

TECHNICAL REPORT ON THE MINERAL RESOURCE ASSESSMENT OF THE MIDDELVLEI PROPERTY LOCATED IN RANDFONTEIN, SOUTH AFRICA

Report Compiled For

The Directors

Middelvlei Minerals (Pty) Ltd.

Author

CJ Muller (Director)

B.Sc. (Hons)(Geol), Pr. Sci. Nat

Report Date: 20 November 2021

Effective Date of Mineral Resources: 20 November 2021

•

Important Notice

This report includes results for Mineral Resources. The report communicates the assessment of Mineral Resources for the Middelvlei Project. The reader is warned that Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

This technical report contains forward-looking information. Forward-looking statements are typically identified by words such as: believe, expect, anticipate, intend, estimate, plans, postulate and similar expressions, or are those, which, by their nature, refer to future events. All statements that are not statements of historical fact are forward-looking statements. The Company cautions investors that any forward-looking statements by the Company are not guarantees of future results or performance, and that actual results may differ materially from those in forward looking statements as a result of various factors, including, but not limited to, variations in market conditions; the nature, quality and quantity of any mineral deposits that may be located; metal prices; other prices and costs; currency exchange rates; the Company's ability to obtain any necessary permits, consents or authorizations required for its activities; the Company's ability to access further funding and produce minerals from its properties successfully or profitably, to continue its projected growth, or to be fully able to implement its business strategies and other risk factors.

Cautionary Note to U.S. Investors

Estimates of mineralisation and other technical information included or referenced in this technical report were prepared in accordance with NI 43-101. The terms "Measured Mineral Resource", "Indicated Mineral Resource" and "Inferred Mineral Resource" are defined in and required to be disclosed by NI 43-101; however, these terms are not defined terms under SEC Industry Guide 7 and normally are not permitted to be used in reports and registration statements filed with the SEC. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. Investors are cautioned not to assume that any part or all of the mineral deposits in these categories will ever be converted into Mineral Reserves. "Inferred Mineral Resources" have a great amount of uncertainty as to their existence, and great uncertainty as to their economic and legal feasibility. It cannot be assumed that all or any part of an Inferred Mineral Resource will ever be upgraded to a higher category. Under Canadian securities laws, estimates of Inferred Mineral Resources may not form the basis of feasibility or pre-feasibility studies, except in rare cases. Additionally, disclosure of "contained ounces" in a Mineral Resource is permitted disclosure under Canadian securities laws; however, the SEC normally only permits issuers to report mineralisation that does not constitute "Mineral Reserves" by SEC standards as in place tonnage and grade without reference to unit measurements. Accordingly, information contained or referenced in this technical report containing descriptions of the Company's mineral deposits may not be comparable to similar information made public by U.S. companies subject to the reporting and disclosure requirements of United States federal securities laws and the rules and regulations thereunder.

INFORMATION RISK

This Report was prepared by CJM Consulting (Pty) Ltd ("CJM"). In the preparation of the Report, CJM has utilised information relating to operational methods and expectations provided to them by various sources. Where possible, CJM has verified this information from independent sources after making relevant enquiry of all material issues that are required in accordance with the requirements of the SAMREC (2016) and SAMVAL (2016) Reporting Codes.

OPERATIONAL RISKS

The business of mining and mineral exploration, development and production by their nature contain significant operational risks. The business depends upon, amongst other things, successful prospecting programmes and competent management. Profitability and asset values can be affected by unforeseen changes in operating circumstances and technical issues.

POLITICAL AND ECONOMIC RISK

Factors such as political and industrial disruption, currency fluctuation and interest rates could have an impact on future operations, and potential revenue streams can also be affected by these factors. Most of these factors are, and will be, beyond the control of any operating entity.

QUALIFIED PERSON

Independent qualified person:

Mr. Charles J. Muller (B.Sc. (Hons) Geology) Pri. Sci. Nat., SACNASP Registration No 400051/05

CJM Consulting (Pty) Ltd

Mineral Resource Consultants

54 Hayes Road, Protea Ridge

Krugersdorp 1739

Republic of South Africa

Mobile: +27 83 230 8332 Phone: +27 11 958 2909

E-mail: charles@cjmconsult.com

OPERATING COMPANIES

Local operating company:

Middelvlei Minerals (Pty) Ltd

174 Berwick, Fernridge Estate

Broadacres Drive

Fourways, 2191

Republic of South Africa

Phone: +27 83 395 1745

E-mail: scott@middelvleimine.co.za

Table of Contents

1. E	kecutive Summary	10
1.1.	Introduction	10
1.2.	Project Area and Location	10
1.3.	Middelvlei Mine	10
1.4.	Geological Setting, Deposit Type and Mineralisation	11
1.5.	Project Geology	11
1.6.	Mineral Resources	11
1.7.	Conclusions and Recommendations	13
2 . In	troduction	15
2.1.	Terms of Reference and Scope of Work	15
2.2.	Status of Project	15
2.3.	Sources of Information	15
2.4.	Units and Currency	15
2.5.	Site Inspection or Field Involvement of Qualified Person	15
	ccessibility, Physiography, Climate, Local, Resources and structure	16
	Topography, Elevation, Fauna and Flora Climate	
	Access	16
	ocation	16
	Property Description	
	Country Profile	
	Adjacent Properties	
	History	
6. Pr	revious Exploration and/or Project Development	18
6.1.	Black Reef	18

6.2.	VCR	19
6.3.	MVR	19
7. Pr	evious Mineral Resource Estimates	20
8. Pr	evious Production	24
9 . Le	gal Aspects and Permitting	25
10.	Royalties	25
11.	Geological Setting, Mineralisation and Deposit Types	25
11.1.	Regional Geology	25
	Local Geology	
	2.1. Black Reef	
11.	2.2. MVR	28
	2.3. VCR	
12.	Structural Geology	28
13.	Deposit Types	30
13.1.	Mineralisation	30
14.	Data configuration	30
14.1.	Black reef	30
	MVR and VCR Reefs	
15.	Exploration and Drilling, Sampling and Data	31
15.1.	Drilling	31
	Collar Surveys	
	Downhole Surveys	
	Geological Logging	
15.5.	Sampling	32
15.6.	Quality Control/Quality Assurance	32
16.	Data Verification, Audits and Reviews	36

16.1. Verification of Data	36
16.2. Nature of the Limitations of Data Verification Process	37
17. Mineral Resource Estimates	38
17.1. Geological Model and Interpretation	38
17.1.1. Structure	38
17.2. Geological Domains	38
17.2.1. Black Reef	38
17.2.2. Middelvlei Reef	39
17.2.3. VCR	39
17.3. Estimation and Modelling Techniques	39
17.3.1. Compositing	39
17.3.2. Statistical Analysis	39
17.3.3. Outlier analysis	40
17.3.4. Variography	40
17.3.5. Estimation Parameters	40
17.3.6. Mineral Resource Classification	41
17.3.7. Mineral Resource Statement	42
18. Other Relevant Data and Information	43
19. Conclusions and Recommendations_	43
20. References	44
21. Date and Signature Page	45
22. Appendices	46
1. Abbreviations	46
Frequently Used Acronyms, Abbreviations, Definitions and Un	

List of Tables

able 1: Historical Exploration on the Black Reef	8
able 2: Summary of Historical Exploration - VCR1	9
able 3: Summary of Historical Exploration - MVR1	9
able 4: Muller 2002at zero g/t cut-off (reef shallower than 50 m)2	20
able 5: Mineral Resources for the Middelvlei Gold Mine as at June 20072	<u>2</u> 1
able 6: Underground Mineral Resources for the Middelvlei Gold Mine as at June 20072	22
able 7: Opencast Mineral Resources for the Middelvlei Gold Mine as at June 2007	22
Table 8: Middlevlei Gold Mine MVR and VCR Mineral Resources stated at a cut-off of zero cmg/t of 3 May 2011	
able 9: Mineral Resources for the Middelvlei Gold Mine as at 30 June 20132	<u>2</u> 3
able 10: Opencast Mineral Resources for the Middelvlei Gold Mine as at 30 June 20132	<u>2</u> 4
able 11: Underground Mineral Resources for the Middelvlei Gold Mine as at 30 June 20132	<u>2</u> 4
able 12: Standard Reference Material (SE19) Samples and Their Respective Assayed Values 3	}3
able 13: Standard Reference Material (SL20) Samples and Their Respective Assayed Values 3	}3
Table 14: Standard Reference Material (SE19 and SL20) Samples and Their Respective Assayed Value for the BR.	
Table 15: Standard Reference Material (SE19 and SL20) Samples and Their Respective Assayed Value for the MVR and VCR.	
able 16: Data Verification and Sign-Off for Data Used in the Middelvlei Project3	37
Table 17: Descriptive statistics - Black Reef (Minxcon 2006)3	}9
Table 18: Descriptive statistics - MVR and VCR (CCIC 2007)4	10
able 19: Mineral Resources for the Middelvlei Gold Mine as at 30 June 20134	1 2
able 20: Opencast Mineral Resources for the Middelvlei Gold Mine as at 30 June 20134	1 2
able 21: Underground Mineral Resources for the Middelvlei Gold Mine as at 30 June 20134	13

List of Figures

Figure 1: Locality of the Middelvlei Gold Mine	17
Figure 2: Project Geology, Reef Outcrops and Location of Boreholes	27
Figure 3: Local Geology of the Middelvlei Mine with Respect to Principal Structural Features	29
Figure 4: Faults and Outcrops of the different Reefs	30
Figure 5: Assay Values of Footwall Quartzites as Blank Samples	34

1. Executive Summary

1.1. Introduction

CJM Consulting (South Africa) Pty Limited (CJM) was requested by the Directors of Middelvlei Minerals (Pty) Ltd, the issuer, to complete an Independent Mineral Resource Assessment of the Middelvlei Mine in accordance with disclosure and reporting requirements set forth in the South African Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves (SAMREC), updated in 2016.

Middelvlei Resources (Pty) Ltd is the 100% owner of Middelvlei Minerals (Pty) Ltd (formerly Pamodzi Gold West Rand (Pty) Ltd), the holder of the new order Middelvlei Mining Right.

This report reviews and updates the geology, the exploration activities and states the Mineral Resources (Effective date: November 20, 2021) for the Black Reef ("BR"), Middelvlei Reef ("MVR") and Ventersdorp Contact Reef ("VCR") on the project areas based on documentation related to the Mine, and discussions with project management up to November 2021. The stated Mineral Resources and all information pertaining to the Mineral Resource estimation is mainly from the June 2013 Minxcon Report.

1.2. Project Area and Location

The Middelvlei Mine is located on the farm Middelvlei 225 IQ, along the north-western margin of the Witwatersrand Basin in the Randfontein area, 35 km south-west of Johannesburg in the Gauteng Province of South Africa.

1.3. Middelylei Mine

The Middelvlei Mine is a gold mining project, located on the Witwatersrand Basin, in the south of the Randfontein Municipality, Gauteng, South Africa. Three reefs have been identified through drilling and mapping on the property, the Black Reef (BR), the Ventersdorp Contact Reef (VCR) and the Middelvlei Reef (MVR). The mineral asset is one of the few remaining gold-bearing orebodies that can be mined via opencast mining methods in the area.

There have been two phases of opencast mining on the project area, 2006 – 2019 on the BR and MVR reefs and VCR in 2012. During the latter part of 2019 overburden stripping of the extension of the BR Pit4 took place. The Mine has been mining the Black Reef on a small scale (13 927 t milled, producing 33.38 kg of gold) since November 2019 to the end of July 2020. The production was halted due to the Covid 19 Pandemic and related issues. Currently they are assessing the down-dip extension of the Middelvlei Reef south of the Main Pit and planning to recommence production as soon as possible.

Middelvlei Minerals is in partnership with APEX Mining Services (Pty) Ltd (APEX) whereby APEX have the right to mine up to 5% of the total Gold Mineral Resource on the property over an agreed geographical footprint. This contract is currently in the process of being renegotiated between the parties.

