

Memorandum

To: Lithium 2019 Ausimm organising committee

Cc:

From: David Billington, Principal Mining Consultant Mining Plus

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Subject: Mining shallow hard rock pegmatite

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Presentation abstract

The economic mining of hard rock pegmatite, with shallow dipping orientation has proved historically difficult with very high mining dilution and poor mining recovery, especially where contamination can have severe impacts on process recovery and product quality.

During recent work for multiple clients, an alternative non-traditional approach has been developed in what has the potential to be transformational for these orebodies.

The focus of the change is to

- reintroduce mining to surfaces rather than horizontal benches for pegmatite recovery
- use economic shape software to determine the nature and shape of the roof and floor of economic pegmatites
- demonstrate which portions of the pegmatite swarms are worth economically mining
- determine mining access and traffic paths on these surfaces
- provide a method for estimating thus scheduling localised dilution and recovery estimates
- provide sufficient drill and blast expertise to create separation at the desired surfaces
- provide a methodology for effective mining of shallow pegmatites

The focus is to provide mining solutions to minimise the introduction of additional processing paths such as flotation, optical sorting. These processes may have a place in the process flowsheet but where economically feasible and effective the maximised and clean recovery of ore should be complete in the mine.

In general terms demonstrate economics of the favourable low capital and fair manner to improve recovery of clean shallow dipping pegmatite.