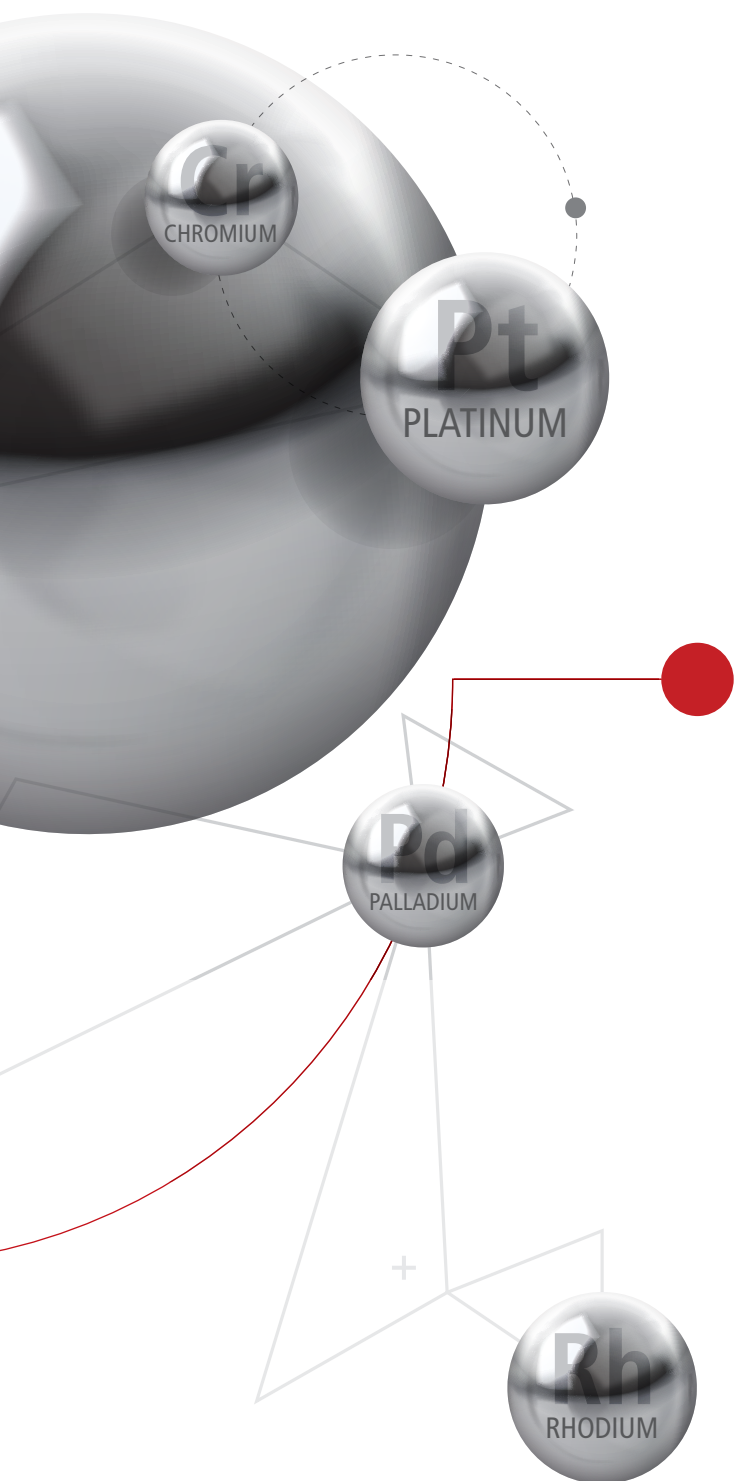


tharisa



**2021 Mineral Resource and
Mineral Reserve statement**

enriching lives through innovating the resources company of the future

THARISA MINERALS: MINERAL RESOURCE AND MINERAL RESERVE STATEMENT

Introduction

The Mineral Resource and Mineral Reserve of Tharisa Minerals was prepared under the guidance of the Competent Person (CP) in accordance with the requirements of the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves, 2016 (SAMREC Code). The estimates are as of 30 September 2021.

