



14 November 2023

## **ASX Announcement**

# Significant Additional Carbonatites and REE Mineralisation Identified at Mick Well

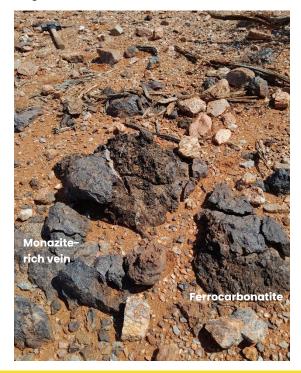
Mick Well carbonatite complex expands significantly, with new carbonatite and mineralisation discoveries from field validation of recently defined large geophysics targets.

### Highlights

- Significant new strike lengths of REE mineralisation discovered from reconnaissance mapping close to the recently identified gravity targets.
- Substantial REE system confirmed, with more than 13.5km of mineralisation mapped so far within a very large 7km by 4km carbonatite complex.
- Assays from carbonatites and additional REE mineralisation expected in November.
- Fieldwork continuing, with REE mineralisation mapping around carbonatite plug targets a high priority.

Kingfisher Mining Limited (**ASX:KFM**) ("**Kingfisher**" or the "**Company**") is pleased to provide an update from its ongoing exploration at Mick Well within the highly prospective Gascoyne Province.

Kingfisher's Executive Director and CEO James Farrell commented: "The latest discoveries confirm Mick Well



is a very large and exciting REE system that extends over an area of more than 7km by 4km. Our ongoing fieldwork has also identified outcropping ferrocarbonatites together with monazite veining proximal to the recently identified carbonatite plug targets. These are the main ingredients for the World's largest REE resources".

**Image:** Outcropping REE-bearing ferrocarbonatites and monazite-rich veins at Mick Well.

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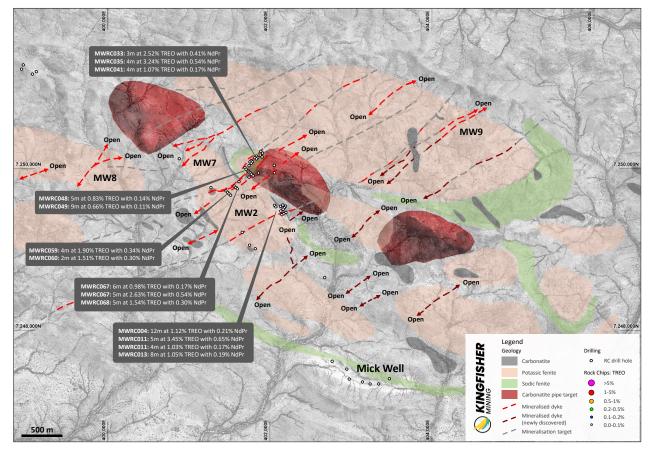




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#### **Mick Well Mapping**

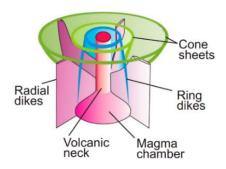
Mapping along structures radiating away from the recently identified potential carbonatite pipes (see ASX:KFM 23 October 2023) has led to the discovery of a further 4,100m strike of outcropping monazitedominant REE mineralisation at the Mick Well project. The mineralisation is part of a very large intrusion centre of some 7km by 4km where carbonatites and mineralisation that have pushed up into the earth's crust are now exposed at surface. The newly discovered lodes and carbonatite intrusions increase the cumulative strike length of mineralisation mapped by the Company to more than 13.5km (Figure 1).



**Figure 1**: Mick Well geology showing newly identified REE mineralisation. Drill results are shown in grey boxes (see ASX:KFM 7 February 2023, 5 July 2022 and 24 March 2022). Results are stated as Total Rare Earth Oxides (TREO%) and total  $Nd_2O_3 + Pr_6O_{11}$  (%) content.

