THE AUSTIN ADVANTAGE

33% COST REDUCTION AND 15% LOAD FACTOR IMPROVEMENT AT MINA JILGUERO

GENERAL **INFORMATION**

Location: Mina Jilguero, CBB Group, Copiapo, Chile

Industry: Limestone Quarry

Products Used: E*STAR Detonators, ANFO, Emulex 2 Plus, Emuline, & APB Boosters

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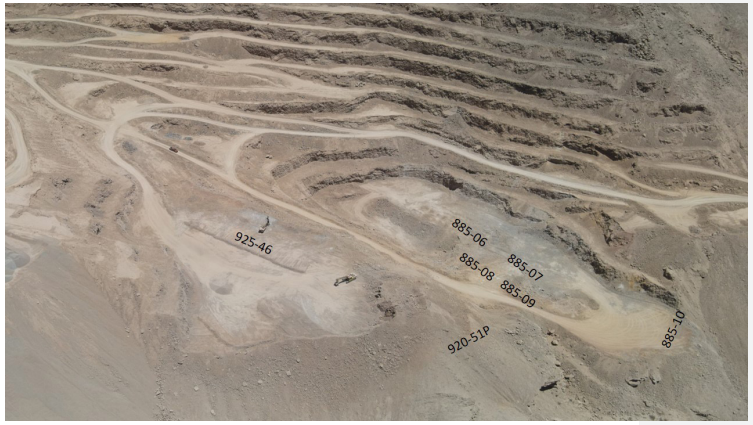
THE **HISTORY**

Austin Powder began its commercial relationship with the CBB Cales Group in 2017 in the El Way mine, where they obtained excellent results in the blasting service and management of powder magazines. This relationship gave them the opportunity in 2019 to be awarded the Goldfinch Mine contract, despite not being the most economical alternative, to replicate and improve on what was done in Mina El Way.

THE **GOALS**

1. Safety in our processes
2. Position the E*STAR System in Chile as a reliable and high-quality alternative
3. Reduction of load factor
4. Minimize drilling rate
5. Minimize oversized material
6. Standardize quarry drilling patterns and rock quality
7. Minimize mineral dilution
8. Protect places of interest
9. Reduction of fine or rejection material



CUSTOMER **CHALLENGE**

For decades, Mina Jilguero dealt with a rocky mass from bad to regular material (20 to 60 GSI) which made drilling and blasting very complicated and resulted in 19% oversized material and 20% fine material.

Until 2019, the Jilguero mine had significantly reduced drilling parameters that did not exceed the 3.0 burden by 2.5 spacing in diameters of 3.5 inches.

THE **AUSTIN** SOLUTION

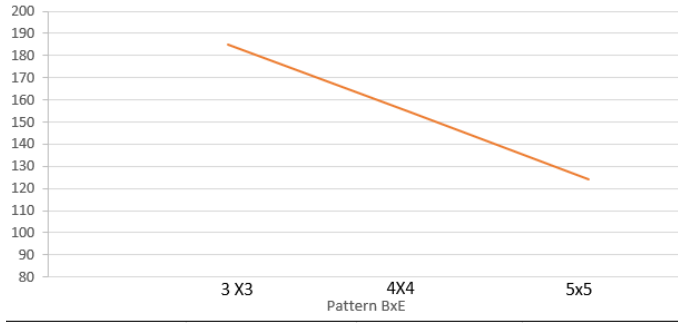
With Austin Powder Chile's proposal to implement dual system blasting, drilling parameters increased to 3.5 burden by 3.0 spacing in 3.5 inches. This produced optimal results well above those obtained for decades, including a 15% reduction of oversized material and a 10% reduction in load factor.

However, the Austin Powder Experts were convinced they could continue improving the blasting results, optimizing the retention of gases with different and heavier stemming material than the cutting left by drilling. They proposed that the client use 6 mm gravel produced by the mine as stemming material, which would help optimize the retention of gases in the stem sector, avoiding the loss of energy as a shotgun effect. This change resulted in an 8% reduction of loading factor and optimization of grinding in the stemming sector and flyrock control.
After months of blast analysis with different sequences and results using dual detonators, Austin Powder Chile proposed to the customer the implementation of E*STAR detonators. The company theoretically demonstrated the benefits of versatility and safety, which are enhanced with an economic improvement in the short and long term.

THE **OUTCOME**

Although the implementation of the Electronic E*STAR System in the Goldfinch Mine will result in a decrease in the consumption of ANFO in sacks, the business vision is to deliver quality, safe, and economical service based on the long-term relationship with our customers and the technical and operational support towards them.

- Reduction of load factor by 15%
- Reduction of drilling rate by 23%
- Cost reduction per blasted ton of 33%
- Expected homogeneous fragmentation
- Removal of oversized material



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