Bi-Monthly Reporting from 18 systems to 2
- 8 systems
- 9 • A reduction in systems reported in Semi-Annual Water Quality
- 10 Reports within the past 18 months
- 11 • Improved communication within Bayleaf customers, to include
- 12 Advisory Group participants' assistance in social media
- 13 messages
- 14 • A reduction in NCDEQ Notices of Deficiency from 68 Entry Points
- 15 in 2018 to 13 Entry Points as of Quarter 1 2020.
- 16 ○ The quarterly NOD communication is shared with the
- 17 Public Staff and contains historical and recent sampling
- 18 data and actions Aqua has taken and has scheduled to
- 19 address secondary water quality issues.
- 20 • Communication from the former NCDEQ Raleigh Regional
- 21 Supervisor stating, "Aqua has made tremendous improvements
- 22 to a number of water systems regarding Fe/Mn and I'm sure the
- 23 customers appreciate that! I appreciate all that you and the rest

1 of the staff have done in regard to addressing Fe and Mn.” (See
2 Berger Rebuttal Exhibit 4)

3 The metrics listed above exclude the data from our secondary water quality
4 program. To update the metrics from December 2019 that I provided in my
5 pre-filed testimony, as of June 2020, Aqua has 67 Entry Points statewide
6 that are listed as Group 1 (Fe + Mn > 1.0 mg/L or Mn > 0.3 mg/L). Of those:

- 7 • Three (3) have filters scheduled to be installed in 2020
- 8 • Three (3) have filters currently in engineering design
- 9 • Eight (8) are awaiting Public Staff concurrence and support
- 10 • Two (2) are in draft Executive Summary form for future submittal
11 to Public Staff for review
- 12 • Fifteen (15) are offline and are not providing water to the system
- 13 • Twelve (12) have alternative treatment or other sources of supply
- 14 • The remaining 23 are all undergoing prudency evaluation for
15 future Executive Summary and consideration for manganese
16 dioxide filtration
- 17 • Thirteen (13) filters have been installed since 2018 (inception of
18 Secondary Water Quality Program) on sites identified as Group 1
19 (Fe + Mn > 1.0 mg/L: Mn > 0.3 mg/L)

20 **Q. ARE WATER QUALITY ISSUES RESULTING FROM HEIGHTENED**
21 **IRON AND MANGANESE LIMITED TO AQUA?**

22 A. No. Secondary water quality issues are not an Aqua-only issue. Iron and
23 manganese are found in amounts greater than the sMCLs (Fe > 0.3 mg/L,

1 Mn>0.05 mg/L) in groundwater throughout the state. (See Berger Rebuttal
2 Exhibit 5). This is not an “Aqua-only” issue in North Carolina.

3 Despite Aqua’s significant demonstrated improvement to address water
4 quality issues through investment in filtration and operational attention, the
5 resultant decline in water quality complaints, and its leading compliance
6 record for primary contaminants, the Public Staff continues to recommend
7 heightened reporting requirements. These reporting requirements for Aqua
8 come at the cost of the Company staff’s time and energy that could be
9 re-allocated toward maintaining the historically good compliance record on
10 primary drinking water standards and continuing significant improvement
11 with regard to secondary water quality standards.

12 **Q. CAN YOU JUSTIFY THE STATEMENT REGARDING AQUA STAFF’S**
13 **TIME AND ENERGY ON REPORTING REQUIREMENTS?**

14 A. Yes. Witness Becker provided Aqua’s informal tracking of time associated
15 with new reporting requirements ordered in the W-218, Sub 497 Aqua rate
16 case and stated that a total of 588 hours was spent meeting these additional
17 reporting requirements between January and October of 2019. That
18 equates to 14.7 weeks at 40 hours/week of operations, compliance, and
19 accounting time in addition to legal assistance required for filings. As stated
20 by Company witness Becker, “Aqua fully supports the generation of reports
21 that are relevant and useful to the Commission’s oversight and would

1 willingly participate in conversations designed to assess whether the current
2 reporting requirements should be revised.”

