



## Water Business Group

### Water and Wastewater Design/Build Project

#### Client

Brisbane Water

#### Location

Brisbane, Queensland

## Brisbane Water Luggage Point Wastewater Reclamation Plant, Queensland

CH2M HILL was selected by Brisbane Water as the Construction Manager and Design/Technical Consultant for the design, construction, and commissioning of a 14 ML/day dual membrane wastewater reclamation plant. Roles included preliminary design and layout; detailed process design and performance specification; contract documentation and technical specifications; tender pre-selection; tender assessment and evaluation; construction management; and commissioning management.

The expansion of the BP Amoco Bulwer Island Refinery increased water consumption and was required by October 2000, a lead time of less than four months. Supply could not be met with existing water supply infrastructure. To meet the increased water demand, a 14 ML/day dual membrane filtration plant treating secondary effluent from the Luggage Point Wastewater Treatment Plant was installed for industrial use by BP.

A D&C delivery methodology was adopted for the project. Practical completion was achieved in 42 weeks.

The water reclamation plant produces very high quality water for BP to use as boiler feed, cooling tower makeup, and other process uses.

The dual membrane plant comprises the PALL microfiltration system using their 0.1 micron PVDF membranes, followed by an Ionics reverse osmosis system using Dow thin film composite polyamide membranes. The product is stored in two 6,000 m<sup>3</sup> lined HDPE lagoons, then further chlorinated before transfer to the BP refinery, 4 km away. Reject water from both membrane stages is routed back to the head of plant.

The contractor successfully completed a 30-day plant proving period to achieve practical completion.

The plant is fully automated with all 12 process modules individually monitored with automatic shutdown and start-up of standby units.