

Orbal® Biological Nutrient Removal System Bayan Baru, Malaysia WWTP

Biological Nutrient Removal Excellence

97% BOD removal
96% TSS removal
96% NH₃-N removal
90% TN removal
67% TP removal

Design Criteria

Average Daily Flow: 50,000 CMD
BOD: 175 mg/l
TSS: 165 mg/l
NH₃-N: 20 mg/l
TP: 9 mg/l

The Orbal® process was selected to treat the municipal wastewater of the City of Bayan Baru, Malaysia. Bayan Baru has a hot climate.

The Orbal® design for this project consists of two basins each has three concentric channels, with wastewater passing through the channels in series. Dissolved Oxygen levels in each channel are controlled by varying aerator speed and/or disc immersion. The outer channel is maintained at low

DO levels to provide simultaneous nitrification/denitrification conditions while the inner channel is maintained at aerobic conditions. Oxygen recovered by denitrification in the outer channel results in power savings. The Bayan Baru STW is planning on adding a third Orbal® basin to expand plant capacity to 75,000.



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