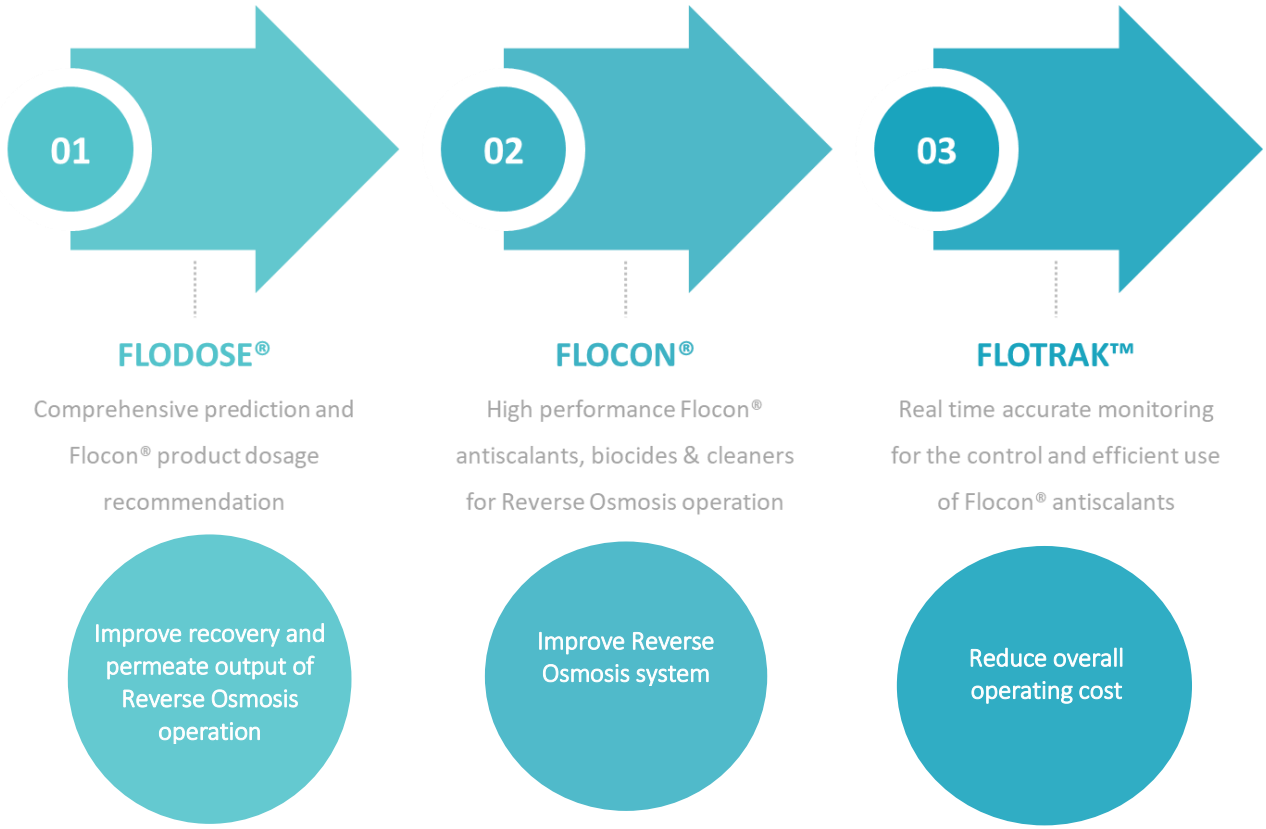
Case Study: Flocon® 260

Category:

Industry: Membrane
Sub-Industry: Desalination
Application: Scale Control
Region: North Africa

Solution – Key Parameters

- Reduced cleaning frequency
- Improved Total Cost of Operation
- Membrane life extension



Challenge

The membrane plant was installed in 2014, with a capacity of 80,000 m3pd, operating with seawater feedwater

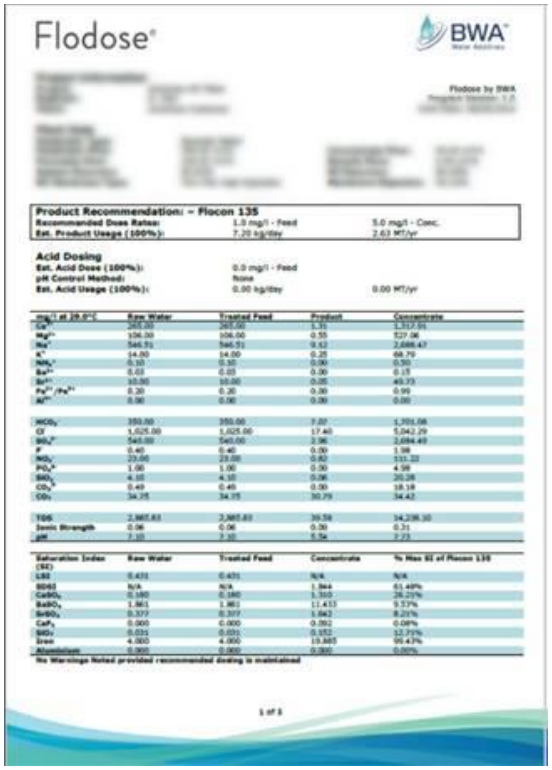
Normal operation for the plant consisted of monthly CIP of membranes, associated membrane replacement and high volumes of CIP chemical usage.

This resulted in additional costs associated with membrane replacement, chemical usage and downtime which reduced the availability of water for sale.

BWA were asked to review the operation and propose a solution to reduce the Total Cost of Operation (TCO) and specifically to reduce cleaning requirements

Solution

BWA introduced their Total Membrane Solutions concept to the end user to identify opportunities for improvement / cost benefits.



Initially, the on-line Flodose® projection tool was used to establish theoretical improvements in plant operation based on fresh, representative water analyses obtained in site audits

From this work, two options were identified for consideration – Flocon® 260 and Flocon® Plus N. The end user then agreed to the trial with specific operation Key Performance Indicators (KPIs) to prove the benefits suggested. Trials were completed using both chemistries and Flocon® 260 stood out, giving scale control performance that the end user had never previously seen.

BWA focused on the full impact of antiscalant usage to include antiscalant usage levels, membrane clean frequency and chemical usage, membrane replacement cost and associated costs due to downtime and high scaling.

Following a value documentation review with the end user, BWA confirmed TCO savings in excess of 1M USD, on an annualised basis, which fully justfied utilising more sophisticated chemical solutions at a higher cost. A substantial part of the saving was associated with the use of the **FloTrak** detection and control system to control product usage properly; essential to high capacity, long term Operations & Maintenance contracts.

Results

ELEMENT	CUSTOMER BENEFIT
 Energy	Less scaling means reduction in deltA across membranes from 260kPa to 170kPa; giving a 35% reduction in electricity usage
 Water	Higher plant availability / increased water due to CIP frequency reduction of 67%
 Asset Integrity	Decreased scaling means a 40% reduction in membrane replacement per annum
 Environment	Control of dose rate saving 0.5ppm of product over-dose Reduction in chemical cleaning of 67%
 Cost	Membrane replacement costs reduced by 39%