FLOW CYTOMETRY

FASTER AND MORE ACCURATE DURING A BACTERIAL ASSESSMENT OF WASTEWATER TREATMENT SYSTEMS

ADVANCED DIAGNOSTIC TOOLS

ADVANCES IN BACTERIAL ASSESSMENT

At Environmental Business Specialists, LLC (EBS), we continually search for ways to enhance our laboratory tests to not only suit our diverse client needs but to provide our clients with more accurate and/or timely results so they can make better decisions regarding their wastewater treatment plant. The fluorescent microscopic procedure we implemented in 2012 was beneficial to our clients in assessing the overall health of their wastewater treatment system's bacterial population. Using this advanced staining technique, EBS was able to determine the total amount of bacteria present in a wastewater system in addition to how many bacteria are actively respiring, which is the population capable of BOD degradation. A healthy, active microbial population is a crucial component for successful wastewater treatment operation.

In 2014, a new and exciting technological procedure was pioneered at our Mandeville, Louisiana laboratory involving the use of flow cytometry for wastewater treatment. This procedure took bacterial cell counting and health assessments to the next level in the wastewater treatment industry, supplying our clients with more precise and accurate results. In turn, this allows operators, environmental staff, and managers to not only manage the compliance aspect of their plant better but enable them to make more informed business decisions regarding the plant's operation and future needs.

A NEW TAKE ON AN OLD MEASUREMENT

Flow cytometry is commonly used in the medical field to generate accurate counts of specific cells of interest using fluorescent stains. The flow cytometer equipment consists of three components - fluidics, optics, and electronics. The sample of interest continuously flows through a capillary tube by a pump driven system. The optics system, which is comprised of lasers and mirrors, excites the fluorophore that has bound to the specific cell to be analyzed. The electronic portion of the flow cytometer graphs the data based on the fluorescent emissions, internal complexity of the cell, and the specific size of the cell. These three components of the flow cytometer yield concrete data which is less susceptible to human error than traditional methods.

EBS continues to utilize fluorescent microscopy as a valuable tool in assessing the total and active bacterial health of wastewater samples. That, coupled with flow cytometry, provides for more rigorous results on client samples. Flow cytometry technology enhances EBS's opportunity to further explore and understand the effect of industrial process components and chemicals on bacterial activity within a wastewater treatment system.

For more information on how flow cytometry can provide you with better bacterial assessments, contact Environmental Business Specialists at info@ebsbiowizard.com or 985-674-0660.

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