The previous declaration of the Mineral Resource and Mineral Reserve was dated September 2020. The current Mineral Resource declaration relies on the geological model and Mineral Resource model of April 2021 for the Middle Group (MG) Chromitite Layers, the Upper Group (UG) 1 Chromitite Layer, the end of Aug FY2021 mining face and one-month forecast from the production schedule. The Mineral Reserve declaration is based on the latest pit design and LOM schedule.

The data referenced in this section “Tharisa Minerals: Mineral Resource and Mineral Reserve Statement” is reported on a 100% basis.

Overview

Since the commencement of operations at the Tharisa Mine, additional geological information was obtained from geological observation in the operating pits and resource drilling. The Mineral Resource and Mineral Reserve information in the tables on the following pages are based on information compiled by the CP.

Definitions

The declaration of the Mineral Resource and Reserve was undertaken in terms of the guidelines of SAMREC Code (2016 edition).

Location

The Tharisa Mine is located 35 km east of Rustenburg and 120 km northwest of Johannesburg in the North West Province of South Africa.

The Tharisa Mine is a mechanised open-pit operation.

Statement by Competent Person

Ken Lomberg of Pivot Mining Consultants Proprietary Limited (previously Coffey Mining South Africa Proprietary Limited) (Island House, Constantia Office Park, Cnr 14th Ave and Hendrik Potgieter Rd, Johannesburg, 1709), is the CP for the Mineral Resource declaration, and is registered with the South African Council for Natural Scientific Professions (Private Bag X540, Silverton, 0127, Gauteng province, South Africa), registration number 400038/01. He holds BSc (Hons) Geology, BCom and MEng (Mining Engineering) degrees. Mr Lomberg is a geologist with 35 years' experience, including the Mineral Resource estimation in respect of PGM and chromitite in the Bushveld Complex.

The Mineral Reserve was prepared under the supervision of Jaco Lotheringen of Ukwazi Mining Studies in his role as Mineral Reserve CP. He holds a BEng (Mining) degree. He is registered with the Engineering Council of South Africa (ECSA, Private Bag X691, Bruma, South Africa), registration number 20030022. The current address of the CP is Unit DSF01, 2nd Floor, Block D, Southdowns Office Park, 22 Karee Street, Southdowns, Centurion, 0157. He is a principal mining engineer with appropriate experience in the estimation, assessment, and evaluation of relevant mineral reserves based on the class of deposit and mining methodology.

The Company has written confirmation from Messrs Lomberg and Lotheringen that the information disclosed is in compliance with the SAMREC Code (2016) and that they have consented to the inclusion of this information in the form and context in which it appears.

Mining rights summary

Tharisa Minerals holds a mining right, granted by the Department of Mineral Resources and Energy (DMRE) (then the Department of Minerals and Energy (DME) in terms of MPRDA on 19 September 2008, for a period of 30 years, to various portions of the farm 342 JQ and the whole of the farm Rooikoppies 297 JQ. On 13 August 2009, the mining right was registered in the Mining and Petroleum Titles Registration Office, under Reference No 49/2009(MR). In July 2011, an application was granted in terms of section 102 of the MPRDA, to amend the existing mining right by the addition of Portions 96, 183 and 286 of the property 342 JQ to the mining right 49/2009(MR).

Mineral Resource

Geology and mineralisation

The Tharisa Mine is situated on the southwestern limb of the Bushveld Complex, one of the world's largest layered mafic intrusions, which host layers rich in PGM, chromium and vanadium, and constitute the largest known resource of these metals. The Tharisa Mine is underlain by the MG and UG Chromitite Layers straddling the boundary between the Marikana and Rustenburg facies. The MG Chromitite Layers outcrop is on the property, striking roughly east to west, with a gentle change in strike to northwest-southeast in the far west. The layers dip at between 12° and 15° to the north. Towards the western extent of the outcrop, the dip is steeper. The stratigraphy typically narrows to the west and the dip steepens. The dip typically shallows out at depth across the extent of the mine area.

