

**WATER RESOURCES, INC.
DOCKET NO. W-1034, SUB 8**

**TESTIMONY OF DAVID C. FURR
ON BEHALF OF THE PUBLIC STAFF
NORTH CAROLINA UTILITES COMMISSION**

August 29, 2018

1 **Q. PLEASE STATE FOR THE RECORD YOUR NAME, BUSINESS**
2 **ADDRESS, AND PRESENT POSITION.**

3 A. My name is David C. Furr. My business address is 430 North Salisbury
4 Street, Dobbs Building, Raleigh, North Carolina. I am Director of the
5 Public Staff Water, Sewer and Telephone Division.

6 **Q. BRIEFLY STATE YOUR QUALIFICATIONS AND EXPERIENCE**
7 **RELATING TO YOUR PRESENT POSITION WITH THE PUBLIC**
8 **STAFF.**

9 A. I graduated from North Carolina State University receiving a Bachelor of
10 Science degree in Mechanical Engineering. I hold registration as an
11 Engineer-in-Training (EIT – State of North Carolina # A-7217). I've
12 received certification as a Grade 1 Wastewater Treatment Plant Operator
13 (# 17423) and Subsurface System Operator (# 19554) by the North
14 Carolina Water Pollution Control System Operators Certification
15 Commission. I have completed the North Carolina Waterworks
16 Operators School for C-well Operators. I worked with the Public Staff
17 from June 1994 to June 2001 and returned in June 2005. I became

1 Director of the Public Staff Water/Sewer Division in January 2013. I have
2 presented recommendations in rate increase proceedings, new franchise
3 and transfer applications and other matters relating to water and sewer
4 utility regulation before the Commission.

5 **Q. WHAT ARE YOUR DUTIES IN YOUR PRESENT POSITION?**

6 A. My duties with the Public Staff are to monitor the operations of regulated
7 water and sewer utilities with regard to rates and service. Included in
8 these duties are field investigations to review, evaluate, and recommend
9 changes, when needed, in the design, construction, and operations of
10 regulated water and sewer utilities; presentation of expert testimony in
11 formal hearings; and presentation of information, data, and
12 recommendations to the Commission.

13 **Q. BRIEFLY EXPLAIN YOUR INVESTIGATION REGARDING THIS**
14 **APPLICATION FOR A RATE INCREASE.**

15 A. On April 18, 2018, Water Resources, Inc. (Water Resources or
16 Company) filed an application with the Commission for authority to
17 increase its rates for providing water utility service in the Rocky River
18 Plantation Subdivision in Cabarrus County, and River Walk Subdivision
19 in Mecklenburg County. On May 14, 2018, the Commission issued its
20 Order Establishing General Rate Case, Suspending Rates, Scheduling
21 Hearing, and Requiring Customer Notice. The required Certificate of
22 Service was filed with the Commission on June 13, 2018.

1 My investigation included a field inspection, review of company records,
2 review of customer complaints, review of records from the North
3 Carolina Department of Environmental Quality (DEQ), and gathering of
4 information from other sources. I have conducted an analysis of
5 revenues at existing and proposed rates, assisted Public Staff
6 Accountant June Chiu in reviewing capital improvements and expenses,
7 and designed water rates to generate the service revenue requirements
8 determined by the Public Staff.

9 **Q. BRIEFLY DESCRIBE THE COMPANY'S SERVICE AREA.**

10 A. Water Resources provides water utility service to approximately 114
11 residential customers in Rocky River Plantation Subdivision in Cabarrus
12 County. Rocky River Plantation Subdivision is located off of SR 1139,
13 Rocky River Road.

14 Water Resources provides water utility service to approximately 32
15 residential customers in River Walk Subdivision in Mecklenburg County.
16 The subdivision is located near SR 1349, and along the Catawba
17 River.

18 **Q. BRIEFLY DESCRIBE THE COMPANY'S UTILITY SYSTEMS.**

19 A. The Rocky River Plantation water system contains two wells with a
20 single entry point, well enclosures, a treatment facility building with
21 chlorination apparatus and a six foot diameter sand filter, a 100,000
22 gallon elevated storage tank, 8-inch, 6-inch and 2-inch distribution

1 piping, valves and other appurtenances. The plans for this system are
2 approved for 119 lots under Division of Health Services serial number
3 89-7189, dated April 13, 1989. In addition, bulk water service is
4 provided to McMillian Acres through a 4-inch master meter. The plans
5 for this connection are approved under Division of Environmental
6 Health serial number 96-09521, dated January 17, 1996.

7 The River Walk Plantation water system contains two wells, well
8 houses, chlorination apparatus, a 15,000 gallon ground level storage
9 tank, two booster pumps, a 2,000 gallon hydropneumatic storage tank,
10 and 6-inch and 2-inch distribution piping, valves and other
11 appurtenances. The plans for this system are approved for 73 lots
12 under Division of Environmental Health serial number 97-14045, dated
13 December 2, 1997.

