



A NEW WASTE WATER TREATMENT PLANT IN PORT KLANG



The existing waste water treatment plant, initially designed for 15m³ per hour, faced difficulties with high levels of contamination from fatty acids and esters, which is expressed as COD (Chemical Oxygen Demand, the amount of oxygen needed to “burn” the contamination). Due to expansion and increasing production at our plant in Port Klang, the COD levels of the waste water were getting too high.

Because it is bacteria that will convert most of the contaminants into clean water and gas, the amount of oxygen used and breathed by the bacteria is expressed as the BOD (Biological Oxygen Demand). Water with a high BOD means it still contains many contaminants that allow bacteria to grow, which is something we do not want to happen in our rivers and lakes as there would not be enough oxygen left for fish and water plants.

We decided to extend the existing waste water treatment plant with a new one that promotes the growth of bacteria in a controlled way, converting the fatty acid and ester contaminants into water and gas – ultimately resulting in clean water with a low BOD. The bacteria used in the new plant grow on compartmented circular plastic structures, floating in the dirty water. These plastic structures have a special design and are called the Activecell™ Media.

The plant consists of two basins (each 350m³) filled with Activecell™ Media, and equipped with air blowers and distributors to provide enough oxygen for the bacteria (so that the BOD can be reduced). Special sieves were installed by Headworks Bio, the American company that designed the plant, to make sure that the media remain inside the basins. The Activecell™ Media are forced to travel around with the airstream. That is why these basins also are referred to as Moving Bed Bio Reactors (MBBR). It is a flexible design that allows for increased capacity in the future, is self-regulating, and has a stable community of bacteria even under large variations in contamination.

The piling works started end 2014, and the new plant is now in use since the last quarter of 2015.

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