#### **The Carbonatite Exploration Model**

The carbonatite intrusion model has a central carbonatite pipe which is comprised of multiple phases of carbonatite intrusion that is surrounded by ring dykes which form around and radial dykes which radiate out from the central intrusion (Figure 2). The carbonatite exploration model envisages alteration of the host country rock into which the carbonatites intrude, with development of sodic (Na) and potassic (K) fenites around the intrusions which often hosts the REE mineralisation (Figure 3).



#### Figure 2: 3D schematic of a carbonatite intrusion\*

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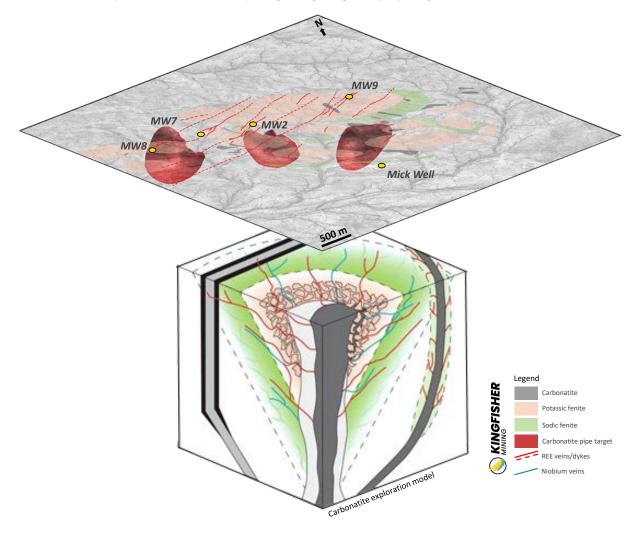
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Each part of the carbonatite system has characteristics which can be detected by modern exploration techniques, for example:

- Thorium associated with the REE mineralisation is apparent in the radiometrics.
- Potassium fenites, the alteration which forms around carbonatites intrusions, is also apparent in the radiometrics.
- Ferrocarbonatites have high iron content and can appear as magnetic highs in the geophysics.
- Carbonatites typically have high density and can be distinguished from the country rocks by gravity surveys.
- ASTER (Advanced Spaceborne Thermal Emission and Reflection Radiometer) remote sensing can detect various minerals and elements, including carbonates, ferrous and ferric iron as well as alumina and magnesium and can assist with of carbonatites and associated alteration.

The combination of these geophysical responses to the carbonatite geology provide a very powerful combination of exploration tools for early stage targeting and project generation.



**Figure 3:** Mick Well geology and the carbonatite associated rare earth element mineralisation model\*. The model shows carbonatite intrusions and dykes, areas of potassic fenitisation as well as the late stage REE-bearing dykes and veins – which have been discovered by the Company.

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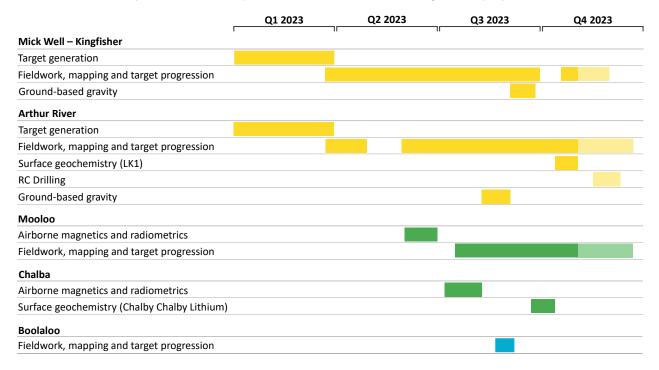
#### **Gascoyne Exploration Program**

Kingfisher is undertaking high impact and value building exploration programs targeting large-scale carbonatite targets along its 54km Chalba target corridor and its 30km long Lockier target corridor. The program will test high priority carbonatite targets across the Company's belt-scale tenement holding, building upon the significant carbonatite discoveries, which confirmed the presence of high grade REE mineralisation along the Chalba target corridor. In addition, the Company is undertaking exploration for lithium associated with various pegmatite outcrops within its tenements at Chalby Chalby.

