

Triangle Wastewater
Treatment Plant
5926 NC Hwy. 55 E.
Durham, NC 27713
(919) 560-9033

Permits:

Wastewater
Treatment Plant:
NC0026051

Collection System:
WQCS00038

Stormwater :
NCG110054

Reclaimed Water:
WQ0032821

Owned and Operated by:

Durham County
Engineering
&
Environmental Services
Utility Division

Contact:

Joseph R. Pearce
E&ES Deputy Director
(919) 560-9033

DURHAM



COUNTY

TRIANGLE WASTEWATER TREATMENT PLANT PERFORMANCE ANNUAL REPORT

JULY 2015—JUNE 2016

The Durham County wastewater collection and treatment system serves over 10,000 residential, commercial, and industrial customers in Southeast Durham County, including the Research Triangle Park.



TARDIGRADE
(WATER BEAR)
FEEDING ON
BACTERIAL
FLOC

TWWTP LAB
MIXED LIQUOR
SAMPLE

Microorganisms: Necessary and Beneficial!

The tardigrade, also called a water bear or moss piglet, takes its name from the Latin meaning “slow walker.” Tardigrades are eight-legged, segmented micro-animals that inhabit aquatic and moist terrestrial environments. They could be nature’s most durable creatures as they are

able to withstand temperatures of -450°F to 300°F , radiation at hundreds of times the dosage that would kill a human, and a trip to outer space and back. Lucky for us, they are useful in wastewater samples as indicators of conditions. Tardigrades are

sensitive to ammonia, which can be toxic. If they show up in mixed liquor samples, there is little to no ammonia present. Tardigrades can also indicate a low food to biomass ratio, high dissolved oxygen, and good organics removal.

Collection System

Durham County owns and maintains a Sewer Collection System which includes 105 miles of gravity sewer and 13 pump stations that discharge to pressurized force mains.



In the past 12 months Durham County had 2 reportable spills.

- A July 16, 2015 spill, estimated at approximately 58,000 gallons of wastewater, resulted from a contractor failing to remove a pipe plug prior to putting a new gravity sewer line into service.

ting a new gravity sewer line into service.

- A July 21, 2015 spill, estimated at approximately 6,000 gallons of wastewater, was caused by vandalism. Glass bottles were found in the collection system causing a flow obstruction and spill.

The Durham County Utility Division prides itself on providing a high level of customer service. All commercial and residential customers' questions and concerns are responded to in a timely manner, no matter the time of day or night. If you have a question or concern regarding the Collection System, or any item covered in this report, please call (919) 560-9033.

In the past year the County has continued its efforts to rehabilitate aging infrastructure. Last fall, the second leg of the Stirrup Iron Creek force main was connected. This proactive rehabilitation is intended to upgrade the existing line, which has corroded after nearly 30 years of service. When placed into service, this new 18-inch line may convey up to 4.5 million gallons per day.



Reuse Water System

The Triangle Wastewater Treatment Plant (TWWTP) operates a reuse water system. Some of the uses of this water include: landscape irrigation, industrial cooling, industrial process water and sewer cleaning. Approximately 77 million gallons of Reuse water was distributed during the fiscal year.



