OPTIMISE

OPTIMISE AND INTEGRATE OPERATIONS

APPROACH

Sibanye's operating model is based on the implementation of fundamental mining practices and flat, cost-efficient structures designed to optimise and sustain operational performance. The Group has a proven operational track record of managing complex mines and is confident that, by applying its operating model and mining capability to new acquisitions and projects, it can continue to realise value for stakeholders.

The Group's cash-generative capacity of its high-quality gold operations and robust balance sheet ideally position the Group to benefit in the current environment of depressed commodity prices and relatively low mining-company valuations. By optimally managing its current operations and successfully integrating recent and pending acquisitions, Sibanye will be able to deliver on its vision while continuing to pay sustainable, industry-leading dividends to shareholders.

PERFORMANCE

The optimisation of operations is multi-faceted, and is underpinned by the Sibanye operating model and its principal objectives. The focus is primarily on initially reducing then managing costs, which are under management's control, thereby lowering pay limits (or the grade at which the operations can be mined at break-even), which results in an increase in operational flexibility and cash margins. Key elements of the optimisation process include continuous re-engineering of the business, and introduction and adherence to planned return cut-off ore reserve-management principles. Initial restructuring in 2013 and 2014 of the gold assets resulted in a meaningful increase in production and decrease in operating costs. Further cost reductions at these assets are likely to be more incremental.

Optimisation of the existing gold operations also involved, among other initiatives, reducing energy consumption so as to minimise the effect of load shedding on operations as well as reducing the cost of power, addressing air leakages underground and increased expenditure on security in order to reduce the impact of illegal mining, which negatively impacts on production, and hence profitability and potentially the life of the operations.

Sibanye's Safe Technology function – see **Modernisation and technological innovation** on page 67 – is researching and developing new technology, which aims to provide a modern mining environment that is safer and more productive in future, and could potentially deliver a profitable long-term future for the industry by allowing safe extraction of previously inaccessible resources and resources at depth.

FUTURE FOCUS

The focus in 2016 will be on ensuring that operational issues, which affected the first quarter of 2015, are not repeated and that greater effort is applied to quality-of-mining factors in order to ensure safe operational delivery against plan in the Gold division. Efficient integration of the platinum assets and implementation of the Sibanye operating model, and CARE culture, will be driven by the Organisational Effectiveness team together with executive and senior management.

OPERATIONAL PERFORMANCE

Overall, gold production in 2015 was lower year-on-year, largely as a result of operational disruptions in the first quarter of the year, especially at Kloof, and periodic electrical load curtailments for most of the first half of the year. Opportunities to improve productivity and recover lost production were identified and implemented at all operations, resulting in improved production levels in the second half of the year.

Average unit costs for the year were negatively affected by the lower level of production, the inclusion of the Cooke Operations for a full year (only seven months in 2014), higher labour costs and electricity tariffs.

Two thirds – R2,305 million – of the total capital expenditure of R3,345 million was spent on ORD at the operations to maintain operational flexibility, in line with our operating model, while R669 million was expended on sustaining capital expenditure and infrastructural maintenance (one of our material issues).

KEY STATISTICS BY OPERATION

	Tons milled (000)						Main development (m)		Area mined (m²)	
	Underground		Surface		Total					
	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014
Beatrix	**2,723**	2,571	**1,596**	1,975	**4,319**	4,546	**21,599**	19,733	**416,684**	384,701
Cooke*	**1,470**	893	**4,323**	2,779	**5,793**	3,672	**12,923**	9,508	**204,835**	175,627
Driefontein	**2,412**	2,497	**3,360**	2,867	**5,772**	5,364	**15,704**	17,376	**384,109**	374,914
Kloof	**1,979**	1,983	**1,998**	2,670	**3,977**	4,653	**17,899**	18,743	**307,750**	304,930

**Since incorporation on 15 May 2014*

	Yield (g/t)						All-in sustaining cost			
	Underground		Surface		Overall		Actual (R/kg)		Margin (%)	
	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014
Beatrix	**3.51**	3.74	**0.34**	0.38	**2.34**	2.28	**408,422**	377,101	**14**	15
Cooke*	**3.65**	4.16	**0.21**	0.21	**1.08**	1.17	**541,843**	445,645	**(14)**	(2)
Driefontein	**6.36**	6.54	**0.60**	0.49	**3.01**	3.31	**373,752**	357,333	**21**	19
Kloof	**6.49**	7.89	**0.61**	0.52	**3.54**	3.66	**426,223**	352,624	**10**	20