14 **Q. HAVE YOU RECEIVED ANY CUSTOMER COMPLAINTS?**

15 A. To date, the Public Staff has received contacts from six customers, all
16 in the Rocky River Plantation Subdivision. Two of the contacts came by
17 way of the North Carolina Department of Justice. Copies of contact
18 documents have been filed with the Commission Chief Clerk in this
19 proceeding's docket.

20 All six contacts are opposed to the rate increase. One of the six noted
21 that Water Resources is not currently charging the Commission
22 approved rates.

1 All six contacts mention poor water quality. They include cloudy water,
2 iron/clay in the water, damage to appliances caused by the water,
3 hardness, and a recent water system violation for failure to take all
4 Lead/Copper testing samples as required.

5 Four of the contacts mention communications issues with Water
6 Resources. This includes the inability to get Water Resources
7 personnel on the telephone, not returning calls, poor response time and
8 multiple calls to resolve the same issue, no updates on outages, no
9 advance notice of flushing operations, and sometimes not getting
10 monthly statements.

11 Two of the contacts mention operational issues. One states there are
12 water outages several times a year, and one discusses issues with
13 water overflowing out of the elevated water storage tank.

14 One of the contacts is requesting the water system be connected to the
15 Town of Harrisburg.

16 **Q. ARE THE WATER UTILITY SYSTEMS IN COMPLIANCE WITH**
17 **NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY**
18 **REGULATIONS?**

19 A. No. Neither system is in compliance with Department of Environmental
20 Quality regulations.

1 I have reviewed Public Water Supply Section (PWSS) records, and
2 received information on the water systems from Ms. Meredith Guglielmi,
3 EI, Assistant Regional Engineer, PWSS, Division of Water Resources,
4 Mooresville Regional Office. Ms. Guglielmi has recently conducted
5 sanitary surveys of both water systems.

6 A sanitary survey for Rocky River Plantation was conducted on March
7 29, 2018. Water Resources was sent a Notice of Deficiency letter,
8 dated April 3, 2018. The letter is attached as Furr Exhibit 1. The stated
9 deadlines for resolving issues were extended to July 31, 2018. As of
10 August 16, 2018, only item #1 and #4 have been resolved.

11 A sanitary survey for River Walk was conducted on December 6, 2017.
12 Water Resources was sent a Notice of Deficiency letter, dated January
13 2, 2018. The letter is attached as Furr Exhibit 2. The stated deadlines
14 for resolving issues were extended to May 2, 2018. As of August 16,
15 2018, only item #1 has been resolved.

16 Some of the same items noted by PWSS for River Walk were also
17 noted in the Commission's Recommended Order Granting Certificate of
18 Public Convenience and Necessity, Approving Rates, Requiring
19 Improvements, and Requiring Customer Notice, dated January 27,
20 2012, in Docket No. W-1034, Sub 6. Water Resources agreed to
21 complete the improvements within six months and file a letter with the

1 Commission stating they had been completed. Improvements were not
2 completed, and no letter was filed.

3 **Q. HAVE YOU INSPECTED AND EVALUATED THE WATER UTILITY**
4 **SYSTEMS, AND IF SO, WHAT WERE YOUR OBSERVATIONS?**

5 A. Yes. I inspected the water systems on August 16, 2018, with Mr.
6 Dennis Abbott of Water Resources, and Ms. Guglielmi. My
7 observations were consistent with the Notice of Deficiency letters,
8 including the PWSS recommendations. Additional observations and
9 recommendations are as follows:

10 For the Rocky River Plantation, I place high significance on PWSS
11 recommendations #1 through #4.

12 Water Resources recently received a notification for Increased
13 Monitoring for Radionuclides: Change to Quarterly, dated August 15,
14 2018. A copy of the notification is attached as Furr Exhibit 3.

15 I have reviewed meter readings at the beginning and end of the test
16 year and believe some of the recorded/billed consumption to be low for
17 some accounts. In discussions with Mr. Abbott, he indicates that water
18 meters have never been replaced, and therefore, many are over 25
19 years old. Water meters tend to start reading low as they age, and
20 these are past their expected operational life. I recommend all the
21 water meters in Rocky River Plantation be replaced, including the 4"
22 bulk meter to McMillian Acres Subdivision.

1 While in the Rocky River Plantation Subdivision, I talked with residents
2 from two houses. I observed slightly cloudy water (suspended air)
3 drawn from a kitchen sink. The air quickly dissipated and the water
4 became clear. One resident presented pictures of brown water in water
5 fixtures, which appeared to be due to high iron content.

6 The problem with overflow of the elevated water storage tank, for the
7 most part, should be resolved. The Rocky River Plantation system has
8 been receiving its water solely from Well #2, which has automatic
9 controls to shut the well off when the elevated storage tank is full.
10 When the well went out of service, Water Resources activated Well #1
11 which only operates on manual control. Failure to monitor this
12 operation adequately resulted in overflow from the elevated storage
13 tank. Well #2 is now back in operation.

