



GOLD FIELDS

Kloof Gold Mine

Technical Short Form Report

Kloof is a large, well-established intermediate to ultra deep level gold mine that is accessed from surface through a number of shafts to 45 Level (the lowest working level) some 3,347 m below surface. Kloof consists of five shaft systems and two gold plants.

In F2009 Kloof Gold Mine produced 0.643 Moz of gold from a combination of underground mining and processing of surface waste rock dump material at a Notional Cash Expenditure (NCE) of US\$ 698/oz. Kloof total employees costed for F2009 was 16,476 including contractors. The area mined averaged some 35,674 m² per month, underground ore processed at 200 kt per month and surface material treated 77 kt per month. Total gold production averaged some 1,667 kg per month at an average yield grade of 6.0 g/t. Significant increases in power, consumable and labour costs have limited the benefit of an increased gold price with the effect that paylimits show only nominal reductions year-on-year.

This Technical Short Form Report reflects the latest Life of Mine plan, coupled with an updated Mineral Resource and Mineral Reserve statement, as at 30 June 2009. All Mineral Resource and Mineral Reserve figures reported are managed unless otherwise stated and Mineral Resources are inclusive of Mineral Reserves.

Salient Features

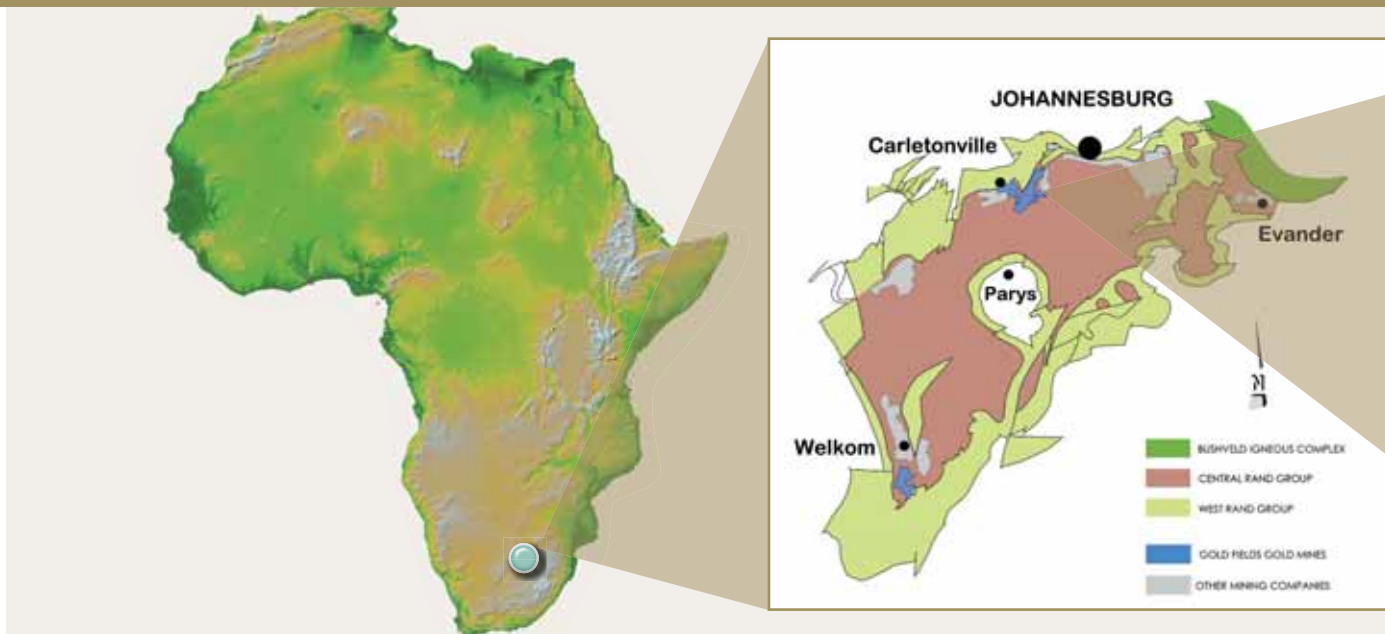
- Focus on safe, steady state production driving volume, value and quality.
- Robust orebody with world class Mineral Resources of 79.0 Moz.
- Mineral Reserves of 10.5 Moz.
- Main Shaft pillar extraction to commence in F2010.
- Major shaft infrastructure refurbishment complete.
- Underground uranium Mineral Resource models have been generated.
- Kloof has installed an emergency generation plant of 14.4 MW to ensure that mine personnel can be evacuated in case of power outages.
- Life of Mine extends to 2030.

Kloof Gold Mine (Kloof) is located in the Far West Rand Goldfield and is situated in the geologically unique and world renowned Witwatersrand Basin, one of the world's premier gold regions. The Witwatersrand Basin has made significant contributions to South Africa's economy and remains the most important gold depository in the history of mining. Since the establishment of the first shaft in 1934, Kloof has produced more than 70 Moz of gold.

Kloof includes the former Venterspost, Libanon, Kloof and Leeudoorn gold mines. The original Kloof was granted a lease to mine at depths of between 2,500 and 3,700 m, downdip of the Libanon mine in 1963 and its current form dates from April 2000 when the four mines amalgamated.

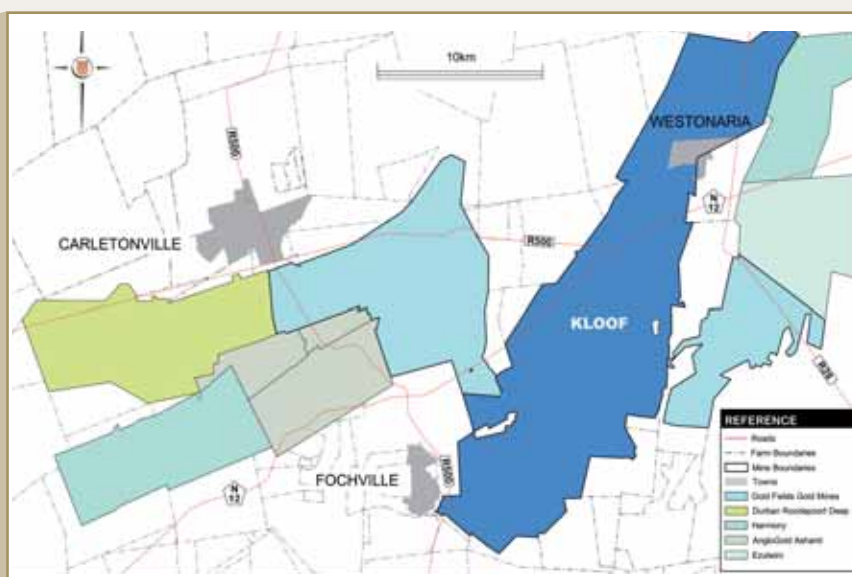
Activity within the mining authorization area (20,087 ha), which extends for more than 27.5 km on strike and 7.5 km on dip, has gradually moved south, and several shafts in the northern extent of the mining authorization are presently managed on a care and maintenance basis.