3 **Q. WHAT IS THE COMPANY’S RECOMMENDATION ON SECONDARY**
4 **WATER QUALITY REPORTING?**

5 A. The Company recognizes that some level of reporting to the Commission
6 on secondary water quality concerns may be desired and warranted. If so,
7 in lieu of the current bi-monthly and semi-annual reporting, I recommend
8 that the Commission establish an Annual Secondary Water Quality Report
9 to be filed by March 31st each year that provides an accounting of the
10 progress made in the previous calendar year. The Company proposes to
11 include the following data:

- 12 • A summary of systems to include secondary water quality concerns that
13 have affected 10 percent of the customers in an individual subdivision area
14 and not fewer than 10 billing customers in a semi-annual period.
- 15 • A secondary water quality data update on the number of entry points that
16 have consistent water quality results greater than Group 1 (Fe + Mn > 1.0
17 mg/L or Mn > 0.3 mg/L) and status of each system.
- 18 • A secondary water quality project update that provides:
 - 19 ○ Number of Manganese Dioxide filters installed in the previous
20 calendar year
 - 21 ○ Number of Manganese Dioxide filters scheduled for the reporting
22 year

- 1 ○ Executive Summary Update and status on filter project concurrence
2 by Public Staff, to include an estimate of the Company's plans to
3 submit executive summaries requesting filtration in the reporting year

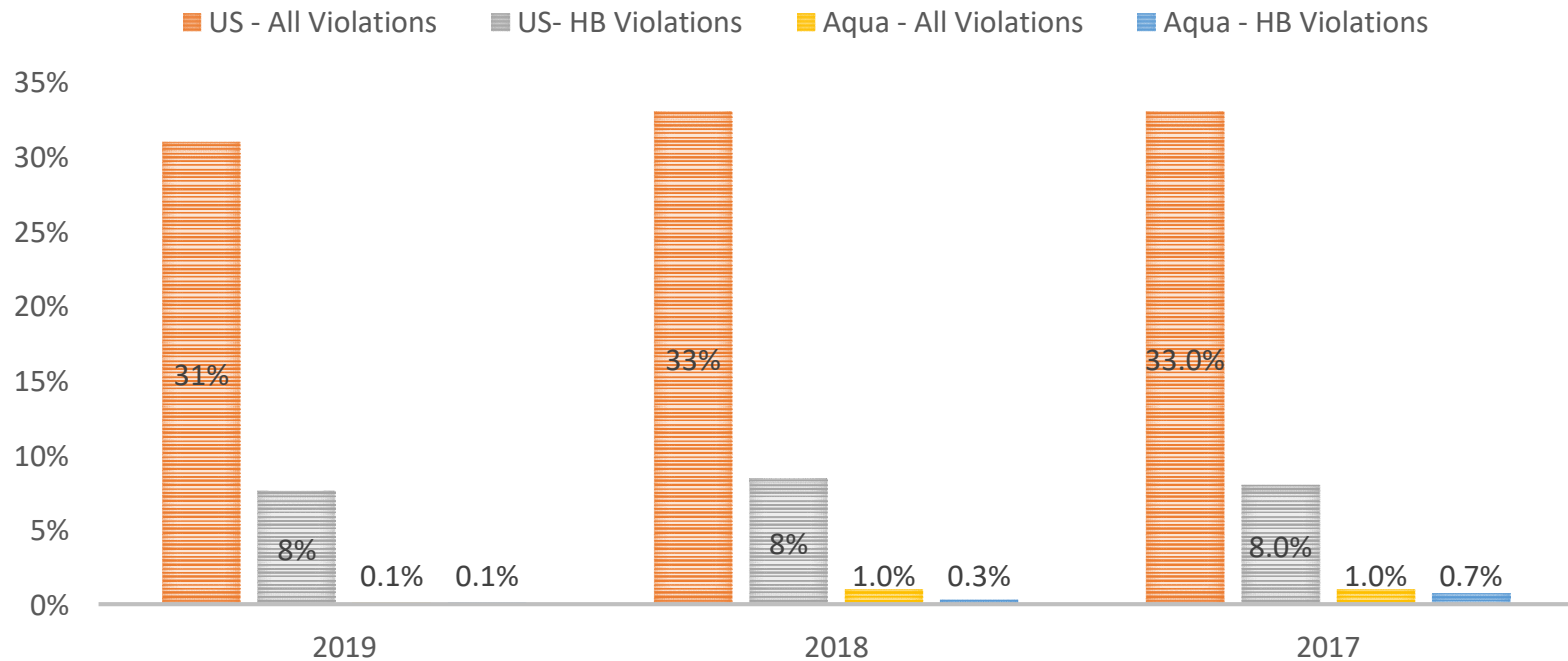
4 The recommendations presented above align with other environmental
5 regulatory reports and provide relevant information that can assist the
6 Commission and Aqua's customers in assessing the Company's progress
7 toward correcting secondary water quality concerns. Further, Aqua
8 recommends that the Commission not require the Company to continue to
9 provide NCDEQ communications either for secondary water quality or
10 primary water quality concerns beyond the Company's NOD responses. As
11 stated above, the Company does not have a poor compliance track record
12 with its environmental regulators and the Public Staff did not present
13 adequate justification in support of this continued (and further expanded)
14 reporting requirement.

