

7 December 2021

ASX ANNOUNCEMENT

TRIAL MINING SUCCESSFULLY COMPLETED AT TGME GOLD PROJECT

- Trial Mining confirms that long hole Mechanised Mining and 15m long mining panels are suitable to mine the narrow gold reef system (0.60-6.0m) present across TGME gold fields
- This is a major milestone for Theta and a critical de-risking event
- Trial Mining demonstrated a cost reduction with the redesign of the drilling and blasting systems to achieve optimal fragmentation
- Rock Engineering support system performed to the expected specifications
- 34 horizontal blast holes were drilled where at various lengths across the span of the trial mining block; 85% of blasted rocks were cast into the cleaning drive
- Gold bearing ore was extracted with minimal dilution from the foot or hanging wall
- DFS TGME Underground Project expected Q1 2022
- Multiple near-term value drivers to be delivered in the next two quarters



Figure 1: LHD at Frankfort Mine for Trail Mining

Theta Gold Mines Limited (“Theta Gold” or “Company”) (ASX: TGM, TGMO | OTCQB: TGMGF) is pleased to announce Trial Mining at Frankfort is now complete. The Beta, Frankfort, and CDM mines, all of which form part of the Central Northern Area are collectively referred to as TGME Underground (UG) Project. Trial Mining was completed to demonstrate that the mechanized long hole stoping mining method was suitable to mine the narrow gold reef system (0.60-6.0m) and to inform the Definitive Feasibility Study (“DFS”) for the TGME Underground Project currently in progress.

Theta's Chairman Bill Guy commented: *"Successful trial mining at TGME is a critical de-risking event and major milestone for Theta as it confirms that long hole mechanized mining methods can effectively mine these large tabular shallow dipping (3-7°) narrow gold reef systems. The reef varies greatly in thickness from 0.24 metres to 6 metres. The ability to mine at 0.6m or narrower means reduced dilution and delivery of a higher ore grade to the plant."*

"As the reef system is tabular, the Beta and CDM combined complex strikes over 8.2km with a down-dip extension of more than 2500m (refer to Appendix A). The trial mining has assisted with confirming initial costs and mine design. The reef is relatively soft in relation to the surrounding host rock, reducing anticipated drilling and explosive costs. The competence of the host sedimentary rock was again experienced as no uncontrolled fall of ground took place during the blasting operations, as observed in other parts of the mine where excavations mined over a hundred years ago are still standing up."

"The next two quarters will deliver exciting news as the Rietfontein PFS, TGME underground DFS together with an updated JORC (2012) Resource Statement will be completed. Underground sampling, bulk gravity gold sampling and further metallurgical test work continues throughout Christmas and New Year into 2022."

Summary

The trial mining project that started in September 2021 focused on rock engineering and mine support systems, drilling, and blasting technics as well as cleaning of broken ore in support of the current definitive feasibility study being prepared by Minxcon for Q1 2022.

A systematic roof support installation was undertaken to secure a safe working environment at Frankfort Mine. The support system consisted of tendon support installed at a 90-degree angle into the hanging wall in all main access development. Aerial support in the form of timber packs was installed in large open unsupported areas and the in-stope support consisted of mechanical jacks, rock bolts, Mine poles, and timber packs. No uncontrolled fall of grounds was recorded during the trial blasting sessions and the designed rock engineering support system did perform to the expected specifications.



Figure 2 & 3 – Support installation before and after at Frankfort Mine

A total of 34 horizontal blast holes were drilled at various lengths across the span of the trial mining block. A series of holes were drilled on a staggered pattern spaced 60cm apart thereafter converting to a single horizontal line of drill holes spaced 60cm apart to complete the remainder of the holes. Different drill hole diameters were tested ranging from 45mm to 52mm. Three different drill bits

were tested during this project to understand the best-matched drill bit to the rock, evaluating rock penetration, metres drilled per drill bit, and drilling cost per metre.



Figure 4 and 5 – Long holes drilled during the trial mining

Bulk emulsion explosives had been selected and supplied by Enaex Africa for trial mining due to the advantages of bulk emulsion explosives over alternative explosive technologies, both in terms of safety and blast performance. The desired outcome of advance per hole and reef contact breaking points was achieved. All blasted holes were primed up to 150 grams Trojan cast booster and the detonator inserted to the middle of the shot hole. The shot holes were pumped with Devex explosives and tamped with stemming material top and bottom to ensure proper breaking can be achieved. This was done up to the collar of the hole. This process proved that 85% of all blasted rock will be cast to the cleaning drive.



Figure 6 & 7- Bulk emulsion explosives charging unit

Evaluation of the blast fragmentation indicated that the burden and spacing should be increased and hole diameter reduced in future drill designs to increase the rock fragmentation size. The drilling redesign will lead to a cost reduction in both drilling and explosive costs. Figure 6, indicates the blasted stope face, broken rock casted into the cleaning drive, and rock fragmentation.



Figure 8 – Blasted stope face, casted broken rock and rock fragmentation

The trial mining at Frankfort Mine was a success and proved that the planned mechanical longhole drilling applied to a narrow vein orebody will achieve the desired outcome and open endless possibilities within these goldfields.