Key Features

Independent Audit	Figures reported in this declaration were as reviewed and approved by independent, external consultants as at 30 June 2009
Prepared by	Gold Fields Limited
Effective date	30 June 2009
Source of Information	This Technical Statement is a summary of the internally sourced document entitled F2010 Kloof Competent Persons Report
Personal Inspection	Personal inspection is conducted by the Competent Persons as listed, who are full time employees of Gold Fields Limited
General Location	Kloof Gold Mine is situated some 60 km west of Johannesburg at latitude 26° 24' S and longitude 27 °36' E, near Westonaria in the Gauteng Province. The mine is accessed via the N12 highway between Johannesburg and Potchefstroom. A well developed network of tarred roads surrounds the area
Licence Status and Holdings	The arial extent of the Kloof Mining Right is 20,087 ha. All required operating permits have been obtained, and are in good standing. Mining rights were converted in terms of Item 7 of Schedule II of the Mineral and Petroleum Resources Development Act, 2002 (Act no. 28 of 2002) on 30 January 2007 (File no. GP30/5/1/2/2(66) MR, Application no. H2003/12/09/003)
Operational Infrastructure	Kloof Gold Mine operates two gold plants and the underground workings are accessed from surface through five shaft systems to a depth of 3,347 m below surface
Climate	No extreme climatic conditions are experienced that may affect mining operations
Deposit Type	Intermediate to ultra deep level gold mine (>2,000 m below surface) exploiting auriferous paleoplacers (reefs), i.e. the Ventersdorp Contact Reef (VCR) of the Venterspost Conglomerate Formation, the Kloof Reef of the Kimberley Conglomerate Formation and the Middelvlei Reef of the Main Conglomerate Formation
Life of Mine (LoM)	It is estimated that the current Mineral Reserves will be depleted in 2030
Environmental	Kloof's systems, procedures, training etc. are at international best practice levels. ISO 14001:2004 certification has been obtained for this operation and OHSAS 18001 was maintained after external audit in F2009. The mine also obtained full compliance for International Cyanide Management code in September 2009
Regulatory Codes	Gold Fields reports its Mineral Resources and Mineral Reserves in accordance with the South African Code for The Reporting of Exploration Results, Mineral Resources and Mineral Reserves (2007 SAMREC Code), and other relevant international codes such as SEC Industry Guide 7, JORC Code and NI 43-101. The Mineral Resources and Mineral Reserves are underpinned by a sufficient Mineral Resource Management process and protocol to ensure adequate corporate governance in respect of the intent of the Sarbanes-Oxley Act



Gold Fields has stated that:
“If we cannot mine safely, we will not mine”.
This principle is embedded at Kloof.

Operating Statistics

Year ended June		F2009	F2008	F2007	F2006	F2005
Main development	km	22.8	33.6	35.0	30.4	33.9
Main on-reef development	km	3.7	5.0	6.1	7.3	6.7
Main on-reef development value	cm.g/t	1,777	1,717	1,410	1,788	1,857
Area mined	'000m ²	428	519	620	607	616
Tons milled	'000 tons	3,319	3,953	3,829	3,666	4,655
Source of ore						
– Underground	'000 tons	2,398	2,941	3,447	3,206	3,471
– Yield	g/t	8.1	8.4	8.2	8.7	9.1
– Surface	'000 tons	921	1,012	382	460	1,184
– Yield	g/t	0.7	0.9	1.2	1.1	0.7
Average yield	g/t	6.0	6.5	7.5	7.8	6.9
Gold produced	kg	19,998	25,533	28,705	28,429	32,258
Gold produced	'000 oz	643	821	923	914	1,037
Operating cost						
– Underground	R/ton	1254	893	727	703	710
– Surface	R/ton	84	62	82	61	68
Total	R/ton	929	680	662	622	546
Gold sold	kg	19,998	25,533	28,705	28,429	32,258
Cash cost	US\$/oz	507	430	366	374	373
Cash cost	R/kg	14,926	100,419	84,672	76,918	75,696
Capital expenditure	Rm	959	898	776	208	230
NCE	R/kg	202,140	140,512	115,377	97,200	–
Number of employees		16,476	16,986	17,143	15,020	15,338
Expected Life-of-Mine	years	21	15	20	14	17
Mineral Reserves	million tons	53.2	51.0	52.8	54.2	56.3
Grade of Mineral Reserves	g/t	6.2	6.8	8.0	8.2	8.3

Rounding off of figures presented in this report may result in minor computational discrepancies, where this occurs it is not deemed significant.

Geological Setting and Mineralisation

All of Gold Fields' South African operations are located in the Witwatersrand Basin and are intermediate to deep level underground mines exploiting gold bearing, shallowly dipping tabular ore bodies. The gold mineralisation in the Witwatersrand Basin occurs within quartz pebble conglomerates termed "reefs".

Kloof is located in the West Wits Line Goldfield of the Witwatersrand Basin. This goldfield is geographically divided into the Far West Rand and the West Rand areas. The bulk of the Kloof mining right is situated in the Far West Rand, but the more northerly portions of Kloof straddle the boundary and can be viewed as being marginal to the West Rand area.

The mining area is underlain by outliers of Karoo Supergroup shales and sandstones, followed by Pretoria Group sediments and the Chuniespoort Group dolomites. The Dolomites overlie the Klipriviersberg Group volcanic rocks, which in turn cap the Ventersdorp Contact Reef and sediments of the Central Rand Group that hosts the other gold-bearing reefs exploited by Kloof.

Local geology

Kloof lies between two major normal faults being the north-south trending West Rand Fault to the east, separating Kloof from South Deep Gold Mine, and the Bank Fault to the west, separating Kloof from Driefontein Gold Mine.