1.4. Geological Setting, Deposit Type and Mineralisation

The Witwatersrand Basin is the largest known gold province in the world and the deposits in it have been mined for over 100 years. Gold is produced from seven goldfields within the basin, mainly from conglomerate horizons of the Witwatersrand, Ventersdorp and Transvaal Supergroups. The West Wits Line (also referred to as the Carletonville Goldfield), of which the Middelvlei Mine forms part, is one of these goldfields, and is situated on the north-western edge of the Witwatersrand Basin, ~35 km west of Johannesburg.

1.5. Project Geology

The principal economic horizons along the West Wits Line include the Black Reef, Carbon Leader, MVR and the VCR). The Black Reef is found at the base of the Black Reef Quartzite Formation ("BRQF") in the Transvaal Supergroup. The Black Reef has been extensively mined on the Middelvlei Mine, during which time exploration was focused on the MVR and, to a lesser degree, on the VCR. The Carbon Leader in the area has been described as a narrow (~10 cm) conglomerate band, rich in hydrocarbons and gold. The Middelvlei Reef overlies the Carbon Leader and comprises bands of conglomerates with internal quartzites up to a maximum thickness of 7 m. In the eastern section of the West Wits Line, the mineralisation within the MVR is confined to wide and poorly defined payshoots, whereas in the west, the payshoots are recorded to be narrower and better defined.

1.6. Mineral Resources

This report documents the Mineral Resource Assessment - Effective Date: November 20, 2021.

Mineral Resources for the Middelvlei Gold Mine.

2007 Depleted	Mineral Resource Category	Reef	Tonnage	Gold Grade	Gold Content	
Depleted			Mt	g/t	kg	Moz
		BR	1.52	3.10	4712.0	0.151
	Measured	MVR	-	-	-	-
Pur		VCR	-	-	-	-
Opencast and Underground	Total Measured		1.52	3.10	4712.0	0.151
erg	Indicated	BR	0.06	1.92	115.2	0.004
Pu		MVR	0.87	2.33	2029.40	0.060
d L		VCR	-	-	-	-
a	Total Indicated		0.93	2.31	2144.6	0.064
ast	Total Indicated + Measured		2.45	2.80	6856.6	0.215
enc	Inferred	BR	-	-	-	-
Ор		MVR	16.36	2.38	38972.9	1.252
		VCR	3.62	1.95	7049.4	0.227
	Total Inferred		19.98	2.30	46022.3	1.479

Notes:

- 1. Mineral Resources are inclusive of the Mineral Reserves.
- 2. The tonnages are based on a SG of 2.7 t/m³.
- 3. A geological loss of 15% was applied to the tonnages.
- 4. The Mineral Resurces are declared at a 0 cmg/t cut-off.
- 5. Conversion: 1kg = 32.15076 oz.
- 6. No environmental, permitting, legal, taxation, socio-political, marketing or other issues are expected to materially affect the above Mineral Resource estimate and have, therefore, not been used to modify the Mineral Resource estimate.

Opencast Mineral Resources for the Middelvlei Gold Mine as at 30 June 2013.

2007	Mineral Resource Category	Reef	Tonnage	Gold Grade	Gold Co	ontent
Depleted			Mt	g/t	kg	Moz
		BR	1.52	3.10	4712.0	0.151
	Measured	MVR	-	-	-	-
		VCR	-	-	-	-
	Total Measured		1.52	3.10	4712.0	0.151
	Indicated	BR	0.06	1.92	115.2	0.004
ast		MVR	0.80	2.36	1888.0	0.060
Opencast		VCR	-	-	-	-
o	Total Indicated		0.86	2.33	2003.2	0.064
	Total Indicated + Measured		2.37	2.82	6715.2	0.215
		BR	-	-	-	-
	Inferred	MVR	1.73	2.57	4446.1	0.142
		VCR	0.16	1.89	302.4	0.010
l	Total Inferred		1.89	2.51	4748.5	0.152

Notes:

- 1. Mineral Resources are inclusive of the Mineral Reserves.
- 2. The tonnages are based on a SG of $2.7 \, t/m^3$.
- 3. A geological loss of 15% was applied to the tonnages.
- 4. The Mineral Resurces are declared at a 0 cmg/t cut-off.
- 5. Conversion: 1kg = 32.15076 oz.
- 6. No environmental, permitting, legal, taxation, socio-political, marketing or other issues are expected to materially affect the above Mineral Resource estimate and have, therefore, not been used to modify the Mineral Resource estimate.

	Underground Mineral	Resources	for the	Middelvlei	Gold Mine	2013.
--	----------------------------	-----------	---------	------------	-----------	-------

2007 Depleted	Mineral Resource Category	Reef	Tonnage	Gold Grade	Gold Content	
Depleted			Mt	g/t	kg	Moz
	Measured	MVR	-	-	-	-
	ivieasured	VCR	-	-	-	-
힏	Total Measured		-	-	-	-
l lio	Indicated	MVR	0.07	2.02	141.4	0.004
l g.		VCR	-	-	-	-
Underground	Total Indicated		0.07	2.02	141.4	0.004
ă	Inferred	MVR	14.63	2.36	34526.8	1.110
	illierred	VCR	3.46	1.95	6747	0.217
	Total Inferred		18.09	2.28	41273.8	1.327

Notes:

- 1. Mineral Resources are inclusive of the Mineral Reserves.
- 2. The tonnages are based on a SG of 2.7 t/m^3 .
- 3. A geological loss of 15% was applied to the tonnages.
- 4. The Mineral Resurces are declared at a 0 cmg/t cut-off.
- 5. Conversion: 1kg = 32.15076 oz.
- 6. No environmental, permitting, legal, taxation, socio-political, marketing or other issues are expected to materially affect the above Mineral Resource estimate and have, therefore, not been used to modify the Mineral Resource estimate.

There is no guarantee that all or any part of the Mineral Resource will be converted to a Mineral Reserve.

1.7. Conclusions and Recommendations

This report is an assessment of previous estimates and work with the last Mineral Resource estimate done in 2007 (CCIC, 2007). Minxcon completed an updated report in 2013 (Minxcon, 2013) mainly to address depletions up to June 2013.

There have been two phases of opencast mining on the project area, 2006 – 2019 on the BR and MVR and VCR reefs in 2012. Overburden stripping of the extension of the BR Pit4 commenced in 2019. The Mine has been mining the Black Reef on a small scale since November 2019 to the end of July 2020.

Middelvlei Minerals is in partnership with APEX Mining Services (Pty) Ltd 9APEX) whereby APEX have the right to mine up to 5% of the total Gold Mineral Resource on the property over an agreed geographical footprint. This contract is currently in the process of being renegotiated between the parties.

The measured and indicated opencast portion of the Mineral Resource is 2.37 Mt at 2.82 g/t and gold content of 0.215 Moz. There is an additional 1.89 Mt at 2.5 g/t and 0.152 Moz contained gold in the inferred category. An optimised pit analysis will be required to establish what portion of the opencast Mineral Resource can be converted to a Mineral Reserve at current economic conditions and planned mining scenario.

It is recommended that all data is compiled in a proper geological database and verified with previous reports.

2. Introduction

2.1. Terms of Reference and Scope of Work

CJM Consulting (South Africa) Pty Limited (CJM) was requested by the Directors of Middelvlei Minerals (Pty) Ltd, the issuer, to complete an Independent Mineral Resource Assessment of the Middelvlei Mine in accordance with disclosure and reporting requirements set forth in the South African Code for Reporting of Exploration Results, Mineral Resources and Mineral Reserves (SAMREC), updated in 2016.

Middelvlei Resources (Pty) Ltd is the 100% owner of Middelvlei Minerals (Pty) Ltd (formerly Pamodzi Gold West Rand (Pty) Ltd), the holder of the new order Middelvlei Mining Right.

This report reviews and updates the geology, the exploration activities and states the Mineral Resources (Effective date: November 20, 2021) for the Black Reef ("BR"), Middelvlei Reef ("MVR") and Ventersdorp Contact Reef ("VCR") on the project areas based on documentation related to the Mine, and discussions with project management up to November 2021. The stated Mineral Resources and all information pertaining to the Mineral Resource estimation is mainly from the June 2013 Minxcon Report.

The listed independent Competent Person (CP) has no financial or preferential relationships with Middelvlei Minerals. The CP has a purely business-related relationship with the operating company and provides technical and scientific assistance when required and requested by the company. The CP has other significant clients and has no financial interest in Middelvlei Mine.

2.2. Status of Project

There have been two phases of opencast mining on the project area, 2006 – 2019 on the BR and MVR reefs and VCR in 2012. During the latter part of 2019 overburden stripping of the extension of the BR Pit4 took place. The Mine has been mining the Black Reef on a small scale (13 927 t milled, producing 33.38 kg of gold) since November 2019 to the end of July 2020. The production was halted due to the Covid 19 Pandemic and related issues. Currently they are assessing the down-dip extension of the Middelvlei Reef south of the Main Pit and planning to recommence production as soon as possible

2.3. Sources of Information

This Report is based on the 2013 report titled "Update of the Middelvlei Mineral Resources as at 30 June 2019, Randfontein Area, Gauteng, South Africa" authored by SM Motlapele B.Sc. (Hons.) (Geol.) (former geologist at Minxcon), along with technical reports by consultants, previous tenements holders and other relevant published and unpublished data for the area. CJM has endeavoured, by making all reasonable enquiries, to confirm the authenticity, accuracy and completeness of the technical data upon which this report is based.

2.4. Units and Currency

In terms of currency, US\$ or USD refer to United States Dollar and Rand or R refers to the South African Rand.

2.5. Site Inspection or Field Involvement of Qualified Person

The independent CP (Mr. CJ Muller) has visited the Middelvlei Project property in 2015, 2016, 2017, 2018, 2019, 2020 and last in March 2021. The Middelvlei Project Area or perimeter is still

secure with no land invasions. The previous opencast operations are as evaluated in the 2013 Minxcon report, except for the small tonnage (13 927t) that have been mined during 2020.

3. Disclaimers and Reliance on Other Experts or Third-Party Information

The CP accepts overall responsibility for the entire report. The CP was reliant, with appropriate due diligence, on the information provided by the Mine and from various reports. The data was verified sufficiently for statement of the Mineral Resources.

The sources of information were subjected to a reasonable level of inquiry and review. The author was granted access to all information. The author's conclusion, based on diligence and investigation, is that the information is representative and accurate.

The CP has reported and made conclusions within this report with the sole purpose of providing information for Middelvlei Minerals' use, subject to the terms and conditions of the contract between the CP and Middelvlei Minerals. The contract permits Middelvlei Minerals to file this report, or excerpts thereof, as a Technical Report with the regulators pursuant to provincial securities legislation, or other legislation, with the prior approval of the CP.

4. Accessibility, Physiography, Climate, Local, Resources and Infrastructure

4.1. Topography, Elevation, Fauna and Flora

The surface topography over the area of interest is characterized by regular and gentle (approximately 5°) slope towards the southeast. This slope increases to approximately 15° in the north western portion of the area.

Savannah grassland is the natural vegetation in the area.

4.2. Climate

Climate is typically of the highveld of South Africa with mild winters and warm summers. Temperatures rarely drop below zero degrees. The area falls within the summer rainfall area, mainly as thunderstorms. Mining operations in the area continue throughout the year.

4.3. Access

The Middelvlei Mine is well located in terms of infrastructure for potential mine development. The property is located close to a major highway and railroad. Several roads cross the property, providing access to the nearby town of Randfontein.

5. Location

5.1. Property Description

The Middelvlei Mine is located on the farm Middelvlei 225 IQ ("Middelvlei"), along the north-western margin of the Witwatersrand Basin in the Randfontein area, 35 km south-west of Johannesburg in the Gauteng Province of South Africa (Figure 1).

