

ASX ANNOUNCEMENT

4 July 2022

Mt York Gold Project, Pilbara

Technical review highlights potential for major increase in 873,500oz resource

Kairos plans ~20,000m drilling program after studies find 3.4 km mineralised trend is open in every direction and not constrained by geology

Highlights

- **Kairos has completed a comprehensive review of Mt York using cutting-edge software**
- **The review has found that the mineralisation is continuous along the 3.4 km-long trend, including the areas between the named deposits of Main Hill, Breccia Hill and Gossan Hill**
- **The review has also highlighted substantial scope to grow the resource at depth, finding there is no geological limitations on the lodes**
- **The existing Resource is limited only by the extent of the drilling**
- **In light of these findings, Kairos will launch a 15,000–20,000m drilling program this quarter with the aim of increasing the resource significantly**
- **The drilling results will also feed into pit optimisation work, metallurgical test work and geotechnical studies**
- **In parallel with this new drilling program, Kairos will update the current Resource to include the previously-released results from the drilling campaign which was completed earlier this year**

Kairos Minerals (ASX: KAI) is pleased to announce that a comprehensive technical review of its Mt York Gold Project in WA's Pilbara has identified potential to significantly increase the 873,500oz resource¹ (see KAI ASX announcement dated 4 March 2020).

The review found that the existing resource was limited by drilling to a depth of 150-200m along the entire deposit, where it remained open over its strike length of 3.4 km.

¹ See full table of resource categories for each Mt York Gold Deposit in the 'About Kairos Minerals' section

The review also identified mineralisation outside the current resource that was intersected during the November-December 2021 drilling programme, especially at 'The Gap' Prospect (see KAI ASX announcement dated 25 May 2022) where the company announced stellar results of **49m @ 1.75 gpt Au** from 135m including **19m @ 3.29 gpt Au** from 153m (KMYC196).

Kairos Managing Director Peter Turner said: **"The results of the review, which was conducted in conjunction with Kairos Exploration Manager Mark Falconer, are extremely compelling.**

"The review paints a picture of an 873,000oz resource which is open in all directions but very constrained by a lack of drilling, particularly below 150-200m.

"The potential to grow this resource substantially is overwhelmingly clear.

"In light of these findings, we are now planning a drilling program of up to 20,000m with the aim of expanding the mineralisation, and therefore the resource, in all directions especially chasing the wide, high-grade plunging shoots below existing drilling.

"We will only begin to understand the true size of the Mt York resource once the next round of staged exploration drilling is completed".

The review found the deposit was constrained only by drilling within the individual deposits and at depth, not by geological or mineralisation factors.

The Kairos technical team met with Auralia Mining Consulting representatives who completed the 2020 resource estimation and provided optimal pit shells, and Como Engineers who provided early-stage advice on metallurgical, process and mechanical engineering works for the Mt York Gold Project in 2020-2021. Both companies concluded that there were no technical impediments to developing the project to the next stage, whether that will be a scoping-level study or a feasibility study. Auralia and Como both recommended further drilling as the next step in developing the project.

Technical Assessment

The Mt York drilling database, including all 2021 drilling results, was imported into Leapfrog™ software and a geological model built. Various grade shell models of the mineralisation were built as part of the technical assessment independent of the Kairos wireframes that were used in the 2020 resource estimate (refer to KAI ASX announcement dated 4 March 2020). The Leapfrog-generated grade shells at a 0.5 gpt Au cutoff were compared to these wireframes and sectional slices through the entire 3,400m of the deposit were made. The wireframes and grade shells compare well except where additional drilling has been undertaken since the resource estimate (ie

later than March 2020). New wireframes are currently being built at a 0.3 gpt Au lower cutoff in preparation for an updated mineral resource update that will include the additional 14,988m of diamond and RC drilling that has not been included in the current mineral resource estimate (see KAI ASX announcements dated 15 September 2021, 23 November 2021, 13 January 2022 and 25 May 2022). Of importance is a previously unrecognised zone of wide mineralisation below existing optimal pit shells at 'The Gap' prospect that returned spectacular results of **49m @ 1.75 gpt Au** from 135m including **19m @ 3.29 gpt Au** (KMYC196) and **24m @ 3.14 gpt Au** from 100m including **14m @ 4.30 gpt Au** (KMYC198) (see KAI ASX announcement dated 25 May 2022). The technical review has concluded that this higher grade zone is likely to be plunging shallowly to the east and fold-controlled. As more diamond drilling is conducted in the deposit in the near future, structural assessment will be key to determine the structural controls of the mineralisation to refine the targeting strategy particularly chasing high-grade lenses at depth.

