

# ENVIRONMENT

The environmental effects of mining need to be controlled by good mine planning. Mine owners wish to be good neighbours to the landowners surrounding them. As part of the mining approvals process, a major environmental impact assessment must be undertaken so that the public, local community and government authorities are properly informed when considering a mining proposal.

## Land Management

One way of being a good neighbour involves building earth wall barriers to keep noise, dust and pollution onsite. The walls prevent noise from spreading across the countryside. Dust is minimised by spraying water over roads, stockpiles and dumping areas. Sometimes an area surrounding the mine is set up to act as a buffer zone protecting the neighbours. Native animals and stock animals can live happily quite close to the mine. The mine plan involves a succession of rehabilitation after mining in an area is completed.

Management of the animals and plants in the local area is important to miners. At the Blair Athol coal mine in the Bowen Basin a unique koala breeding and management program is conducted by the mine's environmental officers.

## Air Quality and Emissions Control

Careful measurement and monitoring of noise, dust and water and air quality is undertaken around each mine. This monitoring is undertaken by environmental scientists employed by the mining company. Findings from the monitoring sites are continuously fed back to the mine management team to enable better planning and operations. Government regulators receive the monitoring results and assess whether standards are being met. Local communities are also advised.

## Water quality

The quality of water is critical at mine sites and is continuously monitored. Salts and sediment are taken up in the water draining from the disturbed area of the



*An environmental scientist monitors vegetation at a rehabilitated mining site.*

*Photo courtesy of BHP Billiton Mitsubishi Alliance*

minesite. This water is collected in settling ponds to allow the sediment to settle. Chemicals are added to neutralise any acidic water and to precipitate salts. The treated water is reused to prevent dust and is also used in the coal preparation plant. Coal mines are major re-users and recyclers of water. All water leaving mine sites must meet stringent environmental regulatory standards.

## Waste material

Fine coal sediments (or tailings), left over from coal preparation are retained in dams so that they can dry out and be covered with overburden and revegetated. In some cases tailings can also be used in some power stations to generate electricity. Coarser waste (non-coal material) of gravel size is buried under the overburden during rehabilitation of the site.

## Energy

Energy is conserved in some underground coal mines by draining methane from the mine and burning it to produce electricity to run the mine. Burning coal-seam methane instead of releasing it into the atmosphere also dramatically reduces greenhouse gas emissions associated with coal mining. Computer modelling of dragline operations has led to improvements which save energy.

*A rehabilitated mining site.*

*Courtesy of BHP Billiton Mitsubishi Alliance*