14 Water Resources needs to take steps to better monitor water quality at
15 Rocky River Plantation. This includes correcting deficiencies identified
16 by PWSS and also acting on the PWSS recommendations.

17 For the River Walk system, I place high significance on PWSS
18 recommendations #3 and #4. I also noted that insulation in the water
19 treatment building was falling out of the ceiling and needs to be properly
20 installed. This results in higher power expenses when heating during
21 cold weather. I also reviewed the power bills for this water system and
22 find them to be high for a system of this size and type of operation. I

1 recommend Water Resources investigate any possible operational
2 issues that may be causing high power expenses.

3 **Q. HAVE YOU IDENTIFIED ISSUES WITH THE COMPANY'S**
4 **CUSTOMER SERVICE?**

5 A. Yes. Water Resources needs to take steps to improve customer
6 service and communications. The evidence of the issues are found in
7 the customer complain letters discussed earlier, my personal
8 experience in contacting the company, and evidence in prior
9 proceedings before the Commission.

10 While attempting to contact Water Resources to obtain information and
11 schedule an inspection, I was only able to leave a voicemail. Part of
12 the message on the system stated Water Resources was aware of an
13 outage at Rocky River Plantation, technicians were on site, and that
14 service should be restored that afternoon. I later determined that there
15 was no outage, and the voice mail message was old. To the best of my
16 knowledge, my messages left at the number were not returned. I was
17 able to contact Water Resources by other telephone numbers, including
18 Mr. Abbott's mobile phone, and messages were returned promptly.

19 Issues with communications between customers and Water Resources
20 were identified in Water Resource's last general rate case, Docket No.
21 W-1034, Sub 4, and in the River Walk application for Certificate of

1 Public Convenience and Necessity proceeding, Docket No. W-1034,
 2 Sub 6. It appears actions to resolve the issues have not been effective.

3 **Q. WHAT ARE THE PRESENT APPROVED RATES AND THE RATES**
 4 **BEING REQUESTED BY THE COMPANY?**

5 A. Water Resources present and proposed monthly metered water rates in
 6 Rocky River Plantation Subdivision are as follows:

	Present <u>Rates</u>	Proposed <u>Rates</u>
7 Base Charge, zero usage	\$ 9.28	\$11.20
10 Usage charge, per 1,000 gallons	\$ 2.57	\$ 3.10

11 The present rates have been in effect since January 1, 2017, when they
 12 were last adjusted with implementation of House Bill 998, (Session law
 13 2013-316), in Docket No. M-100, Sub 138, and Docket No. W-1034,
 14 Sub 7. The last rates established in a general rate case were in Docket
 15 No. W-1034, Sub 4, effective December 19, 2002.

16 Water Resources present and proposed monthly metered water rates in
 17 River Walk Subdivision are as follows:

	Present <u>Rates</u>	Proposed <u>Rates</u>
18 Base Charge, zero usage	\$37.67	\$40.68
22 Usage charge, per 1,000 gallons	\$ 9.42	\$10.18

23 The present rates have been in effect since July 1, 2014, when they
 24 were adjusted due to implementation of House Bill 998 (Session Law

1 2013-316), in Docket No. M-100, Sub 138, and Docket No. W-567,
2 Sub 7. The prior rates were established in the original franchise
3 proceeding in Docket No. W-1034, Sub 6, effective August 12, 2013.

4 **Q. HAS WATER RESOURCES BEEN CHARGING THE COMMISSION**
5 **APPROVED WATER RATES?**

6 A. No. One customer noted that the rates being charged in Rocky River
7 Plantation are not the Commission approved rates.

8 I have reviewed bills issued to customers in both Rocky River Plantation
9 and River Walk. It appears the January 1, 2017 rate revisions for
10 Rocky River Plantation in Docket No. W-1034, Sub 7, were never
11 implemented. This was a one cent decrease in the monthly base
12 charge. Water Resources is currently charging \$9.29, instead of the
13 now approved rate of \$9.28. The Certificate of Service included in the
14 Commission order making the rate change was not filed with the
15 Commission Chief Clerk.

16 **Q. HAVE YOU DETERMINED GROWTH FACTORS TO BE UTILIZED IN**
17 **CALCULATING REVENUES AND EXPENSES?**

18 A. No. The number of customers on the water systems did not change
19 during the test year.

1 **Q. WHAT ARE THE REVENUES UNDER THE COMPANY'S PRESENT**
2 **RATES AND PROPOSED RATES?**

3 A. For Rocky River Plantation Subdivision, I have calculated water utility
4 service revenues of \$32,829 at the Company's present rates, and
5 \$39,607 at the Company's proposed rates. The calculations are shown
6 on Furr Exhibit 4.

7 For River Walk Subdivision, I have calculated water utility service
8 revenues of \$33,468 at the Company's present rates, and \$36,157 at
9 the Company's proposed rates. The calculations are shown on Furr
10 Exhibit 5.

