

No 5 Ventilation Shaft - Broken Hill - Australia 1990**Mine Shaft**

The modernization of the Pasminco Mines required the construction of a new 6.0 metre diameter upcast ventilation shaft.

Assessment of the hydro geological data of the area suggested that inflows of 700 litres per minute could be expected. This situation would not only overload the mine pumping system but would reduce the efficiency of the ventilation fans. This would also cause an unwanted spray of water around the shaft area which would adversely affect the environment and nearby overhead power lines.

When the 1.8 metre diameter pilot hole was completed, a water make of 300 litres per minute was measured. During reaming of the pilot hole to 6.5m diameter the combined flow from various areas in the shaft was measured at 850 litres per minute. A decision was made to embark on a programme on in-shaft grouting using the patented Sovereign grout system.

This flow was reduced to 15 litres per minute by drilling holes into the aquifers from the sinking stage, followed by the injection of Scem66. Holes were also drilled through the concrete lining to seal residual leaks behind the lining.