Turborator® Improves ATAD Performance

Description

The City of McMinnville, Oregon Water Reclamation Facility (WRF) is designed to treat wastewater with advanced processes to produce exceptional quality water to be discharged back into the local river system. As part of the process, the WRF produces Class A Biosolids using an Autothermal Thermophilic Aerobic Digestion (ATAD) process.

The ATAD system was designed to require three 67,000 gallon tanks. Each tank was equipped with 7.5 KW and 9 KW mixer / aerators mounted on the sides to provide mixing and aeration to the sludge. Each day, approximately 17,000 gallons of primary sludge at 5% solids is introduced into the first reactor and an equivalent amount is removed from the last reactor and placed in a storage tank, ultimately destined for land application to local farmland.

In 2006 the WRF decided to add two (2) 10 HP Turborator® Aerator / mixers to the first tank to enhance the mixing and aeration of the sludge. Installation of the Turborator® in the existing tank was easily accomplished and provided immediate benefit in enhanced mixing, quicker temperature rise and stabilization and process control. Once the Turborators® were added, the temperature in the initial reactor increased from approximately 35^0 C to approximately 50^0 C with more consistency and uniformity throughout the reactor.

Results

The driving force for ATAD compliance is time and temperature. The increase in temperature in the first stage, along with the consistency of the mixture has allowed the WRF to eliminate the third tank from service and continue to process the same amount of sludge. The addition of the Turborators® has decreased overall operation and maintenance requirements and provided increased treatment capacity.

Since the initial two (2) Turborators® were added to the first tank, the WRF had added and additional two (2) units to the second reactor to better control the process. In addition to increasing overall capacity, the Turborator® has provided greater process stability and control in the event of upsets. Prior to the addition of the Turborator®, process upsets were hard to avoid and even harder to recover from. With the added level of control provided by the Turborator®, the operators are able to foresee process changes and make appropriate adjustments in time to prevent costly upsets.

About MGD Process Technology Inc.

MGD Process Technology Inc. specializes in wastewater treatment equipment and engineering. In March of 2006, MGD purchased the patented Turborator® technology which provides an innovative approach to gas/liquid transfer. The simplicity of design results in a rugged, durable, low maintenance system, providing superior mixing and aeration with reduced energy costs. **For more information contact us or visit www.mgdprocess.com.**

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