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Elikhulu

HIGHLIGHTS

Safety

No fatalities were reported

LTIFR (per million man hours) improved to 1.37 (2021: 1.71)

TRIFR (per million man hours) regressed to 8.23 (2021: 5.14)

Sales and production

Gold sales and production increased to 52,220oz (2021: 51,459oz)

Capital expenditure

Total capital expenditure was US\$11.0 million (2021: US\$4.1 million), comprising:

- **sustaining capital** expenditure of US\$3.1 million (2021: US\$0.5 million)
- **expansion capital** expenditure of US\$7.9 million (2021: US\$3.6 million)

Cost of production

AISC per ounce increased by 18.6% to US\$1,003/oz (2021: US\$846/oz) adversely impacted by a reduction in recoveries to 35% (2021: 41%) together with an increase of 5.2% in tonnes treated and above-inflationary increase in the costs of reagents and electricity

Cost of production increased 19.1% to US\$45.6 million (2021: US\$38.3 million)

- **Processing costs** increased by 15.7% to US\$23.6 million (2021: US\$20.4 million)



Elikhulu metallurgical plant | Circle: Equipment inspection at the Elikhulu metallurgical plant

OVERVIEW OF OPERATIONS

Elikhulu is one of the lowest-cost gold mining operations in Southern Africa, producing 52,220oz (2021: 51,459oz) at an AISC[®] of US\$1,003/oz (2021: US\$846/oz), with a remaining operational life of 11 years. The plant processes approximately 1.2Mt of historical tailings per month from the three existing TSFs at Kinross, Leslie/Bracken and Winkelhaak. Reprocessing will result in the residues being redeposited to a single TSF site, reducing our ecological footprint. Elikhulu's Kinross TSF extension is lined to prevent and limit possible underground seepage and pollution. This demonstrates our commitment to addressing the environmental legacy of historical tailings depositions. As the TSFs are located near residential areas, specialist independent contractors were appointed to build and operate the TSFs. In addition, tailings dam management for the Group is overseen by an appointed competent person at each TSF site to ensure monitoring and compliance with legislation as well as the Group's internal codes of practice. Recent high-profile incidents of TSF failures within the global mining industry demonstrate the potentially severe effects of tailings facility failures and have resulted in an increased demand for regulatory action. In August 2020, the International Council on Mining and Metals, the United Nations Environment Programme and the Principles for Responsible Investment launched the GISTM. These standards place a strong emphasis on improving the safe management of tailings facilities, community engagement, governance and independent review requirements. The Group appointed a responsible TSF engineer in June 2022 for all its operations, as recommended by the GISTM.

As the majority of Pan African's TSFs were constructed before the introduction of the GISTM, the Group has been implementing ongoing assessments of its TSFs and is in the process of implementing the appropriate actions required to narrow any compliance gaps.

The Elikhulu operation consists of a technologically advanced, automated plant with a reduced labour requirement. The plant's numerous innovations, in addition to its high throughput and short pumping distances, include its modern extraction process, which does not require regrind mills and thickeners, has low reagent consumption and supplements recirculated process water with non-potable water from adjacent underground operations.

The Group designs its tailings plants to incorporate a high oxygen mass transfer pre-oxidation step to improve gold extraction. The remaining activities are also automated to some degree, with the latest in hydro-mining technology employed. These factors allow production costs to remain low.

Elikhulu is a testament to Pan African's ability to conceptualise, plan and complete substantial growth projects ahead of time and within budget. The Group has successfully delivered four such projects to date.

RENEWABLE ENERGY PROJECTS

The 9.9MW solar PV renewable energy plant at Evander Mines commenced the generation and supply of electricity to Elikhulu as part of its hot commissioning process in May 2022. Evander Mines' solar PV renewable energy plant is one of the first utility-scale solar PV renewable energy facilities to be commissioned in the South African mining industry and will provide approximately 30% of Elikhulu's power requirements during daylight hours. It will materially reduce electricity costs at this operation while also reducing its dependency on the national grid.

