



### ActiveCell<sup>®</sup> Biological Treatment System Treats Wastewater for Reuse Application

**Customer:** Jamaica Public Service Company

**Industry:** Reuse

**Location:** Montego Bay, Jamaica

#### Background

The island nation of Jamaica required additional power generation capabilities in order to satisfy peak demands and prepare for future base capacity requirements. Generation of the incremental 125 MW required large quantities of clean water, a scarce and precious commodity in Jamaica.

#### ActiveCell Solution

The ActiveCell Moving Bed Biofilm Reactor (MBBR) process was selected to treat municipal wastewater and produce a water stream suitable for reuse at the power generation plant. MBBR technology employs thousands of polyethylene biofilm carriers operating in a mixed motion within an aerated treatment basin. Each individual piece of media increases productivity through providing protected surface area to support the growth of bacteria within its cells. It is this high density population of bacteria that achieves high-rate biodegradation within the system, while also offering process reliability and ease of operation.

The new treatment plant will accept 1.8 MGD of municipal effluent from the Bogue WWTP located a few miles away. The complete system consists of three ActiveCell bioreactors in series designed for BOD<sub>5</sub> and Nitrification to less than 10 mg/L and < 2 mg/L respectively. Next, the treated effluent is fed to a dissolved air flotation (DAF) system for removal of suspended solids.

The effluent is then further treated with chlorination and sand filtration prior to reuse as cooling tower make-up. A portion of the filtered flow is demineralized prior to reuse as boiler feed water. If additional capacity is required in the future, additional media may be added up to a total of 67% by volume.

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To learn more about treating wastewater for reuse applications  
using MBBR technology, contact:

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