11 **Q. WHAT ADJUSTMENTS HAVE YOU RECOMMENDED TO OTHER**
12 **REVENUES?**

13 A. Water Resources has stated other revenues of \$26,902. Of the total,
14 \$26,740 is from lease of space on an elevated water storage tank to a
15 telecommunications company. The water storage tank is not
16 associated with either of the water systems currently operated by Water
17 Resources. The Wiltshire Manor water system was transferred to the
18 City of Charlotte in Docket No. W-1034, Sub 5, in 2006, and Water
19 Resources still owns the elevated water storage tank. This is now non-
20 utility revenue, and should be excluded from this rate case proceeding.

1 Q. WHAT ADJUSTMENTS HAVE YOU RECOMMENDED TO
2 OPERATING EXPENSES?

3 A. I have assisted Public Staff Chiu in review of operating expenses and
4 make recommendations as follows:

5 Maintenance and Repairs

6 Water Resources stated total maintenance and repair expenses of
7 \$23,968, and only provided documentation for a total of \$22,483. A
8 water pump motor replacement of \$2,509 was capitalized and assigned
9 to Rocky River Plantation. Of the remaining supported amount, I have
10 assigned \$10,149 to Rocky River Plantation, and \$9,825 to River Walk.
11 Most of this expense is the amount paid to the contract operator.

12 Transportation

13 Water Resources stated a test year transportation expense of \$516.
14 This was for a single item that should not be included in the rate case
15 as an ongoing expense. Other transportation expenses are included in
16 the contract operator's fees. There should be no separate
17 transportation expense.

18 Chemicals

19 Water Resources stated total test year chemical expenses of \$1105.
20 This amount is equivalent to 13 months expense.

1 The contract operator charges Water Resources \$85 per month for
2 chlorine. I have allocated 12 months of chemical expense between the
3 two water systems based on the number of customers in each system.
4 The expense for Rocky River Plantation is \$796, and for River Walk is
5 \$224.

6 Water Testing

7 Water Resources stated test year water quality testing expenses of
8 \$3,090.

9 Different water quality tests have different testing frequency
10 requirements, some being conducted only once every three or six years.
11 This results in the test year expense not being representative of the
12 average annual expense. Using information provided by the Company,
13 PWSS, and K&W Laboratories, and based on current testing
14 quantities/frequencies/costs, I have calculated average annual water
15 quality testing expenses of \$1,823 for Rocky River Plantation and \$1,671
16 for River Walk. My calculations are shown on Furr Exhibits 6 and 7. This
17 is an overall increase of \$404.

18 Permit Fees

19 Water Resources stated total test year permit fees of \$620. The DEQ
20 permit fees are assessed based on water system population. The
21 permit fee for Rocky River Plantation is \$350, and for River Walk is
22 \$270.

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Purchased Sewer Treatment

Water Resources stated a test year purchased water/sewer treatment expense of \$657. This is for purchased sewer treatment by the Town of Harrisburg for backwash from the Rocky River Plantation sand filter. Based on 12 annual flat rate bills of \$52.22, I recommend total purchased sewer treatment expense of \$627. All of this expense should be allocated to the Rocky River Plantation system.

Property Taxes

I have advised Public Staff Accountant Chiu to remove the property tax bill in the amount of \$702 for the Wiltshire Manor elevated water storage tank site, since the site is no longer associated with Water Resources water systems.

Q. WHAT ADJUSTMENTS HAVE YOU RECOMMENDED TO PLANT IN SERVICE?

A. I have assisted Public Staff Accountant Chiu in review of plant in service and make recommendations as follows:

Reclassified Items

As stated previously, I have recommended one item be reclassified from maintenance and repair, capitalized and assigned to Rocky River Plantation as follows:

Well Pump Motor	\$ 2,509
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1 Deficiency letter, dated April 3, 2018, and attached as Furr Exhibit 1,
2 within 90 days of the Commission's final order in this proceeding.
3 I recommend the Commission order Water Resources to complete
4 recommendations #1 through #4 within 6 months of the Commission's
5 final order in this proceeding.

6 I recommend that Water Resources replace all the customer water
7 meters in Rocky River Plantation.

8 For River Walk, I recommend the Commission order Water Resources
9 to correct all the deficiencies identified in the Notice of Deficiency letter,
10 dated January 2, 2018, and attached as Furr Exhibit 2, within 90 days
11 of the Commission's final order in this proceeding. I recommend the
12 Commission order Water Resources to complete recommendations #1
13 through #4 within 6 months of the Commission's final order in this
14 proceeding.

15 I recommend Water Resources investigate any possible operational
16 issues that may be causing high power expenses at River Walk.

17 **Q. WHAT ARE YOUR CUSTOMER SERVICE RECOMMENDATIONS**
18 **FOR WATER RESOURCES?**

19 A. In Docket No. W-1034, Sub 6, Water Resources agreed to, and the
20 Commission ordered, that Water Resources keep a log book of
21 customer complaints. I recommend that Water Resources be ordered

1 to keep a log book of customer complaints. The log should include the
2 date and time the customer contacted Water Resources or its
3 answering service, a description of the complaint, what was done to
4 resolve the issue, and the date and time that resolution of the issue was
5 communicated back to the customer. A copy of these records should
6 be filed in this docket on a quarterly basis until further order of the
7 Commission.

