Application of MBBR Technology In
Food Additives Wastewater Treatment

BioCell
MBBR & IFAS Technology

Case study	Food Additives Wastewater
Start Up	March 2014
Capacity	300 m^3/d
Location	Tianjin China

Overview

Unilever's headquartered is in Holland, Rotterdam and London, UK, it is a multinational company engaged in food and detergent business.

Unilever Tianjin industrial park secondary project is located in the Tianjin Airport Economic Zone, the products including the chicken powder, salad sauce, and the annual production capacity is over 100 thousand tons.

This plant design capacity is 300m3/d, It is used to treat the waste water which discharged from the production process, and the effluent could be promoted to local creterial.

Challenge

The Inlet and outlet values of the WWT plant as follows:

Parameter	Unit	Inlet values	Outlet values
COD	mg/L	3,000	50
BOD_5	mg/L	1,500	10
NH_4-N	mg/l	92	1
N_{total}	mg/l	173	10

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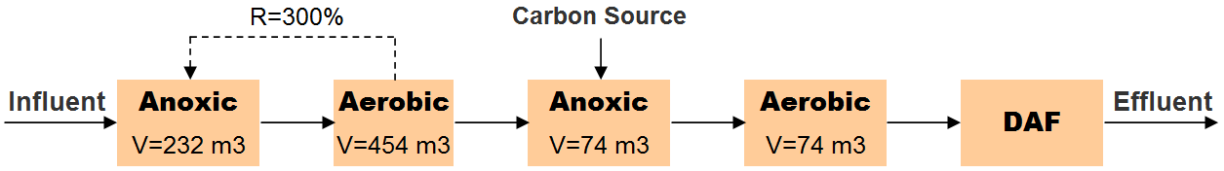
Solution

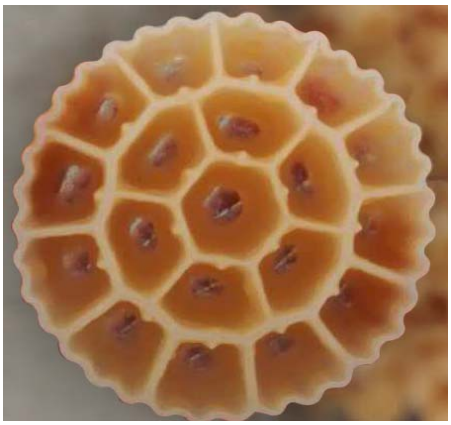
Two stage A/O MBBR biofilm process for treating the high ammonia wastewater, first aerobic stage,the nitrifying bacteria transforms the ammonia nitrogen to nitrate nitrogen. Then the liquid of O1 tank be pumped back to the A1 process, denitrification usingthe carbon source from the inffluent. Next, adding carbon source in the A2 tank for denitrification. The residual carbon source could be further oxidation in the O2 tank.

Flow Chart of the Process：



Results

Two stage A/O MBBR biofilm process was successfully started up in mid May 2014. Performance testing was a success, Biolfilm where attche in the BioCell media growed very well. And the system meets the effluent design criteria.



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