

# USING EBS BACTERIAL ACCELERATION CHAMBER (BAC™ AND BAC²) UNITS TO ENHANCE BIOAUGMENTATION

## ENHANCED BIOAUGMENTATION

Bioaugmentation is often used as a reactive response to an upset, but throwing in pounds of dry bacteria can be either inefficient or ineffective. The theory is that the bacteria will grow once they are added so the actual dosage is not that critical. In concept, that is true. However, extensive work by EBS scientists and university researchers demonstrated that if the initial inoculation (seeding) level is insufficient, the indigenous population crowds out the supplemental bacteria. This minimum threshold dosage ranges between 10,000 – 1,000,000 bacteria (cfu) per mL of system volume or daily flow. Attempting to achieve these inoculation levels by adding dry bacteria is simply not cost effective.

## EBS BAC UNIT AND EBS BACTERIAL FORMULATIONS

The EBS Bacterial Acceleration Chamber (BAC) unit and the two-stage BAC<sup>2</sup> unit are designed to acclimate and grow 10 to 100 times the bacterial population that is in the dry product for the BAC unit and 100 to 1000 times the bacterial population that is in the dry product for the BAC<sup>2</sup>. To achieve this growth rate, EBS developed special product formulations that provide additional nutrients and food for optimum bacterial growth. Other bacterial products do not contain the proper ingredients to sustain multiple log growth rates.

EBS BAC units comes in several sizes for varying system capacities and needs. Several units can be run in automatic mode where only the dry bacteria are added to the chamber once per day, but the unit grows up multiple batches in a 24-hour period. This provides a very hands off approach with minimal oversight needed to succeed.



## APPLICATIONS FOR THE BAC UNIT

EBS BAC units are used in several ways.

- Once through lagoons (aerated stabilization basins) are a prime application for BAC technology due to the lack of biomass (sludge) return. Systems with low retention time can benefit from the higher population of bacteria and aggressive bioaugmentation has been shown to reduce nutrient requirements.
- BAC units are also helpful in conventional activated sludge systems where the indigenous bacterial population is stressed due to high loading or bioaccumulation of harmful chemicals in the biomass. To be effective, the dosage of bacteria must be high enough to affect the population of the system. This quantity can be accomplished with the BAC unit.
- For systems without full biological treatment, application of high levels of bacteria to an aerated equalization tank that discharges to a publicly owned treatment works can reduce BOD and associated surcharges.

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**For more information on the EBS BAC Unit, the BAC<sup>2</sup> Unit, and EBS bacterial formulations, contact Environmental Business Specialists at [info@ebsbiowizard.com](mailto:info@ebsbiowizard.com) or 985-674-0660.**

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