Introducing I-FLOAT:

Real-Time Off-Gas Testing for Optimal Aeration and GHG Reduction

The Inflatable Fast and Lightweight Off-Gas Analysis Technology (I-FLOAT) system revolutionizes off-gas testing, providing Water Resource Recovery Facilities (WRRFs) with critical insights into diffuser efficiency, aeration optimization, and real-time greenhouse gas emissions measurement.

Key Benefits

Optimized Aeration

The I-FLOAT system provides targeted insights on the actual oxygen transfer efficiency (OTE) of the aeration system at WRRFs, which can be used to inform strategies that aim to reduce energy use and operational costs associated with the aeration process.

Precision GHG Monitoring

By enabling real-time quantification of direct emissions, including nitrous oxide (N_2O), I-FLOAT empowers utilities to accurately measure and mitigate their greenhouse gas footprint.

Informed Aeration Design

I-FLOAT quantifies the actual aeration efficiency loss from contaminants hindering gas transfer, known as the alpha factor. Understanding this factor improves the accuracy of aeration demand estimates, enabling optimal sizing of blowers and diffusers during design, thus avoiding oversizing the system, and reducing capital and operational costs.

Easy Deployment

Designed as a compact and portable system, I-FLOAT offers easy and efficient on-site testing capabilities, allowing a single operator to run an off-gas test with minimal logistical complexity.

"With I-FLOAT we can streamline our testing, understanding, and optimization of the aeration process. When you consider that aeration accounts for 50 percent or more of a plant's energy consumption, our real-time, off-gas measurements give water resource recovery facilities a powerful tool to benchmark actual aeration performance, which is the basis for developing strategies targeting the reduction of energy costs and greenhouse gas emissions."

- Sam Reifsnyder, Technology Developer, Carollo Engineers

I-FLOAT

Comprehensive Testing Capabilities

The I-FLOAT system's advanced floating hood design collects off-gas directly from aeration basins, accurately measuring key gases that offer insights on:

Energy Usage and Efficiency

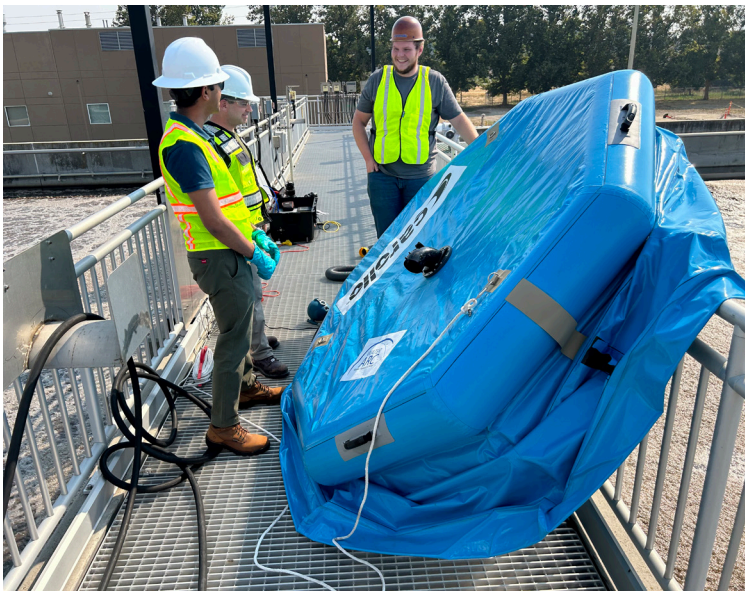
- Evaluate the performance of diffuser systems.
- Identify opportunities to improve OTE.

Greenhouse Gas (GHG) Emissions

- Directly measure Scope 1 emissions from aeration tanks.
- Establish a baseline and track emission reduction progress.

Off-Gas Testing Options

- Sweep tests that capture spatial data across multiple tank zones.
- Continuous tests that monitor temporal changes in individual zones over time.



Remote Monitoring and Control

Data-Streaming and Remote Monitoring via Cellular Connection

- Stay connected with real-time performance data.
- Eliminates the need for hard-wired communication and plant firewall access.

Comprehensive Data Control

- Batch download data locally and remotely.
- Alarm notifications for continuous un-supervised operation.

I-FLOAT Specifications

- **Weight:** Lightweight, < 25 lbs. for portable, single-person deployment.
- **Construction Materials:** UV-resistant composite materials, designed for durability in outdoor and variable environmental conditions.
- **Deployment Mechanism:** Quick-inflate system with integrated ballast for secure, stable positioning on aeration basin surface.
- **Real-Time Monitoring:** Continuous data streaming capability with remote, cellular connection.
- **Emission Gases:** Measures oxygen (O_2), nitrous oxide (N_2O), and carbon dioxide (CO_2).
- **Deployment Requirements:** Operates independently of facility firewall, requiring only standard power source and water basin access.

For additional information, contact Carollo's Off-Gas Testing Lead Sam Reifsnyder at sreifsnyder@carollo.com.