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Degrémont's largest nanofiltration plant: NOM removal at the Vegi 2000

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ABSTRACT

Nanofiltration (NF) is an alternative for micropollutant and organic matter removal. Some important aspects must be taken into account in the design and the operation (e.g., biofouling). The Vegi 2000 plant with a total production capacity of 110,000 m^3/d is the largest NF plant built by Degrémont. Commissioning was scheduled for end of 2008. The first feedback of the plant commissioning of the plant is presented. The choice of the treatment line was linked to pilot tests carried out from 2000 to 2005. The aim was to better understand water quality problems and to compare several alternatives for the treatment; the best dissolved organic carbon (DOC) and especially biodegradable DOC reduction was targeted. Pilots were installed at the Eupen drinking water treatment plant. Ozonation coupled with granular activated carbon (GAC) absorption was tested, and different membrane alternatives were also considered (microfiltration/ultrafiltration) (MF/UF), UF + powderedactivated carbon (PAC), NF). NF was tested with Toray, Hydranautics and Dow membranes and focused on Dow membranes. The first feedback of NF will be presented in the future.

Keywords: Nanofiltration; NOM; Membranes; Brackish surface water; Desalination

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