

City of Reidsville

1100 Vance Street, Reidsville, North Carolina 27320

PHONE (336) 349-1077

FAX (336) 634-1738



Public Works Department

February 24, 2023

System Performance Annual Report
North Carolina Division of Water Quality
1617 Mail Service Center
Raleigh, NC 27699-1617

Re: City of Reidsville
Consolidated Annual Performance Reports
Rockingham County

Dear Sirs:

Enclosed you will find the Consolidated Annual Performance Report for the year of 2022 for the City of Reidsville. The systems covered by this report include the:

Wastewater Treatment Plant	Permit No.: NC0024881
Collection System	Permit No.: WQCS00049
Water Treatment Plant	Permit No.: NC0046345

We believe the report to be complete and accurate. The customers will be notified of the availability of the report through the local newspaper and posted on the City's website at www.Reidsvillenc.gov.

If there are any questions, please contact me at (336) 349-1070.

Sincerely;

A handwritten signature in black ink that reads "Joshua Beck".

Joshua Beck, PE
City of Reidsville
Public Works Director

2022 Annual Performance Report *for the* City of Reidsville Collection System

I. General Information

Facility / System Name:	City of Reidsville Wastewater Collection System WQCS 00049
Responsible Entity:	City of Reidsville
Contact Information:	Lindsey Tuttle Public Services Superintendent 1100 Vance Street Reidsville, North Carolina 27320 (336) 349-1070

I. Description of Collection System

The City of Reidsville's wastewater collection system currently consists of 93.64 miles of gravity lines with approximately 6,500 service connections. In addition there are 18 pump stations with approximately 15 miles of force main lines.

The Sewer Collection division of Public Works is responsible for maintenance of the gravity lines and force mains in the system. That division consists of 4 full time employees who routinely flush the mains to prevent blockages and also handle maintenance needs on service lines within public right of way provided a cleanout at the property line is available. As part of their maintenance activities they mow outfall easements and maintain access to these areas. Line repairs and replacement along with installation of new lines are also handled by this division.

The Lift stations are maintained by the Public Services Utility Lines Department. Two employees are dedicated to the lift stations full time. Their responsibilities are to insure proper operation of the lift stations by testing backup systems and performing preventative maintenance on the pumps and electronic controls.

II. Compliance Performance

The wastewater collection system had no sanitary sewer overflows in 2022 and was deemed compliant after inspection.

III. 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 and customers of the City of Reidsville System and those users have been notified of its availability.



Lindsey Tuttle, ORC
City of Reidsville Public Services
1100 Vance Street
Reidsville, NC 27320

February 23, 2023

Date

2022 ANNUAL PERFORMANCE REPORT FOR THE CITY OF REIDSVILLE WASTEWATER TREATMENT PLANT

I. GENERAL INFORMATION

Facility/System Name: City of Reidsville Wastewater Treatment Plant

Responsible Entity: City of Reidsville, NC

Plant Location: 407 Broad Street Reidsville, NC 27320

Plant Class: IV

Contact Information: Ralph H. Potter, Jr.
Wastewater Interim Superintendent
407 Broad Street
Reidsville, North Carolina 27320
(336) 347-2310

II. DESCRIPTION OF TREATMENT PROCESS

The City of Reidsville, North Carolina operates a 7.5 million gallon per day (MGD) design capacity wastewater treatment plant (WWTP). The facility treats a combination of industrial and domestic wastewaters with the industrial fraction representing approximately 46% of the influent wastewater flow. In 2022, the facility treated a total of 837.112 million gallons of wastewater with an average of 2.293 million gallons per day. The treatment process includes preliminary treatment, extended aeration activated sludge, and secondary clarification followed by tertiary filtration. The treated effluent is chlorinated/dechlorinated and discharged into the Haw River which is a tributary of the Cape Fear River Basin. The waste sludge is thickened by a rotary drum thickener before stabilization in four aerobic digesters. The stabilized sludge is then land applied by a certified contractor onto permitted agricultural lands.

