ROCKY MOUNT
WATER RESOURCES
THE CENTER OF IT ALL

City of Rocky Mount Wastewater Systems
Annual Performance Report
(January 2021 - December 2021)

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:	James K Costello, Wastewater Treatment Plant Superintendent Nathaniel Williams, Water & Sewer Services Superintendent Shelton Coley, Wastewater Treatment Plant Chief Operator
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. The city converted from gaseous chlorine to liquid 12.5% bleach as the disinfecting agent on April 2, 2021.

II. Performance Summary for the Reporting Period of January 2021 - December 2021

The Tar River Regional Wastewater Treatment Facility treated 4.34 billion gallons of wastewater in 2021. Removal of $CBOD_5$ (Carbonaceous Biochemical Oxygen Demand) contaminants was 98.67%, total suspended residue was removed at a rate of 98.42% and NH_3N (ammonia nitrogen) removal rate was 98.86%.

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 TREATMENT FACILITY
EFFLUENT ANALYSIS

	Summer (Apr-Oct)		Winter (Jan-Mar & Nov-Dec)	
Parameter	NPDES Limits	Actual Values	NPDES Limits	Actual Values
pH	6 to 9	6.4 to 7.4	6 to 9	6.2 to 7.4
Residual Chlorine	0.028 mg/L	<0.020 mg/L	0.028 mg/L	0.021 mg/L
$CBOD_5$	5 mg/L	2.20 mg/L	10.0 mg/L	1.97 mg/L
Ammonia Nitrogen	2 mg/L	0.128 mg/L	4 mg/L	0.352 mg/L
Total Suspended Residue	30 mg/L	2.90 mg/L	30 mg/L	3.12 mg/L
Fecal Coliform	200/100 ml	58.6/100 ml	200/100 ml	22.2/100 ml
Dissolved Oxygen	6.0 mg/L minimum	8.46 mg/L	6.0 mg/L minimum	9.06 mg/L
Flow	21 MGD	10.0 MGD	21 MGD	14.5 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 2021.

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, food scraps, and sanitary wipes into solid waste containers, rather than down the drain.

There were ten **(10)** incidents of sanitary sewer overflows within this report period as follows:

1. 01/01/2021, Riverside Dr @ RR Trestle.
2. 01/31/2021, Riverside Dr @ RR Trestle.
3. 02/13/2021, Riverside Dr @ RR Trestle.
4. 02/15/2021, Olive St, manhole.
5. 02/16/2021, Scott St, manhole on utility easement.
6. 02/16/2021, Wake St, manhole.
7. 02/19/2021, Old Mill Rd, manhole near 681 Old Mill Rd.
8. 02/19/2021, Old Mill Rd, manhole near Postal Dr.
9. 02/19/2021, Tyan St, manhole near 817 Tyan St.
10. 02/19/2021, Branch St, manhole near 1717 Branch St.

All included sanitary sewer overflows occurred following heavy sustained rain events causing inflow and infiltration into the system as documented by USGS data.

There was one **(1)** incident of sanitary sewer overflow at the Tar River Regional Wastewater Treatment Facility on 02/11/2021 due to rags plugging a barscreen. The overflow lasted for 10-minutes with untreated wastewater reaching a stormwater pond. High level alarms have been installed in the barscreen.

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 2021 the City completed in-house repairs for the following:

- Clean out caps (missing or damaged) replaced: 35
- Manholes raised or repaired: 126
- Service laterals repaired: 93
- Damaged sewer mains repaired: 25
- Mains cleaned: 32.5 miles
- Miles of sewer main video inspected: 10 miles
- Sewer main relined: 1,635 linear feet

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 — 2/28/2022

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