STB-014

Effective Management of Organic Wastes

Application:	Organic Wastewater Treatment
Application Detail:	Cross Flow Technology for Treating Organics in Wastewater
Graver Product:	Graver Technologies Scepter

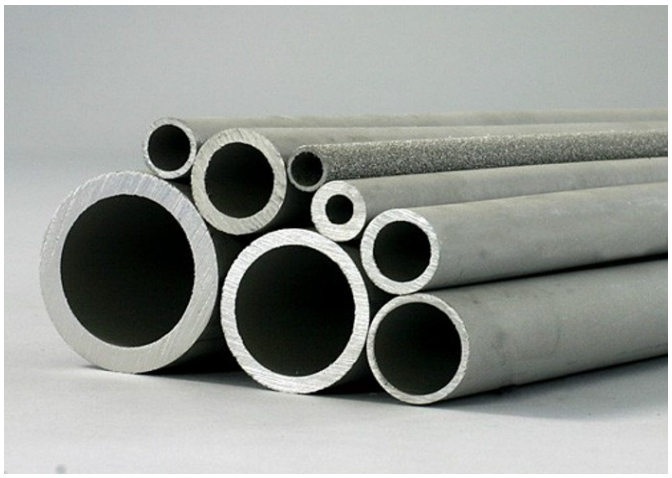
Discussion:

Over 70 million tons of organic waste is produced in the United Sates each year with many being non-edible sources such as livestock manure, agriculture wastes, wastewater, and inedible food wastes. If improperly managed, these organic wastes pose a significant risk to the environment and public health due to the presence of pathogens, chemicals, antibiotics, and nutrients that may contaminate surface and ground waters through runoff or by leaching into soils as well as result in algal blooms, harm wildlife or further reduce the quality of surface waters. Large amounts of methane, which is considered a significant greenhouse gas, may also be generated through decomposition of the organic waste and if not properly managed, poses further risk to global warming.

Failure to adequately address the disposal of these organic wastes can result in significant fines for the operators. For many companies, handling the organic wastes requires hauling the waste to water treatment facilities or other waste disposal operations which in turn adds significant cost to the process and may limit the ability of the operation to expand to meet market growth. Cost effective on-site treatment processes that could create clean water for reuse, allow direct discharge or create a concentrate that reduces total amount to be disposed or even that can be turned into value-added co-products are therefore very desirable.

Filling The Technology Gap

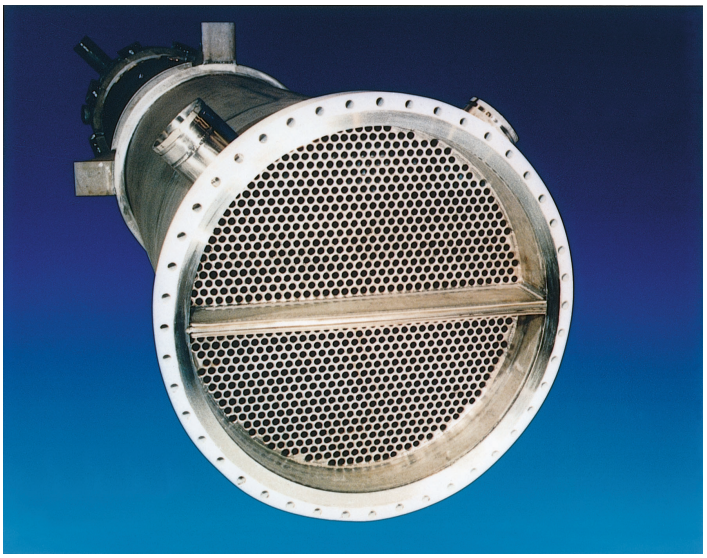
Graver Technologies, by combining its experience in polymer research, membrane technology and process engineering can povide cost savings through reduced waste discharge or disposal. SCEPTER patented crossflow filtration technology combines porous stainless steel tubing with state-of-the-art sinter-bonded titanium oxide (TiO) membrane to create a smooth, foulant-resistant surface that permits the processing of dirty or hostile fluids over a broad range of chemical conditions, pressures and temperatures, often where no other membrane device can be used. Crossflow membrane filtration has become an effective operation in for organic waste treatment, providing reliable and consistent filtration with easy maintenance, low labor costs and can be aggressively cleaned-in-place.



After the removal of any large abrasive particles, Scepter has been effectively used to create clean water from anaerobic digester run-off without the addition of polymers or processing aids, significantly reducing the operation cost and allowing for direct discharge or reuse. Scepter membrane has also been used to reduce stillage disposal while reducing freshwater consumption through beneficial reuse, and offer a smaller footprint with reduced energy consumption as compared to a traditional system with centrifuges and evaporators. It will effectively handle the effluent from your current high solids and organic load process to address the challenge of economical handling of organic waste streams.

The More Robust Technology

In these extremely challenging clarification applications, a very robust technology is required such as the SCEPTER® crossflow microfiltration and ultrafiltration products. These rugged tubular stainless-steel membranes have a titanium oxide (TiO) membrane coating that is permanently sintered to the inside of the 316L stainless support tube. This creates a smooth, foulant-resistant membrane that permits the processing of dirty or hostile fluids over a broad range of chemical conditions, pressures and temperatures, often where no other membrane device can be used.



The design of SCEPTER sintered tubes and membranes creates a durable and robust structure making it adaptable to a wide variety of system configurations, from basic batch processing to more complex multi-stage continuous designs. Since SCEPTER systems are based on modular units, it is easy to increase capacity as need arises, just by adding additional modules or stages.

Evaluation of Your Feed Stream

The Graver Technologies design team is available to work with you to analyze your needs. Together we will custom-design the optimal caustic recovery system for your plant. For a preliminary analysis of your process, please contact Graver Technologies toll-free 800-249-1990 x 539 or visit our website: www.gravertech.com, e-mail: info@gravertech.com