The exploration work planned for the 2023 field season will include:

- Significant on-ground mapping and sampling targeting interpreted "Mt Weld style" carbonatite plugs as well as dyke mineralisation and alteration which can be used to vector towards the large-scale source of intrusions. The results will be used for drill planning of the high priority targets.
- RC drilling to test carbonatite targets at Mick Well, Kingfisher and Arthur River.
- Ground-based gravity at LK1 and Mick Well. The gravity survey will be used to model higher density rocks (potential mineralised carbonatites) at depth.
- Surface geochemical survey over the large-scale high priority LK1 target at Arthur River, where mapping is restricted by deep weathering associated with the highly altered rocks and cover.
- Surface geochemistry at Chalby Chalby to define additional lithium-bearing pegmatite drill targets.
- Further airborne geophysics to incorporate Mooloo and North Chalba Projects to our early-stage target generation. Magnetics and radiometrics are highly effective for identifying carbonatite mineralisation.

The timeline for the planned and completed activities for 2023 for Kingfisher's projects are shown below.



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#### **Upcoming News**

- **November 2023:** Results from ongoing mapping and rock chip sampling of the high grade REE system at Mick Well.
- December 2023: Results from surface geochemistry survey at the large-scale LK1 carbonatite target.

#### About the Kingfisher's Gascoyne Projects

The Mick Well and Kingfisher Projects are located approximately 230km east of Carnarvon, in the Gascoyne region of Western Australia where the Company holds exploration licences covering 969km<sup>2</sup>. The geological setting of the tenure is similar to Hastings Technology Metals' world-class Yangibana Deposit which includes 29.93Mt at 0.93% TREO<sup>#</sup> as well as the recent Yin discovery of Dreadnought Resources which includes mineral resources of 20.06Mt at 1.03% TREO<sup>^</sup> (Figure 4). The tenure is also prospective for lithiumbearing Thirty Three Suite Pegmatites which hosts Delta Lithium's Yinnetharra Project and has returned drill results of 33m at 1.9% Li<sub>2</sub>O<sup>+</sup> from Delta's Malinda Prospect and rock chips results of 4.2% Li<sub>2</sub>O<sup>+</sup> from Delta's Jamesons Prospect.

Kingfisher recently made discoveries of hard rock and clay rare earth elements mineralisation at Mick Well. Both styles of mineralisation are associated with carbonatites that intruded along a crustal-scale structural corridor, the Chalba Shear, which extends over a strike length of 54km within the Company's tenure. The Company has also identified a second structural corridor along the Lockier Shear which extends for 18km across the Company's Mooloo Project and 12km across the Arthur River Project.

Drilling at the MW2 Prospect has intersected five parallel ferrocarbonatite lodes and associated monazite mineralisation within a 300m wide zone and has returned high-grade REE results with 5m at 2.63% TREO with 0.54% Nd<sub>2</sub>O<sub>3</sub> + Pr<sub>6</sub>O<sub>11</sub>, 4m at 3.24% TREO with 0.54% Nd<sub>2</sub>O<sub>3</sub> + Pr<sub>6</sub>O<sub>11</sub>, 5m at 1.54% TREO with 0.30% Nd<sub>2</sub>O<sub>3</sub> + Pr<sub>6</sub>O<sub>11</sub>, 4m at 1.90% TREO with 0.34% Nd<sub>2</sub>O<sub>3</sub> + Pr<sub>6</sub>O<sub>11</sub> and 3m at 2.52% TREO with 0.41% Nd<sub>2</sub>O<sub>3</sub> + Pr<sub>6</sub>O<sub>11</sub>. The results from the ferrocarbonatite mineralisation is 500m northwest of Kingfisher's breakthrough REE discovery where maiden drilling returned 5m at 3.45% TREO with 0.65% Nd<sub>2</sub>O<sub>3</sub> + Pr<sub>6</sub>O<sub>11</sub> as well as 12m at 1.12% TREO with 0.21% Nd<sub>2</sub>O<sub>3</sub> + Pr<sub>6</sub>O<sub>11</sub> from a separate mineralised lode.