15 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

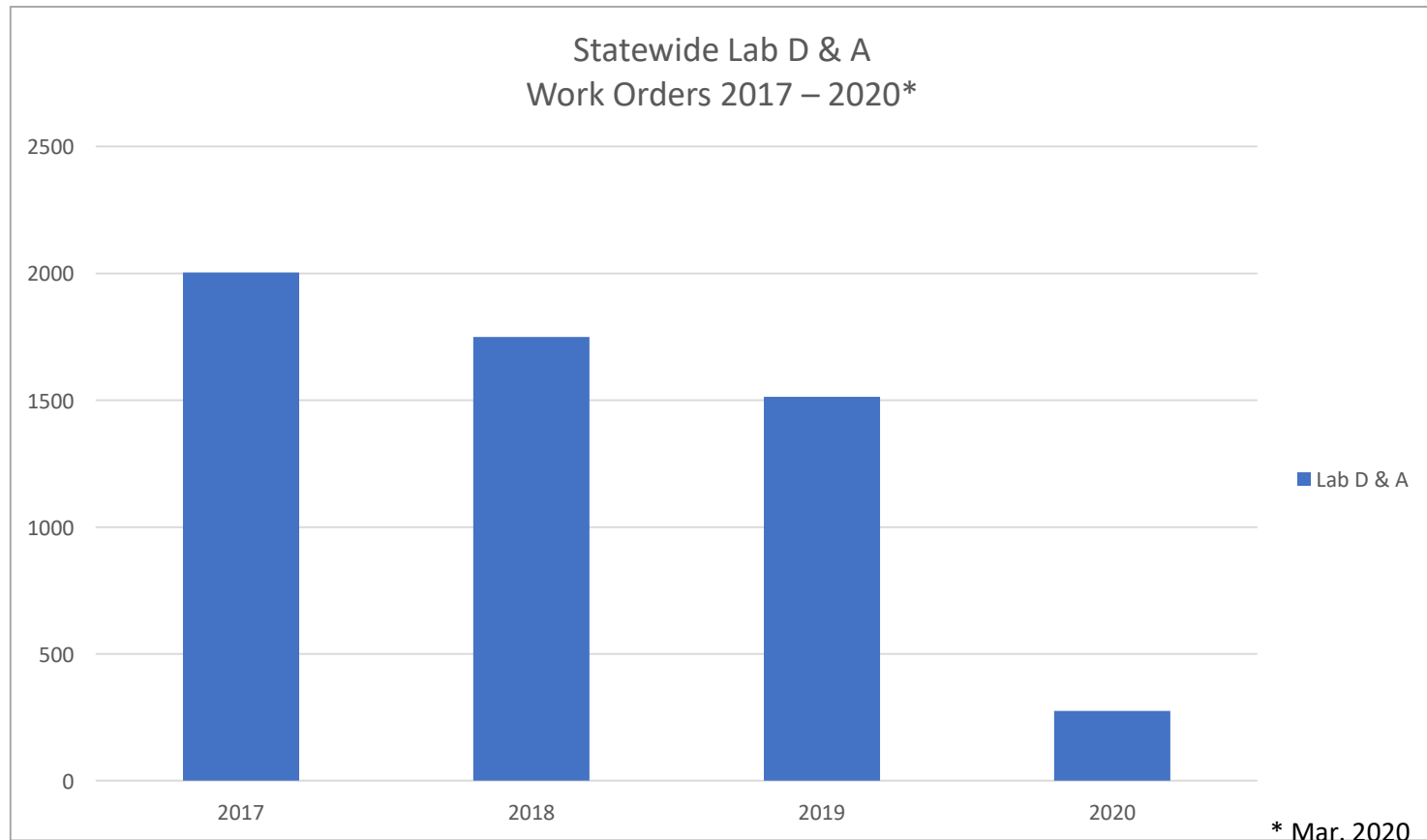
16 **A. Yes, it does.**

Compliance Data

US WATER SYSTEMS COMPLIANCE VS AQUA-NORTH CAROLINA



Customer Discolored Water Quality Complaint Trend

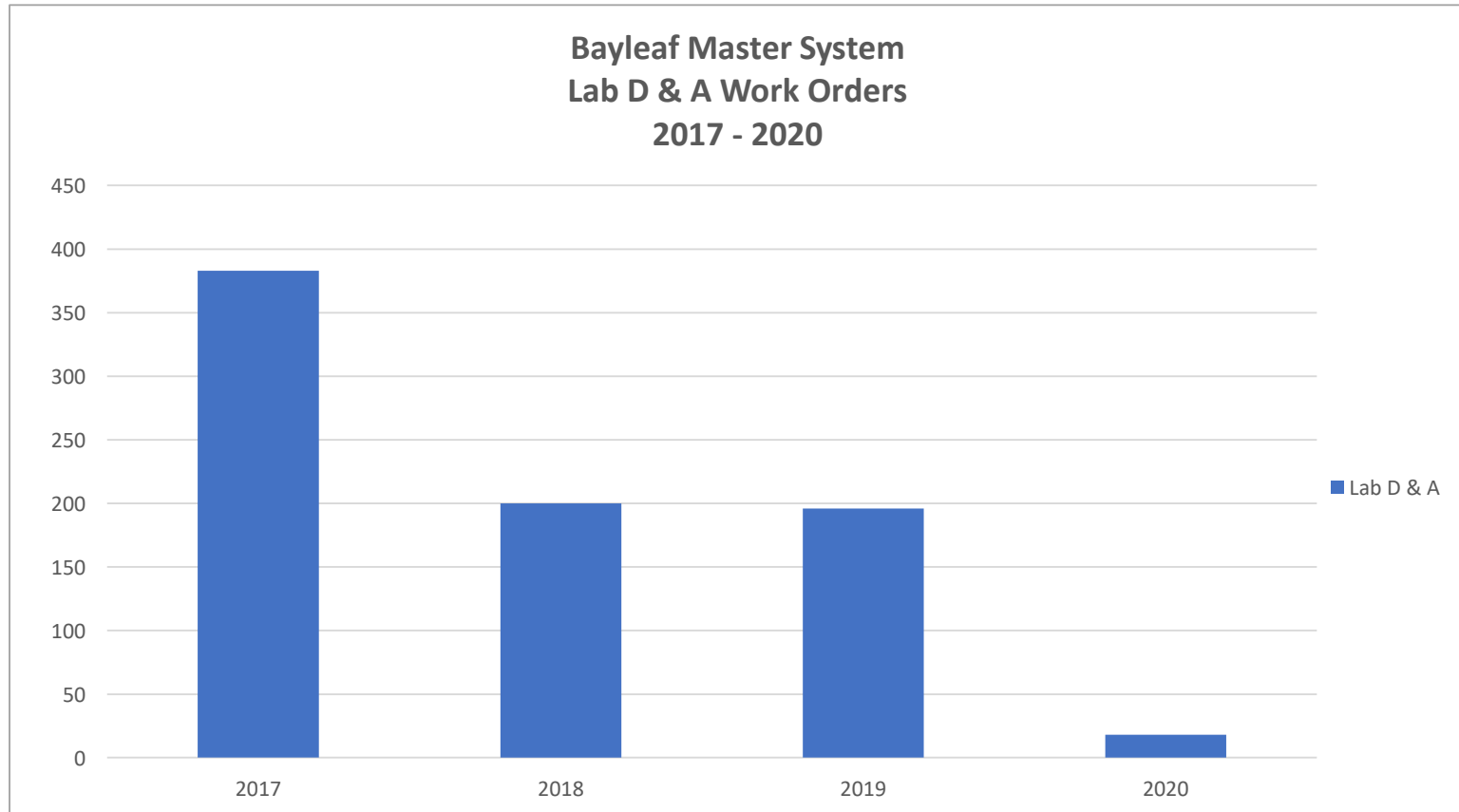


Statewide Discolored Water WO's:

- **25%** decline from 2017 – 2019
- Projected **45%** decline from 2017 to 2020

Note: Lab "A" is annotative of air in the water work orders. Lab "A" calls were commonly tracked as Lab "D" prior to the creation of the Lab "A" work order in 2018. Included both in Lab "A" and Lab "D" after 2018 to ensure data was representational.