In the Far West Rand area, three primary reefs are exploited, the Ventersdorp Contact Reef (VCR) located at the top of the Central Rand Group, the Carbon Leader Reef (CL) near the base and the Middelvie Reef (MR), which stratigraphically occurs some 50 to 75 m above the CL. The Kloof Reef (KR) and Libanon Reef (LR), which are found approximately midway between the VCR and MR, represent secondary reefs in the area and are mined on a small-scale due to localised payability. Kloof exploits the VCR, MR, KR and LR.

The structure of the West Rand area is dominated by the West Rand and Panvlakte Horst blocks, which are superimposed over broad folding associated with the south-east plunging West Rand Syncline. The northern limb of the syncline dips in a south-south-westerly direction and the southern limb in an east-south-easterly direction. Pilanesberg, Bushveld and Ventersdorp age dykes are also present.

Within Kloof's boundary, the VCR and the underlying Central Rand Group strata of the Witwatersrand Supergroup have a general north-east strike and dip to the south-east at between 25° and 45°. Major geological structures within the property comprise

normal faults sub-parallel to the West Rand Fault. Sympathetic to it are north-north-east trending dykes with little or no apparent offset of the stratigraphic units and younger, easterly trending sinistral faults, some of which host dyke material.

Local bedding plane faulting along the VCR has resulted in the elimination and local duplication of the VCR horizon.

In 2003, a 3D seismic survey was undertaken over a portion of the south-eastern part of the mining area, which covers much of the area below infrastructure, including the Eastern Boundary Area (EBA) and the Kloof Extension Area (KEA) projects.

The 3D seismic survey resulted in a change in the interpretation of the West Rand Fault position and also indicated that the downthrow on the West Rand Fault decreases from 1,5 km in the north to 500 metres in the southern part of the mining area. It also refined the position of a number of major faults (Danie's Fault, Danie's Twin Fault and the Shaft Fault). The full interpretation of the 3D seismic dataset was completed and incorporated in the 4 and 7 Shaft models, as well as the KEA and EBA areas.

The majority of the mining takes place on the VCR, which constitutes 84% of the Mineral Reserve, the MR 14%, and the Kloof and Libanon Reefs together constitute the remaining 2%. Limited quantities of surface rock dump material are also processed.

Ventersdorp Contact Reef (VCR)

A palaeomorphological slope and terrace facies model was introduced for the VCR in October 2003, aimed at improving support for short term planning and the targeting of pillars. This model identifies six types of terrace facies and a low-grade slope facies. An external audit, in 2005, endorsed the model and highlighted areas for further refinement.

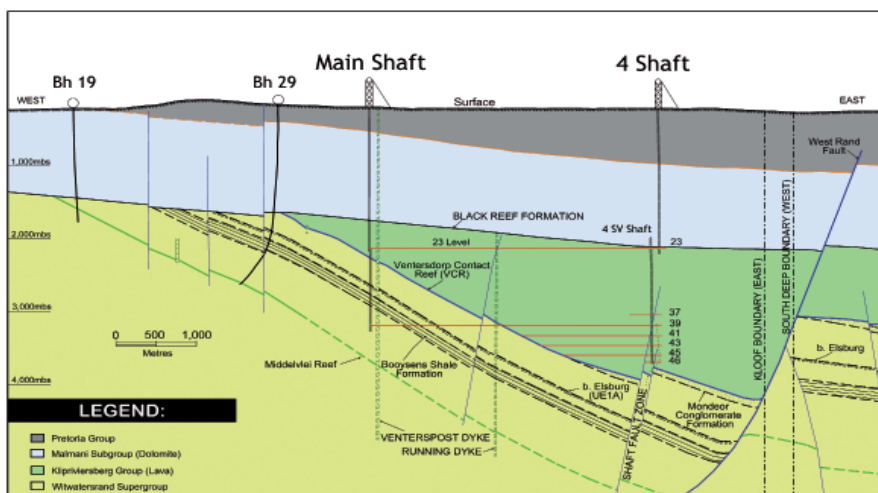


VCR Milky Cobble Terrace Facies

The 2005 model had facies trends honouring the old geozones in the below infrastructure areas, that is on a west to east palaeocurrent direction. The audit showed that the younger Sandy 1 and 2 facies were introduced from a northern source, with sediment transported along a north to south palaeocurrent direction, thus resulting in a fundamental change in the geological interpretation for the VCR orebody, particularly impacting the below infrastructure areas.



VCR Sandy 1 Facies



Typical section through the Kloof orebody



Local geology (continued)

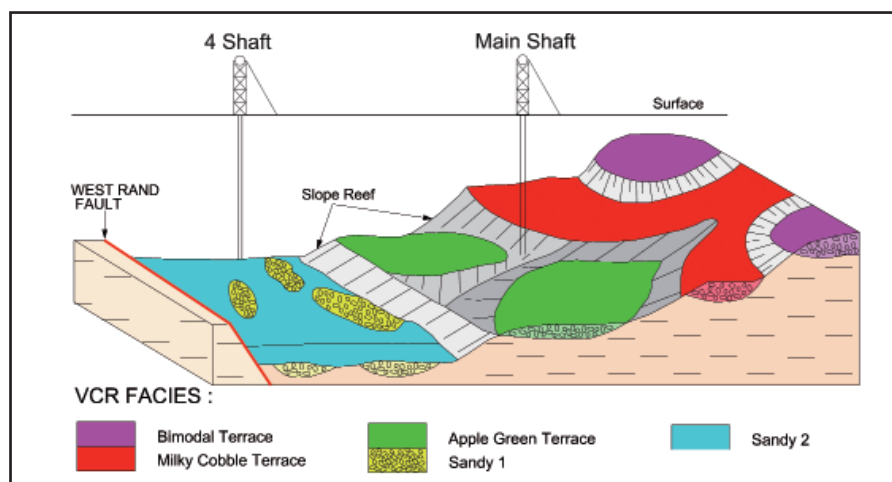
This observation confirmed earlier suggestions that this younger sediment was introduced into the Kloof area along a structurally controlled channel running parallel to the scarp created by the West Rand Fault. Geostatistical evidence supports this change in depositional direction. The current model is now fully aligned with the geozones for the Sandy 1 and 2 facies that honour the north-south palaeocurrent direction.

For the 30 June 2009 Mineral Resource and Mineral Reserve estimate, changes were made to the VCR facies model based on the latest geological information.

