



*SYSTEM PERFORMANCE
ANNUAL REPORT FOR
CITY OF KINGS MOUNTAIN
PILOT CREEK WWTP
NC0020737
AND COLLECTION SYSTEM
WQCS0036*

JULY 01, 2017 - JUNE 30, 2018

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The *responsible parties* including contact numbers are
as follow:

TOWN MAYOR

Mr. Scott Neisler 704.734.4604

CITY MANAGNER

Mrs. Marilyn Sellers 704.734.4606

CITY COUNCIL

Mr. Mike Butler 704.734.0333

Mr. Rodney Gordon 704.734.0333

Mr. Tommy Hawkins 704.734.0333

Mr. Keith Miller 704.734.0333

Mr. Jay Rhodes 704.734.0333

Mr. David Allen 704.734.0333

WATER RESOURCE DIRECTOR

Mr. Ricky Duncan

704.734.4525

WATER RESOURCES SUPERINTENDENT

Mr. Don Spencer

704.477.2928

WWTP SUPERVISOR/ORC/PRETREATMENT COORDINATOR

Ms. Richelle Meek

704.739-7131

COLLECTION SYSTEM SUPERVISOR

Mr. Aaron Kondzielski

704-472-5868

FACILITY OPERATORS

(Contact Number 704.739.7131)

Ms. Kathy Moses (Chief Operator/Pretreatment)

Mr. Rickey Bailey (Back-Up Operator)

Mr. Lee Douglass (Back-Up Operator)

Mr. Jason Davis (Lab Analyst/Pretreatment)

Mr. Gary Beason (Operator)

COLLECTIONS OPERATORS

(704-734-4531)

Mr. Mark Estes (Operator)

Mr. Corbin Berryman (Utility Maintenance)

The City of Kings Mountain is pleased to present the Annual Wastewater Collection and Treatment System Report for fiscal year 2018. As a requirement of the City's Collection System Permit Number WQCS00036, issued by the State of North Carolina, the City of Kings Mountain is required to report the System Performance to all of its customers on an annual basis. This report provides information about the performance of the City of Kings Mountain Pilot Creek Wastewater Treatment Facility, in addition to the performance of the City's wastewater collection system for the period of July 01, 2017 through June 30, 2018. All of the information contained in this report is accurate and complete.

Wastewater systems have evolved considerably from early systems in the 1800's. Although the purpose has always been to collect human waste and transport it away from urban areas to protect human health, early systems merely transported the wastewater to a nearby stream, where it was discharged. Today, wastewater systems are not only expected to protect human health, but to protect the environment as well.

In 1972, the U.S. Congress passed landmark legislation entitled the "Clean Water Act" which insured environmental protection as a performance benchmark for all wastewater systems. Long before the passage of this act, and every day since, the protection of public health and the environment have been the operating standard of the City of Kings Mountain's wastewater system.

To learn more about the City's wastewater collection system or the wastewater treatment plant, please contact the City of Kings Mountain, Water Resource Department or visit the City's web site at www.cityofkm.com.

WASTEWATER COLLECTION

The City of Kings Mountain owns and operates its Collection System and Wastewater Treatment Facility.

The City of Kings Mountain serves a population of approximately 14,085 people and 5,210 Customers which consist of (average of 4,144 Residential and 82 Commercial).

The Collection System operates under the permit #WQCS00036 issued by the State of North Carolina.

On average the City collects 1,785,400 gallons of wastewater (55% Domestic/Commercial and 45% Industrial Process) each day and transports it through 113 miles of gravity collection lines, 37 miles of force mains and 35 pumping stations, and approximately 2,235 covered manholes, to the Pilot Creek Wastewater Treatment Plant.

The City's goal is to have zero spills and overflows from its Collection System. Unfortunately, because pumping stations are mechanical devices and sewer collection systems are subject to clogs from grease, roots, construction debris and litter, all systems are subject to spills and overflows.

WASTEWATER COLLECTION

In order to help prevent spills and overflows, the City uses television equipment to visibly inspect lines and routinely flushes lines to help prevent future problems. Since June 2017, the collection department has cleaned 209,883 feet of sewer lines and 1,574 feet of lines have been videoed. In addition, a Sewer Overflow Response Plan has been prepared that identifies equipment, supplies and on-call employees that are available to help mitigate spills and procedures to follow should an overflow occur.

