ROCKY MOUNT
WATER RESOURCES
THE CENTER OF IT ALL

City of Rocky Mount Wastewater Systems
Annual Performance Report
(January 2020 - December 2020)

I. General Information

Facility/System Name:	Tar River Regional Wastewater Treatment Facility and Collection System
Responsible Entity:	Brenton F. Bent, MSML, Director of Water Resources City of Rocky Mount
Persons in Charge:	Darrell Highsmith, Wastewater Treatment Plant Chief Operator Nathaniel Williams, Water & Sewer Services Superintendent James K Costello, Wastewater Treatment Plant Superintendent
Applicable Permits:	NPDES Permit #NC0030317 Land Application Permit #WQ0005568 Collection System Permit #WQCS00011

Description of Collection System and Treatment Process:

The city of Rocky Mount (City) maintains 436 miles of wastewater collection lines with 33 sewer lift stations. The collection system receives wastewater from five municipalities located in Nash and Edgecombe counties. The collection system discharges to the Tar River Regional Wastewater Treatment Facility. This facility is permitted to treat twenty-one (21) million gallons per day of wastewater by a pure oxygen activated sludge process using the Air Products "A2O OASES" biological nutrient removal process which provides both nitrification (conversion of ammonia to nitrates) and denitrification (conversion of nitrates to gaseous nitrogen). The effluent is filtered, disinfected and returned to the Tar River. Waste activated sludge is aerobically digested to permitted parameters and recycled through land application.

II. Performance Summary for the Reporting Period of January 2020 - December 2020

The Tar River Regional Wastewater Treatment Facility treated 5.34 billion gallons of wastewater in 2020. Removal of $CBOD_5$ (Carbonaceous Biochemical Oxygen Demand) contaminants was 98.66%, total suspended residue was removed at a rate of 97.87% and NH_3N (ammonia nitrogen) removal rate was 99.04%.

The following table serves as an exhibit of the Tar River Regional Wastewater Treatment Facility performance in relation to set limits within NPDES (National Pollutant Discharge Elimination System) Permit No. NC0030317 Section A.(1.)a.:

TAR RIVER REGIONAL WASTEWATER PLANT
EFFLUENT ANALYSIS

	Summer (Apr-Oct)		Winter (Jan-Mar & Nov-Dec)	
Parameter	NPDES Limits	Actual Values	NPDES Limits	Actual Values
pH	6 to 9	6.2 to 7.4	6 to 9	6.1 to 7.1
Residual Chlorine	0.028 mg/L	<0.020 mg/L	0.028 mg/L	<0.020 mg/L
$CBOD_5$	5 mg/L	1.81 mg/L	10.0 mg/L	1.74 mg/L
Ammonia Nitrogen	2 mg/L	<0.100 mg/L	4 mg/L	0.233 mg/L
Total Suspended Residue	30 mg/L	2.22 mg/L	30 mg/L	4.57 mg/L
Fecal Coliform	200/100 ml	17.2/100 ml	200/100 ml	15.7/100 ml
Dissolved Oxygen	6.0 mg/L minimum	8.15 mg/L	6.0 mg/L minimum	8.81 mg/L
Flow	21 MGD	13.3 MGD	21 MGD	16.4 MGD

Permit Non-Compliance:

The Tar River Regional Wastewater Treatment Facility maintained full compliance for all effluent limitations and monitoring requirements as written in NPDES Permit No. NC0030317 Section A.(1.)a. for 2020.

Sanitary Sewer Overflows:

The City's Water Resources Department strives for a goal of zero (0) sanitary sewer overflows (SSOs). SSOs may result from, but are not limited to, inflow and infiltration due to high water level, restricted lines from rags, roots, grease accumulations, broken pipes from corrosion and construction activities and power failures at sewer pump stations. The City is reducing the potential for SSOs by maintaining back-up generators for pump stations, cleaning system lines and working to reduce inflow and infiltration problems. Users/Customers of the City's Collection System can help prevent SSOs by properly disposing of spent household products such as grease/oils and food scraps into solid waste containers, rather than down the drain.

