Buffalo Coal looks to achieve sustainability

Although it is currently trading profitably, Buffalo Coal, which operates the Aviemore and Magdalena mines near Dundee in KwaZulu-Natal, is faced with several challenges, some technical and some financial, which have largely been inherited by the current management and which need to be overcome if the company is to ensure its long-term future as a small- to mid-tier coal producer. Interim CEO Rowan Karstel, appointed in October last year, has been charged with the task of putting the company’s mining operations on a sustainable footing and – as he recently related to Modern Mining’s Arthur Tassell – believes that excellent progress is being made towards achieving this goal.

The mines were originally established by the Slater brothers but were acquired by Buffalo Coal (then known as Forbes & Manhattan (Coal) Inc) in 2010 when it bought out Slater Coal. The two properties are situated in the Kliprivier coalfield near Dundee, with Aviemore, an anthracite mine, and Magdalena, a bituminous producer, being located respectively 10 km and 27 km north of the town. Both mines are underground bord-and-pillar operations (exploiting the Gus and Alfred seams) although Magdalena did operate an open-pit section until early 2015. Aviemore has two conventional drill-and-blast sections while Magdalena operates four continuous miner (CM) sections.

Magdalena has its own beneficiation plant but the coal from Aviemore is processed in a wash plant at Buffalo’s Coalfields site on the outskirts of Dundee. The Coalfields wash plant was commissioned by Slater Coal in 1992 (at that stage it was a toll treatment facility as Aviemore had not yet started up) while the Magdalena plant was built in 2007. Between them, the plants – which have identical capacities – can treat 3 Mt/a, which is in excess of Buffalo’s present requirements. The Coalfields site is also home to a calcine plant which is owned by a third party but which is fully integrated into Buffalo’s operations. Essentially a rotary kiln, the plant is used to drive off ‘volatiles’ in the anthracite to increase the fixed carbon content.

Since the 2010 deal, ROM production at the mines has roughly doubled from 822 000 tonnes to the 1,56 Mt (892 591 tonnes saleable) recorded in 2016, with Magdalena – which commissioned its first CM in 2011 – accounting for roughly two thirds of this figure. While this increase is impressive, much of this period was characterised by declining prices for thermal coal and reduced demand for anthracite with the result that Buffalo Coal’s operations had to be substantially restructured in 2014/15 to increase efficiencies and reduce costs.

Karstel, a mining and civil engineer who has enjoyed a long career in the coal industry (he was formerly with Beacon Hill Resources, Keaton Energy, BHP Billiton Energy Coal and Xstrata Coal), is building on this restructuring. “The measures taken were a big step in the right direction but we still need to do a great deal more to ensure the long-term sustainability of our operations.”
The anthracite from Aviemore is washed in this plant at the Coalfields site.
The calcine plant at the Coalfields site.

A 2000-ton blast just happened here.

This has involved negotiating a 22-m thick dyke with a 13.5 m downthrow and the work is now completed. Another priority at Magdalena is to reduce contamination of coal mined in the four underground sections and Buffalo is working closely with STA to achieve this objective.

According to Karstel, about 80% of production at Magdalena is derived from the Alfred seam. “The problem with the Alfred is that it has a very weak roof and the potential for fall-of-ground incidents is high,” he says. “To prevent fall of ground, the weak roof needs to be cut with the CMs and this causes contamination which reduces the saleable product yield at the end of the day.”

Magdalena is a typical KwaZulu-Natal underground reserve with lots of dykes and faults. Karstel also mentions that Buffalo is working on a new reserve statement for Magdalena, as well as a process to re-engineer the operation and evaluate it at a combination of CM and drill-and-blast operations.

At Aviemore, as mentioned, mining is undertaken by conventional drill-and-blast methods with battery-operated scoops (rather than loaders and shuttle cars) being used to transport coal to the various conveyor locations. The Gus seam is mined (the average seam thickness is 1.6 m) and the roof conditions are much more competent than at Magdalena.

Potentially, Aviemore – which has a 42 MThS resource – has a remaining life of at least 12 years but to realise this a significant investment will have to be made in a new adit. Says Karstel: “This new adit – the North adit – will access new mining blocks that cannot be easily reached through the existing infrastructure. In any event, the distances involved would be too great. In our current mining areas, ventilation is already reaching the legal limits, power dips are becoming a problem and travel times to working areas are becoming an issue – although there are various interim measures we can take to alleviate these problems.

“We have completed a concept study on the North adit project and we now have an independent consultant, cPod, working on a pre-feasibility. If this is positive, we’ll proceed to a feasibility later this year. Assuming we get all the requisite regulatory approvals, construction could start in the second half of 2018. The project would take roughly 18 months to complete, so first production would be in early 2020. We will have to await the outcome of the various studies for accurate capex figures but initial estimates suggest that the project would cost in the region of R200 million.”

Karstel adds that Aviemore would become a four-section operation once the North adit is commissioned, allowing ROM production to be more than doubled (to almost 1.3 Mt/a) by 2022. This level of production would also

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Buffalo Coal, roughly half is sold into domestic markets with the other half being exported through Richards Bay. Anthracite exports are somewhat higher, with approximately 71% of anthracite production being exported in the first quarter of this year. Buffalo keeps its logistics to a minimum by selling to traders on a Rand per ton basis, who then transport it from the Coalfields site — where all product is stockpiled — via either road or rail. In the case of thermal coal for export, it is mostly purchased by Glencore. Buffalo has its own small Quattro allocation (204 500 tons) but this is likely to be withdrawn within the next few months, although the company does not expect this to result in any reduction in exports.

Giving his views on the year ahead, Karstel says that the outlook for Buffalo is positive. “The price of thermal coal has rebounded quite nicely from the levels seen in the first half of 2016 while anthracite demand is very robust, so we envisage good sales and revenues,” he states. “Moreover, we’re one of the few suppliers of anthracite left in the country, given that two other anthracite mines in KZN – Springlake and Vaalkrantz – are no longer producing. I’ve been encouraged by our first quarter results this year, which indicated net revenues of R163.9 million compared with the R138.3 million of the first quarter of 2016. Most importantly, operating profit was R18.2 million compared to R10.6 million in Q1 2016. We’re definitely moving in the right direction and I’m very optimistic that we will have a good 2017 provided the contractor at Magdalena can overcome the geological challenges.”