



Biosolids ● Industrial Pretreatment ● Reuse

2017 SEDC Visionary Leadership Award

The U.S. Environmental Protection Agency (EPA) Southeast Diesel Collaborative is a public-private partnership composed of stakeholders from Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina and Tennessee.

Project Narrative:

The Neuse River Resource Recovery Facility (NRRRF) is the wastewater treating facility for the City of Raleigh. The City typically treats in excess of 45 million gallons of wastewater per day. A part of the treatment process is the active Land Application program that includes agricultural practices on over 1200 acres of land associated with the NRRRF in addition to a vast amount of private farmland within central and eastern North Carolina owned and operated by farmers. By-products of the treatment process; biosolids and treated effluent, are utilized on the agricultural lands growing crops for non-human consumption (animal feed) that also reduce nutrient levels. One of those crops is sunflower and the biofuel produced from the seed oil is mixed directly at the NRRRF for a B-20 fuel source for all of the off-road diesel fueled heavy equipment. This project was conceptualized in 2010 with the City experimenting with the growing of sunflower and finalized in 2016 with many steps along the way. In 2012 the City of Raleigh received a grant in the amount of \$100,000 under "Priority 2: Civic and small scale Biofuels" through the N.C. Department of Agriculture Biofuels Research Initiative to better understand costs for biofuel production on municipal lands for its own benefit and to serve as a model for other N.C. municipalities. Our goal is to utilize the biofuel processor each year for both processing and educational opportunities, increasing production and efficiency levels and sharing that information with other municipalities, the biofuel industry, university and K-12 schools, and the general public.



Wastewater Environmental Management System Update

What is a WEMS?

The Resource Recovery Division's WEMS (Wastewater Environmental Management System) utilizes an environmental policy to recognize responsibilities to protect the environment and public health. The Resource Recovery Division's Environmental Policy is as follows:

The Resource Recovery Division recognizes the responsibility to protect the environment and public health focusing on products for beneficial reuse by :

- Complying with all applicable laws and regulations
- Seeking continuous improvement in all operations
- Promoting positive relations with interested parties
- Prevention of pollution
- Following the principles of National Biosolids Partnership Code of Good Practice

The WEMS team establishes annual goals in order to measure success and create opportunities for improvement. Some of the highlights of this year's WEMS program include:

2016 Regulatory Compliance:

NRRRF received Platinum award from the National Association of Clean Water Agencies (NACWA) for 13 consecutive years without a permit violation

Of the fifteen Targets & Objectives set for 2016, ten were achieved, two were carried into 2017, and three were eliminated from consideration.

The Resource Recovery Division was recertified in ISO 14001:2015 as well as the National Biosolids Partnership following a third party audit conducted March 6-10, 2017.

2017 Targets & Objectives

- Establish a Plant Advisory Committee for all three treatment plants
- Establish upstream water quality monitoring program for all three treatment plants
- Expand usage of alternative energy systems
- Eliminate potential pollutant sources on NRRRF plant site
- Optimize new biological phosphorous removal at NRRRF (carried over from 2016; eliminated from consideration in July 2017)
- Develop a systematic and sustainable program for the upkeep of plant operational facilities
- Develop Equipment Operating Procedures (EOIs) for plant equipment at Little Creek and Smith Creek WWTPs
- Initiate ISO 17025 certification (carried over from 2016)
- Maintain 100% regulatory compliance

To-date, six of the eight Targets & Objectives are on target.

For more information about our WEMS program, contact Emily Fentress at (919) 996-3700 or via email at emily.fentress@raleighnc.gov



2017 Targets and Objectives for Wastewater Environmental Management System



Pretreatment Notes

What is Pretreatment?

The term “pretreatment” means the treatment of wastewater by commercial and industrial facilities to remove harmful pollutants before discharge to a sewer system under the control of a publicly owned treatment works (POTW). The U.S. Environmental Protection Agency (EPA) developed the General Pretreatment Regulations under Title 40 Code of Federal Regulations (40 CFR) 403 to set responsibilities for federal, state, local government, industry, and the public to achieve the National Pretreatment Program Objectives.

