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Springvale Coal - Delta Electricity Water Transfer Scheme

This case study outlines an initiative which has saved over 3 billion litres of water for Sydney's drinking water catchment.

Springvale Colliery is a longwall coal mining operation located near Lithgow in the Western Coalfields of NSW. The mine is 50% owned by Centennial Coal and 50% by SK/Kores. It supplies Delta Electricity's Western Power Stations with approximately three million tonnes of coal each year.



Springvale Colliery in foreground, Mt Wallerawang Power Station in middle ground and Mt Piper Power Station in background.

The Springvale mine extracts around 15 ML of water each day from dewatering bores to remove excess runoff and groundwater seepage into the mine, and this amount is expected to increase in the future. Under a Department of Environment and Climate Change licence, the water was being discharged into the Wolgan River, which then flows through Wollemi National Park. Even though Springvale Coal's discharge licence conditions were being met, they were looking for ways to improve the management of the mine water discharge.

Delta Electricity's Wallerawang and Mt. Piper power stations require around 60 ML of water each day to operate. In the past this water has been extracted from the Cox's River, which

forms part of Sydney's drinking water supply catchment. Extracting this water reduces the amount of water reaching Warragamba Dam, Sydney's major water storage facility. Delta has also identified potential shortages of water for power generation in the future.

Springvale recognised the potential water savings and worked with the power generators to develop the "Springvale Coal – Delta Electricity Water Transfer Scheme". Under the Scheme, water from the mine's dewatering bores is pumped to a 500 KL storage tank at Springvale Colliery. From the storage tank, the water is transferred by gravity through a 10km pipeline to Wallerawang power station.



Pipeline being laid between Springvale Colliery and Wallerawang Power Station.

The Scheme has a capacity of 30 ML per day, and over the first six months of operation averaged a transfer rate of 15.55 ML of water each day. This has resulted in a total of 3,000 ML of water being returned to the Sydney drinking water catchment in the first six months alone.

The capacity of the Scheme will also allow greater flows in the future. The nearby Angus Place Colliery, owned by Centennial Coal, has a dewatering borehole with a capacity of 6.7 ML per day, and has been linked into the transfer

system. Further dewatering boreholes are planned for both Angus Place and Springvale Collieries.



Springvale Colliery water discharging into Wallerawang Power Station cooling tower.

The benefits from the Scheme include:

- Returning natural flows to the Wolgan River, with significantly improved environmental outcomes;
- Reducing power stations' demand on Sydney's drinking water supply;
- Increasing water security for electricity production, and therefore reliability for NSW residents; and,
- Provision of crucial access to water for fire fighting purposes in remote areas of the Newnes State Forest.

Springvale Coal and Delta Electricity invested over \$5 million to implement the Scheme, and have been recognised for achieving significant water savings. The Scheme was awarded the 2006 Water Recycling and Conservation Leadership Award at the Department of Water and Energy's 2006 Energy and Water Green Globe Awards.

The growing population of the Sydney basin has and will create an increasing demand for electricity and water. The symbiotic relationship which now exists between the mine and the power stations will ensure that the reliability of supply of each commodity is enhanced.

The Scheme is yet another example of the NSW minerals industry working closely with other stakeholders to produce positive environmental outcomes.



Presentation of the Water Recycling and Conservation Leadership Award at the 2006 Energy and Water Green Globe Awards.