



# OxyMem™ Provides Process Intensification on the UK's Largest MABR Plant

## The challenge

Severn Trent Water is the UK's second largest water company, serving 4.4m homes and business customers. The Spenal plant is a 100,000 PE medium sized wastewater plant which treats the sewage wastewater from the town of Redditch. It also serves as Severn Trent Water's renowned "Urban Strategy Demonstration Site".

In the winter months the plant struggles to process all the ammonia load generated from the digested of imported sludge. As a result, at times sludge imports must be stopped, Severn Trent were looking for improved processes to treat all the ammonia within the existing footprint throughout the year.

## The solution

Ten OxyMem MABR modules were installed into one of the lines at the Spenal WWTP. Over a 2-day period the OxyMem MABR modules were simply dropped into the live anoxic zone. The normal operation of the plant was not interrupted and effluent quality was not compromised at any time during the installation. This full-scale installation follows an extensive 12-month pilot trial at Severn Trent's Minworth site on the northeastern outskirts of Birmingham where the OxyMem system proved its value.

## The benefits

Following the installation a biofilm was established in 2.5 weeks. Since then the MABR system has shown excellent stability providing for 12%–17% process intensification. A total of 40 kgN/d was removed by the MABR on average which is a nitrification rate of 2.75 gN/m<sup>2</sup>.d.

OxyMem MABR has helped Severn Trent Water achieve additional treatment capacity and process resilience at Spenal, providing them with a means of treating an increased variable load while consistently achieving the desired effluent quality.

## Fast Facts

**Location:** United Kingdom

**Application / Market:** MABR

**Water Type:** Municipal Wastewater

**Contractor / End User:**  
Severn Trent Water

**System configuration:** 10 modules

**Module type:** OxyFAS



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