13 April 2021

ASX ANNOUNCEMENT

Pre-Feasibility Study for Initial Underground Projects

Theta Gold Mines Limited ("Theta Gold" or "Company") (ASX: TGM| OTC: TGMGF) is pleased to announce its Maiden Underground Prefeasibility Study (PFS) for the Beta, Frankfort, and CDM mines, all of which form part of the Central Northern area and now collectively referred to as TGME Underground (UG) Project.

HIGHLIGHTS: TGME Phase 1 Underground Project, which excludes the open pits. All numbers in USD and financials based on forecast gold price of average USD$1,570/oz and ZAR/USD exchange rate of 15.9.

- **Pay-back period from first gold 13 months**
- **Pay-back period from start of mining 22 months**
- **419,000 oz Au delivered to plant over initial Life of Mine (LoM)**
- **By the third year, production over 60,000 oz Au/year (recovered)**
- **LoM is 7.67 years**
- **US$241.2 million EBITDA over LoM**
- **Internal Rate of Return (IRR) 82%**
- **US$91.2 million Net Present Value (NPV)**
- **US$905/oz Au all-in sustaining cost (AISC) over LoM, bottom quartile for South Africa producers**
- **Total LoM Capital Expenditure (CAPEX) US$79 million includes -**
    - **Peak CAPEX first 3 years US$37M – Oxide and Backfill Plant and Beta Mine development**
    - **Year 4 US$27M Sulphide Circuit and Frankfort and CDM Mine development**
    - **US$15M of remaining capital to develop and sustain operations**

The company continues to honor its commitment to improving the project economics and expansion of the production profile. The team has delivered a Maiden Underground Prefeasibility Study based on only 16% of the 4.5m oz Au underground gold resource, and incorporates only three mines out of a total 43 historical mines across the project area. As well, it considered only measured and indicated resources for initial inclusion in production and reserve conversion. The inferred resources of these phase 1 mines, together with more than 40 historical mine sites under management, will be systematically studied and incorporated into future production modelling. This is a very positive early step to developing the goldfield.

The initial study focused on the easy access of 684,000 oz Au in the Measured and Indicated categories of the TGME Underground Resource for the Beta, Frankfort and CDM areas. (*Appendix B*). The team achieved a conversion factor of 63% from resource to mining reserve in those areas.

A further 3.5m oz Au of inferred resources is available to be upgraded to the Measured and Indicated resource category and potentially a portion could be converted into mining reserves.

Table 1 below sets out the Phase 1 UG results at various gold price scenarios:

Table 1 : TGME Phase 1 Underground Project

UG Operations	Unit	Base Case US$1570/oz	Gold price US$1500/oz	Gold price US$1600/oz	Gold price US$1700/oz	Gold price US$1800/oz	Gold price US$2000/oz
NPV @ 5%	USDm	91	81	98	115	132	166
Internal Rate of Return (IRR)	%	82%	75%	88%	100%	111%	134%
Total Oz in Mine Plan	oz	418,845	418,845	418,845	418,845	418,845	418,845
Total Oz Recovered	oz	353,012	353,012	353,012	353,012	353,012	353,012
Average Payback Period (from Start of Mining)	Months	22	23	21	18	17	16
Peak Funding Requirement	USDm	36	36	36	36	36	36
EBITDA over LOM (Undiscounted)	USDm	241	222	254	286	318	382
All-in Sustainable Costs (AISC)	USD/oz	905	900	909	917	926	942
Gold Price	USD/oz	1,570	1,500	1,600	1,700	1,800	2,000
Exchange Rate	ZAR/USD	15.89	15.89	15.89	15.89	15.89	15.89

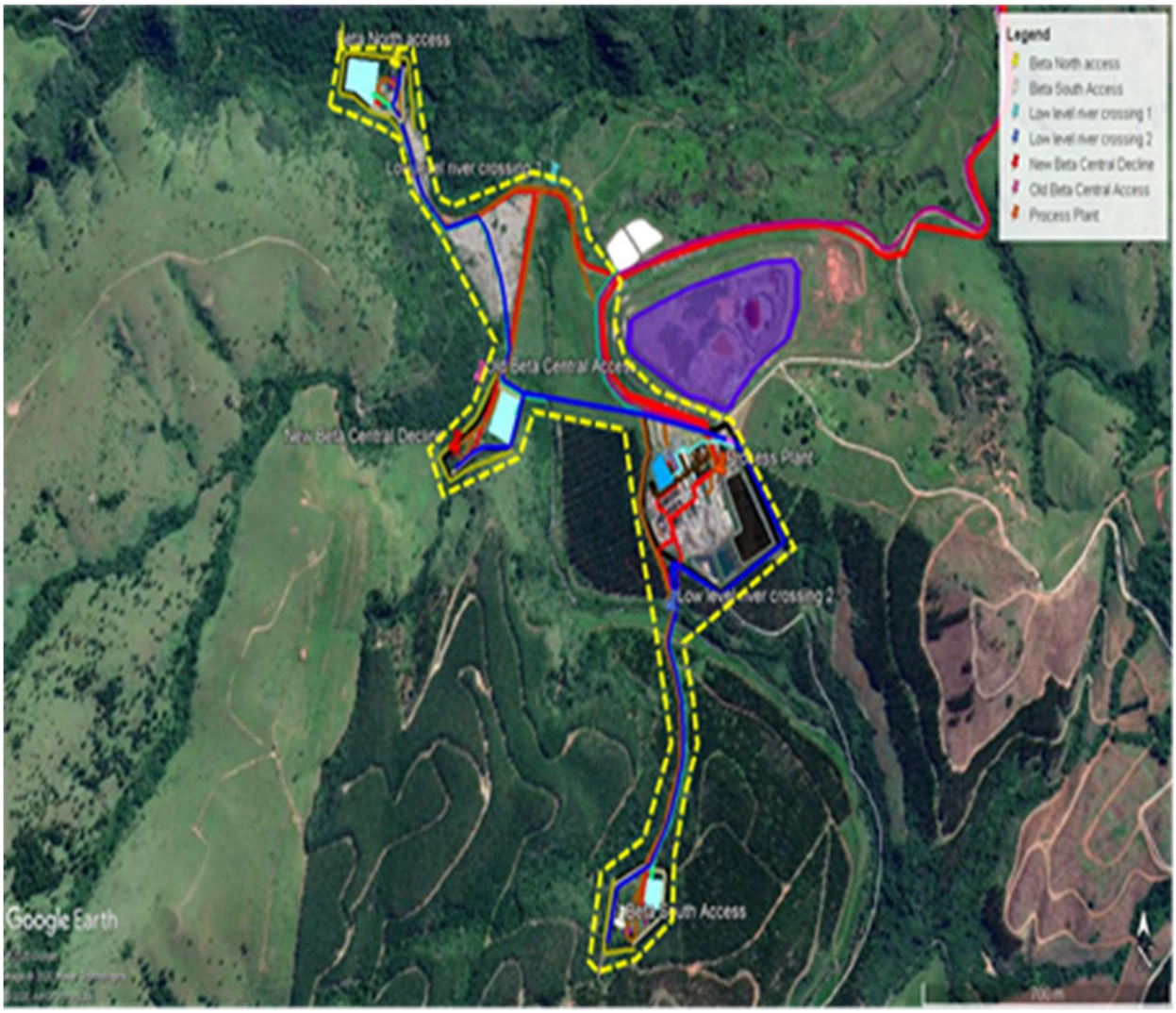


Figure 1: Surface Infrastructure TGME Underground Mine Layout

Theta Gold has demonstrated, through the first phase underground PFS, excellent project economics for what it believes to be only a small portion of the underground resource and will continue to build up its Mining Reserves during the year by progressing Rietfontein and other mines through to PFS level, while concluding detailed designs for the Phase 1 UG Project.

Previously the company announced a five-year plan, which targets four (4) mine developments, Theta open-pit Starter Project (MR83 only), Theta open pit extension (MR341) and the Rietfontein and Beta underground mines. This 4-mine strategy provided the company with a clear growth plan with a combined open pit and underground resource of over 2.75 Moz. The recent detailed work that was done on Frankfort, Beta and CDM UG mines, together with Theta Phase 1 OP, has further enhanced this strategy. The Company will expand further regarding this wider scope during Q2 2021.

The TGME Underground PFS shows that the narrow high-grade reefs system can be mined with modern mechanized mining techniques (safer, increased productivity and minimum dilution), and that the gold can be recovered by utilizing modern metallurgical technologies (Ultrafine grinding and Intense CIL). This proof of concept is part of de-risking the underground projects. The "New CEO's Development Strategy" later in April will review how the underground and open pit mines will be combined to organically grow the production profile.

Chairman Mr Bill Guy stated, "The TGME Underground Prefeasibility Study clearly demonstrates that the extensive flat high-grade narrow reef systems of East Transvaal Goldfield can be mined economically, and modern mechanized mining and metallurgy can deliver strong project economics.

Now that the company has generated a PFS for the TGME Underground Project, we can optimize our development strategy based on confident numbers. At a 63% conversion ratio, Theta Gold still has 3.5 million oz Au of underground resources to develop in order to extend LoM and increase production into the future.

Due to the shallow, high grade and on-reef development characteristics of the ore, our AISC of US$905 per ounce of gold sits in the bottom quartile of costs for South Africa. At a forecasted average US$1,570 gold price, EBITA is US$241m from revenue of US$545m and the NPV is US$91m; all based on a very small proportion of the overall project area. The CAPEX is modest and staged and production peaks at 70,000 oz Au per annum. This PFS clearly demonstrates very strong project economics for the underground mines. In real terms, we have only completed the study on 16% of the total of 4.5m ounces of gold in the underground mineral resource. The team will complete the Rietfontein PFS in Q3 of this year. The Mining Reserve from Rietfontein can then be brought into the updated PFS to further increase the production profile.

At Theta Gold, the resource pipeline into the future is strong, and the scale of the potential resources and the geology in South Africa should not be underestimated. The Company will soon be a key player in the South African mining industry, a sector that has produced more tons of gold than any other country when measuring gold bullion tonnage. Over 40% of the world's gold has come from the small corner of South Africa that we call home."

Financial Summary

Financial modelling was completed over a range of gold price environments, using all of forecast prices and constant prices of US$1,500/oz, US$1,600/oz, US$1,700/oz, US$1,800/oz and US$2,000/oz. The forecast prices are considered the Base Case as per the completed PFS.

Table 2 : Key Aspects of UG Operations PFS

Item	Unit	Base Case US$1,570/oz	US$1,500/oz	US$1,600/oz	US$1,700/oz	US$1800/oz	US$2,000/oz
NPV @ 0%	USDm	122.9	109.0	131.5	153.1	174.7	218.2
NPV @ 2.5%	USDm	105.7	93.7	113.5	132.5	151.5	189.7
NPV @ 5%	**USDm**	**91.2**	**80.8**	**98.3**	**115.1**	**131.9**	**165.6**
NPV @ 7.5%	USDm	79.0	69.8	85.4	100.3	115.2	145.2
NPV @ 10%	USDm	68.6	60.5	74.4	87.7	101.0	127.8
NPV @ 12.5%	USDm	59.7	52.6	65.0	77.0	88.9	112.8
NPV @ 15%	USDm	52.1	45.7	57.0	67.7	78.4	99.9
Internal Rate of Return (IRR)	%	82%	75%	88%	100%	111%	134%
Total ounces in Mine plan (2)	oz	418,845	418,845	418,845	418,845	418,845	418,845
Total Oz Recovered (2)	oz	353,012	353,012	353,012	353,012	353,012	353,012
Average ounces recovered per month	oz	4,253	4,253	4,253	4,253	4,253	4,253
Average Grade to Plant	g/t	5.51	5.51	5.51	5.51	5.51	5.51
Benefit-Cost Ratio/Money on Investment$_{5.0}$	Ratio	5.8	5.4	6.2	6.9	7.7	9.3
Capital Gain$_{5.0}$	%	483%	438%	516%	593%	671%	827%
Average Payback Period (from Start of Mining)	Month	22	23	21	18	17	16
Average Payback Period (from First Gold)	Month	13	14	12	9	8	7
Total Capital (2)	USDm	79	79	79	79	79	79
Peak Funding Requirement (2)	USDm	36	36	36	36	36	36
Peak Funding Month	Month	23	23	23	23	23	23
Revenue over LoM (Undiscounted)	USDm	545	524	559	594	629	699
EBITDA over LOM (Undiscounted)	USDm	241	222	254	286	318	382
Net Cash Flow over LoM (Undiscounted)	USDm	123	109	131	153	175	218
Break-even Milled Grade (Excluding Capex)	g/t	3.1	3.2	3.0	2.9	2.7	2.5
Break-even Milled Grade (Including Capex)	g/t	3.9	4.0	3.8	3.6	3.4	3.1
Break-even Gold Price (Excluding Capex)	USD/oz	866	861	870	879	887	903
Break-even Gold Price (Including Capex)	USD/oz	1,089	1,083	1,092	1,101	1,109	1,125
Gold Price	USD/oz	1,570	1,500	1,600	1,700	1,800	2,000
Exchange Rate (1)	ZAR/USD	15.89	15.89	15.89	15.89	15.89	15.89

Note:

- Money On Investment (MOI) calculated as present value of income flow over present value of investment (5% discount rate); calculated in USD terms.
- EBITDA = Earnings before interest, tax, depreciation and amortisation (excludes Capital)

Notes:

1. All values converted from ZAR to USD at relevant exchange rate
2. Capital costs in PFS Study were converted from ZAR

The project also demonstrates a robust NPV across a wide range of gold prices as can be seen in the graph below.

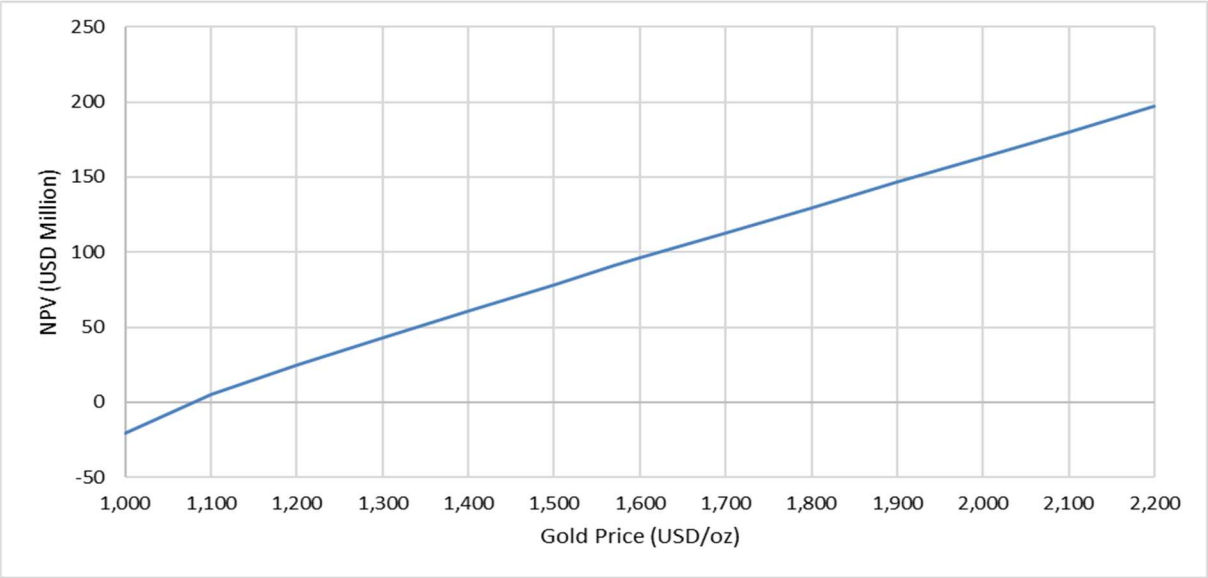
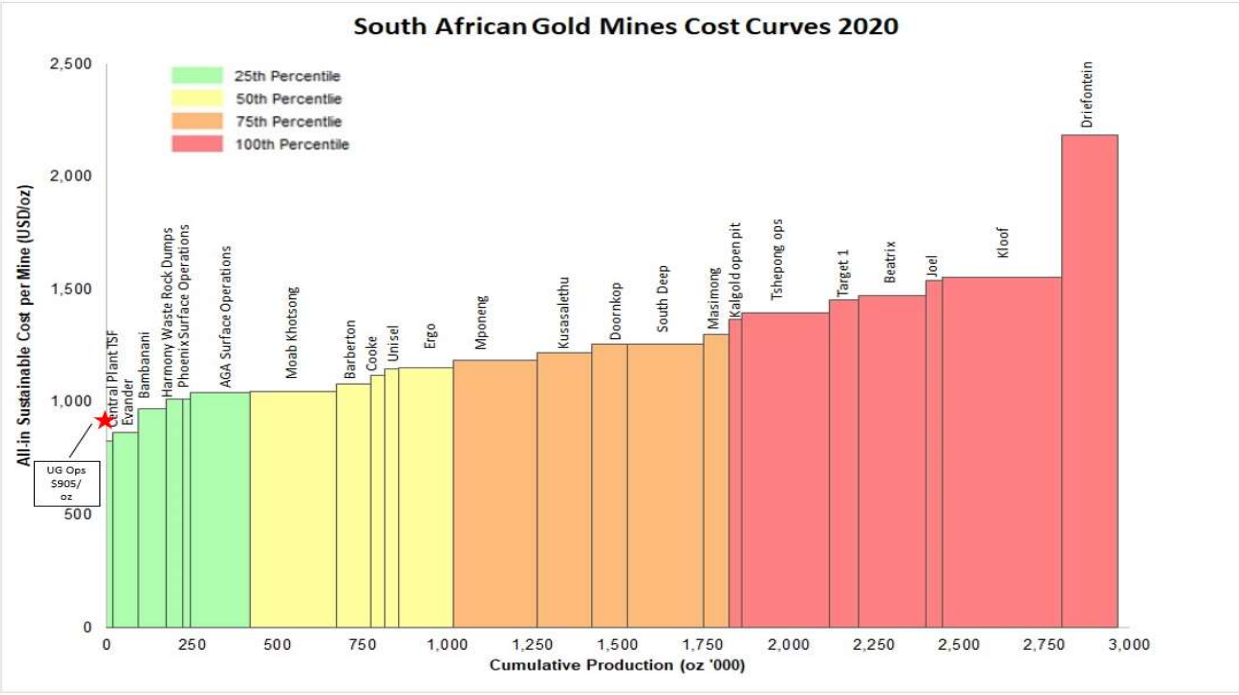


Figure 2 : NPV Sensitivity to Gold Price

The AISC costs for the UG PFS continue to reflect a project that is at the bottom quartile when compared to South African peer mines.



Note: Various operations are inclusive of waste rock dumps mining or tailings retreatment operations which could skew costs

Figure 3 : South African Miners AISC Costs 2019: Minxcon 2020

By the third year of production, over 60,000oz per year of gold is being recovered as demonstrated in the graph below. Years 7 and 8 is only a reflection of the limitation of excluding current inferred resources. Plant capacity will be filled by either current inferred resources or from the large stockpiles of old surface dumps, which will have a significant upside to this base case.

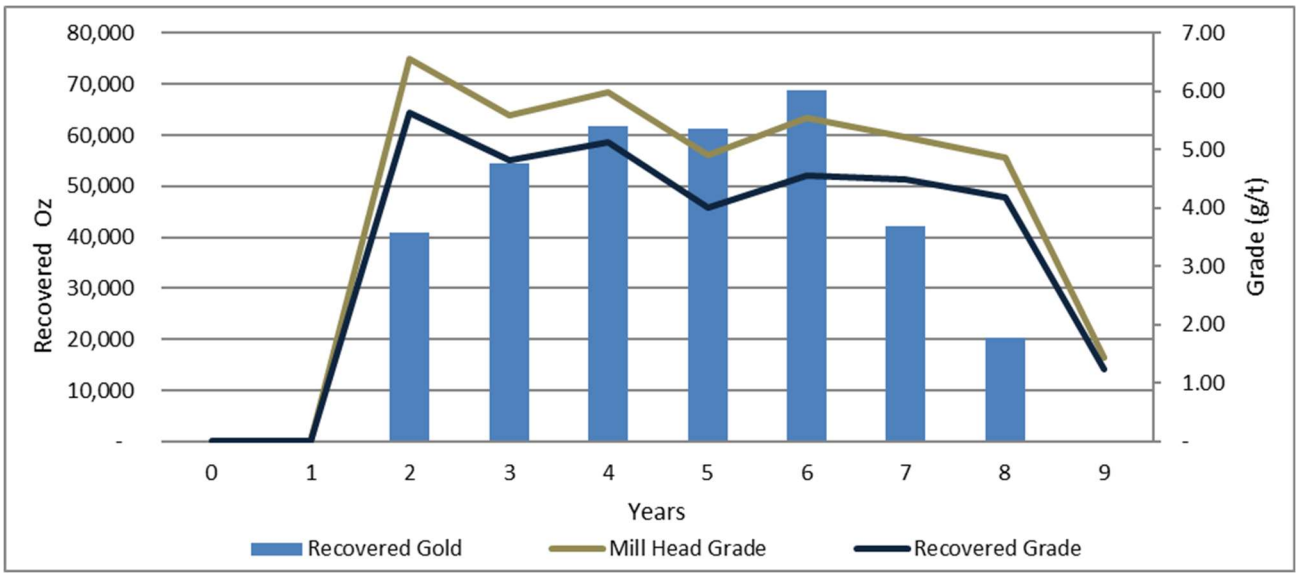


Figure 4 : Annual TGME Underground Project Gold Production (oz)

CAPITAL COSTS

In order to draft a capital cost estimation for the three underground operations various quotations and pricing were sourced. Where new quotations could not be sourced, older quotations and projects of a similar size and nature were used to benchmark costs. These costs were escalated to align with the current financial year. The final capital estimation is dated February 2021.

The capital estimations are based on items that fall within the capital footprint of the Project. The capital footprint is defined by the battery limits for the engineering and infrastructure design within three main areas. These areas include:-

- Beta underground operation and associated surface facilities;
- Frankfort underground operation and associated surface facilities;
- CDM underground operation and associated surface facilities; and

Bill of quantities ("BoQs") were drafted for these areas on which costing has been done. Where BoQs for work breakdown structure items are not applicable, batch costing has been done per unit volume.

The main capital cost drivers for the underground operations include the establishment of the underground conveyor systems, mining and ancillary fleet not leased and the establishment of the surface mine sites at each of the operations.

The capital costs have all been developed in ZAR and then converted to USD at the exchange rate relative to the model forecast. The average exchange rate over the LoM is 15.89 ZAR/USD, while the total capital requirement is USD78.5m. The peak funding requirement is USD36m, with the remaining capital funded from cash flow. Total capital is demonstrated in the table below.

Table 3 : UG PFS Capital Summary

Description	TGME UG Project USDm
Mining Capital	
Total Direct Mining Capital	27.1
Stay in Business Mining Capital	13.7
Mining Capital Contingency	5.4
Total Mining Capital	**46.2**
Plant Capital	
Total Direct Plant Capital	22.6
Stay in Business Plant Capital	0.0
Plant Capital Contingency	4.5
Total Plant Capital	**27.1**
Other Capital	
Total Other Non-Direct Capital	4.2
Stay in Business Other Capital	0.0
Other Capital Contingency	0.8
Total Other Capital	**5.1**
Total Capital	
Total Direct Capital	**54.0**
Total SIB Capital	**13.7**
Total Capital Contingencies	**10.8**
Total Capital	**78.5**

Notes:

- ZAR/USD exchange rate of 15.89 used for conversion.
- Total capital requirement $78.5 million

The capital schedule over the life of the project is illustrated below and reflects the appropriate exchange rate as per the forecast period over the LoM.