As part of the ongoing trial mining within the project scope, investigations were undertaken in accessing suitable equipment to allow for bulk gravity gold sampling for exploration work in targeted areas across the concession. A centrifugal concentrator was procured, which will be utilized to test different ore types and attain an understanding of potential gravity gold recovery.

Both the Phase 1 underground DFS and Rietfontein PFS is ongoing and progressing well with the expected completion of the PFS by end of December 2021 and a DFS by Q1 2022 respectively.



Figure 9 & 10 – GoldKach MkIV Concentrator

This announcement was authorised for release by Theta Gold Mines Board.

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ABOUT THETA GOLD MINES LIMITED

Theta Gold Mines Limited (ASX: TGM | OTC: TGMGF | FWB: 3LM) 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 initial ore reserves.

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 as part of the country's ESG initiatives. 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.



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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

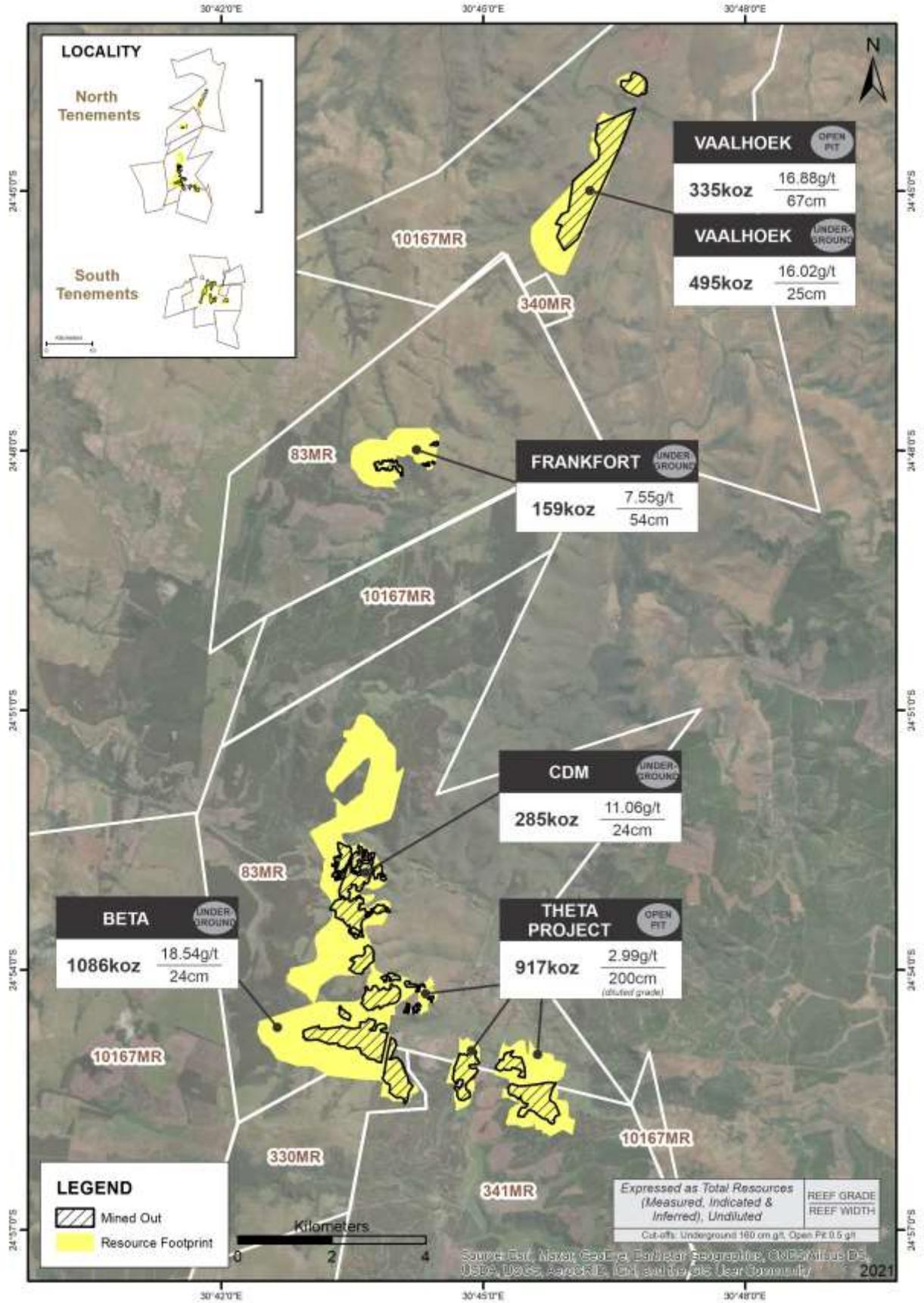
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This announcement may refer to the intention of Theta Gold regarding estimates or future events which could be considered forward looking statements. Forward looking statements are typically preceded by words such as “Forecast”, “Planned”, “Expected”, “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 Northern Tenement Map



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