

**Martin County Regional Water and Sewer Authority  
WATER TREATMENT FACILITY**

**ANNUAL PERFORMANCE REPORT**

For the Calendar Year 2018

prepared: January 2019

2018 Annual Performance Report  
for the  
Martin County Regional Water and Sewer Authority (MCRWASA)  
Water Treatment Facility

General Information

Facility/System Name: Martin County Regional Water and Sewer Authority Water Treatment

Responsible Entity: MCRWASA

Person in Charge/Contact: David Bone  
MCRWASA Board Chairman  
PO BOX 668  
Williamston NC 27892  
(252) 789-4300

**Description of Treatment Process:**

Raw water is initially pumped from the Roanoke River to a raw water reservoir where sodium permanganate (NaMnO<sub>4</sub>) is added for pre-oxidation. The water is then sent to a low lift pump station where sodium permanganate (NaMnO<sub>4</sub>) can be added for pre-oxidation again if needed. Afterward, water is pumped to a chemical feed vault where the following chemicals are added: Powdered Activated Carbon for Total Organic Carbon (TOC) removal, Sodium Hydroxide for pH adjustment, and Alum for coagulation. The water flows to a Super Pulsator Clarifier for clarification, where polymer can be added for enhanced clarification. Prior to filtration, chemical injection points for Chlorine and Sodium Hydroxide are located for disinfection and pH/Alkalinity adjustment. The water is then filtered and flows to the chlorine contact tank for disinfection. A corrosion inhibitor is added before the water flows to a 300,000 gallon ground storage tank. The water is then pumped to a 400,000 gallon elevated storage tank, from where it enters the distribution system. The waste sludge generated from the super pulsator clarifiers or overflow is discharged to the sludge storage tank for gravity thickening and decanting operations. The wastewater generated from the filter backwash operation is discharged to the filter backwash storage tank for equalization, solids settling and decanting operations. The gravity thickened sludge from both the sludge storage tank and filter backwash storage tank is periodically disposed of by land application. The decanted water from the sludge holding tank and the filter backwash storage tank is de-chlorinated and discharged to the Unnamed Tributary to Sweetwater Creek in Roanoke River Basin.

The wastewater and solids (sludge) generated at the water treatment plant include: (1) waste sludge from the super pulsator clarifier, and (2) wastewater from filter backwash, filter to waste and sampling operations. The waste sludge generated from the super pulsator sludge blown downs and overflow is discharged to 529,300 gallon capacity sludge storage tank for gravity thickening and decanting operations. The wastewater generated from filter backwash, filter to waste, and sampling operations is discharged to 529,300 gallon capacity filter backwash storage tank for equalization, solids settling and decanting operations. The gravity thickened sludge from both the sludge storage and filter backwash storage tanks is periodically disposed of by land application, using a private contractor engaged in disposal of residuals by land application. The wastewater decanted from the sludge storage tank and the filter backwash storage tank is de-chlorinated and discharged to the Unnamed Tributary to Sweetwater Creek in Roanoke River Basin.

## Compliance Monitoring

The North Carolina Environmental Quality (NCEQ) regulates the Martin County Regional Water and Sewer Authority Water Treatment Plant effluent discharge under the National Pollutant Discharge Elimination System (NPDES). The NCEQ issued to the MCRWASA a NPDES Permit, which includes water quality limits and sampling and monitoring requirements. The November 1, 2017 NPDES Permit requires the MCRWASA to test 12 different constituents. The monitoring frequency for these constituents are set at various intervals such as continuous, daily, weekly, monthly, and quarterly. During the reporting period, MCRWASA conducted 138 tests of the treated water before it was discharged to the creek. The WTP achieved a compliance level of 100% with the NPDES Permit requirements. 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 not include parameters, which incorporates a monitoring requirement only, nor does it include daily process control testing.

Constituent	Number of Test Required	Number of Test Conducted*	Number of Test Not Conducted (No Discharge)
Flow	Continuous	Continuous	(1) Month (No Flow)
Total Suspended Solids (TSS)	52	52	0
pH	52	60	0
Chlorine	52	60	0
Turbidity	52	52	0
Toxicity	4	4	0
Aluminum	4	4	0
Total Copper	4	4	0
Total Hardness	4	4	0
Total Zinc	4	4	0
Ammonia Nitrogen	4	4	0
Total Nitrogen	4	4	0
Total Phosphorus	4	4	0

\*Testing is not required on holidays or during inclement weather.

## NPDES Permit Violations

There were no permit violations during 2018.

Certification

I have personally examined and am familiar with the information submitted in this document and attachments. Based upon my inquiry of those individuals immediately responsible for obtaining the information reported herein, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information.

Signed this 2<sup>nd</sup> day of January, 2019.

David Bone  
Chairman, MCRWASA



---

(Signature)