Kairos identified that the Main Hill mineralisation is a substantial orebody in its own right. KAI ASX announcement dated 10 February 2017 described a 100m-wide, stacked series of "*Banded Iron Formation-hosted*" (BIF) gold lodes backed up with results from the only diamond core holes that have been drilled into the main trend of the deposit by the Company (KMYD013A, KMYD014 & KMYD015). Kairos's new Technical Team led by Managing Director **Dr Peter Turner** and Exploration Manager **Mark Falconer**, who have over 40 years of combined experience working on gold deposits Worldwide, have concluded that the Main Hill Prospect is indeed a very wide deposit that has not received much drilling at all.

Examination by the technical team of holes KMYD013A and KMYD014 show that the gold mineralisation is associated with significant magnetite, pyrrhotite, pyrite and minor arsenopyrite. The core shows obvious signs of folding and may back-up the team's view that the deposit is controlled by fold structures. The magnetite (iron oxide) may well be a hydrothermal alteration rather than a primary magnetite associated with a Banded Iron Formation or BIF. The technical team also found the mixture of oxide phases (magnetite) and sulphide phases (pyrrhotite, pyrite, arsenopyrite) to be an interesting factor sometimes seen in large gold systems. It may be inferred that the mixing of oxidised and reduced fluids during gold mineralisation has occurred.