8 In Docket No. W-1034, Sub 6, Water Resources agreed to, and the
9 Commission ordered, that Water Resources return customer calls
10 within 60 minutes of receipt. I recommend that the Commission order
11 the same once again, and that Water Resources be ordered to
12 document this in the log book of customer complaints.

13 In Docket No. W-1034, Sub 6, Water Resources agreed to, and the
14 Commission ordered, that Water Resources respond to outages within
15 60 minutes of receiving an outage report from a customer. I
16 recommend that the Commission order the same once again, and that
17 Water Resources be ordered to document this in the log book of
18 customer complaints.

19 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

20 A. Yes, it does.



ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
LINDA CULPEPPER
Interim Director

Notice of Deficiency

April 3, 2018

Water Resources, Inc.
Registered Agent: Dennis C. Abbott
5970 Fairview Road, Suite 710
Charlotte, NC 28210-3124
Certified Mail: 7016 1370 0000 2591 9168

RE: Rocky River Plantation S/D
PWSID: NC0113220
Cabarrus County

Dear Mr. Abbott:

This letter is provided to inform you that a sanitary survey of the referenced water system was conducted on March 29, 2018 in the presence of Mr. Greg Trombello. The purpose of the sanitary survey was to determine whether the water system facilities were in compliance with the requirements of the Division of Water Resources' *Rules Governing Public Water Systems*.

During the sanitary survey, the following deficiencies were noted:

1. The approval letter for the Rocky River Plantation water system, with serial number 89-7189, states the following: "The two (2) well pumps will be operated separately with an alternator." It was observed during the sanitary survey that Well 1 is manually operated and that Well 2 is not operational.

As a result, the water system has violated the requirements of North Carolina Administrative Code, Title 15A, Subchapter 18C, Rule .1304(a) [15A NCAC 18C .1304(a)], which states that water systems shall be operated and maintained in accordance with applicable approved engineering plans and specifications.

This deficiency can be resolved by operating Well 1 and Well 2 in accordance with the approved plans and specifications.

This deficiency must be corrected by May 3, 2018.

2. It was observed during the sanitary survey that the hypochlorite solution injection point is not in the location shown on the approved plans for the chemical feed system



improvements, with serial number 15-00341. The hypochlorite solution injection point was observed to be located on the Well 2 raw water line prior to the convergence of the Well 1 raw water line and the Well 2 raw water line.

As a result, the water system has violated the requirements of 15A NCAC 18C .1304(a), which states that deviations from the approved engineering plans and specifications or changes in site conditions affecting capacity, hydraulic conditions, operating units, the functioning of water treatment processes, the quality of water to be delivered, or any provisos stipulated in the Department's original and subsequent letters or approval must be approved by the Department before any construction or installation.

This deficiency can be resolved by installing the hypochlorite solution injection point in accordance with the approved plans and specifications.

This deficiency must be corrected by May 3, 2018.

3. It was observed during the sanitary survey that a faucet or spigot for sampling treated water prior to delivery to the first customer is not provided.

As a result, the water system has violated the requirements of 15A NCAC 18C .0402(e), which states that faucets or spigots shall be provided for sampling both raw water prior to treatment and treated water prior to delivery to the first customer.

This deficiency can be resolved by providing a faucet or spigot for sampling treated water prior to delivery to the first customer.

This deficiency must be corrected by May 3, 2018.

4. It was observed during the sanitary survey that the threaded hose bib at the Well 2 wellhead was not equipped with an anti-siphon device.

As a result, the water system has violated the requirements of 15A NCAC 18C .0402(e), which states that threaded hose bibs shall be equipped with anti-siphon devices.

This deficiency can be resolved by equipping the threaded hose bib at the Well 2 wellhead with an anti-siphon device.

This deficiency must be corrected by May 3, 2018.

5. It was observed during the sanitary survey that the well house provided for Well 1 is not secured with a lock and key.

As a result, the water system has violated the requirements of 15A NCAC 18C .0402(f), which states that a well house must be secured with lock and key.

This deficiency can be resolved by securing the well house provided for Well 1 with a lock and key.

This deficiency must be corrected by May 3, 2018.

6. It was observed during the sanitary survey that the totalizing meters for Well 1 and Well 2 are not functional.

As a result, the water system has violated the requirements of 15A NCAC 18C .0402(g)(6), which states that a totalizing meter shall be installed in the piping system from each well.

This deficiency can be resolved by repairing or replacing the totalizing meters for Well 1 and Well 2.

7. It was noted during a review of monthly operation reports that approximately three residual disinfection tests in the distribution system are performed per week. The water system is classified as a B Distribution system, which requires a minimum of five residual disinfection tests to be performed in the distribution system per week.

As a result, the water system has violated the requirements of 15A NCAC 18C .1302(a)(1)(A), which states that residual disinfectant concentrations shall be measured weekly at locations that represent maximum residence time of the water in the distribution system or at other locations with high water age. The table shows in this section requires a minimum of five residual disinfection tests to be performed in the distribution system per week for a water system classified as a B Distribution system.