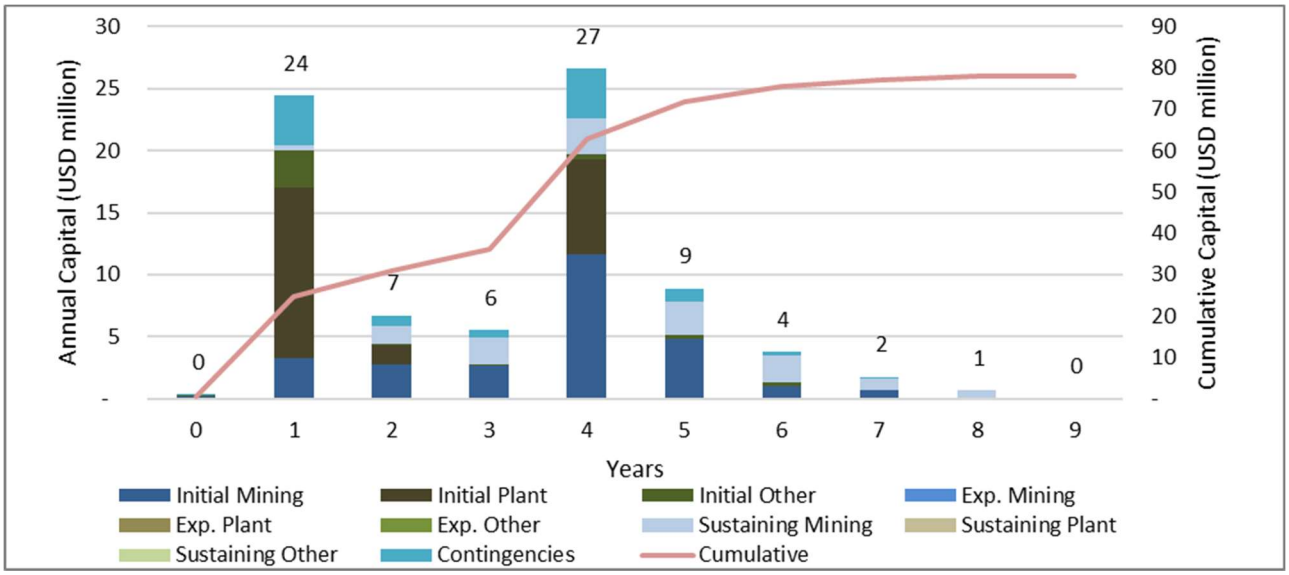


Figure 5 : Monthly Capital Schedule (USD)

Notes

- *Capital in Year 1:-*
  - *Oxide Plant Circuit 30 ktpm*
  - *Paste Backfill Plant*
  - *Beta Infrastructure*
- *Capital in Year 2 and Year 3:-*
  - *Mostly Beta Infrastructure and Tail-end of Plant Capital*

- *Capital in Year 4:-*
  - *CDM and Frankfort Infrastructure*
  - *Sulphide Plant Circuit 15ktpm*
- *Capital Post Year 5:-*
  - *Mostly CDM and Frankfort Infrastructure*

ECONOMIC ANALYSIS

Minxcon performed an independent economic analysis on the Project's Mineral Resources to determine the economic viability of the Project to declare Ore Reserves. The Base Case utilises the price and exchange rate forecasts based on the median of various banks, brokers and analysts, converted to real terms and based on a forecast in January 2021. The long-term gold price was calculated as the average between the maximum and minimum real-term gold price over the past ten years. Minxcon also completed a gold price sensitivity at the request of TGM to demonstrate results at various price environments. The price scenarios considered are constant prices of US$1,500/oz, US$1,600/oz, US$1,700/oz, US$1,800/oz and US$2,000/oz.

The table below illustrates the forecasts for the first five years as well as the long-term forecast used in the financial model.

Table 4 : Macro-economic Forecasts & Commodity Prices Used in Base Case

Item	Unit	2021	2022	2023	2024	2025	Long-term
Gold Price (Real)	USD/oz	1,892	1,786	1,587	1,502	1,469	1,600
Exchange Rate (Real)	ZARUSD	15.39	15.57	15.93	16.00	16.00	16.00

Source: Median of various Banks and Broker forecasts (Minxcon), IMF.

The NPV is derived from post-royalties and tax, pre-debt real cash flows, after taking into account operating costs, capital expenditures for the mining operations and the processing plant and using forecast macro-economic parameters. The DCF evaluation was set up in months, but also subsequently converted to calendar years ending December. The annual ZAR cash flow was converted to USD using the relevant exchange rates as per the forecast.

The mine plan includes predominantly Probable Mineral Reserve. No Inferred Mineral Resources have been included in the economic analysis.

The Project NPVs are shown in Table 5 below and reflect a financially robust project.

Table 5 : NPVs at Various Discount Rates (Real Terms)

Item	Unit	Base Case US$1,570/oz	US$1,500/oz	US$1,600/oz	US$1,700/oz	US$1,800/oz	US$2,000/oz
NPV @ 0%	USDm	122.9	109.0	131.5	153.1	174.7	218.2
NPV @ 2.5%	USDm	105.7	93.7	113.5	132.5	151.5	189.7
NPV @ 5%	**USDm**	**91.2**	**80.8**	**98.3**	**115.1**	**131.9**	**165.6**
NPV @ 7.5%	USDm	79.0	69.8	85.4	100.3	115.2	145.2
NPV @ 10%	USDm	68.6	60.5	74.4	87.7	101.0	127.8
NPV @ 12.5%	USDm	59.7	52.6	65.0	77.0	88.9	112.8
NPV @ 15%	USDm	52.1	45.7	57.0	67.7	78.4	99.9
Internal Rate of Return (IRR)	%	82%	75%	88%	100%	111%	134%

The monthly and annual cumulative cash flow along with the cumulative cash flow over the life of mine for the Base Case Scenario is shown in the figures below in USD terms. The underground operations have a peak funding requirement of US$36.1 million and a payback period from start of mining is 22 months. The payback period from first gold production is 13 months.

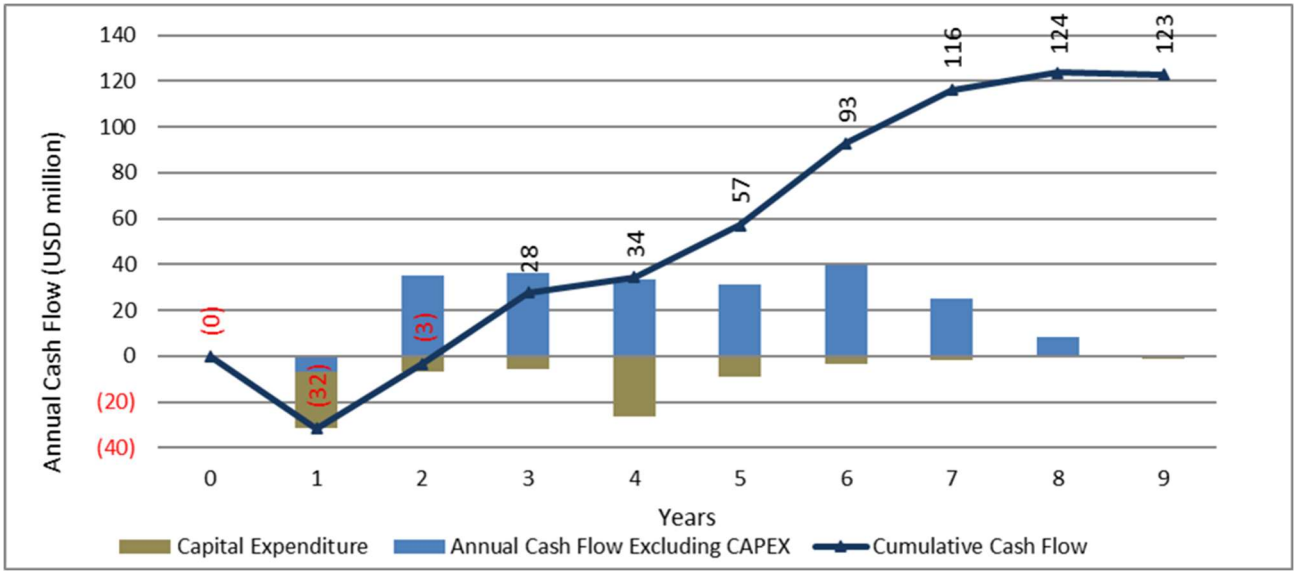


Figure 6 : Annual Cumulative Cash Flow USD (Undiscounted) TGM Underground Project Base Case

Minxcon performed single-parameter sensitivity analyses based on the real cash flow to ascertain the impact on the NPV. For the DCF, the commodity prices, exchange rate and grade have the most significant impact on the sensitivity of the project followed by the mining and plant operating cost. The project is least sensitive to capital and non-direct costs.

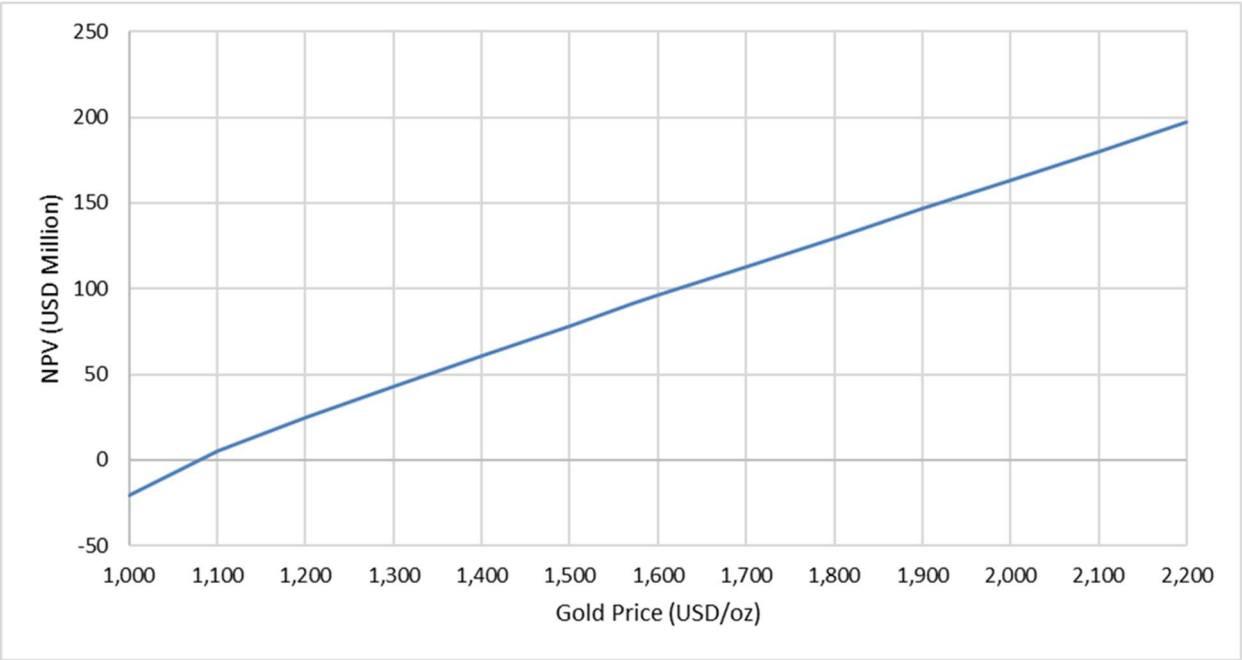


Figure 7 : NPV Sensitivity to Gold Price at Base Case

The PFS has an AISC cost below the forecast gold price from start of production as illustrated in the graph below.

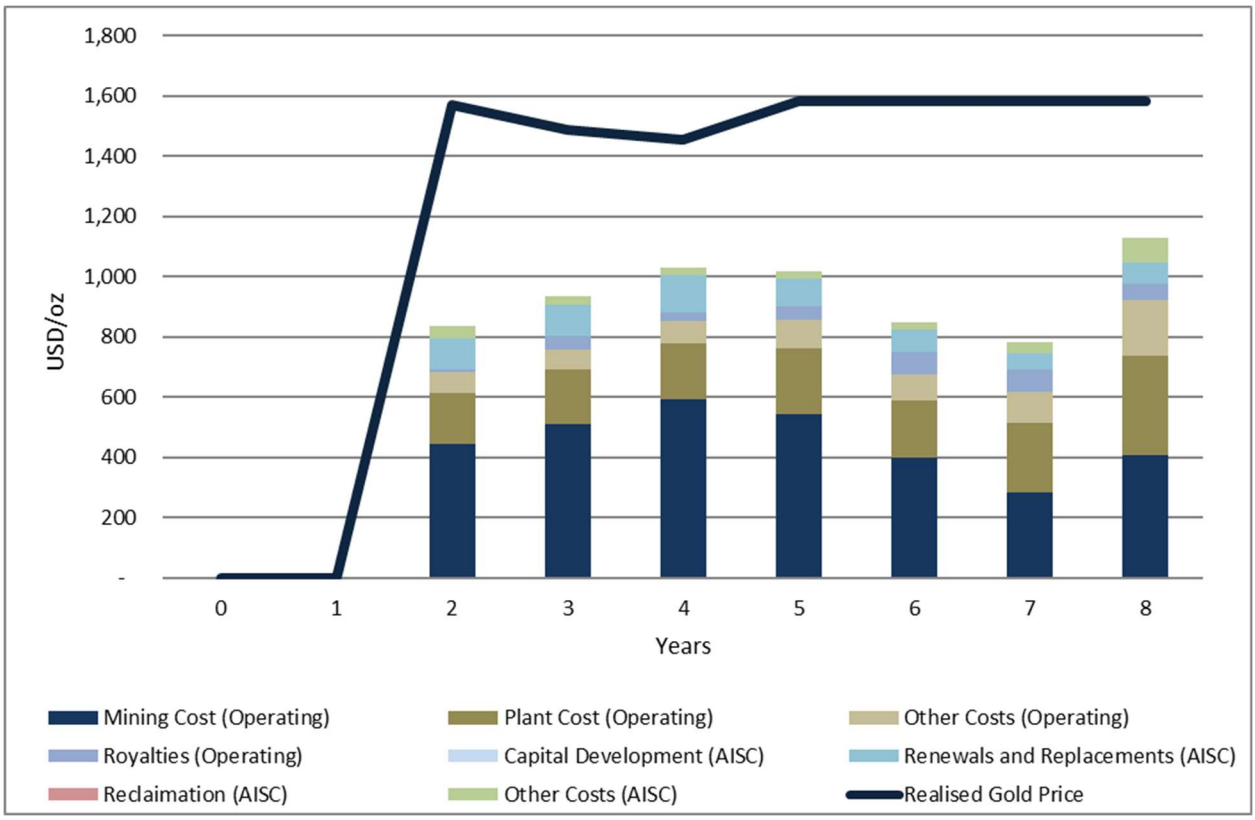


Figure 8 : ASIC cost on Yearly Basis TGME Underground Project

The table below reflects the operating data for the project.

Table 6 : Production Data

Description	unit	Base Case
Waste Tonnes Mined	kt	1,221
Ore Tonnes Mined	kt	2,366
Total Tonnes Mined	kt	3,587
Average Mined Grade	g/t	5.51
Total Oz in Mine Plan	oz	418,845
Gold Recovered	oz	353,012
Average ounces recovered per month	oz	4,253
Average ounces recovered per annum	oz	51,038
Grade Delivered to Plant	g/t	5.51
Recovered grade	g/t	4.64
Yield/Recovery	%	84%
All in Sustaining Costs ("AISC" base case)	USD per oz	905
All in Costs ("AIC" base case)[1]	USD per oz	1,089
Life of Mine	Months	92
Life of Project (Processing)	Months	83

Notes:

1. AISC + non-sustaining capital expenditure.

MINING METHOD

Long hole drilling as applied to flat dipping, narrow vain orebodies, will be utilised for stoping. The method has successfully been applied at mines like Sibanye-Stillwater and Anglo Platinum. Long-hole drilling is seen as a continuous operation allowing blocks to be pre-drilled and blasting to take place as and when required (Figure 9).

Step 1 in the mining cycle is to pre-develop the mining grid. The mining grid consist of two drilling drives on each side of the intended pillar to be mined. The drilling drives are blasted from the cleaning roadway/advanced strike drive and connected to the next advanced strike drive. This grid development will be done by a development drill rig with a planned daily advance of 3m.

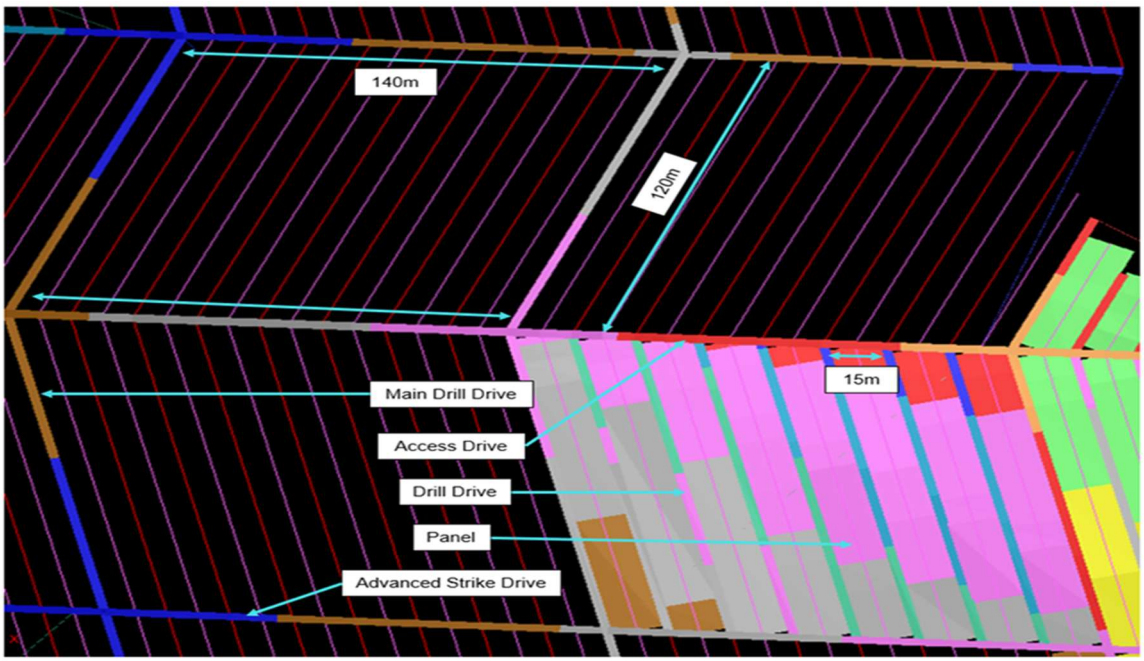


Figure 9 : Underground Development Design

Step 2 in the mining cycle, once the mining grid has been pre-developed, 15m long blast holes are drilled with a long hole drill rig from the drill drive down-dip of the mining pillar and holed into the up-dip drill drive. A single operator drills 120–150 meters in a 12-hour shift (Figure 11).

Five holes are blasted at a time, advancing 3m. Stope cleaning is done by waterjet or low profile scrapers. Personnel are not required to enter the stoping area as all work is done from the safety of the well supported drives.

LHDs load and transport the ore from drives to underground belts, from where it goes to surface.

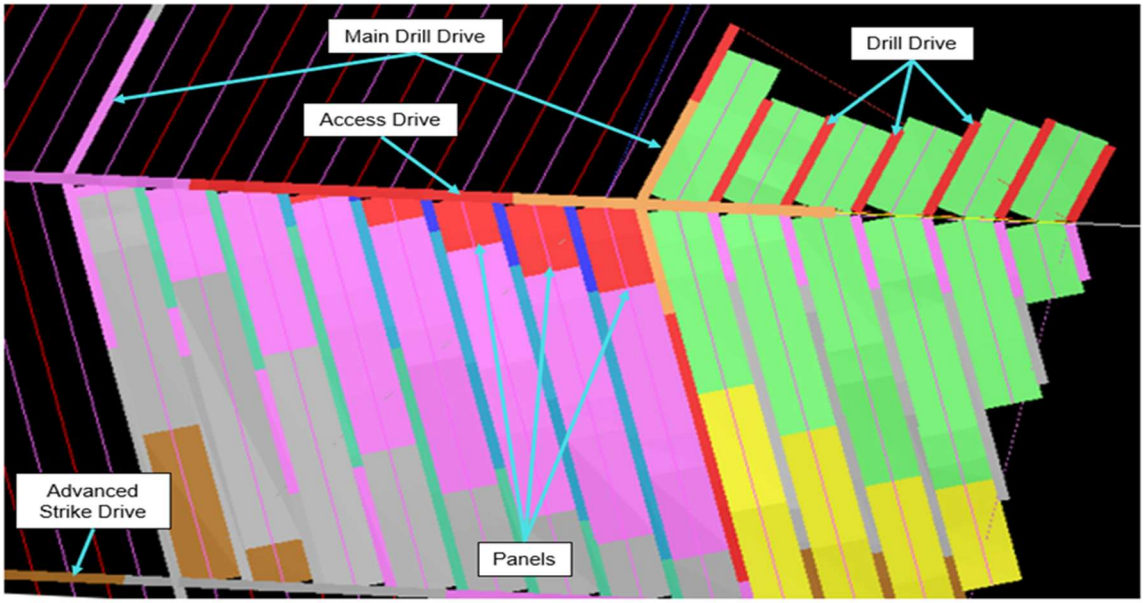


Figure 11 : Example of Long Hole stoping layout

The method allows for ultra-narrow stoping widths, with drastic reduction in waste dilution. The lowest widths planned is 60cm, although the method proved capable under 50cm.

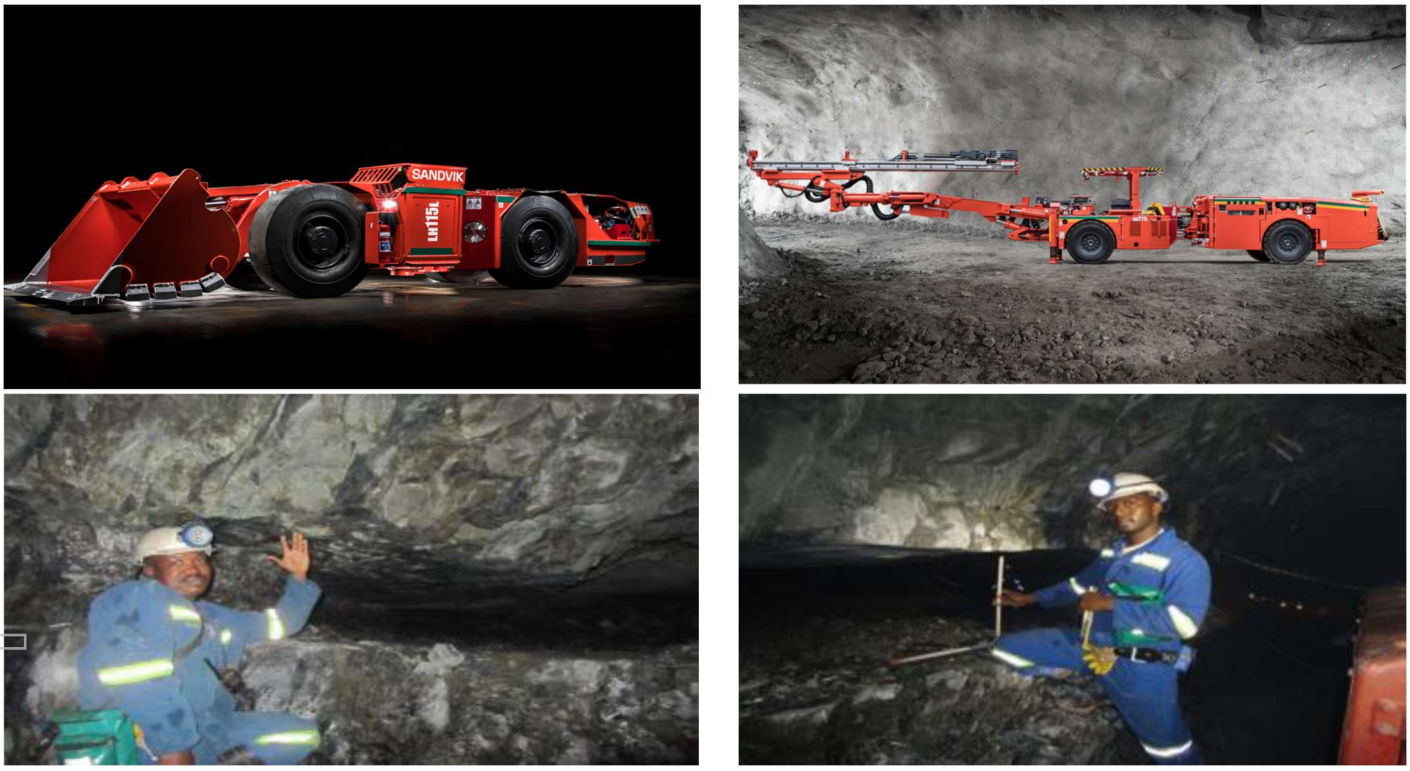


Figure 12 : Long Hole Narrow Reef Stoping

OPERATING COSTS

The mining operating cost estimations were completed utilising the Minxcon first-principles activity-based cost model. The cost model utilises the mine and engineering design criteria as well as production schedule inputs to derive cost rates for the mining and engineering activities.

The underground mining costs for labour, equipment, consumables, services and utilities have been sourced from quotations, actual industry stores costs, industry rates and utility rates. Where costs could not be obtained from these sources, benchmarking with similar-sized projects and operations was conducted and historical costs escalated.

A ZAR/USD exchange rate of 15.89 as of 1 February 2021 has been used to convert costs to USD terms for reference purposes.

