City of Clinton: Wastewater Systems
Annual Performance Report

January 2024 through December 2024

I. General Information

Facility/System Name(s):	City of Clinton Collection System and Norman H. Larkins Wastewater Treatment Plant
Responsible Entity:	Michael Christopher Medlin, Public Works Director / ORC Collection System
Person(s) in Charge:	Michael Christopher Medlin, Public Works and Utilities Director Taylor Ray Johnson, Distribution and Collection System Supervisor / Back-Up ORC Collection System Blake Raynor, Wastewater Treatment Manager, ORC Wastewater Treatment Plant
Applicable Permit(s):	Collection System Permit WQCS00079 NPDES Discharge Permit NC0020117

Clinton Public Works and Utilities Department
200 W. John St.
Clinton, NC 28328
Telephone - (910) 299-4905
Facsimile - (910) 592-3825

Norman H. Larkins Wastewater Treatment Plant
123 Mill Branch Road
Clinton, NC 28328
Telephone - (910) 299-4908
Facsimile - (910) 590-2387

II. Collection System and Treatment Process Description

A. Collection System

The City of Clinton maintains approximately 91 miles of wastewater collection lines with 15 major lift stations, 61 simplex lift stations, 1623 manholes, and approximately 3,656 connections. The Collection System is staffed by ten (10) full time personnel, led by the City's state certified Operator in Responsible Charge and the Utilities Supervisor / Back-Up Operator in Responsible Charge. The Collection System staff is responsible for the routine required inspection, maintenance, and cleaning, as well as repair and upgrading of the collection lines, manholes, connections, and simplex lift stations.

The Collection System is permitted by the state and must adhere to state permit requirements. The system's use is regulated by the City's Sewer Use Ordinance, Chapter 22, Article V. Sewers, of the City of Clinton Code of Ordinances. The ordinance includes provisions for domestic and industrial users, as well as restrictions and requirements for treating wastewater prior to disposal in the City's Collection System with devices such as grease traps, or sand filters.

B. Wastewater Treatment Plant

The Collection System discharges to the Norman H. Larkins Wastewater Treatment Plant. The treatment plant is staffed by eleven (11) full-time employees. The staff hold multiple state certifications in Wastewater Operations, Maintenance Technology, Collection Systems, and Land Application of Biosolids. The plant is operated and maintained by the Operations staff, including the Chief Wastewater Operator and the Operator in Responsible Charge / Wastewater Treatment Manager, as well as the Environmental Programs Manager / Laboratory Supervisor, an Environmental Programs Assistant / Backup Laboratory Analyst, and a full time Laboratory Analyst. The Operations staff are also responsible for the operation and maintenance of the City's fifteen (15) major duplex lift stations.

The plant is permitted by the state to treat five (5) million gallons of wastewater per day by tertiary biological methods. Following mechanical separation of solids and biological treatment, the treated wastewater is filtered, disinfected, and received by the Williams Old Mill Branch which enters the Great Coharie Creek of the Cape Fear River Basin. Wasted biosolids are aerobically digested and recycled through a contractual land application program which is managed per North Carolina and EPA regulations, or landfilled. The City utilizes a combination of the on-site Wastewater Laboratory and a contract laboratory to monitor the incoming wastewater (influent), in-process water (intermediate) and biosolids (activated sludge), and outgoing water (effluent) routinely to ensure the treatment processes are successful and that the water adheres to state and federal standards. Additionally, the City is a member of the Lower Cape Fear River Program, and up and downstream monitoring is conducted via this program on behalf of the City.

III. Pretreatment

The Environmental Programs Manager and Environmental Programs Assistant administer a state approved Pretreatment Program, which is required for any Publicly Owned Treatment Works (POTW) to accept wastewater from any significant industrial user (SIU). The goals of the Pretreatment Program are to protect the waters of the state by preventing pollutant pass-through of the treatment facility, prevent interference with the wastewater treatment process, promote beneficial use of treated biosolids, and to protect the worker and the environmental and public health. These goals are accomplished through a program of cooperation between the POTW and the industrial users in which the industries maintain wastewater pretreatment operations on site to reduce the amount of pollution entering the City's collection system and the City's wastewater treatment facility. The POTW helps the industries maintain a state of compliance through the issuance of Industrial User Permits, enforcement response, regular communication, inspections, and sampling.

IV. Certifications

A. Collection System

For the calendar year of 2024, all current City of Clinton Collection System employees maintained existing certifications.

B. Wastewater Treatment

For the calendar year of 2024, current City of Clinton Wastewater Treatment Plant employees maintained existing certifications.

C. Laboratory

For the calendar year of 2024, the City of Clinton Wastewater Treatment Plant Laboratory maintained certification for eight pollutant test methods and complied with the Method Update Rule 2024.

