



**ROCKY MOUNT**  
WATER RESOURCES  
THE CENTER OF IT ALL

**City of Rocky Mount Wastewater Systems  
Annual Performance Report  
(January 2023 - December 2023)**

**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 32 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 2023 - December 2023**

The Tar River Regional Wastewater Treatment Facility treated 3.62 billion gallons of wastewater in 2023. Removal of CBOD<sub>5</sub> (Carbonaceous Biochemical Oxygen Demand) contaminants was 98.42%, total suspended residue was removed at a rate of 97.46% and NH<sub>3</sub>N (ammonia nitrogen) removal rate was 98.02%.

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**

Parameter	Summer (Apr-Oct)		Winter (Jan-Mar & Nov-Dec)	
	NPDES Limits	Actual Values	NPDES Limits	Actual Values
pH	6 to 9	6.5 to 7.4	6 to 9	6.0 to 7.5
Residual Chlorine	0.028 mg/L	0.001 mg/L	0.028 mg/L	0.005 mg/L
CBOD <sub>5</sub>	5 mg/L	2.4 mg/L	10.0 mg/L	3.6 mg/L
Ammonia Nitrogen	2 mg/L	0.301 mg/L	4 mg/L	0.84 mg/L
Total Suspended Residue	30 mg/L	3.01 mg/L	30 mg/L	5.10 mg/L
Fecal Coliform	200/100 ml	7.0/100 ml	200/100 ml	12.4/100 ml
Dissolved Oxygen	6.0 mg/L minimum	8.56 mg/L	6.0 mg/L minimum	9.23 mg/L
Flow	21 MGD	9.5 MGD	21 MGD	10.5 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 2023.

**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 eight (8) incidents of sanitary sewer overflows within this report period as follows:

1. 2/12/2023, Riverside Dr, @ RR Trestle
2. 2/13/2023, manhole at the dead end of Hargrove St.
3. 03/21/2023, Nicodemus Mile Rd, Rocky Mount (manhole on sewer easement behind the Cracker Barrel)
4. 04/08/2023, Riverside Dr, @ RR Trestle
5. 05/01/2023, Riverside Dr, @ RR Trestle
6. 12/17/2023, Riverside Dr, @ RR Trestle
7. 12/17/2023, Manhole at 1024 Johnson St, Rocky Mount
8. 12/27/2023, Riverside Dr, @ RR Trestle

Apart from # 3, all included sanitary sewer overflows occurred following heavy sustained rain events causing inflow and infiltration into the system as documented by USGS data. Incident #3 was a result of a vandal act.

There was one (1) incident of sanitary sewer overflow at the Tar River Regional Wastewater Treatment Facility on 02/01/2023 due to very high influent wet well levels. The overflow resulted from a backup, due to the high wet well level, in drain lines from other equipment on the plant site. The overflow lasted for 15 minutes and was calculated to be 1,000 gallons. Operating protocol has been changed and does not allow for the wet well level to reach this height again.

**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 hydraulic cleaners and remote camera equipment.

In 2023 the City completed in-house repairs for the following:

- Clean out caps (missing or damaged) replaced: 46.
- Manholes raised or repaired: 24.
- Service laterals repaired: 75.
- Damaged sewer mains repaired: 16.
- Mains cleaned: 23.44 miles.
- Miles of sewer main video inspected: 3.9 miles.
- Sewer main relined: 4,988 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*

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

*2/7/2024*

Date