Table 7 : Operating Costs USD/t milled

Item	Base Case US$1,570/oz	US$1,500/oz	US$1,600/oz	US$1,700/oz	US$1,800/oz	US$2,000/oz
Net Turnover	**232**	**223**	**238**	**253**	**268**	**297**
Mine Cost	72	72	72	72	72	72
Processing Costs	31	31	31	31	31	31
On-Site Other Costs	14	14	14	14	14	14
Royalties	7	6	8	9	10	12
Operating Costs	**124**	**123**	**124**	**126**	**127**	**129**
SIB Capex	6	6	6	6	6	6
Reclamation	0	0	0	0	0	0
Off-Mine Overheads	5	5	5	5	5	5
All-in Sustaining Costs (AISC)	**135**	**134**	**136**	**137**	**138**	**141**
Non-Sustaining Capital	27	27	27	27	27	27
All-in Costs (AIC)	**162**	**162**	**163**	**164**	**166**	**168**
All-in Cost Margin	**30%**	**28%**	**31%**	**35%**	**38%**	**44%**
EBITDA	103	95	108	122	135	163
EBITDA Margin	44%	42%	45%	48%	51%	55%
Gold in Mine Plan	418,845	418,845	418,845	418,845	418,845	418,845
Gold Recovered	353,012	353,012	353,012	353,012	353,012	353,012

Table 8 : Operating Costs USD/oz recovered

Item	Base Case US$1,570/oz	US$1,500/oz	US$1,600/oz	US$1,700/oz	US$1,800/oz	US$2,000/oz
Net Turnover	**1,555**	**1,495**	**1,594**	**1,694**	**1,794**	**1,993**
Mine Cost	484	484	484	484	484	484
Processing Costs	206	206	206	206	206	206
On-Site Other Costs	92	92	93	94	94	96
Royalties	48	43	51	59	66	81
Operating Costs	**830**	**825**	**834**	**843**	**851**	**867**
SIB Capex	39	39	39	39	39	39
Reclamation	0	0	0	0	0	0
Off-Mine Overheads	36	36	36	36	36	36
All-in Sustaining Costs (AISC)	**905**	**900**	**909**	**917**	**926**	**942**
Non-Sustaining Capital	184	184	184	184	184	184
All-in Costs (AIC)	**1,089**	**1,083**	**1,092**	**1,101**	**1,109**	**1,125**
All-in Cost Margin	**30%**	**28%**	**31%**	**35%**	**38%**	**44%**
EBITDA	688	634	724	815	907	1,090
EBITDA Margin	44%	42%	45%	48%	51%	55%
Gold in Mine Plan	418,845	418,845	418,845	418,845	418,845	418,845
Gold Recovered	353,012	353,012	353,012	353,012	353,012	353,012

ENVIRONMENTAL AUTHORISATIONS

Underground mining is less impactful on the environment than open pit mining. Although the Phase 1 UG mines are already authorised in most aspects, an amended mine works programme will be submitted, and associated environmental approvals will be obtained.

The company has assembled a highly competent team to deal with all "licence to operate" aspects, who is pro-actively project managing the various approval aspects associated with the growing number of mine development projects.

Mineral Resources and Energy Minister, Honorable Gwede Mantashe, recently expressed renewed commitment to enhance the Government processes to expedite approval processes in the South African mining industry. The department is working closely with the Minerals Council on these aspects. The President of South Africa has also announced mining to be a key component of post-Covid economic recovery and job creation. The Company is therefore confident that all approvals will be obtained.

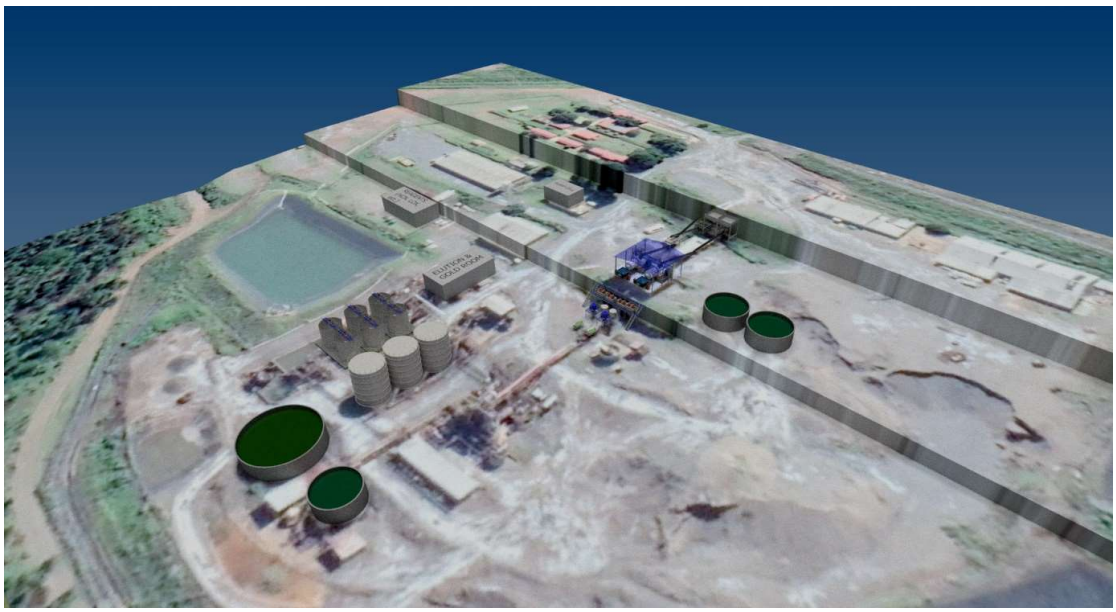
The company is committed to "zero harm" and will add significant value to the communities and the environment. Informal mining and unsustainable land use practises have caused environmental damage in the area, and TGME will work with the community and authorities to improve it as part of its ESG commitments. The local communities are highly supportive of the Company's projects.

METALLURGY SECTION

The UG-Plant will be able to accommodate a variety of ore sources, incorporating different streams that require different treatment solutions, while sharing front-end (crushing) and back-end (CIL, elution, gold room, tailings) infrastructure. It will also be further expandable with modular additions, and the CIL section will also be shared with the 50kt/m Theta Open Pit plant (oxide ore plant).

The existing Process Plant will be upgraded and refurbished to treat ore from Beta. The process will follow a conventional Carbon-in-Leach ("CIL") configuration at a rate up to 30 ktpm.

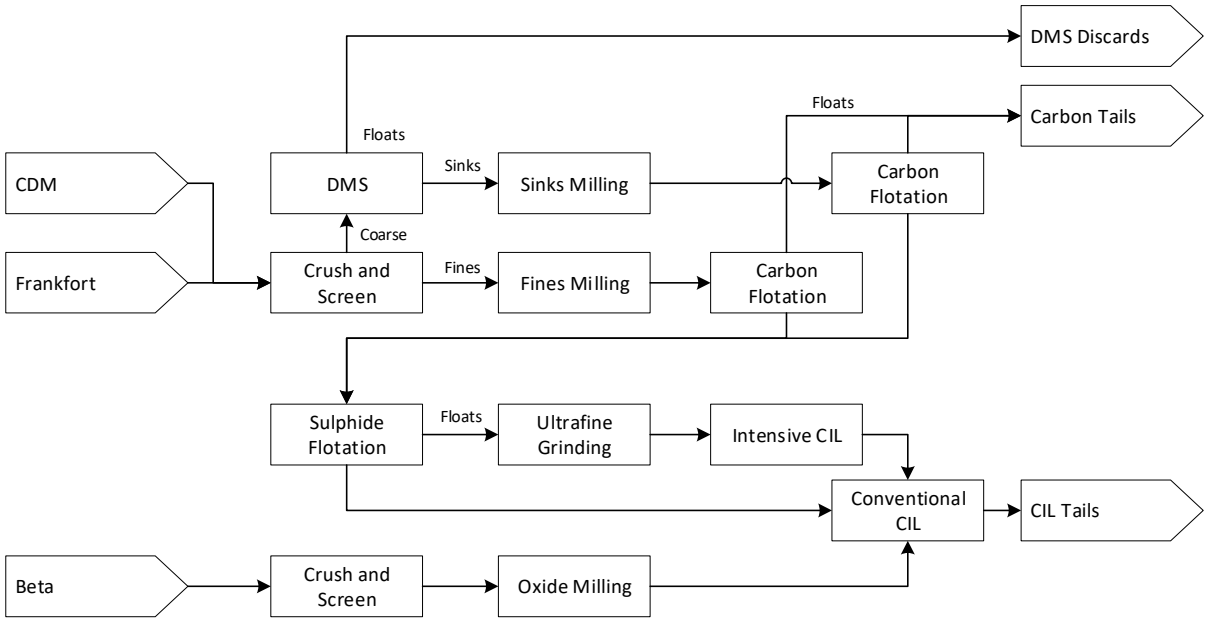
Figure 10: 3D view of refurbished Process Plant superimposed on current Plant footprint



Source: MET63

Frankfort ore will be concentrated via Dense Media Separation ("DMS") at the shaft and only the concentrate will be trucked to the Process Plant. The DMS will process up to 15 000 tpm, and the discards will be stockpiled at the shaft. The DMS concentrate will be processed with a specialized circuit that will remove the carbonaceous preg-robbers and oxidize the sulphide minerals (figure 13). The ore from CDM mines will also follow the same process route as Frankfort ore.

Figure 13: Block Flow Diagram for Beta, Frankfort and CDM ore



The existing tailings facility will be re-commissioned for the first phase, while for subsequent phases the CIL Tailings will be pumped into the mined-out workings of the Beta mine adjacent to the Process Plant as backfill.

Potential upgrading of mined ore from Beta and CDM via XRT or DMS is under investigation and not factored in. This, however, could potentially further increase gold production**.**

Detailed metallurgical testwork has been concluded for the more complex Frankfort ore, confirming the above solution. Initial testwork on Beta ore indicates a simpler design, where e.g. carbon floatation will be excluded from the stream. More detailed studies will be conducted to refine the design. The planned recovery rate of 84% is based on the testwork to date.

A highly competent team of experts (inhouse capacity and consultants) are working on the plant solutions, and assurance checks have been put in place. The company will employ reputable EPCM partners for detailed design and construction of the project, with track records of successful project delivery.

ORE RESERVE

The Ore Reserve statement from the March 21 release is presented below. The Ore Reserve calculation considered Mineral Resources in the Indicated category as the Theta Project does not contain any Measured Mineral Resources (Table 4). The graph below (Figure 14) illustrates the effect of the modifying factors on the diluted scheduled tonnes for the Theta Project. Pit designs are provided in Appendix A.

Table 9: Ore Reserves

Operation	Grade	Tonnes	Au Content	
	g/t	kt	kg	koz
Beta	6.51	1,662	10,822	347.94
Frankfort	4.13	319	1,317	42.33
CDM	2.31	385	889	28.58
Open Pit (MR83)	2.74	2,164	4,996	160.61
Total	**3.98**	**4,530**	**18,023**	**579.46**

Notes:

1. An Ore Reserve cut-off of 170 cm.g/t has been applied for Beta
2. An Ore Reserve cut-off of 150 cm.g/t has been applied for Frankfort
3. An Ore Reserve cut-off of 121 cm.g/t has been applied for CDM
4. An Ore Reserve cut – off of 0.4 g/t was applied. For the open pit.
5. A gold price of USD 1,465 / oz and exchange rate of 16 ZAR / USD was used for the cut-off calculation for Beta, Frankfort and CDM
6. A gold price of USD 1,300 / oz was used for the cut - off calculation for the open pit operation
7. Ore Reserves are reported as total Ore Reserves and are not attributed.

The Mineral Resource to Ore Reserve conversion requires application of appropriate factors which would account for any changes to the Mineral Resources (Figure 6) in the life of mine plan as a result of mining the ore. As part of the technical studies the potential ore loss and dilution to the Mineral Resources was determined and applied to the resources available for conversion to Ore Reserves. The ore loss reduces the tonnage and content, while the dilution would add additional tonnage with no gold content. Note ore reserve included previously undiscovered reefs (Bevetts and Shale Reef).

Figure 14: Resources to Ore Reserves Beta Mine

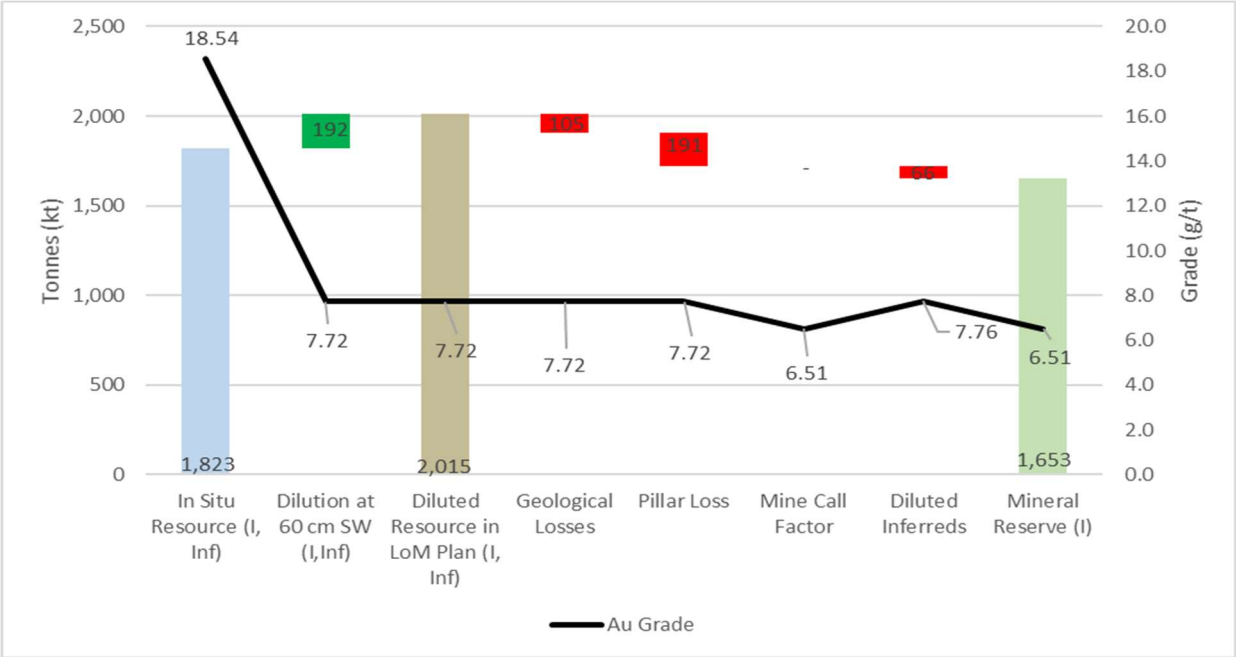


Figure 15 : Mineral Resources to Ore Reserves Frankfort Mine

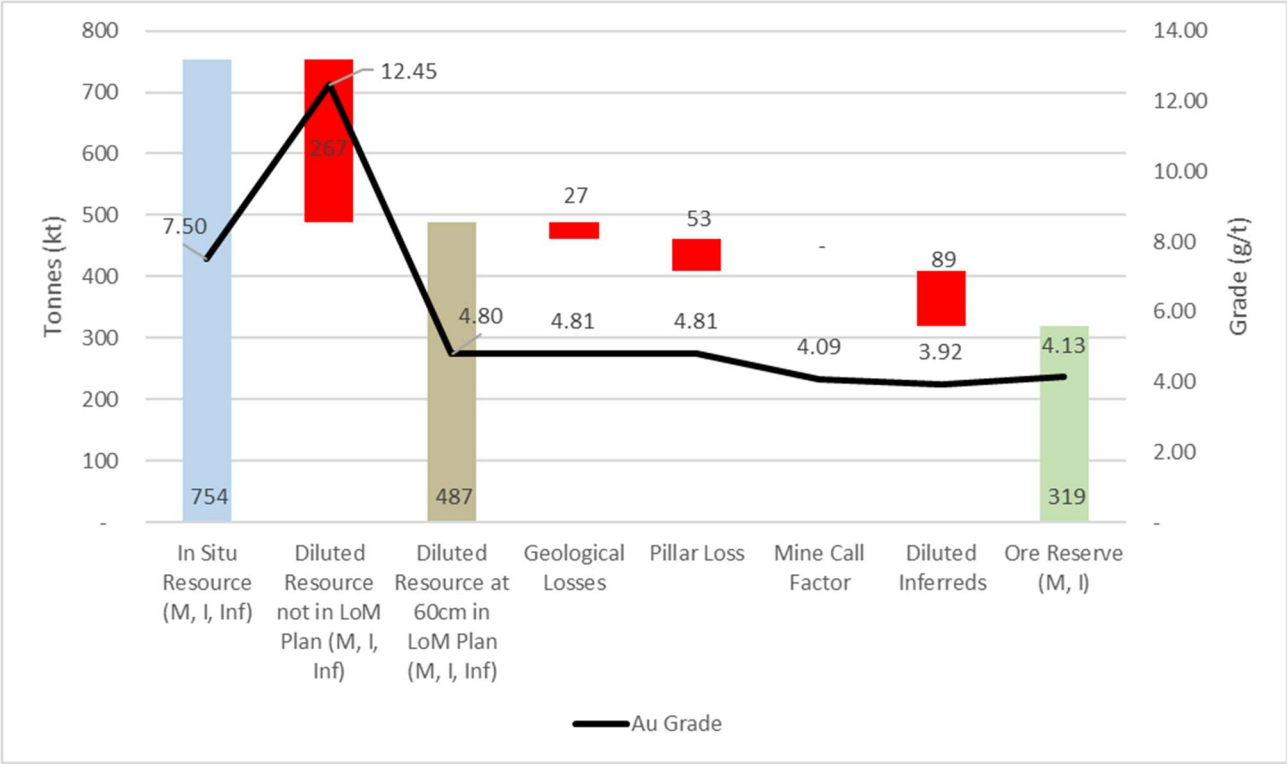
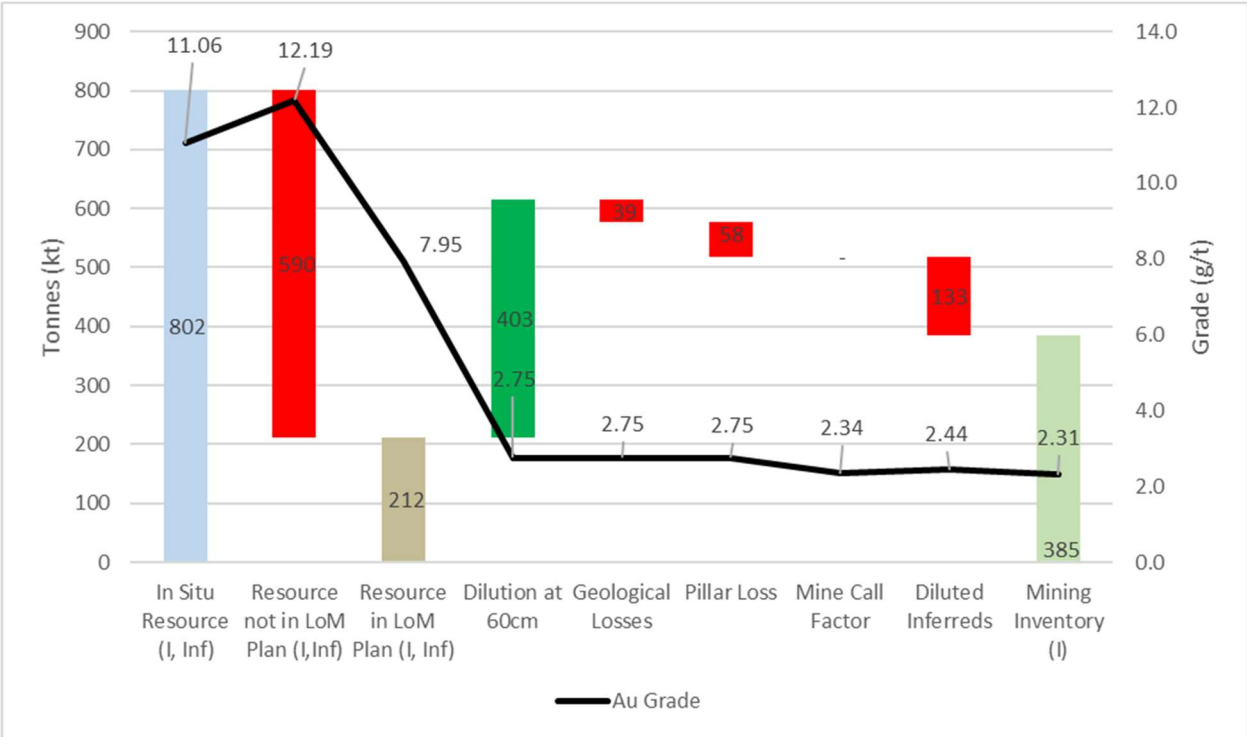


Figure 16: Mineral Resource to Ore Reserve CDM Mine



STUDY INPUTS AND DERIVATION

The Pre-Feasibility Study for Initial Underground Projects is based on the following key input parameters:-

- The Mineral Resources were estimated and compiled by Minxcon (Johannesburg);
- The Project mine plan and detailed monthly mining and processing schedule, derived from primarily Indicated Mineral Resources was produced by Minxcon after the application of mining parameters, mining and processing costs from in-country contractors, processing inputs and geotechnical design considerations.
- A small portion of Inferred Mineral Resources was included in the LoM plan since it is unavoidable to exclude it. This Inferred Mineral Resource was excluded from the Ore Reserves and economic analysis.
- Maiden Probable Reserve has been stated by Minxcon after excluding the Inferred Mineral Resources and confirming the economic viability.
- Geotechnical inputs and parameters for underground mine designs by Mr. Mark Grave, independent rock engineer;
- Process engineering design, capital and operating costs by MET63 South Africa (Pty) Ltd (Johannesburg) and Minxcon;
- Metallurgical recovery inputs based on test work by Maelgwyn South Africa and interpreted by MET63 South Africa (Pty) Ltd.
- Tailings storage facility design, capital and operating costs by Tailex Management Services (Pty) Ltd ("Tailex") and Minxcon.

This announcement was approved for release by Mr Bill Guy, Chairman.

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https://www.linkedin.com/company/thetagoldmines/

ABOUT THETA GOLD MINES LIMITED

Theta Gold Mines Limited (ASX: TGM | OTCQB: TGMGF) is a gold development company that holds a range of prospective gold assets in a world-renowned South African gold mining region. These assets include several surface and near-surface high-grade gold projects which provide cost advantages relative to other gold producers in the region.

Theta Gold's core project is located next to the historical gold mining town of Pilgrim's Rest, in Mpumalanga Province, some 370km northeast of Johannesburg by road or 95km north of Nelspruit (Capital City of Mpumalanga Province). Following small scale production from 2011 – 2015, the Company is currently focussing on the construction of a new gold processing plant within its approved footprint at the TGME plant, and for the processing of the Theta Open Pit oxide gold ore. Nearby surface and underground mines and prospects are expected to be further evaluated in the future.

The Company aims to build a solid production platform to over 160kozpa based primarily around shallow, open-pit or adit-entry shallow underground hard rock mining sources. Theta Gold has access to over 43 historical mines and prospect areas that can be accessed and explored, with over 6.7Moz of historical production recorded.

Theta Gold holds 100% issued capital of its South African subsidiary, Theta Gold SA (Pty) Ltd ("TGSA"). TGSA holds a 74% shareholding in both Transvaal Gold Mining Estates Limited ("TGME") and Sabie Mines (Pty) Ltd ("Sabie Mines"). The balance of shareholding is held by Black Economic Empowerment ("BEE") entities. The South African Mining Charter requires a minimum of 26% meaningful economic participation by the historically disadvantaged South Africans ("HDSAs"). The BEE shareholding in TGME and Sabie Mines is comprised of a combination of local community trusts, an employee trust and a strategic entrepreneurial partner.

Competent Persons Statement

Ore Reserves

The information in this report relating to Ore Reserves is based on, and fairly reflects, the information and supporting documentation compiled by Mr Daniel van Heerden (B.Ing (Mining M.Com (Business Management), member of Engineering Council of South Africa (Pr.Eng. Reg. No. 20050318)), a director of Minxcon (Pty) Ltd and a fellow of the South African Institute of Mining and Metallurgy (FSAIMM Reg. No. 37309).

Mr van Heerden has sufficient experience that is relevant to the style of mineralisation under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr van Heerden consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Mineral Resources

The information in this report relating to Mineral Resources is based on, and fairly reflects, the information and supporting documentation compiled by Mr Uwe Engelmann (BSc (Zoo. & Bot.), BSc Hons (Geol.), Pr.Sci.Nat. No. 400058/08, MGSSA), a director of Minxcon (Pty) Ltd and a member of the South African Council for Natural Scientific Professions.

