

# UNDERSTANDING OF FOULING IN LOW PRESSURE UF MEMBRANE FILTRATION BY NATURAL ORGANIC MATTER (NOM): A PERSPECTIVE OF ULU PONTIAN RIVER AND BEKOK DAM WATER

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## ABSTRACT

Samples from Ulu Pontian river which has a relatively hydrophilic NOM source water and Bekok Dam river which has a relatively hydrophobic NOM source water have been used for fouling behaviors analyses and membrane autopsy protocol. Ulu Pontian river has shown greater fouling potential and higher flux decline but lesser NOM removal than the Bekok Dam water, suggesting that differences in molecular weight distribution, structural, functionality and hydrophilicity/hydrophobicity between the two NOM sources played primary roles in governing the fouling mechanisms of ultrafiltration membrane. Moreover the membrane autopsies analyses confirmed the flux decline results and permeate analyses as the filtered membrane was mainly fouled by the hydrophilic NOM components such as the polysaccharides-like substances, alcoholic compounds and aliphatic amide of protein groups rather than humic compounds.

**Keywords:** NOM; Fouling; Autopsy; Drinking water