

MONITORING OF THE ULTRAFILTRATION MEMBRANES AND INTEGRITY - HOW EFFECTIVE DO YOU MANAGE THE RISK OF THIS BARRIER AT NGWRP IN WINDHOEK

Truddy Theron-Beukes*, Juergen Menge**

*Windhoek Goreangab Operating Company, PO Box 2103, Windhoek (Namibia)
Tel: +264 61 272 138/272 083 Fax: +264 61 272 263 E-mail: truddy@wingoc.com.na

**City of Windhoek, PO Box , Windhoek, Namibia
Tel: +264 61 290 3450 Fax: +264 61 290..... E-mail: jgm@windhoekcc.org.na

Abstract *The New Goreangab Water Reclamation Plant in Windhoek (NGWRP) uses an ultrafiltration hollow fibre membrane plant as a final barrier for the removal of bacteria, viruses and other pathogenic micro-organisms. This barrier completes a range of pre-treatment processes including coagulation/flocculation, sand filtration, ozonation and activated carbon filtration.*

The monitoring of integrity on the ultrafiltration membrane plant is done by both direct and indirect methods. Direct monitoring of integrity involves the testing of membrane modules and the measurement of fibre breakage rates and indirect integrity monitoring entails the evaluation of the water quality results.

After more than six years of operation, this paper aims to look at the contribution of direct and indirect integrity monitoring at NGWRP to managing the risk of ultrafiltration membranes as a final microbiological barrier. Fibre breakage rates and water quality results will be evaluated and compared to see what contribution the two different method of integrity monitoring made over the years of operation.

It also aims to look at whether/ if chemical cleaning regimes can be optimised according to the organic quality of the feed water. In addition, the replacement of the old membranes S225 modules with the new SXL module on some of the racks should increase membranes lifetimes/reduce fibre breakage and will be evaluated for the period of operation.