There were forty-eight **(48)** incidents of sanitary sewer overflows within this report period as follows:

1	1/14/2020	Riverside Dr. @ RR Trestle	**17**	6/17/2020	Battle Park Ln.	**33**	6/22/2020	416 Barnum Rd.
2	1/23/2020	Bethlehem Rd. @ Tar River Bridge	**18**	6/17/2020	4021 Ketch Point Ln.	**34**	6/28/2020	3300 Cornwallis Dr.
3	2/6/2020	Riverside Dr. @ RR Trestle	**19**	6/17/2020	1420 Hillsdale Dr.	**35**	9/17/2020	Riverside Dr. @ RR Trestle
4	2/6/2020	1101 Johnson St. @ lift station	**20**	6/17/2020	545 E Raleigh Blvd.	**36**	9/30/2020	Riverside Dr. @ RR Trestle
5	2/6/2020	1701 Cooley Rd. @ lift station	**21**	6/17/2020	105 Wake St.	**37**	11/11/2020	203 Hill St.
6	2/6/2020	Cherry St.	**22**	6/17/2020	Olive St. & Shearin St.	**38**	11/11/2020	1713 Branch St.
7	2/7/2020	Old Mill Rd.	**23**	6/17/2020	1713 Branch St.	**39**	11/11/2020	691 Old Mill Rd.
8	2/8/2020	Battle Park Ln.	**24**	6/17/2020	200 S Englewood Dr.	**40**	11/11/2020	Bethlehem Rd. @ Tar River Bridge
9	3/24/2020	3324 Sunset Ave.	**25**	6/17/2020	2800 Westminster Dr.	**41**	11/11/2020	Olive St. & Shearin St.
10	3/25/2020	Riverside Dr. @ RR Trestle	**26**	6/17/2020	1700 Jason Dr.	**42**	11/11/2020	Riverside Dr. @ RR Trestle
11	4/30/2020	Riverside Dr. @ RR Trestle	**27**	6/17/2020	905 Tyan St.	**43**	11/11/2020	1101 Johnson St.
12	6/17/2020	Riverside Dr. @ RR Trestle	**28**	6/17/2020	1401 E Raleigh Blvd.	**44**	11/11/2020	107 Cooley Rd.
13	6/17/2020	1101 Johnson St.	**29**	6/18/2020	2471 Postal Dr.	**45**	11/12/2020	Battle Park Ln.
14	6/17/2020	1460 Cokey Rd.	**30**	6/18/2020	681 Old Mill Rd.	**46**	11/12/2020	Cherry St.
15	6/17/2020	824 Old Mill Rd.	**31**	6/18/2020	163 Spaulding Dr.	**47**	11/24/2020	Riverside Dr. @ RR Trestle
16	6/17/2020	930 Bethlehem Rd. @ Tar River	**32**	6/18/2020	1717 Branch St.	**48**	12/31/2020	691 Old Mill Rd.

Except for incidents # 9,14, and 34, all included sanitary sewer overflows occurred following heavy sustained rain events causing inflow into the system as documented by USGS data. Incidents #9,14, and 34, were the result of blockages caused by grease and debris build up.

Collection System Improvements:

A Supervisory Control and Data Acquisition (SCADA) system monitors all lift stations through remote monitoring. The sewer lines are inspected and cleaned daily by a full-time CCTV Crew using high pressure water jet trucks.

In 2020 the City completed in-house repairs for the following:

- Clean out caps (missing or damaged) replaced: 86
- Manholes raised or repaired: 33
- Service laterals repaired: 19
- Damaged sewer mains repaired: 7
- Mains cleaned: 31.75 Miles
- Miles of sewer main video inspected: 2.7
- Sewer main relined, 2.68 miles

III. Notification

This report is available through the City's Water Resources Department webpage and can be requested from the Water Quality Services Division at (252) 972-1408.

Certification:

I certify under penalty of law that this report is complete and accurate to the best of my knowledge. I further certify that this report has been made available to the Users/Customers of the city of Rocky Mount and that those Users/Customers have been notified of its availability.

B.F. Bent

Brenton F. Bent, MSML
Director of Water Resources
City of Rocky Mount, NC

1/21/2021
Date