Secondary reefs

In the Middelvei Reef (MR), the majority of the gold is contained in the lower 40 – 85 cm of the reef package, which is generally highly channelised.

The MR is exploited at No. 3, 8 and 1SV Shafts. In 2003 external consultants produced a model based on sedimentology and



Schematic diagram of the VCR Palaeomorphological Slope and Terrace Model

value/channel width trends to highlight prospective areas and constrain the estimation process.

For the 30 June 2009 Mineral Resource estimate, changes were made to the facies model at 1 Sub-vertical and 8 Shafts based on

the latest geological information.

The Kloof Reef is a relatively minor component of the Kloof Mineral Resource. It is also channelised and a scope of work has been proposed to carry out a similar exercise to that done on the MR.

Exploration and drilling

The exploration strategy includes the following:

- Reduced uncertainty inherent to the deposit;
- Underground fan drilling;
- Timeous prospect development;
- Proactive geology; and
- Reconnaissance visits to previously mined areas to confirm structure and facies.

For F2009, the following was achieved:

- Working cost exploration drilling: 9,937 m at a cost of R6.1 million.

The working cost strategy involved the drilling of a fan of holes from each crosscut and limited pillar infill drilling. The current working cost drilling strategy involves the drilling of a fan of up to 3 inclined holes per crosscut and a cover

hole. Pillar infill drilling is conducted in areas where structure and grade require refinement.

- Capital exploration drilling: 4,828 m at a cost of R4.1 million.

The down-dip extension of a high grade trend was targeted on the Middelvei Reef at 1SV Shaft. Infill drilling was conducted on the VCR in the Main Shaft pillar area. The down-dip extension of a high grade facies (Sandy 1) was targeted on the VCR at 7 Shaft.

The current capital programme will target Middelvei Reef down-dip trends at 1SV Shaft toward the east and west and confirmation of facies trends on the VCR at 3 Shaft and at 7 Shaft.



Underground Roco drilling machine capable of drilling boreholes in excess of 1,000 metres in length

Mining

The Kloof operation is engaged in underground and rock dump mining. A significant challenge facing the Kloof operation is seismicity and to a lesser extent flammable gas. To reduce the impact of seismicity, Kloof practices the closely spaced dip pillar mining method and has also adopted a revised stope support standard in all areas with friable hangwall and in areas that have the Westonaria Formation Lava hangwall.

Early detection methods and increased ventilation of the shafts are being used to minimize the risk of incidents caused by

flammable gas. Extensive cooling infrastructure is required to maintain comfortable conditions for workers due to the depth of its operations.

An application for additional power was made to the supplier of power in fiscal 2009. This has been granted and Kloof is now permitted to utilize power at an increased baseline of 234.4 MW, rather than 214.4 MW.

In addition, in the unlikely event of a total power outage for a prolonged period, Kloof has installed and commissioned an emergency

generation plant of 14.4 MW to allow mine personnel to be evacuated speedily.

Mining methods

The predominant mining layout at Kloof is breast stoping with dip pillars, with a minor contribution from scattered mining. Breast stoping with dip pillars has been selected for the below infrastructure projects. Mining spans and pillar widths depend on the location, the reef being mined and the depth of working.

Mine planning and scheduling

All mine design and scheduling is undertaken using Cadmine® computer software in conjunction with the Integrated Resource and Reserve Information System (IRRIS) proprietary to Gold Fields. This includes the delineation of mining or stoping areas for each mining level and section, usually leading from an extension to the existing mining sequence, and the definition of the necessary development layouts. The latest update of the geological structure model is referenced and incorporated into the mine design.

The mine design includes rock engineering pillars comprising bracket pillars along major geological structures, as well as stability pillars related to the appropriate mining method. An allowance for minor faulting, structure and reef loss, based on historical results, is applied.

The mine design is scheduled on a monthly basis for the first 2 years of the operational

plan, which is extended on an annual basis for the remaining period of the LoM Plan.

The production parameters necessary for the development of the strategic LoM plan are captured from the computer models on a shaft basis for each period. The inclusion of the surface Mineral Resources at Kloof is reviewed annually as part of the strategic planning process.

The F2010 operational plan, with respect to remnant pillar mining, was aligned to the updated Gold Fields Pillar Mining Code of Practice, which takes cognisance of a stringent safe remnant extraction practice. The rock engineering risk factors (risk matrix) associated with remnant extraction were identified as: Energy Release Rate; Average Pillar Stress; Shape; Width-to-Height Ratio; and the presence of seismically active geological structures. Additional pillars and

remnants have therefore been excluded from Kloof's F2010 Mineral Reserves.

Mineral Reserve development will continue to be a key performance indicator and will be accelerated further in appropriate areas. The following table indicates the development advanced for the last 12 months to June 2009. A total of 22.8 kilometres was developed with 3.7 kilometres driven on-reef.

Development results

Category	Main	Kloof	VCR
Main advanced (m)	3,514	399	18,925
Advanced on reef (m)	838	212	2,678
Sampled (m)	876	207	2,296
Channel width (cm)	117	180	127
Average grade (g/t)	6.6	4.7	17.7
Average value (cm.g/t)	780	854	2,241

Projects

The Main Shaft Pillar Extraction Project

The final design for the mining of the Main Shaft pillar with the necessary bracket and regional stability pillars is currently being modelled and the final mining sequence and seismic risk analysis will then be completed.

The 69 Decline Project

The 69 Decline (a depth extension project from No. 7 Shaft) has been incorporated into 7 Shaft's LoM profile and is progressing as scheduled.

The 55 Decline Project

This Modified KEA Project Design of the decline and ancillary excavations, together with the access developments and stoping layouts from 45 level down to 48 level and the scheduling of the decline development, has been completed.

An external company has been contracted to complete detailed costing of the decline, service ways, airways and cooling and hydropower reticulation, to ultimately produce a detailed capital estimate and schedule.

The 55 decline project targets the VCR south of Danie's Fault down dip from the current workings between 45 and 48 levels. Access will be from the hangingwall via a 14° conveyor decline with a chairlift and a separate raise bored service way, similar to the design for the 69 Decline Project. The project is treated as a depth extension to the No. 4 Shaft complex and the Mineral Reserves are determined according to a computer aided mine design and schedule and utilise comparable modifying factors to the Mineral Reserves above 45 level.