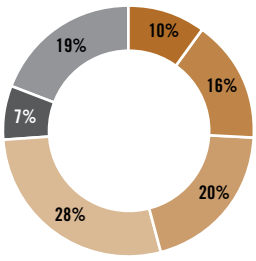
**Since incorporation on 15 May 2014*

	Gold produced (kg)						Capital expenditure (Rm)		Total cash cost (R/kg)	
	Underground		Surface		Total					
	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014
Beatrix	**9,557**	9,603	**548**	751	**10,105**	10,354	**597**	548	**340,792**	313,888
Cooke*	**5,359**	3,719	**893**	586	**6,252**	4,305	**337**	230	**474,584**	395,168
Driefontein	**15,345**	16,329	**2,005**	1,406	**17,350**	17,735	**994**	1,149	**309,764**	283,129
Kloof	**12,848**	15,653	**1,220**	1,385	**14,068**	17,038	**1,130**	1,236	**342,764**	271,282

**Since incorporation on 15 May 2014*

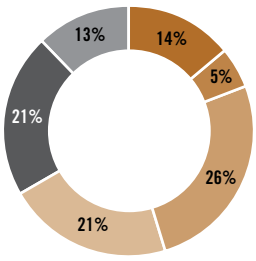
GOLD

Mineral Resources (98.8Moz)



Beatrix 9.6Moz · Cooke 15.9Moz · Driefontein 19.8Moz · Kloof 28.2Moz · WRTRP 6.5Moz · Projects 18.8Moz

Mineral Reserves (31.0Moz)



Beatrix 4.3Moz · Cooke 1.5Moz · Driefontein 8.2Moz · Kloof 6.5Moz · WRTRP 6.5Moz · Projects 3.9Moz

OPTIMISE

OPTIMISE AND INTEGRATE OPERATIONS CONTINUED

BEATRIX

Located in the Free State province of South Africa, some 240km south-west of Johannesburg, near Welkom and Virginia, Beatrix operates under new order mining rights covering a total area of 16,821ha. Beatrix is principally an underground mine with nominal surface reserves represented by surface rock dumps (SRDs) accumulated during the operating history of the mine.

INFRASTRUCTURE

Shaft system	Hoisting capacity
No 1	138ktpm
No 3	170ktpm
No 4*	120ktpm

Capacities based on operational requirements and constraints

**Includes Beisa*

Processing plant	Capacity	Recovery factor
No 1	243ktpm	96%
No 2	130ktpm	95%

PERFORMANCE IN 2015

Gold production decreased by 2% to 10,105kg (324,900oz) in 2015. This was primarily due to anticipated lower grades at the West Section (4 Shaft), partly offset by high volumes and grades from the North Section.

Underground ore milled increased by 6% to 2.7Mt in 2015, offsetting a 6% lower yield, which averaged 3.51g/t. As a result, gold production from underground was flat at 9,557kg.Unit costs decreased by 2% to R1,169/t.

To improve mining flexibility, on-reef development was increased by 4% to 6,344m, mainly at the West Section. Main development increased by 9% to 21,599m. The average development value increased to 1,100cm.g/t from 1,034cm.g/t.

Underground operating costs increased by 4% to R3,185 million, reflecting the higher development and stoping volumes at the North and West sections, and the above-inflation increases in wages and electricity tariffs, partly offset by an increase in ORD capitalised. Underground operating profit increased by 16% to R1,371 million and the operating margin increased from 28% to 30% in 2015.

The Beatrix surface operations contributed 548kg, 27% lower than in 2014. This was mostly due to a 19% decrease in tons processed due to SRD material being displaced by higher grade underground ore, and marginally lower grades. Operating profit for the year amounted to R53 million.

Capital expenditure increased by 9% to R597 million in 2015. The increase was predominantly due to the increase in off-reef development at Beatrix West Section, following the suspension of development in 2014 in order to maintain the economic viability of the section.

DESCRIPTION

Gold mining began at Beatrix in 1985 and at Oryx (Beatrix Shaft 4, also known as West Section) in 1993.