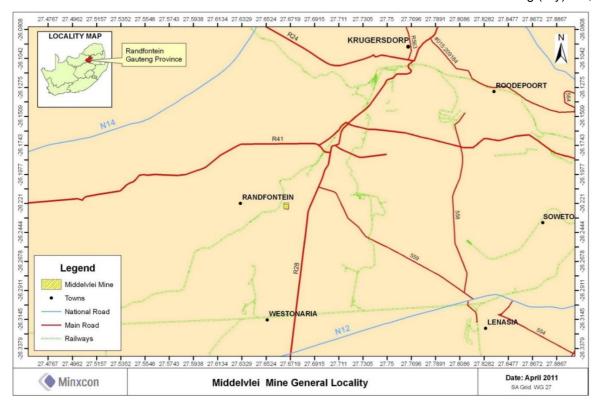


Figure 1: Locality of the Middelvlei Gold Mine.

5.2. Country Profile

South Africa has one of Africa's most developed economies and hosts a middle-income emerging economy which is a gateway to Sub-Saharan Africa. Major industries include mining, automobile assembly, metalworking, machinery, textiles iron and steel and farming. The abundance of natural resources is complimented by well-developed financial, legal, communications, energy, and transport sectors. Challenges currently facing the country include unemployment (approximately 27%), poverty and inequality.

5.3. Adjacent Properties

The mine is bordered to the east by Agricultural Holdings, with the Cooke 1, 2 and 3 shafts in close proximity to the mine.

Lindum Reefs Gold Mining Company Limited successfully mined Black Reef open cast operations on the Randfontein Estates Limited lease area, some of the operations were to the immediate north of the area of interest. The mining took place during the 1990's.

The Middelvlei and VCR reefs were mined extensively in underground operations to the south of the property on the old Venterspost Gold Mine, now part of the Sibanye mines.

5.4. History

The first borehole was drilled on the property in 1929. Initial exploration was conducted in order to assess the potential of the MR. Up to 1935, several trenches and winzes were excavated, but the values were not encouraging enough at the time to warrant further work. In 1937, the VCR was identified and sampled but the values also proved discouraging. Between 1945 and 1946 a drilling programme consisting of the MV series was carried out by Gold Fields between the outcrops and the northern boundary of the Venterspost mine. These values also proved uneconomic at the time. After these disappointments, interest in the area was abandoned, but was later revived as a result of a better

understanding of the VCR, in that it was found that VCR payshoots existed wherever Witwatersrand gold-bearing conglomerates sub-cropped against the Ventersdorp lava.

A new drilling programme (M series) was initiated in 1969 by Gold Fields and was followed by twenty cross-cut trenches in the outcrop area, which disclosed some high values on the VCR. It was concluded at the time that the area may provide the company with a useful additional tonnage to be mined in the future. In 1995, further exploration was carried out on the VCR and BR, which indicated that the Project could be exploited as an opencast operation. Gold Fields, however, never mined the gold deposit on Middelvlei.

During the last decade, studies have been conducted by Messrs Muller, Moodly and Trevarthen, amongst others, they're contributions are discussed later in the report. The property was previously owned by, amongst others, Kloof Gold Mining Company Ltd ("Kloof") a subsidiary of Gold Fields, (Portion 2), and Gold Fields (Portion 3 and 6). Middelvlei Gold Investments ("MGI") obtained the rights to the property in 2003 and have since been exploring the mine's economic potential. Mining has taken place on the Black Reef immediately to the north of the Project boundary and MVR and VCR have been mined extensively immediately to the south of the Project boundary.

6. Previous Exploration and/or Project Development

6.1. Black Reef

Table 1 shows a summary of the historical exploration on the Black Reef.

Table 1: Historical Exploration on the Black Reef.

Date	Study By			Modelling Type	Tonna ge Grade		COG	Resource	Comme nts
				2111	Mt	g/t	g/t		
1995	Gruszka (Gold Fields)	Preliminary geological investigatio n 424 BHs drilled on a 40 (EW) x 80-160 (NS) grid - all vertical	424 340 PC/RC and 28DD BHs used	Inverse Distance Squared grid 20 m x 20 m	1.129	2.35	1	Resources (1m reef thickness)	Major core losses with core drilling especially from weathere d zones. RC drilling used to suppleme nt informatio n. 41.8 Ha OC area with avg. stripping ratio of 22:1 defined
199 6	Moodely Detailed geostatistical evaluation		Ordinary Lognormal Kriging Grid: 20mx20m	6.71	0.86		In situ Mineral Resource (1m reef thickness)	Used the same drill data as Gruszka	
Aug- 02	CJ Muller	Evaluation of Middelvlei Project		Ordinary Lognormal Kriging Grid: 40mx40m	6.4	0.91		In situ Measured Resource	True thickness
Nov- 02	CJ	Evaluation of Box Cut			na	0.05- 113.55	na	na	na

	Muller	samples						
200 3	CJ Muller	Resource Estimation		4.45	1.29		In situ Mineral Resource	True thickness
200	CJ Muller	Pit Optimi sation using Datami ne's Maxipit		0.476	3.7		Probable Reserves	True thickness
200 5	CJ Muller	Resource Estimation		3.45	2.22	03	Measured Resource	True thickness

6.2. VCR

A summary of the historical exploration of the VCR is detailed in Table 2.

Table 2: Summary of Historical Exploration - VCR.

Year	Work Carried	Total	BHs intersecting	Grade	Comments
Teal	Out	Drilling	VCR	cmg/t	Comments
1937	Winze sampling	0	-	-	Poor results over erratically developed reef. Only covered small area.
1946	Drilled MV1 – MV10.	10	6	-	Low core recoveries.
1969	Drilled M1 – M12.	12	6	Up to 2,834	The VCR was faulted out in holes M1, 2, 3, 6, 7 and 11.
1980	Drilled M13 – M21.	9	?	-	VCR yielded very low values, except in M17 (21.7g/t)

6.3. MVR

A summary of the historical exploration of the MVR is detailed in Table 3.

Table 3: Summary of Historical Exploration - MVR.

Year	Work Carried Out	Total Drilling	BHs intersecting MVR	Tonnage (Mt)	Grade	Comments
1929	BH drilled on eastern section of Inlier. Position unknown.	1	1	-	?	Intersected MVR.
1931	Comparison made of reefs outcropping at Middelvlei with UG reefs at Randfontein & West Rand Mines	-	-	-	-	Reefs compared were found to be of the same stratigraphic unit.
1935	222 Samples taken, assayed from 3 re- opened winzes.	-	-	-	520 cmg/t	-
1946	10 BHs drilled. (MV1 – MV10)	10	6	-	-	Core recovery was low and therefore not representative.
1980	9 BHs drilled. (M13- M21)	9	6	-	1.6 – 8.7g/t	MVR absent in M14, M16 and M17.
1983	Surface Sampling took place.	0	-	-	-	No results were available.
1986	Declines developed. MX1 – MX21 Drilled. BH1 – BH16 Drilled.	37	?	-	-	Only UG mine was considered. No

					results from the declines were available
1996 Trevarthen	Study undertaken to establish economic potential MVR. Only upper 30m was considered.	0	-	0.166602	The extraction of the MVR was considered to be an economically viable addition to the Black Reef project.

7. Previous Mineral Resource Estimates

1995

Grade and thickness were interpolated into a 2D block model (20 m x 20 m block size) using *inverse distance square* method (Gruszka 1995). Mineral Resources were calculated and yielded at 1 g/t cutoff grade a tonnage of 1.129 Mt at an average grade of 2.35 g/t. No values were given at zero g/t cutoff grade. The average stripping ratio was 22:1 with a potential open pit area of 41.8ha.

<u>1996</u>

Grade and thickness were interpolated into a 20 m x 20 m 2D block model using *Ordinary Lognormal Kriging*. A constant reef thickness of 1m was used. An *in situ* Mineral Resource has been calculated of 6.71 Mt at an average grade of 0.68 g/t (Moodley 1996).

A study was undertaken by Trevarthen S. J. 1996, to establish the economic potential of the Main Reef and VCR for opencast potential. Only the upper 30 m was considered and yielded a resource of 166 602 tonnes at an average grade of 2.05 g/t. The extraction of the Main Reef was considered to be an economically viable addition to the Black Reef project.

2002

Table 4: Muller 2002at zero g/t cut-off (reef shallower than 50 m)

AREAS	Tonnage	Channel Width	Motal		Gold
	t	cm	G	g/t	cmg/t
А	3,078,592	85.07	2798530	0.91	77
В	730,087	107.88	905649	1.24	134
С	1,059,994	75.26	613815	0.58	44
D	723,415	82.89	325169	0.45	37
E	371,028	67.43	149451	0.40	27
F	223,024	82.67	653344	2.93	242
G	169,071	92.60	322796	1.91	177
Total/Av	6,355,210	84.89	5768755	0.91	77

^{*}A SG of 2.7 was used.

2003

The same drill hole data was used (Muller 2003) as in the Moodley assessment, but the reef package was redefined. Ordinary kriging was used to interpolate grades into 40 m x 40 m blocks. The results show an *in situ* Mineral Resource of 6.35 Mt at an average grade of 0.91 g/t.

All available information was used to calculate a resource for the Main Reef (Muller 2003). The

information was however incomplete and further work is needed to do a proper resource evaluation. The Main reef was delineated to a depth of 50 m below surface. The total Mineral Resource for the Main Reef, to a depth of 50 m below surface, is 155 000 tonnes at an average grade of 1.92 g/t. The resource was classified as an inferred resource.

2006

0000	Tonnage	Gold Grade	Gold	Content
2006	Mt	g/t	'000 oz	tonnes
Measured	2.61	2.01	169	5.24
Indicated	0.56	1.96	35	1.09
Total M&I	3.17	2.00	204	6.33
Inferred	9.46	5.88	1,787	55.58

Notes:

- 1. Mineral Resources are inclusive of the Mineral Reserve figures.
- 2. 1 kg = 32.15076 oz. troy.
- All figures are in Metric Tonnes.
- All figures are in Metric Tonnes.
 Mineral Resource Cut-Off: Black Reef: a 0.3 g/t cut-off was used to delineate the Mineral Resource. MVR: a 0.1 g/t cut-off was used to delineate the Mineral Resource. VCR: a 0.2 g/t cut-off was used to delineate the resource.
- Petrex Mineral Resource includes all blocks above 2 g/t, including pillars.
- Excludes all blocks that have had their availability classified as "abandoned" and "underwater".

2007

CCIC

Table 5: Mineral Resources for the Middelvlei Gold Mine as at June 2007.

2007 Depleted	Mineral Resource Category	Reef	Tonnage	Gold Grade	Gold Co	ontent
Depleted			Mt	g/t	kg	Moz
		BR	1.52	3.10	4712.0	0.151
	Measured	MVR	-	-	-	-
pu		VCR	-	-	-	-
Opencast and Underground	Total Measured		1.52	3.10	4712.0	0.151
erg	Indicated	BR	0.06	1.92	115.2	0.004
Pur		MVR	0.87	2.33	2029.40	0.060
ηp		VCR	-	-	-	-
an	Total Indicated		0.93	2.31	2144.6	0.064
ast	Total Indicated + Measured		2.45	2.80	6856.6	0.215
enc		BR	-	-	-	-
Ор	Inferred	MVR	16.36	2.38	38972.9	1.252
		VCR	3.62	1.95	7049.4	0.227
ĺ	Total Inferred		19.98	2.30	46022.3	1.479

Notes:

- 1. Mineral Resources are inclusive of the Mineral Reserves.
- 2. The tonnages are based on a SG of 2.7 t/m³.
- 3. A geological loss of 15% was applied to the tonnages.
- 4. The Mineral Resurces are declared at a 0 cmg/t cut-off.
- 5. Conversion: 1kg = 32.15076 oz.
- 6. No environmental, permitting, legal, taxation, socio-political, marketing or other issues are expected to materially affect the above Mineral Resource estimate and have, therefore, not been used to modify the Mineral Resource estimate.

Table 6: Underground Mineral Resources for the Middelvlei Gold Mine as at June 2007.

