

GOLD & MINERALS

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Xstrata Technology's key role at Phu Kham

Pan Australia's Phu Kham mine has a strong association with Xstrata Technology – a link that undoubtedly goes back to contacts made through their respective headquarters in Queensland.

Xstrata Technology was at Phu Kham for its start up in 2008, with the provision of an IsaMill in its concentrator.

A large M10,000 IsaMill with a 3,000kW motor, was selected for its regrind circuit to treat copper gold rougher concentrate before further flotation.

Rougher concentrate, with average F80 sizing is treated through the IsaMill to liberate the copper minerals further, to a size range below 40um. Importantly this grinding takes place in fully inert conditions, with the rubber-lined mill using ceramic Magotteaux media to grind the particles.

Liberated minerals then report to the flotation circuit to enable final grade concentrate to be produced.

Xstrata Technology's Global Marketing Manager, Steve Smith said the Phu Kham installation was the first IsaMill™ project for his company in South East Asia.

He said Xstrata Technology had great assistance from PanAust in getting the regrind installation commissioned quickly, and then training all operational and maintenance crews.

The installation also had the first IsaCharger fitted into the IsaMill circuit last year.

This device is a self contained water powered unit that delivers the media to the mill.

Smith said the IsaCharger has several modes of operation and can add small amounts of media to enable the mill to operate at a set power draw, as well as



The M10,000 IsaMill at Phu Kham.

operating at full speed that enables the mill to be filled quickly after a shutdown.

"The unit has no moving parts, so maintenance is very simple," he said.

The IsaMill will be joined by Xstrata Technology's Jameson Cell when the Phu Kham circuit is upgraded in 2012. The Jameson Cell will be installed between the IsaMill and conventional cleaner flotation cells in the flowsheet and will be producing final grade copper concentrate in just one pass.

This type of circuit is similar to the installation at Oz Minerals Prominent Hill operation, where the IsaMill grinds rougher concentrate to allow a final grade concentrate to be produced by the Jameson Cell – commonly known as high grade scalping flotation.

Jameson Cells are well suited to these duties involving particles with very fast flotation kinetics, as freshly liberated material can report to the concentrate

quickly, without further contamination of the mineral surfaces.

The use of wash water on the cell enables any non sulphide gangue to be washed from the concentrate, creating good quality concentrate.

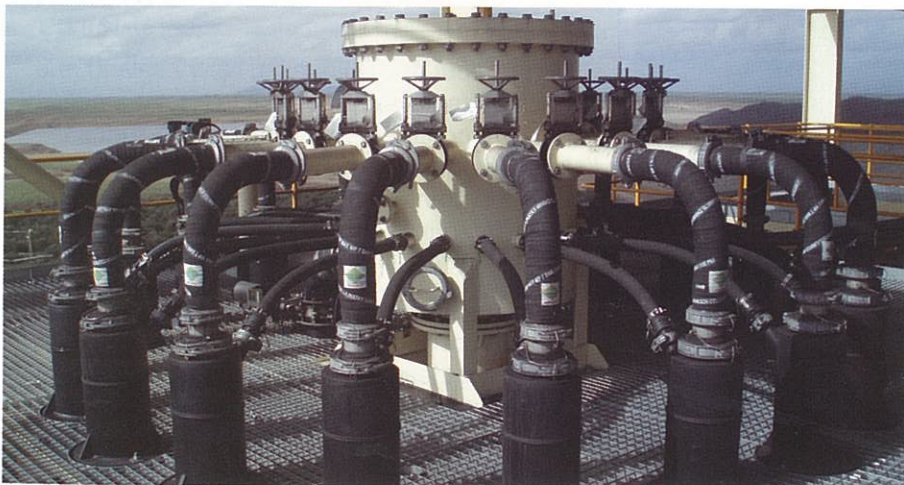
The slower floating liberated minerals in the Jameson Cell tailings, need longer time to float, and are well suited for recovery by the conventional flotation following the Jameson Cell.

Smith said installation of the B6500/24 Jameson Cell for the Phu Kham upgrade is one of the biggest cells being used for base metal flotation, and will provide the extra flotation capacity in a relatively simple circuit.

"The use of Jameson Cells in high-grade scalping applications works well, and enables the concentrate to be recovered quickly under the high intensity conditions of the cell, with high solid loadings being achieved by the generation of ultrafine bubbles in the cells' downcomers," he added.

Designing the circuit to treat the IsaMill discharge – free from iron media contamination due to the use of inert ceramic media – takes account of the mineral species to be recovered, that is, fast floating liberated minerals in the Jameson Cell, and the slower floating mineral species in the conventional cells.

The B6500/24 being designed for the PanAust expansion will incorporate the new Mk IV design. This model is designed for minimal maintenance and robust operation, which includes amongst other improvements, lightweight flexible slurry inlet hoses, which allow for easier inspection when required.



A model IV Jameson Cell.