The existing scope of operations is the result of the consolidation of the adjacent Beatrix and Oryx mines on 1 July 2002.

Beatrix has three operating shaft systems with two ventilation shafts to provide additional upcast and downcast ventilation capacity, and is serviced by two metallurgical plants.

Beatrix, a shallow to intermediate-depth operation, mining at depths of between 700m and 2,200m below surface, exploits the Beatrix Reef at shafts 1 and 3, and the Kalkoenkrans Reef at Shaft 4. Situated near regional urban centres where it can routinely obtain supplies, the mine has access to the national electricity grid and to water, road and rail infrastructure.

Processing occurs by way of carbon in leach (CIL) and carbon in pulp (CIP) treatment at the No 1 and 2 plants respectively.

COOKE

Located near Randfontein, approximately 30km south-west of Johannesburg in the province of Gauteng, South Africa, the Cooke underground operations comprise four vertical shafts (Cooke 1 to 4 and the Ezulwini Plant) and the surface operation (with a dedicated processing facility), serviced by a developed network of mining and civil infrastructure with adequate electricity and water supplies. The operations have three individual new order mining rights: Cooke 1, 2 and 3 cover 7,875ha, Cooke 4 covers 3,718ha and the surface operations cover 3,230ha.

DESCRIPTION

The Cooke Operations consist of four producing shaft systems and well as three metallurgical plants.

The underground operations are relatively shallow (~1,000m) with fewer seismicity or heat challenges than experienced at the neighbouring Kloof or Driefontein operations. The primary gold-bearing reef horizon mined at Cooke 1, 2 and 3 is the UE1A and the Upper Elsburg Reef at Cooke 4.

Access to the Ezulwini uranium plant allows for near-term production of uranium from underground ore mined at Cooke as a by-product.

The Cooke Plant was constructed in 1978 and has a nameplate capacity of 280,000tpm.

In 2005, it was converted from a reef treatment plant to treat sand from the nearby high-grade Dump 20 tailings storage facility (TSF). High-grade ore from the Cooke 1, 2 and 3 shafts was diverted for toll treatment at Harmony's Doornkop Plant.

Today, the Cooke surface operations process tailings from Dump 20 at a monthly rate of approximately 350,000t to produce approximately 32,000oz of gold per annum. Mixed gold and uranium underground ore from Cooke 3 and all of Cooke 4's ore is treated at the dual-stream Ezulwini gold- and uranium-recovery plants.

INFRASTRUCTURE

Shaft system	Hoisting capacity
No 1	15ktpm
No 2	28ktpm
No 3	54ktpm
No 4	56ktpm

Capacities based on operational requirements and constraints

Processing plant	Capacity	Recovery factor
Cooke Plant	400ktpm	60%
Ezulwini gold plant	150ktpm	95%
Ezulwini uranium plant	50ktpm	78%

PERFORMANCE IN 2015

Gold production in 2015 amounted to 6,252kg (201,000oz) compared with 4,305kg (138,400oz) for the seven months since acquisition, ended 31 December 2014. The average yield was marginally lower at 1.08g/t.

Underground production was 5,359kg compared with 3,719kg for seven months in 2014. Underground ore milled was 1.5Mt at a yield of 3.65g/t.

The R58 million operating loss from the underground operation was offset by R54 million operating profit from surface, resulting in an operating loss of R4 million. Underground operating costs for 2015 were R2,620 million at a unit cost of R1,782/t compared with R1,641/t in 2014.

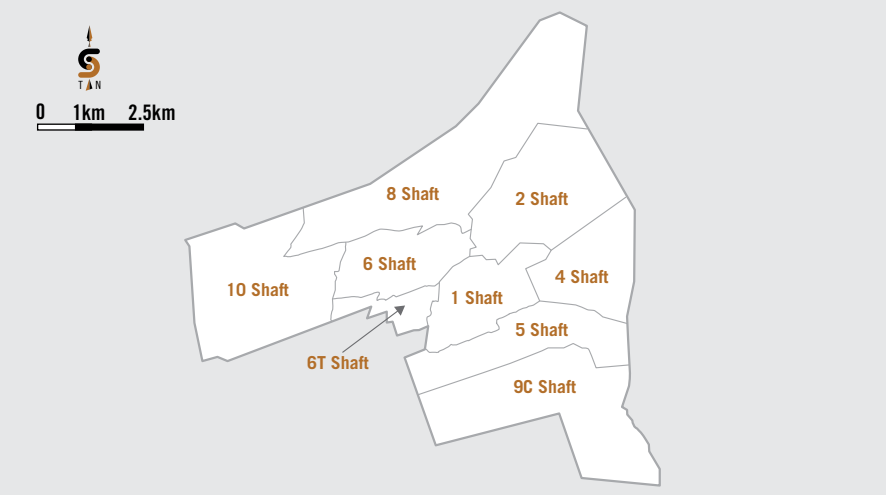
Main development of 12,923m was 36% higher than in 2014 at an average value of 834cm.g/t, compared with 799cm.g/t for 2014.