The MG Chromitite Layer package consists of five groups of Chromitite Layers, being the MG0 Chromitite Layer at the bottom, followed by the MG1 Chromitite Layer, the MG2 Chromitite Layer (sub-divided into A, B and C Chromitite Layers), the MG3 Chromitite Layer and the MG4 Chromitite Layer (sub-divided into 4(0), 4 and 4A Chromitite Layers). The layers between the Chromitite Layers frequently include stringers or disseminations of chromite. The MG Chromitite Layers at the Tharisa Mine are a typical stack of tabular deposits.

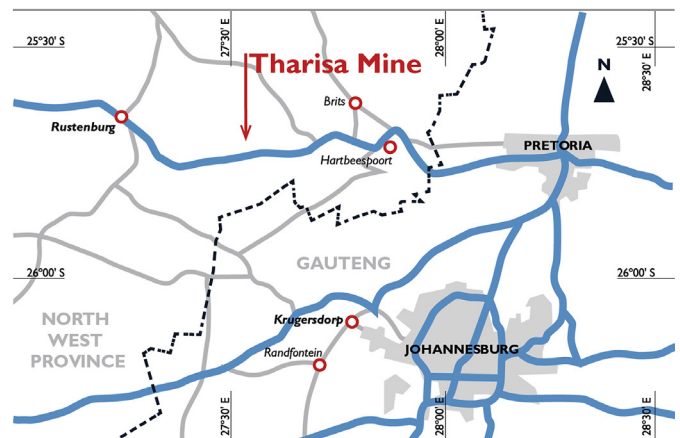


Figure 1: Location of the Tharisa Mine

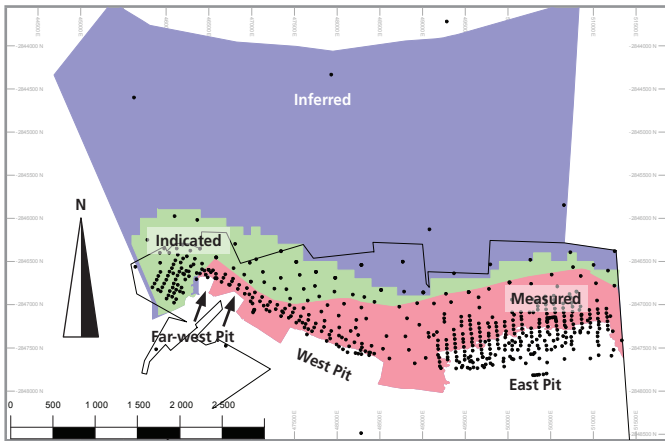


Figure 2: Image of the Tharisa Mine plan showing borehole locations and the extent of the open pits

The structural interpretation of the Tharisa Mine geology is based on the aeromagnetic data, the available drilling, and observations in the operating open pits. The only significant fault is a steeply dipping northwest-southeast trending normal fault with a downthrow of less than 30 m to the east. This fault occurs only on the far north-eastern corner of the property and will have little effect on mining of the MG Chromitite Layers on the mine. A northwest-southeast sub-vertical dyke of some 10 m thickness was exposed in the east pit. The dyke is not expected to have a major impact on mining. The other major feature of interest is the Spruitfontein upfold or pothole, which is located on the properties immediately west of the mine. It affects the UG2 Chromitite Layer and the rest of the critical zone below. No new major structural features were exposed by the current mining operation.