Mapping and sampling for lithium at the Company's Chalby Chalby project has delineated an area of 3.3km by 3km that includes multiple stacked pegmatites with a cumulative strike length of over 11km and with surface sample results up to 0.61% Li<sub>2</sub>O.

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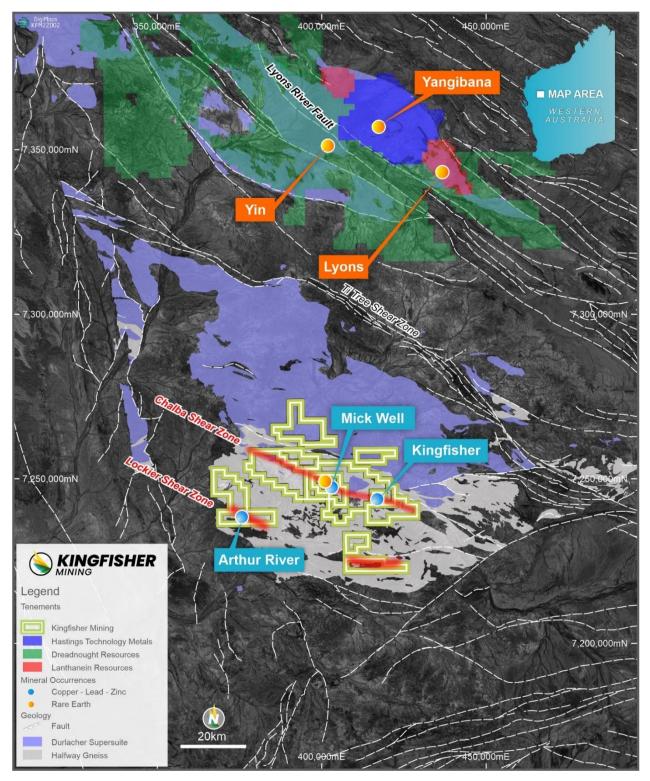
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**Figure 4:** Location of the Mick Well Project in the Gascoyne Mineral Field showing the extents of the Durlacher Suite and Halfway Gneiss. The location of the Yangibana Deposit and Yin and Lyons Projects 100km north of Kingfisher's projects are also shown.

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This announcement has been authorised by the Board of Directors of the Company.

#### Ends

#### For further information, please contact:

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#### **About Kingfisher Mining Limited**

Kingfisher Mining Limited (**ASX:KFM**) is a mineral exploration company committed to increasing value for shareholders through the acquisition, exploration and development of mineral resource projects throughout Western Australia. The Company's tenements and tenement applications cover 1,676km<sup>2</sup> in the underexplored Ashburton and Gascoyne Mineral Fields.

The Company has made a number of breakthrough high grade rare earth elements discoveries in the Gascoyne region where it holds a target strike lengths of more than 54km along the Chalba mineralised corridor and more than 30km along the Lockier mineralised corridor. The Company has also secured significant landholdings across the interpreted extensions to its advanced copper-gold exploration targets giving it more than 30km of strike across the Boolaloo Project target geology.

To learn more please visit: www.kingfishermining.com.au

#### **Previous ASX Announcements**

ASX:KFM: Gravity Survey Confirms Carbonatite Pipe Targets at Mick Well 23 October 2023.

ASX:KFM: Further High Grade REE Mineralisation Discovered at Mick Well 3 October 2023.

ASX:KFM: Carbonatite Intrusions Confirmed at Large-Scale Chalba Targets 10 July 2023.

