Site Profile
El Romeral Mine is an open pit mine, which has been mined for more than 50 years, it belongs to CAP Minería, a chilean company, and it is located in the IV region of Chile.

During all these years, the mine has undergone a series of major breakdowns, which resulted in its closure in 2003. The year 2008 marks the beginning of a new operational phase where it was essential to apply Wall Control methods to avoid past problems.

The Situation
The main objective is to reach the mine design and finish successfully the whole operation by the year 2012.

To achieve this a base line is created that enable working safely during the entire ore body mining, obtaining a blasted material in optimal conditions, controlling the damage and the major instabilities, keeping safe the operations and the mine equipment.

Technical Solutions
The R2S Wall Control Engineering service contemplates to assess and optimise the drill and blast design; by the same token, the design and control of presplit through vibrational studies. The service includes measurement and fragmentation control with advanced modelling and wall quality evaluation through KPI, with the technical support and products that support the Wall Control technology.

To control the instability the first priority is bench quality improvement, carrying out:
- Redesign of Drill and Blast parameters.
- Use of electronic sequences.
- Redesign and pre split optimisation.

The Result
With product support, use of i-kon™ electronic initiators and blast design improvement, through advanced modelling, is achieved:
- Lesser impact on the walls, reducing vibrational levels in 30% produced by Production and Contour blasts.
- Increase presplit filtering from 35% to 55% in sector with major Faults.
- Improve overall bench stability, changing presplit angle from 90° to 75°.
- According to records of mine Radar, reduce in 30% the affected area (evidenced as superficial spills) for the blasts in general.
- Reduce displacements registered in the wall behind the current operation (Graph 2). In the following image you can see the displacement in 30% of prism PE 37 in the time (Graph 1). Where there is less displacement after the start of blasting with electronic sequences.

Graph 1: Graph of displacement Prism PE 37.
In general a mine overall stability improvement is achieved, having operations under safe working conditions (Picture 2).

Acknowledgements

- To Cap Minería – El Romeral Mines, specially to Marco Ramirez for his support during the entire management performed in this mine site.
- To the Company EMT, in charge of giving geomechanical support to the mine.
- To the Company Trepsa-Cerro Alto for the good operational practices carried out during this operation.