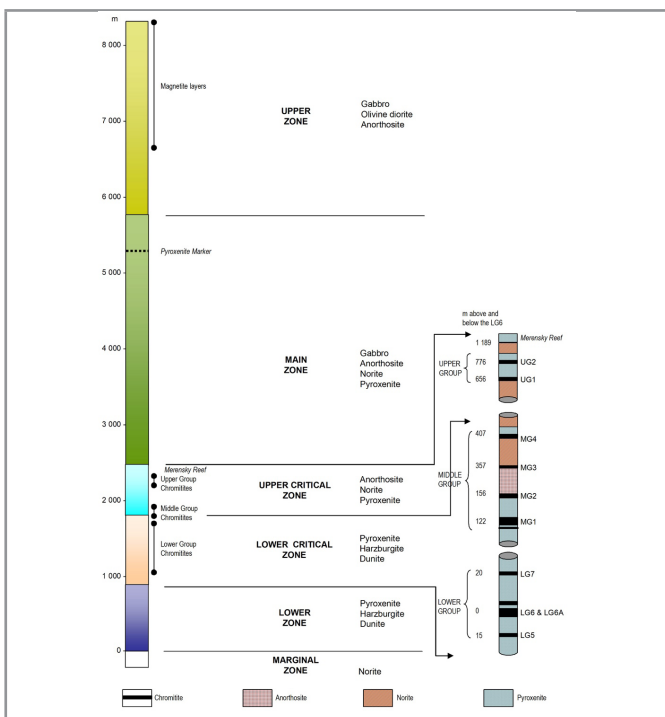


Figure 3: Stratigraphic map

The Mineral Resource estimate was completed over the mining right of Tharisa Minerals to a depth of 750 m for the MG Chromitite Layers. The UG1 Chromitite Layer Mineral Resource estimate was limited to the area within the planned pit perimeter.

The previous declaration of the Mineral Resource and Mineral Reserve was dated September 2020. The current Mineral Resource declaration relies on the geological model and resource model of April 2021 for the MG Chromitite Layers, the geological and resource model of June 2018 for the UG1 Chromitite Layer, and the end of FY2021 mining faces. Additional diamond drill boreholes were added to the database. Most significantly, the geological interpretation was reviewed with emphasis on the west and far-west pit areas. The geological interpretation includes the construction of three-dimensional models for each of the units estimated. Areas in the far west were redefined, where the individual layers were consolidated, requiring a revised perspective of the layer in the far-west mining area. Work on the area in the far west was largely responsible for the decrease in the reported tonnage of the Mineral Resource particularly in the Inferred category. The Mineral Resource, is restricted at a depth of 750 m below surface based on the "realistic expectations for eventual extraction".

The results from the samples confirmed the geological assumptions and the grades of the various Chromitite Layers, providing additional confidence in the mining operations. Observations on the operation confirm the details observed from the drilling. In-pit drilling continues for the purposes of mining operations, mine planning and grade control. Additional resource drilling has been planned for the next financial year.

Prior to the estimation, the data was collated and verified with the quality controls for logging, sampling, and assays being used. The Mineral Resource estimate was undertaken on each Chromitite Layer and interburden independently. Each element was estimated separately by inverse distance weighting (power2). The classification of the Mineral Resource is predominately determined by the distribution of the boreholes, with the consideration of the complexity of the geology, especially in the extreme western side of the property. Changes to the Mineral Resource declaration are due to the production during the previous financial year and a revised interpretation in the west and far west. The estimated thickness in these areas are slightly thinner in the areas mostly affecting the Indicated and Inferred Mineral Resources in these areas.

The Tharisa Minerals Resource at 31 September 2021 is reported inclusive of Mineral Reserve.