Pan African concluded the concept design and the bankable feasibility study for this solar PV renewable energy plant in 2019 and obtained municipal consent for its construction in December 2019. Engineering studies and other regulatory processes, including the water-use licence, environmental approvals and DMRE consent, were obtained in 2020. In December 2020, the Group entered into an engineering, procurement and construction agreement with juwi Renewable Energies Proprietary Limited (juwi South Africa) to complete and commission the plant. The National Energy Regulator of South Africa (NERSA) generation licence was issued in August 2021. The plant was commissioned in May 2022 when power was fed into the grid for use at Elikhulu.



Hydro-mining activities at Elikhulu | Circle: Carbon measurements at Elikhulu plant carbon-in-leach tanks

The total cost of Evander Mines' solar PV renewable energy plant is US\$10.7 million¹, with a calculated payback on this investment of less than five years.

This solar PV renewable energy plant further reduces Elikhulu's environmental impact and is just one of several initiatives in the Group's commitment to producing high-margin ounces in a safe and efficient manner for the long term, while investing in local communities and minimising the environmental impact of its operations.

During construction, the services of 10 local contractor companies were used, which provided 202 temporary job opportunities for local community members. The jobs and skills developed during construction will be retained for the plant's 12MW extension that will be constructed to supply renewable energy for Evander Mines' expanding underground operations. Apart from using local contractors for cleaning and maintenance of the solar panels, the Company is investigating the development of agriculture projects at the facility, with the intention of creating sustainable local employment opportunities and maximising land utilisation.

CHALLENGES

Production in the second quarter of the financial year was impacted by remedial work required on the slurry receiving tank within the Elikhulu plant. This resulted in the Group having to install an interim substitute tank which was completed over a period of two weeks. Following the installation of the substitute tank and the subsequent replacement of the original vessel, production levels returned to planned capacity.

The unstable supply of electricity from the national grid has, at times, led to the disruption of operations and interrupted process flows, leading to delays in resuming production. Unplanned power cuts and the ongoing failure of the national grid's ageing electrical infrastructure exacerbate the situation, resulting in production losses that cannot be recouped immediately, potentially leading to missed production targets. The installation of the solar PV renewable energy plant at Evander Mines is expected to mitigate this challenge to a large extent.

¹ Converted at the closing exchange rate of US\$/ZAR:16.28.

While Elikhulu processed tonnages with volumes and head grade both in excess of the mining plan, which improved gold production levels when compared to the prior financial year, production levels were negatively impacted by adverse weather conditions and lower than anticipated recoveries. Inclement weather with higher than average rainfall also negatively hampered production between December and March. While the operation can cope with excessive rainwater, production is adversely impacted by severe lightning activity and the resultant electricity supply trips. These electricity supply disruptions impair pumping capacity which hampers the removal of excess water from the mining compartments. Once electricity is restored, flooded workings have to be drained over a period of approximately two hours before production can commence.

FOCUS FOR 2023

Our goal for the year ahead is to achieve an improved performance at our surface operations. Our focus areas for the year ahead include:

- continuing optimisation of the mining plan for low-risk, high-margin performance from Elikhulu
- commissioning the Leslie/Bracken pump station
- initiating remining activities on the Leslie/Bracken TSF
- progressing the expansion of the solar PV renewable energy plant with an additional 12MW
- continuing with the rehabilitation of historical TSF sites
- expanding the enlarged Kinross TSF extension over the Kinross dam 1 and 2 compartments
- commissioning the water retreatment plant at Evander Mines which will produce potable water from recycled underground mine water to be used for processing at Elikhulu, thereby alleviating the need to purchase municipal water
- investigating alternative land-use projects on the rehabilitated footprints of the Leslie/Bracken and Winkelhaak TSFs, post-mining, for socio-economic development.



Left: Refurbished pump being lowered for installation at Elikhulu | Right: Carbon-in-leach tanks at the Elikhulu metallurgical plant