Objectives of the Pretreatment Program:

- Prevent interference with the operation of the wastewater treatment plant
- Prevent the introduction of pollutants that could pass through the treatment plant untreated into the receiving stream
- Improve opportunities for reuse or recycling of wastewater and biosolids
- Prevent the introduction of pollutants that could cause health or safety problems to the public or the environment



Sample Receiving

Pretreatment Program Update

On June 14, 2017, the EPA passed effluent guidelines and regulations for dental discharges to POTW's throughout the country. These regulations require dental offices to install, maintain, and certify that an amalgam separator has been installed and certain Best Management Practices will be followed. More information about these regulations can be found on the EPA website at: <https://www.epa.gov/eg/dental-effluent-guidelines>

EPA's Clean Water Act (CWA) Pretreatment Program regulations require that Industrial Users report any substance discharged to the POTW which, if otherwise disposed of, would be considered a Resource Conservation and Recovery Act (RCRA) hazardous waste. Under RCRA's Domestic Sewage Exclusion, any mixture of domestic sewage and other wastes that passes through a sewer system to a POTW is not considered a hazardous waste for the purposes of RCRA. For this reason, reports of these discharges are regulated under the CWA. This being said, hazardous waste is strictly prohibited from being discharged to the City's sanitary sewer without prior review and approval. More information can be obtained by contacting the Pretreatment Coordinator.

If you have an Industrial User Permit, a reminder that your permit likely expires December 31, 2018. New applications must be received by June 30, 2018.

Visit our new website! Go to www.raleighnc.gov and search for pretreatment.

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Pretreatment Reporting

Your friendly reminder about monthly reporting requirements:

- Reports due on the 20th of the month
- Cover page (Monthly Facility Status Sheet)
- Summary page (Industrial Data Summary Form)
- Lab reports and Chain of Custody

For any non-compliance events:

- 24-hour notification requirement
- Resample within one week of becoming aware of a violation
- Investigate cause of non-compliance



Sampling Equipment

For information concerning the City of Raleigh Industrial Pretreatment Program, please feel free to contact us:

Ryan Faw, Industrial Pretreatment Coordinator, 919-996-3679, ryan.faw@raleighnc.gov

2017 Reclaimed Water Flow



Month	EMJWTP Bulk Flow gal 12067	NRRRF Bulk Flow gal 12007	SCWWTP Bulk Flow gal 12077	LCWWTP Distribution Flow gal 12078	NRRRF Onsite Irri- gation Flow gal 3001	NRRRF Distribution Flow gal 16177
Jul 2016	3,100	3,780	0	2,587,500	7,473,000	40,605,000
Aug 2016	2,124	4,740	0	3,160,600	8,617,000	43,966,000
Sep 2016	0	48,300	0	2,850,400	2,100,000	39,583,100
Oct 2016	0	0	0	2,612,800	1,064,000	35,060,000
Nov 2016	0	15,000	0	2,960,100	335,000	16,145,000
Dec 2016	0	14,000	0	2,582,800	0	12,658,000
Jan 2017	0	800	0	2,367,200	0	14,919,000
Feb 2017	0	1,750	0	2,217,400	372,000	21,064,000
Mar 2017	0	0	0	2,559,400	877,000	30,245,000
Apr 2017	0	1,120	0	2,115,600	3,225,000	32,338,200
May 2017	0	1,100	0	3,252,100	2,732,000	41,032,500
Jun 2017	0	0	0	3,415,700	2,423,000	29,476,300
Minimum	0	0	0	2,115,600	0	12,658,000
Maximum	3,100	48,300	0	3,415,700	8,617,000	43,966,000
Total	5,224	90,590	0	32,681,600	29,218,000	357,092,100
Average	435	7,549	0	2,723,467	2,434,833	29,757,675

More Ways to Contact Us

Do you have a question or just want some general information about something happening around the plant but don't know who to contact? We've made it easier for you to submit your comments, concerns or questions with the development of three new email addresses.

For biosolids information: Biosolids@raleighnc.gov

For wastewater treatment operations information: Wastewater.Treatment@raleighnc.gov

For reuse water information: Water.Reuse@raleighnc.gov

Resource Recovery Division is composed of the following programs: Administration, Laboratory, Plant Operations, Plant Maintenance, Remote Facilities (pump stations, odor control and air release valves), Land Management, and Pretreatment.

There are approximately 106 employees working at this facility, which is a 24-hour-per-day/seven-days-a-week operation.

If you have questions or concerns, please feel free to contact us:

- Robert Massengill, Public Utilities Director, 919-996-4540 or Robert.Massengill@raleighnc.gov
- Marla Dalton, Environmental Coordinator, 919-996-3700 or marla.dalton@raleighnc.gov
- Jeremy Blackmon, Asst. W&S Superintendent, 919-996-3700 or Jeremy.blackmon@raleighnc.gov
- Emily Fentress, Process Control Training Officer, 919-996-3700 or Emily.Fentress@raleighnc.gov
- Darrell Crews, Laboratory Supervisor, 919-996-3700 or Darrell.crews@raleighnc.gov
- Ryan Faw, Pretreatment Coordinator, 919-996-3700 or Ryan.faw@raleighnc.gov
- Tim Woody, Resource Recovery Superintendent, 919-996-3700 or Tim.Woody@raleighnc.gov
- T J Lynch, Asst. Public Utilities Director, 919-996-4540 or TJ.Lynch@raleighnc.gov