

# Mangoola Coal Mine



**Client:** Xstrata Coal  
**Location:** Upper Hunter Valley, New South Wales, Australia  
**Date:** 2006-ongoing

This coal resource in the Upper Hunter Valley had been known for some time but in the early 2000's, increasing coal demand provided the impetus to initiate feasibility studies and an Environmental Assessment, ultimately leading to Planning Approval for the project in mid-2007.

While initially developed by Centennial Coal and known as the Anvil Hill Mine, the greenfields project was subsequently purchased by Xstrata Coal in 2007, and the mine, renamed Mangoola Coal, entered into the design phase in 2008/09.

ATC Williams' involvement began in 2006 when we were engaged to provide a conceptual study of the life of mine tailings storage. This involved site assessment of potential start-up and in-pit tailings storage sites, an assessment of tailings production based on the mine development plans, and identification of the preferred life of mine storage strategy complete with conceptual design of embankments.

Our water management expertise was also utilised to implement the water management requirements of the Environmental Assessment. Using specialised mass-balance software, water modelling was undertaken to determine water storage capacities. Water supply in the Hunter Valley is a precious commodity. Strict regulations are enforced to

manage extraction from the Hunter River. Water security for the Mangoola mine is therefore essential. ATC Williams provided specialist advice for navigating through these complex regulatory issues.

We introduced a new approach in pump station technology, employing a pump that had not been used before on the Hunter River. This provided significant cost savings while minimising environmental impact during construction.

Specific services on the project have included:

- tailings management over life of mine
- water management over life of mine
- geotechnical investigations
- concept and detailed design for tailings dams and water dams
- concept and detailed design for pump stations and pipelines
- TCE cost estimates
- tender and construction documentation
- construction phase attendance.

The water management system design has responded to the current challenges and Mangoola will be a demonstration of a new generation of mines in the Hunter, with substantially greater water security.