2007	Mineral Resource Category	Reef	Tonnage	Gold Grade	Gold C	ontent
Depleted			Mt	g/t	kg	Moz
	Measured	MVR	-	-	-	-
	ivieasured	VCR	-	-	-	-
P P	Total Measured		-	-	-	-
Пo	Indicated	MVR	0.07	2.02	141.4	0.004
rgr	Illulcated	VCR	-	-	-	-
Underground	Total Indicated		0.07	2.02	141.4	0.004
ā	Inferred	MVR	14.63	2.36	34526.8	1.110
	merred	VCR	3.46	1.95	6747	0.217
	Total Inferred		18.09	2.28	41273.8	1.327

Notes:

- 1. Mineral Resources are inclusive of the Mineral Reserves.
- 2. The tonnages are based on a SG of 2.7 t/m^3 .
- 3. A geological loss of 15% was applied to the tonnages.
- 4. The Mineral Resurces are declared at a 0 cmg/t cut-off.
- 5. Conversion: 1kg = 32.15076 oz.
- 6. No environmental, permitting, legal, taxation, socio-political, marketing or other issues are expected to materially affect the above Mineral Resource estimate and have, therefore, not been used to modify the Mineral Resource estimate.

Table 7: Opencast Mineral Resources for the Middelvlei Gold Mine as at June 2007.

2007 Depleted	Mineral Resource Category	Reef	Tonnage	Gold Grade	Gold C	ontent
Depleted			Mt	g/t	kg	Moz
		BR	1.52	3.10	4712.0	0.151
	Measured	MVR	-	-	-	-
		VCR	-	-	-	-
	Total Measured		1.52	3.10	4712.0	0.151
	Indicated	BR	0.06	1.92	115.2	0.004
ast		MVR	0.80	2.36	1888.0	0.060
Opencast		VCR	-	-	-	-
o	Total Indicated		0.86	2.33	2003.2	0.064
	Total Indicated + Measured		2.37	2.82	6715.2	0.215
		BR	-	1	-	-
	Inferred	MVR	1.73	2.57	4446.1	0.142
		VCR	0.16	1.89	302.4	0.010
	Total Inferred		1.89	2.51	4748.5	0.152

Notes:

- 1. Mineral Resources are inclusive of the Mineral Reserves.
- 2. The tonnages are based on a SG of 2.7 t/m³.
- 3. A geological loss of 15% was applied to the tonnages.
- 4. The Mineral Resurces are declared at a 0 cmg/t cut-off.
- 5. Conversion: 1kg = 32.15076 oz.
- 6. No environmental, permitting, legal, taxation, socio-political, marketing or other issues are expected to materially affect the above Mineral Resource estimate and have, therefore, not been used to modify the Mineral Resource estimate.

2011

The Table 8 summarises the Mineral Resource Classification for the Middelvlei Project for the MVR and VCR as at 3 May 2011.

Table 8: Middelvlei Gold Mine MVR and VCR Mineral Resources stated at a cut-off of zero cmg/t as at 3 May 2011.

		Resource	Dip Corrected Tonnes	Geological Tonnes	Au	Au Content		CW
		Category	Mt	Mt	g/t	kg	Moz	cm
		Measured	1.84	1.57	1.56	2,438.80	0.078	645
M	VR	Indicated	1.94	1.65	1.69	2,787.66	0.090	616
		Inferred	0.13	0.11	4.35	473.57	0.015	187
		Measured	0.02	0.02	2.83	47.15	0.002	25
V	CR	Indicated	0.04	0.03	3.71	116.07	0.004	30
		Inferred	0.21	0.18	3.57	628.75	0.020	29

Notes: The current Mineral Resource model is based on historical drill hole and sampling data collected in the Project area. The Mineral Resource estimation was carried out by C.Muller. The Mineral Resource estimate is based on a 3D computer block model for MVR and VCR Gold Content (cm.g/t) and Channel Width (CW) estimated into 5 X 5 X 1 metre blocks using full channel width composite data. The grade models were constructed from simple kriged estimates. The grade models were verified by visual and statistical methods and deemed to be globally unbiased. The blocks were classified into Measured, Indicated and Inferred Mineral Resource categories using the following and not limited thereto: sampling QAQC, geological confidence, number of samples used to inform a block, kriging variance, distance to sample (variogram range), lower confidence limit, kriging efficiency, regression slope, etc. No environmental, permitting, legal, taxation, socio-political, marketing or other issues are expected to materially affect the above Mineral Resource estimate and hence have not been used to modify the Mineral Resource estimate. Only the Mineral Resources lying within the Project area and the legal boundaries are reported. Mineral Resources are inclusive of the Mineral Resources are inclusive of the Mineral Resources are declared at a 0 cmg/t cut-off shown in the table above. Conversion kg to oz: 32.15076.

2013

Table 9: Mineral Resources for the Middelvlei Gold Mine as at 30 June 2013

2007 Depleted	Mineral Resource Category	Reef	Tonnage	Gold Grade	Gold Co	ontent
Depleted			Mt	g/t	kg	Moz
		BR	1.52	3.10	4712.0	0.151
	Measured	MVR	-	-	-	-
Pu		VCR	-	-	-	-
Opencast and Underground	Total Measured		1.52	3.10	4712.0	0.151
erg	Indicated	BR	0.06	1.92	115.2	0.004
밀		MVR	0.87	2.33	2029.40	0.060
) p		VCR	-	-	-	-
ä	Total Indicated		0.93	2.31	2144.6	0.064
ast	Total Indicated + Measured		2.45	2.80	6856.6	0.215
enc		BR	-	-	-	-
o	Inferred	MVR	16.36	2.38	38972.9	1.252
		VCR	3.62	1.95	7049.4	0.227
	Total Inferred		19.98	2.30	46022.3	1.479

Notes:

- 1. Mineral Resources are inclusive of the Mineral Reserves.
- 2. The tonnages are based on a SG of 2.7 t/m³.
- 3. A geological loss of 15% was applied to the tonnages.
- 4. The Mineral Resurces are declared at a 0 cmg/t cut-off.
- 5. Conversion: 1kg = 32.15076 oz.
- No environmental, permitting, legal, taxation, socio-political, marketing or other issues are expected to materially affect the above Mineral Resource estimate and have, therefore, not been used to modify the Mineral Resource estimate.

Table 10: Opencast Mineral Resources for the Middelvlei Gold Mine as at 30 June 2013

2007 Depleted	Mineral Resource Category	Reef	Tonnage	Gold Grade	Gold Co	ontent
Depleted			Mt	g/t	kg	Moz
		BR	1.52	3.10	4712.0	0.151
	Measured	MVR	-	-	-	-
		VCR	-	-	-	-
	Total Measured		1.52	3.10	4712.0	0.151
	Indicated	BR	0.06	1.92	115.2	0.004
Opencast		MVR	0.80	2.36	1888.0	0.060
enc		VCR	-	-	-	-
ď	Total Indicated		0.86	2.33	2003.2	0.064
	Total Indicated + Measured		2.37	2.82	6715.2	0.215
		BR	-	-	-	-
	Inferred	MVR	1.73	2.57	4446.1	0.142
		VCR	0.16	1.89	302.4	0.010
	Total Inferred		1.89	2.51	4748.5	0.152

Notes:

- 1. Mineral Resources are inclusive of the Mineral Reserves.
- 2. The tonnages are based on a SG of 2.7 t/m^3 .
- 3. A geological loss of 15% was applied to the tonnages.
- 4. The Mineral Resurces are declared at a 0 cmg/t cut-off.
- 5. Conversion: 1kg = 32.15076 oz.
- 6. No environmental, permitting, legal, taxation, socio-political, marketing or other issues are expected to materially affect the above Mineral Resource estimate and have, therefore, not been used to modify the Mineral Resource estimate.

Table 11: Underground Mineral Resources for the Middelvlei Gold Mine as at 30 June 2013

2007	Mineral Resource Category	Reef	Tonnage	Gold Grade	Gold Co	ontent
Depleted			Mt	g/t	kg	Moz
	Measured	MVR	-	-	-	-
	ivieasured	VCR	-	-	-	-
Þ	Total Measured		-	-	-	-
ino	Indicated	MVR	0.07	2.02	141.4	0.004
B	Illulcated	VCR	-	-	-	-
Underground	Total Indicated		0.07	2.02	141.4	0.004
Ď	Inferred	MVR	14.63	2.36	34526.8	1.110
	Interred	VCR	3.46	1.95	6747	0.217
	Total Inferred		18.09	2.28	41273.8	1.327

Notes:

- 1. Mineral Resources are inclusive of the Mineral Reserves.
- 2. The tonnages are based on a SG of 2.7 t/m^3 .
- 3. A geological loss of 15% was applied to the tonnages.
- 4. The Mineral Resurces are declared at a 0 cmg/t cut-off.
- 5. Conversion: 1kg = 32.15076 oz.
- 6. No environmental, permitting, legal, taxation, socio-political, marketing or other issues are expected to materially affect the above Mineral Resource estimate and have, therefore, not been used to modify the Mineral Resource estimate.

8. Previous Production

The Mine has been mining the Black Reef on a small scale (13 927 t milled, producing 33.38 kg of gold) since November 2019 to the end of July 2020.

There have been 2 previous phases of mining of which no information is available.

9. Legal Aspects and Permitting

The renewal of the current mining right has been submitted in 2019 and awaiting final renewal for the next 10 years. There is a 20-year lease agreement with the land owner signed in 2019.

A toll treatment contract exists with Sibanye-Stillwater.

Middelvlei Minerals is in partnership with APEX Mining Services (Pty) Ltd 9APEX) whereby APEX have the right to mine up to 5% of the total Gold Mineral Resource on the property over an agreed geographical footprint. This contract is currently in the process of being renegotiated between the parties.

All steps have been completed for the application for a water use licence application (WULA) and final submission was done in late 2019. Currently it is still in progress and the department has to finalise the WULA. The Water Use Licence is in the final stage of application.

There are no known impediments or any other claims that the CP are aware of.

South Africa is a country with a long-established rich mining history. South Africa has detailed regulatory framework for mining and environmental approvals. The Mining Charter as a companion to the Mining Act sets out goals for employment, procurement and black ownership.

The country has a detail regulatory framework of mineral title, mining right grant and mining authorization. The Mineral Resources Petroleum Development Act "MRPDA" is the current minerals legislation. An update to the Mining Charter setting goals for empowerment, procurement and employment has recently be proclaimed. The Company will need to comply with certain empowerment, procurement and management targets pertaining to a Mining Right.

The Social and Labour plan is the documents in the Mining Right application that discusses for consultation the relationship with the local communities.

There are no land claims on the project area.

There is no reason at this time that the permissions, permits, surface and water use rights will not be achieved but these factors are potential significant project risks. The risk is mitigated by following the established process of consultation in the Environmental Assessment for a new mining right.

10. Royalties

The CP is not aware of any royalties, back-in rights, payments or other encumbrances, other than in agreements disclosed here, that could prevent Middelvlei Minerals from carrying out its plans or the trading of its rights to its licence holdings at the Middelvlei Mine.

11. Geological Setting, Mineralisation and Deposit Types

11.1. Regional Geology

The Witwatersrand Basin is the largest known gold province in the world and the deposits in it have been mined for over 100 years. Gold is produced from seven goldfields within the basin, mainly from conglomerate horizons of the Witwatersrand, Ventersdorp and Transvaal Supergroups. The West Wits Line (also referred to as the Carletonville Goldfield), of which the Middelvlei Mine forms part, is one of these goldfields, and is situated on the north-western edge of the Witwatersrand Basin, ~35 km west of Johannesburg.

The Witwatersrand Supergroup is underlain by an Archaean (>3.1 billion years (Ga) ago) granite-greenstone basement and the 3.086–3.074 Ma Dominion Group. It is unconformably overlain by rocks

of the Ventersdorp (2.7 Ga), Transvaal (2.6 Ga) and Karoo (302-180 million years (Ma) ago) Supergroups. The Witwatersrand Supergroup is divided into two groups: the West and Central Rand Groups ("CRG"). The reefs present at the Middelvlei Mine have been classified as part of the CRG.

