



CASE STUDY

NOVACELL™ PILOT PLANT

PROJECT BACKGROUND

Capstone Copper and Jord deployed a NovaCell™ pilot plant at the Mantos Blancos mine in Chile to de-risk the industrial-scale implementation. The trial targeted copper losses in rougher tailings, specifically in the coarse (>212 µm) and fine (<45 µm) size fractions, where conventional flotation is less efficient. By validating the copper recovery at these size extremities, the trial provided the metallurgical and economic justification for advancing the project toward full-scale implementation.

“Capstone Copper recognizes the significant value that coarse particle flotation (CPF) can bring to our operations. The NovaCell offers a distinct advantage by recovering valuable minerals across the entire particle size distribution generated by our existing comminution circuits. Moreover, it requires smaller downstream infrastructure to produce a marketable concentrate, significantly reducing capital expenditure compared to other CPF technologies we have assessed.

The installation of the first pilot-scale NovaCell at Mantos Blancos validated the strong laboratory-scale results and enabled us to identify key operational levers to optimize performance for the site.” **Brandon Akerstrom (Director – Metallurgy)**



TECHNICAL HIGHLIGHTS

- **Superior Metallurgical Performance:** The pilot consistently exceeded all headline targets, achieving up to **56% copper recovery**, a **product upgrade ratio > 6.0**, and a **mass pull of ~8%**.
- **Competitive Differentiation:** Results validated the simplicity of the NovaCell™ design; high-value minerals were captured across all particle sizes in a **single device**, eliminating the need for upfront classification or separate fines flotation circuits required by competing technologies.
- **Coarse Particle Recovery:** Mineralogical analysis confirmed the system successfully recovered coarse, poorly liberated particles with **< 30% surface exposure**, proving a critical capability for Coarse Particle Flotation (CPF) applications.



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