Customer Discolored Water Quality Complaint Trend



Bayleaf Discolored Water WO's:

- **49%** decline from 2017 – 2019
- Projected **72%** decline from 2017 to 2019

Note: Lab "A" is annotative of air in the water work orders. Lab "A" calls were commonly tracked as Lab "D" prior to the creation of the Lab "A" work order in 2018. Included both in Lab "A" and Lab "D" after 2018 to ensure data was representational.

Lambeth, Robyn E

Subject: FW: [EXTERNAL] FW: 2Q19 Aqua Quarterly Report Comments

Importance: High

From: Hardy, Allen <allen.hardy@ncdenr.gov>

Sent: Wednesday, July 31, 2019 3:26 PM

To: Krueger, Robert D <RDKrueger@aquaamerica.com>

Cc: Tupps, Roger B <RBTupps@aquaamerica.com>; Stagner, Lorraine M <LMStagner@aquaamerica.com>; Jackson, Jackie L <JLJackson@aquaamerica.com>; Rhodes, Peter B <PBRhodes@aquaamerica.com>

Subject: [EXTERNAL] FW: 2Q19 Aqua Quarterly Report Comments

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Rob

Since I will be retiring soon this is probably my last forwarding of Shawn's quarterly report comments. Please continue to work with Shawn regarding resolution of the Fe/Mn related issues. Please respond to his comments if needed.

Aqua has made tremendous improvements to a number of water systems regarding Fe/Mn and I'm sure the customers appreciate that!! I appreciate all that you and the rest of the staff have done in regards to addressing Fe and Mn. Still a lot of work to do and I'm sure Shawn will provide any assistance that you need from this office.

This is not my farewell speech, that will be coming soon. I will try to get by Aqua's office in the next few weeks and speak with folks. Thanks.

Allen

From: Guyer, Shawn

Sent: Wednesday, July 31, 2019 10:02 AM

To: Hardy, Allen <allen.hardy@ncdenr.gov>

Cc: Guyer, Shawn <shawn.guyer@ncdenr.gov>

Subject: 2Q19 Aqua Quarterly Report Comments

Allen,

I have completed a review of the Aqua Quarterly NOD Reports submitted for the second quarter of 2019. My comments are below:

1. Regarding the two facilities that Aqua requested be removed from quarterly reporting:
 - **Middle Creek Acres [NC0392370] Well #1 (P01)** - The data submitted indicates that iron and manganese concentrations are below the action level or within the range that is acceptable for treatment with a sequestering agent. Aqua has reported no customer complaints attributable to this facility for 2017, 2018 or 2019. The iron and manganese concentration deficiency is resolved and quarterly reports are no longer required. A letter stating the same will be sent shortly.

- **Saddle Run S/D [NC0392080] Stanstead Well #2 (P05)** - The data submitted indicates that iron and manganese concentrations are below the action level or within the range that is acceptable for treatment with a sequestering agent. Aqua has reported no customer complaints attributable to this facility for the first half of 2019. The iron and manganese concentration deficiency is resolved and quarterly reports are no longer required. A letter stating the same will be sent shortly.
2. Regarding the three facilities with new filters that received Final Approval and are in operation. The iron and manganese concentration deficiency is resolved and quarterly reports are no longer required. The Public Water Supply Section will review monthly operating reports to monitor the effectiveness of the installed treatment. A letter stating the same will be sent shortly. These facilities include:
- **Ridgebrook Bluff S/D [NC4392101] Westbury Well #1 (P03)**
 - **Bayleaf Master [NC0392373] Barony Well #5 (P63)**
 - **Bayleaf Master [NC0392373] Georges Grant Well #1 (P7B)**
3. **Bayleaf Master [NC0392373] Enclave at Barton Creek Bluffs Well #18 (P75)** – Comments indicate that this well may be redrilled. Please provide additional information regarding drilling activities. Some activities may be considered modification, alteration, or construction and require approval from the Plan Review Unit.

