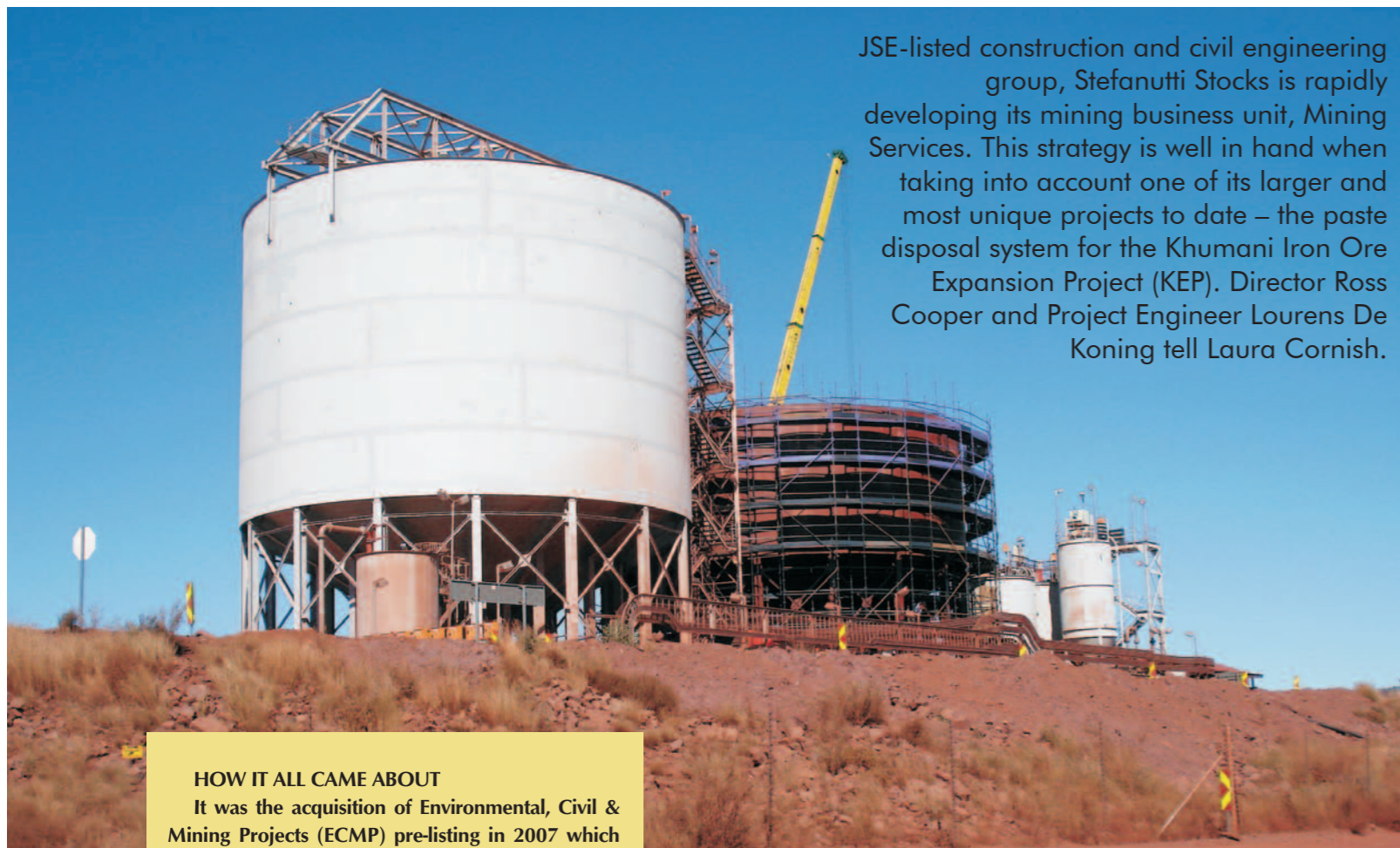


# Stefanutti Stocks Mining Services

## tells the 'tail' for Khumani expansion



JSE-listed construction and civil engineering group, Stefanutti Stocks is rapidly developing its mining business unit, Mining Services. This strategy is well in hand when taking into account one of its larger and most unique projects to date – the paste disposal system for the Khumani Iron Ore Expansion Project (KEP). Director Ross Cooper and Project Engineer Lourens De Koning tell Laura Cornish.