This deficiency can be resolved by performing five residual disinfection tests in the distribution system per week. It should be noted that samples collected on the same day must be collected from different locations.

This deficiency must be corrected by May 3, 2018.

Furthermore, the following recommendations are made to improve the quality and/or safety of the water provided by the water system:

1. It was noted during a review of the monthly operation reports on file in the Mooresville Regional Office that the results from the iron and manganese field readings exceed the secondary maximum contaminant levels (sMCLs) for iron and manganese on some occasions. It is recommended that the filter be evaluated by a qualified professional to assess the operation and maintenance of the filter. The treatment system must be operated such that the iron and manganese concentrations in the treated water do not exceed their sMCLs.
2. It was observed during the sanitary survey that a Hach Iron and Manganese Color Disc Test Kit is being used to measure the iron and manganese concentrations that are reported on the monthly operation reports. It is recommended that the test kit be calibrated in accordance with the manufacturer's instructions, that no expired reagents are used, and

that the test kit is stored and maintained in accordance with the manufacturer's instructions.

3. It is unknown when the elevated storage tank was last inspected, or if the elevated storage tank has been inspected since its installation. It is requested that the elevated storage tank be regularly inspected by a qualified professional and that the vent be inspected on a regular basis to ensure that the screen is intact.
4. During the sanitary survey, holes were observed in the lower portion of the western wall of the building containing the sand filter. It is recommended that the wall be repaired or replaced.
5. It was noted during a review of the documents kept on file in the Mooresville Regional Office that a dual check valve assembly (DCVA) and a dual check detector assembly (DCDA) are present at a service connection serving a former school, which had been demolished at the time of the sanitary survey. If this service connection is placed back into service at a future date, it is recommended that all testable backflow prevention assemblies be tested on an annual basis.

During the sanitary survey, it was observed that Well 1, was placed into service after a period of inactivity. The Department is not aware of any monitoring being performed on Well 1 during the period of inactivity. Monitoring of Well 1 must be performed in accordance with 15A NCAC 18C.

If you have any questions or need any additional information, please feel free to contact me at (704) 235-2132.

Sincerely,



Meredith Guglielmi, EI
Assistant Regional Engineer
Public Water Supply Section
Division of Water Resources

CC: Jessica C. Godreau, P.E., Chief – Public Water Supply Section
Clinton O. Cook, P.E., Regional Engineer – Mooresville Regional Office

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Aug 29 2018



ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
LINDA CULPEPPER
Interim Director

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Aug 29 2018

Notice of Deficiency

January 2, 2018

Water Resources, Inc.
Dennis Abbott
5970 Fairview Road, Suite 710
Charlotte, NC 28210-3124
Certified Mail:7015 1520 0002 6984 7658

RE: Riverwalk Plantation
PWSID: NC0160379
Mecklenburg County

Dear Mr. Abbott:

This letter is provided to inform you that a sanitary survey of the referenced water system was conducted on December 6, 2017 in the presence of Mr. Greg Trombello. The purpose of the sanitary survey was to determine whether the water system facilities were in compliance with the requirements of the Division of Water Resources' *Rules Governing Public Water Systems*.

During the sanitary survey, the following deficiencies were noted:

1. Threaded hose bibs are not equipped with anti-siphon devices at the Well 1 raw water tap and at the Well 2 raw water tap.

As a result, the water system has violated the requirements of North Carolina Administrative Code, Title 15A, Subchapter 18C, Rule .0402(e) [15A NCAC 18C .0402(e)], which states that threaded hose bibs shall be equipped with anti-siphon devices.

This deficiency can be resolved by installing anti-siphon devices or by removing the threaded portion of the tap at the Well 1 raw water tap and at the Well 2 raw water tap.

This deficiency must be corrected by April 2, 2018.

2. The cover over the well house for Well 1 is not secured against unauthorized access, and a locking mechanism is not provided.

As a result, the water system has violated the requirements of 15A NCAC 18C .0402(f), which states that a water supply well shall be secured against unauthorized access and that a locking mechanism shall be provided.



This deficiency can be resolved by repairing the cover over the Well 2 well house to protect against unauthorized access and by providing a locking mechanism.

This deficiency must be corrected by April 2, 2018.

3. A properly sized vacuum relief valve is not provided for the hydropneumatic tank.

As a result, the water system has violated the requirements of 15A NCAC 18C .0405(c)(3), which states that pressure tanks shall have access manholes, bottom drains, pressure gauges, and properly sized pressure and vacuum relief valves.

This deficiency can be resolved by providing a properly sized vacuum relief valve for the hydropneumatic tank.

This deficiency must be corrected by April 2, 2018.

