

EnviroMix Operational Excellence Award Presented to SGWASA WWTP

Plant recognized for outstanding operation of BioMix and BioMix-DC systems

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/EINPresswire.com/ -- Located in the Raleigh-Durham area, the South Granville Water and Sewer Authority ([SGWASA](#)) serves several towns in Granville County, North Carolina. The SGWASA wastewater treatment plant (WWTP) was upgraded in 2015 to replace aged infrastructure and enable the facility to meet stringent nitrogen and phosphorus effluent limits. As part of the upgrade, SGWASA replaced the jet mixing system in their anaerobic and anoxic selectors and converted their oxidation ditch to include post-anoxic and reaeration zones.



Plant Superintendent Cody Norwood (second from right) and SGWASA staff members after receiving the award.

“

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Cody Norwood, Plant Superintendent

[BioMix](#) Compressed Gas Mixing was selected to replace the jet mixing system in the anaerobic and anoxic selectors, providing significant energy savings versus jet mixing pumps. BioMix nozzles were also integrated with fine bubble aeration in the post-anoxic zones, delivering significant energy savings by utilizing two compressors as opposed to more than a dozen mixers.

An energy-efficient patented technology from EnviroMix, BioMix provides uniform mixing of tank contents by firing programmed, short-duration bursts of compressed air through engineered nozzles located near the tank floor. The bottom-up compressed gas mixing easily integrates with aeration equipment and can be operated concurrent with or independent from aeration for optimized process conditions. All in-tank components of the system are maintenance free, non-clogging, and self-cleaning.

Since the BioMix upgrade, SGWASA has realized 75% energy savings versus the previous jet mixing system while also reducing maintenance demands. Additionally, the facility has not exceeded any permitted effluent quality limits.

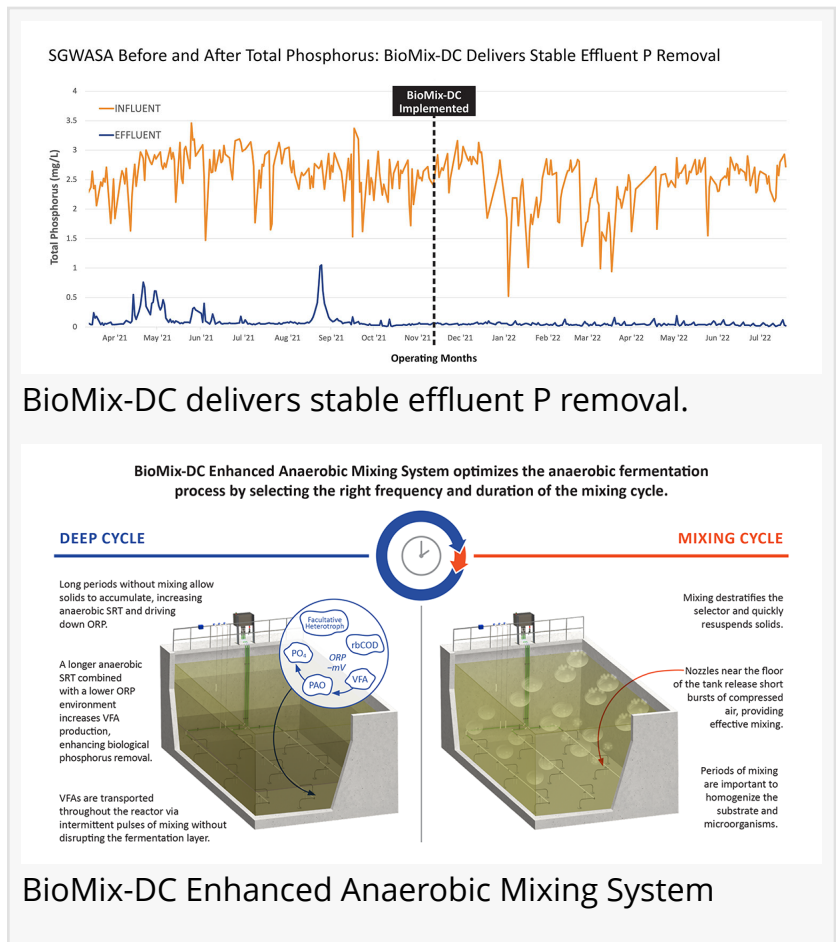
Once EnviroMix released their award-winning [BioMix-DC](#) Enhanced Anaerobic Mixing technology in 2021, the SGWASA plant further upgraded the mixing system in their anaerobic selectors in hopes of achieving more stable enhanced biological phosphorus removal (EBPR).

BioMix-DC optimizes EBPR by transforming a traditional anaerobic selector into an intensified fermentation tank by alternating a short mixing cycle with a long deep cycle. The deep cycle increases anaerobic solids retention time (SRT) while creating a fermentation blanket to generate volatile fatty acids (VFA). The presence of additional VFA leads to the proliferation of phosphorus accumulating organisms (PAOs), the microorganisms responsible for EBPR.

After implementing BioMix-DC, testing confirmed high levels of orthophosphate release in SGWASA's anaerobic zone — more than three times the influent concentration. The sampling and testing showed that the plant is achieving stable effluent phosphorus levels below their permit limit (see chart pictured). Samples collected in the fermentation blanket also confirmed conditions that encourage PAO growth and optimize EBPR.

Plant Superintendent Cody Norwood and his staff are true wastewater treatment professionals, striving to operate their EnviroMix systems at optimal efficiency. Focused on environmental responsibility, the team diligently monitors nutrient levels, achieving very low Total Nitrogen (less than 3 mg/L) and consistently low phosphorus levels. By enthusiastically adopting BioMix-DC, they have been able to maximize the technology's effectiveness and consistently reduce chemical consumption. As a repeat customer, Norwood commented, "EnviroMix's very good customer service means a lot. We like the whole EnviroMix system, and obviously we've gotten positive results from it."

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