III. COMPLIANCE PERFORMANCE

The North Carolina Department of Environmental Quality (NCDEQ) regulates the City of Reidsville's effluent discharge under the National Pollutant Discharge Elimination System (NPDES). The NCDEQ issued to the City an NPDES Permit, which includes water pollutant limits, with monitoring requirements. The NPDES Permit requires the City to test the treated water for more than 27 different parameters. The monitoring frequency for these parameters is set at various intervals, such as *continuous*, *daily*, *weekly*, *monthly*, *quarterly*, and *annually*.

During the year 2022, the City conducted over 2,000 tests of the treated water before it was discharged into the Haw River. In addition to the required testing, the City conducted over 4,000 in-house tests to ensure proper operation of the wastewater treatment plant. The following is a summary of the testing for some parameters, which are assigned Water Quality standards by the NPDES Permit. Please note that the summary does not include those parameters that incorporate a monitoring requirement only, nor does it include daily process control testing.

Parameter	# Tests Required	# Conducted
Flow	Continuous	Continuous
Carbonaceous Biochemical Oxygen Demand (CBOD) ¹	249	249
Total Suspended Solids (TSS) ²	104	105
Ammonia ²	104	105
Fecal Coliform ²	104	105
Chlorine ¹	249	249
Total Phosphorus	52	52
Total Nitrogen	52	52
Cadmium ³	4	4
Mercury ⁵	4	4
Copper ⁵	4	4
Zinc ⁵	4	4
Selenium ³	4	4
Fluoride ⁵	4	4
Conductivity ¹	249	249
Silver ³	4	4
Toxicity ⁵	6	6
Cyanide ³	4	4

¹ Testing is not required on weekends and holidays.

² The frequency of testing for TSS, Fecal Coliform and Ammonia-Nitrogen is 2 times per week under the current discharge permit.

³ Cadmium, silver, cyanide and selenium are monitored only as part of the pretreatment Long Term Monitoring Plan (LTMP).

⁴ The frequency for testing copper, zinc, fluoride, and mercury is quarterly. The copper, zinc, and mercury testing coincides with quarterly toxicity testing.

⁵ Quarterly toxicity testing was increased by two additional tests (up to 6 in total) due to toxicity detected in April (and May).

IV. SUMMARY OF PERMIT VIOLATIONS

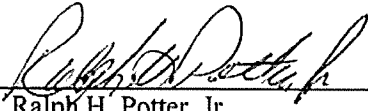
During the year 2022, the Division of Water Resources (DWR) of the North Carolina Department of Environmental Quality (NCDEQ) issued eight Notices of Violation (NOVs) to the City of Reidsville's Wastewater Treatment Plant. These included Limit Exceedance Violations for the discharge of ammonia and Carbonaceous Biochemical Oxygen Demand (CBOD), and also for effluent toxicity.

- February: Exceeded the limit for fecal coliform weekly geometric mean. Exceeded weekly average for CBOD. Exceeded weekly average for ammonia (for two weeks). Exceeded monthly average for CBOD. Exceeded monthly average for ammonia.
- March: Exceeded weekly average for CBOD. Exceeded weekly average for ammonia. Exceeded monthly average for CBOD. Exceeded monthly average for ammonia.
- April: Violation of toxicity limitation.
- April: Exceeded weekly average for CBOD (for four weeks). Exceeded weekly average for ammonia (for 3 weeks). Exceeded monthly average for CBOD. Exceeded monthly average for ammonia.
- May: Violation of toxicity limitation.
- May: Exceeded weekly average for CBOD (for three weeks). Exceeded monthly average for CBOD.
- June: Exceeded weekly average for CBOD (for four weeks). Exceeded monthly average for CBOD.
- July: Exceeded weekly average for CBOD (for three weeks). Exceeded monthly average for CBOD.

In August and September 2022, the City of Reidsville Wastewater Treatment Plant again exceeded weekly and monthly limits for CBOD. However, no additional Notices of Violation were received for these two months. In September, the Wastewater Treatment Plant's performance appeared to be improving. The plant was compliant for all parameters in October, November, and December of 2022.

V. 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 customers of the City of Reidsville System and those customers have been notified of its availability.



