



## Project Snapshot

**BUNDAMBA, AUSTRALIA**

### CAPACITY

50,000 m<sup>3</sup>/day [13.2 mgd]

### INSTALLED UNITS

9 trains of 18" Series

Pressure vessels

13 units per train [total 117]

**START-UP DATE** Jan 2008

## Bundamba Advanced Water Treatment Project



### BACKGROUND AND CHALLENGES

Due to severe water shortages in Australia water restrictions are fairly common in many regions and cities. The range is from a level 1 to the most extreme level 8, and is also referred to as stages; from 1 to 8, each one more restrictive than the next as you go up. "Water inspectors," are there to implement the rules and issue penalties to people who waste water. South East Queensland's (SQE) normal weather condition is extremely dry, but when the pendulum swings it turns into totally drought conditions. As of this writing the area is at level 6.

In response to these harsh conditions the South East Queensland Water Strategy (The Strategy) has been put in place. It is an adaptive plan whose goal is to meet SEQ's water supply requirements to 2050 and beyond. The Strategy's executive summary states that; *"The Strategy will deliver a Water Supply Guarantee, supplying sufficient water to support a comfortable, sustainable and prosperous lifestyle while meeting the needs of urban, industrial and rural growth and the environment."*

The Bundamba AWTP Located near Ipswich, Queensland, was built to provide an alternative water supply for the region and diminish the pressure on SQE's existing dams and waterways. It is part of a \$2.5bn (AUS) Western Corridor Recycled Water Project. The largest undertaking of its kind in the Southern Hemisphere and is ranked as the world's third-biggest recycled water scheme to date. It will provide 110 MGD (400 MLD) of recycled water to reduce the load on the region's water supply.

### WINNER – Global Water Intelligence Award

The Bundamba Advanced Water Treatment Plant (AWTP) is the winner of the 2008 Global Water Intelligence Award for Global Water Project of the year. AWTP was designed, constructed, commissioned and operating within 39 weeks on budget.



ROPV manufactures pressure vessels in a wide range of sizes for all major industry systems and applications. We are the largest pressure vessel manufacturer in the Asia/Pacific region with headquarters in Harbin, China, manufacturing facility in Dezhou, Shandong Province and global sales office in San Francisco, California, USA.

Our commitment to quality and innovation has led to successful development of original equipment configurations with various industry partners for UF, EDI, large diameter membranes, and emerging water treatment technologies.

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This ambitious project is delivered by an alliance between Black & Veatch/Thiess joint venture in partnership with Western Corridor Recycled Water Pty., Ltd. and the Queensland Government's Department of Planning and Infrastructure and features a network of 200 km of underground pipelines and three new advanced water treatment plants that include: Bundamba, Luggage Island and Gibson Island.

### TECHNOLOGY

The cutting edge plant provides purified recycled water and is quite unique because it employs combined technologies in micro-filtration membranes, reverse osmosis membranes and advanced oxidation using UV irradiation and peroxide. The Bundamba AWTS employs 18-inch diameter MegaMagnum® reverse osmosis (RO) elements from Koch Membrane Systems (KMS) to reclaim municipal effluent for use as the water supply for cooling towers at the Swanbank and the Torong power stations.

In making the decision to use the world's largest commercially available pressure vessel for their spiral wound RO elements, KMS turned to ROPV of Harbin, China. ROPV was born out of the experts from China's highly reputed and well respected Harbin FRP Design Institute. ROPV developed the R180S pressure vessel to house KMS's 18" x 60" MegaMagnum spiral elements with a surface area of 2,800 ft<sup>2</sup> of membrane surface area versus 400 ft<sup>2</sup> for the commonly used 8" x 40" standard pressure vessels. These pressure vessels were specifically designed to significantly reduce the cost, footprint and installation time of the RO systems.

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Doc. No. ROPV-CS-2010-06-001A-EN  
Printed in P.R. China