The original report titled "Theta Gold increases Mineral Resource to over 6Moz" was dated 16 May 2019 and was released to the Australian Securities Exchange (ASX) on that date. The Company confirms that –

- it is not aware of any new information or data that materially affects the information included in the ASX announcement; and
- all material assumptions and technical parameters underpinning the estimates in the ASX announcement continue to apply and have not materially changed.

DISCLAIMER

This announcement has been prepared by and issued by Theta Gold Mines Limited to assist in informing interested parties about the Company and should not be considered as an offer or invitation to subscribe for or purchase any securities in the Company or as an inducement to make an offer or invitation with respect to those securities. No agreement to subscribe for securities in the Company will be entered into on the basis of this announcement.

This announcement may contain forward looking statements. Whilst Theta Gold has no reason to believe that any such statements and projections are either false, misleading or incorrect, it does not warrant or guarantee such statements. Nothing contained in this announcement constitutes investment, legal, tax or other advice. This overview of Theta Gold does not purport to be all inclusive or to contain all information which its recipients may require in order to make an informed assessment of the Company's prospects. Before making an investment decision, you should consult your professional adviser, and perform your own analysis prior to making any investment decision. To the maximum extent permitted by law, the Company makes no representation and gives no assurance, guarantee or warranty, express or implied, as to, and take no responsibility and assume no liability for, the authenticity, validity, accuracy, suitability or completeness of, or any errors in or omissions, from any information, statement or opinion contained in this announcement. This announcement contains information, ideas and analysis which are proprietary to Theta Gold.

FORWARD LOOKING AND CAUTIONARY STATEMENTS

This announcement may refer to the intention of Theta Gold regarding estimates or future events which could be considered forward looking statements. Forward looking statements are typically preceded by words such as "Forecast", "Planned", "Expected", "Intends", "Potential", "Conceptual", "Believes", "Anticipates", "Predicted", "Estimated" or similar expressions. Forward looking statements, opinions and estimates included in this announcement are based on assumptions and contingencies which are subject to change without notice, and may be influenced by such factors as funding availability, market-related forces (commodity prices, exchange rates, stock market indices and the like) and political or economic events (including government or community issues, global or systemic events). Forward looking statements are provided as a general reflection of the intention of the Company as at the date of release of the document, however are subject to change without notice, and at any time. Future events are subject to risks and uncertainties, and as such results, performance and achievements may in fact differ from those referred to in this announcement. Mining, by its nature, and related activities including mineral exploration, are subject to a large number of variables and risks, many of which cannot be adequately addressed, or be expected to be assessed, in this document. Work contained within or referenced in this report may contain incorrect statements, errors, miscalculations, omissions and other mistakes. For this reason, any conclusions, inferences, judgments, opinions, recommendations or other interpretations either contained in this announcement, or referencing this announcement, cannot be relied upon. There can be no assurance that future results or events will be consistent with any such opinions, forecasts or estimates. The Company believes it has a reasonable basis for making the forward looking statements contained in this document, with respect to any production targets, resource statements or financial estimates, however further work to define Mineral Resources or Reserves, technical studies including feasibilities, and related investigations are required prior to commencement of mining. No liability is

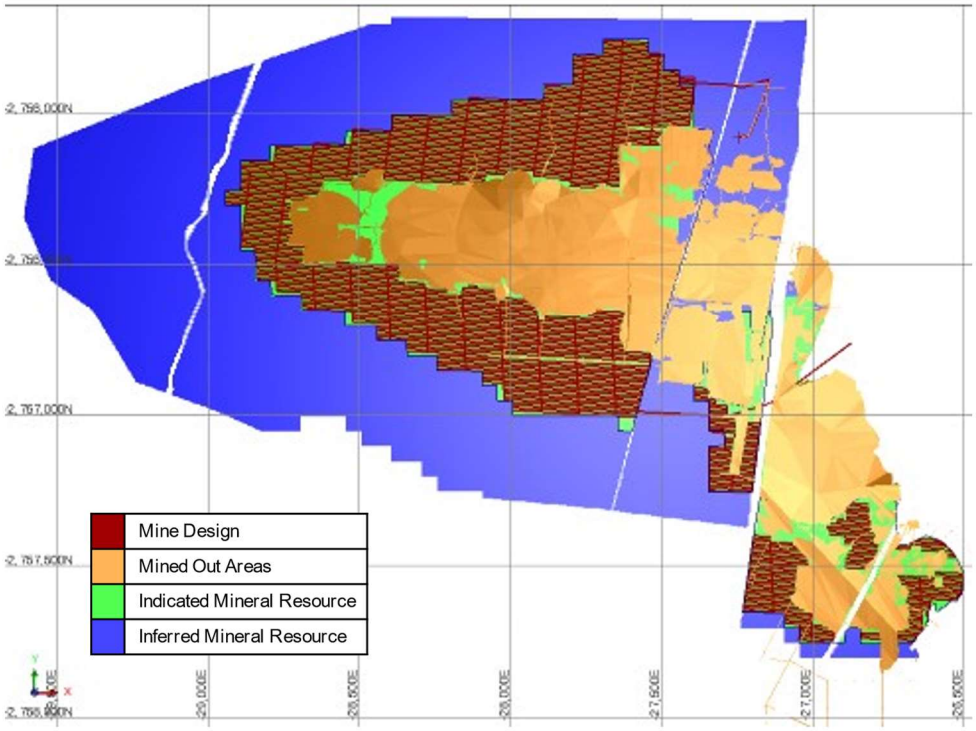
accepted for any loss, cost or damage suffered or incurred by the reliance on the sufficiency or completeness of the information, opinions or beliefs contained in this announcement.

The Feasibility Study referred to in this announcement is based on technical and economic assessments to support the estimation of Ore Reserves. There is no assurance that the intended development referred to will proceed as described, and will rely on access to future funding to implement. Theta Gold Mines believes it has reasonable grounds the results of the Feasibility Study. At this stage there is no guarantee that funding will be available, and investors are to be aware of any potential dilution of existing issued capital. The production targets and forward looking statements referred to are based on information available to the Company at the time of release, and should not be solely relied upon by investors when making investment decisions. Theta Gold cautions that mining and exploration are high risk, and subject to change based on new information or interpretation, commodity prices or foreign exchange rates. Actual results may differ materially from the results or production targets contained in this release. Further evaluation is required prior to a decision to conduct mining being made. The estimated Mineral Resources quoted in this release have been prepared by Competent Persons as required under the JORC Code (2012). Material assumptions and other important information are contained in this release.

APPENDIX A

Phase 1 UG Project Mine Plans

Beta Mine Design



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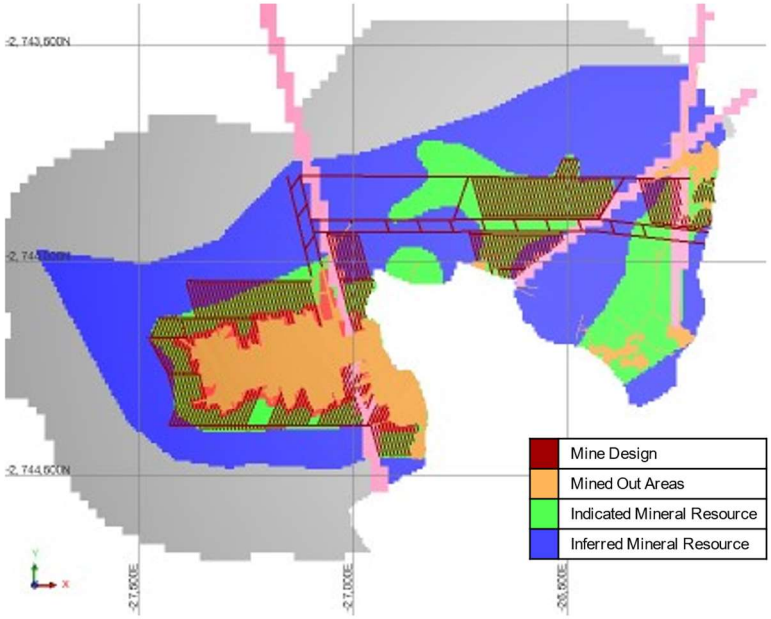
RESOURCE | RESERVE | VALUE

Frankfort Mine Design

Minxcon Consulting



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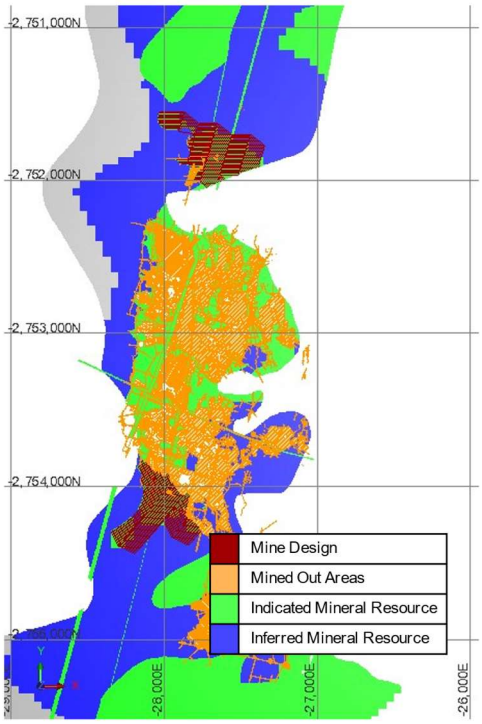
RESOURCE | RESERVE | VALUE

CDM Mine Design

Minxcon Consulting



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APPENDIX B

JORC Global Mineral Resources

Mineral Resources for the TGM Underground Operations as at 1 February 2021

Mineral Resource	Mine	Reef	Ree	Sto	Ree	Sto	Conte	Reef	Stop	Au Content	
			g/t	g/t	cm	cm	cm.g/t	Mt	Mt	kg	koz
Measured	Frankfort	Bevetts	7.13	5.37	73	103	520	0.06	0.09		15.7
Total Measured			**7.13**	**5.37**	**73**	**103**	**520**	**0.06**	**0.09**	**489**	**15.7**
Indicated	Frankfort	Bevetts	7.86	5.13	58	96	452	0.24	0.37		61.5
	CDM	Rho	13.1	3.80	23	90	307	0.25	0.89		109.
	Beta	Beta	21.6	6.58	23	90	499	0.71	2.35		498.
	Rietfontein	Rietfontein	14.5	8.20	52	92	755	0.51	0.91		242.
	Vaalhoek	Vaalhoek	13.9	6.34	36	90	499	0.06	0.14		28.5
	Olifantsgera	Olifantsger	16.9	4.62	25	90	416	0.02	0.09		13.6
Total Indicated			**16.2**	**6.21**	**36**	**91**		**1.82**	**4.77**	**29,661**	**953.**
Total Measured & Indicated			**15.9**	**6.20**	**38**	**91**		**1.89**	**4.86**	**30,150**	**969.**

Mineral Resource	UG Mine	Reef	Ree	Sto	Ree	Sto	Conte	Reef	Stop	Au Content	
			g/t	g/t	cm	cm	cm.g/t	Mt	Mt	kg	koz
Inferred	Frankfort	Bevetts	7.41	4.27	48	93	356	0.34	0.59		81.8
	CDM	Rho	10.0	3.02	24	90	244	0.54	1.81		175.
	Beta	Beta	16.5	5.43	25	90	414	1.10	3.36		587.
	Rietfontein	Rietfontein	14.0	8.52	57	94	803	1.19	1.96		537.
	Olifantsgera	Olifantsger	18.3	4.68	23	90	422	0.05	0.24		37.3
	Vaalhoek	Vaalhoek	16.2	4.77	22	90	361	0.87	2.98		456.
	Vaalhoek	Thelma	12.1	9.47	96	123	1166	0.02	0.03		9.1
	Glynns	Glynns	15.8	5.19	25	90	397	3.21	9.83		1
	Ponieskrant	Portuguese	13.2	3.99	22	90	287	0.06	0.21		27.3
	Frankfort	Theta	7.22	3.24	34	90	244	0.09	0.22		23.0
	Nestor*	Sandstone	5.54	2.92	41	90	225	0.10	0.19		18.1
Total Inferred			**14.6**	**5.22**	**31**	**91**	**458**	**7.62**	**21.4**		**3597**

Notes:-

1. Mineral Resource cut-off of 160 cm.g/t applied.
2. Fault losses of 5% for Measured and Indicated, 10% for Inferred Mineral Resources.
3. Gold price used for the cut-off calculations is USD1,500/oz.
4. cm.g/t and g/t figures will not back calculate due to variable densities in reef and waste rock.
5. Mineral Resources are stated as inclusive of Ore Reserves.
6. Mineral Resources are reported as total Mineral Resources and are not attributed.

APPENDIX C

JORC Mineral Resources for the Total Theta Project (as at *February 2021*)

Resource Classification	Open Pit Mine	Reef	Reef Grade	Reef Width	Content	Reef Tonnes	Au Content	
			g/t	cm	cmgt	Mt	Kg	koz
Indicated	Theta & Browns Hill	Shale	1.02	200	204	0.397	404	13.0
	Theta & Browns Hill	Bevett's	1.08	223	241	0.856	925	29.7
	Theta & Browns Hill	Upper Theta	2.41	100	241	0.651	1 571	50.5
	Theta & Browns Hill	Lower Theta	3.79	100	379	0.839	3 178	102.2
	Theta & Browns Hill	Beta	2.51	100	251	0.373	938	30.1
	Columbia Hill	Bevett's	2.98	114	340	0.108	323	10.4
	Columbia Hill	Upper Rho	2.33	402	937	0.897	2 090	67.2

	Columbia Hill	Lower Rho	2.51	520	1306	0.981	2 464	79.2
	Columbia Hill	Upper Theta	1.06	114	121	0.163	173	5.6
Total Indicated			**2.29**	**258**	**591**	**5.267**	**12 066**	**387.9**

Resource Classification	Open Pit Mine	Reef	Reef Grade	Reef Width	Content	Reef Tonnes	Au Content	
			g/t	cm	cmgt	Mt	Kg	koz
Inferred	Theta & Browns Hill	Shale	1.12	215	240	0.600	668	21.5
	Theta & Browns Hill	Bevett's	1.17	217	254	0.451	528	17.0
	Theta & Browns Hill	Upper Theta	1.86	100	186	0.948	1 762	56.6
	Theta & Browns Hill	Lower Theta	8.06	100	806	1.384	11 153	358.6
	Theta & Browns Hill	Beta	2.17	100	217	0.778	1 686	54.2
	Columbia Hill	Upper Rho	5.12	134	687	0.131	673	21.6
Total Inferred			**3.84**	**129**	**497**	**4.292**	**16 470**	**529.5**

Resource Classification	Open Pit Mine	Reef	Reef Grade	Reef Width	Content	Reef Tonnes	Au Content	
			g/t	cm	cmgt	Mt	Kg	koz
Indicated	Total Theta Project	All	2.29	258	591	5.3	12 066	387.9
Inferred	Total Theta Project	All	3.84	129	497	4.3	16 470	529.5
Total Indicated and Inferred			**2.99**	**200**	**598**	**9.6**	**28 535**	**917.4**

Notes:

1. Theta Project (Theta Hill, Browns Hill and Iota) cut-off is 0.35 g/t;
2. The gold price used for the cut-off calculations is USD 1,500 / oz;
3. Geological losses applied are 10% for inferred and 5% for Indicated and Measured;
4. Theta Hill and Browns Hill - Upper Theta Reef, Lower Theta Reef and Beta Reef are diluted grades over 100cm;
5. Historical mine voids have been depleted from the Mineral Resource;
6. The inferred Mineral Resources have a high degree of uncertainty and it should not be assumed that all or a portion thereof will be converted to Ore Reserves;
7. Mineral Resources fall within the mining right 83MR and 341MR.

APPENDIX D

JORC Checklist – Table 1 Assessment and Reporting Criteria

SECTION 1: SAMPLING TECHNIQUES AND DATA		
Criteria	**Explanation**	**Detail**
Sampling techniques	Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.	Sampling types discussed in this section mainly pertain to historical data with the exception of the Theta Project subsequent to the 2017-2019 drilling campaign. Drilling data sampling types include diamond, reverse circulation ("RC"), percussion and auger drilling. Other sampling data types include underground channel chip sampling (as individual sample section composite data points on plans or as development or stope face composite stretch values), grab sampling as well as trench and sample pit sampling for bulk sampling for the purposes of size fraction analysis. The table below outlines the types of sampling data collected or utilised in the Mineral Resource or Exploration Target estimates for each of the Project Areas.

Project Area	Reef	Sampling Data Types
Rietfontein	Rietfontein	Drillhole Data
		Channel Chip Sample Data
Beta	Beta	Drillhole Data
		Channel Chip Sample Data
Frankfort	Bevetts and Theta	Drillhole Data
		Channel Chip Sample Data
Clewer, Dukes Hill & Morgenzon	Rho	Drillhole Data
		Channel Chip Sample Data
Olifantsgeraamte	Olifantsgeraamte	Drillhole Data
		Channel Chip Sample Data
Vaalhoek	Vaalhoek and Thelma Leaders	Drillhole Data
		Channel Chip Sample Data
		Stretch Values
Glynn's Lydenburg	Glynn's	Drillhole Data
		Channel Chip Sample Data
		Stretch Values
Theta Project (Theta Hill, Browns Hills and Iota section of Columbia Hill)	Beta, Shale, Lower Theta, Upper Theta, Lower Rho, Upper Rho and Bevetts	Drillhole Data
		Trench Sampling Data
		Channel Chip Sample Data
Columbia Hill (remaining)	Rho, Shale and Shale Leaders	Drillhole Data
		Channel Chip Sample Data
Hermansburg	Eluvial	RC Drillhole Data
DG1	Eluvial	RC Drillhole Data
DG2	Eluvial	RC Drillhole Data
DG5	Eluvial	Grab Samples
		RC Drillhole Data

SECTION 1: SAMPLING TECHNIQUES AND DATA		
Criteria	**Explanation**	**Detail**

Glynn's Lydenburg TSF	Tailings	Auger Drillhole Data
Blyde TSFs (1, 2, 3, 3a, 4, 5)	Tailings	Auger Drillhole Data
TGM Plant	Tailings	Auger Drillhole Data
Vaalhoek, South East (DGs), Peach Tree, Ponieskrantz, Dukes Clewer	Rock Dump	Bulk Sampling Data
		Trench Sampling Data
		Sampling Pit Data

a) Channel Chip Sampling Data:-
Historical (Pre-1946) chip sample values were captured in 'pennyweight' (dwt) units for gold content and in inches for channel width. The quality of the chip samples could not be ascertained due to the historical nature there-of; however, it should be noted chip sampling is a well-established sampling method in the underground South African mining industry. The sampling activity on the mines was usually managed by each mine's survey department and were usually conducted to specific company-wide standards.

More recent chip sample values were captured as cm.g/t content values and channel widths were recorded in centimetres as is the case at Frankfort while under ownership of Simmer & Jack Mines Limited. During 2008, Minxcon audited the chip sampling procedure as employed by Simmer & Jack and found the procedures employed to be of industry standard.

b) Stretch Values:-
In some instances (such as at Vaalhoek and Glynn's Lydenburg) in areas where original sample plans were not available, stretch value plans recording a composite content and channel width value for a stope length or development end were available and included in the database. The integrity of these plans as a source of grade information has been proven in other areas on the same mines where both chip sample plans and stretch value plans were available and were compared. It was found that the correlation to old sampling has been representative of the stretch values in these areas.

c) Drillhole Data:-
Historical (pre-2007/8) drillhole data (inclusive of diamond, RC, and auger) exists on many of the operations. However very little backing data is available for many of these older holes and it must be assumed that QAQC was not included in the process. Minxcon has however reviewed the general quality of the survey data for these drillholes. For the most part, collar data has been found to agree well with local topography and is considered to be acceptable for modelling purposes.

Downhole survey data with respect to diamond and RC drilling is also often absent from the older holes; however, it should be noted that over 98% of these holes were seldom drilled to depths in excess of 150 m and were vertically collared. Only 1.40% of all the drillholes on all the properties were drilled as inclined drillholes, thus it is Minxcon's view that the holes and their relative reef intercept points would be spatially acceptable for modelling purposes.

The historical drillhole data has no accompanying assay QAQC, however this fact is considered in allocation of Mineral Resource classification during modelling.

More recent drillhole data (inclusive of diamond, RC and auger) from 2008 onward is considered to be of high quality as it was conducted to updated industry standards with the incorporation of drillhole collar survey as well as assay QAQC where blanks and certified reference material were inserted for monitoring purposes, with the inclusion of coarse duplicate samples. These later drilling

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		programmes were also either monitored, audited or managed by Minxcon personnel under Minxcon previous sister company Agere Project Management ("Agere"). d) Trench, Sample Pit and Bulk Sampling (Vaalhoek Rock Dump):- In order to evaluate the Vaalhoek Rock Dump, trenches and sample pits were dug. The trenches and pits were surveyed by a Mine Surveyor and were sampled in sections down to a depth 1.2 m, each sample representing a composite of 40 cm down the wall of the trench or pit. These samples were then assayed. The discard material from the trenches and pits was then composited to form a bulk sample of 50 tonnes for conducting size fraction analysis. The nature and quality of the sampling in question has been considered in the Mineral Resource classification for the Vaalhoek Dump, which is Inferred. e) Bulk Sampling (South East (DGs), Peach Tree, Ponieskrantz, Dukes Clewer):- Bulk sampling was done through a triple deck screening plant (bulk samples were between 20t and maximum 520t per waste rock dump). f) Trench Sampling (Theta Project Browns Hill):- Trenching was conducted on Browns Hill during the 2017-2019 drilling campaign to assist in locating the Lower Theta Reef outcrop. Trenches were dug in roughly an east-west orientation to a depth of between 1.0 m to 2.1 m. A total of 10 trenches were dug with an approximate spacing of approximately 30 to 35 m. The trenches were sampled near to vertical at 2 m intervals, due to the very shallow dip of the reef, where full side-wall composite samples were taken. Samples were dispatched to SGS Laboratory in Barberton for analysis. The trench sampling was not used in any evaluation as its only purpose was to locate reef outcrops.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	a) Chip Sampling:- In concordant reef underground projects chip samples were taken normal to the reef dip and calculated to give a composited value for a true reef thickness. In the case of cross-reefs such as that at Rietfontein, chip sample positions were plotted on the development centre lines indicating face sampling normal to the reef dip. Scatter plots were also generated to examine the data set for errors introduced while capturing the data. All values were converted using factors of 2.54 cm for 1 inch and 1.714285 g/t for 1 dwt. The older underground sampling took place at approximately 6 m spacing along on-reef development, whilst in newer mining areas this spacing was reduced to approximately 2 to 3 m along on-reef development. In the stoping areas a grid was targeted on an approximate 5 m by 5 m grid where applicable, which is a historical grid (Pre-1946). This grid was put in place due to the nugget effect of the reef. The minimum size of the samples was 20 cm to obtain a minimum weight of 500 g. b) Trench, Sample pit and Bulk Sampling (Vaalhoek Rock Dump):- The trenches at Vaalhoek Rock Dump were located and spread as evenly as possible on the top of the dump, while pits were located on the sides of the dump and these were sampled in sections down to a depth 1.2 m, each sample representing a composite of 40 cm down the wall of the trench or pit. The discard material from the trenches and pits was then composited to form a bulk sample of 50 tonnes for conducting size fraction analysis and screened at -10 mm, +40 mm and -75 mm. The nature and quality of the sampling in question has been considered in the Mineral Resource classification for the Vaalhoek Dump, which is Inferred. c) Trench, Sample pit and Bulk Sampling (Theta Project):- The trenches were dug in roughly an east-west orientation to a depth of between 1.0 m to 2.1 m. A total of 10 trenches were dug with an approximate spacing of approximately 30 m to 35 m. The trenches were sampled near to vertical at 2 m intervals, due to the very

