

H2info

Treatment Plant Operator Magazine Article

"Nancy Pugh of the Louisa County (Virginia) Water Authority was recently named Wastewater Operator Specialist of the Year by the Virginia Rural Water Association. Pugh is the chief operator of the Zion Crossroads Wastewater Treatment Plant, and in this online exclusive video, she talks about her city's infrastructure, its updated treatment facility and a hurricane that led operators to fill every empty basin available." ~ Treatment Plant Operator Magazine

[Check out the video!](https://www.tpomag.com/video/profile/award-winning-operator-thankful-for-updated-wastewater-treatment-plant) <https://www.tpomag.com/video/profile/award-winning-operator-thankful-for-updated-wastewater-treatment-plant>

Louisa County Water Authority

Zion Crossroads Wastewater Treatment Plant: In the early 2000's, the Zion Crossroads Wastewater Treatment Plant (ZCWWTP) and collection system construction began. The ZCWWTP was upgraded in 2013-2014 to an advanced treatment system. The ZCWWTP collection system extends from Ferncliff, west on Rt.250 to the intersection of Rt.15 and Rt.250 then north on Rt.15 to the Sommerfield Business Park. The collection system consists of gravity and force main lines. Three pump stations move sewage through the force main lines. The current permitted capacity of the ZCWWTP is 311,000 gallons per day. The permit can be increased to 700,000 gallons per day with the current facility. With another construction upgrade, capacity can be increased to 1.5 million gallons per day. The ZCWWTP currently treats approximately 130,000-150,000 gallons per day.

The ZCWWTP has a tiered permit with some of the tightest discharge limits in the Commonwealth. Because the discharge from the ZCWWTP ultimately reaches the Chesapeake Bay, the type of treatment at the ZCWWTP is Biological Nutrient Removal (BNR). The BNR treatment process was placed into service in January 2013 and removes nitrogen and phosphorous from the effluent discharged into the South Anna River. High levels of nitrogen and phosphorous added to surface water sources can cause harm to the environment and citizens, for example algal blooms. When an algal bloom occurs in surface waters it can cause harm to the aquatic ecosystem (both fish and plants). The reduction in dissolved oxygen in surface waters caused by nitrogen and phosphorous loading can lead to fish kills, reduction of aquatic plants and discolored water.

The ZCWWTP also has a Reuse Permit allowing the use of discharged effluent for irrigation of the Spring Creek Golf Course. The Reuse Permit provides a way for approximately 100,000 gallons per day of effluent to be pumped to a retention pond for later use in irrigating the golf course during the spring, summer and fall. The ZCWWTP Reuse Permit is only one of five permits under the regulatory oversight of the Northern Virginia Regional Office - Department of Environmental Quality (DEQ). Having a Reuse Permit sets Louisa County Water Authority apart from most small rural utilities in the Commonwealth.

The ZCWWTP staff are on duty 365 days a year with twelve hour shifts Monday—Friday and eight hour shifts on the weekends. Wesley Basore the Wastewater Operation Manager provides oversight of the operations, but the daily work is conducted by the Chief Operator Nancy Pugh and her staff of operators and trainees.

Currently staff is working on finalizing Fall Protection upgrades to meet Virginia Occupational Safety and Health Standards, ensuring equipment and operations are not disrupted when lightning strikes occur and making improvements to the Dechlor Facility to meet DEQ Sewage Collection and Treatment Regulations.



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LCWA—Employee Spotlight (Page 2)
Phillip L. (Phil) Bailey, Maintenance Supervisor

Louisa County Water Authority



Hours of operation

The Northeast Creek Water Treatment Plant, Louisa Regional Wastewater Treatment Plant and the Zion Crossroads Wastewater Treatment Plant are manned seven days a week, 365 days a year, from eight to twelve hours a day, including holidays and weekends.

The Business office is open Monday—Friday 8:00 am—4:30 pm.

Contact Numbers

Business office phone: 540-967-1122

Business office Fax: 540-967-0656

Website: louisacountywaterauthority.org

After hours emergency: 540-967-1234

Employee Spotlight

This quarter we will shine the “Employee Spotlight” on Phillip L (Phil) Bailey. Phil has been employed by Louisa County Water Authority (LCWA) since January 1990. During his thirty years of service, he acquired his Class II Water Operator License and his Class III Wastewater Operator License. When provided an opportunity to choose between working as a Water Plant Operator or working in our Maintenance Department, Phil chose the maintenance position, and the rest as they say is history. Phil is now the Maintenance Supervisor, the highest position in the Maintenance Department. He is also a valued member of the LCWA Management Team.

Sometimes patience and time is all that can be offered to customers. Phil has been known to go door to door to advise customers when we have received a dirty water complaint. He is truly the face of the Authority. He provides the best example to all staff members of what it means to be a loyal, dedicated, professional, team oriented player.

He responds to our facilities in a timely manner, willing and able to get the job done, no matter the time of day or night. He is pulled in many different directions, but continues to complete projects and maintenance necessary to keep systems running and operating properly. Phil offers alternative solutions to difficult and expensive repairs and maintenance projects.

Phil continues to evolve and grow with changing and improving technology. He is valued, respected and honored among his co-workers. He is an outstanding leader for LCWA and the Louisa Community.

Current Projects and Initiatives

- Safety! Safety!! Safety!!!
 - 1) Fall Protection
 - 2) Safety Manual update
 - 3) Updating safety equipment
 - 4) Updating all personal protective equipment
- Geographic Information System Mapping (GIS)
 - 1) Work orders
 - 2) System inventory
 - 3) Asset management
- Fiscal goals
 - 1) Fiscal independence
 - 2) Build reserve funds
 - 3) Manage O & M expenses
- Apprenticeship Program
 - 1) Second approved program in Virginia
 - 2) Locating a viable candidate
- Employee Training and Enhancement
 - 1) Succession Planning
 - 2) Training
 - 3) Highly qualified staff
 - 4) Fairly compensated staff
- Rate Structure
 - 1) Rate reviews
 - 2) Rate setting
- Tractor Purchase
 - 1) Right-of-way clearing
- James River Water Project
- Zion Crossroads Wastewater Treatment Plant
 - 1) Dechlorination Facility
 - 2) Lightning protection system
- Louisa Regional Wastewater Treatment Plant
 - 1) Filter building Modifications
 - 2) Upgrade lighting
 - 3) Addition of sidewalks
 - 4) Splitter box modifications
- Northeast Creek Water Treatment Plant
 - 1) Sludge-vac System
- Regulations
 - 1) PFAS (Perfluorinated compounds, perfluoroalkyl acids, synthetic chemicals)
 - 2) Safe Yield
 - 3) Procurement
 - 4) SCC Rule update decision
 - 5) New Pretreatment rules
 - 6) Phase Three Watershed Implementation Plan
 - 7) Ammonia-Nitrogen limits
 - 8) Reassignment of Nitrogen and Phosphorous Limits