Mineral Processing

Kloof has two operational metallurgical facilities using proven metallurgical processes, with a central elution and smelting facility located at 2 Plant. The third metallurgical facility that processed surface material was closed in April 2005. The facility was demolished and all gold recovered. 1 Plant was commissioned in 1968 to treat underground ore. This plant comprises three stage crushing, utilising open circuit rod mills for primary milling and closed circuit pebble mills for secondary milling. After milling, the pulp is thickened and then processed through air agitated leaching, drum filtration, zinc precipitation and smelting to doré. In June 2001 an AAC Pump Cell CIP circuit was installed to replace the less efficient drum

filtration and Zinc precipitation. Smelting was also discontinued, with loaded carbon being transported to 2 Plant for elution and thermal regeneration. The current operational capacity of 1 Plant is 180 ktpm.

2 Plant was commissioned in November 1990. This Plant receives underground Run-of-Mine ore (RoM), which is crushed and delivered to a stacker reclaimer system, where the ore is stored and blended prior to reclamation and delivery to the mills. Surface material is also delivered to the stacker pad to utilise plant capacity. There are two Semi-Autogenous Grinding (SAG) mills, which are equipped with variable-speed ring motor drives, and can be

operated as fully autogenous units or as semi-autogenous units by adding steel grinding balls. Milled ore is thickened ahead of cyanide leaching in air-agitated tanks and adsorption onto activated carbon in a conventional CIP circuit. Loaded carbon is eluted in an AARL elution circuit, which was upgraded in June 2001 and further in October 2003. It now serves as the central elution facility for Kloof. The upgrade included the installation of Continuous Electrowinning Sludge Reactors, which are working very efficiently. Cathode sludge is filtered and smelted to produce doré. The current operational capacity of 2 Plant is 150 ktpm.



Sustainable Development

Gold Fields has embraced Sustainable Development as a business imperative, which is reflected in its Vision, Values and Strategy. Through this, Gold Fields has introduced structures that encourage a networked interface between disciplines like Safety, Health, Environmental Engineering, Natural Environment, Risk, Stakeholder Engagement, Legal and Communication. This approach has allowed Gold Fields to capitalize on synergies and to avoid duplication. In this regard, several Key Performance Indicators (KPIs) are monitored and utilised to make informed business decisions.

In terms of community involvement, Kloof has initiated a programme to improve the understanding of Mathematics and Science among school pupils, whereby Kloof employees volunteer their time to assist local schools. Some pupils are also sponsored to become involved in advanced programmes of this nature. Kloof has also initiated a process, through cooperation with the local municipality, that will result in a community clinic being

built. Other community projects include waste recycling, alien vegetation eradication and making sporting facilities available to local schools.

Kloof's environmental initiatives are focused on reducing the impact that the mine may have on the receiving environment. All potential sources of pollution like the water discharges are sampled, analysed and monitored on a regular basis. Concurrent rehabilitation projects, like alien vegetation eradication are the current focus.

Gold Fields is designing a safety management system called the Safe Production Management System, to address outstanding issues identified and to assist Kloof to improve

health and safety to best practice levels.

Gold Fields has committed itself to the Mine Health and Safety Council target set by the industry in conjunction with the Department of Mineral Resources. These milestones are based on rate improvements for fatalities, noise induced hearing losses and silicosis, with the objective of aligning with international norms.

Passing of the Mine Health and Safety Act in 1996 heralded a transition to a new paradigm shift in mining health and safety in South Africa. Since that time, the Mine Health and Safety Council has set a benchmark for reduction of accidents to international standards in the South African mining industry by 2013.

Safety Statistics	Units	F2005	F2006	F2007	F2008	F2009
Fatalities	(No)	12	16	11	15	10
Fatality Rate	(per mmhrs)	0.28	0.37	0.23	0.33	0.25
LDIFR	(per mmhrs)	17.35	19.1	15.4	11.1	6.1

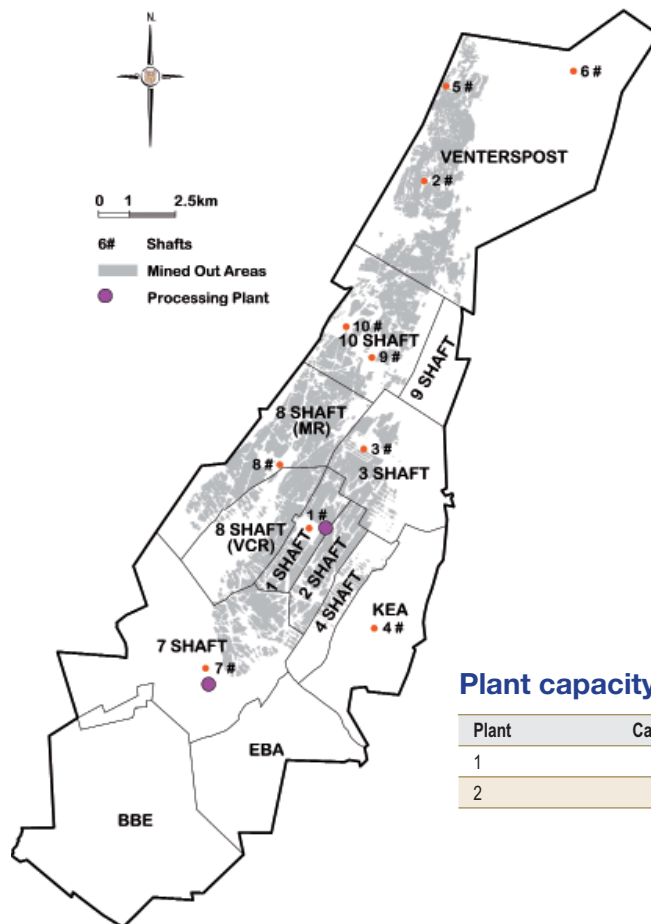
Production and hoisting capacities

Shaft Zone	Planned Production (t _{pm})*	Operating Shaft	Hosting Capacity (t _{pm})
Main		1	265,000
1	52,312	1SV	187,000
2	26,515	2SV	101,000
3	43,273	3SV	131,000
4		4	112,000
	80,020	4SV	166,000
7		7	176,000
	53,533	7SV	195,000
8	28,170	8	84,000