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		shallow dip of the reef, where full side-wall composite samples were taken. The trench sampling was not used in any evaluation as its only purpose was to locate reef outcrops.
	Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	Samples presented in the historical database represent full reef composites for both diamond drilling as well as chip sampling. The historical nature of the data and the high grades encountered implies the use of fire assay as an assay technique. Sample preparation and aspects regarding sample submission for assay are not known due to the historical nature of the sampling data. Underground sampling, for metallurgical purposes, was undertaken at the northern Neck section of Vaalhoek during February, 2018. Two samples weighing approximately 4kg were taken from exposed faces of the Vaalhoek Reef, in two separate underground localities of previous mining. Two samples were also taken of Thelma Leader mineralisation located in underground exposures adjacent to the Vaalhoek Dyke. These samples also weighed approximately 4 kg each. All samples were composites of rock chipped over the reef width. The four samples were submitted for Bottle Roll testwork at SGS Barberton, which is discussed under the Metallurgical section. The smallest split drillcore sample taken was 15 cm in length. After crushing and pulverising the core sample, a 30 g cupel was utilised for analysis. Low core recoveries resulted in reverting to RC drilling for evaluation purposes. For the RC drilling conducted at the Theta Project, the mass of recovered sample obtained was recorded on a per metre drilled basis, with approximately 3 kg of sample per metre run, being split off by means of a 3-tier riffle splitter for submission to SGS Laboratories in Barberton. Assays pertaining to the Theta Project were conducted by means of gold by fire assay with a gravimetric and/or flame atomic absorption spectrometry ("AAS") utilising a 30 g cupel.
Drilling techniques	Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	a) Underground/Hard Rock Projects:- All historic (pre 2007/2008) Mineral Resource evaluation drilling for the underground projects was conducted in the form of diamond drilling. Information regarding drilling diameter, drill tube type and core orientation is not available or discernible for the earlier 1995/1996 drilling as the core is no longer available. Only core loss, intersection length and grade (g/t) are recorded with various levels of geological lithological information. Due to the age of the data in question and the non-availability of the historical drill core, information regarding drilling diameter, drill tube type, core orientation is not available. More recent drillhole data (inclusive of diamond, RC and auger) from 2008 onward is considered to be high quality as it was conducted to updated industry standards with the incorporation of assay QAQC where blanks and certified reference material ("CRM") were inserted for monitoring purposes. Core drilling utilised an NQ (47.6 mm) drill bit. Details pertaining to earlier drilling programs' core orientation are not available. Due to poor diamond drillcore recoveries during the 2017-2019 drilling campaign, core orientation was not conducted. b) Open Pit or Eluvial Projects:- Drilling on the eluvial deposits took place under the auspices of Horizon Blue Resources and is regarded as being of high quality due to good survey control and inclusion of QAQC practices. The main drilling method (95% of drillholes) utilised to evaluate these projects was reverse circulation (4.5 inch (115 mm) and 6 inch (150 mm) diameter) drilling, vertical reverse circulation drillholes, with or without temporary casing depending on ground condition in the vicinity of the various drill sites. Rotary core drilling (NQ size with 75.7 mm outside diameter and 47.6 mm inside diameter) was utilised in 5% of the drillholes on these projects. More recent drillhole data (inclusive of diamond, RC and auger) from 2008 onward is considered to be of high quality as it was conducted to updated industry standards with the incorporation of assay QAQC where blanks and certified reference material ("CRM") were inserted for monitoring purposes. Core drilling utilised an NQ (47.6 mm) drill bit. Details pertaining to earlier drilling programs' core orientation are not available. Due to poor diamond drillcore recoveries during the 2017-2019 drilling campaign, core orientation was not conducted. c) Tailings Projects:-

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		Drilling on the tailings projects was conducted by means of small diameter (45 mm and 50 mm) auger drilling. Drillhole positions have been surveyed by TGM utilising a GPS based Total station. All holes were drilled vertically.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	a) Diamond Drilling:- Information regarding the 1995/1996 recoveries is not available. However, during the 2008 and 2012/2013 drilling campaigns the recoveries were recorded. Diamond drill core recoveries were recorded during the 2013 drilling programmes, which was managed by Minxcon Exploration (Pty) Ltd. Core recovery percentage was calculated for each drill run. Sample recoveries were maximised through drilling techniques (diamond drilling), however drilling recoveries versus grade relationships were not assessed. During the 2017-2019 drilling campaign consistent and accurate records relating to core and RC drill sample recovery were maintained on a per sample basis. Diamond drill samples were measured on a per sample basis and related back to the recorded drill run length versus the length of drill core recovered, which was then presented as a percentage. The average drill recovery achieved during the diamond drilling campaign was approximately 65%, with at least 33.3% of samples achieving recoveries of 50% or less. This low recovery resulted in reverting to RC drilling as a means of obtaining representative drill data for evaluation purposes. b) RC Drilling:- Details regarding the chip sample recovery of the historical RC drilling for the eluvial project are not available or existent in Minxcon's data records. For the RC drilling conducted at the Theta Project, the mass of recovered sample obtained was recorded on a per metre drilled basis, with approximately 3 kg of sample per metre run, being split off by means of a 3-tier riffle splitter for submission to SGS Laboratories in Barberton.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Owing to the historical nature of the data in question (prior to 2005), measures taken to maximise sample recovery and ensure the representative nature of the samples are not known. During the 2008, 2012/2013 and 2017-2019 drilling campaign, sample recoveries were maximised through utilising appropriate drilling techniques depending on the deposit in question. In order to ensure the representative nature of the drilled intersections and due to the dip of the reefs being very shallow at between 3° to 12°, drillholes were drilled vertically in order to obtain an intersection as close to normal as possible. Owing to low core recoveries achieved in the 2017-2019 drilling campaign, RC drilling was utilised to maximise sample recovery.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	Sample recovery versus grade was not assessed due to the lack of historical drill core and sample rejects, as well as due to the low diamond drilling sample recovery experience during the 2017-2019 drilling campaign. Sample recovery and grade relations with regard to the RC drilling was not possible due to not having a historical RC dataset to compare with. It is Minxcon's view that samples recording a core loss would result in a net negative bias, resulting in a potentially lower reported gold value. Twinning of these holes might serve to support this theory.
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.	Historical drillholes (pre-2007/2008) in most cases have no original drillhole logs available for review. Summary lithological strip logs or MS Excel™ logs are available in most cases however and present lithological changes and reef positions. It is Minxcon's view that the level of detail available is still supportive and appropriate for Mineral Resource estimation. This level of detail has been considered in allocation of Mineral Resource classification. All 2008 drillholes were geologically logged including the deflections (or wedges) and the 2012/2013, as well as the 2017-2019 drilling campaign drillholes were both geologically and geotechnically logged. It is Minxcon's view that logging was done to a level of detail appropriate to support Mineral Resource estimation.

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	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	No detailed drillhole logs are available for the historical (pre-2007/2008) surface drilling. No core or core photography is available for review. The 2008 and 2012/2013 logging was qualitative in nature and core photos of all intersections were also taken. Logging conducted during the 2017-2019 drilling campaign was also qualitative in nature. All drill core and reference RC Chip sample trays were photographed and archived for record purposes.
	The total length and percentage of the relevant intersections logged.	Historical drillholes (pre-2007/2008) in most cases have no original drillhole logs available for review. Summary lithological strip logs or MS Excel™ logs are available in most cases however and present lithological changes and reef positions. Based on the information available it is assumed that all historical intersections represented in the Mine Resource estimation dataset were logged. All drilling and relevant intersections relating to 2007 through to, and including the 2017-2019 drilling programme were logged. The logging information per Project is presented in the full CPR document and described in detail.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	It is not known how core was split in historical drilling (pre-2007/2008) campaigns. It is assumed that core was split as has been routine exploration practice. However, sampling/core records/libraries or protocols for this period are not available for review. In later drilling programmes (including the 2017-2019 drilling campaign) core was sawn in half lengthwise down the core axis. Once the core had been split the core was sampled along lithological boundaries. The smallest sample that was taken was 15 cm which was governed by the low core recovery, as well as the minimum weight required for a laboratory sample. Individual samples for NQ cores were 20 cm long. Reef samples were >10 cm and <40 cm.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	Historical Protocols pertaining to the RC and auger drilling sample splitting are not available for scrutiny and thus unknown. During the 2017-2019 RC drilling programme, samples were dry sampled and riffle split through a 3-tier riffle splitter
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	For historical diamond drilling (pre-2007/2008) no protocols pertaining to sample preparation techniques are available for scrutiny. Recent (inclusive of the 2017-2019 drilling campaign) drilling sampling preparation and its appropriateness is in line with industry practice.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Historical (pre-2007/2008) historical sub-sampling techniques were not available for review. All later drilling programmes utilised blanks and certified reference materials in order to maximise representivity of samples. In the 2017-2019 drilling campaign, coarse duplicates were added to the QAQC programme to test repeatability and thus representivity of samples.
	Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.	Pertaining to historical (pre-2007/2008) drilling programmes, sub-sampling techniques were not available for review. In 2008, only blanks and certified reference material were used. No field duplicate/second –half or subsequent quarter sampling was conducted to Minxcon's knowledge. Later drilling programmes utilised only blanks and certified reference material. No field duplicate/second–half or subsequent quarter sampling was conducted. In the 2017-2019 drilling campaign, coarse field duplicates were added to the QAQC programme to test repeatability and thus representivity of samples. Out of 292 duplicates taken, three were identified as outliers. Once these were removed from the dataset, a correlation coefficient of 0.9683 was achieved, presenting very high correlation, thus supporting the view of sample representivity.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Pre-2007/2008: Not known. Historical sample size taken were not recorded. Later programmes considered sample length versus core diameter together with assay laboratory techniques and protocols to ensure sample sizes were appropriate relative to the material in question being sampled. It is Minxcon's view that the sample sizes take are appropriate to the gold grain size being sampled due to the fact that out of 292 duplicates taken (2017-2019 drilling programme), three were identified as

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		outliers. Once these were removed from the dataset, a correlation coefficient of 0.9683 was achieved, presenting very high correlation, thus supporting the view of sample representivity.
Quality of assay data and laboratory tests	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	Historical underground channel chips were reported in dwt, it is assumed that only fire assay was utilised and it is assumed that the technique represents total analysis. In 2008, all diamond core samples including blanks and certified reference material ("CRM") were dispatched to Set Point Laboratories ("Set Point") in Isando, Johannesburg, South Africa. Set Point is a SANAS certified laboratory, in accordance with the recognised international standard ISO/IES 17025:2005, with accreditation number T0223. The samples were analysed for Gold ("Au") by standard fire assay with ICP finish, and specific gravity ("SG") analysis were conducted on selected samples. It is assumed that the technique represents total analysis. Up to May 2007, all RC samples were sent to ALS Chemex Laboratory. From May 2007 onwards, RC samples were sent to Performance Laboratories (now SGS Performance Laboratories) and core samples to ALS Chemex (which is SANAS accredited) for fire assay by lead separation and AA finish. Each sample was also analysed for a spectrum of 34 metals using Inductively Coupled Plasma ("ICP") techniques. It is assumed that the technique represents total analysis. In 2017, samples from drillholes V6 and V8 including blanks and certified reference material were dispatched to Super Laboratory Services (Pty) Ltd ("Super Labs") in Springs, South Africa. Super Labs is a SANAS certified laboratory, in accordance with the recognised international standard ISO/IES 17025:2005, with accreditation number T0494. The assay samples are 50 g samples in mass and are assayed for gold (Au) by means of fire assay with gravimetric finish. It is assumed that the technique represents total analysis. For the 2017-2019 drilling campaign, all drillhole samples were sent to SGS Performance Laboratories in Barberton. SGS Performance Laboratories, Barberton is a SANAS certified laboratory, in accordance with the recognised international standard FAA303, with accreditation number T0565. Assays pertaining to the Theta Project were conducted by means of gold by fire assay with a gravimetric and/or flame AAS utilising a 30 g cupel. This assay technique is viewed as being total.
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	No assay methods other than those conducted by laboratories as mentioned above were utilised in the generation of any of the TGM projects sampling database.
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	No records of Assay QAQC are available for the historical data due to the age there-of (*i.e.* pre-1946 for channel chip sampling, and for drilling predating 2007/2008) and due to the accepted practices in place at the time. Drilling campaigns conducted post 2007/2008 and the accompanying sampling was conducted according to industry standards. QAQC measures were implemented by regular insertion of blanks and standards into the sampling stream. Minxcon considers that the QAQC measures, as well as data used for Mineral Resource estimation, were of adequate quality. Approximately 17% of the samples sent to the laboratory represented assay control material. Minxcon is of the opinion that an adequate number of control samples were utilised during this drilling programme. No field duplicates were however used during the 2008 drilling and sampling programmes. During the 2012/2013 exploration programme, the project was stopped due to budgetary constraints and the completed drillholes were not assayed at the time.

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		For the 2013 drilling programme the samples were analysed in 2017 and a total of 84 samples including blanks and certified reference material were dispatched to Super Labs. Two CRMs, namely AMIS0016 and AMIS0023, and silica sand blanks were used in the sampling sequence. Roughly every fifth sample inserted in the sampling sequence was a QAQC sample. A total of two AMIS0023, two AMIS0016, five duplicates and six blank samples were used. Approximately 18% of the samples sent to the laboratory represented assay control material. Minxcon is of the opinion that an adequate number of control samples were utilised. During the 2017-2019 drilling programme the CRMs and blanks were inserted at predetermined positions in the sampling sequence, namely: analytical blank samples were placed at the beginning and at the end of a drillhole. With the diamond drilling control samples were placed in the sampling stream at every tenth sample, with a sequential rotation between a blank, CRM and duplicate. With the RC drilling, this was similarly done, but at every twentieth sample position. In both cases the control sample spacing was based upon the batch size utilised by the laboratory in order to ensure each tray included at least one blank and an additional control sample during sample preparation and analysis. Approximately 2.75% of the samples sent to the laboratory represented CRM and 4.5% represented analytical blanks and 1.3% represented coarse duplicates. These samples are in addition to the in-laboratory assay conducted by the laboratory which traditionally adds up to 20% control samples to the total sample stream, usually incorporating a CRM as well as an analytical blank and two duplicate samples to each sample batch. Minxcon is of the opinion that an adequate number of control samples were utilised during this drilling programme.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	No verification of historical assay results is currently possible due to the historical nature of the data in question and the non-availability of the core. Minxcon verified the historically bagged samples for drillholes V6 and V8 for accuracy and representativeness before sending them to the laboratory in 2017. Those samples that were not representative or missing were re-sampled from the remaining core at TGM. Minxcon reviewed all historical datasets chip sampling and the historical drilling attributed to the various historical operations, as well as digital plans (scanned DXF plans of sampling plans) and found that captured sample positions had good agreement with those in the digital dataset. In addition, different versions of the underground sampling file were found and cross validated to test for data changes or eliminations. These were corrected where applicable. Minxcon reviewed, verified and cross-checked captured assays relating to the 2008 drilling dataset by means of checking for transfer mistakes, gaps and overlaps in sampling intervals and also checked that all reef composites were correctly calculated for each reef intersection, before calculating the weighted mean of drillhole points with multiple intersections of wedges. Minxcon conducted checks on sampling during the 2017-2019 drilling programme by means of standard assay QAQC procedures and reviewing and cross-checking the .pdf assay results provided by the laboratory and those copied into the database utilised for evaluation. In addition, reviews of the sampling process were conducted by Minxcon personnel other than those managing the programme, namely the then Competent Person Mr Uwe Engelmann, and Mr Paul Obermeyer, the Minxcon Mineral Resource Manager.
	Discuss any adjustment to assay data.	No adjustments were made to raw assay data according to Minxcon's knowledge.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Not known. Historical data capture and data entry procedures were not available for review. The 2007/2008 and 2013 exploration programmes were logged and captured on hardcopy. These were then transferred to MS Excel™. Minxcon currently only has the data in this digital format for verification purposes. During the 2017-2019 drilling campaign, all logging and sampling were logged and captured on

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		hardcopy and then captured in MS Excel™. Assay results were received from the laboratory in MS Excel™ .csv format as well as .PDF, thus allowing verification and comparison between hardcopy, source and digital data files.
	The use of twinned holes.	No twinned holes were drilled.
Location of data points	Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	TGM utilised a handheld GPS for the purpose of locating historical adits and mine entrances, which in turn have been utilised in conjunction with historical survey data in positioning the historical underground workings in 3D. Historical survey plans with plotted survey peg positions and elevations are available for most of the historical underground operations. These pegs were installed by mine surveyors relative to fixed local mine datum's. The survey pegs and workings have been digitised in ARCView GIS 10™. Each data point and stretch value on the original assay plans was marked and annotated with a reef width and gold grade. Assay plan images were imported into GIS and co-ordinates converted from a local grid co-ordinate (WG31) system to a WGS84 grid system. The plans were then captured into Datamine Studio 3™. The captured assay points were plotted on a plan of the underground workings to ensure that the points plotted correctly relative to development and stoping. The sampling has in turn been fixed to the underground development and stoping voids. It is Minxcon's opinion that sample positional accuracy would be within 5 to 10 m of the original sample point (within acceptable limits of a GPS). Drillhole collars were also located by means of handheld GPS co-ordinates. Assay plan images were imported into GIS and co-ordinates converted from a local grid co-ordinate system to a WGS84 grid system. The plans were then captured into Datamine®. The captured assay points were plotted on a plan of the underground workings to ensure that the points plotted correctly relative to development and stoping. Historically, sampling points were measured by means of measuring tape and the resultant offsets plotted on the sampling and development plans. Information pertaining to the instrument used for downhole survey conducted before and including the 2007/2008 drilling programmes is not available During the 2012/2013 drilling programme an EZ-Trac with EZ Com was used. Drillholes drilled at the Theta Project did not have downhole surveys conducted due to all being drilled vertically and due to them all being under 200 m in depth. Drillhole collars were located by two means. Of the 371 holes drilled some 99 collars were surveyed utilising an RTK Trimble R8 GPS Survey Total Station, while the balance was recorded by means of handheld GPS. TGM complete a LIDAR survey over the Theta Project in March 2019 which was then used to re-elevate the collar positions to the new LIDAR surface for improved accuracy. The 3D geological model was updated in June 2019 and the Mineral Resource was adjusted accordingly.
	Specification of the grid system used.	The grid system used is Hartebeeshoek 1994, South African Zone WG31.
	Quality and adequacy of topographic control.	Minxcon utilised the GPS co-ordinates provided by TGM for the adit positions, as well as ventilation openings to assist in verifying and fixing the underground workings in 3D space. Very good correlation between the digital topography and the underground mining profiles was found. The tailings and rock dump projects were surveyed utilising standard survey methods (Survey total station) and detailed topographical data collected. This data was subsequently rendered as digital contour plans. A LIDAR survey was conducted in March 2019 and was compared to the original digital topography utilised in the reef modelling. Discrepancies were found to be small with negligible impact on the geological model or the reef block models. The 3D geological model was revised in June 2019 and the Mineral Resource adjusted accordingly. There was an overall increase of 9% in the ounces in the Mineral Resource for the Theta Project due to the changes in the reef elevation and reef outcrop positions.

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Data spacing and distribution	Data spacing for reporting of Exploration Results.	In the stoping areas, the mean channel chip sample grid spacing was approximately on a 5 m x 5 m grid, while on development in older areas samples were taken at about 5 m to 6 m intervals, while in more recent areas sample sections were taken at between 2 m to 3 m spacing. Available information shows that diamond drillholes were drilled on an irregular grid of between 200 m to 500 m. Owing to the more advanced investigation stage (*i.e.* Mineral Resources and Ore Reserves), no Exploration Results have been reported. In the stoping areas, the sample stretch values were spaced approximately at 15 m on dip and 4 m on strike, while in more detailed areas sample spacing was found to be as little as 3 m between points. In the development, stretch values spacing varied from 4 m to 20 m, while in more detailed areas sample spacing is seen to be as close a 3 m. Drillhole spacing for the underground projects varies significantly and is considered during Mineral Resource classification. In one specific case (Vaalhoek) two drillholes (V6 and V8) did not significantly affect the Mineral Resource estimation as they were beyond the variogram range of the sample points (1,000 m) as Minxcon did not include the drillhole data with the stretch value data. They did however prove continuity of the reef. For the Glynn's Lydenburg and Blyde TSF projects, auger drilling was conducted on a 25 m x 25 m grid spacing, while on the TGM Plant TSF auger drilling was conducted on an approximate 50 m x 50 m grid. The Hermansburg eluvial deposit was drilled on an approximate 25 m x 25 m grid, while the DG deposits were drilled on an approximate 20 m x 20 m by 25 m x 25 m grid spacing, depending on local topography and access.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	It is Minxcon's opinion that drillhole and sample spacing is adequate for the purpose of conducting meaningful Mineral Resource estimation in and around stoping areas due to the density of the chip sampling data. It is Minxcon's view that the drillhole spacing pertaining to the Theta Project conducted during the 2017-2019 drilling programme is adequate for the purpose of conducting Mineral Resource estimation. Spacing per reef is viewed as being appropriate to the Mineral Resource categories applied.
	Whether sample compositing has been applied.	All channel chip sample points within the underground operations database represent full reef composites. Full reef composites were applied to drillholes belonging to the underground operations due to the inherent narrow nature of the reefs concerned. All eluvial, TSF drillholes and rock dump sample points were composite at fixed downhole sample intervals for the purposes of conducting full 3D Mineral Resource Estimations on these types of deposits. During the 2017-2019 drilling programme, in thin reef environments with reefs of <1 m (Upper Theta, Lower Theta and Beta Reefs) diluted (to 1 m) reef composites were utilised for evaluation purposes due to the minimum sample width obtained during the RC drilling being 1 m. In thick reef environments (Upper Rho, Lower Rho, Bevetts and Shale reefs), individual original sample widths of 1 m were maintained for utilisation in 3D estimation.
Orientation of data in relation to geological structure	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Concordant reefs are all near horizontal and as such these dip at between 3° to 12° to the west and strike in a north–south direction. Drillholes were drilled vertically (-90° dip) to intercept the mineralised shear zones at a near perpendicular angle in order that the sampling of the drill core minimises the sampling bias. Chip sampling in concordant reef environments was conducted normal to reef dip. It is Minxcon's view that sampling orientation has attempted to reduce sample bias with respect to angle of intersection. All intersections represented corrected reef widths. Discordant reef as encountered at Rietfontein is vertical to sub-vertical. Drillholes were orientated at angles to intercept the mineralised shear zones at as near a perpendicular angle in plan and acute angle in section as possible in order that the sampling of drill core minimises the

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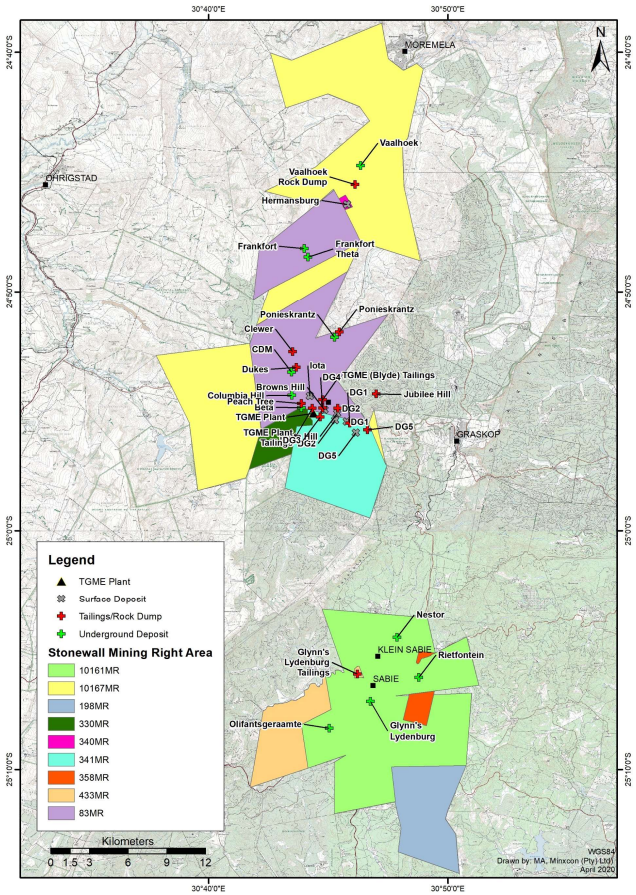
		sampling bias. Chip sampling was conducted normal to reef dip. It is Minxcon's view that sampling orientation has attempted to reduce sample bias with respect to angle of intersection. All intersections represented corrected reef widths. All sampling of the TSF was conducted vertically. This is normal to the orientation of deposition and is therefore achieves unbiased sampling
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	Available information indicates that the drilling orientation provides reasonably unbiased sampling of the mineralisation zones.
Sample security	The measures taken to ensure sample security.	Measures taken to ensure sample security pertaining to the historical chip sampling are not available due to the historical nature of the data in question. Measures taken to ensure sample security during historical drilling programmes (1995/1996 and 2008 drilling) are not available due to the historical nature of the data in question. During 2012/2013 all core samples were stored in a locked facility prior to dispatch to the laboratory. The samples from the 2013 drilling campaign were bagged and labelled in 2013 but were not sent away to a laboratory for assayed due to the project ending prematurely. The samples were stored at the TGM Plant in Pilgrims Rest and delivered to the Minxcon Exploration offices in Johannesburg in November 2017 to check and verify the previously bagged samples. A standard chain of custody was implemented during the 2017-2019 drilling campaign. Immediately when the core arrived in the core yard daily, the geologist or core yard manager was required to sign the core shed register (core) after inspecting the core against the reported drilled metres in acknowledgement of having received the core in good condition. On a weekly basis (or more often when required) samples were despatched directly to the analytical laboratory. The Chain of Custody for the core and samples utilised by Minxcon in the 2017-2019 drilling programme was congruent with that utilised in the 2008 and 2012/2013 drilling programs under the management of Agara.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Minxcon reviewed all historical datasets attributed to the various projects comprising the Mineral Resources, historical plans and sections as well as digital plans (scanned DXF plans of sampling plans) and found that historically captured sample positions had good agreement with those in the digital dataset. In addition, different versions of the underground sampling files were found and cross validated to test for data changes or eliminations. Minxcon also digitised a series of plans or sampling points and stretch values which were used in the various estimations. Minxcon was not able to audit or review the sampling techniques in practice due to the historical nature of the data in question. Minxcon is not aware of any other audits that have been conducted on the Mineral Resources.