The CRG unconformably overlies the West Rand Group. Lithologies in this group are characterised by sandstone and conglomerate which dominate over shale. The CRG comprises the Turffontein and Johannesburg Subgroups, which both contain conglomerates in their lower and upper portions. At least ten basin-wide unconformities are known, each of which are overlain by conglomerate beds. The conglomerates of the CRG contain a variety of pebble types. A distinctive feature of the conglomerates is an overall increase in clast size, which is recorded from the base to the top of the group. "Along the West Wits Line, the CRG is unconformably overlain by basal volcanic rocks of the Ventersdorp Supergroup, the latter interfingering with the sediments of the Venterspost Conglomerate Formation" (L.J. Robb and V.M. Robb, The Mineral Resources of South Africa, 1998).

The Black Reef located at the base of the Black Reef Quartzite Formation (BRQF) was deposited as fluvial channels on a peneplained post-Ventersdorp surface as the basal unit of the early Proterozoic Transvaal Sequence/Supergroup. This formation is nowhere very thick (25 m on average), except along the northern edge of the basin, where it locally reaches a thickness of 500 m. It is nevertheless developed with surprising uniformity all along the edge of the basin. The formation is composed almost entirely of quartzite, with lenticular beds of grit and conglomerate, usually at the base, and shale at the top, where it grades into the dolomite of the Malmani Subgroup. Dips are shallow and everywhere are towards the inside of the basin (Visser, 1989).

11.2. Local Geology

The principal economic horizons along the West Wits Line include the Black Reef, Carbon Leader, MVR and the VCR). The Black Reef is found at the base of the Black Reef Quartzite Formation ("BRQF") in the Transvaal Supergroup. The Black Reef has been extensively mined on the Middelvlei Mine, during which time exploration was focused on the MVR and, to a lesser degree, on the VCR. The Carbon Leader in the area has been described as a narrow (~10 cm) conglomerate band, rich in hydrocarbons and gold. The Middelvlei Reef overlies the Carbon Leader and comprises bands of conglomerates with internal quartzites up to a maximum thickness of 7 m. In the eastern section of the West Wits Line, the mineralisation within the MVR is confined to wide and poorly defined payshoots, whereas in the west, the payshoots are recorded to be narrower and better defined.

The Project is underlain by the shallow-lying BR, as well as the VCR, MVR and Carbon Leader. The BR covers a large portion of the mining area, whereas the VCR and MVR orebodies occur in what has historically been termed the "Middelvlei Inlier" (*Figure 2*), as well as in the area to the south of the Middelvlei Inlier. The MVR and VCR are exposed by an erosional window through the BR cover. The area delineated for the Project is limited to the area in which the MVR and VCR outcrop and information has been gathered historically.

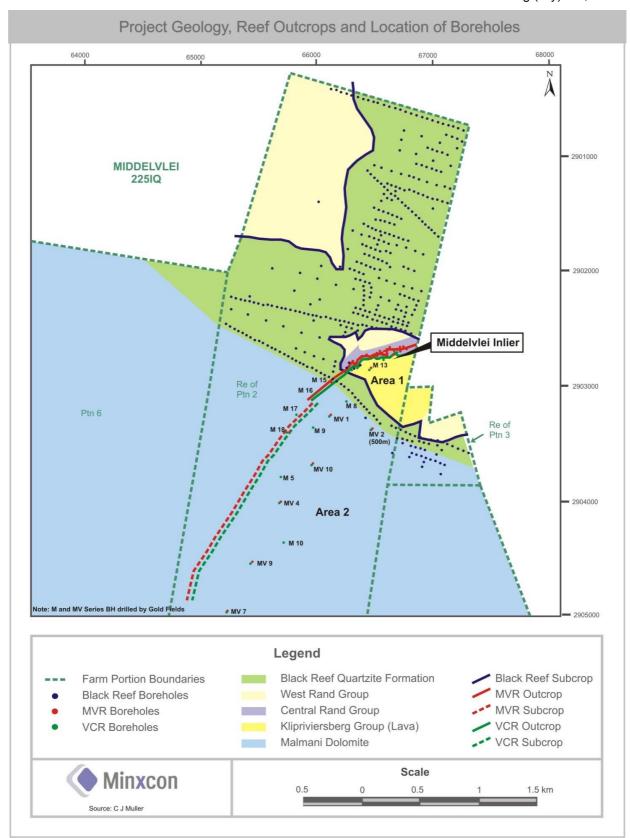


Figure 2: Project Geology, Reef Outcrops and Location of Boreholes.

11.2.1. Black Reef

The BR, located at the base of the BRQF, was deposited as fluvial channels on a post-Ventersdorp surface as the basal unit of the early Transvaal Sequence/Supergroup. The BRQF has an average thickness of 25 m, except along the northern edge of the basin, where it locally reaches a thickness of 500 m. It has developed uniformly all along the edge of the basin. The formation is composed almost entirely of quartzite, with lenticular beds of grit and conglomerate, usually at the base, and shale at the

top, where it grades into the dolomite of the Malmani Subgroup. The gold occurs as syngenetic, heavy mineral particles largely within conglomerates deposited in fluvial channels. This reef dips fairly shallow at ~15° NNE and is composed of a coarse-grained to gritty, grey meta-quartzite, which is sometimes conglomeratic, and usually well-mineralised. Its occurrence takes the form of well-defined conglomeratic channels up to 40 m wide, which follow the general NS strike direction of the footwall lithologies. The width of the reef generally does not exceed 50 cm, but the reef zone may be as much as 3 m thick. Two distinct conglomerates can be distinguished, separated by a quartzite middling. The top band of the BR is often not developed, leaving only the bottom band in place.

11.2.2. MVR

The MVR is an auriferous conglomeratic unit located towards the base of the CRG. Lenticular, conglomerate units are fairly extensive laterally (in the order of kilometres) with gold associated within these conglomerates. The Reef package exhibits cross-stratification and other sedimentological characteristics which show it to have been deposited in a high energy fluvial depositional environment. The MVR consists of three distinct conglomerate packages (Top, Middle and Bottom Band) separated by quartzite partings, the entire reef having a thickness of up to 7 m. All three bands are oligomictic quartz pebble conglomerates, up to 1 m thick. The Bottom band generally shows the best mineralisation and highest gold concentration, especially at its lower erosive contact, but the Top band is also occasionally well-mineralised. The Middle band is usually of low grade. The MVR on the Middelylei Mine outcrops in Middelylei Inlier and dips at 52° to the SSE.

11.2.3. VCR

The width of the VCR varies from zero, where the lavas lie directly on the Witwatersrand strata with no discernible lag horizon, up to 3 m. Where the VCR is well-developed it comprises a poorly sorted, oligomictic, matrix supported quartz pebble conglomerate, with a dark coloured auriferous matrix. Mineralisation usually exhibits highly distinctive buckshot pyrite. The VCR shows conspicuous variations in width, pebble size and gold value over short distances. Clast sizes range from 5 mm to 100 mm and occasional boulders could be present. Large clast sizes suggest high energy depositional environments, which may explain the variable reef widths and areas of non-deposition which possibly resulted from the scouring effect of the transport medium (Trevarthen, 1996).

12. Structural Geology

Two major structural features, the West Rand Fault and the Bank Break, occur in the West Wits Line Region (Figure 3). The West Rand Fault displaced pre-BR strata, and marks the eastern limit of the Middelvlei Reef and the VCR on the West Wits Line. The fault dips approximately 40° west and attains vertical displacements in the order of 3,000 m. This fault also marks the eastern extent of the reefs present in the Middelvlei Inlier. The Bank Fault divides the goldfield into two sections: the section east of the Bank Fault, which represents a natural sedimentological extension of the West Rand goldfield, and the western section, which is sedimentologically distinct and referred to as the Carletonville goldfield.

The Bank Break is a complex structure, consisting of an anticline, which was later modified by numerous faults. Even though the Bank Break is associated with little displacement, other characteristics of the Witwatersrand strata and reefs change across the feature. To the east, the strata strike NNE and dip at 50° to the SE. To its west, the strike changes to E-W and dips 20°-25° S.

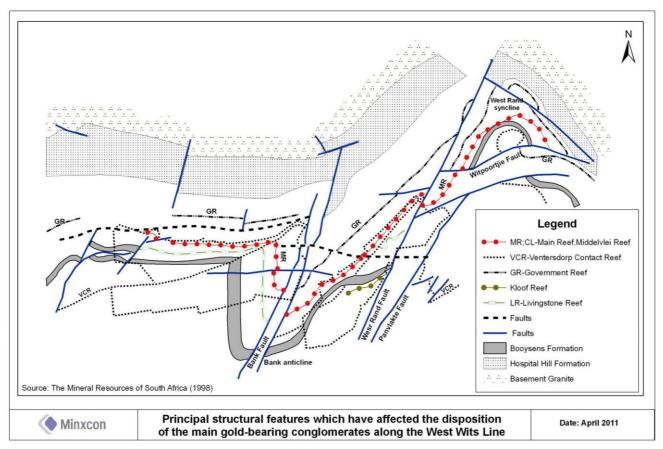


Figure 3: Local Geology of the Middelvlei Mine with Respect to Principal Structural Features.

The geological map of a section of the Middelvlei Inlier shows the sub-outcrops of the MVR footwall small pebble conglomerate, the top and bottom contacts of the MVR, the bottom contact of the VCR, and the associated faulting (Error! Reference source not found.). This map was compiled by T revarthen (1996) while completing a M.Sc. degree in Mining Geology, which was sponsored by Gold Fields. The main objective of the study was to calculate Mineral Resources for the MVR and VCR within the Middelvlei Inlier. The structural plan resulted from an assessment of all available Goldfields information on the area. A hard copy of the plan was scanned-in, geo-referenced and digitised. By superimposing the structural plan with the DD borehole information (locations of which are indicated in Figure 4), the degree of accuracy of the data was considered reasonable, and a 3D structural model of the fault planes was constructed in the Surpac Vision mining software system by Caracle Creek International Consulting Inc ("CCIC").

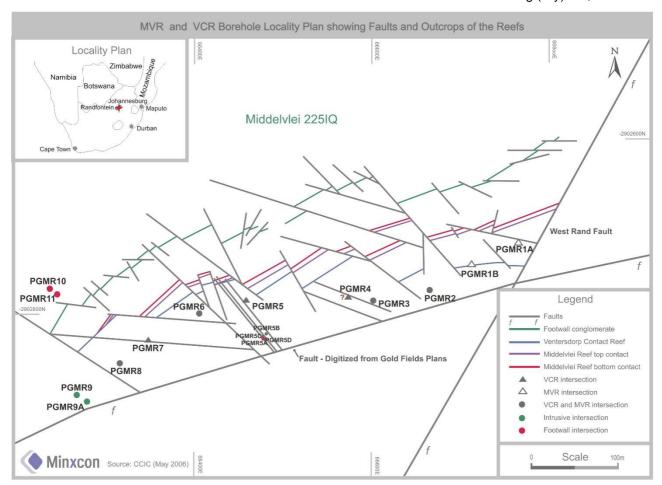


Figure 4: Faults and Outcrops of the different Reefs.

13. Deposit Types

13.1. Mineralisation

Gold is associated with conglomeratic units deposited and concentrated on unconformities. These conglomerates have been deposited on braid plains and within fluvial channels. The Black Reef occurs in pay shoots trending parallel (north-south) to the sub-cropping Witwatersrand conglomerates (VCR and Main Reef).

Sixteen samples (five borehole and eleven percussion chip) of Black Reef intersections from the Middelvlei Project were submitted to the Mineralogy Section of Gold Fields Limited for investigation (Martin 1995).

Most of the gold observed within the samples submitted (most of which emanated from above the water table) was associated with different forms of iron oxyhydroxides. Gold occurred as large, nugget-like intergrowths. Gold also occurred as inclusions within quartz, and also associated with tourmalised grains. A certain amount of the gold was liberated. The size of the gold grains varied considerably from very coarse nugget-like intergrowths (+- 300 um) down to very fine inclusions (< 10 um). It is estimated that the average size range of gold would lie between 20 and 50 um.

14. Data configuration

14.1. Black reef

The borehole distribution for evaluation off the Black Reef is shown in Figure 2. Black Reef in this area is characterised by narrow channels running north-south and therefore the 40 m east-west and 80 m to 160 m drill spacing in a north south direction. The drill spacing was adequate for delineating the

channels and evaluate the black Reef. Additional data were also obtained from the opencast operations which provided more local detail, but did relate to the overall drill spacing results.

