

## MUNICIPAL WASTEWATER PLANTS TURNING TO BIOAUGMENTATION

BETHLEHEM, PA (date) – Faced with overloading, industrial influents and fats, oils and greases (FOG) from restaurants, municipal wastewater treatment plants throughout the U.S. are turning to bioaugmentation with commercially available strains of adapted bacteria. Increased regulatory pressure to reduce effluent contaminants and budget constraints also are factors favoring bioaugmentation.

“While the biomass of a waste-treatment plant will adapt eventually to new conditions, there is often not enough time to prevent it from going over effluent permit limits when subjected to continuing overloads,” said Thomas G. Zitrides, president of Bioscience, Inc., a leading supplier of biotreatment additives for wastewater treatment plants.

The results of “slug loading” on the plant include filamentous infestations, clogging of equipment with FOG, poor sludge settling and odor problems, in addition to permit violations, Zitrides said.

“Plant operators who formerly relied solely on adjusting operating parameters such as sludge wastage rate or food to mass ratio to alleviate problems, have now added bacterial products as an additional tool to help degrade FOG, enhance settling, reduce the generation of odor-causing sulfides and volatile fatty acids, or displace filamentous organisms. Bacterial addition may also be used to increase the capacity of the biomass to degrade more typical waste streams and reduce effluent ammonia, BOD and suspended solids.”

Such products, usually specially designed mixtures of pre-adapted bacterial strains, growth enhancers, and complementary ingredients, eliminate the adaptation phase and allow the plant to adjust to new conditions and overloads faster. They are also generally less costly than chemical treatments or flocculating agents used to enhance settling.

The most rapidly increasing problem for municipal plants is FOG from restaurants discharging to sewer lines, clogging lift stations, sludge pumping equipment, clarifiers and scum pits, Zitrides said. FOG accumulations can also cause major odor problems.

One recent example, he said, is a 2000-gallon scum pit at a municipal plant in the Northwest. Its contents consist of skimmed solids and grease from various sources in the plant. Wastewater underflow is returned to the headworks. FOG accumulation in the pit caused pipe blockages, increased BOD loading and caused odors. Addition of a MICROCAT®-DNTRF bioformula directly to the pit reduced FOG in the pit, eliminated FOG from the recycled wastewater, reduced equipment downtime and maintenance, and eliminated odors.

In the biological part of the treatment plant, it generally takes about a week for the adapted bacterial population to establish itself, and two weeks to achieve full build-up, Zitrides said. In sewer line and lift station applications, results have been noted in as little as three days.

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