

OPERATIONAL PROFILE 2015



The Vaal River mining operations, one of three entities within AngloGold Ashanti's South Africa region, comprises two mines, which share a milling and treatment circuit. The mines, which are located about 180km from Johannesburg, near the Vaal River on the Free State-North West Province border, are:

VAAL RIVER

SOUTH AFRICA

HIGHLIGHTS

PRODUCTION IMPACTED

by safety-related stoppages and resultant delayed access to higher-grades areas

COST OPTIMISATION

efforts to be ramped up

SAFE PRODUCTION STRATEGY

reviewed and revised to deliver accountability and a safe production and workplace

GOOD PROGRESS ON CONSOLIDATION

of surface and some underground infrastructure of neighbouring mines

THREE-YEAR WAGE AGREEMENT

signed with unions

SILICOSIS CLAIMS

– agreement reached on certain claims

ALL-IN SUSTAINING COSTS

of \$1,084/oz

As at 31 December 2015:

- **MINERAL RESOURCE** of 22.9Moz (inclusive)
- **ORE RESERVE** of 7.4Moz

- **Kopanang**, which is bound to the south by the Jersey Fault and has a single shaft system to a depth of 2,600m. It exploits the Vaal Reef almost exclusively, producing gold as its primary output and uranium oxide as a by-product.
- **Moab Khotsong**, AngloGold Ashanti's newest South African mine, is located in the Free State and has three vertical shaft systems mining to a depth of 3,100m. Given the geological complexity of the Vaal Reef, the mine's principal reef, scattered mining is employed. Great Noligwa's operating infrastructure and employees were fully incorporated with those of Moab Khotsong during 2015.

OPERATIONAL PERFORMANCE

Production

In addition to – and in some cases as a result of – safety stoppages, production at the Vaal River operations was negatively affected

by a deterioration in the mining mix as the anticipated move into higher-grade areas was delayed. Increased dilution resulted in a decline in head grades.

Safety stoppages and lack of available face length and mining flexibility, a result of the premature halt to mining of low-grade areas, affected production at Kopanang. In mitigation, more concentrated efforts were put in place, prioritising safe practices, and plans are underway to increase available face length and Ore Reserve development. Safety improvements achieved in the last quarter of the year indicated a return to operational stability.

The Vaal River operations produced 0.9Mlb of uranium in 2015 (2014: 1.3Mlb) as a by-product.

Costs

While all-in sustaining costs declined somewhat year-on-year for Kopanang, they were higher

for Moab Khotsong. The negative cost impact was countered by the weaker rand relative to the US dollar, as well as a modest contribution from the early stages of Project 500 efficiency interventions. Performance was significantly affected by the lower volumes mined as well as ongoing inflationary pressures in South Africa, which is fully exposed to above-inflation administered price increases for critical inputs, like power and water, while gaining little benefit from a lower fuel price.

Project 500 cost optimisation, instituted in 2013, is ongoing and is being introduced to a range of core disciplines in the South Africa region.

A study is planned for 2016 to investigate ways to further reduce the South Africa region's all-in sustaining cost. This study will focus on the rationalisation of off-mine services and costs, and is expected to include a further footprint reduction in the Vaal River area in particular. This work will be incorporated into the Project 500 framework and could contribute to the viability of key growth projects.

Good progress was made with the integration of the Vaal River operations. This entailed consolidation of the surface infrastructure of the neighbouring Moab Khotsong, Kopanang and Great Noligwa mines as well as some of their underground infrastructure. This is expected to further reduce the surface footprint, enable improved mining flexibility in response to a variable gold price, allow us to take advantage of synergies in the management of mineral and shared services, and improve the profitability and sustainability of these operations.



Substantial savings have been realised to date. In 2016, the focus is expected to be on refining and embedding these changes to achieve further cost efficiencies and eliminate duplication.

Growth and improvement

At Moab Khotsong, project Zaaiplaats remained on hold. Another study has been undertaken to determine the best technical and economically viable options for the project, and is expected to recommend alternative investment opportunities. The purpose of this study will be to formulate mine designs to economically extract Zaaiplaats and contiguous blocks from the Moab Khotsong shaft systems, and to claw back value through potential schedule, cost and mining-volume gains by applying modern shaft designs and other associated technologies.

A further study is expected to begin in 2016 to investigate the impact of the regional cost rationalisation initiative.

For further information on our activities relating to safety, employee wellness, healthcare, employee and labour relations, the environment, stakeholder engagement, community relations, community development work, and regulatory compliance, see the South Africa regional review in the Integrated Report 2015 available at www.aga-reports.com/15/ir/topics/ir/performance/context, and the Sustainable Development Report, available at www.aga-reports.com/15/sdr/home.



VAAL RIVER – KEY STATISTICS

	Units	2015 ⁽¹⁾	2014	2013
Operational performance				
Cut-off grade ⁽¹⁾	oz/t	0.129	0.133	0.094
	g/t	4.43	4.55	3.21
Recovered grade	oz/t	0.210	0.225	0.197
	g/t	7.21	7.72	6.77
Tonnes treated/milled	Mt	1.6	1.9	2.1
Gold production	000oz	371	452	473
Total cash cost	\$/oz produced	867	857	895
All-in sustaining cost	\$/oz sold	1,084	1,061	1,249
Capital expenditure	\$m	68	78	182
Productivity	oz/TEC	3.03	3.45	4.29
Safety				
No. of fatalities		3	1	1
All injury frequency rate (AIFR)	per million hours worked	15.01	15.83	11.94
No. of employees on ART		1,464	1,476	1,604
People				
Total average no. of employees		10,521	11,204	13,788
– Permanent		9,534	10,245	11,965
– Contractors		987	959	1,823
Environment				
Water usage	ML	13,259	13,402	14,331
Water usage per tonne treated	kL/t	1.46	1.31	1.22
Energy usage	PJ	5.66	5.31	5.63
Energy usage per tonne treated	GJ/t	0.62	0.52	0.48
Greenhouse gas (GHG) emissions (CO ₂ e)	000t	1,436	1,360	1,415
GHG intensity per tonne treated	t CO ₂ e/t	158	133	120
Cyanide usage	t	2,020	2,567	2,301
No. of reportable environmental incidents		1	0	0
Total rehabilitation liabilities	\$m	56	45	43

⁽¹⁾ Based on the Ore Reserve.