Shawn F. Guyer, P.E.
Assistant Regional Engineer
Raleigh Regional Office
Public Water Supply Section
Division of Water Resources
Department of Environmental Quality

919 791-4299 direct
919 791-4200 main
Shawn.Guyer@ncdenr.gov

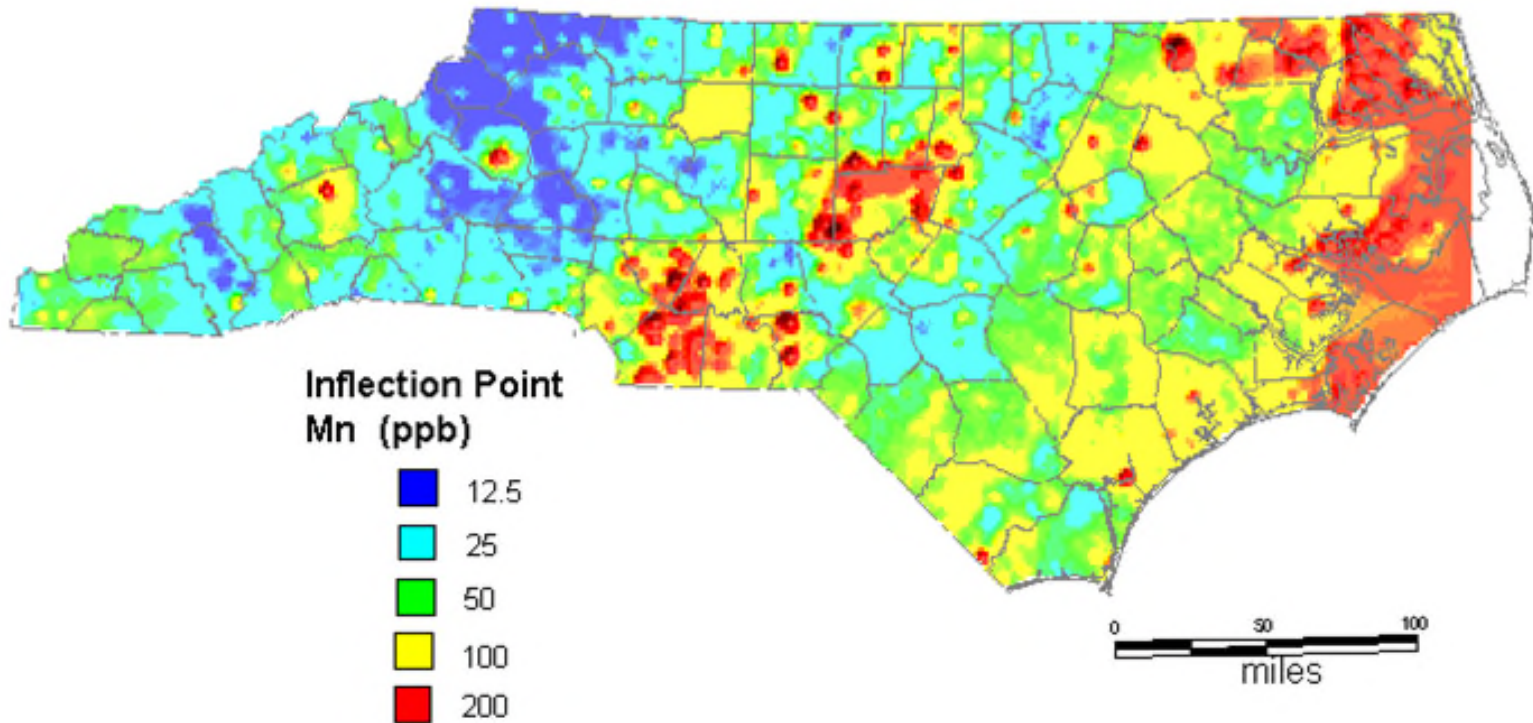
Physical: 3800 Barrett Drive,
Raleigh NC 27609

Mailing: 1628 Mail Service Center
Raleigh NC, 27699-1628

*Email correspondence to and from this address is subject to the
North Carolina Public Records Law and may be disclosed to third parties.*

North Carolina Compliance Data

Manganese in Groundwater



Grid Cell Interpolated Thematic
Grid Cell = 1.5 miles