The Cooke surface operations contributed 893kg (28,700oz) from throughput of 4.3Mt at a yield of 0.21g/t, which was similar to 2014.

Capital expenditure of R337 million was mainly spent on ORD and infrastructure upgrades, and the studies relating to the growth project: the WRTRP.

OPTIMISE

OPTIMISE AND INTEGRATE OPERATIONS CONTINUED



DRIEFONTEIN

Located on the Far West Rand, in the mining district of Oberholzer, some 70km south-west of Johannesburg in the province of Gauteng, South Africa, Driefontein operates under new order mining rights covering a total of 8,561ha. It is an underground mine with surface reserves represented by rock dumps and TSFs that have accumulated throughout the operating history of the mine.

INFRASTRUCTURE

Shaft system	Hoisting capacity
No 1	105ktpm
No 2	165ktpm
No 4	57ktpm
No 5	159ktpm
No 6	26ktpm
No 8	60ktpm

Capacities based on operational requirements and constraints

Processing plant	Capacity	Recovery factor
No 1	240ktpm	97%
No 2	180ktpm	81%
No 3	100ktpm	82%

PERFORMANCE IN 2015

Due to a decrease in underground volumes and a planned decrease in grade, gold production from Driefontein decreased by 2% to 17,350kg (557,800oz) during 2015. The overall yield decreased from 3.31g/t to 3.01g/t.

Underground ore milled decreased by 3% to 2.4Mt, largely due to lower volumes in the March 2015 quarter. The yield also decreased by 3% year-on-year due to a face value decrease from 1,840cm.g/t in 2014 to 1,742cm.g/t in 2015. Accordingly, underground gold production was 6% lower at 15,345kg.

The cost of underground ore milled increased by 9% to R1,941/t year-on-year due to lower throughput and above-inflation increases in electricity tariffs and wages. In nominal terms, costs increased by less than 6%. Main development decreased by 10% to 15,704m and on-reef development of 3,242m was 18% lower, as planned. Operating profit from the underground operations declined by 6% to R2,603 million due to the lower gold production and increase in costs. The operating margin decreased from 37% in 2014 to 36% in 2015.

Lower underground production was partly replaced by surface production, with gold from processing surface reserves increasing by 43% to 2,005kg. This was driven by a 22% increase in the yield to 0.60g/t due to higher-grade available SRDs and a 17% increase in tons milled at 3.4Mt. This was due to optimisation of existing milling capacity. Operating profit from surface operations increased from R145 million in 2014 to R399 million in 2015.

Capital expenditure of R994 million was 13% lower than in 2014. This was mainly due to the completion of infrastructure upgrades – a significant element being the No 2 Plant CIL upgrade (R117 million in 2014). Capital in 2015 was predominantly spent on ORD, the refrigeration and cooling plant on 38 Level, and stabilisation of the shaft barrel at the Ya Rona Shaft.

DESCRIPTION

Driefontein has six operating shaft systems at depths of between 700m and 3,420m below surface and three metallurgical plants exploiting the Carbon Leader Reef, the Ventersdorp Contact Reef and the Middelvlei Reef.

Driefontein has access to the extensive national electricity grid and to water, road and rail infrastructure. Located near regional urban centres where it can routinely obtain supplies, the mine was formed from the amalgamation of the East Driefontein and West Driefontein mines in 1999.

The Driefontein 1 Plant treats underground ore and has a processing capacity of 240,000tpm. The upgraded CIP circuit at the No 1 Plant consists of a semi-autogenous grinding (SAG) mill circuit followed by cyanide leaching, CIP and a central elution facility.