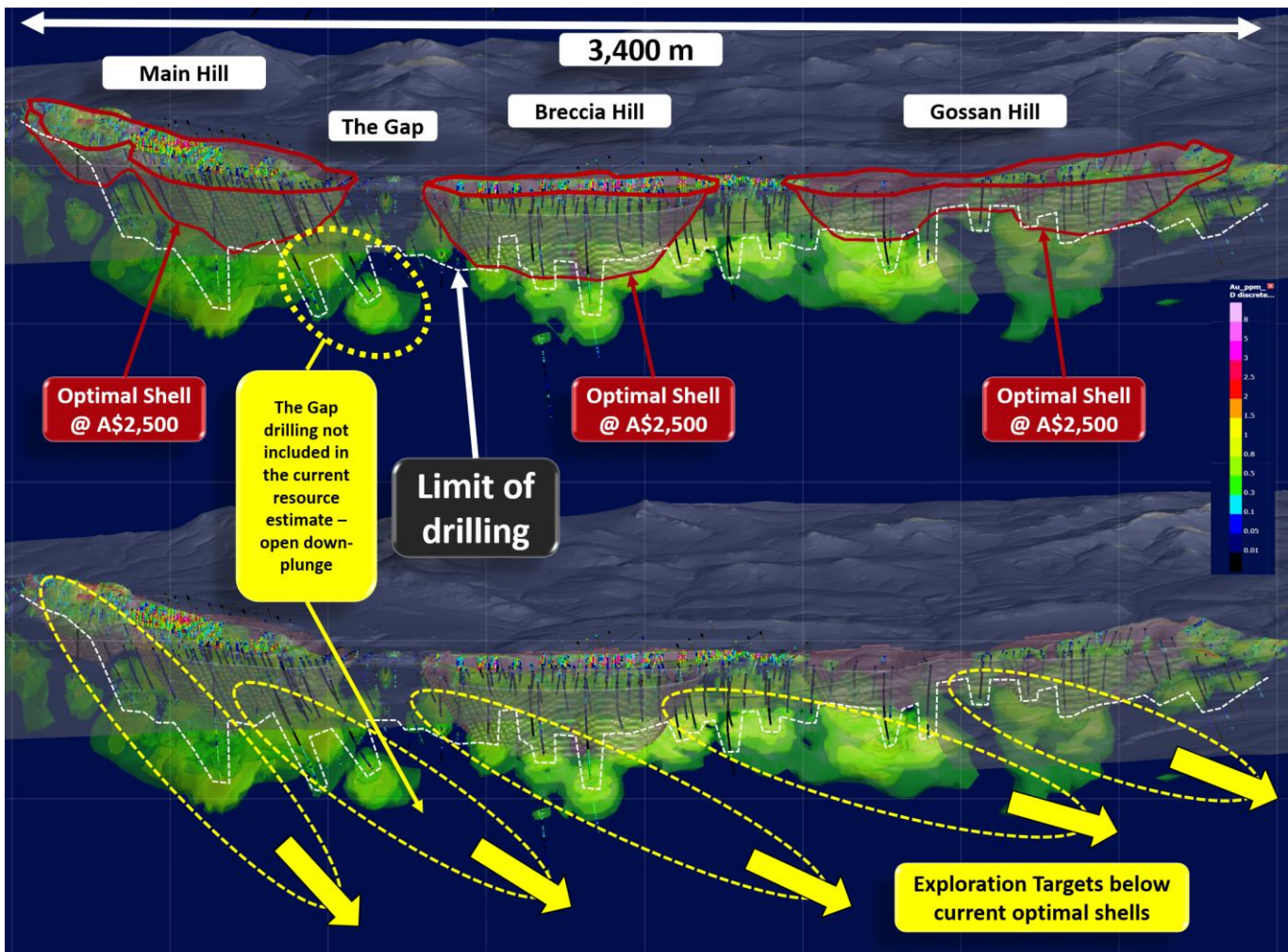


Figure 1: Leapfrog™ generated image showing the main >3,400m trend at Mt York Gold Project looking north showing a series of grade shells from 0.5 gpt Au wireframes (green outer shells) to >8 gpt Au (see legend for colour coding). The limit of effective current drilling is shown as a white dashed line and emphasises that the base of drilling is often at, or above the A\$2,500 optimal pit shells generated in 2020 meaning that more drilling is required. Further drilling has occurred since the last mineral estimate in 2020 particularly at 'The Gap' Prospect which is anticipated to grow the resource in the next estimate. See **Figure 2** for a plan view of the mineralised trend. Upper view emphasising the grade shells, optimal pit outlines and limit of drilling whilst the lower image accentuates the exploration upside of the trend.

What became apparent during the technical assessment of the Mt York Gold Project was that optimal pit shells (the shell used here is calculated on a A\$2,500 gold price) that were constructed by Auralia largely bottomed-out on the drilling data inferring that more data was required below the current optimal shell (**Figure 1**). Inspection of gold grade intercepts near the optimal shell bases suggest that there is indeed good reason to continue to drill the deposits at depth and to particularly focus on the structural controls on the gold mineralising shoots to better target the higher-grade mineralisation at depth. As **Figure 1** suggests, there are multiple zones of potential high-grade mineralisation that, if successful in the next drilling campaign as expected, will likely lead to a continued growth of mineral resource.

Figure 2 shows the scale of the mineralisation and the fact that currently, mineralisation has been defined over a 3,400m strike length, is positioned on a structurally-important arcuate-shaped flexure and is open along-strike and down-dip along it's whole length.