SECTION 2: REPORTING OF EXPLORATION RESULTS		
Criteria	**Explanation**	**Detail**
Mineral tenement and land tenure status	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests,	The mining rights are held under Transvaal Gold Mining Estates Limited ("TGME"), a 74% indirect subsidiary of TGM. The mineral rights 83MR, 340MR, 341MR, 358MR and 433MR have been granted, registered and executed, held over certain Mineral Resource areas. Their accompanying environmental and social permits are also executed. The mining rights 10161MR and 10167MR have been granted and are pending execution. The mining rights 330MR and 198MR are still in the approval process.

SECTION 2: REPORTING OF EXPLORATION RESULTS		
Criteria	**Explanation**	**Detail**
	historical sites, wilderness or national park and environmental settings.	A Section 102 amendment process for inclusion of Theta Project into 83MR is currently underway, with the environmental and socio-economic studies, as well as water use licence application process, following prescribed regulatory timelines. It is noted that the proposed underground operations may require revised mine work programmes to be approved, as well as environmental, social and water use licences.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	TGM is required to comply with DMRE regulations and instructions timeously in order to receive executed rights, as well as for the currently active rights to remain in force. Minxcon notes that a few years have lapsed since the last formal DMRE communication on 330MR and 198MR, and notes that the security of these rights may be at risk. The 83MR Section 102 application is following timelines as stipulated by applicable regulations and guided by government departments and prcoesses. The Mineral Resources are located within the above permit areas as per the figure to follow.

SECTION 2: REPORTING OF EXPLORATION RESULTS		
Criteria	**Explanation**	**Detail**
		
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Acknowledgement is hereby made for the historical exploration conducted from 1977 to 1982 by Placid Oil and Southern Sphere over the northern areas over the TGM holdings. From 1982 to 1992, Rand Mines conducted sporadic alluvial prospecting along the Blyde River, limited surface diamond drilling, re-opening of old workings and extensive exploration programmes around the town of Pilgrims Rest. TGME and Simmer & Jack conducted drilling, geochemical soil sampling, trenching and geological mapping.
Geology	Deposit type, geological setting and style of mineralisation.	Epigenetic gold mineralisation in the Sabie-Pilgrims Rest Goldfield occurs as concordant and discordant (sub-vertical) veins (or reefs) in a variety of host rocks within the Transvaal Drakensberg Goldfield, and these veins have been linked to emplacement of the Bushveld Complex.

SECTION 2: REPORTING OF EXPLORATION RESULTS		
Criteria	**Explanation**	**Detail**
		Mineralisation in the region occurs principally in concordant reefs in flat, bedding parallel shears located mainly on shale partings within the Malmani Dolomites. These bodies are stratiform, and are generally stratabound, and occur near the base of these units. The discordant reefs (or cross-reefs) are characterised by a variety of gold mineralisation styles. At Rietfontein, a sub-vertical quartz-carbonate vein occurs which reaches up from the Basement Granites and passes to surface through the Transvaal. They are found throughout the Sabie-Pilgrims Rest Goldfield, and are commonly referred to as cross reefs, blows, veins, and leaders and exhibit varying assemblage of gold-quartz-sulphide mineralisation generally striking northeast to north-northeast. They vary greatly in terms of composition, depth and diameter. In addition to the above, more recent eluvial deposits occur on the sides of some of the hills and are through to represent cannibalised mineralised clastic material resulting from the erosion of underlying reefs. Gold mineralisation is accompanied by various sulphides of Fe, Cu, As and Bi.
Drillhole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes: * easting and northing of the drillhole collar * elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar * dip and azimuth of the hole * down hole length and interception depth * hole length.	A summary of the data types and the number of data attributable to each project is presented in the table below. It should be noted that all the projects listed are historical mining areas and do not constitute exploration projects in the true sense of the word. However, detailed drillhole summary tables are presented in the CPR in the appropriate sections pertaining to Exploration Targets. It should be noted that the numbers presented for drillholes in the table below represent all drillhole records, regardless of the status of the data concerned.

SECTION 2: REPORTING OF EXPLORATION RESULTS		
Criteria	**Explanation**	**Detail**

Project Area	Sampling Data Types	Historical datasets (Pre - 2007/2008) Quantity (Incl. Wedges)	Recent Datasets Quantity
Rietfontein	Drillhole Data	8	-
	Channel Chip Sample Data	2,265	-
Beta	Drillhole Data	7	20
	Channel Chip Sample Data	4,553	-
Frankfort	Drillhole Data	15	59
	Channel Chip Sample Data	3,187	864
CDM	Drillhole Data	115	-
	Channel Chip Sample Data	24,483	-
Olifantsgeraamte	Drillhole Data	1	-
	Channel Chip Sample Data	316	-
Vaalhoek	Drillhole Data	16	8
	Channel Chip Sample Data	3,836	-
	Stretch Values	1,472	-
Glynn's Lydenburg	Drillhole Data	-	-
	Channel Chip Sample Data	26,435	-
	Stretch Values	872	-
Theta Project (Theta Hill, Browns Hill & Iota section of Columbia Hill)	Drillhole Data	263	371
	Trench Sampling	-	10
	Channel Chip Sample Data	7,472	-
Columbia Hill (remaining)	Drillhole Data	26	-
	Channel Chip Sample Data	14,478	-
Hermansburg	RC Drillhole Data		79
DG1	RC Drillhole Data	-	
DG2	RC Drillhole Data	-	221
DG5	Grab Samples	-	≈100
	RC Drillhole Data	-	19
Glynn's Lydenburg TSF	Auger Drillhole Data	-	140
Blyde TSFs (1, 2, 3, 3a, 4, 5)	Auger Drillhole Data	-	86
TGM Plant	Auger Drillhole Data	-	34
Vaalhoek (Rock dump)	Bulk Sampling Data	-	1
	Trench Sampling Data	-	13
	Sampling Pit Data	-	57
South East (DGs) (Rock dump)	Bulk Sampling Data	50	-
Peach Tree (Rock dump)	Bulk Sampling Data	8	-
Ponieskrantz (Rock dump)	Bulk Sampling Data	10	-
Dukes Clewer (Rock dump)	Bulk Sampling Data	13	-

	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person	All the available drillholes on all projects and project types that were historically sampled and had the assay result available, were used for Mineral Resource estimation with the exception of four drillholes (in the case of Rietfontein) where out of eight drillholes, a total of four were excluded from the estimation due to excessive poor core recovery. All 10 drillholes drilled in 2012/2013 as well as three drillholes drilled in 2008 were only used for geological modelling due to the fact that the project was stopped due to budget constraints and the mineralised zones were never assayed.

SECTION 2: REPORTING OF EXPLORATION RESULTS		
Criteria	**Explanation**	**Detail**
	should clearly explain why this is the case.	
Data aggregation methods	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	All chip samples and drillhole samples were agglomerated. Data type biases were not investigated due to the small number of drillhole intersections. Where stretch values were used in the estimation these were composited to a 3 m composite based on a minimum stretch length. These values were treated separately and not included in the chip sample database. Areas utilising stretch values were immediately relegated to Inferred Mineral Resource classification. During the 2017-2019 drilling programme, in thin reef environments with reefs of <1 m (Upper Theta, Lower Theta and Beta Reefs) diluted (to 1 m) reef composites were utilised for evaluation purposes due to the minimum sample width obtained during the RC drilling being 1 m. In thick reef environments (Upper Rho, Lower Rho, Bevetts and Shale Reefs), individual original sample widths of 1 m were maintained for utilisation in 3D estimation.
	Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	All chip samples and drillhole samples were agglomerated. Data type biases were not investigated due to the small number of drillhole intersections. Where stretch values were used in the estimation these were composited to a 3 m composite based on a minimum stretch length. These values were treated separately and not included in the chip sample database. Areas utilising stretch values were immediately relegated to Inferred Mineral Resource classification. During the 2017-2019 drilling programme, in thin reef environments with reefs of <1 m (Upper Theta, Lower Theta and Beta Reefs) diluted (to 1 m) reef composites were utilised for evaluation purposes due to the minimum sample width obtained during the RC drilling being 1 m. In thick reef environments (Upper Rho, Lower Rho, Bevetts and Shale reefs), individual original sample widths of 1 m were maintained for utilisation in 3D estimation.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalents were calculated.
Relationship between mineralisation widths and intercept lengths	If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	For the historical drillhole intersections (as well as intersections pertaining to the 2017-2019 drilling campaign) no downhole lengths have been reported – only true reef widths have been recorded in the estimation database on the historical sampling plans and sections. All drilling was conducted near normal to bedding so is reef width would be very closely related to the intersection length due to the low dip of the orebody and the vertical drilling of the drillholes. Historical underground chip sampling is sampled normal to the dip of the reef so is therefore the true width.
		Only true width data is available. All significant grades presented in the estimation dataset represent the value attributable to the corrected sample width and not the real sampled length.
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drillhole collar locations and appropriate sectional views.	The TGM Mineral Resource is not a true greenfields exploration project but rather a mature mining operation with a wealth of historical underground chip sampling and drillhole intersections which have been collated, captured and digitised. The CPR has the detail diagrams of the sampling datasets for the various operations. These include chip samples and drillhole intersections.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be	The various Mineral Resource estimations were conducted by Minxcon and are based upon the information provided by TGM. This Mineral Resource Report contains summary information for all historic sampling and drilling campaigns within the Project Area, as well as new data obtained during the evaluation drilling conducted at the Theta Project and provides a representative range and mean of grades intersected in the datasets.

SECTION 2: REPORTING OF EXPLORATION RESULTS		
Criteria	**Explanation**	**Detail**
	practiced to avoid misleading reporting of Exploration Results.	
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	Various exploration campaigns have been conducted over the years but not all information is available or relevant to the current Mineral Resource update. No other exploration data other than that presented for the purposes of the Mineral Resource estimation is therefore presented here. TGM has undertaken additional drilling at Columbia Hill (Iota), Theta Hill, Browns Hill and Iota (Theta Project). This data has been incorporated in the current Mineral Resource estimate. TGM has completed and is still in the process of completing metallurgical testwork and studies for the recoveries of the various reefs. This testwork all forms part of the feasibility study that is being completed.
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).	The properties have a number of potential exploration targets that may increase the current Mineral Resource and Ore Reserve. These are spread over a number of the project areas and cover lateral extensions, depth extensions as well as compiling and re-interpreting historical datasets. The table below is a summary of the near-term potential exploration targets. The scale of the exploration depends on the available budget and therefore cannot be defined currently.

Project	Type of Potential	Comment
Rietfontein	Lateral and depth extensions	Lateral extension is possible to the south which is untested as well as at depth below the current historical mining areas
Beta	Lateral extension	Lateral extension of the main beta "Payshoot"
CDM	Lateral extension	Lateral extension to the south toward Dukes' Hill South
Theta	Lateral extension	Lateral extension to the south on both Theta Hill and Browns Hill once 341MR is available. Lateral extension to the west and southwest at Iota
Vaalhoek	Depth extensions and open-pit opportunities	Near surface potential (open pit) exists on the Vaalhoek Reef and Thelma Leaders Reef
Glynn's Lydenburg	Shallow lateral extensions	The new model has identified new high-grade exploration targets for possible near surface open pit opportunities
Columbia Hill	Shallow lateral extensions	The new geological interpretation has identified Columbia Hill as a potential open pit target that will be drilled in the near future

This table excludes all the other historical mines that have not been investigated yet.

	Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	The potential areas for the various mines have been detailed in the CPR. Detailed exploration strategy and budget has not been finalised due to the unknown available budget.

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**
Database integrity	Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.	Minxcon reviewed all historical datasets attributed to all the underground projects, as well as digital plans (scanned DXF plans of sampling plans) and found that captured sample positions had good agreement with those in the digital dataset except for a small number of chip samples (<1%), which Minxcon subsequently corrected. In addition, different versions of the underground sampling file were found and cross validated to test for data changes or eliminations over the years. Minxcon found that database integrity was maintained over time. The chip sampling data that was captured was also verified on an ad-hoc basis by different personnel as to the personnel that captured the data. Prior to estimation a duplicate check in Datamine Studio RM™ was carried out on the datasets to eliminate duplicate data point errors, and found that less than 2% of the population included duplicate captured sample points. Minxcon reviewed existing digital drillhole logs and assay sheets for the historical drilling relative to scans of drillhole strip logs and found very good agreement. In cases were errors were encountered, these were corrected and incorporated into a date-stamped database for sign-off prior to submission for Mineral Resource estimation. With regards to the 2017-2019 exploration campaign, assay data integrity was maintained by cross-validating MS Excel™ .csv assay results files from the laboratory with the .pdf files also provided by the Laboratory. Hard copy geological logs were kept as a means of referral with reference to the geological information captured in the project database.
	Data validation procedures used.	Minxcon reviewed all historical datasets attributed to all the underground projects, as well as digital plans (scanned DXF plans of sampling plans) and found that captured sample positions had good agreement with those in the digital dataset except for a small number of chip samples (<1%), which Minxcon subsequently corrected. In addition, different versions of the underground sampling file were found and cross validated to test for data changes or eliminations over the years. Minxcon found that database integrity was maintained over time. The chip sampling data that was captured was also verified on an ad hoc basis by different personnel as to the personnel that captured the data. Prior to estimation a duplicate check in Datamine Studio RM™ was carried out on the datasets to eliminate duplicate data point errors, and found that less than 2% of the population included duplicate captured sample points. Minxcon reviewed existing digital drillhole logs and assay sheets for the historical drilling relative to scans of drillhole strip logs and found very good agreement. In cases were errors were encountered, these were corrected and incorporated into a date-stamped database for sign-off prior to submission for Mineral Resource estimation. With regards to the 2017-2019 exploration campaign, assay data integrity was maintained by cross-validating MS Excel™ .csv assay results files from the laboratory with the .pdf files also provided by the Laboratory. Hard copy geological logs were kept as a means of referral with reference to the geological information captured in the project database.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	Minxcon personnel have consistently visited the gold properties in the Sabie-Pilgrims Rest area since 2007. Mr Uwe Engelmann, who is a Competent Person and who is responsible for the sign-off of the Mineral Resources, undertook a site visit to the Beta Mine on 15 December 2016, as well as on 23 November 2017 and 18 May 2018 to review the current RC and diamond drilling conducted at the Theta Project to inspect the drilling and sampling procedures. During the May visit Mr Engelmann also inspected the tailings storage facilities ("TSFs") and Vaalhoek Rock Dump for possible depletions. An additional site visit by Mr Engelmann was conducted on 10 April 2019 to review the close-out procedures associated with the protracted preceding drilling programme. The most recent site visit by Mr Uwe Engelmann was on 21 January 2020 to investigate the additional waste rock dumps for which the historical data was supplied by Mr Phil Bentley.

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**
	If no site visits have been undertaken indicate why this is the case.	Not applicable – refer to above.
Geological interpretation	Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	Four types of digital 3D geological models were created in Datamine Studio 3™ and Datamine Studio RM™ for the different types of orebodies within the TGM Projects. The four types of geological models relate to the type of orebodies encountered and include:- • Sub-vertical discordant (cross-reef) reef models • Sub-horizontal concordant (and leader) reef models • Topographical surficial reef models • Topographical TSF models The table below presents each of the four types of geological model and the projects that they were applied to:

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**

Geological Model Type	Project Area	Reef
Sub-vertical discordant (cross-reef) reef models	Rietfontein	Rietfontein
Sub-horizontal concordant (and leader) reef models	Beta (3D)	Beta
	Frankfort (2D)	Bevetts
		Theta
	CDM (2D)	Rho
	Olifantsgeraamte (2D)	Olifantsgeraamte
	Vaalhoek (3D)	Vaalhoek
		Thelma Leaders
	Glynn's Lydenburg (3D	Glynn's
	Theta Project (Theta Hill, Browns Hill & Iota section of Columbia Hill) (3D)	Shale Reefs
		Bevetts
		Upper Rho
		Lower Rho
		Upper Theta
		Lower Theta
		Beta
	Columbia Hill (3D)	Rho
		Shale
		Shale Leaders
Topographical surficial reef models	Hermansburg	Eluvial
	DG1	Eluvial
	DG2	Eluvial
	DG5	Eluvial
Topographical TSF models	Glynn's Lydenburg	Tailings
	Blyde 1	Tailings
	Blyde 2	Tailings
	Blyde 3	Tailings
	Blyde 4	Tailings
	Blyde 5	Tailings
	Blyde 3a	Tailings
	Vaalhoek	Rock Dump
	South East (DGs), Peach Tree, Ponieskrantz and Dukes Clewer	Rock Dump (manual)

The geological reef wireframes for the Concordant and Disconcordant mineralised zones for all the digital geological models were constructed by Minxcon geologists and are based upon mine development plans and historical surveyed peg files (honouring the on-reef development) provided by TGM. Where this information did not exist, Minxcon digitised the development, stoping outlines, pillars, chip sample data, geological mapping and interpretation data (where available) and survey pegs from digital scans of historical mine survey and sampling plans. Drillholes, survey pegs and thickness modelling were utilised to model the stacked concordant reefs for the Theta Project. The eluvial deposits and TSF models were also constructed by Minxcon geologists and are based upon surveyed contour lines (in the case of the TSFs) and drillhole collars. In the case of the eluvial deposits, topographical contours in conjunction with drillhole collars, were utilised to generate the geological and geographical 3D limits to the geological wireframe models.

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**
		Minxcon is of the view that the confidence in the geological wireframes is such that it supports the relevant Mineral Resource categorisation currently utilised in the Mineral Resource estimate.
	Nature of the data used and of any assumptions made.	Scanned plans were digitised to generate development strings. These were co-ordinated and repositioned relative to underground plans and survey pegs. Geological plans were also used in conjunction with limited underground geological mapping, underground survey pegs in conjunction with historical and new drillholes were used in the generation of the underground and open-pit project geological models.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The geological interpretation of the Sabie-Pilgrims Rest Goldfield (as discussed in the geology section) has not been re-interpreted but what Minxcon has undertaken is a process of collating, capturing and digitising the historical datasets (chip samples, drillhole intersections and historical plans into the electronic environment (GIS and Datamine) to assist in re-investigating the undiscovered potential at the different mines and re-estimation of Mineral Resources if there is potential. Due to the quality and volume of drilling conducted on the Theta Project during 2017-2019, Minxcon was able to generate a lithological model for the first time, which assisted greatly in correctly identifying and correlating individual reefs. In addition, the lithological modelling has played a significant role in the Mineral Reserving process associated with the Theta Project. The surficial or eluvial deposits utilised topographical control as opposed to geological control. The Mineral Resource estimation has been restricted to the hard boundaries defined in the geological interpretation in the form of faulting and outcrop lines. For Rietfontein, a maximum depth below surface of 440 m restricts the depth extension.
	The use of geology in guiding and controlling Mineral Resource estimation.	The geological reef wireframes for the various underground projects were constructed by a Minxcon geologist and are based upon mine development plans and historical surveyed peg files (honouring the on-reef development) provided by TGM. The resultant geological wireframes were then utilised as a closed volume to constrain the volume and spatial estimate of the Mineral Resources. Geological structures were constructed and utilised as hard boundaries for the purposes of Mineral Resource estimation. Due to the quality and volume of drilling conducted on the Theta Project during 2017-2019, Minxcon was able to generate a lithological model for the first time, which assisted greatly in correctly identifying and correlating individual reefs. In addition, the lithological modelling has played a significant role in the Mineral Reserving process associated with the Theta Project. The surficial or eluvial deposits utilised topographical control as opposed to geological control.
	The factors affecting continuity both of grade and geology.	The Mineral Resource estimation has been restricted to the hard boundaries defined in the geological interpretation in the form of faulting and outcrop lines. With regards Rietfontein a maximum depth below surface of 440 m restricts the depth extension.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	The block model extents for all the digital project models are shown in the table below. The block models cover all the structures modelled.

Geological Model Type	Project Area	Reef	Block Size			Block Model Dimension		
			X (m)	Y (m)	Z (m)	X (m)	Y (m)	Z (m)
Sub-vertical discordant (cross-reef) reef models	Rietfontein	Rietfontein	20	30	30	900	4020	1080
Sub-horizontal concordant (and leader) reef models	Beta	Beta	50	50	10	4350	4550	10
	Frankfort	Bevetts	20	20	10	2100	1580	10
	Clewer, Dukes Hill & Morgenzon	Rho	50	50	10	3100	7100	10
	Olifantsgeraamte	Olifantsgeraamte	20	20	1	800	1000	1
	Vaalhoek	Vaalhoek	20	20	10	2500	4380	10
		Thelma Leaders	20	20	10	2500	4380	10
	Theta Hill & Browns Hill	Beta	20	20	5	4000	3000	600
		Lower Theta	20	20	5	4000	3000	600
		Upper Theta	20	20	5	4000	3000	600
		Bevetts	20	20	5	4000	3000	600

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES									
Criteria	**Explanation**	**Detail**							
			Shales	20	20	5	4000	3000	600
		Iota section of Columbia Hill	Rho Upper	20	20	1	1140	1600	1820
			Rho Lower	20	20	1	1140	1600	1820
			Bevetts	20	20	1	1140	1600	1820
			Upper Theta	20	20	1	1140	1600	1820
		Glynn's Lydenburg	Glynn's	20	20	10	7840	7440	10
		Topographical surficial reef models	Hermansburg	Eluvial	20	20	3	240	360	87
			DG1	Eluvial	20	20	3	292	432	103
			DG2	Eluvial	20	20	3	58	560	213
		Topographical TSF models	Glynn's Lydenburg	Tailings	25	25	3	360	485	19
			Blyde 1	Tailings	25	25	3	340	260	20
			Blyde 2	Tailings	25	25	3	156	172	20
			Blyde 3	Tailings	25	25	3	155	190	23
			Blyde 4	Tailings	25	25	3	130	145	12
			Blyde 5	Tailings	25	25	3	95	60	12
			Blyde 3a	Tailings	25	25	3	120	135	7
			TGM Plant	Tailings	10	10	1.5	720	450	51
			Vaalhoek	Rock Dump	10	10	1	280	300	40
			South East (DGs)	Rock Dump	N/A	N/A	N/A	N/A	N/A	N/A
			Peach Tree	Rock Dump	N/A	N/A	N/A	N/A	N/A	N/A
			Ponieskrantz	Rock Dump	N/A	N/A	N/A	N/A	N/A	N/A
			Dukes Clewer	Rock Dump	N/A	N/A	N/A	N/A	N/A	N/A
		Block Plans and/ or Block Listings	Ponieskrantz*	Portuguese	N/A	N/A	N/A	N/A	N/A	N/A
			Frankfort Theta*	Theta	N/A	N/A	N/A	N/A	N/A	N/A
			Nestor*	Sandstone	N/A	N/A	N/A	N/A	N/A	N/A

Note: ** These historical mines have not been converted yet and are still manual ore resource block lists.*

Estimation and modelling techniques

The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.

Estimations were carried out utilising Ordinary Kriging for the latest estimations, with the exception of the TGM Plant tailings where Inverse distance squared was seen as most appropriate. The table shows the different estimations techniques per project and the number of domains used. Domains were based on data type available and structural boundaries. The search parameters informed by the variography for the various areas are presented in the table below with the minimum and maximum number of samples used in the estimation.