14.2. MVR and VCR Reefs

The MVR and VCR reefs outcrop within the Middelvlei inlier and dips at xx degrees to the south-east. The outcrop area had sufficient data on a close space grid to evaluate these reefs for opencast operations. The MVR and VCR reefs are mainly targeted as underground operations and have therefore a wider borehole distribution away from the outcrop area (Figure 4). This is however in line with the regional mining of these reef that have typically a wider distribution from which assessments are made. The current borehole distribution resulted in an inferred resource and would more infill drilling be required to upgrade to an indicated category for any consideration for eventual mining of these underground.

15. Exploration and Drilling, Sampling and Data

15.1. Drilling

Four drilling campaigns drilled during the Goldfield's ownership were identified. They are identified as the 'MV' series, the 'MV' series, the 'MX' series and the 'BH' series.

The MV Series was drilled for both MVR and VCR. Not all the drillholes did, however, intersect the reefs, due to faulting.

Due to the poor documentation of the M Series drillholes the majority of these series were excluded from the Project. The target reef for these drillholes varied from VCR, MVR and both VCR and MVR.

No information for the MX and BH Series could be located for this Project. It is recommended that further investigations be undertaken to locate this data for the next phase of the Project.

Historical reports indicate that all available drill core is stored at Harmony Gold's Randfontein Core Yard.

15.2. Collar Surveys

Collar coordinates (X and Y values) of the holes M1 to M12 and the MV series were digitized from a 1:10 000 scale geological hard copy plan and the z values were acquired in the field by the survey contractor (Little Swift Investments). Clark 1880 (LO29) co-ordinates (x, y and z values) for the collars of holes MV13 to MV21 were captured from the original logs. The original survey certificates for these holes are not available. However, the plotted locations of the holes compared well to the hard copy plans.

15.3. Downhole Surveys

The BR drillholes (MN) were drilled vertically. The down-hole survey data of the holes M19, M20, M21 was captured from the original certificates, which are available from the historical files.

15.4. Geological Logging

No information was available regarding the logging or the historical drillholes. All sampling reported for the BR, prior to the involvement of MGI, was completed by Gold Fields SA/GFM&D. No written

information on the logging and sampling protocol was available. The qualified person responsible for the Middelvlei Mine resource statement in the 2007 CPR, Mr CJ Muller, was involved with the project at the time as the Chief Resource Geologist for Gold Fields, supervising the resource estimation.

15.5. Sampling

No information is available regarding the sampling method carried out on the MVR or VCR. Files containing the sampling sheets for samples taken on these reefs are located at the Gold Fields Exploration Office in Oberholzer.

According to Mr. Muller, sampling was conducted using normal industry standard procedures under the direction of geological staff from Gold Fields. Minxcon also visited the Gold Fields Exploration Office in Oberholzer and viewed selected BR DD core that is stored at the premises. It was observed that the DD boreholes were split using a diamond saw and were halved or quartered depending on whether duplicate samples were to be analysed. The core was sampled in 10 cm - 25 cm intervals over the reef horizon, with samples being taken on lithological units, with 2 cm into the hanging wall and footwall. One footwall sample was always taken as a check sample. The hangingwall was also sampled on occasion.

All the BR drillholes were drilled vertically and all the boreholes that were viewed were drilled well into the footwall. In the boreholes that were inspected, the sampling depths on the boreholes were checked with the sampling depths recorded on the sampling sheets and no errors were found. All the PC and RC core was sampled at 50 cm intervals straddling the reef horizon. A conventional Riffler was used to split the samples in three to obtain samples of a manageable size. With the RC drilling, sample recovery was monitored by means of the sample weight. On average, an 83.8% sample recovery was achieved.

15.6. Quality Control/Quality Assurance

This section was referenced from CCIC reports for the data obtained under their supervision.

Two standard reference materials, SL20 (5.911 g/t) and SE19 (0.583 g/t), were supplied by Rock Labs (Ltd.). Every fifteenth sample of the consignment comprised of alternating high and low gold value standard reference material or a blank sample (footwall quartzite). In the case of highly mineralised intersections, standard samples were more frequently and randomly inserted in the consignment.

Table 12 illustrates the assayed values for the standard sample SE19. Four of the values are considered to be outliers. The sample batch related to the outliers will be re-submitted to an umpire laboratory as part of the independent verification of results. The average percentage of 104%, excluding the outliers, is within the 10% bottom and top limits of the standard grade.

Table 12: Standard Reference Material (SE19) Samples and Their Respective Assayed Values.

Assayed value	Standard value	Std Dev top limit	Std Dev bottom limit	% (Assayed value VS Std value)
0.6	0.58	0.61	0.56	103%
0.6	0.58	0.61	0.56	103%
0.62	0.58	0.61	0.56	106%
0.6	0.58	0.61	0.56	103%
0.84	0.58	0.61	0.56	outlier
0.6	0.58	0.61	0.56	103%
0.62	0.58	0.61	0.56	106%
0.56	0.58	0.61	0.56	96%
0.64	0.58	0.61	0.56	110%
0.62	0.58	0.61	0.56	106%
0.84	0.58	0.61	0.56	outlier
3.9	0.58	0.61	0.56	outlier
			Average	104%

Table 13 shows the assayed values for the standard sample SL20. For the higher-grade standard reference material, the results do not reveal significant outliers. The average percentage of 94% is within the 10% bottom and top limits of the standard grade.

Table 13: Standard Reference Material (SL20) Samples and Their Respective Assayed Values.

Assayed value	Standard value	Std Dev top limit	Std Dev bottom limited	% (Assayed value VS Std value)
5.42	5.91	6.09	5.74	92%
5.80	5.91	6.09	5.74	98%
5.64	5.91	6.09	5.74	95%
5.52	5.91	6.09	5.74	93%
5.66	5.91	6.09	5.74	96%
5.40	5.91	6.09	5.74	91%
5.30	5.91	6.09	5.74	90%
5.80	5.91	6.09	5.74	98%
5.78	5.91	6.09	5.74	98%
5.72	5.91	6.09	5.74	97%
5.78	5.91	6.09	5.74	98%
5.30	5.91	6.09	5.74	90%
5.62	5.91	6.09	5.74	95%
5.02	5.91	6.09	5.74	85%
5.70	5.91	6.09	5.74	96%

Average

94%

Footwall quartzites were inserted in the sample consignment as blank samples. Typical low values for the blank samples were assayed (Figure 5).

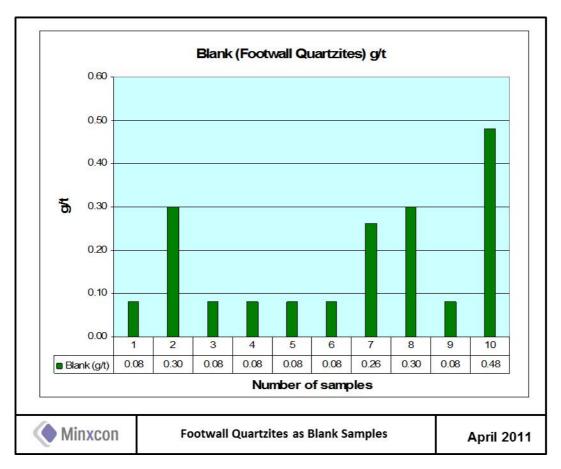


Figure 5: Assay Values of Footwall Quartzites as Blank Samples.

Repeat assays (10%), as part of independent verification of results, is underway and is being performed by SGS Lakefield Research Africa (Pty) Ltd.

The assayed values of the standards SE19 and SL20 for the Black Reef DD programme is shown in Table 14.

Table 14: Standard Reference Material (SE19 and SL20) Samples and Their Respective Assayed Values for the BR.

Bh_ID	Reef Type	Sample_ID	Assayed value	Standard value	Std Dev top limit	Std Dev bottom limited	% (Assayed value VS Std value)
BH16	BR	16	5.44	5.91	5.74	6.09	92.05%
BH17	BR	17	0.6	0.58	0.61	0.56	103.45%
BH17	BR	20	5.86	5.91	5.74	6.09	99.15%
BH18	BR	14	0.64	0.58	0.61	0.56	110.34%
BH18	BR	19	0.64	0.58	0.61	0.56	110.34%
BH18	BR	16	5.54	5.91	5.74	6.09	93.74%
BH19	BR	9	0.6	0.58	0.61	0.56	103.45%
BH19	BR	15	0.6	0.58	0.61	0.56	103.45%
BH19	BR	13	5.34	5.91	5.74	6.09	90.36%
BH19	BR	5	5.38	5.91	5.74	6.09	91.03%
BH20	BR	11	0.66	0.58	0.61	0.56	113.79%
BH20	BR	5	4.88	5.91	5.74	6.09	82.57%
BH20	BR	13	5.42	5.91	5.74	6.09	91.71%
BH21	BR	6	5.56	5.91	5.74	6.09	94.08%
BH22	BR	8	0.6	0.58	0.61	0.56	103.45%
BH27	BR	3	0.62	0.58	0.61	0.56	106.90%
BH28	BR	4	0.68	0.58	0.61	0.56	117.24%
BH29	BR	2	0.58	0.58	0.61	0.56	100.00%
BH30	BR	3	0.58	0.58	0.61	0.56	100.00%

BH31 BH34	BR BR	2	0.56 0.61	0.58 0.58		0.56 0.56	96.55% 105.17%
BH48	BR	2	0.62	0.58	0.61	0.56	106.90%
		<u> </u>				Average	100.48%

The assayed values of the standards SE19 and SL20 for the second phase of MVR and VCR DD is shown in Table 15.

Table 15: Standard Reference Material (SE19 and SL20) Samples and Their Respective Assayed Values for the MVR and VCR.

Bh_ID	Reef Type	Sample_ ID	Assayed value	Standard value	Std Dev top limit	Std Dev bottom limited	% (Assayed value VS Std value)
BH15	MVR&VCR	17	0.64	0.58	0.61	0.56	110.34%
BH15	MVR&VCR	3	5.52	5.91	5.74	6.09	93.40%
BH15	MVR&VCR	19	5.8	5.91	5.74	6.09	98.14%
BH35	MVR&VCR	4	0.58	0.58	0.61	0.56	100.00%
BH35	MVR&VCR	8	0.58	0.58	0.61	0.56	100.00%
BH35	MVR&VCR	12	0.58	0.58	0.61	0.56	100.00%
BH35	MVR&VCR	45	0.58	0.58	0.61	0.56	100.00%
BH35	MVR&VCR	28	0.64	0.58	0.61	0.56	110.34%
BH35	MVR&VCR	6	5.5	5.91	5.74	6.09	93.06%
BH35	MVR&VCR	10	5.58	5.91	5.74	6.09	94.42%
BH35	MVR&VCR	42	5.7	5.91	5.74	6.09	96.45%
BH35	MVR&VCR	24	5.8	5.91	5.74	6.09	98.14%
BH39	MVR&VCR	2	0.56	0.58	0.61	0.56	96.55%
BH39	MVR&VCR	4	5.84	5.91	5.74	6.09	98.82%
BH40	MVR&VCR	10	0.62		0.61	0.56	
BH40	MVR&VCR	3	0.62	0.58 0.58	0.61	0.56	106.90% 110.34%
BH40	MVR&VCR	6	5.76	5.91	5.74	6.09	97.46%
BH40	MVR&VCR	22	5.82	5.91	5.74	6.09	98.48%
BH43	MVR&VCR						96.55%
BH43		16 7	0.56	0.58 0.58	0.61	0.56	
BH43	MVR&VCR MVR&VCR	3	0.6	0.58	0.61	0.56 0.56	103.45%
BH43	MVR&VCR	5	0.64 5.76	5.91	0.61 5.74		110.34%
				5.91		6.09	97.46%
BH43	MVR&VCR	25	5.8		5.74	6.09	98.14%
BH43	MVR&VCR	12	5.82	5.91	5.74	6.09	98.48%
BH44	MVR&VCR	30	0.58	0.58	0.61	0.56	100.00%
BH44	MVR&VCR	51	0.58	0.58	0.61	0.56	100.00%
BH44 BH44	MVR&VCR	63 11	0.6 0.62	0.58 0.58	0.61	0.56	103.45% 106.90%
	MVR&VCR				0.61	0.56	
BH44	MVR&VCR	40	0.62	0.58	0.61	0.56	106.90%
BH44	MVR&VCR	69	0.62	0.58	0.61	0.56	106.90%
BH44 BH44	MVR&VCR MVR&VCR	58 55	0.66 5.56	0.58 5.91	0.61 5.74	0.56 6.09	113.79%
BH44		60	5.56	5.91	5.74		94.08%
BH44	MVR&VCR					6.09	94.08%
BH44	MVR&VCR	44 22	5.6 5.72	5.91	5.74	6.09	94.75% 96.79%
BH44	MVR&VCR MVR&VCR	36		5.91	5.74 5.74	6.09	
BH44	MVR&VCR		5.8 5.8	5.91	5.74	6.09	98.14%
BH44	MVR&VCR	66 85	5.9	5.91 5.91	5.74	6.09 6.09	98.14% 99.83%
BH45	MVR&VCR	2	5.92	5.91	5.74	6.09	100.17%
BH41	MVR&VCR	7	5.72		5.74		96.79%
				5.91		6.09	
BH47 BH47	MVR&VCR MVR&VCR	3 5	0.64	0.58	0.61	0.56	110.34%
			5.84	5.91	5.74	6.09	98.82%
BH47	MVR&VCR	9	0.6 5.76	0.58	0.61	0.56	103.45%
BH47	MVR&VCR	13	5.76	5.91	5.74	6.09	97.46%
BH47	MVR&VCR	16	0.62	0.58	0.61	0.56	106.90%
BH47	MVR&VCR	18	5.86	5.91	5.74	6.09	99.15%
BH47	MVR&VCR	21	0.62	0.58	0.61	0.56	106.90%
BH47	MVR&VCR	26	5.77	5.91	5.74	6.09	97.63%
BH47	MVR&VCR	29	0.6	0.58	0.61	0.56	103.45%
BH47	MVR&VCR	34	5.58	5.91	5.74		94.42%
BH47	MVR&VCR	44	0.68	0.58	0.61	0.56	117.24%