Ralph H. Potter, Jr.
Plant Interim Superintendent
City of Reidsville WWTP

2/22/2023
Date

2022 Annual Performance Report *for the* City of Reidsville Water Treatment Facility

I. General Information

Facility / System Name:	City of Reidsville Water Treatment Plant
Responsible Entity:	City of Reidsville
Contact Information:	W. Blake Slaughter Water Treatment Plant Superintendent/Drinking Water ORC 278 Reid Lake Rd Reidsville, North Carolina 27320 (336) 349-4001

II. Description of Treatment Process

The wastewater discharged by the Reidsville Water Plant is generated by the filter backwash operation. The filter backwash is settled in two lagoons and discharged through Pipe 002. The settled water is discharged from either one or both lagoons by use of telescopic valves located in each of the two lagoons. The wastewater travels through the valves and empties into a wet well where it is pumped out by one of two submersible pumps. The wastewater is dechlorinated by the addition of sodium bisulfite or calcium thiosulfate prior to discharging to Little Troublesome Creek. Sludge, which is settled from the wastewater, is pumped out of the lagoons by use of a floating dredge. While the slurry is being pumped through the dredge, polymer is injected in the line to the sludge slurry and the dewatered sludge is deposited in a sand drying bed adjacent to the lagoons. The sludge is allowed to dry to a denser cake and is periodically collected and disposed. Sludge is also removed from the lagoons via a licensed, certified professional third party. The sludge is pumped into tanker trucks and land applied utilizing farm land and a specialized permit authorized and approved by the state of North Carolina and the EPA.

III. Compliance Performance

The North Carolina Department of Environment and Natural Resources (NCDENR) regulates the City of Reidsville's effluent discharge under the National Pollutant Discharge Elimination System (NPDES). The NCDENR issued to the City a NPDES Permit, which includes water quality limits, sampling and monitoring requirements. The NPDES Permit requires the City to test more than 6 different constituents in the treated water. The monitoring frequency for these constituents are set

at various intervals such as continuous, daily, weekly, monthly and quarterly. During the previous year, the City conducted 672 tests of the discharged treated water. Following is a summary of the testing for the parameters, which are assigned Water Quality standards by the NPDES Permit. Please note the summary does include parameters which incorporate permit monitoring requirements, and it does not include all process control testing. The wastewater ORC changed over from Scott Jewell to Boyd Hawley in September 2022. Water plant superintendent/drinking water ORC changed from Scott Jewell to W. Blake Slaughter in October 2022. The new superintendent is actively working to ensure sludge removal occurs more regularly and the wastewater lagoons are better maintained than they have been in the past.

IV. NPDES Permit

The current 4-year NPDES permit went in effect on May 1, 2022 and will expire on April 30, 2026. Application for the renewal of the NPDES permit was successfully submitted to the State on 10-23-2020.

Below the tests required and the conducted differ for two different reasons. We did not get an active permit issued until May 1, 2022 and were use following prior permit requirements and secondly, we had over a months' worth of days of no flows which make it impossible to sample.

Outfall 002

Constituent	# Tests Required	# Conducted
Flow	365	325
Total Suspended Solids	52	47
pH	52	47
Chlorine	52	47
Turbidity	24	28
Aluminum	4	4
Copper	12	9
Manganese	4	4
Fluoride	12	9
Zinc	12	2
Total Nitrogen	4	4
Total Phosphorus	4	4
Hardness	4	4
Ammonia Nitrogen	4	4
Toxicity	4	4
Upstream Hardness	4	3

Summary of Permit Violations

During the year of 2022 the City of Reidsville Water Plant received one Notice of Deficiency (NOD) for total suspended solids (TSS) as we had a reported value of 49 on July 11, 2022 and the value daily limit is 45. This was right before the City of Reidsville Water Plant had sludge removed from the lagoons and they were at their maximum. It should also be noted that during the fourth

quarter the City of Reidsville Water Plant failed its toxicity testing requirement, no violation has been received as of February 24, 2023. The City of Reidsville Water Plant also did receive a Notice of Notice of Violation (NOV) on March 24, 2022 for the prior year, October 1, 2021 for total suspended solids (TSS) as the reported value was 57 and the daily limit was 45.

W. Blake Slaughter

2-24-23

W. Blake Slaughter, Water Treatment Plant Superintendent/ Drinking Water ORC

Date