Project Area	Reef	Vgram Range		Est no Samples		Type Estimation
		Min	Max	Min	Max	
Rietfontein	Rietfontein	40	120	5	15	Ordinary Kriging
Beta	Beta	40	297	5	20	Ordinary Kriging
Frankfort	Bevetts	115	120	3	30	Ordinary Kriging
CDM	Rho	383	583	10	25	Ordinary Kriging
Olifantsgeraamte	Olifantsgeraamte					Ordinary Kriging
Vaalhoek	Vaalhoek	68.9	174.8	4	20	Ordinary Kriging
	Thelma Leaders	86.7	96.5	4	20	Ordinary Kriging
Theta Hill & Browns Hill	Beta	90.3	90.3	3	15	Ordinary Kriging
	Lower Theta	99.7	99.7	3	15	Ordinary Kriging
	Upper Theta	10.4	10.4	3	15	Ordinary Kriging
	Bevetts	89.5	89.5	3	15	Ordinary Kriging

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES								
Criteria	**Explanation**	**Detail**						
			Shale	79.6	79.6	3	15	Ordinary Kriging
		Iota section of Columbia Hill	Upper Theta	72	72	3	15	Ordinary Kriging
			Lower Rho	72	72	3	15	Ordinary Kriging
			Upper Rho	126.9	126.9	3	15	Ordinary Kriging
			Bevetts	72.2	72.2	2	10	Ordinary Kriging
			Shale	72.2	72.2	3	15	Ordinary Kriging
		Glynn's Lydenburg	Glynn's	75	488.5	3	30	Ordinary Kriging
		Hermansburg	Eluvial	25.8	25.8	12	40	Ordinary Kriging
		DG1	Eluvial	122.5	122.5	4	15	Ordinary Kriging
		DG2	Eluvial	85.8	85.8	4	15	Ordinary Kriging
		Glynn's Lydenburg	Tailings	92.3	195.8	4	40	Ordinary Kriging
		Blyde 1	Tailings	31.8	31.8	4	40	Ordinary Kriging
		Blyde 2	Tailings	30.1	30.1	4	40	Ordinary Kriging
		Blyde 3	Tailings	25.1	25.1	4	40	Ordinary Kriging
		Blyde 4	Tailings	30.7	30.7	4	40	Ordinary Kriging
		Blyde 5	Tailings	7.1	7.1	4	40	Ordinary Kriging
		Blyde 3a	Tailings	31.6	31.6	4	40	Ordinary Kriging
		TGM Plant	Tailings	120	120	2	10	Inverse distance Squared
		Vaalhoek	Rock Dump	18.2	32.9	2	40	Ordinary Kriging
		South East (DGs)	Rock Dump					Manual/Historic
		Peach Tree	Rock Dump					Manual/Historic
		Ponieskrantz	Rock Dump					Manual/Historic
		Dukes Clewer	Rock Dump					Manual/Historic
		Ponieskrantz*	Portuguese					Manual/Historic
		Frankfort Theta*	Theta					Manual/Historic
		Nestor*	Sandstone					Manual/Historic
		Note: ** These historical mines have not been converted yet and are still manual ore resource block lists.*						
		The Mineral Resource was then depleted with the mining voids. The estimation techniques applied are considered appropriate. Datamine Studio™ was utilised for the statistics, geostatistics and block model estimation.						
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.							

Project Area	Reef	Historic Estimate Available Yes/No
Rietfontein	Rietfontein	Yes
Beta	Beta	Yes
Frankfort	Bevetts	Yes
Clewer, Dukes Hill & Morgenzon	Rho	No – not a combined resource
Olifantsgeraamte	Olifantsgeraamte	Yes
Vaalhoek	Vaalhoek	No – not a complete electronic resource
	Thelma Leaders	No – not a complete electronic resource
Glynn's Lydenburg	Glynn's	No – not a complete electronic resource
Theta Hill & Browns Hill	Beta	No
	Lower Theta	No

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**

	Upper Theta	No
	Bevetts	No
	Shale	No
Iota section of Columbia Hill	Upper Theta	No
	Lower Rho	No
	Upper Rho	No
	Bevetts	No
Hermansburg	Eluvial	Yes
DG1	Eluvial	Yes
DG2	Eluvial	Yes
Glynn's Lydenburg	Tailings	Yes
Blyde 1	Tailings	Yes
Blyde 2	Tailings	Yes
Blyde 3	Tailings	Yes
Blyde 4	Tailings	Yes
Blyde 5	Tailings	Yes
Blyde 3a	Tailings	Yes
TGM Plant	Tailings	No – not from drill sampling
Vaalhoek	Rock Dump	Yes
South East (DGs)	Rock Dump	Yes
Peach Tree	Rock Dump	Yes
Ponieskrantz	Rock Dump	Yes
Dukes Clewer	Rock Dump	Yes
Ponieskrantz*	Portuguese	No
Frankfort Theta*	Theta	No
Nestor*	Sandstone	No

Note: ** These historical mines have not been converted yet and are still manual ore resource block lists.*

The assumptions made regarding recovery of by-products.

No investigation has been conducted with regards secondary mineralisation or correlation between pyrite and gold.

Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).

No estimates pertaining to deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation) have been conducted.

In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.

Geological Model Type	Project Area	Reef	Block Size			Block Model Dimension			Sample Spacing
			X	Y	Z	X	Y	Z	
Sub-vertical discordant	Rietfontein	Rietfontein	20	30	30	900	4020	1080	3-5 m

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES											
Criteria	Explanation	Detail									
		(cross-reef) reef models									
		Sub-horizontal concordant (and leader) reef models	Beta	Beta	50	50	10	4350	4550	10	3-5 m
			Frankfort	Bevetts	20	20	10	2100	1580	10	3-5 m
			Clewer, Dukes Hill & Morgenzon	Rho	50	50	10	3100	7100	10	3-5 m
			Olifantsgeraamte	Olifantsgeraamte	20	20	1	800	1000	1	3-5 m
			Vaalhoek	Vaalhoek	20	20	10	2500	4380	10	3-5 m
				Thelma Leaders	20	20	10	2500	4380	10	3-5 m
			Glynn's Lydenburg	Glynn's	20	20	10	7840	7440	10	3-5 m
			Theta Hill & Browns Hill	Beta	20	20	5	4000	3000	600	3-100 m
				Lower Theta	20	20	5	4000	3000	600	3-100 m
				Upper Theta	20	20	5	4000	3000	600	50-100 m
				Bevetts	20	20	5	4000	3000	600	50-100 m
				Shales	20	20	5	4000	3000	600	50-100 m
			Iota section of Columbia Hill	Rho Upper	20	20	1	1140	1600	1820	3-75 m
				Rho Lower	20	20	1	1140	1600	1820	50-100 m
				Bevetts	20	20	1	1140	1600	1820	50-100 m
				Upper Theta	20	20	1	1140	1600	1820	50-100 m
		Topographical surficial reef models	Hermansburg	Eluvial	20	20	3	240	360	87	25 m
			DG1	Eluvial	20	20	3	292	432	103	25 m
			DG2	Eluvial	20	20	3	58	560	213	25 m
		Topographical TSF models	Glynn's Lydenburg	Tailings	25	25	3	360	485	19	25 m
			Blyde 1	Tailings	25	25	3	340	260	20	25 m
			Blyde 2	Tailings	25	25	3	156	172	20	25 m
			Blyde 3	Tailings	25	25	3	155	190	23	25 m
			Blyde 4	Tailings	25	25	3	130	145	12	25 m
			Blyde 5	Tailings	25	25	3	95	60	12	25 m
			Blyde 3a	Tailings	25	25	3	120	135	7	25 m
			TGM Plant	Tailings	10	10	1.5	720	450	51	50 m
			Vaalhoek	Rock Dump	10	10	1	280	300	40	25 m
			South East (DGs)	Rock Dump	N/A	N/A	N/A	N/A	N/A	N/A	
			Peach Tree	Rock Dump	N/A	N/A	N/A	N/A	N/A	N/A	
			Ponieskrantz	Rock Dump	N/A	N/A	N/A	N/A	N/A	N/A	
			Dukes Clewer	Rock Dump	N/A	N/A	N/A	N/A	N/A	N/A	
		Block Plans and/ or Block Listings	Ponieskrantz*	Portuguese	N/A	N/A	N/A	N/A	N/A	N/A	
			Frankfort Theta*	Theta	N/A	N/A	N/A	N/A	N/A	N/A	
			Nestor*	Sandstone	N/A	N/A	N/A	N/A	N/A	N/A	

Note: ** These historical mines have not been converted yet and are still manual ore resource block lists.*

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**
		The Block Models produced in Datamine Studio RM™ consisting of a cell sizes as shown in the above table. Final estimated models were projected to the reef plan based on the structural interpretation.
	Any assumptions behind modelling of selective mining units.	No assumptions were made in terms of selective mining units with respect to the cell size selected.
Estimation and modelling techniques (continued)	Any assumptions about correlation between variables.	Grade (Au g/t) and reef width were estimated - no correlation between thickness and grade was found during the statistical analysis, however a cm.g/t value was calculated on a post estimation basis.
	Description of how the geological interpretation was used to control the resource estimates.	The Mineral Resource estimation has been restricted to the hard boundaries encompassed by the geological wireframes.
	Discussion of basis for using or not using grade cutting or capping.	The data sets were capped per domain and the following table indicates the minimum and maximum capping of the upper limits of the data sets. Minxcon utilised 'Cumulative Coefficient of Variation' plots to assist with the capping. Reef widths were capped in the same manner due to anomalies in the sampling thickness and generally occur between the 95th to the 99th percentile. CAE Studio RM™ was utilised for the statistics, geostatistics and block model estimation. Capping ranges as depicted in the table below represent capping range for the various domains per project. These are broken up in detail in the CPR.

Geological Model Type	Project Area	Reef	Capping		Number of Estimation Samples
			RW (cm)	Au (g/t)	
Sub-vertical discordant (cross-reef) reef models	Rietfontein	Rietfontein	236	123.5	2,262
Sub-horizontal concordant (and leader) reef models	Beta	Beta	170.0	300	4,566
	Frankfort	Bevetts	200-281	46.6-57.5	4,114
	Clewer, Dukes Hill & Morgenzon	Rho	50	314.5	24,693
	Olifantsgeraamte	Olifantsgeraamte	142	147.3	316
	Vaalhoek	Vaalhoek	335.3	411.4	16,652
		Thelma Leaders	54 -78	137-304	901
	Glynn's Lydenburg	Glynn's	105-281	100-134	29,444
	Theta Hill & Browns Hill	Beta	176	14.0	1,673
		Lower Theta	176	18.2	5,609
		Upper Theta	176	63.4	148
		Bevetts	N/A	14.0	155
		Shale	N/A	4.9	59
	Iota section of Columbia Hill	Upper Theta	N/A	9.1	39
		Lower Rho	N/A	23.0	680
		Upper Rho	N/A	212.0	208
		Bevetts	N/A	19.4	26
Topographical surficial reef models	Hermansburg	Eluvial	N/A	67.1	1,076
	DG1	Eluvial	N/A	8.55	784
	DG2	Eluvial	N/A	22.5	234

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**

Topographical TSF models	Glynn's Lydenburg	Tailings	N/A	1.8	793
	Blyde 1	Tailings	N/A	2.2	288
	Blyde 2	Tailings	N/A	2.1	176
	Blyde 3	Tailings	N/A	1.0	179
	Blyde 4	Tailings	N/A	0.9	104
	Blyde 5	Tailings	N/A	1.0	40
	Blyde 3a	Tailings	N/A	0.9	27
	TGM Plant	Tailings	N/A	2.6	288
	Vaalhoek	Rock Dump	N/A	4.1 -16.1	80
	South East (DGs)	Rock Dump	N/A	N/A	N/A
	Peach Tree	Rock Dump	N/A	N/A	N/A
	Ponieskrantz	Rock Dump	N/A	N/A	N/A
	Dukes Clewer	Rock Dump	N/A	N/A	N/A
Block Plans and/ or Block Listings	Ponieskrantz*	Portuguese	N/A	N/A	N/A
	Frankfort Theta*	Theta	N/A	N/A	N/A
	Nestor*	Sandstone	N/A	N/A	N/A

Note: ** These historical mines have not been converted yet and are still manual ore resource block lists.*

The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.

Swath analysis of the current estimated projects were conducted in the east-west and north-south directions in order to check correlations between the block modelled grades and the raw sampled values. Swath analysis shows a good correlation with the sample grade. In addition, correlation between the estimate and the average value of a block was investigated. Historic estimates (eluvials & TSFs and Olifantsgeraamte) were reviewed visually to ensure similar grade trends between drillholes or sampling points and the final block models. In addition, for the TSFs the mean sampled value was compared to the mean estimated value of the block models.

Moisture

Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.

The density is based on a dry rock mass.

Cut-off parameters

The basis of the adopted cut-off grade(s) or quality parameters applied.

The Mineral Resource has been split into underground Mineral Resources, open pit Mineral Resources and tailings dams.

The following parameters were used for the declaration and pay limit calculation: Gold price, % MCF, dilution, discount rate, plant recovery factor, mining cost total plant cost. The gold price of USD1,497/oz, is the 90th percentile of the historical real term commodity prices since 1980.

Description	Unit	Value
Gold Price	USD/oz	1,500
% MCF	%	90%
Dilution	%	0%
Plant Recovery Factor	%	90%
Mining Costs	ZAR/t	522
Total Plant Cost	ZAR/t	472
Total Cost	ZAR	994

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**
		For the open pit Mineral Resource cut-off, the following parameters were used. **Description / Unit / Value** Gold Price / USD/oz / 1,500 % MCF / % / 100% Dilution / % / 0% Plant Recovery Factor / % / 92% Mining Costs / ZAR/t / 24 Total Plant Cost / ZAR/t / 269 For the tailings Mineral Resource cut-off, the parameters were the same as above except the plant recovery factor which was 50% and the total mining and processing cost of ZAR135/t with a 10% discount. The resultant cut-offs were 160 cm.g/t for the underground (pay limit calculation); 0.5 g/t and 0.35 g/t for the Theta Project (economic cut-off calculation) for the open pit (with in the pit shell using Datamine Maxipit software) and 0.35 g/t for the tailings dam and rock dumps (pay limit calculation).
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	A minimum stoping width of 90 cm was assumed. Where reef width (or channel width) was less than 70 cm, dilution was increased accordingly. Elsewhere, the stoping width was calculated by adding 20 cm dilution to the Mineral Resource Estimation. No dilution was applied to the open pit Mineral Resources, nor the TSF Mineral Resources, with the exception of the new Theta Project where narrow reefs (<100 cm reef thickness) were diluted to 100 cm due to the drilling sample run achieved in the RC drilling programme being at 1 m intervals.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation	All of the ore will be be processed via cyanide leach and carbon adsorbsion as is done with most gold ores. A different recovery estimate was used for each mine and reef where applicable. The recovery assumed for Beta was 86% as it is known to be a free milling ore with limited preg-robbing caractaristics. Frankfort is a double refractory ore, with significant locked gold and preg-robbers. A 69% recovery was assumed. CDM also contains sulphides but historically gave fair recoveries, and 86% was assumed. The Theta Project has a number of reefs and a recovey for each was assumed. Recovery for the Upper Theta, Lower Theta and Beta composites are assumed to be 88.78%, 95.28% and 86.54% respectively. Bevetts, Shale and Rho Reefs were all assumped to gve 91.56 % recovery.

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**
	of the basis of the metallurgical assumptions made.	
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	No environmental factors or assumptions were applied to this Mineral Resource estimation.
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.	No historical bulk density measurement data is available besides a tabulated summary table indicating historically applied densities for the various in situ reefs. However, bulk density tests have been carried out for the Theta Project reefs host lithologies. Reef samples suitable for bulk density tests were however limited due to the poor core recovery achieved in the 2017-2019 diamond drilling programme. A density of 3.6 g/cm^3 was used for the calculation of in situ underground and open pit hard rock ore tonnes, in line with the value used in previous declarations. A density of 2.84 g/cm^3, which is the average density of dolomite, was used for the waste or dilution tonnes. The Rietfontein estimate uses a 2.9 t/m^3 based on historical assumptions and estimates. The Theta Project uses a bulk density of 2.75 t/m^3 for the estimation in areas where there was new drilling data. The historical 3.6 t/m^3 for reef and 2.84 t/m^3 for the dolomites were still used in the historical areas as there was no new data. In these areas the diluted reef density is in the region of 3.1 t/m^3. The 2.75 t/m^3 is based on the field testing of the core samples only as the RC chips could not be used due to the weathered nature and fine material in the samples. 156 density readings were taken on the available reef core of which 27 were not reliable due to high clay (WAD) content and fine material. For the 129 representative core samples the density was 2.69 t/m^3 and for the solid core (53 samples) it was 2.78 t/m^3. Therefore, a density of 2.75 t/m^3 was utilised. More work is required on the density with further drilling campaigns to obtain more readings and a higher level of confidence in the density. The density is one of the reasons that the Mineral Resource categories in the Theta Project are only Indicated and Inferred with no Measured Mineral Resources. Densities were determined utilising the Archimedes principle. Bulk density for the eluvial deposits was assumed at 2.3 t/m^3 based on typical unconsolidated material densities. Minxcon used an SG of 1.4 t/m^3 for the modelling of all of the historical TSFs, with the exception of the TGM Plant TSF, where SG measurements were conducted utilising the “pipe method”. The SG for this TSF was calculated at 1.54 t/m^3 from a total of 40 samples taken at various locations all over the TSF. In Minxcon’s view this SG may be considered to representative for this TSF.

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**
	The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.	The pipe method (as utilised on the TGM Plant TSF) of measuring bulk density is utilised on soft sediments and is conducted in such a manner as to ensure that little to no compaction of the material within the pipe occurs. This serves to preserve the inherent sediment porosity.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	No historical bulk density measurement data is available besides a tabulated summary table indicating historically applied densities for the various in situ reefs. However, bulk density tests have been carried out for the Theta Project reefs host lithologies. Reef samples suitable for bulk density tests were however limited due to the poor core recovery achieved in the 2017-2019 diamond drilling programme. A density of 3.6 g/cm3 was used for the calculation of in situ underground and open pit hard rock ore tonnes, in line with the value used in previous declarations. A density of 2.84 g/cm3, which is the average density of dolomite, was used for the waste or dilution tonnes. The Rietfontein estimate uses a 2.9 t/m3 based on historical assumptions and estimates. The Theta Project uses a bulk density of 2.75 t/m3 for the estimation in areas where there was new drilling data. The historical 3.6 t/m3 for reef and 2.84 t/m3 for the dolomites were still used in the historical areas as there was no new data. In these areas the diluted reef density is in the region of 3.1 t/m3. The 2.75 t/m3 is based on the field testing of the core samples only as the RC chips could not be used due to the weathered nature and fine material in the samples. 156 density readings were taken on the available reef core of which 27 were not reliable due to high clay (WAD) content and fine material. For the 129 representative core samples the density was 2.69 t/m3 and for the solid core (53 samples) it was 2.78 t/m3. Therefore, a density of 2.75 t/m^3 was utilised. More work is required on the density with further drilling campaigns to obtain more readings and a higher level of confidence in the density. The density is one of the reasons that the Mineral Resource categories in the Theta Project are only Indicated and Inferred with no Measured Mineral Resources. Densities were determined utilising the Archimedes principle. Bulk density for the eluvial deposits was assumed at 2.3 t/m^3 based on typical unconsolidated material densities. Minxcon used an SG of 1.4 t/m^3 for the modelling of all of the historical TSFs, with the exception of the TGM Plant TSF, where SG measurements were conducted utilising the “pipe method”. The SG for this TSF was calculated at 1.54 t/m^3 from a total of 40 samples taken at various locations all over the TSF. In Minxcon’s view this SG may be considered to representative for this TSF.
Classification	The basis for the classification of the Mineral Resources into varying confidence categories.	The Mineral Resource classification for the all the block models is based on a positive kriging efficiency, calculated variogram ranges and number of samples informing the estimation. Where confidence in the historical sampling values or position were low the classification was downgraded to Inferred Mineral Resource. At the Theta Project, the highest Mineral Resource classification applied was Indicated (regardless of data spacing: 1) Historical nature associated with the chip sampling dataset, stretch values and block values and around the historical drillholes. 2) The low availability of detailed bulk density data 3) the low volume of diamond drilling conducted at the Project.
	Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values,	Mineral Resources were only classified as Indicated and Inferred Mineral Resources in the vast majority of cases due to the age and spacing of the data utilised. Measured Mineral Resources were only identified on a small portion of Frankfort due to the recent nature of some areas of the channel chip sampling data. Minxcon utilised a combination of variogram ranges, spread in confidence limits and minimum number of samples to be utilised in the estimate, in conjunction with geological continuity to assign Mineral Resource categories.

SECTION 3: ESTIMATION AND REPORTING OF MINERAL RESOURCES		
Criteria	**Explanation**	**Detail**
	quality, quantity and distribution of the data).	At the Theta Project, the highest Mineral Resource classification applied was Indicated (regardless of data spacing: 1) Historical nature associated with the chip sampling dataset, stretch values and block values and around the historical drillholes. 2) The low availability of detailed bulk density data 3) the low volume of diamond drilling conducted at the Project. The additional rock dumps (South East (DGs), Peach Tree, Ponieskrantz and Dukes Clewer) have all been classified as Inferred Mineral Resources due to the historical nature of the database. A bulk sampling programme would have to be undertaken to confirm the Mineral Resource in order for them to be converted to an Indicated Mineral Resource.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	It is the Competent Person's opinion the Mineral Resource estimation conducted by Minxcon is appropriate and presents a reasonable result in line with accepted industrial practices.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	Minxcon, as well as the Competent Person, conducted internal reviews of the Mineral Resource estimate, geological modelling and the data transformations from 2D to 3D.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.	Upon completion of the estimations, the older block models were visually checked with regards to the drillholes and sample points to the estimated values. Swath plot analysis was carried out on the newly estimated block models, comparing the chip samples and drillholes in a particular swath to the estimation block model also falling within the same swath. The swath plots produce a good correlation with regards the estimation and the data in both the north-south plots and the east-west plots. The Competent Person deems the Mineral Resource estimate for the current estimated projects. The estimation conducted at the Theta Project underwent similar swath and visual checks as the historical Mineral Resource block model estimates. The Competent Person deems the Mineral Resource estimate for the Current Estimated Projects to reflect the relative accuracy relative to the Mineral Resource categories as required by the Code for the purposes of declaration and is of the opinion that the methodologies employed in the Mineral Resource estimation, based upon the data received may be considered appropriate.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	Regional accuracy is considered acceptable as evidenced by the swath plots, and direct sample point versus block model checks have ensured acceptable local accuracy with regards the estimated Projects.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	Accuracy of the estimate relative to production data (historical projects) cannot be ascertained at this point as the project is still in the exploration phase. Accurate historical production figures are not readily available. At the Theta Project, a feasibility study has been completed with no accurate production data being available from the historical workings for the various reefs. Production has not commenced, thus "ground-truthing" at this point is not possible. Also, proposed open pit mining methods are not aligned to the historical underground mining methods employed.