The Driefontein 2 Plant processes SRD material, which is delivered by rail and truck. Plant flow incorporates two SAG mills and a ball milling circuit, cyanide leaching and a CIP plant. A CIL circuit was commissioned in 2014 at the No 2 Plant to improve recoveries by replacing the aging CIP circuit.

The Driefontein 3 Plant was originally designed as a uranium plant but was converted to process low-grade surface rock in 1998. Similar to the No 2 Plant, SRD ore is delivered by rail and truck. The plant has four SAG mills followed by cyanide leaching and a CIP circuit.

KLOOF

Located in the Far West Rand mining district of Westonaria, some 60km south-west of Johannesburg in Gauteng province, South Africa, Kloof's new order mining rights cover a total of approximately 20,100ha. It is principally an underground mine with nominal surface reserves represented by SRDs and TSFs accumulated during the operating history of the mine.

DESCRIPTION

The Kloof Operation is a complex of intermediate to ultra-deep-level mines, predominantly mining the Ventersdorp Contact Reef, at depths of between 1,300m and 3,350m below surface. The mine is situated near regional urban centres where it can routinely obtain supplies, and has access to the national electricity grid and to water, road and rail infrastructure. Kloof's existing scope of operation is the result of the consolidation of the Kloof, Libanon, Leeudoorn and Venterspost mines in 2000.

Gold mining began in the area now covered by these operations in 1934.

Kloof's operations comprise five producing shaft systems and two metallurgical gold plants. The Kloof 1 Plant (KP1) was commissioned in 1968 and originally designed to process underground ore. It was converted to process surface reclamation dumps in 2001. KP1 comprises three-stage crushing, open-circuit rod mills for primary grinding and closed-circuit pebble mills for secondary milling. This is followed by cyanide leaching, filtration, zinc precipitation and smelting.

The Kloof 2 Plant (KP2) was commissioned in November 1990 and currently treats all of Kloof's underground ore. Reef is trucked and conveyed to a central stacker pad, which feeds two SAG mills equipped with variable-speed ring motor drives. Milling is followed by cyanide leaching, CIP and treatment at an independent elution and smelting facility. The elution facility was upgraded in June 2001 and again in October 2003 to process loaded carbon from KP1 and the former KP3 (Libanon) plant. The upgrade included the installation of continuous electro-winning sludge reactors.

INFRASTRUCTURE

Shaft system	Hoisting capacity
No 1	100ktpm
No 3*	55ktpm
No 4	82ktpm
No 7	32ktpm
No 8	15ktpm

Capacities based on operational requirements and constraints

**Increased winder speed*

Processing plant	Capacity	Recovery factor
KP1	180ktpm	92%
KP2	165ktpm	98%

PERFORMANCE IN 2015

Year-on-year gold production declined by 17% to 14,068kg (452,300oz) in 2015. Production was impacted by underground fires at 7 and 1 shafts, which resulted in lower volumes and lower grades, and load shedding.

Underground production volumes in the second half of 2015 were much improved, albeit at lower grades, resulting in tons milled for 2015 of 2.0Mt being only marginally lower than that achieved in 2014. However, yields and gold output both declined by 18% to 6.49g/t and 12,848kg respectively.

On-reef development increased by 8% to 4,314m and the average development value increased to 1,824cm.g/t from 1,637cm.g/t. Main development was planned down due to the recapitalisation project largely completed by the end of 2014 but was also affected by the fires, as well as safety stoppages, and decreased by 5% to 17,899m.

Lower production resulted in unit costs increasing by 9% to R2,251/t and operating profit from the underground operations declining from R2,800 million in 2014 to R1,658 million in 2015.

Surface throughput decreased by 25% to 2.0Mt as a result of decommissioning the Python mobile processing plant in July 2014. Average surface grades increased from 0.52g/t to 0.61g/t due to more selective processing of SRD material, which partly offset the lower throughput, resulting in a 12% decline in surface gold production to 1,220kg. Despite the lower production, closure of the Python Plant resulted in reduced costs and an increase in operating profit from R200 million in 2014 to R256 million in 2015.

Capital expenditure of R1,130 million was 9% lower than in 2014. Capital was mainly spent on ORD, maintenance and equipment upgrades, and the 4 Shaft 45 Level decline project.