V. System Maintenance and Improvements

A. Collection System

During the 2024 calendar year, Collection System personnel performed routine cleaning of 54,702 ft. of collection lines. In addition to routine maintenance the following repairs and/or upgrades were made to the system in 2024:

Collection System Repairs/Upgrades in 2024
Manholes: Ten new manholes installed
Manhole Covers and Rings: Thirty-two manhole rings and covers replaced
New Sewer Main Installed: 0.5 miles of new sewer main installed
Connections: Thirty new connections added with new taps and cleanouts
Camera Assessment: 7,900 feet of sewer lines performed
Duplex (major) Lift Stations Annual Cleaning: All lift stations cleaned and jet-vacuumed
Pugh Road Lift Station, Ellis Street Lift Station and County Complex Lift Station: Replaced the dialup alarm system with a web-accessible supervisory control and data acquisition system (SCADA)
Fontana Street Lift Station: Repair/rehab one of two pumps
Deer Run Lift Station: Repair/rehab one of two pumps

B. Wastewater Treatment Plant

During the calendar year of 2024, in addition to routine maintenance of the plant and effluent outfall, the following major repairs, replacements or upgrades were made to the WWTP:

Wastewater Treatment Plant Repairs/Upgrades in 2024
Aerated Grit Chamber: Replaced motor at grit chamber
Primary Clarifier A: Repair of Primary Sludge Pump; Replaced flights
Influent: Continued construction of new influent pump station for one incoming line, estimated completion 02/2025
Intermediate: Pump station and pipes resurfaced
Jet Aeration Basin: Annual preventative maintenance on all JAB Blowers; Repair/rehab of two pumps; Replacement of one pump impeller; Replaced multiple butterfly valves
Tertiary Filters: Repaired/rehabbed surface wash pump; Replaced anthracite in all filters; Replaced filter nozzles for the sweeper arms
Sludge Digesters: Repaired/rebuilt sludge recirculation pump
Chlorine/Sulfur Dioxide System: Annual preventative maintenance performed; Replaced the hoist for the chlorine

VI. Performance: Summary of Performance for Reporting Period

A. Collection System Performance

- The City received a renewal of its state issued Collection Systems Permit (WQCS00079) effective June 24, 2024.
- The City of Clinton is routinely working to maintain and improve the efficiency of our Collection System by increasing routine maintenance of lines and lift stations and participating in an ongoing education program in which citizens are instructed in the importance of proper disposal of household waste, including fats, oils, and grease. The City is encouraging its citizens and system users to recycle used cooking oil, avoid the use of 'flushable' wipes, and limit garbage disposal usage. Water/sewer bill inserts were mailed to system users in April and December of 2024. 'Can the Grease' collection cans are available to citizens upon request. Additional information is available on the City's website at www.cityofclintonnc.com.
- **Sanitary Sewer Overflows (SSOs):** Sanitary sewer overflows may result from a variety of causes: inflow and infiltration due to high water levels; blocked pipes from wipes, rags, roots, and grease accumulation; broken lines from corrosion or construction activity; power or equipment failures at pump and lift stations within the system. Spills/overflows are required to be reported to NCDEQ if the volume is equal to or greater than 1000 gallons on land, or any volume to surface water. The City of Clinton Collection System suffered one reportable SSOs for the calendar year of 2024. Information regarding this SSO is listed below:

September 27, 2024
The City of Clinton Collection System had a discharge of untreated wastewater on September 27, 2024, of an estimated 9,800 gallons from a manhole overflow located at 403 East Johnson Street, during Hurricane Helene. The North Carolina Department of Environmental Quality, Division of Water Resources was notified of the event on the same day and the required 5-day reporting was completed.

B. Wastewater Treatment Plant Performance: Wastewater Treatment Plant Effluent Analyses

The following table summarizes plant performance for the calendar year 2024 in comparison with National Pollutant Discharge Elimination System (NPDES) permitted limits:

Parameter	Limit Interval	Spring / Summer (April 1 to October 31)		Fall / Winter (Jan 1 to March 31 and November 1 to December 31)	
		NPDES Limits	Measured Values; Range or Mean	NPDES Limits	Measured Values; Range or Mean
Flow	Mean Monthly	5.0 MGD	**2.3 to 4.2 MGD**	5.0 MGD	**2.4 to 2.9 MGD**
pH	Daily	6.0 to 9.0 S.U.	**6.7 to 7.7 S.U.**	6.0 to 9.0 S.U.	**6.9 to 7.8 S.U.**
Residual Chlorine	Daily Maximum	17/50 µg/L	**< 15 to 21.3 µg/L**	17/50 µg/L	**< 15 µg/L**
BOD_5	Mean Monthly	5.0 mg/L	**<2.0 to 5.6 mg/L**	10.0 mg/L	**<2 to 3.3 mg/L**
BOD_5	Mean Weekly	7.5 mg/L	**<2.0 to 9.2 mg/L**	15.0 mg/L	**<2 to 5.0 mg/L**
Ammonia Nitrogen	Mean Monthly	1.0 mg/L	**< 1.0 mg/L**	2.0 mg/L	**< 1.0 to 2.4 mg/L**
Ammonia Nitrogen	Mean Weekly	3.0 mg/L	**<1.0 to 2.9 mg/L**	6.0 mg/L	**<1.0 mg/L**
Total Suspended Residue	Mean Monthly	30.0 mg/L	**<2.5 to 2.7 mg/L**	30.0 mg/L	**<2.5 to 3.0 mg/L**
Total Suspended Residue	Mean Weekly	45.0 mg/L	**<2.5 to 6.4 mg/L**	45 mg/L	**<2.5 to 4.5 mg/L**
Fecal Coliform	Geometric Mean Monthly	200 mpn/100 mL	**6 to 71 mpn/100mL**	200 mpn/100 mL	**10 to 37 mpn/100mL**
Fecal Coliform	Geometric Mean Weekly	400 mpn/100 mL	**3 to 152 mpn/100mL**	400 mpn/100 mL	**3 to 78 mpn/100mL**
Dissolved Oxygen	Daily Minimum	6.0 mg/L min.	**6.0 to 9.3 mg/L**	6.0 mg/L min.	**6.0 to 10.4 mg/L**
Temperature	Daily	Monitor	**20 to 33 °C**	Monitor	**16 to 26 °C**
Conductivity	Daily	Monitor	**405 to 1066 µmhos/cm**	Monitor	**727 to 1103 µmhos/cm**
Total Hardness	Quarterly	Monitor	**120 mg/L**	Monitor	**100 to 140 mg/L**
Total Nitrogen	Monthly	Monitor	**16.6 to 29.7 mg/L**	Monitor	**21.2 to 321 mg/L**
Total Phosphorus	Monthly	Monitor	**4.8 to 8.7 mg/L**	Monitor	**4.6 to 8.4 mg/L**
Total Copper	Quarterly	Monitor	**0.021 to 0.026 mg/L**	Monitor	**0.013 to 0.017 mg/L**
Aluminum	Quarterly	Monitor	**<0.01 to 0.012 mg/L**	Monitor	**0.02 mg/L**
Total Silver	Quarterly	Monitor	**< 0.001 mg/L**	Monitor	**<0.001 mg/L**
Total Chloride	Monthly	Monitor	**75 to 521 mg/L**	Monitor	**77 to 512 mg/L**
Total Fluoride	Monthly	1800 µg/L (until Sept 1, 2024)	**200 to 300 µg/L**	1800 µg/L	**300 µg/L**

- During the calendar year of 2024, the City of Clinton Norman H. Larkins WWTP treated approximately 1.05 billion gallons of wastewater.
- The City received a renewal of its state issued NPDES Wastewater Discharge Permit (NC0020117) effective September 1, 2024.

Norman H. Larkins Wastewater Treatment Plant Non-Compliance Events

The Norman H. Larkins Wastewater Treatment Plant had four non-compliance events with NPDES permit parameters during the 2024 reporting period:

April, 2024
The Norman H. Larkins Water Pollution Control Facility exceeded permitted parameter limits for Biochemical Oxygen Demand (BOD) for the weeks ending 4/13/24 and 4/20/24 as well as the monthly average of BOD for April2024. Staff believe this to be the result of a large slug of BOD from an industrial user. The facility returned to compliance in May of 2024. This was reported to the North Carolina Department of Environmental Quality (NCDEQ) as required.
September, 2024
The Ceriodaphnia toxicity test run for treated wastewater in September of 2024 did not pass. Sampling and repeat testing were completed in October and November of 2024 with passing results. This was reported to the North Carolina Department of Environmental Quality (NCDEQ) as required.

- The Wastewater Treatment Plant did not suffer any spills in 2024.

V. Notification

This report has been published to the City of Clinton website's Document Center link at: Document Center • Clinton, NC • CivicEngage or https://www.cityofclintonnc.com/documentcenter.

Paper copies may be obtained by calling the City of Clinton Public Works Department Environmental Programs Manager, Monday-Friday, 7:00 AM to 3:30 PM at (910) 299-4912.

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

Michael Christopher Medlin — Date

Public Works and Utilities Director / ORC Collection System

Michael C. Medlin 2/26/25

Taylor Ray Johnson — Date

Distribution and Collection System Supervisor

T. Johnson 2-26-25

Blake Raynor — Date

Wastewater Treatment Manager / ORC Wastewater Treatment Plant

B. Raynor 2-26-25