SECTION 4: ESTIMATION AND REPORTING OF ORE RESERVES		
Criteria	**Explanation**	**Detail**
Mineral Resource estimate for conversion to Ore Reserves	Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.	Ore Reserves and mining were investigated for the Beta, Frankfort and CDM underground operations and the Theta Project (Theta Hill, Browns Hill and Iota Pit). The Ore Reserve estimation utilises the same Mineral Resource models used for the Mineral Resource classification. No Mineral Reserve cut-offs have been applied to the underground operations. The Theta Project conversion to Ore Reserves includes an Ore Reserve grade cut-off determined during the pit optimisation process with the relevant geological losses applied as part of the conversion factors.
	Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	All Mineral Resources are stated as inclusive of the Ore Reserves.
Site visits	Comment on any site visits undertaken by the Competent Person and the outcome of those visits.	The Competent Person Mr van Heerden has conducted a number of site visits of the gold properties held by TGM in the Sabie-Pilgrims Rest area since 2007. Mr van Heerden vistied Project Area throughout 2019 to become familiar with project location and state of the land. From the site visits, an understanding of the potential layouts of the pits, infrastructure and infrastructure routes was formulated, as well as a general understanding of the practical design consideration. Further site visits were conducted on 7 March 2019 and 5 November 2019 with the purpose of introducing the potential mining contractors with the areas of interest, plant and pit areas, infrastructure build requirements and rock characteristics. On 22 September 2019, the Rietfontein Project was also visited with the purpose to identify access options for underground operations.
	If no site visits have been undertaken indicate why this is the case.	Site visits have taken place, as described above.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	The Frankfort Mine is the only underground operation for which Measured Mineral Resources have been declared. The underground operations are at a Pre-Feasibility Level of Study and Measured Mineral Resources and Indicated Mineral Resources have been converted to Proved and Probable Ore Reserves respectively, using the appropriate modifying factors. No Measured Mineral Resources have been declared for the Theta Project. The Theta Project is at a Pre-Feasibility Study Level and Indicated Mineral Resources in the Theta Project have been converted to Probable Ore Reserves by having applied the required modifying factors.
	The Code requires that a study to at least Prefeasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	Detailed LoM plans and schedules have been completed for the underground operations and the Theta Project. Some components are at a Feasibility Study Level with other components such as a geotechnical study at Pre-Feasibility Study Level. The studies conducted on the underground operations and Theta Project have been deemed at an overall PFS Level. Life of mine plans to a feasibility level of detail was the basis of the Ore Reserve classification. The mine plans take into consideration all relevant modifying factors and productivities. A financial valuation was conducted on the life of mine plans and was found econically viable.
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	No cut-off was applied to the Beta, Frankfort and CDM Mines. A planning pay limit for each of the underground operations was calculated using current economic planning parameters. The planning pay limit was applied to the Mineral Resource model and blocks above the planning pay limit were included in the LoM designs. The planning pay limits applied to the underground operations are:

SECTION 4: ESTIMATION AND REPORTING OF ORE RESERVES		
Criteria	**Explanation**	**Detail**
		• Beta Mine: 170 cm.g/t; • Frankfort Mine: 163 cm.g/t; and • CDM Mine: 121 cm.g/t The cut-off parameters was determined by completing a pit optimisation. The pit optimisation determines a range of economically viable pits from the pit optimisation inputs. A separate pit selection process followed where an economically viable pit shell was selected to be used as a template for mine design. The cut-off for the pit optimisation results determined in the optimisation software is 0.42 g/t. Understanding that all the tonnes in the pits will be mined an additional cut-off was calculated to determine the processing cut-off grade of 0.4 g/t which is applied as the Ore Reserve cut-off.
Mining factors or assumptions	The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).	Only Measured and Indicated Mineral Resources have been converted to Proved and Probable Ore Reserves, respectively. No Inferred Mineral Resources have been included in the Ore Reserve estimation. The basis of the Ore Reserve estimation is detailed LoM designs and schedules for both the underground operations and the Theta Project. The Mineral Resource to Ore Reserve conversion requires application of appropriate factors which would account for any changes to the Mineral Resources in the life of mine plan as a result of mining the ore. As part of the technical studies the Ore Reserve conversion factors were determined and applied to the Mineral Resources in the LoM plan available for conversion to reserves.
	The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.	The mining method selected to be implemented on the undergournd operations at Beta Mine, Frankfort Mine and CDM Mine, is mechanised long hole drilling applied to a narrow reef orebody. The mining method requires pre-development of a mining block in preparation for stoping operations. Resue mining will be applied to the development ends allowing separate extraction of the reef and waste cuts. The selected mining method allows for minimal dilution. The mining method selected for the Theta is modified terrace mining and is suited to the mountainous profile of the current topography. The orebodies are considered stratified and on an inclined mountain. The steeply dipping nature of the mountain and relatively small scale of the operation eliminated the use of draglines and conventional strip mining. To overcome the steeply dipping orientation, the ore will be extracted on a flat surface whereby all the ore are extracted on the horizontal plane via ripping, loading and hauling.
	The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.	Geotechnical studies for the Frankfort and Beta Mines have been completed at a PFS level. The recommendations as per the geotechnical reports have been applied to the Mineral Resources in the loM plan to account for Pillar Losses. No geotechnical studies for the CDM Mine has been conducted and a Pillar Loss of 10% which is similar to the Beta and Frankfort operations have been applied. A combined overall slope angle of 40° was selected to accommodate all the rock type in the Theta Project. The selected slope angle is well in the range of the recommended slope angles.
	The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).	Geological Losses applied to the underground operations are 0 % for Measured Mineral Resources, 5 % for Indicated Mineral Resources and 10 % for Inferred Mineral Resources. Geological Losses applied to the Theta Project are 5% for the Indicated Mineral Resources, and 10% for the Inferred Mineral Resources.
	The mining dilution factors used.	The Ore Reserve conversion factors applied to the underground operations are detailed in the table below.

SECTION 4: ESTIMATION AND REPORTING OF ORE RESERVES		
Criteria	**Explanation**	**Detail**

Ore Reserve Conversion Factors Applied to Underground Operations

Area	Mining Factors	Unit	Value
Underground Operations	Pillar Loss Beta and CDM	%	10
	Pillar Loss Frankfort	%	11
	Oreloss	%	0.5
	Dilution	%	1

The pillar loss applied to the Frankfort Mine is higher than the pillar loss applied to the Beta and CDM operations. The pillar loss applied to the Frankfort Mine was derived from the geotechnical study conducted.

The dilution factors applied due to dilution and ore loss for the Theta Project open pits are illustrated in

Ore Reserve Conversion Factors Applied to the Theta Project

Orebody Descriptions	Avg. Reef Width	Ore Loss	Dilution
	cm	%	%
Beta	100	10.00%	10.00%
Upper Theta	100	10.00%	10.00%
Lower Theta	100	10.00%	10.00%
Bevetts	229	4.37%	4.37%
Upper Theta	100	10.00%	10.00%
Lower Theta	100	10.00%	10.00%
Bevetts	184	5.43%	5.43%
Shales	206	5.43%	5.43%
Lower Theta	114	8.77%	8.77%
Bevetts	114	8.77%	8.77%
Upper Rho	361	2.77%	2.77%
Lower Rho	550	1.82%	1.82%

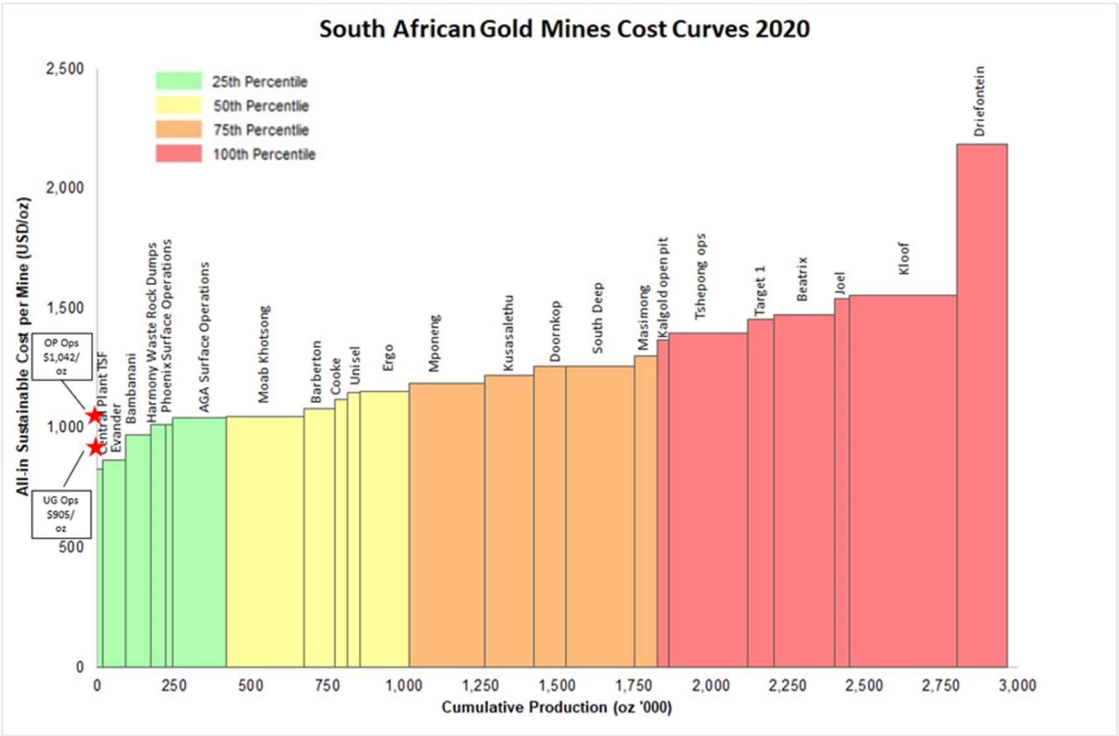
	The mining recovery factors used.	A MCF of 100% was applied to the Theta Project as the product accounted for and product called for will have the necessary measuring methods in place so that all the product will be accounted for in the Theta Project. A MCF of 85 % was applied to the underground operations which was derived from similar operations using a similar mining layout and mining method.
	Any minimum mining widths used.	A minimum mining width of 60 cm was applied in the design of the underground operations. A 10 cm hangingwall and 10 cm footwall dilution is included in the 60 cm mining width that will be used in the development end resue mining and stoping operations. No minimum mining widths was used in the design of the Theta Project as the ripping of the dozers can rip the minimum orebody widths.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	The underground LoM designs and schedules of the Beta, Frankfort and CDM mines includes a portion of Inferred Mineral Resources. The Inferred Mineral Resources have been excluded from the Ore Reserve estimate and the economic analysis. The Inferred Mineral Resources in the LoM plan for the underground operations are: • Beta Mine: 3.83%; • Frankfort Mine: 21.92%

SECTION 4: ESTIMATION AND REPORTING OF ORE RESERVES		
Criteria	**Explanation**	**Detail**
		• CDM Mine: 25.71% The Inferred Mineral Resources in the Theta Project contain 8.10% of the total 2,355 kt Mineral Resource which adds up to 191 kt. The Inferred Mineral Resources cannot be included as Ore Reserves and were excluded from the economic analysis.
	The infrastructure requirements of the selected mining methods.	Infrastructure for the selected mining method includes:- • Mining contractor site – Earth Moving Vehicle workshops, stores, offices, changing facilities, fuel storage facility, wash bay and contractor's site power and water supply; • Administrative and other offices and facilities; • Underground trackless mining fleet and anciliray fleet; • Haul roads; • Waste rock dumps ("WRDs"); • Strategic ore stockpile; • RoM stockpile; • Topsoil stockpile; • Surface water management infrastructure – Dirty and clean water separation and storage and pit dewatering system. • Underground water management infrastructure – Dewatering system and water storage facilities. • Water supply and distribution infrastructure; • Power supply and distribution infrastructure; • Underground ore transport (Conveyor systems and Incline Winding Plant; • Surface ore load out and storage facilities; and • Low level river crossing.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	The OP-Plant wil treat the free milling ore from the Theta Project with the conventinal CIL process. Refractory Frankfort ore will be upgraded with DMS to reject some of the waste rock before the ore is trucked from the shaft to the plant. The UG-Plant will firstly remove the preg-robber and then with Ultrafine Grinding to liberate the sullphide locked gold.
	Whether the metallurgical process is well-tested technology or novel in nature.	Most of the gold ore in the world are cyanide leached and adsorbed onto activated carbon is eather a CIL or CIP configuration. DMS is frequently used to concentrate ores, including gold. Ultrafine grinding is widely used in gold and other commodities to extract metals from sulphides.
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	One grab sample was taken from the Beta mine and subjected to XRD and diagnostic leach. Four grab samples were taken from the available faces at the Frankfort mine and subjected to XRD and diagnostic leach by MSA. Following the poor recoveries achieved from the diagnostic leach the samples were sent for ultrafine grinding and then a bottle roll cyanide leach. No recent metallurgical testwork data was available for CDM. The daily production report from the old plant for May 2006 was used to estimate the recovery. Composite samples were mode from RC Drilling chips to represent Upper Theta, Lower Theta and Beta. A master composite of these three was also tested. Tested done included diagnostic leach, kinetic leach and the effect of grind.
	Any assumptions or allowances made for deleterious elements.	The significant amounts of preg-robbers in the Frankfort ore will be removed by a flotation circuit. Additionally, the Frankfort ore will be treated in a intensive CIL which will further reduce the effect of the preg-robber. A cyanide destruction circuit was included in the plant design which will ensure that the weak acid dissociable ("WAD") cyanide concentration in the tailings fraction that will be pumped to the TSF does not exceed the stipulated maximum level of 50 ppm.
	The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered	No bulk sampling was completed.

SECTION 4: ESTIMATION AND REPORTING OF ORE RESERVES		
Criteria	**Explanation**	**Detail**
	representative of the orebody as a whole.	
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	Specifications are not applicable. The product will be sold as gold Doré to Rand Refinery with payability calculated based on the final gold content.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	Owing to topography and the environmentally sensitive nature of the Theta Project Area a number of locations have been considered for the placement of WRDs for the open pit mining operation. The Theta Project Area has been sub-divided into two main areas. The first being the Browns Hill and Theta Hill area and the second the Iota area. Two WRD locations has been considered for each of these areas. All options have been designed in CAD mine design software and a preferred option chosen from a mining and engineering perspective. Waste rock from the TGM underground projects considered in the detailed studies will be placed on existing WRD's located at the CDM operation. Waste from the underground operations will be very limited as it will be placed in the stoping back areas and all development will be conducted on reef. Two options have been considered for the disposal of mine resude or tailings, and they will be used at the same time. There is an existing TSF that will be used for the initial deposition. This TSF will be brought up to the latest standards such as inclusion of an HDPE liner. Deposition on the TSF will be be both hydraulic placement and dry stacking. The second disposal option is storage of tailings underground as a cemented paste backfill in the mined-out sections of the Beta Mine. Both these options will require relvant approvals which are still in progress.
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	The Theta Project Area is well established. Access roads are available and in a serviceable condition. The TGM underground projects considered in the detailed studies are historical project with established access roads leading to the individual project areas. Road require some minor repairs and upgrades in areas. Power supply to the Theta project is available on site and with some expansion / upgrades on the power supply system power supply capacity to the project will be sufficient. The TGM underground projects considered in the detailed studies does not currently grid power supply available. Power will be supplied to the CDM and Frankfort underground projects via diesel generators over their life of mine. The Beta underground project will initially be supplied with power from diesel generators and once the grid power supply in the area have been upgraded, grid power supply will be put in place for this project area. Based on a total project static water balance (includes – mine, processing plant and TSF) the project will be water positive during the wet season (October – March) and water negative during the dry months. Allowance has been made for the treatment of excess water as well as for a pumping system to supply any short falls of water. Additional make up water will be sourced from the Blyde River. Additional make up water sourced from the Blyde River is well within the allowable limits as stipulated in the existing water use licence ("WUL"). The TGM underground projects considered in the detailed studies will mainly be supplied with water from flooded underground workings and captured dirty rainwater. Provision have been made for boreholes that couldl supplement the water supply system if required.

SECTION 4: ESTIMATION AND REPORTING OF ORE RESERVES		
Criteria	**Explanation**	**Detail**
		Potable water to the underground projects will be supplied from trucking of potable water from the town of Pilgrims Rest. Water available to the project is deemed to be sufficient. Gold from the TGM projects considered in the detailed studies, will be transported from site to Rand Refineries via helicopter. Allowance has been made for the construction of a Helistop on site for this purpose. Well established roads are in place in the project areas that allows for easy access and transport of material and equipment to and from the projects. The TGM projects considered in the detailed studies are located in an area of Mpumalanga which has long been associated with mining. Skilled labour can be sourced from nearby towns such as Lydenburg, Nelspruit and Steelpoort. Towns such as Lydenburg, Graskop and Sabie are well developed with facilities such as hospitals, police stations, schools and churches. These towns are located within 57 km of the Theta project and can thus provide accommodation to employees of the project.
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Capital costs were estimated from first principles and engineering designs. Bills of quantities were utilised to obtain quotations for the capital cost estimation. The project capital has a base date of February 2021 and an exchange rate of ZAR/USD 15.06 were utilised where applicable to convert to USD terms.
	The methodology used to estimate operating costs.	The mining and central services operating costs for the underground operations were derived from first principles cost estimations with some factoring. The mining operating costs for the open pit operations are sourced form budget quotes received from reputable contactors. The open pit central services cost was estimated from first principles and provided by TGM. The plant operating costs were completed from first principles with consumable supplier quotes utilised were necessary. The corporate overheads were provided by TGM. Environmental and Social costs were calculated using the quatums provided by the Client as part of the Environmental Authorisation process.
	Allowances made for the content of deleterious elements.	Allowance has been made for the costs associated with removal of deleterious elements (WAD cyanide) prior to deposition onto the TSF.
	The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.	The price forecasts are based on forecasts from Consensus Economics which considers various brokers and analyst forecasts; the long-term price was derived using an in-house model based on the real historic price trends.
	The source of exchange rates used in the study.	The exchange rate forecasts are based on forecasts sourced from various South African banks (ABSA, Investec, First National Bank and Nedbank) with the long-term exchange rate calculated using an in-house model based on the historic purchasing price parity of the Rand to the Dollar.
	Derivation of transportation charges.	Transport costs are based on indicative rates sourced from Rand Refinery; a conservative estimate has been used.
	The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.	Gold specification, refining charges and penalties are as per refining offer from Rand Refinery.

SECTION 4: ESTIMATION AND REPORTING OF ORE RESERVES		
Criteria	**Explanation**	**Detail**
	The allowances made for royalties payable, both Government and private.	The refined Mineral and Petroleum Resources Royalty Act formula was used for this Project.
Revenue factors	The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.	The head-grade is based on an Ore Reserve LoM plan. The price forecasts are based on forecasts from Consensus Economics which considers various brokers and analyst forecasts; the long-term price was derived using an in-house model based on the real historic price trends. The exchange rate forecasts are based on forecasts sourced from various South African banks (ABSA, Investec, First National Bank and Nedbank) with the long-term exchange rate calculated using an in-house model based on the historic purchasing price parity of the Rand to the Dollar. Transport costs based on indicative rates sourced from Rand Refinery, conservative estimate used. Gold specification, refining charges, penalties and payabilities as per refining offer from Rand Refinery.
	The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	No co-products.
Market assessment	The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.	• Gold demand fell by 10% year-on-year ("y-o-y") in the first three quarters of 2020 compared to 2019 primarily due to a slump in consumer demand as the world continues to fight the Covid-19 pandemic. • Global central bank reserves grew by 247 t (-53% y-o-y), with Q3 seeing net sales for the first time since 2010. • Total gold supply declined by 5% to y-o-y in the first three quarters of 2020 to 3,394 t primarily attributed to Covid-19 restrictions hampering both mining and recycling production. • The gold price averaged USD1,770/oz in 2020, and in August 2020 broke the USD2,000/oz barrier for the first time. The gold price ended the year at USD1,883/oz. The elevated pricing was driven largely by global uncertainty and investors looking for safe-haven assets. The global economy has been hit hard by the COVID-19 pandemic, with the IMF having projected a 4.9% contraction in global growth in 2020. Economic recovery is also unlikely to be swift, with a U-shaped recovery or even W-shaped recovery due to recurring waves of infection being the most realistic outcome (World Gold Council, 2020). The high levels of uncertainty coupled with long-lasting impact to investor portfolio performance make gold an attractive asset.

SECTION 4: ESTIMATION AND REPORTING OF ORE RESERVES		
Criteria	**Explanation**	**Detail**
	A customer and competitor analysis along with the identification of likely market windows for the product.	 Note: Various operations are inclusive of waste rock dumps mining or tailings retreatment operations which could skew costs Gold dorè will be produced for sale. In the case of the Theta Project, Rand Refinery shall refine the material and if requested - sell, on their behalf. When compared to South African gold miners, the TGM operations are in the lower quartile on an AISC basis with an AISC of USD905/oz and USD1,042/oz for the UG operations and OP operations, respectively (excluding initial capital).
	Price and volume forecasts and the basis for these forecasts.	Volume forecasts based on reserve LoM plan. The price forecasts are based on forecasts from Consensus Economics which considers various brokers and analyst forecasts; the long-term price was derived using an in-house model based on the real historic price trends.
	For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	N/A
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.	In generating the financial model and deriving the valuations, the following were considered:- • This Report details the optimised cash flow model with economic input parameters. • The cash flow model is in real money terms and completed in ZAR. • The DCF valuation was set up in months starting April 2021, but also subsequently converted to calendar years.

<table>
<tr><th colspan="3">SECTION 4: ESTIMATION AND REPORTING OF ORE RESERVES</th></tr>
<tr><th>Criteria</th><th>Explanation</th><th>Detail</th></tr>
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- The annual ZAR cash flow was converted to USD using real term forecast exchange rates (Median of bank forecasts) to provide real results in this currency.
- A company hurdle rate of 5.0% (in real terms) was utilised for the discount factor.
- The impact of the Mineral Royalties Act using the formula for refined metals was included.
- Sensitivity analyses were performed to ascertain the impact of discount factors, commodity prices, exchange rate, grade, operating costs and capital expenditures.
- Valuation of the tax entity was performed on a stand-alone basis.
- The full NPV of the operation was reported for the Theta Project.
- No Inferred Mineral Resources was considered for the economic analysis.

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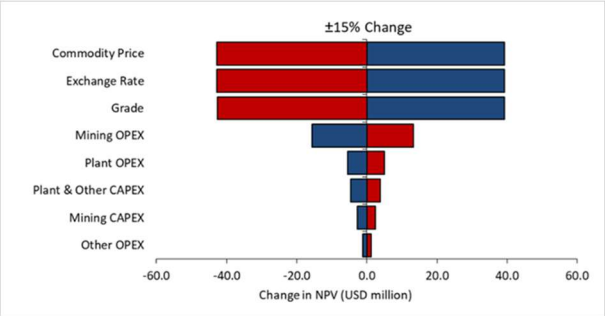
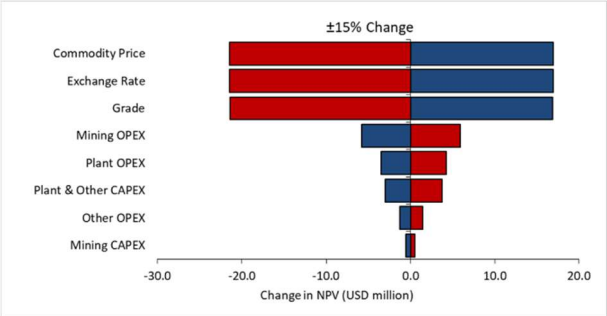
<tr><td>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</td><td>

UG Operations



OP Operations



The Project is most sensitive to the gold price, exchange rate, and grade, followed by mining and plant operating costs. The project is least sensitive to capital and other operating costs.

Real Discount Rate	Unit	UG Operations	OP Operations	UG & OP Operations
NPV @ 0%	USDm	122.9	34.1	153.7
NPV @ 2.5%	USDm	105.7	27.4	130.5
NPV @ 5%	**USDm**	**91.2**	**21.9**	**111.2**
NPV @ 7.5%	USDm	79.0	17.4	94.9
NPV @ 10%	USDm	67.6	13.4	79.9
NPV @ 12.5%	USDm	59.7	10.7	69.6
NPV @ 15%	USDm	52.1	8.2	59.7

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<tr><td>Social</td><td>The status of agreements with key stakeholders and matters leading to social licence to operate.</td><td>

A public participation process has taken place as part of the 83MR Section 102 amendment process for inclusion of the Theta Project to establish community views and potential project impacts and incorporate social upliftment measures into the social strategy. Social engagement is ongoing until such time as the EA has been approved. A revised SLP has been submitted.

It is noted that as at the effective date, illegal mining operations are active at the CDM site. This may delay CDM project commencement and appropriate arrangement for the removal of these illegal miners should be initiated.

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SECTION 4: ESTIMATION AND REPORTING OF ORE RESERVES		
Criteria	**Explanation**	**Detail**
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	-
	Any identified material naturally occurring risks.	No material naturally occurring risks have been identified.
	The status of material legal agreements and marketing arrangements.	There are no legal or marketing agreements in place for the Project.
	The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	Commissioning of the Project can only commence once all permits and authorisations have been approved. A Section 102 amendment application has been submitted to the DMRE for the addition of the Theta Project. Currently, a WULA process is underway to authorise the anticipated water uses at the open pit project. An EA process is also underway.
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	The appropriate category of Ore Reserve is determined primarily by the relevant level of confidence in the Mineral Resource. The Mineral Resource estimate, which includes all the project areas for TGM, was the basis of the Ore Reserve estimation for the Theta Project. The level of confidence in the Indicated Mineral Resource is sufficient to convert to Probable Ore Reserves.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The results as presented appropriately reflect the CP's view of the deposit.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	No Measured Mineral Resources was converted to Probable Ore Reserves.
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	No external audits or reviews of the Theta Project Ore Reserves have been conducted.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures	The appropriate category of Ore Reserve is determined primarily by the relevant level of confidence in the Mineral Resource. The global Mineral Resource estimate, which includes all the project areas for TGM, was the basis of the local Ore Reserve estimation for the Theta Project. The level of confidence in the Indicated Mineral Resource is sufficient to convert to Probable Ore Reserves.

SECTION 4: ESTIMATION AND REPORTING OF ORE RESERVES		
Criteria	**Explanation**	**Detail**
	to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	The global Mineral Resource estimate, which includes all the project areas for TGM, was the basis of the local Ore Reserve estimation for the Theta Project.
	Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.	The modifying factors applied were determined by technical studies at the appropriate level of confidence producing a mine plan and production schedule that is technically achievable and economically viable. The overall slope angles was determined with limited geotechnical information and requires additional technical work before project execution. A conservative approach was followed with the selection of the slope angles and any changes will have a minimal impact on the overall project.
	It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	No previous Ore Reserve statements are available. However, the modifying factors were determined by technical studies and based on current operations utilising the selected mining method and are at the appropriate level of confidence to produce a mine plan and production schedule that is technically achievable and economically viable.