4. The Department of Labor inspection for the hydropneumatic tank is expired.

As a result, the water system has violated the requirements of 15A NCAC 18C .0405(c)(5), which states that hydropneumatic storage shall conform to the construction requirements for pressure vessels adopted by the North Carolina Department of Labor and codified in North Carolina Administrative Code, Title 13, Subchapter 13 [13 NCAC 13]. 13 NCAC 13 .0211(h) states that hydropneumatic storage tanks shall undergo an external inspection every four years.

This deficiency can be resolved by obtaining a hydropneumatic tank inspection certificate for the hydropneumatic tank from the Department of Labor. The inspector for Cabarrus County is Oscar Coley, and he can be reached at 704-261-6873.

This deficiency must be corrected by April 2, 2018.

Furthermore, the following recommendations are made to improve the quality and/or safety of the water provided by the water system:

1. It was noted during a review of monthly operation reports that the free chlorine residual in the water system is typically between 0.2 and 0.4 mg/L. Discussion with the Operator in Responsible Charge (ORC) revealed that he has attempted to increase the hypochlorite feed rate in an effort to raise the free chlorine residual in the distribution system, but he has been unsuccessful. The ORC believes that buildup may be causing a reduced flow of sodium hypochlorite that is injected into the water. Therefore, it is recommended that the drop pipe, tubing, and injection point associated with the hypochlorite treatment equipment be cleaned or replaced as necessary to ensure the proper flow of chemicals.

If the ORC is unable to increase the the sodium hypochlorite feed rate after the above-described corrective actions have been taken, it is recommended that further investigation into this issue be performed until a solution can be identified and implemented.

2. It was observed during the sanitary survey that the valve for the blow-off at Well 1 was leaking. It is recommended that the valve be repaired or replaced so that it is no longer leaking.
3. It was observed that the hydropneumatic tank and the ground storage tank are severely corroded. It is recommended that the hydropneumatic tank and the ground storage tank be either replaced or cleaned and recoated by a qualified professional.
4. It is recommended that trees and limbs surrounding both well houses, the hydropneumatic tank, and the ground storage tank be trimmed as necessary to ensure that no water system components would be damaged in the event of falling trees and limbs.
5. It was observed that the water treatment facility, where treatment equipment and chemicals are housed, does not have a way to drain water. 15A NCAC 18C .0404(a)(2) states that drainage shall be provided by floor drain, wall drain, or slope to door. It is recommended that drainage by floor drain, wall drain, or slope to door be provided if major construction is performed on the water treatment facility in the future.
6. It was noted during a review of historic monitoring data that total coliform sampling sites are not rotated. It is recommended that bacteria sampling sites be rotated on a monthly basis and that a bacteria sample siting plan be developed.

If you have any questions or need any additional information, please feel free to contact me at (704) 235-2132.

Sincerely,



Meredith Guglielmi, EI
Assistant Regional Engineer
Public Water Supply Section
Division of Water Resources

CC: Jessica C. Godreau, P.E., Chief – Public Water Supply Section
Clinton O. Cook, P.E., Regional Engineer – Mooresville Regional Office

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
LINDA CULPEPPER
Interim Director

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AUG 20 2018

NCDEQ
Public Water Supply



NORTH CAROLINA
Environmental Quality

August 15, 2018

Public Staff
Furr Exhibit 3 MG

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AUG 20 2018

WQROS
MOORESVILLE REGIONAL OFFICE

NC0113220_20180815_RAD_INC_MON_20183Q_SS2.pdf

WATER SYSTEM NUMBER: NC0113220; CABARRUS COUNTY
ROCKY RIVER PLANTATION S/D
WATER RESOURCES INC_113220
5970 FAIRVIEW RD SUITE 710
CHARLOTTE, NC 28210-3167

INCREASED MONITORING FOR RADIONUCLIDES: CHANGE TO QUARTERLY

The monitoring requirements for Radionuclides in drinking water are outlined in North Carolina's Rules Governing Public Water Systems Section, 15A NCAC 18C .1519 §141.26(a)(3)(v).

Your system's Radionuclides analytical results for Facility ID No./Sample Point ID: SS2 / E04 collected on May 9, 2018 indicate that the MCL for the following contaminant(s) was exceeded: Combined Radium. **Therefore, as specified in the Rule, your system must now monitor for Combined Radium at the referenced sample point on a quarterly basis. Your next sample must be collected during the quarterly compliance period beginning July 1, 2018.** Please note that all contaminants identified by the method of analysis for the required contaminant(s) must be electronically reported to the Public Water Supply Section by a North Carolina certified laboratory.

Based upon your subsequent quarterly results, if you believe that your system is eligible for a reduction in monitoring in accordance with the Rule, you must submit a written request to my attention for approval in order to reduce your monitoring frequency.

Please include your water system's name and number on all correspondence. Our website contains links to "Sampling Status" which allows systems to view their current monitoring schedules for each contaminant group and to "Drinking Water Watch" which allows systems to view their monitoring results and other system information. Copies of North Carolina's Rules Governing Public Water Systems can also be found on our website at www.ncwater.org.

If you have any questions or need assistance regarding this matter, please contact me at (919) 707-9091 or by email at veena.ramachandran@ncdenr.gov.