THARISA MINERALS: MINERAL RESOURCE AND MINERAL RESERVE STATEMENT continued

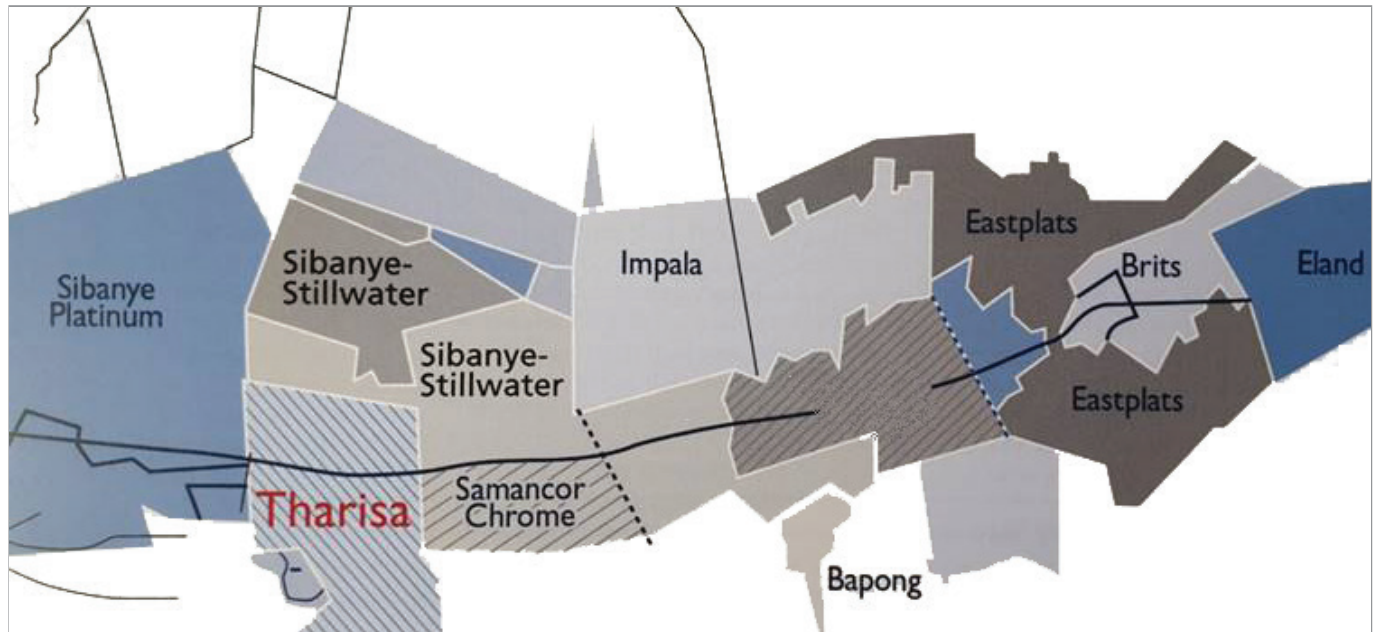


Figure 4: Map of the location of the Tharisa Mine

Mineral Resource estimate

	Unit	Measured	Indicated	Inferred	Total
2021					
Tonnes	Mt	109.16	112.56	632.68	854.40
6PGE + Au grade	g/t	1.77	1.41	1.53	1.54
5PGE + Au grade	g/t	1.69	1.35	1.45	1.47
3PGE + Au grade	g/t	1.33	1.02	1.12	1.13
Cr ₂ O ₃ grade	%	22.42	19.37	19.72	20.02
Contained 6PGE + Au	Moz	6.21	5.11	31.06	42.39
Contained 5PGE + Au	Moz	5.99	4.47	29.80	40.26
Contained 3PGE + Au	Moz	4.65	3.68	22.81	31.15
Contained Cr ₂ O ₃	Mt	24.47	21.80	124.79	171.06
2020					
Tonnes	Mt	105.69	85.74	668.15	859.58
6PGE + Au grade	g/t	1.77	1.50	1.52	1.55
5PGE + Au grade	g/t	1.69	1.43	1.45	1.47
3PGE + Au grade	g/t	1.32	1.07	1.12	1.14
Cr ₂ O ₃ grade	%	22.66	22.60	19.26	20.01
Contained 6PGE + Au	Moz	6.01	4.14	32.63	42.79
Contained 5PGE + Au	Moz	5.73	3.83	31.10	40.67
Contained 3PGE + Au	Moz	4.50	2.95	24.13	31.57
Contained Cr ₂ O ₃	Mt	23.95	19.38	128.67	172.00

Mineral Reserve declaration

The Mineral Reserve estimate for September 2021 was based on a revised and updated LOM for the open pit. This estimation was underpinned by an updated mining model and incorporates the current economic conditions, current on-mine mining methodology and survey depletion. Appropriate technical aspects were considered in the mine design and schedule as the basis for the Mineral Reserve estimate, including economic pit limits, geotechnical parameters, mining methodology and sequence, pit access, ramp placement, equipment capability, production rates, and practical mining considerations. The mining-related modifying factors applied included geological losses, mining losses, mining dilution, and metallurgical recovery. As part of the LOM process, a reconciliation was done as the basis for the modifying factors to be applied. The reconciliation completed with the below modifying factors on the different pits were deemed appropriate to form the basis of the Mineral Reserve estimate.