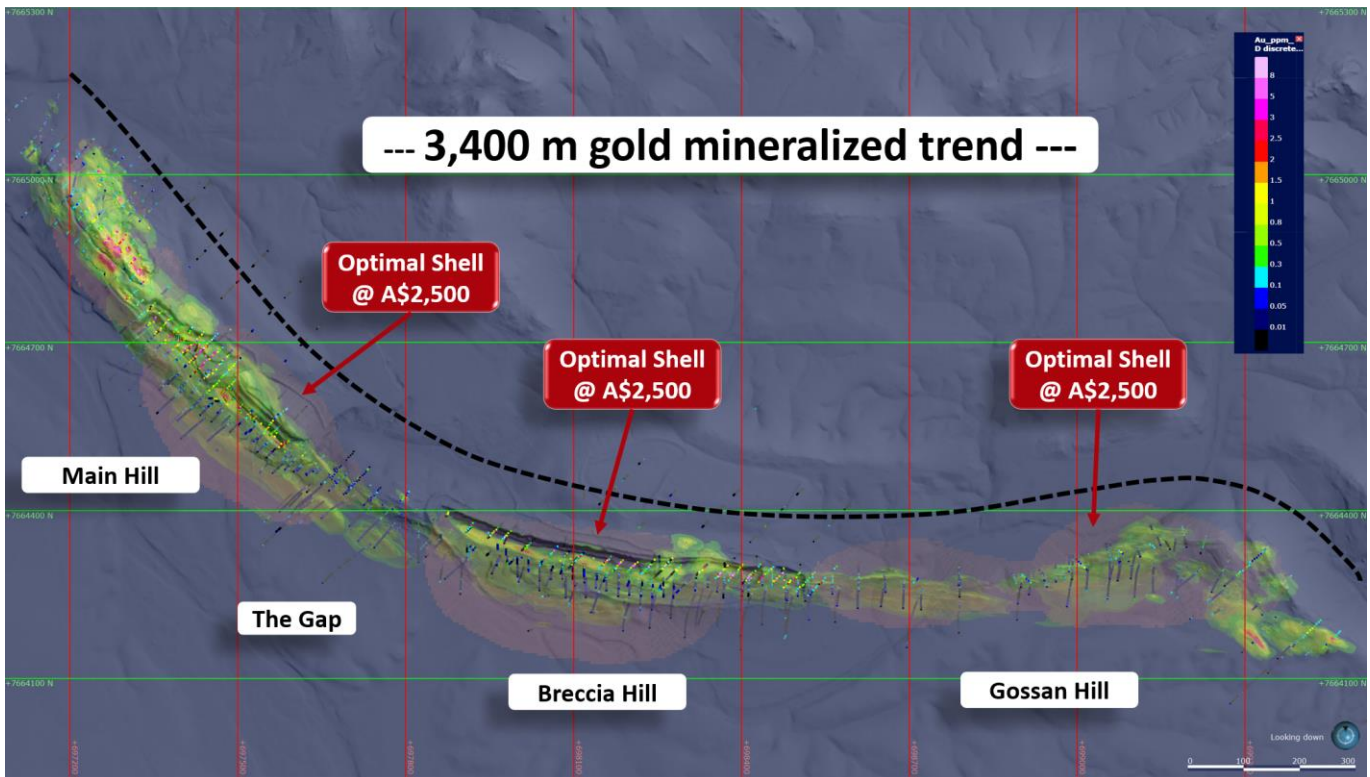


Figure 2. Leapfrog™ generated plan view of the drill holes coloured on gold values for the Main Mt York Trend only. The mineralisation occurs over 3,400m, is open at both the NW and SE strike extents and at depth along the entire trend. The Prospects are shown as are the newly generated Leapfrog™ grade shells (all grade shells above 0.5 gpt Au are shown with varying levels of transparency). Leapfrog grade shells are not interpreted to be mineralised wireframes and may vary from the final wireframes that will be generated for the next mineral resource estimate. They are provided as a guide to possible mineralised trends using implicit modelling algorithms to enhance possible structural trends.

The mineralisation crops-out at surface (**Figure 3**) along it's whole strike length giving geologists exposure to the system without drilling. Kairos will take advantage of this and conduct detailed structural maps of the deposits to aid in better targeting for depth extensions prior to drilling.



Figure 3. Eastern end of Gossan Hill Prospect looking east. Kairos's Exploration Manager and experienced geologist, Mark Falconer, inspects gossanous (weathered sulphide samples) outcropping at surface along the Main Trend of the Mt York Gold Project.

Although weathered at surface, there was an opportunity to review two core holes that exist from 2017 drilling. The fresh core holes (**Figure 4**) provided the Team with access to fresh rock to establish the style of mineralisation, review potential structural controls (along with pit inspections at Iron Stirrup, Main Hill and Breccia Hill Prospects) and to look at sulphide and other alteration/mineralogical associations.

