

NEXT CAB OFF THE RANK

Australia's newest lithium mine, the Bald Hill joint venture, kicked off production in March. With a burgeoning electric vehicle market spearheading demand for lithium-ion batteries, Tawana Resources is already pushing full steam ahead with expansion plans.

CAMERON DRUMMOND

LITHIUM production has commenced at the Bald Hill lithium-tantalum mine in the Eastern Goldfields region of WA.

Bald Hill, a 50:50 joint venture (JV) between operator Tawana and Singapore-listed Alliance Mineral Assets Limited (AMAL), is the first Australian mine to commence spodumene production since Galaxy Resources' Mt Cattlin in 2016.

Bald Hill was originally a tantalum project operated by Cannington Mines between 2002 and 2005.

It was then shuttered until Tawana's JV partner AMAL refurbished the tantalum plant in 2016; however the project did not go into production due to depressed prices.

In July 2016, Tawana decided to buy into Bald Hill for \$12.5m, earning a 50 per cent stake.

The company immediately began drilling and proving up lithium resources in the area to fast track development and meet overseas demand, with tantalum becoming a secondary focus.

After a preliminary feasibility study (PFS) showed a maiden resource of 18.9 million tonnes grading at 1.18 per cent Li₂O, the JV decided to go straight into construction, skipping the next traditional step of undertaking a definitive feasibility

study (DFS) prior to development.

"We didn't go beyond the PFS because the project's economics were so strong and we felt it would have been a waste of time," Tawana managing director Mark Calderwood said.

At a capital cost of about \$75m – of which \$30m was spent on the refurbishment of the plant – Bald Hill is one of the lowest cost lithium mines to come online in Australia.

"The fact it was a brownfields project as a tantalum mine meant we could get the project up and running fairly quickly," Mr Calderwood said.

To help fund construction, Tawana and AMAL were prepaid a total of \$25m in an offtake agreement penned with Hong Kong-based Burwill Holdings in April 2017.

The funding was used towards meeting the remaining capital costs of Stage 1, leaving Tawana virtually debt free into production.

Under the agreement, Burwill will receive 100 per cent of Stage 1 lithium concentrate produced from Bald Hill over a five-year term at 2018 and 2019 prices of \$US880 per tonne (t).

The prepayment is interest free, and will be repaid from 20 per cent of the income from each lithium concentrate shipment

until it has been repaid.

At estimated shipping volumes, Tawana expected those repayments to be finalised before the end of the year.

"Roughly monthly, we will send shipments of between 10000t and 15000t of production during 2018," Mr Calderwood said.

After 2019, shipment prices will be settled annually for the remaining three years of the contract.

Seven Months to Production

Lithium concentrate is being produced through a newly constructed and commissioned 1.2 million tonne per annum (mtpa) dense medium separation (DMS) circuit, which will be ramped up over several months to produce its nameplate capacity of 155,000tpa.

Within its first two weeks of operation, the DMS circuit performed to nameplate capacity of 162 tonnes per hour (tph), and the first of three performance tests achieved positive results.

4152 tonnes of ore was processed over a 24-hour period at an average rate of 173tph, with initial primary concentrate sampling returning a grade of 7.03 per cent spodumene and less than 1 per cent mica.

Tawana said the results were achieved on low-grade commissioning ore and the plant performance was consistent with test work results achieved in the development and design phase of the project.

"To produce concentrates with more than 6 per cent lithium oxide within the first two weeks of ore commissioning exceeds expectations given the initial low feed grade ore being used for commissioning start up," Mr Calderwood said.

"The high-quality of concentrates appears to be a testament to the favourable mineralogy-metallurgy of the Bald Hill deposit and the bespoke design of the DMS circuit."

Mr Calderwood said it was a great effort by everybody involved to take Bald Hill from maiden lithium resource to production in nine months, including only seven months of construction from the ground up.

"The focus now is to achieve steady state production from the Stage 1 DMS circuit and optimise lithium yields," he said.

He admitted that the company had felt it was in a race to develop the mine and secure offtake agreements as soon as possible, however demand for lithium had since picked up pace and was growing exponentially.

"Previously there was a major sense of urgency when we weren't sure how deep the market was, but I believe people have realised it is a lot deeper than they anticipated," Mr Calderwood said.

The change in market sentiment has spurred the Tawana board to advance plans to increase production by installing a Stage 2 fines circuit to process stockpiled fines under 5.6mm.

For a projected capital expenditure of under \$10m, the fines circuit would boost mine production capability by an estimated 20 to 25 per cent to 220,000tpa.

The company also expects to begin shipping a minimum 600,000 pounds of tantalum concentrate from this month until the end of 2020 to German offtake partner HC Starck Group, with pricing above what had been anticipated in the PFS.

Expansion

High demand from offtake partners will drive an increase in production and exploration activities this year at Bald Hill, according to Tawana.

Speaking at Paydirt's Battery Minerals Conference in Perth last month, Mr Calderwood signalled 2018 would be a pivotal period of growing the mine's resource base and expanding production rates.

"We could easily take this project up from a 155,000tpa nameplate capacity up to 220,000tpa, and an extra DMS circuit could double that to 440,000tpa quite easily with a low capital cost."

To meet those production rates, Tawana is accelerating plans to prove up further reserves and extend Bald Hill's current mine life of just 3.6 years.

Mr Calderwood said that tenements surrounding Bald Hill had been vastly underexplored while the company was commissioning the plant and getting into production.

"It's been pretty quiet over the last six months as we first focused exploration on the existing mining license to get into production quickly," Mr Calderwood said.

"However, we are about to fire up exploration again over about 1600sqkm.

"With AMAL, we have 770sqkm locked up under the JV, and in our own right have about another 770sqkm to explore in the region."

With the resource open in all directions from the plant site, the company said it would conduct an aggressive infill and extensional drilling campaign this year.

"Initial data has uncovered vast pegmatite fields covering over at least 200sqkm of the Bald Hill project area so far," Mr Calderwood said.

"Unlike gold projects, where finding enough resource tends to be an issue, these pegmatite fields can be fairly large.

"I have full confidence in our exploration team to prove up further reserves and we should be able to reveal two or three reserve upgrades this year.

"Due to the size of our project area we have at least a decade of exploration ahead of us to grow production as the market grows."



Bald Hill is Australia's fifth producing lithium operation.