* 5 year average



2 Processing Plant, Kloof Gold Mine



Plant capacity

Plant	Capacity (t _{pm})
1	180,000
2	150,000

Mineral Reserves per mining area

Mining Area	Proved			Probable		
	Tons (Mt)	Grade (g/t)	Gold ('000 oz)	Tons (Mt)	Grade (g/t)	Gold ('000 oz)
1 Shaft	6.8	4.2	909	1.0	4.4	141
2 Shaft	4.6	11.8	1,760	–	–	–
3 Shaft	2.0	9.8	641	1.2	10.6	395
4 Shaft	1.3	11.5	466	9.6	8.8	2,696
7 Shaft (includes 69 decline area)	1.9	7.0	428	6.3	6.6	1,332
8 Shaft	2.6	5.9	499	0.4	3.7	45
55 Decline Area (4 Shaft below 45 L) *				3.4	8.0	868
Surface stockpile	–	–	–	12.2	0.9	341
Total	19.2	7.6	4,704	34.0	5.4	5,817

* Below Infrastructure

Mineral Resources and Mineral Reserves

Kloof's Mineral Resources and Mineral Reserves are reported within its mining right and are adjusted to show the split between above (A) and below (B) current shaft infrastructure as defined by 45 level.

A group developed geostatistics evaluation system is used in the modelling and estimation process at Kloof. Based on the structural and geological models, the Mineral Resource is divided into various domains, which are used as the basis for the homogenous geostatistical zones or geozones. The main interpolation methodologies used are ordinary and simple kriging. Macro kriging, Sichel 't' and declustered averaging techniques are used for larger areas where the Mineral Resource estimates are predominantly based on relatively few surface and underground boreholes. Detailed variography studies are carried out on point and regularised data.

Mineral Resources

The F2010 Mineral Resource includes dip pillars from the areas where breast mining configured with dip pillars is the mining method employed. A limited number of these pillars at 7 Shaft and Main Shaft are, however, excluded from the Mineral Resource.

Mineral Resources are quoted at an appropriate in-situ economic cut-off grade with tonnages and grades based on the resource block model. They also include estimates of any material below the cut-off grade required to be mined to extract the complete pay portion of the Mineral Resource.

Mineral Resource Classification	Tons (Mt)			Grade (g/t)			Gold ('000 oz)		
	June 2009	June 2008	Dec 2006	June 2009	June 2008	Dec 2006	June 2009	June 2008	Dec 2006
Underground									
Measured	71.1	55.6	51.7	11.6	12.8	13.8	26,549	22,962	22,966
Indicated (A)	73.9	92.4	76.9	8.0	9.0	9.5	19,071	26,839	23,570
Total (A)	145.0	148.0	128.6	9.8	10.5	11.3	45,620	49,801	46,536
Indicated (B)	79.5	54.6	49.0	12.8	12.2	14.0	32,729	21,355	22,121
Total underground	224.6	202.7	177.6	10.9	10.9	12.0	78,350	71,156	68,657
Surface stockpiles									
Indicated	30.7	31.4	32.0	0.6	0.6	0.6	604	618	632
Total surface stockpiles	30.7	31.4	32.0	0.6	0.6	0.6	604	618	632
Grand Total	255.2	234.0	209.6	9.6	9.5	10.3	78,954	71,774	69,289

The Mineral Resource estimate for underground uranium plus the uranium and gold in the Tailings Storage Facilities (TSF), are included for the first time and the figures are as follows:

Mineral Resource Classification (Uranium)	Tons (Mt)			Grade (kg/t)			Uranium (Mlbs)		
	June 2009	June 2008	Dec 2006	June 2009	June 2008	Dec 2006	June 2009	June 2008	Dec 2006
Underground									
Inferred (scheduled)	35.5	–	–	0.045	–	–	3.554	–	–
Total underground	35.5	–	–	0.045	–	–	3.554	–	–
Surface tailings									
Measured tailings	234.9	–	–	0.039	–	–	20.450	–	–
Total surface tailings	234.9	–	–	0.039	–	–	20.450	–	–
Grand Total	270.4	–	–	0.040	–	–	24.004	–	–

Mineral Resource Classification (Gold)	Tons (Mt)			Grade (kg/t)			Gold ('000 oz)		
	June 2009	June 2008	Dec 2006	June 2009	June 2008	Dec 2006	June 2009	June 2008	Dec 2006
Surface tailings									
Measured tailings	234.9	–	–	0.3	–	–	2.145	–	–
Total TSF's	234.9	–	–	0.3	–	–	2.145	–	–



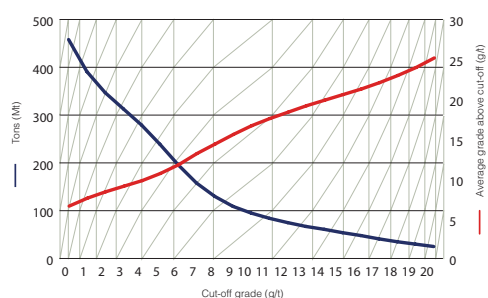
Modifying factors

- The Measured and Indicated Mineral Resources are inclusive of those Mineral Resources corrected to produce Mineral Reserves;
- Unless otherwise stated, all Mineral Resources and Mineral Reserves are quoted as 100% managed and are not attributable with respect to ownership;
- All Mineral Reserves are quoted in terms of RoM grades and tonnages as delivered to the metallurgical processing facilities and are fully diluted;
- Mineral Reserve statements include only Measured and Indicated Mineral Resources, modified to produce Mineral Reserves and contained in the LoM plan; and
- Mineral Resources and Mineral Reserves undergo both internal and external audits either during the year, yearly or biannually, and any issues identified are rectified usually during the current reporting cycle.

Modifying Factors		
Mineral Resource Gold Price	US\$/ oz	1,000
Exchange Rate	ZAR:US\$	8.95:1
Mineral Reserve Gold Price	US\$/ oz	800
Mineral Resource Paylimit	cm.g/t	1,030
Mineral Resource Block Width	cm	146
Mineral Reserve Paylimit	cm.g/t	1,310
Mine Call Factor	%	85
Block Factor	%	100
Shortfall	%	11
Stoping Width	cm	146
Mill Width	cm	200
Plant Recovery	%	97.6

Grade tonnage curve

This grade tonnage curve represents undiluted grade (at block width) and tons within the total Mineral Resource. Underground Mineral Resources make provision for minor faulting and minor geological losses.