The City of Kings Mountain Wastewater Collection System have not had any wastewater spills between July 2017 and June 2018.

The City of Kings Mountain's Collections Department has updated three (3) pump stations by removing the old float controls and replacing them with transducer controls. These modifications were completed at the pump stations located at HWY 74, Longbranch and Beason Creek. The TinMine pump station has also received modifications to include removing two tandem, 4", 20 HP pumps with two 10", 30 HP pumps.

A new power generating facility has come to Kings Mountain called NTE. A new pump station has been

installed and the company plans to come online July 2018.

PUBLIC NOTICES

Residents can help minimize future overflow events by reporting unauthorized uncovering of sewer manholes, improper disposal of materials into manholes, vandalism of manhole structures, any observed overflow or spills, and strong sewage odor in or around sewer lines to the City of Kings Mountain at 704-734-0333.

On February 14, 2018 a public notice was posted on the City's Facebook page informing customers of the outcome from pouring oil and grease into the collection system.

Publication:

A copy of this Annual Report may be obtained by contacting the City's Water Resource Department or visiting the Cities website.

WASTEWATER COLLECTIONS DEPARTMENTS FUTURE IMPROVEMENTS

Future plans on improving the Collection system includes:

- Replacing 350 feet of sewer main on Stone Street right-of-way*
- Replacing 230 feet of sewer main on Cansler Street*
- SCADA server upgrade*

Collection System Monthly Violations

July 2017 - June 2018

<i>July 2017</i>	<i>Total SSO's: None</i>	<i>Total Gallons Spilled: 0</i>
<i>August 2017</i>	<i>Total SSO's: None</i>	<i>Total Gallons Spilled: 0</i>
<i>Sept. 2017</i>	<i>Total SSO's: None</i>	<i>Total Gallons Spilled: 0</i>
<i>Oct. 2017</i>	<i>Total SSO's: None</i>	<i>Total Gallons Spilled: 0</i>
<i>Nov. 2017</i>	<i>Total SSO's: None</i>	<i>Total Gallons Spilled: 0</i>
<i>Dec. 2017</i>	<i>Total SSO's: None</i>	<i>Total Gallons Spilled: 0</i>
<i>Jan. 2018</i>	<i>Total SSO's: None</i>	<i>Total Gallons Spilled: 0</i>
<i>Feb. 2018</i>	<i>Total SSO's: None</i>	<i>Total Gallons Spilled: 0</i>
<i>March 2018</i>	<i>Total SSO's: None</i>	<i>Total Gallons Spilled: 0</i>
<i>April 2018</i>	<i>Total SSO's: None</i>	<i>Total Gallons Spilled: 0</i>
<i>May 2018</i>	<i>Total SSO's: None</i>	<i>Total Gallons Spilled: 0</i>
<i>June 2018</i>	<i>Total SSO's: None</i>	<i>Total Gallons Spilled: 0</i>

No reportable spills took place during the July 2017-June 2018 reporting period.

The State of North Carolina regulates the treated wastewater which is discharged into the Buffalo Creek. The (NPDES) Permit Number for this facility is NC0020737. This facility is located off U.S. Highway 74 Bypass, West of Kings Mountain (Cleveland County).

PROCESS DESCRIPTION

When wastewater is discharged from a home, industry, etc., flow travels through miles of underground lines by gravity or conveyed by pumps. This process is called a Collection System.

Once the wastewater enters the facility it contains organic and inorganic material which, at this time, consist of approximately forty percent (45%) Industrial Wastewater.

The wastewater is lifted approximately thirty two (32) foot by one of two (1 of 2) Spiral Screw Pumps. Wastewater then travels through a (Mechanical Step Feed) Bar Screen, where debris is removed, compacted, and discharged into a dumpster for disposal. It then travels through a Parshall Flume with a twenty four (24) inch throat, which includes a staff gauge, and a

flow meter, all for measuring the incoming flow. A 24 hour circular chart, pH meter is also installed at the Influent. As the wastewater travels through the throat of the Parshall Flume a flow proportional refrigerated twenty four (24) hour composite sample is collected for analysis.