Bh_ID	Reef Type	Sample_ ID	Assayed value	Standard value	Std Dev top limit	Std Dev bottom limited	% (Assayed value VS Std value)
BH47	MVR&VCR	47	5.6	5.91	5.74	6.09	94.75%
BH51	MVR&VCR	4	0.6	0.58	0.61	0.56	103.45%
BH51	MVR&VCR	20	5.4	5.91	5.74	6.09	91.37%
BH51	MVR&VCR	23	0.6	0.58	0.61	0.56	103.45%
BH51	MVR&VCR	26	5.71	5.91	5.74	6.09	96.62%
BH51	MVR&VCR	29	0.63	0.58	0.61	0.56	108.62%
BH51	MVR&VCR	31	5.65	5.91	5.74	6.09	95.60%
BH51	MVR&VCR	33	5.53	5.91	5.74	6.09	93.57%
BH51	MVR&VCR	52	5.84	5.91	5.74	6.09	98.82%
BH51	. MVR&VCR	. 54	5.6	5.91	5.74	6.09	. 94.75%
						Average	100.57%

16. Data Verification, Audits and Reviews

16.1. Verification of Data

Table 16 shows an example of drillhole and surface sampling data which was subjected to a verification process (Minxcon 2013). Only information approved during this verification stage was used in the Mineral Resource Estimation. The table summarises the information available for each of the drillholes and surface sampling sections.

Table 16: Data Verification and Sign-Off for Data Used in the Middelvlei Project.

NO	BHID	Alternate BHID	Sample Type	Collars	Assays	Survey	Geology	Connests
- 1	BH001A	PGMR1A	BH	YES	YES	YES?	YES	Check the survey with Warren
2	BH001B	PGMR11B	вн	YES	YES	YES?	YES	Drilled beyond the VCR outcrop
3	BH2	PGMR2	вн	YES	YES	YES?	YES	
	внз	PGMR3	вн	YES	YES	YES?	YES	Drilled beyond the VCR outcrop
5	BH5	PGMR5	вн	YES	YES	YES	NO	Drilled beyond the VCR outcrop
	BH5A	PGMR5A	вн	YES	NO	NO	NO	Faulted out
7	BH5B	PGMR5B	вн	YES	YES	YES	YES	
	BH5C	PGMR5C	вн	YES	YES	YES	YES	Stopped - water problems
	BH5D	PGMR5D	вн	YES	YES	YES	YES	Faulted intersection - only 2m CW
10	BH6	PGMR6	вн	YES	YES	YES	YES	No recovery on VCR - weathered
11	BH7	PGMR7	вн	YES	YES	YES	YES	Faulted - no reef
12	BH8	PGMR8	вн	YES	YES	YES	YES	Faulted - small CW
13	ВН9	PGMR9	вн	NO	NO	YES	NO	Intersected a dolerite dyke
14	BH9A	PGMR9A	вн	NO	NO	YES	NO	Intersected a dolerite dyke
15	BH10	PGMR10	вн	YES	NO	YES	YES	Drilled in MVR footwall
16	BH11	PGMR11	вн	NO	NO	NO	YES	Drilled in MVR footwall
17	BH12	PGMR12	вн	YES	NO	YES	NO	Drilled in MVR footwall
18	BH15	0	вн	YES	YES	YES	YES	
19	BH199		BH	YES	YES	NO	YES	MVR is too close to VCR. Fault?
20	BH203	Ž.	вн	YES	YES	NO	YES	Check values
21	BH204	le.	вн	YES	YES	NO	YES	
22	BH215	4	вн	YES	YES	NO	YES	Not a full intersection - faulted
23	BH217		вн	YES	YES	NO	YES	Drilled in the FW
24	BH219		вн	YES	YES	NO	YES	
25	BH221		вн	YES	YES	NO	YES	Check the borehole position
26	BH223	Ţ	вн	YES	YES	NO	YES	Check the borehole position
27	BH226		вн	NO	YES	NO	YES	MVREV
28	BH241	à.	вн	NO	YES	NO	YES	Low CW Faulting
29	BH242		BH	NO	YES	NO	YES	Low CW Faulting
30	BH243	8	вн	NO	YES	NO	YES	
31	MVI		вн	YES	YES	YES	YES	Low CW Faulting
32	M13	0	BH	YES	YES	YES	YES	
23	M15	8	вн	YES	YES	YES	YES	
34	M16	10	BH	YES	YES	YES	YES	
35	M5		BH	YES	YES	YES	YES	
36	M8		вн	YES	YES	YES	YES	

16.2. Nature of the Limitations of Data Verification Process

As with all information, inherent bias and inaccuracies can and may be present. Given the verification process that was carried out, however, should there be a bias or inconsistency in the data, the error would be of no material consequence in the interpretation of the model or evaluation.

This report is a compilation and assessment of previous work and no detailed data verification was done or not available for this exercise. The Minxcon 2013 report was accepted as the process that verified all relevant information and data pertaining to the results of that report.

The CPs opinion is that the data used were adequate for use in Mineral Resource Estimation.

17. Mineral Resource Estimates

All the data used in the Middelvlei June 2007 Geological Modelling and Mineral Resource Estimation represents historical data captured from historical documentation of the Middelvlei Gold Mine.

17.1. Geological Model and Interpretation

17.1.1. Structure

Surface outcrops of the MVR and VCR and associated fault interpretations were digitised from 1:1000 scale hard copy plans contained in a historical report by Trevarthen (1996). This map resulted from an amalgamation of data acquired from historical plans, which was the most recent at the time and was therefore assumed to be the most accurate. Earlier information was amended accordingly (Trevarthen, 1996). The mapping and fault interpretation done by Trevarthen (1996) was verified with ground truthing and mapping of the MVR and VCR outcrops. Where the VCR disappears below the surface, trenches were excavated at right angles across the strike of the strata. The trenches revealed a scree material, possibly derived from the VCR and the Ventersdorp Lava, overlying the more resistant meta-quartzites of the Witwatersrand Supergroup. The surface between the scree and the resistant meta-quartzites is a well-defined sharp contact and presents an eroded surface. The mapping of these surfaces related well with the previously excavated VCR trenches and with Trevarthen's mapping and fault interpretations. The geological interpretation of the orebody accounted for losses associated with major faulting. Due to the complex structural setting and the numerous deformational events that the Witwatersrand deposit has been subjected to, a geological loss of 20% was applied by CCIC to account for macro

and minor scale faulting. This approach is consistent with industry benchmarks for this deposit.

17.2. Geological Domains

17.2.1. Black Reef

Modelling was conducted over the following four geozones:

- 0 45 cmg/t;
- 45 125 cmg/t;
- 125 250 cmg/t; and
- >250 cmg/t.

In addition to the contours, the final geozones were interpreted according to the footwall contours and sedimentological understanding of the fluvial system.

17.2.2. Middelylei Reef

The Middelvlei Reef conglomerate package consists of three conglomerate units the Top, Middle and Bottom bands which are separated by quartzite partings and the database was coded according to these bands as "TOP", "MID" and "BOT" respectively.

17.2.3. VCR

The VCR was coded as one single unit, being "VCR". Geological domains were investigated and proved ineffective due to the small dataset and the erratic spatial distribution of values.

17.3. Estimation and Modelling Techniques

17.3.1. Compositing

All samples ae composited over the full reef intersection.

17.3.2. Statistical Analysis

All statistical analyses were done by CCIC using Datamine Studio $^{\text{M}}$. The statistical tables have been derived from the validated drillhole file. The generally barren quartzitic units that occur between the MVR reef bands have been incorporated into the respective reef bands. Where the quartzites have not been sampled, these intersections have been set to 0.04 g/t. Each intersection was composited to a single sample per reef band.

Table 17: Descriptive statistics - Black Reef (Minxcon 2006)

	Valid							Skewnes	
	N	Mean	Median	Minimum	Maximum	Variance	Std.Dev.	s	Kurtosis
Channel									
Width (cm)	368	89.68	100.00	18.00	300.00	2443.44	49.43	1.42	2.33
Gold Grade									
(g/t)	368	0.89	0.31	0.01	15.62	3.11	1.76	5.02	32.73
Gold Content									
(cmg/t)	368	106.24	28.50	0.1	3123.50	74398.76	272.76	6.33	52.51

Table 18: Descriptive statistics - MVR and VCR (CCIC 2007)

	Во	t MVR	Mig	MVR	To	pp MVR	V	CR
Parameter	Au	Density	Au	Density	Au	Density	Au	Density
	g/t	t/m3	g/t	t/m3	g/t	t/m3	g/t	t/m3
N Samples	14	9	13	8	14	9	17	5
Min	0.268	2.684	0.33	2.68	0.549	2.68	0.046	2.7
Max	3.317	2.721	13.558	2.719	24.2	2.73	39.532	2.73
Mean	1.489	2.7	2.8	2.2697	3.962	2.7	7.022	2.713
Variance	0.899	0	11.742	0	35.43	0	139.252	0
Std Dev	0.948	0.012	3.427	0.013	5.952	0.018	11.8	0.014
Std Derr	0.253	0.004	0.95	0.005	1.591	0.006	2.862	0.006
Skewness	0.603	0.697	2.365	0.247	2.771	0.633	1.866	0.37
Kurtosis	-0.676	-0.711	4.614	-0.973	6.6	-0.883	2.119	-1.816
Geomean	1.162	2.7	1.684	2.697	2.132	2.7	0.985	2.713
COV	0.637	0.004	1.224	0.005	1.502	0.007	1.68	0.005

17.3.3. Outlier analysis

The capping strategy applied was an iterative process of identifying outlier samples in poorly-informed areas, skewness of histograms, Log Probability Plots, as well as model estimate validation. The following capping were applied to the resource estimate:

- MVR Bottom Band No capping applied;
- MVR Middle Band All values trimmed to 10 g/t;
- MVR Top Band All values trimmed to 15 g/t; and
- VCR cut at 10 g/t.

