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

JULY 01, 2016 – JUNE 30, 2017

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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. Curtis Pressley	704.734.0333
Mr. Howard Shipp	704.734.0333

WATER RESOURCE DIRECTOR

Mr. Ricky Duncan 704.734.4525

WASTEWATER COLLECTION SUPERINTENDENT/ORC

Mr. Don Spencer 704.477.2928

WWTP SUPERVISOR/ORC/PRETREATMENT COORDINATOR

Ms. Richelle Meek 704.739-7131

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)

The City of Kings Mountain is pleased to present the Annual Wastewater Collection and Treatment System Report for fiscal year 2017. 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, 2016 through June 30, 2017. 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 10,644 people and 5,334 Customers which consist of (average of 4,863 Residential and 448 Commercial).

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

On average the City collects 1,813,500 gallons of wastewater (60% Domestic/Commercial and 40% Industrial Process) each day and transports it through 113 miles of gravity collection lines, 36 miles of force mains and 34 pumping stations, and approximately 1,500 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. 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 had tow (1) reportable wastewater spills or overflows (SSO's), between July 2016 and June 2017.

- *In April 2017 The City of Kings Mountain experienced an overflow of approximately 1700 gallons of wastewater*

Necessary measures were taken to address, correct and minimize future overflow events. The North Carolina Department of Environmental Resources, Division of Water Quality was notified of each overflow event.

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.

Publication:

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

Collection System Monthly Violations

July 2016 – June 2017

July 2016	Total SSO's: None	Total Gallons Spilled: 0
August 2016	Total SSO's: None	Total Gallons Spilled: 0
Sept. 2016	Total SSO's: None	Total Gallons Spilled: 0
Oct. 2016	Total SSO's: None	Total Gallons Spilled: 0
Nov. 2016	Total SSO's: None	Total Gallons Spilled: 0
Dec. 2016	Total SSO's: None	Total Gallons Spilled: 0
Jan. 2017	Total SSO's: None	Total Gallons Spilled: 0
Feb. 2017	Total SSO's: 1	Total Gallons Spilled: 40
March 2017	Total SSO's: 1	Total Gallons Spilled: 15
April 2017	Total SSO's: 2	Total Gallons Spilled: 1771
May 2017	Total SSO's: None	Total Gallons Spilled: 0
June 2017	Total SSO's: None	Total Gallons Spilled: 0

The City of Kings Mountain's drinking water was not affected by any of the reported overflow events.

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 (40%) 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 Basin's 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 exit's 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, 2016 – JUNE 30, 2017

MONTH/YEAR	RESULTS
JULY 2016	N/C-Tl
AUGUST 2016	N/C-NH_3
SEPTEMBER 2016	NONE
OCTOBER 2016	N/C-NH_3
NOVEMBER 2016	NONE
DECEMBER 2016	NONE
JANUARY 2017	NONE
FEBRUARY 2017	NONE
MARCH 2017	NONE
APRIL 2017	NONE
MAY 2017	NONE
JUNE 2017	NONE**

**June 21st, 2017 the wastewater treatment plant experienced a system overload in the #3 treatment system (due to an operator error). This caused solids to be released into the Buffalo Creek. This event was reported to DWQ.

VIOLATIONS/DEFICIENCIES

FOR

JULY 01, 2016 – JUNE 30, 2017

*During this period from July 2016 to June 2017, there were **no violations** reported for Toxicity. All Notice of violations has been issued to industries exceeding SIU permit limits.*

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.

SUPERINTENDENT/Pretreatment Coordinator

Richelle Meek

WWTP ORC/Supervisor

June 28, 2017