TANK Enviro Systems

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TRICKLING FILTER TECHNOLOGY IS STILL RELEVANT

Trickling filters have been the workhorse of the biological wastewater treatment industry for over 100 years. Trickling filters have proven to efficiently remove pollutants from wastewater since their inception, earning recognition as a technology that will continue to serve the industry well into the future.

History

Prior to the use of structured sheet media, rock was used in trickling filters to support biofilm growth. Many of these rock systems were constructed in the 1970's as a direct result of the Clean Water Act. This legislative movement set new federal standards in the United States and forced many facilities to upgrade their treatment methods.

Process

By utilizing an aerobic process, trickling filters remove organic matter and ammonium nitrogen from wastewater. These filters consist of a fixed-bed media fill through which wastewater is "trickled". The term trickling filter can be misleading, however, as no physical filtration occurs in a trickling filter system. Instead, the filter serves as a host for microorganisms that grow on the media fill to form biofilm. As wastewater flows over the biofilm and interacts with the air, organic matter and nitrogen pollutants are removed from the water. Trickling filters drain at the bottom, and the effluent is sent to clarifiers where solids can settle out.

Efficiency

Trickling filters are simple and reliable. With fewer moving parts than activated sludge systems or other options, they require less maintenance and operational oversight. Trickling filters are also known to have greater resistance to shock loadings due to the nature of attached growth.

Additionally, since trickling filters typically only require power for pumping, they use much less energy than other aerobic treatment processes. When designed and operated properly, trickling filters use thirty to fifty percent less power to remove the same amount of pollutants. They can also be combined with processes such as activated sludge, solids contact, or denitrification filters to offer useful solutions that take advantage of both technologies.

Trickling Filter Technology is Still Relevant

While trickling filters may sometimes seem like old technology, there has been a worldwide resurgence in their use. The combination of modern engineering designs and inherent energy efficiency of trickling filters enable wastewater treatment plants to comply with strict limits and achieve high levels of treatment. A time-tested technology, trickling filters will continue to serve the wastewater industry for years to come.

BRENTWOOD®

BT010-1_6-20_EN

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