

Treatment of anoxic pond effluent using crossflow microfiltration

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Abstract: The treatment of anoxic waste stabilization pond effluent was investigated using crossflow microfiltration in conjunction with dynamic membranes. The primary membrane used throughout the study was made of woven polyester, while the dynamic membrane was formed of manganese dioxide (MnO₂). Effluent from a lab-scale anoxic waste stabilization pond was treated with and without the addition of slug doses of polyaluminum silicate sulphate (PASS) as a coagulant. Removal of suspended solids, turbidity, COD and *E. coli* was found to be affected by feed turbidity and the addition of PASS. On the other hand, removal of *Streptococcus faecalis* and algal species was found to be 100% and was not affected by feed turbidity. This was attributed to their size which could be more than the pore size of the dynamic membrane. Addition of slug doses of PASS were found to have a positive effect on the permeate flux and quality, which was attributed to the influence of crossflow velocity on the agglomerated particles.