Sincerely,

Veena Ramachandran
Environmental Engineer
Compliance Services Branch
Public Water Supply Section

cc: MOORESVILLE REGIONAL OFFICE, Regional Engineer
METREYEON, DUSTY



North Carolina Department of Environmental Quality | Division of Water Resources
Public Water Supply Section | 1634 Mail Service Center | Raleigh, North Carolina 27619-1634
(919) 707-9100 | www.ncwater.org/pwv

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Aug 29 2018

Water Resources, Inc.
Docket No. W-1034, Sub 8
Service Revenue
Rocky River Plantation Subdivision

Public Staff
Furr Exhibit 4

End of Period Customers	114
Test Year Billings	1,368
Test Year Consumption	7,834,110 gals.

Service Revenue at Present Rates

Base Charge Revenue

1,368 x \$ 9.28 = \$ 12,695

Consumption Charge Revenue

7,834 x \$ 2.57 = \$ 20,134

Total Revenue \$ **32,829**

Service Revenue at Proposed Rates

Base Charge Revenue

1,368 x \$ 11.20 = \$ 15,322

Consumption Charge Revenue

7,834 x \$ 3.10 = \$ 24,286

Total Revenue \$ **39,607**

Water Resources, Inc.
Docket No. W-1034, Sub 8
Service Revenue
River Walk Subdivision

Public Staff
Furr Exhibit 5

End of Period Customers	32
Test Year Billings	384
Test Year Consumption	2,017,230 gals.

Service Revenue at Present Rates

Base Charge Revenue

384 x \$ 37.67 = \$ 14,465

Consumption Charge Revenue

2,017 x \$ 9.42 = \$ 19,002

Total Revenue \$ **33,468**

Service Revenue at Proposed Rates

Base Charge Revenue

384 x \$ 40.68 = \$ 15,621

Consumption Charge Revenue

2,017 x \$ 10.18 = \$ 20,535

Total Revenue \$ **36,157**

Water Resources, Inc.
 Docket No. W-1034, Sub 8
 Water Quality Testing Expenses
 Rocky River Plantation Subdivision

Public Staff
 Furr Exhibit 6

<u>Test</u>	<u>Annual Tests</u>	<u>Cost Per Sample</u>	<u>Annual Expense</u>
Coliform Bacteria	12.00	\$ 45.00	\$ 540
THM/HAA5	0.33	\$ 240.00	\$ 80
Lead/Copper	5.00	\$ 50.00	\$ 250
Inorganics	0.33	\$ 300.00	\$ 100
VOCs	0.33	\$ 195.00	\$ 65
SOCs	0.33	\$ 975.00	\$ 325
Nitrate	1.00	\$ 40.00	\$ 40
Radiologicals	0.17	\$ 455.00	\$ 76
Gross Alpha			
Combined Uranium			
Combined Radium*	0.33	\$ 455.00	\$ 152
Misc. Additional Tests			
Annual CCRs			\$ 195
Total Average Annual Expense			\$ 1,823

* Special test amortized over 3 years

Water Resources, Inc.
Docket No. W-1034, Sub 8
Water Quality Testing Expenses
River Walk Subdivision

Public Staff
Furr Exhibit 7

<u>Test</u>	<u>Annual Tests</u>	<u>Cost Per Sample</u>	<u>Annual Expense</u>
Coliform Bacteria	12.00	\$ 45.00	\$ 540
THM/HAA5	0.33	\$ 240.00	\$ 80
Lead/Copper	5.00	\$ 50.00	\$ 250
Inorganics	0.33	\$ 300.00	\$ 100
VOCs	0.33	\$ 195.00	\$ 65
SOCs	0.33	\$ 975.00	\$ 325
Nitrate	1.00	\$ 40.00	\$ 40
Radiologicals Gross Alpha Combined Uranium Combined Radium	0.17	\$ 455.00	\$ 76
Misc. Additional Tests			
Annual CCR			\$ 195
Total Average Annual Expense			\$ 1,671

Water Resources, Inc.
Docket No. W-1034, Sub 8
Rate Design - River Walk Subdivision

Public Staff
Furr Exhibit 8

Revenue Requirement	\$	32,696
Total EOP Metered Customers		32
Annual Metered Customer Billings		384
Total Annual Metered Usage		2,017,230 gallons

Monthly Metered Rates, Monthly Base Charge, Zero Usage

Base Charge (zero usage)

Recover approx: 44% of metered revenue requirement

$$\$ 32,696 \times 44\% = \$ 14,386.24$$

$$\$ 14,386 / 384 = \$ 37.46$$

Set Base Charge at **\$ 37.50**

Revenue From Base Charge

$$\$ 37.50 \times 384 = \$ 14,400$$

Usage Charge

Usage Revenue Requirement

$$\$ 32,696 - \$ 14,400 = \$ 18,296$$

Usage Charge per 1,000 gallons

$$\$ 18,296 / 2,017.23 = \$ 9.0699$$

Must round up, set usage charge at **\$ 9.07**