Main Shaft, Kloof Gold Mine

Mineral Reserves

Mineral Reserve estimation at Kloof is based on development of an appropriately detailed and engineered LoM plan, which accounts for all necessary access development and stope designs. The planning process incorporates appropriate modifying and technical-economic factors.

Significant increases in power, consumables and labour costs have limited the benefit of an increased gold price, with the result that paylimits show only nominal reductions year-on-year for Mineral Resources and Mineral Reserves respectively.

Mineral Reserve Classification	Tons (Mt)			Grade (g/t)			Gold ('000 oz)		
	June 2009	June 2008	Dec 2006	June 2009	June 2008	Dec 2006	June 2009	June 2008	Dec 2006
Underground									
Proved	19.2	18.7	12.0	7.6	8.9	10.7	4,704	5,334	4,150
Probable (A1)	18.4	17.2	24.2	7.8	8.7	9.5	4,609	4,790	7,415
Total (A1)	37.6	35.9	36.2	7.7	8.8	9.9	9,313	10,124	11,565
Probable (B1)	3.4	2.3	4.3	8.0	7.9	12.1	868	584	1,692
Total underground	41.0	38.2	40.5	7.7	8.7	10.2	10,180	10,708	13,257
Surface stockpiles									
Probable	12.2	12.8	12.3	0.9	0.8	0.7	341	362	296
Total surface stockpiles	12.2	12.8	12.3	0.9	0.8	0.7	341	362	296
Grand Total	53.2	51.0	52.8	6.2	6.8	8.0	10,521	11,070	13,553

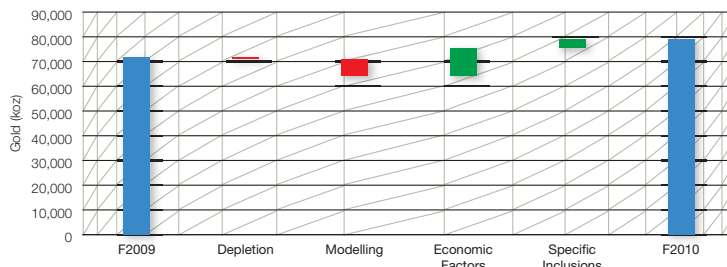
Mineral Resources and Mineral Reserves Reconciliation year-on-year

Mineral Resources

Factors that affected Mineral Resource reconciliation:

- The higher gold price resulted in an increase of 11.2 Moz; and
- Remodelling removed 6.7 Moz, with other inclusions totalling 3.5 Moz as indicated in the accompanying graph.

Change in Mineral Resource F2009 to F2010

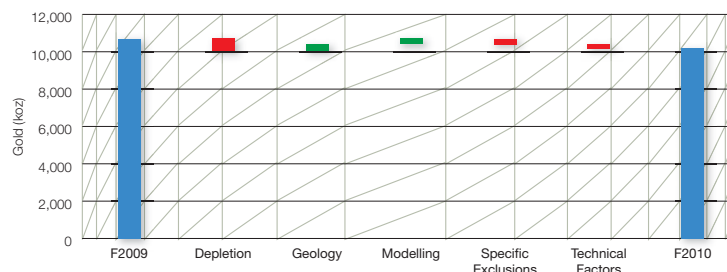


Mineral Reserves

Factors that affected the Mineral Reserve reconciliation:

- 636 koz production depleted; and
- Other minor changes are as indicated in the accompanying graph.

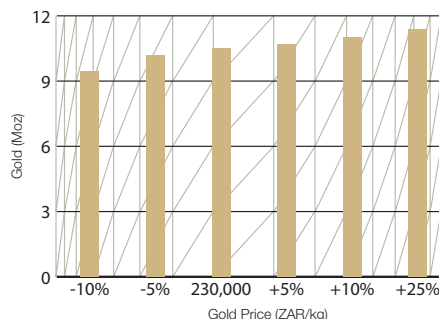
Change in Mineral Reserve F2009 to F2010



Mineral Reserve sensitivity

The following graph indicates the Managed Mineral Reserve sensitivity at -10%, -5%, base, +5%, +10% and +25% to the gold price.

Managed Mineral Reserve Sensitivity



Regulatory Codes

SAMREC

This Technical Statement has been prepared in Compliance with the South Africa Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (2007 SAMREC Code).

JSE

This Technical Statement has been prepared in compliance with the listing requirements of the JSE Securities Exchange, South Africa (JSE), specifically Section 12 – Issue 11.

Sarbanes-Oxley Act

The Mineral Resource and Mineral Reserve is underpinned by an adequate Mineral Resource Management process and protocol to ensure adequate corporate governance in respect of the intent of the Sarbanes-Oxley Act.

Environmental

Kloof has an environmental management team who are supported by specialist assistance from the South Africa regional office in Johannesburg. The systems, procedures, training etc. are at international best practice levels. Gold Fields has produced a Sustainability Report in 2009 and intends reporting annually in accordance with the Global Reporting Initiative.



Competent Persons

S. Reddi: Manager Mine Planning and Resource Management

GDE (Mining Engineering), B.Tech (Mineral Resource Management), Mine Surveyors Certificate of Competency, Registered with PLATO as Professional Mine Surveyor Reg. no. PMS 0193, Fellow of the Institute of Mine Surveyors of S.A. Mr Reddi has 24 years experience in the Mining Industry (6 years at Kloof) and is responsible for the overall correctness, standard and compliance of this declaration.

N Reddy: Chief Geologist

B.Sc (Hons.) Geology, SAIMM (No. 704065), Member GSSA. Mr Reddy has 19 years experience in the mining industry (4 years at Kloof) and is responsible for geology and exploration for Kloof.

M Tandree: Chief Evaluator

National Diploma in Mine Surveying, Mine Surveyors Certificate of Competency, SAIMM registration pending. Mr Tandree has 12 years experience in the mining industry (6 years at Kloof) and is responsible for the sampling and evaluation functions at Kloof.

JH Engelbrecht: Chief Surveyor

Chief Surveyor, NHD (Mineral Resource Management), National Diploma in Mine Surveying, Mine Surveyors Certificate of Competency, PLATO Reg. no. MS 0105. Mr Engelbrecht has 25 years experience in the mining industry (23 years at Kloof) and is responsible for the mine survey, reporting and historical modifying factors for Kloof.

DT Foley: Chief Mine Planner

GDE (Mining Engineering), CoM Survey certification, Member SAIMM No. 703904. Mr Foley has 31 years experience in the mining industry (6 years at Kloof) and is responsible for the mine planning and scheduling for Kloof.