Parameter	Unit	East pit	West pit	Far-west pit
MG4A dilution thickness	m	0.53	0.51	0.51
MG4 dilution thickness	m	0.83	0.71	0.71
MG3 dilution thickness	m	0.75	0.60	0.60
MG2 dilution thickness	m	1.30	0.83	0.83
MG1 dilution thickness	m	0.48	0.44	0.44
Mining losses	%	6.0	6.0	10.0
Geological losses	%	5.0	7.5	15.0

The variance between the 2020 and 2021 Mineral Reserve estimation is due to:

- Mining depletion
- Updated geological model and an updated coding of the MG layers in the western pit area
- Updated open pit design based on the updated pit optimisation results
- Removal of a portion of the underground Mineral Reserves due to the increase of the open pit depths.

The pricing assumptions are the averages of individual estimates from local and international analysts, underpinned by averages from S&P's CapitalIQ platform. The Chrome forecasts are further supported by historical data from Ferralloy.net.

The LOM plan was designed to extract the MG Chromitite Layers, firstly from open-pit mining to a maximum depth of 260 m and subsequently from underground extraction (MG2 and MG4 Chromitite Layers) by means of a bord and pillar mining method. An underground mining pre-feasibility study was done during 2019. This was updated for the 2021 Mineral Reserve estimate by removing the areas falling within the updated open pit economic pit limits. The increase in pit depths had no impact on the position of the underground portal positions.

The Mineral Reserve tonnage increased by 16.7 Mt due to the final pit limit increase of the open pits. Pit design and updated MG Chromitite Layers accounted for a 26.4 Mt increase, mining depletion accounted for a 4.5 Mt decrease and the underground Mineral Reserves reduced by 6.2 Mt.

The PGM (3PGE + Au) and Cr₂O₃ grades remained similar to the 2020 quality estimates. No Inferred Mineral Resources were included in the open-pit LOM plan. Inferred Mineral Resources formed part of the underground mine plan, but were not considered as part of the Mineral Reserve estimate. If excluded from the underground mine plan, the underground project may not be feasible.

The open-pit LOM schedule was based on a targeted ROM production rate of 5.64 Mtpa over a period of 15 years before the East open pit is depleted and up to the depletion of the West pit after an additional five years. The final open pit ROM material will be produced during 2041. The open pit LOM increased by eight years due to the increase in the open pit limits. The East open pit transitions to underground mining from 2036 onwards and the West open pit from 2041 onwards.

The Mineral Reserve for the underground project was derived from the Measured and Indicated Mineral Resource portion included as part of the underground LOM plan. The underground section was scheduled to ramp up during the final phase of the open pit operation, targeting the MG2 and MG4 Chromitite Layers from the final open pit highwall. The Mineral Reserve for the underground section extends to a maximum depth of 270 m, constrained by the Mineral Resource classification. It would be reasonable to expect that the underground LOM can be extended to a maximum depth of 700 m, pending further fieldwork and study work.

The 2021 Mineral Reserve estimate was based on the approved Mineral Resource models, modified mining models, and mine designs. An updated LOM production schedule was completed for the open pit as the basis for the 2021 Mineral Reserve estimate. The Proved Mineral Reserve was derived from the Measured Mineral Resource and the Probable Mineral Reserve from the Indicated Mineral Resource. No Probable Mineral Reserve was derived from the Measured Mineral Resource.