17.3.4. Variography

Variograms were calculated on the composited data for both Au and metre gram per tonne ("mgt"). Variography was perform in log scale and then converted to a normalised variogram. No well-defined anisotropy was evident and therefore isotropic variogram models were created. Variogram parameters for Au had a Nugget of 56%, with a range of influence of 135 m. The mgt variogram had a 75% Nugget and a range of 26 m.

17.3.5. Estimation Parameters

Zonal control was applied during block modelling so that samples within a specific reef band was used to estimate grades within that specific band only. Parent cell size was optimised using the following criteria as a guideline:

- Kriging variance or estimation error;
- Kriging efficiency or confidence in the block grades being realised;
- General drill grid spacing; and
- Practical mining considerations or minimum mining units.

The approach was to select a generic sample spacing that meets the average drill spacing and then run numerous block size iterations whilst keeping all other estimation parameters constant. The objective is to select the minimum kriging variance, whilst taking into consideration the other practical criteria.

The optimum block size was determined to be 80 m x 80 m x 10 m in the X, Y and Z directions, respectively. Sub-celling was controlled with the aim of preserving the wireframe volume and morphology, whist maintaining a manageable file size. The minimum cell size was 5 m x 5 m x 0 m in the X, Y and Z directions. Zero metres in the Z direction is to ensure that the smallest reef widths are preserved. The estimation method employed was ordinary kriging, with parent cell estimation. This implies that all sub cells within a parent cell will have the same grade. Lognormal kriging was also performed as an additional validation tool. Zonal grade control was applied within each reef band. Discretisation was $10 \times 10 \times 2$ in the X, Y and Z cell directions respectively. Density readings were measured from the drill core, using the Archimedes method.

Density values varied between 2.67 t/m^3 to 2.73 t/m^3 , with a mean of 2.70 t/m^3 . Density values were estimated into the block model using Inverse Power of Distance method, with a power of 2. All un-estimated blocks were assigned the mean value. The following attributes were estimated into the model:

- Gold using Ordinary Kriging AuOK;
- Gold using Log Kriging AuLK; and
- Density RD.

17.3.6. Mineral Resource Classification

The Resource was classified in accordance with SAMREC guidelines. The following criteria were used by CCIC as guidelines:

- Drillhole distributions;
- Search volume parameters during estimation;
- Kriging Variance of the block estimates;
- Model validations against drillhole samples;
- Mining History on the property and around the vicinity;
- Geological controls for mineralisation; and
- Qualified person's assessment/review.

The MVR was classified as Indicated and Inferred Mineral Resources based on the Guidelines above and the VCR only as Inferred Mineral Resources. Due to the highly channelised and variable nature of mineralisation of the VCR and the data density, no measured or indicated Mineral Resources are reported.

17.3.7. Mineral Resource Statement

Table 19: Mineral Resources for the Middelvlei Gold Mine as at 30 June 2013.

2007 Depleted	Mineral Resource Category	Reef	Tonnage	Gold Grade	Gold Content		
Depleted			Mt	g/t	kg	Moz	
		BR	1.52	3.10	4712.0	0.151	
	Measured	MVR	-	-	-	-	
Pu		VCR	-	-	-	-	
Opencast and Underground	Total Measured		1.52	3.10	4712.0	0.151	
erg		BR	0.06	1.92	115.2	0.004	
Pu	Indicated	MVR	0.87	2.33	2029.40	0.060	
ا م		VCR	-	-	-	-	
a E	Total Indicated		0.93	2.31	2144.6	0.064	
Cast	Total Indicated + Measured		2.45	2.80	6856.6	0.215	
enc		BR	-	-	-	-	
ď	Inferred	MVR	16.36	2.38	38972.9	1.252	
		VCR	3.62	1.95	7049.4	0.227	
	Total Inferred		19.98	2.30	46022.3	1.479	

Notes:

- 1. Mineral Resources are inclusive of the Mineral Reserves.
- 2. The tonnages are based on a SG of 2.7 t/m^3 .
- 3. A geological loss of 15% was applied to the tonnages.
- 4. The Mineral Resurces are declared at a 0 cmg/t cut-off.
- 5. Conversion: 1kg = 32.15076 oz.
- 6. No environmental, permitting, legal, taxation, socio-political, marketing or other issues are expected to materially affect the above Mineral Resource estimate and have, therefore, not been used to modify the Mineral Resource estimate.

Table 20: Opencast Mineral Resources for the Middelvlei Gold Mine as at 30 June 2013.

2007 Depleted	Mineral Resource Category	Reef	Tonnage	Gold Grade	Gold Content		
Depleted			Mt	g/t	kg	Moz	
		BR	1.52	3.10	4712.0	0.151	
	Measured	MVR	-	-	-	-	
		VCR	-	-	-	-	
	Total Measured		1.52	3.10	4712.0	0.151	
		BR	0.06	1.92	115.2	0.004	
Opencast	Indicated	MVR	0.80	2.36	1888.0	0.060	
enc		VCR	-	-	-	-	
o	Total Indicated		0.86	2.33	2003.2	0.064	
	Total Indicated + Measured		2.37	2.82	6715.2	0.215	
		BR	-	-	-	-	
	Inferred	MVR	1.73	2.57	4446.1	0.142	
		VCR	0.16	1.89	302.4	0.010	
	Total Inferred		1.89	2.51	4748.5	0.152	

Notes:

- 1. Mineral Resources are inclusive of the Mineral Reserves.
- 2. The tonnages are based on a SG of 2.7 t/m^3 .
- 3. A geological loss of 15% was applied to the tonnages.
- 4. The Mineral Resurces are declared at a 0 cmg/t cut-off.
- 5. Conversion: 1kg = 32.15076 oz.
- 6. No environmental, permitting, legal, taxation, socio-political, marketing or other issues are expected to materially affect the above Mineral Resource estimate and have, therefore, not been used to modify the Mineral Resource estimate.

Table 21: Underground Mineral Resources for the Middelvlei Gold Mine as at 30 June 2013.

2007 Depleted	Mineral Resource Category	Reef	Tonnage	Gold Grade	Gold Content		
Depleted			Mt	g/t	kg	Moz	
	Measured	MVR	-	-	-	-	
	ivieasureu	VCR	-	1	-	-	
힏	Total Measured		-	-	-	-	
Underground	Indicated	MVR	0.07	2.02	141.4	0.004	
ırgı	Illuicateu	VCR	-	1	-	-	
Jde	Total Indicated		0.07	2.02	141.4	0.004	
Ď	Inferred	MVR	14.63	2.36	34526.8	1.110	
	lillerred	VCR	3.46	1.95	6747	0.217	
	Total Inferred		18.09	2.28	41273.8	1.327	

Notes:

- 1. Mineral Resources are inclusive of the Mineral Reserves.
- 2. The tonnages are based on a SG of 2.7 t/m^3 .
- 3. A geological loss of 15% was applied to the tonnages.
- 4. The Mineral Resurces are declared at a 0 cmg/t cut-off.
- 5. Conversion: 1kg = 32.15076 oz.
- No environmental, permitting, legal, taxation, socio-political, marketing or other issues are expected to materially affect the above Mineral Resource estimate and have, therefore, not been used to modify the Mineral Resource estimate.

18. Other Relevant Data and Information

To the best of the author's knowledge there is no other relevant data or information, the omission of which would make this report misleading.

19. Conclusions and Recommendations

This report is an assessment of previous estimates and work completed. The last Mineral Resource estimate was done in 2007 (CCIC, 2007). Minxcon completed an updated report in 2013 (Minxcon, 2013) mainly to address depletions up to June 2013.

There have been two phases of opencast mining on the project area, 2006 – 2019 on the BR and MVR and VCR reefs in 2012. Overburden stripping of the extension of the BR Pit4 commenced in 2019. The Mine has been mining the Black Reef on a small scale since November 2019 to the end of July 2020.

Middelvlei Minerals is in partnership with APEX Mining Services (Pty) Ltd (APEX) whereby APEX have the right to mine up to 5% of the total Gold Mineral Resource on the property over an agreed geographical footprint. This contract is currently in the process of being renegotiated between the parties.

The measured and indicated opencast portion of the Mineral Resource is 2.37 Mt at 2.82 g/t and gold content of 0.215 Moz. There is an additional 1.89Mt at 2.5 g/t and 0.152 Moz contained gold in the inferred category. An optimised pit analysis will be required to establish what portion of the opencast

Mineral Resource can be converted to a Mineral Reserve at current economic conditions and planned mining scenario.

It is recommended that all data is compiled in a proper geological database and verified with previous reports.

20. References

Du Plessis G P and Dr P.J. Hancox (Caracle Creek International Consulting Inc.) (June 2007), Report Prepared for Pamodzi Gold on the Results obtained from a Diamond Drilling Programme of the Middelylei Inlier on Middelylei 255IQ.

Gruszka B M (1995). Evaluation of the Middelvlei target area. Gold Fields of South Africa Limited inhouse report.

Martin G J (1995). The nature and mode of occurrence of the gold in the Black Reef: Middelvlei Project. Gold Fields of South Africa Limited in-house report. Gold Fields Laboratories.

Moodley B, 1996, Geostatistical Evaluation of The Middelylei Target Area.

Motlapele S M, 2013, Update of the Middelvlei Mineral Resources as at 30 June 2013, Randfontein Area, Gauteng, South Africa.

Muller CJ (2003). Evaluation of the Main Reef – Middelvlei project. Report by Global Geo Services (Pty) Ltd for ImPafa Resources (Pty) Ltd.

Muller C J (2003). Evaluation of box cut samples for pit B 1 of the Middelvlei project. Report by Global Geo Services (Pty) Ltd for ImPafa Resources (Pty) Ltd.

Muller CJ, 2003, Comparison between borehole data and box cut sampling.

Muller C J, 2003, Evaluation of the Main Reef – Middelvlei project.

Muller C J, Global Geo Services (Pty) Ltd, (August 2006), Report Prepared for Superior Mining Corporation Limited on the Resource Estimate for the Middelvlei Property of Pamodzi Gold (Pty) Ltd in the Gauteng Province of the Republic of South Africa.

Robb L J and V.M. Robb, V.M. Robb and Associates Geological Services, The Mineral Resources of South Africa, 1998.

Steward BD (1998). Review of the underground gold resources of Lindum Reefs Section of Randfontein Estates Ltd., as at October 1998. Report No. 4/1998.

Subramani D and Anton Von Wielligh (Caracle Creek International Consulting Inc.)(2007), Resource and Reserves Update September 2007.

Trevarthen SJ (1996). The evaluation of the Middelvlei Inleir. Gold Fields of South Africa Limited inhouse report.

21. Date and Signature Page

The date of this report is 20 November 2021. The effective date of the Mineral Resources reported herein is the 20 November 2021.

CJ Muller

B.Sc. (Hons), Pr. Sci. Nat.

22. Appendices

1. Abbreviations

Frequently Used Acronyms, Abbreviations, Definitions and Units of Measure

Abbreviation	Definition
3D	Three Dimensional
AMSL	Above Mean Sea Level
Au	Gold
BEE	Black Economic Empowerment
CIM	Canadian Institute of Mining
CLO	Community Liaison Officer
cm	centimeter
CoV	Coefficient of Variation
DMR	Department of Mineral Resources
DTM	Digital Terrain Model
EMP	Environmental Management Program
g/t	grams per tonne
LOM	Life of Mine
km	kilometer
km2	Square kilometer
m	meter
Moz	million ounces
MPRDA	Mineral and Petroleum Resources Development Act, No. 28 of 2002
Mt	Million tonnes
NI 43-101	Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects
ОК	Ordinary Kriging
PFS	Pre-Feasibility Study
ppb	parts per billion
PR	Prospecting Right
Pt	Platinum
QA/QC	Quality Assurance and Quality Control
СР	Qualified Person

Abbreviation	Definition
SAMREC Code	South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (2016)
	` '
SD / SDV	Standard Deviation
SG	Specific Gravity
SK	Simple Kriging
USD	United States Dollar