



**City of Rocky Mount Wastewater Systems  
Annual Performance Report  
(January 2019 - December 2019)**

**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 2019 - December 2019**

The Tar River Regional Wastewater Treatment Facility treated 4.33 billion gallons of wastewater in 2019. Removal of CBOD<sub>5</sub> (Carbonaceous Biochemical Oxygen Demand) contaminants was 98.79%, total suspended residue was removed at a rate of 98.34% and NH<sub>3</sub>N (ammonia nitrogen) removal rate was 98.72%.

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**

Parameter	Summer (Apr-Oct)		Winter (Jan-Mar & Nov-Dec)	
	NPDES Limits	Actual Values	NPDES Limits	Actual Values
pH	6 to 9	6.2 to 7.3	6 to 9	6.1 to 7.4
Residual Chlorine	0.028 mg/L	<0.020 mg/L	0.028 mg/L	<0.020 mg/L
CBOD <sub>5</sub>	5 mg/L	1.77 mg/L	10.0 mg/L	2.21 mg/L
Ammonia Nitrogen	2 mg/L	0.112 mg/L	4 mg/L	0.258 mg/L
Total Suspended Residue	30 mg/L	2.16 mg/L	30 mg/L	4.19 mg/L
Fecal Coliform	200/100 ml	18.2/100 ml	200/100 ml	11.1/100 ml
Dissolved Oxygen	6.0 mg/L minimum	8.25 mg/L	6.0 mg/L minimum	8.72 mg/L
Flow	21 MGD	9.76 MGD	21 MGD	14.8 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 2019.

**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 six (6) incidents of sanitary sewer overflow within this report period as follows:

1. 02/23/2019 @1013 Johnson St.
2. 02/23/2019 @ 6503 Old Mill Rd.
3. 02/24/2019 @ 549 E Raleigh St.
4. 02/25/2019 @ E Virginia St & Cowlick Creek.
5. 03/04/2019 @ Riverside Dr & RR Trestle.
6. 11/04/2019 @ Sutton Rd & Arlington St.

With the exception of incident 6, all included sanitary sewer overflows occurred following heavy sustained rain events; as documented by USGS data. Incident 6 was the result of a blockage 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 2019 the City completed in-house repairs for the following:

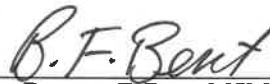
- Clean out caps (missing or damaged) replaced: 19
- Manholes raised or repaired: 12
- Service laterals repaired: 33
- Damaged mains repaired: 12
- Mains cleaned: 22.3 miles
- Mains video inspected: 9.5 miles
- 2,373 linear feet of sewer main relined

### **III. Notification**

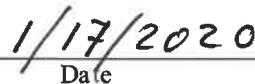
This report is available through the City's Water Resources Department webpage, as well as its publication in the Rocky Mount Telegram.

### **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.



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



Date