

# Carrapateena Sub Level Cave Crows Foot Design – Safety in design to support efficiency and production automation

Sub-Level Cave, Safety, Automation, Production, Efficiency

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Carrapateena is a copper-gold deposit hosted in a brecciated granite complex, located 500km North of Adelaide, South Australia. The deposit will be mined by Sub Level Caving Mining method at a rate of 4.25 MTPA. The Carrapateena Sub Level Cave construction remains on schedule for first production in Q4 of 2019, ramping up to full production over the following 18 months.

Traditional sub level cave designs have had issues with safety interactions on production levels, namely at the perimeter drive, as well as presented challenges for the application of automation due to frequency of activity required to achieve ring turn-over rates.

This paper discusses the work carried out during the Carrapateena feasibility study and optimised during project execution to update the sub level cave production level mine design, with a layout known as the Crows Foot layout.

This paper focuses on:

- An introduction to the Carrapateena Operation and mine plan.
- An overview and historical challenges of traditional Sub Level Cave production level design.
- An introduction to the Carrapateena Crows Foot sub level cave mine design, including production level design parameters as well as development metres and productivity comparisons.
- Outlines the expected benefits of the Crows Foot design for safety in design of sub level cave operations.
- Provides a roadmap for improved production efficiency, level operational philosophy and the application of automation within the Sub Level Cave.

The paper will be updated with information and learnings coming from the start of production late 2019.