USA BASEBALL FIELD
TOWN OF CARY



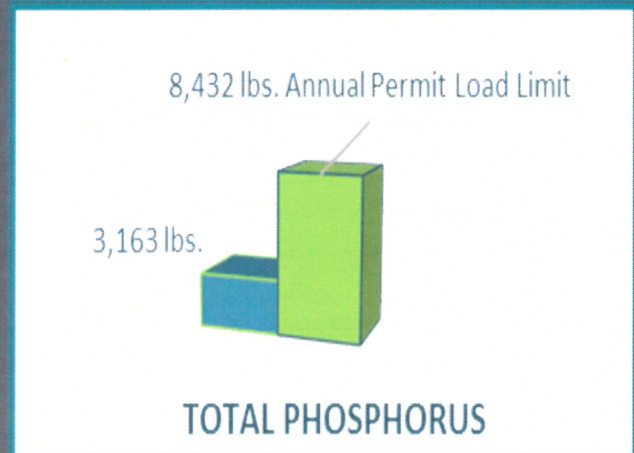
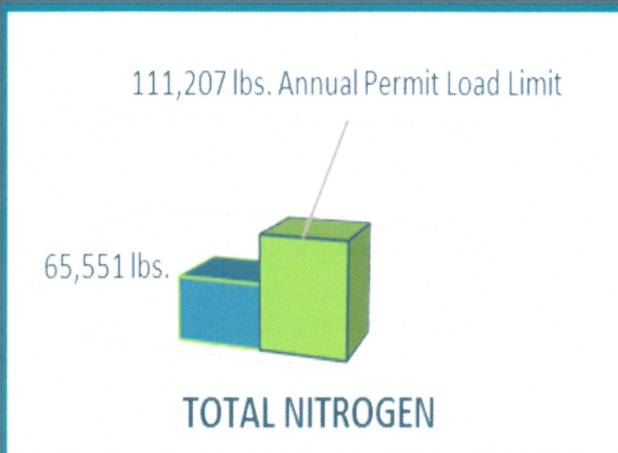
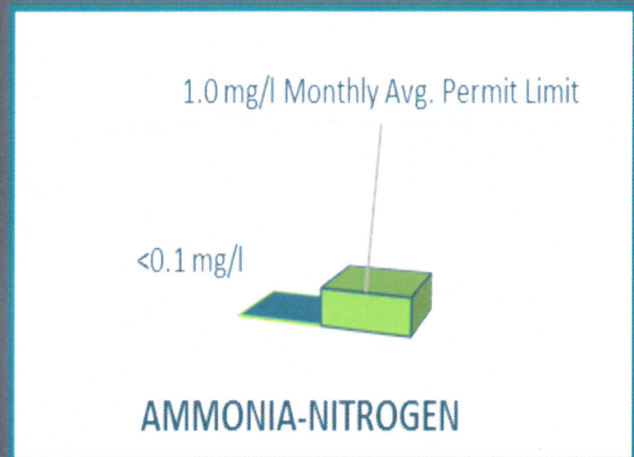
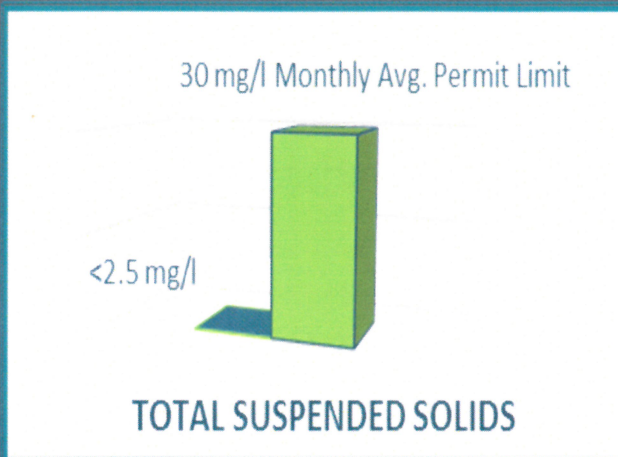
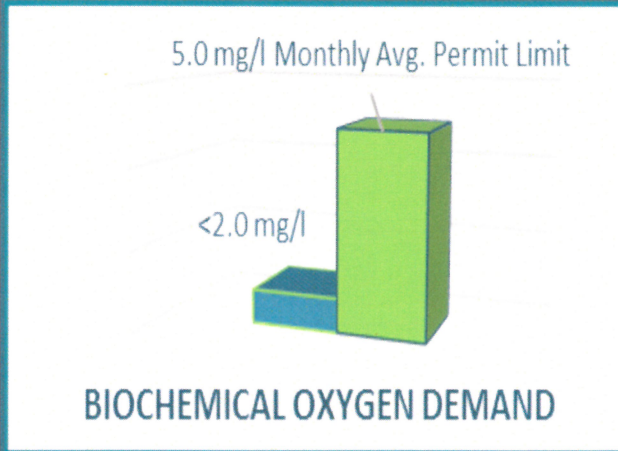
TWWTP's Sludge Loading
Facility

Biosolids System

The TWWTP generates waste biological residuals (approximately 500 million wet pounds per year), which are dewatered by centrifuges. The dewatered cake (approximately 15 million wet pounds per year) is transported to McGill's Composting,

where it undergoes further biological treatment to produce a Class A biosolid. These biosolids are beneficially used as soil amendments in commercial landscaping and agricultural activities.

