

### Monthly Spill Totals As Reported to NCDEQ

All overflows and violations have been corrected and reported to the State of NC. No environmental impacts or fish kills occurred with these events.

Jan	825	May	920	Sep	0
Feb	0	Jun	170	Oct	900
Mar	1,639	Jul	0	Nov	12,300
Apr	300	Aug	940	Dec	130

### ENVIRONMENTAL PROGRAMS AND SERVICE INITIATIVE

As part of a commitment to support educational awareness and promote better learning, Shelby offers tours of the wastewater treatment plant to various interest groups. For a tour of the plant, contact the Wastewater Plant Supervisor at 704-484-6850.

### FATS, OILS AND GREASE PROGRAM

Grease is a leading cause of sewer blockages and overflows in the sewer system and can lead to sewer back-ups into homes. The City urges residents to help our fight against grease:

- Never pour grease down the drain.
- Scrape grease and food scraps into the trash.
- Use sink strainers to prevent food scraps from going down the drain.

The Fats, Oil and Grease (FOG) Program seeks to reduce these occurrences by education to the public on how to prevent grease from entering the sewer system.

Special emphasis has been placed on food service establishments, but we all need to do our part to keep grease out of the sewer system. For more information on our program, contact the Pretreatment Coordinator at 704-484-6850.

Brochure Number: WWT1003-000



### INFRASTRUCTURE IMPROVEMENTS

#### Sewer Collections System

- **Manhole Replacements** – 7 manholes
- **Sewer Replacement & Repairs**
  - ◆ Blanton Street (570 LF)
  - ◆ Royster Street (71 LF)
  - ◆ Robinwood Drive (175 LF)
  - ◆ Warren Street (120 LF)
- **Sewer Extensions**
  - ◆ South Ridge (1,112 LF & 6 Manholes)
  - ◆ Lake George Drive (130 LF & 1 Manhole)
  - ◆ Palisades (3,460 LF & 26 Manholes)
  - ◆ Pinnacle Estates (3,748 LF & 24 Manholes)
  - ◆ Randolph Industrial Park (Gravity sewer, force main, & lift station - *project ongoing*)
- **Sewer Point Repairs** – Various point repairs identified by assessments or by staff.

#### Wastewater Treatment Plant


- Digital scales
- SCADA server upgrades
- Primary Clarifier Pump Replacement


#### COPIES OF THIS REPORT ARE AVAILABLE AT:

- City Hall: 300 South Washington Street
- Utilities Operations Center: 824 West Grover Street
- First Broad River Wastewater Treatment Plant: 1940 South Lafayette Street
- On the City's website: [www.cityofshelby.com](http://www.cityofshelby.com)

For more detailed information, contact the Water Resources Operations Manager, Brian Wilson at 704-484-6840 or [brian.wilson@cityofshelby.com](mailto:brian.wilson@cityofshelby.com).

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 or customers of the named system and that those users have been notified of its availability.

  
Steve Smith  
Operator in Responsible Charge

  
Adam Howell  
Field Operations Crew Supervisor/  
Operator in Responsible Charge



## ANNUAL SYSTEM PERFORMANCE REPORT 2022



#### Facility Information:

First Broad River Wastewater Treatment Plant  
1940 South Lafayette Street  
Shelby, North Carolina 28152

#### Permits:

Collection System: WQCS00037  
Wastewater Treatment: NC0024538  
Laboratory Certification: 238  
WWTP Stormwater Permit: NCG110040  
Class B Land Application: WQ0042031

City of Shelby Utilities  
824 West Grover Street  
Shelby, North Carolina 28150

## SYSTEM OVERVIEW

The City of Shelby wastewater collection and treatment system serves a customer base of 8,497 residential, commercial, and industrial users. During last year, the First Broad River Wastewater Treatment Plant (WWTP) collected and treated an average of 3.11 million gallons per day (MGD); included in this flow is wastewater from Kingstown and Fallston.

The sewer collection system consists of gravity sewer lines, lift stations, and force mains that convey wastewater to the First Broad River WWTP. The City owns and maintains 219.8 miles of gravity sewer and force main lines with twenty (20) lift stations. The City of Shelby also maintains the sewer collection systems for the Town of Fallston and the Town of Kingstown.



Aerial View of the First Broad River WWTP

## WHAT IS WASTEWATER?

Wastewater is sewage from your home's sinks, toilets, bathtubs, and washing machines. People also create wastewater at work. Offices, businesses and manufacturers create not only domestic wastewater, but also can create wastewater combined with the discharge associated with manufacturing processes or services.

The City of Shelby's collection system and lift stations direct the flow of the wastewater to the First Broad River WWTP for treatment. The First Broad River WWTP is located on South Lafayette Street.

## HOW DO WE TREAT WASTEWATER?

Wastewater treatment plants clean our wastewater and prevent pollution from getting into the environment. When wastewater enters our 6 MGD facility, bar screens catch and remove trash and large objects. Grit chambers then remove heavy particles like gravel, sand, seeds, and coffee grounds. The wastewater then flows through large settling tanks called clarifiers where heavy solids settle to the bottom and are removed. After the primary clarifiers, the liquid portion flows into the aeration basin where microorganisms breakdown the pollutants.

The wastewater then flows into final clarifiers where the microorganisms settle out and are returned to the basins. The flow is disinfected before the treated water is returned to the First Broad River.

The solids, which have been removed from the process, are pumped to anaerobic digesters where they are held, mixed and are heated for treatment. Once treatment requirements are met, the solids are stored until they can be dewatered through belt pressing operations. The de-watered cake solids are stored and eventually land applied as a Class B biosolids (fertilizer) on permitted farm land.

## COLLECTION SYSTEM MAINTENANCE

The Field Operations Division maintains collection system pipes and lines in order to prevent sanitary sewer overflows (SSOs) and keep wastewater flowing through the collection system to the treatment plant for treatment. During this report year, 21.83 miles of sewer lines (10.0%) were cleaned by rodding/jetting/bucket cleaning, 16.49 miles of sewer lines (7.5%) were videoed to inspect sewer lines for problems. During the year, Field Operations also conducted inspections of 156 exposed aerial crossings and also performed maintenance of sewer right-of-ways. Field Operations is responsible for installation of sewer connections and also perform repairs to problematic connections, lines and manholes. Smoke testing is also performed to determine sources of inflow and infiltration.

Plant Maintenance conducts inspections of all lift stations and performs both preventative and corrective maintenance on the stations and the force mains. The City's lift

stations are equipped with alarm systems and are served with back-up generation (either permanent or portable capabilities).

**Dumping waste into the City's manholes without permission is illegal. Residents can report suspicious activity, sewer overflows and other sewer issues any time by dialing (704) 484-6866.**

## COMPLIANCE SUMMARY

The City of Shelby's First Broad WWTP has permit limits and monitoring requirements regulated by the North Carolina Department of Environmental Quality (NCDEQ). During the year thousands of samples are collected and analyzed to document compliance and to monitor plant operations.

## WASTEWATER TREATMENT PLANT COMPLIANCE

No violations during 2022

NCDEQ requires all wastewater collection and treatment systems to annually report to its customers all sanitary sewer overflows, violations of state-issued permit limits and reporting requirements. The following overflows and violations occurred from January 2022 through December 2022.

## SANITARY SEWER OVERFLOWS

### Spills Greater Than 1,000 Gallons Reaching Surface Water

<u>Date</u>	<u>Address</u>	<u>Gallons</u>	<u>Cause</u>
11/24/22	1158 Wyke Rd	12,300	R/D

TR—Torrential Rain \* R/D—Roots/Debris \*  
PF—Pipe Failure