### HOW IT ALL CAME ABOUT

It was the acquisition of Environmental, Civil & Mining Projects (ECMP) pre-listing in 2007 which saw Stefanutti Stocks take a position in the mining sector.

Today, Mining Services (incorporating ECMP) comprises four core divisions – Tailings Operations, Design & Construction, Contract Mining and Materials Handling.

The fifth division – Technical Services –caters to all other mining operations.

ECMP was established 18 years ago, its primary area of specialty including the design, construction and operation of tailings facilities.

Its subsequent expansion to include open cast mining lead to its purchase by Stefanutti Stocks in 2007.

The intention is to grow the Mining Services business unit quite substantially in the short- to medium-term.

With regards to Tailings Operations specifically, although there are a number of major projects about which the company can boast, the KEP contract holds the 'flagship title'. Khumani mine is operated by Assmang, and jointly owned by Assore and African Rainbow Minerals (ARM).

"We have been involved with the KEP project since the mine's inception in 2004," De Koning says.

Based on its success with Khumani Phase 1, which included the turnkey project for the design and construction of an 18m<sup>3</sup> paste thickener, underflow pumping system and paste disposal facility, the division was awarded the turnkey project scope for Phase 2.

"This includes an additional 18m<sup>3</sup>paste thickener, upgrades and extensions to the underflow pumping system as well as modifications to the paste disposal facility such as raising the wall another 5m," De Koning adds.

The tailings facility has a 140ha footprint with 14m high embankments.

Through the expansion, it will touch close on 20m in height, with plans for it to ultimately reach about 30m above ground.

In addition to development and construction, Stefanutti Stocks Mining Services will also operate the paste disposal system which includes the thickeners, underflow system and paste disposal facility on a full time basis. "We are in the second year of a five year operational contract," Cooper points out.

The tailings portion of the project will be part of the overall expansion that will enable Khumani to expand from this year's 10mtpa to 16mtpa. Paste thickening (for tailings) has become a company specialty, whose design enables maximum water return for re-use in the main plant prior to disposal on the slimes dam.

This technology is particularly well suited to Khumani, situated in the Northern Cape's semi-desert region, which is known for its water scarcity.

"We have guaranteed our client water returns of at least 70%, although we are achieving in excess of 80% returns currently," Cooper declares.

The slurry is pumped 6km from the primary thickeners situated at the main plant on the Parsons farm, to the paste thickeners. Overflow from the paste thickeners is pumped back to the plant for re-use in the process.

Stefanutti Stocks Mining Services is currently negotiating the construction of a second return water dam.

Metso (South Africa) is supplying the centrifugal pumps to cope with pumping demands.

Each paste thickener will process between 147tph to 350tph, but must be able to handle up to 450tph for short periods.

In terms of deadlines, the project is running slightly ahead of schedule.

The raising of the embankments is due for completion in December this year, and the second paste thickener, subcontracted to WesTech Process Equipment Africa, will be installed by October (fabrication is already complete).

Cape Town-based consulting engineers, Patterson & Cooke, were sub-contracted to design the upgraded underflow pumping system, which is due for completion in December this year.

Overall, cold commissioning is anticipated for year-end, with hot commissioning to start early next year.

Aside from the enormous project scale of Khumani, Cooper explains that a variety of other reasons make this project "quite unique" and a true 'flagship' project.

Because the tailings facility is situated next to the main highway, intensive safety measures had to be incorporated, as well as enabling the structure to be "aesthetically pleasing" and more environment-friendly.

This being said, the tailings wall is constructed out of overburden, effectively functioning as a dam, as opposed to a pure waste facility.

The dam wall is also compartmentalised, to accommodate mining activity within the footprint of the paste facility.

In order to optimise the functioning of the pumps, thickeners and tailings as a whole, the 'perfect' slurry density is essential, bearing in mind that pumps must cater for high densities.

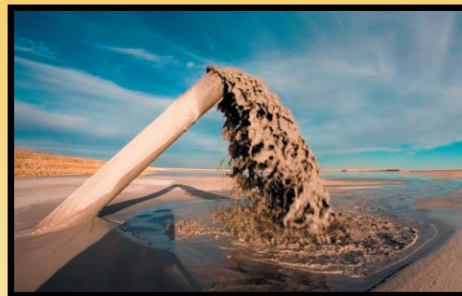
Both Cooper and De Koning believe the project team has perfected this 'cocktail' for Khumani, enabling optimal equipment functioning and water return.

"This is definitely a unique iron ore system application," Cooper reiterates. ○



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