

## Water efficiency business profile

### Fosters Australia

Fosters Australia is quenching Australia's thirst in more ways than one.

The Foster's Group is Australia's premier drinks business with a leading portfolio of beer, wine, spirits, cider and non-alcohol brands. In Queensland, the company's major production facility is its brewery at Yatala.

This brewery, which underwent a \$170 million expansion in 2005 to become the equal largest in the country and one of the most state-of-the-art in the world, now produces 450 million litres of beer each year – satisfying approximately one quarter of the nation's thirst for beer.

#### Water conservation approach

"We implemented water efficient methods because, first and foremost, we acknowledge business' responsibilities in the area. We are a desert nation and water is a scarce resource, particularly throughout south east Queensland in the last few years as the city battled the effects of drought. We at Fosters care about the environmental sustainability of our communities and business", Noel Jago, General Manager, Yatala.

When Fosters Australia doubled production capacity following the brewery's expansion in 2005, it was conscious that it did not want to double its water use and waste water discharge. Prior to expansion, the Yatala Brewery's water usage was 3.5 litres of water per litre of beer.

This was already the lowest of any brewery in Australia, down from approximately six litres in the early 1990s, thanks to a range of water reduction methods employed over the years.

Yatala became arguably one of the most water efficient breweries in the world when the expansion was completed, achieving a water/beer ratio of approximately 2.3 litres per litre of beer. Therefore the Water Management Project has enabled the brewery to double its brewing capacity with only a marginal 10-15 percent increase in its water consumption!





The latest major project undertaken was the internal Water Recycling Project.

In this project, wastewater from the brewery is treated through anaerobic, aerobic, and advanced water treatment processes to recover water that is pure. This recovered/recycled water is then used for non-product related applications such as cleaning, boiler feed and cooling tower make-up.

### Water conservation objectives

The water saving objectives were to maximise the recovery of purified water while simultaneously minimising salt discharge to the wastewater network to enable Allconnex Water to continue with its water recycling strategy.

These contradictory objectives were solved using a sophisticated water balance model of the brewery, pilot scale evaluation of the water recycling process and consultations with Allconnex Water. It was determined that the water index could be reduced to 2.1 and 2.5; that salt discharge could be minimised by replacing the ion exchange process with reverse osmosis and by targeting a 50 percent reduction in caustic cleaning chemical consumption per hectolitre of beer produced.

### Actual savings achieved from water conservation approach

During 2005/06, water consumption of the brewery was 1010ML. With the introduction of WEMP's and Foster's new recycled water unit, this consumption level decreased to 840ML in 2007/08. The ratio of water/litres of beer has reduced from an average of 3.84L/L in 2004 to an average of approximately 2.3L/L in 2006/07. Water consumption for 05/06 was 1010.836ML and by 07/08 had reduced to 840.75ML, a reduction of 17 per cent. The \$14 million Water Management Project implemented as part of the brewery expansion enabled the brewery to double its brewing capacity with only marginal increase (10-15 percent) in its water consumption.

As part of Fosters initiatives to reduce water consumption on site, Fosters commissioned a sludge dewatering plant, which recovers approximately 30-35KL/day for reuse. The predominant source of future water savings for Fosters is through continuous improvement and the implementation of further initiatives such as increased reverse osmosis recovery and optimisation of recycled water use.

### Water conservation efforts

Ongoing water conservation efforts are to further optimise the operation of the water recycling plant and re-optimize the brewery water consumption (by applying Replace, Reduce, Reuse, Review concepts), sludge dewatering and storm water harvesting.



*Allconnex Water congratulates Fosters Brewery for setting sustainable water saving benchmarks.*