The wastewater then enters a Splitter Box (Diversion Box) that splits the flow into three (3) Aeration Basins based on their design flow. Sodium Hydroxide (50% Caustic Soda), is added at the diversion box to adjust the incoming pH and alkalinity to the aeration basins. Once the fresh wastewater enters the aeration basin the organic material is consumed by the microorganism. The aeration basins are equipped with floating diffusers, which supplies oxygen and mixing for the microorganism to survive. The detention time in these basins are approximately four (4) to seven (7) days. This process is called activated sludge.

The activated sludge then enters at the center well of the secondary circular clarifier(s), which is where the microorganism settle at the bottom to digest the organic material that was consumed in the aeration basin. The detention time in these clarifier(s) are approximately two (2) to four (4) hours. As the

activated sludge settles in the clarifier's, a portion of it is either returned to the head of the aeration basin (RAS) or wasted (WAS) to the aerobic holding tank for disposal by pumps.

As the treated wastewater leaves the clarifier's, it then enters a Chlorine Contact Basin, where Chlorine Gas is injected to kill the disease causing bacteria (Fecal Coliform), before leaving the facility. These contact chambers are equipped with baffles (walls) to provide enough contact time. The flow exits these chambers over a rectangular weir or a V-Notch weir, which has a staff gauge and a flow meter that sends a signal to a totalizer.

As the three (3) effluent flows combine into a manhole, Sulfur Dioxide Gas is injected to remove the residual chlorine. The flow continues to travel to the plants effluent flow proportional twenty four (24) hour refrigerated composite sampler, where a sample is collected for laboratory analysis.

This facility is also equipped with a waste pump station that has two (2) grinder pumps that conveys the floatable solids from the clarifiers back to the head of the Influent.

Also included is a wash water pump station that pumps treated wastewater to the Belt Filter press which is used to operate our 2.2 meter Klamp Press. This Klamp Press is used to dewater the waste activated sludge. This press produces a dry sludge cake of approximately 15 to 18%. A dry polymer is used in the polymer system that mixes with the waste sludge to form a floc so the water can drain through the pores in the belts.

The disposal process includes two (2) aerobic holding tanks which are gravity fed to the disposal sludge pump station. These pumps convey the waste sludge to the belt filter press for operation.

Once the dry cake leaves the belt filter press, it travels up a conveyor belt, through a hopper, into a tandem truck and is hauled to the Cleveland County Landfill for final disposal.

***VIOLATIONS OR DEFICIENCIES
FOR PILOT CREEK WWTP
JULY 01, 2017 - JUNE 30, 2018***

<i><u>MONTH/YEAR</u></i>	<i><u>RESULTS</u></i>
<i>JULY 2017</i>	<i>N/C-As</i>
<i>AUGUST 2017</i>	<i>NONE</i>
<i>SEPTEMBER 2017</i>	<i>NONE</i>
<i>OCTOBER 2017</i>	<i>NONE</i>
<i>NOVEMBER 2017</i>	<i>NONE</i>
<i>DECEMBER 2017</i>	<i>N/C Reporting for NH₃</i>
<i>JANUARY 2018</i>	<i>NONE</i>
<i>FEBRUARY 2018</i>	<i>NONE</i>
<i>MARCH 2018</i>	<i>NONE</i>
<i>APRIL 2018</i>	<i>NONE</i>
<i>MAY 2018</i>	<i>NONE</i>
<i>JUNE 2018</i>	<i>N/C -As</i>

VIOLETIONS/DEFICIENCIES

FOR

JULY 01, 2017 - JUNE 30, 2018

During this period from July 2017 to June 2018, there were no violations reported for Toxicity. All Notice of violations has been issued to industries exceeding SIU permit limits.

WASTEWATER TREATMENT PLANT FUTURE IMPROVEMENTS

The City of Kings Mountain's WWTP will receive the following improvements to its system to include:

- Cleaning out the aeration basins*
- Installing two (2) mixers in each of the three basins*
- 2019- Planning on building a new laboratory and office building*

NOTIFICATION

This Annual Report is available upon request. If there are any questions concerning this report, please feel free to contact the Supervisor/ORC/Pretreatment Coordinator at the WWTP (Pilot Creek).

CERTIFICATION STATEMENT

I certify that this report is accurate to the best of my knowledge.

WWTP Supervisor/ORC/Pretreatment Coordinator

Richelle Meek

WWTP ORC/Supervisor

June 22, 2018