Metallurgical testwork samples will be collected as part of the 15,000 – 20,000m programme that is currently being planned. Previous operators of the project, Lynas Gold NL, undertook metallurgical testwork on samples of all rock types. The test work was conducted during 1986-1989, 1994 and 1997 mainly by AMMTEC in Perth (ref "Final Feasibility Study" Volume 1 prepared by Signet Engineering Pty Ltd, February 1994). Kairos considers this work to be a guide only and aims to complete it's own metallurgical testwork during the next round of drilling in H2, 2022. A large component of the drilling will be diamond core for this purpose.



Figure 4 shows some selected pieces of core from hole KMYD013A. The rock intervals selected for photography are representative of the whole intercept that is reported on the core piece. Gold grades are also shown for the entire intercept length.

The intervals are interpreted to be from a BIF-sequence, all are magnetite-rich and have up to 50% sulphide minerals, mostly pyrite, pyrrhotite and some minor arsenopyrite.

Folding is evidenced in several of the core pieces. Quartz veining is restricted to the interval 176.28 – 176.9m (top) and does not appear to play a major in the gold mineralisation.

Multi-element geochemistry suggests that the gold mineralisation has a very strong association with the magnetite-rich units. This will aid future targeting where geophysical methods may be deployed down-hole.

Figure 4. Selected core samples from KMYD013A (see KAI ASX announcement dated 10 February 2017) with intervals that correspond to the gold results and the gold results themselves.

Next Steps

- Completion of detailed structural mapping over the Mt York Gold Project and to provide a detailed structural synthesis to better model the gold resources and to provide a targeting framework
- Full Leapfrog™ evaluation of Iron Stirrup, Old Faithful, Steamboat ahead of resource estimation
- Drill planning of drill holes for resource, density measurements, metallurgy & geotechnical information at all prospects
- Camp establishment at Mt York ahead of major drilling campaign
- Drill contract negotiations for 15,000m – 20,000m RC and DDH at Mt York H2, 2022

- Contract negotiations with consultants for mining engineering studies, geo-metallurgical testwork and early negotiations for mineral processing, environmental works