SW van Coller: Chief Mine Planner - Projects

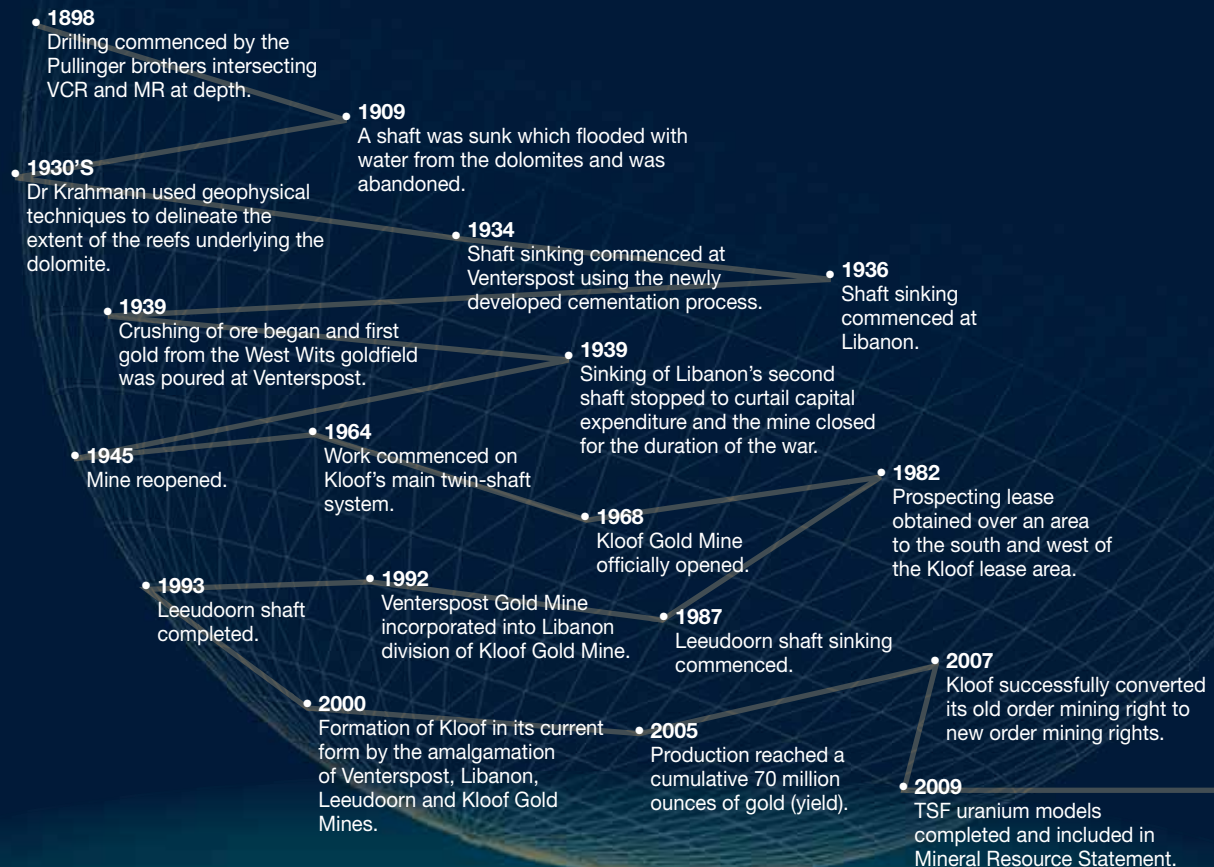
B.Sc (Mining Geology), M.Sc (Geology), Pr. Sci. Nat. (Reg. no. 400328/04). Mr van Coller has 27 years experience in the mining industry (15 years at Kloof) and is responsible for LoM projects.

Key Technical Staff

Post	Incumbent	Qualifications	Years	Key responsibilities
Vice President and Head of Operations	Philip Schoeman	NHD Metalliferous Mining, BCom		Overall strategic direction, leadership & management
Mining: Senior Manager Operations	Jock Pywell	Mine Managers Certificate of Competency	26	Full operational management,
Mining: Senior Manager Operations	Garth Oliver	NHD (Metalliferous Mining) Mine Managers Certificate of Competency	27	Full operational management,
Mineral Resources Manager Mine Planning and Resource Management	Presley Reddi	B.TECH (MRM), GDE (Mining Engineering) NHD (Mineral Resource Management) Mine Surveyors Certificate of Competency	22	Mine Planning, Mineral Resources & Mineral Reserves and compilation of CPR
Manager Engineering	Ben Potgieter	NHD (Electrical & Mechanical Engineering) Pr. Cert. Engineer	31	Engineering, logistics, infrastructure and capital management
Financial Manager	Johan Britz	FCIS (SA) Chartered Secretary & Administrator, AGA (SA) No. 3270292, Reg Institute of Chartered Accountant CPA (SA)	35	Financial reporting, compliance
Human Resources Manager	M Ngema	HR M (Hons), Advance Program in Organisational Development	14	Human resource management
Metallurgical Manager	R Vorster	NHD Extr. Metallurgy	11	Metallurgical management



Kloof History at a Glance



Disclaimer

Forward looking statements

Certain statements in this document constitute "forward looking statements" within the meaning of Section 27A of the US Securities Act of 1933 and Section 21E of the US Securities Exchange Act of 1934.

Such forward looking statements involve known and unknown risks, uncertainties and other important factors that could cause the actual results, performance or achievements of the company to be materially different from the future results, performance or achievements expressed or implied by such forward looking statements. Such risks, uncertainties and other important factors include among others: economic, business and political conditions in South Africa, Ghana, Australia, Peru and elsewhere; the ability to achieve anticipated efficiencies and other cost savings in connection with past and future acquisitions, exploration and development activities; decreases in the market price of gold or copper; hazards associated with underground and surface gold mining; labour disruptions; availability terms and deployment of capital or credit; changes in government regulations, particularly environmental regulations; and new legislation affecting mining and mineral rights; changes in exchange rates; currency devaluations; inflation and other macro-economic factors; industrial action, temporary stoppages of mines for safety reasons; and the impact of the Aids crisis in South Africa. These forward looking statements speak only as of the date of this document. The company undertakes no obligation to update publicly or release any revisions to these forward looking statements to reflect events or circumstances after the date of this document or to reflect the occurrence of unanticipated events.