



Carolina Water Service
of North Carolina™

**Wastewater Treatment and Collection
Performance Annual Reports**

Bradfield Farms

NPDES: NC0064734
Collection System: WQCS00253

January 1, 2019 - December 31, 2019

P.O. Box 240908
Charlotte, NC 28224

Phone: 800-525-7990
<https://www.myutility.us/carolinawaterservicenc>

I. General Information

Service Area:

Bradfield Farms, Larkhaven, Peach Orchard Estates

Applicable Permits:

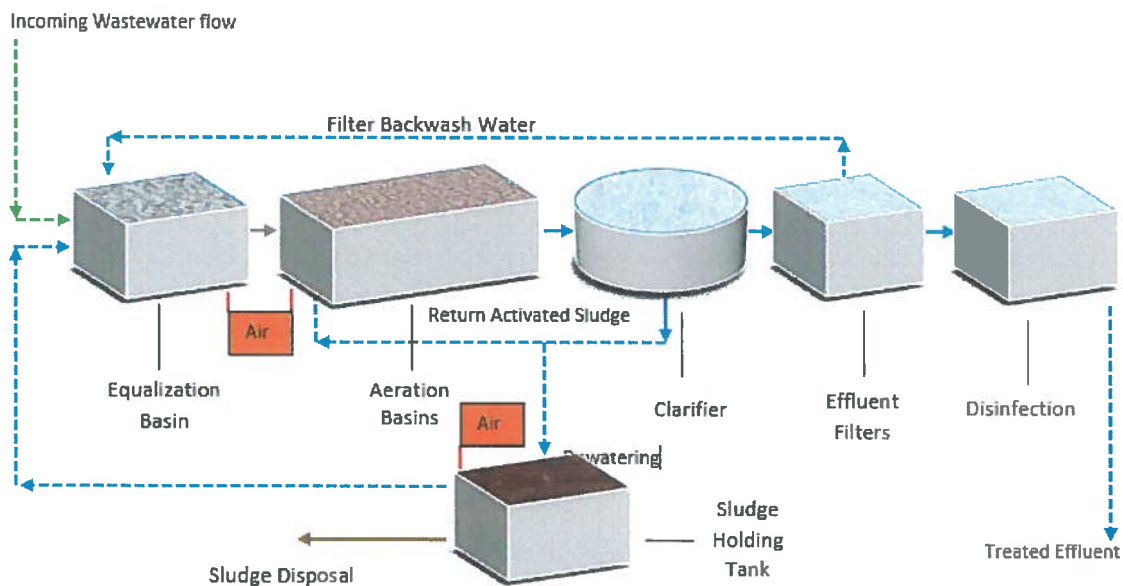
Type	NPDES Permit Number	Area Manager	Phone
Wastewater Treatment Facility	NC0064734	Mark Haver	800-525-7990
Collection System	WQCS00253	Mark Haver	800-525-7990

Description of Collection and Treatment Systems:

The operation and maintenance of a wastewater collection system consisting of, at the time of permit issuance, approximately 10.18 miles of gravity sewer, approximately 0.2 miles of force main, 3 duplex pump stations, and all associated piping, valves, and appurtenances.

The operation of a 0.46 MGD wastewater treatment facility consisting of: an influent lift station, bar screen and flow splitter box; two parallel 0.23 MGD plants consisting of: aerated equalization basin, aeration basins, clarifiers, aerobic sludge digester, cloth filter membrane filters, UV disinfection, and flow meter. New treatment upgrades include cloth filters, static screens, screenings auger and ultraviolet (UV) disinfection system.

Treatment Process Flow Chart



1. Equalization Basin — Removes debris which could damage plant equipment.
2. Aeration Basin — Air is circulated and bacteria removes dissolved solids, pollutants, phosphorus and nitrates.
3. Clarifier — Solids are separated from the liquid and piped back to the aeration basins via the return activated sludge piping.
4. Effluent Filters — Liquid is filtered to remove any remaining small particles which are piped to Equalization tank.
5. Disinfection — Effluent is disinfected by either Ultra Violet light or chlorine to Remove organisms.
6. Solids Handling — Treats the solids removed from the wastewater to allow safe and economical disposal.

Summary of Collection System Performance.

During 2019, we collected and treated over 105 million gallons of wastewater. There were also no SSO's for 2019

Key Performance:

- 1500 feet of sewer pipe were cleaned in 2019.
- There are 3 duplex Lift Stations serving the Bradfield Farms Subdivision. Each Lift Station is checked two times a week with maintenance conducted as needed as well as emergency generator testing, wet well cleanings, and emergency/routine repairs conducted periodically.
- All duplex Lift Stations are continuously monitored using a telemetry system that will notify our staff of any issues 24/7.
- Annually, each Lift Station is inspected using our 56 Point safety checklist.
- As part of our Asset Management Program, an Annual Maintenance Checklist is conducted to determine that equipment is performing at peak efficiencies.
- Our staff throughout the year manually conducts manhole inspections and documents deterioration (if any) due to corrosive atmospheric conditions.
- We have instituted an infiltration and inflow (I&I) program. The purpose of the I&I program is to keep unwanted storm water from entering the collection system. Infiltration and inflow is a clear indicator that there could be broken pipes, uncovered sewer laterals, or someone illegally connected to the collection system.
- As a proactive measure, we educate our customers of our concerns of Fats, Oil, and Grease. Your help in what is put down the drain greatly prevents clogs due to grease buildups and improves our overall collection system. These grease buildups can result in SSO's.
- Our staff is continually monitoring and clearing rights of way (ROW's). These ROW's normally are in low lying creeks and wooded areas. ROW's need to be kept cleared to ensure easy access during emergency situations.

Summary of Wastewater Facility Performance:

It is our goal and standard at Carolina Water Service of North Carolina to meet 100% of our NPDES permit discharge limits. We evaluate our treatment processes daily to ensure that goal is obtained. Our permit requires us to continually monitor the effluent to determine if the treatment processes are working effectively. This monitoring consists of sampling at various point in the treatment process. These samples include: Flow measurement of how much wastewater enters and then is discharged from our plant, Biological Oxygen Demand (BOD), Fecal Coliform, Total Ammonia-Nitrogen, Total Nitrogen, pH, Total Phosphorus, Total Suspended Solids, Dissolved Oxygen, and Temperature.

A minimum of 789 compliance samples are conducted on an annual basis. We were issued one (1) Notice of Violation in July for violating the Fecal Coliform daily limit.

Our staff is committed to a standard of excellence by ensuring a safe and clean facility while maintaining regulatory compliance. No known adverse effects have been noted on the environment or receiving stream.

II. 2019 Violation Summary

January	No violations/deficiencies.
February	No violations/deficiencies.
March	No violations/deficiencies.
April	No violations/deficiencies.
May	No violations/deficiencies.
June	No violations/deficiencies.
July	Exceeded the daily Fecal Coliform limit on July 23, 2019.
August	No violations/deficiencies.
September	No violations/deficiencies.
October	No violations/deficiencies.
November	No violations/deficiencies.
December	No violations/deficiencies.

III. Notification

Customers will be notified of the availability of this report with a message on their bills and copies will be provided upon request.

IV. Certification

I hereby certify that the information contained in this report is accurate and complete to the best of my knowledge.

Signature:



Date:

2-20-2020

Name: J. Bryce Mendenhall

Title: VP of Operations NC/TN