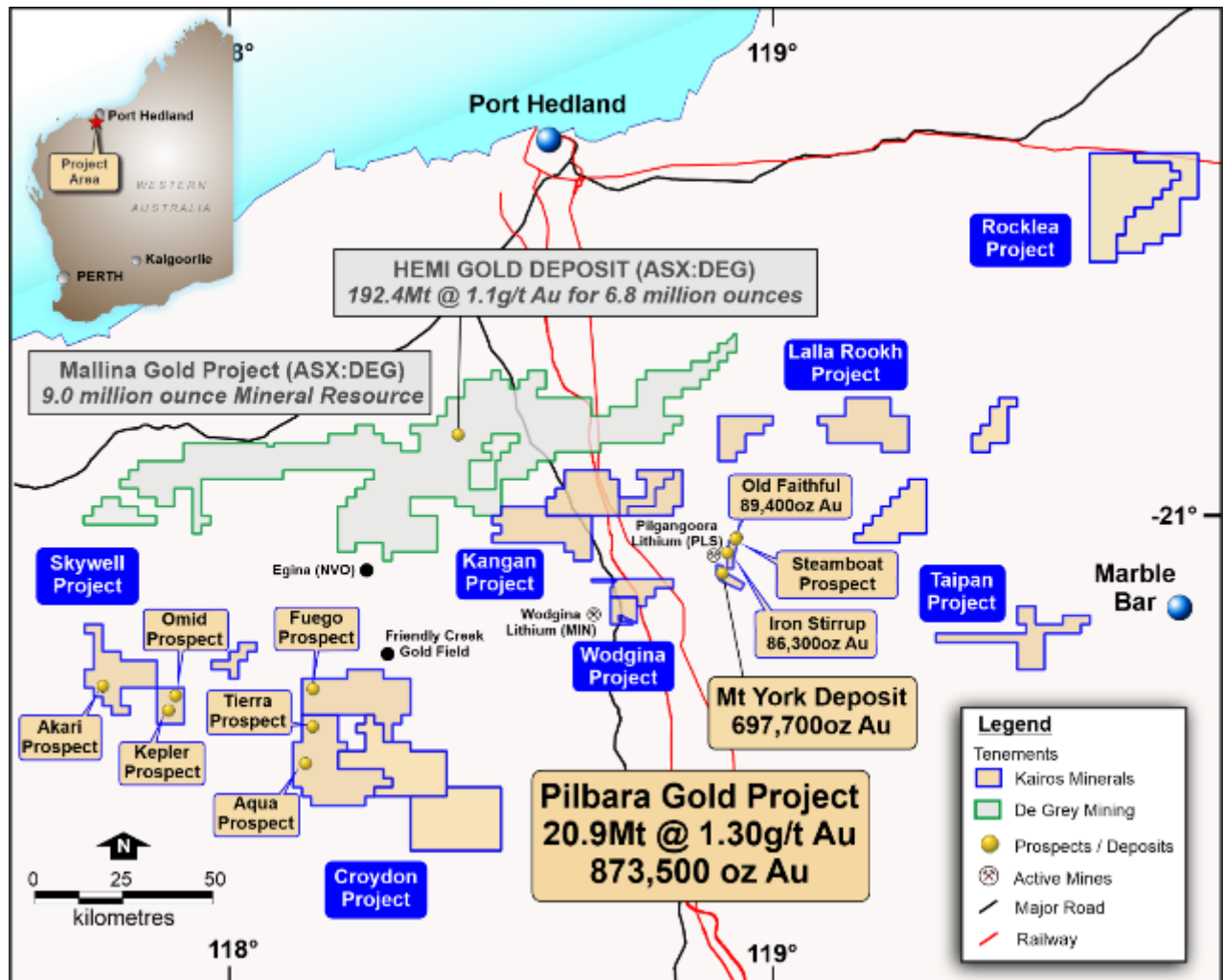


Figure 5. Pilbara Gold Projects showing the Mt York Gold Project location.