ASX:KFM: Significant Exploration Program Targets Large-Scale Carbonatites 4 April 2023.

ASX:KFM: High Grade Drilling Results Confirm New MW2 REE Discovery 7 February 2023.

ASX:KFM: MW2 and MW7 Continue to Expand on Latest Surface Sample Results 23 January 2023.

ASX:KFM: Assays from MW7 Confirm Another High Grade REE Discovery 29 November 2022.

**ASX:KFM:** New REE Discoveries along Kingfisher's 54km Target Corridor - MW7 and MW8 24 October 2022.

ASX:KFM: Further Exceptional REE Results Extends MW2 Strike Length to 3km 4 October 2022.

ASX:KFM: 40% REE Returned from Mick Well 30 August 2022.

**ASX:KFM:** Latest Drilling Returns High Grade REEs with 5m at 3.45% TREO, including 3m at 5.21% TREO 5 July 2022.

**ASX:KFM:** Surface Assays up to 21% TREO Define a Further 800m of Outcropping Mineralisation 20 June 2022.

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**ASX:KFM:** High Grade Rare Earths Returned from Discovery Drill Hole: 4m at 1.84% TREO, including 1m at 3.87% TREO 24 March 2022.

ASX:KFM: Significant Rare Earths Discovery: 12m at 1.12% TREO 10 January 2022.

- ^ ASX Announcement '40% Increase in Resource Tonnage at Yin Mangaroon (100%)'. Dreadnought Resources Limited (ASX:DRE), 5 July 2023.
- # ASX Announcement 'Drilling along 8km long Bald Hill Fraser's trend Increases Indicated Mineral Resources by 50%'. Hastings Technology Metals Limited (ASX:HAS), 11 October 2022.
- \* ASX Announcement 'Stunning new drilling results from Yinnetharra'. Delta Lithium Limited (ASX:DLI), 23 June 2023.
- ASX Announcement 'Yinnetharra Lithium Project Continues to Deliver'. Red Dirt Metals Limited (ASX:RDT), 14 April 2023.

#### **Technical Exploration Papers**

- \* Simandl, G.J. and Paradis, S. 2018. Carbonatites: related ore deposits, resources, footprint, and exploration methods, Applied Earth Science, 127:4, 123-152
- \* Elliott, H.A.L., Wall, F., Chakhmouradian, A.R., P.R.Siegfried, Dahlgrend, S., Weatherley, S., Finch, A.A., Marks, M.A.W., Dowman, E. and Deady, F. 2018. Fenites associated with carbonatite complexes: A review. Ore Geology Reviews, Volume 93, February 2018, Pages 38–59.

#### **Total Rare Earth Oxide Calculation**

Total Rare Earths Oxides (TREO) is the sum of the oxides of the light rare earth elements lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), and samarium (Sm) and the heavy rare earth elements europium (Eu), gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb), lutetium (Lu), and yttrium (Y).

#### **Forward-Looking Statements**

This announcement may contain forward-looking statements which involve a number of risks and uncertainties. These forward-looking statements are expressed in good faith and believed to have a reasonable basis. These statements reflect current expectations, intentions or strategies regarding the future and assumptions based on currently available information. Should one or more of the risks or uncertainties materialise, or should underlying assumptions prove incorrect, actual results may vary from the expectations, intentions and strategies described in this announcement. No obligation is assumed to update forward looking statements if these beliefs, opinions, and estimates should change or to reflect other future developments.

#### **Competent Persons Statements**

The information in this report that relates to Exploration Results is based on information compiled by Mr James Farrell, a geologist and Executive Director / CEO employed by Kingfisher Mining Limited. Mr Farrell is a Member of the Australian Institute of Geoscientists and has sufficient experience that is relevant to this style of mineralisation and type of deposit under consideration and to the activity that is being reported on to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Farrell consents to the inclusion in the report of the matters in the form and context in which it appears.

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