THARISA MINERALS: MINERAL RESOURCE AND MINERAL RESERVE STATEMENT

continued

Open pit 2021	Unit	Proved	Probable	Total
Tonnes	Mt	77.7	16.5	94.2
5PGE + Au grade	g/t	1.42	1.31	1.40
3PGE + Au grade	g/t	1.10	1.01	1.08
Cr ₂ O ₃ grade	%	18.7	17.2	18.5
Contained 3PGE + Au ⁽¹⁾	Moz	2.7	0.5	3.3
Contained Cr ₂ O ₃ ⁽²⁾	Mt	14.6	2.8	17.4
Open pit 2020	Unit	Proved	Probable	Total
Tonnes	Mt	66.2	6.1	72.4
5PGE + Au grade	g/t	1.40	1.09	1.37
3PGE + Au grade	g/t	1.08	0.84	1.06
Cr ₂ O ₃ grade	%	18.4	14.1	18.1
Contained 3PGE + Au ⁽¹⁾	Moz	2.2	0.3	2.4
Contained Cr ₂ O ₃ ⁽²⁾	Mt	12.2	0.9	13.1
Underground 2021	Unit	Proved	Probable	Total
Tonnes	Mt	5.7	13.3	19.0
5PGE + Au grade	g/t	1.51	1.63	1.60
3PGE + Au grade	g/t	1.22	1.24	1.23
Cr ₂ O ₃ grade	%	18.7	20.6	20.0
Contained 3PGE + Au ⁽¹⁾	Moz	0.2	0.5	0.8
Contained Cr ₂ O ₃ ⁽²⁾	Mt	1.1	2.7	3.8
Underground 2020	Unit	Proved	Probable	Total
Tonnes	Mt	8.1	17.1	25.1
5PGE + Au grade	g/t	1.57	1.62	1.60
3PGE + Au grade	g/t	1.23	1.24	1.24
Cr ₂ O ₃ grade	%	19.3	20.6	20.1
Contained 3PGE + Au	Moz	0.3	0.7	1.0
Contained Cr ₂ O ₃	Mt	1.6	3.5	5.1
Total open pit and underground 2021	Unit	Proved	Probable	Total
Tonnes	Mt	83.4	29.7	113.1
5PGE + Au grade	g/t	1.43	1.45	1.42
3PGE + Au grade	g/t	1.11	1.11	1.11
Cr ₂ O ₃ grade	%	18.7	18.7	18.7
Contained 3PGE + Au ⁽¹⁾	Moz	2.9	1.0	4.0
Contained Cr ₂ O ₃ ⁽²⁾	Mt	15.7	5.6	21.3
Total open pit and underground 2020	Unit	Proved	Probable	Total
Tonnes	Mt	74.3	23.2	97.5
5PGE + Au grade	g/t	1.42	1.48	1.43
3PGE + Au grade	g/t	1.09	1.13	1.10
Cr ₂ O ₃ grade	%	18.5	18.9	18.6
Contained 3PGE + Au	Moz	2.5	1.0	3.4
Contained Cr ₂ O ₃	Mt	13.8	4.4	18.2

* Due to rounding up of the figures, some totals may not add up in the table

⁽¹⁾ Average PGE process plant recovery estimates range from 78.9% to 83.9%

⁽²⁾ Average chrome-yield estimates range from 33.9% to 37.8%



Material risks

Year-on-year deferral of waste could have a substantial impact on the open pit Mineral Reserve and sustained delivery of chrome and PGM product. Waste-stripping production risks are being addressed and year-on-year improvements are achieved, but it is still below current planned waste-stripping targets.

An auditable and ongoing reconciliation process could add significant value to the appropriate understanding of the systematic contribution of process plant recoveries and dilution and losses on the mining operations related to plant feed grades, mining methodology and equipment allocation to sustain cost-effective production performance. Plans are currently being investigated to address this risk. Flow diagrams were approved and will be implemented during the latter periods of 2021.

Current long-term PGM and chrome prices were adopted for the pit optimisation process as the basis for the open pit techno-economic mining limits. Sustained low commodity prices over the long term will materially impact on the overall value of the operation and can have a material impact on the size of the open pit Mineral Reserve.

Due to a pit selection strategy that was based on value and extended life, sustained low-cost and efficient mining, with a specific focus on waste backfill and processing recoveries, are critical to sustainably deliver value from the open pit operation.

Reporting codes and compliance

The Mineral Resource and Mineral Reserve estimates for Tharisa Minerals were stated in accordance with the principles and guidelines of the SAMREC Code. All the required regulatory permits have been obtained or applied for. The directors are unaware of any legal proceedings or impediments to the continued operation of Tharisa Mine.

Environmental management and funding

Tharisa Minerals has obtained all environmental approvals and authorisations required for the operation of the Tharisa Mine. The estimated long-term environmental provision, comprising rehabilitation and mine closure, was based on the Group's environmental policy, considering the current technological, environmental, and regulatory requirements. Details of the Group's environmental liability and funding will be detailed in the consolidated financial statements.