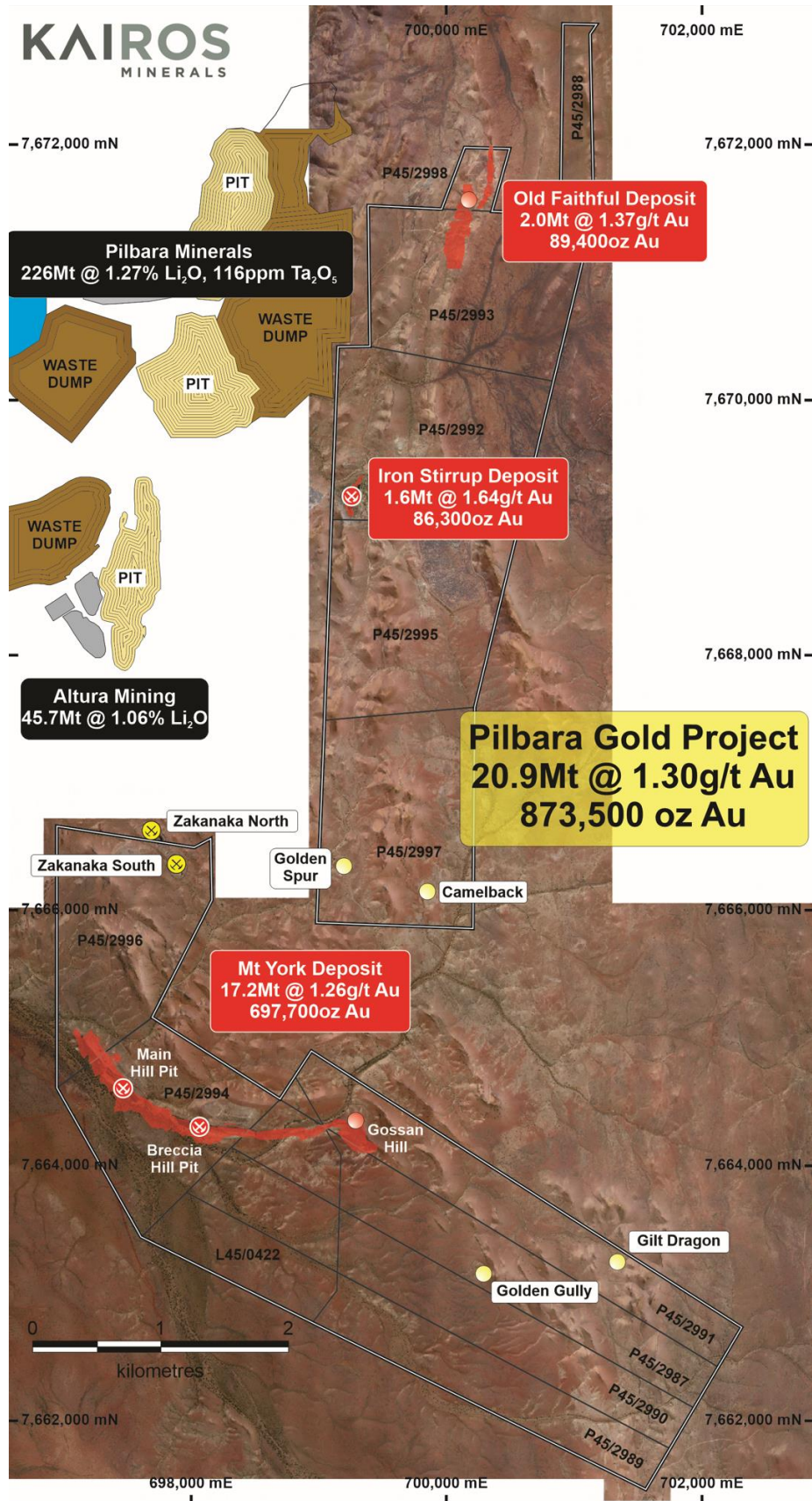


Figure 6. Mt York Gold Project including all prospects and resources.

About Kairos Minerals

Kairos Minerals (ASX: KAI) is a diversified West Australian-based exploration company which is focused on the exploration and development of two key project hubs located in WA's premier mining districts. The Company's 100%-owned Pilbara Gold Project has its central "hub" located ~100km south of Port Hedland in the world-class Pilgangoora district immediately adjacent to the major lithium-tantalum projects owned by Pilbara Minerals and Altura Mining.

In the Pilbara, Kairos also holds 2,026 square kilometres of tenure which is highly prospective for gold and copper discoveries.

Kairos owns 100% of the flagship Mt York Gold Project that was partially mined by Lynas Gold NL between 1994 to 1998. Since acquiring the project in early 2016, Kairos has rapidly established an 873,000oz JORC 2012 compliant gold mineral resource with the resource categories shown for each deposit shown in the table below.

Deposit	Indicated			Inferred			Total		
	Tonnes (kt)	Au (g/t)	Ounces (koz)	Tonnes (kt)	Au (g/t)	Ounces (koz)	Tonnes (kt)	Au (g/t)	Ounces (koz)
Mt York	6,844	1.29	284	10,419	1.23	413	17,263	1.26	698
Iron Stirrup	797	1.63	41	843	1.65	45	1,639	1.64	86
Old Faithful	925	1.33	39	1,102	1.41	50	2,027	1.37	89
Total	8,565	1.33	366	12,364	1.28	507	20,929	1.30	873

Kairos's 100%-owned Roe Hills Project, located 120km east of Kalgoorlie in WA's Eastern Goldfields, comprises an extensive tenement portfolio where the Company's exploration work has confirmed the potential for significant discoveries of high-grade gold, nickel and cobalt mineralization in an emerging lithium province.

This announcement has been authorised for release by the Board.

Peter Turner
Managing Director

Zane Lewis
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For further information, please contact:

Investors:

Mr Zane Lewis
 Non Executive Director
 Kairos Minerals Limited

COMPETENT PERSON STATEMENT:

The information in this report that relates to Exploration Results or Mineral Resources is based on information compiled and reviewed by Mr Eduardo Ruaro, who is a consultant to Kairos Minerals Ltd and who is also a Member of the Australian Institute of Geoscientists (AIG). Mr Ruaro has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.' (the JORC Code 2012). Mr Ruaro has consented to the inclusion in the report of the matters based on their information in the form and context in which it appears.