Annual Average Data



The TWWTP discharge was compliant in all sampling events for the past year, while treating approximately 1.75 billion gallons of wastewater.

Lab & Pretreatment Program

August 31, 2016

Notification:

This Performance Annual Report covering July 1, 2015 through June 30, 2016, was forwarded to the NC Department of Environment Quality. Public Notice of the report was advertised in the Durham Herald Sun newspaper and is available for review at the following locations:

Durham County
Clerk to The Board
200 East Main St.,
2nd Floor

Durham County
Main Library
300 N. Roxboro St.

Durham County
South Regional Library
4505 S. Alston Ave.

Durham County
Website
www.dconc.gov

Certification:

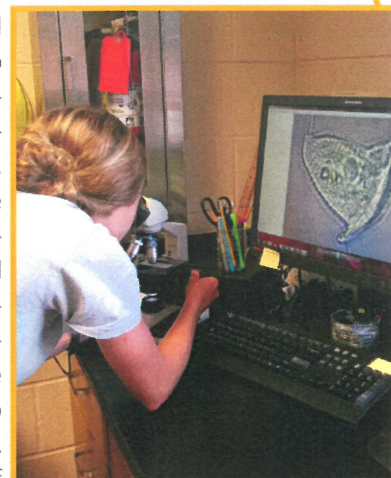
I certify under penalty of law that this report is complete and accurate to the best of my knowledge. I further certify that this report has been made available to the users or customers of the named system and that those users have been notified of its availability.

Joseph R. Pearce
Deputy Director
Engineering & Environmental
Services

The TWWTP laboratory staff collects and analyzes wastewater samples as required by the NPDES permit and the Reclaim Water permit. Currently, the laboratory is certified by the Division of Water Resources Laboratory Certification Branch to analyze ammonia, biochemical oxygen demand, total residual chlorine, conductivity, dissolved oxygen, fecal coliform, pH, temperature and total suspended solids. Recently, the laboratory purchased a digital compound microscope with a camera and can now take pictures and videos of microorganisms in samples. Staff is able to determine the age and health of the activated sludge and identify microorganisms such as: amoebae, ciliates, flagellates, nematodes, rotifers, and water bears (as featured on the front page).

The TWWTP implements an Industrial Pretreatment Program (IPP) to control pollutants which may cause pass through, interfere with the treatment plant's processes, contaminate sewage sludge, or be hazardous to workers' health and safety. Currently, there are forty permitted industries that are

regularly inspected and monitored to ensure their discharges meet specific permit limits. Eleven of these industries are Significant Industrial Users (SIUs). Biosafety Laboratories in our service area have also been identified. Currently eleven of these labs are permitted. Several of the Industrial Pretreatment Permit holders are now required to certify that their facility has followed biosafety procedures consistent with the fifth edition of the Biosafety in Microbiological and Biomedical Laboratories, US DHHS -PHS, -CDC and -NIH for the deactivation of Biosafety Level 1, 2, 3 or 4 materials prior to discharge to the sewer system.



Example of a "Rag Ball" caused by "flushable" wipes and hair.



No Wipes in the Pipes!

Utility staff would like users to consider a request... Do not toss "flushable" wipes in the toilet. These wipes do flush but DO NOT disintegrate like toilet paper. "Flushable" wipes clog pipes which may cause sanitary sewer overflows. The end result may be costly and result in sewage backing up in your home or causing sewage to spill into streets and creeks which is harmful to the environment and creates health hazards. Check out the

links below for additional information.

- <https://www.youtube.com/watch?v=SLTVqkXVvNk&feature=youtu.be>
- <http://www.theindychannel.com/news/call-6-investigators/flushable-wipes-causing-sewer-problems>

**PLEASE REPORT SANITARY SEWER
OVERFLOWS OR BACKUPS
CALL (919) 560-9033**