

Suspended Air® Flotation (SAF®) Sets New Standard in Wastewater Treatment

Heron Innovators Raises Bar for Efficiency, Sustainability, and Performance in Waste Activated Sludge Thickening

DAVIS, CA, UNITED STATES, January 14, 2025 /EINPresswire.com/ -- Heron Innovators is proud to announce the transformative impact of its Suspended Air® Flotation (SAF®) process, a groundbreaking solution for wastewater treatment. Developed using advanced colloidal gas aphon (CGA) technology, SAF® is delivering unmatched performance in [thickening waste activated sludge](#) (WAS), improving operational efficiency, and reducing energy costs across wastewater facilities nationwide.



Warminster Wastewater Treatment Plant

With growing demand for sustainable and efficient wastewater management, the SAF® process offers a cutting-edge alternative to traditional dissolved air flotation (DAF) systems. By leveraging electrically charged, micron-sized bubbles encapsulated in a surfactant film, SAF® achieves superior solids capture and flotation, all within a compact footprint.

Key Benefits of the SAF® Process

Improved Solids Capture: SAF® technology achieves solids loadings up to 40 lb/ft²·h, a tenfold improvement over most DAF systems.

Energy Efficiency: SAF® reduces energy consumption by up to 90% compared to DAF, thanks to its innovative low-pressure bubble generation system.

Enhanced Performance: SAF® effectively handles high and variable concentrations of total

suspended solids (TSS), even with challenging feedstocks such as aged and stored sludge.

Operational Flexibility: The system adapts to a wide range of flow rates and sludge characteristics, providing consistent performance under variable conditions.

Reduced Footprint and Chemical Usage: SAF[®] operates efficiently within existing tank footprints and minimizes polymer and surfactant usage.

Proven Success in Real-World Applications

Heron Innovators' SAF[®] process has been implemented in facilities across the United States, consistently exceeding expectations. Three recent [case studies](#) illustrate its versatility and effectiveness:

Topeka, KS (Oakland Wastewater Treatment Facility):

SAF[®] replaced outdated DAF units to thicken WAS from 0.4–0.8% solids to 4%, reducing sludge volume fivefold and boosting anaerobic digestion retention time. Energy consumption dropped dramatically, from 49.9 kWh/day for DAF to just 4.9 kWh/day for SAF[®]. The Oakland facility also benefited from reduced chemical usage and the ability to handle TSS concentrations up to 16,000 mg/L.

Warminster, PA (Warminster Municipal Authority):

Transitioning from DAF to SAF[®] improved thickened solids concentration from 3.5–4.5% to 4.5–5.5%. This enhanced stability in the anaerobic digestion process eliminated foaming issues and provided operators with a more reliable system. SAF[®]'s adaptability also allowed the facility to maintain performance during operational challenges caused by historic drought conditions.

Sauk Centre, MN (Sauk Centre Wastewater Treatment Facility):

SAF[®] reduced thickening operational time by 80%, cutting runtime from 24 hours per day to just 7 hours per day. Biosolids volume was reduced by 15%, and polymer usage dropped by 60%. Operators praised the SAF[®] system for its ease of use, quiet operation, and ability to consistently achieve solids capture efficiency of 99.7%.

The SAF[®] Difference

The SAF[®] process stands out in several critical ways compared to traditional DAF systems:

Bubble Stability: Unlike DAF, SAF[®] bubbles do not coalesce, ensuring greater adsorption and flotation efficiency.

Rapid Startup: SAF[®] units can be operational in minutes, significantly reducing downtime.

Versatility: SAF[®] handles both fresh and stored WAS, adapting seamlessly to variable flow rates and sludge conditions.

“The SAF® process represents a significant advancement in wastewater treatment,” said Harold Leverenz, Ph.D., P.E., a leading researcher at the University of California, Davis. “Its ability to reduce energy consumption, enhance solids management, and improve digester performance makes it a game-changer for municipalities and industries alike.”

A Sustainable Future for Wastewater Management

The SAF® process is not just a technological breakthrough—it’s a step toward a more sustainable future. By reducing energy use, operational time, and chemical dependency, SAF® helps facilities meet environmental requirements while improving their bottom line.

As municipalities and industries continue to seek innovative solutions to address increasing demands on wastewater infrastructure, the SAF® process is positioned to play a pivotal role in shaping the future of water treatment.

Learn More

Heron Innovators, Inc. specializes in manufacturing and engineering advanced wastewater treatment solutions, including SAF® Systems, a versatile fleet of SAF® pilot and rental units, and fully integrated turnkey wastewater treatment systems. To learn more about the Suspended Air® Flotation process and its applications, visit HeronInnovators.com.

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