

## CORPORATE PROFILE

Shares on issue: 53,715,001

Listed options: 14,850,001

Unlisted options: 11,935,000

Cash: \$4.5M (31 December 2022)

Market Capitalisation: \$16.1M\*

Debt: Nil

## PROJECTS

### MICK WELL AND KINGFISHER

Breakthrough high grade rare earth elements discovery in the Gascoyne region of Western Australia

### BOOLALOO

Exciting copper and gold potential in the Ashburton region of Western Australia

## CORPORATE DIRECTORY

### WARREN HALLAM

Non-Executive Chairman

### JAMES FARRELL

Executive Director and CEO

### SCOTT HUFFADINE

Non-Executive Director

### STEPHEN BROCKHURST

Company Secretary

## MEDIA & INVESTOR ENQUIRIES

Peter Taylor, NWR Communications

P: +61 412 036 231

E: peter@nwrcommunications.com.au

ABN: 96 629 675 216

P: +61 8 9481 0389

E: info@kingfishermining.com.au

Unit 2, 106 Robinson Avenue

Belmont WA 6104 AUSTRALIA

\* Based on a share price of \$0.30 as of 22 February 2023

# Exciting Carbonatite Potential at Arthur River

## REE-Bearing Ironstones Intersected in Drilling

- Significant potential at Arthur River has been highlighted from the review of open file exploration data which has revealed numerous Rare Earth Element (REE) and carbonatite mineralisation pathfinder elements at the large-scale LK1 target, interpreted to include intrusion plugs as well as associated veins and dykes.
- Previous drilling at LK1 has targeted Zn-REE bearing ironstones and has intersected broad zones of iron carbonate (siderite), which is interpreted to be associated with the intrusion of carbonatites. The ironstone deposits of Dreadnought Resources' Yin Project which includes maiden mineral resources of 14.36Mt @ 1.13% TREO (see ASX:DRE 24 January 2023<sup>^</sup>) is developed in siderite-rich ferrocarnatites.
- Potassic alteration has also been intersected in drilling and identified from analysis of surface samples close to the ironstones; the potassic alteration is now interpreted to be fenite, a type of alteration that occurs with carbonatite intrusions.
- The recent airborne geophysical surveys completed by Kingfisher highlighted numerous circular magnetic and radiometric features which are interpreted to be potential carbonatite pipes in the LK1 area and broader Arthur River tenement package (see ASX:KFM 18 January 2023).
- The drilling and rock chips as well as Kingfisher's recent airborne geophysical surveys all highlight a large target area with potential carbonatite plugs which extend over a strike length of 9km and is more than 6.5km wide.
- The exploration results also highlight the significant potential of the Lockier target corridor to host carbonatite intrusive complexes, with numerous geophysical features and geochemical anomalies pointing to the potential presence for REE mineralisation associated with carbonatite intrusions.
- Field work is set to commence in March, with the Company's full exploration plans for the 2023 to be announced in the coming weeks; ahead of the field season.

Kingfisher Mining Limited (ASX:KFM) ("Kingfisher" or the "Company") is pleased to announce the results of its review of previous exploration data for the large-scale LK1 carbonatite target which is part of its 100% owned Arthur River Project in the Gascoyne Mineral Field in Western Australia. The review provides further support for the potential of a large-scale carbonatite-related REE system at LK1.

Kingfisher's Executive Director and CEO James Farrell commented: "In January we announced the results from our airborne geophysics surveys which led to the identification of 17 large-scale carbonatite plug and dyke targets across the 84km of strike of our Chalba and Lockier target corridors.

We have now completed a review of historical exploration data which covers the largest target, LK1. The review has revealed an enormously exciting and significant body of evidence which supports the presence of a large-scale carbonatite system, including iron carbonates, fenite alteration as well as anomalous REE and pathfinder elements from previous drill holes and surface samples across the large target area.

Fieldwork at LK1 and other high-priority targets is set to commence in March and will be initially focused on advancing the potential carbonatite intrusion targets."

## Previous Exploration at LK1

Past exploration in the Arthur River area has established the potential for carbonatite intrusion-related REE mineralisation at the large-scale LK1 target. Previous drilling and surface sampling at LK1 has established the presence of siderite and potassic alteration, numerous anomalous REEs as well as pathfinder elements.

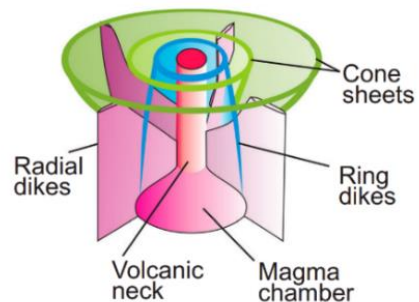
Exploration at LK1 has been completed in three main phases:

- 1997–1998: Paladin Resources NL targeted surficial calcrete Uranium mineralisation, completing ground-based geophysical surveys, mapping and rock chip sampling. Anomalous REE (La) results were returned from one sample.
- 2001–2002: Rio Tinto Exploration Pty Ltd targeted Broken Hill Style massive sulphide mineralisation in the area, completing four drill holes which returned anomalous REE results from a limited REE suite which included Ce, La, Nb and Y.
- 2007–2009: Barranco Resources NL followed up the Rio Tinto Exploration work, completing 25 drill holes targeting outcropping ironstones. Due to the nature of the target base metal mineralisation, the drill holes were not assayed for REEs.

The previous exploration work did not identify economic concentrations of the target base metal and uranium mineralisation but has provided significant results which are highly encouraging when considered in the context of the carbonatite exploration model.

## 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 1). 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 2).

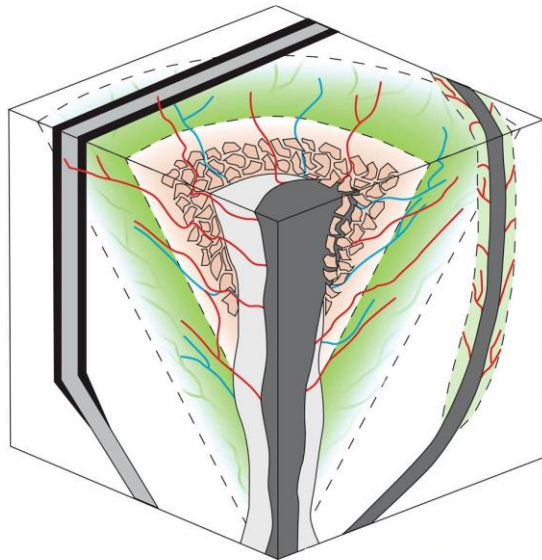


**Figure 1:** 3D schematic of a carbonatite intrusion\*

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.
- Ferrocarnatites have high iron content and can appear as magnetic highs in the geophysics.
- Aster 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.



Carbonatite generation 1   Carbonatite gen. 2   Carbonatite gen. 3   Sodic fenitization  
 Potassic fenitization   Micaceous fenite   Potassic fenite breccia   ..... Gradational boundary  
 Sodic fenite veins (early)   Nb-bearing veins (intermediate)   REE-bearing veins (late)

**Figure 2:** 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.

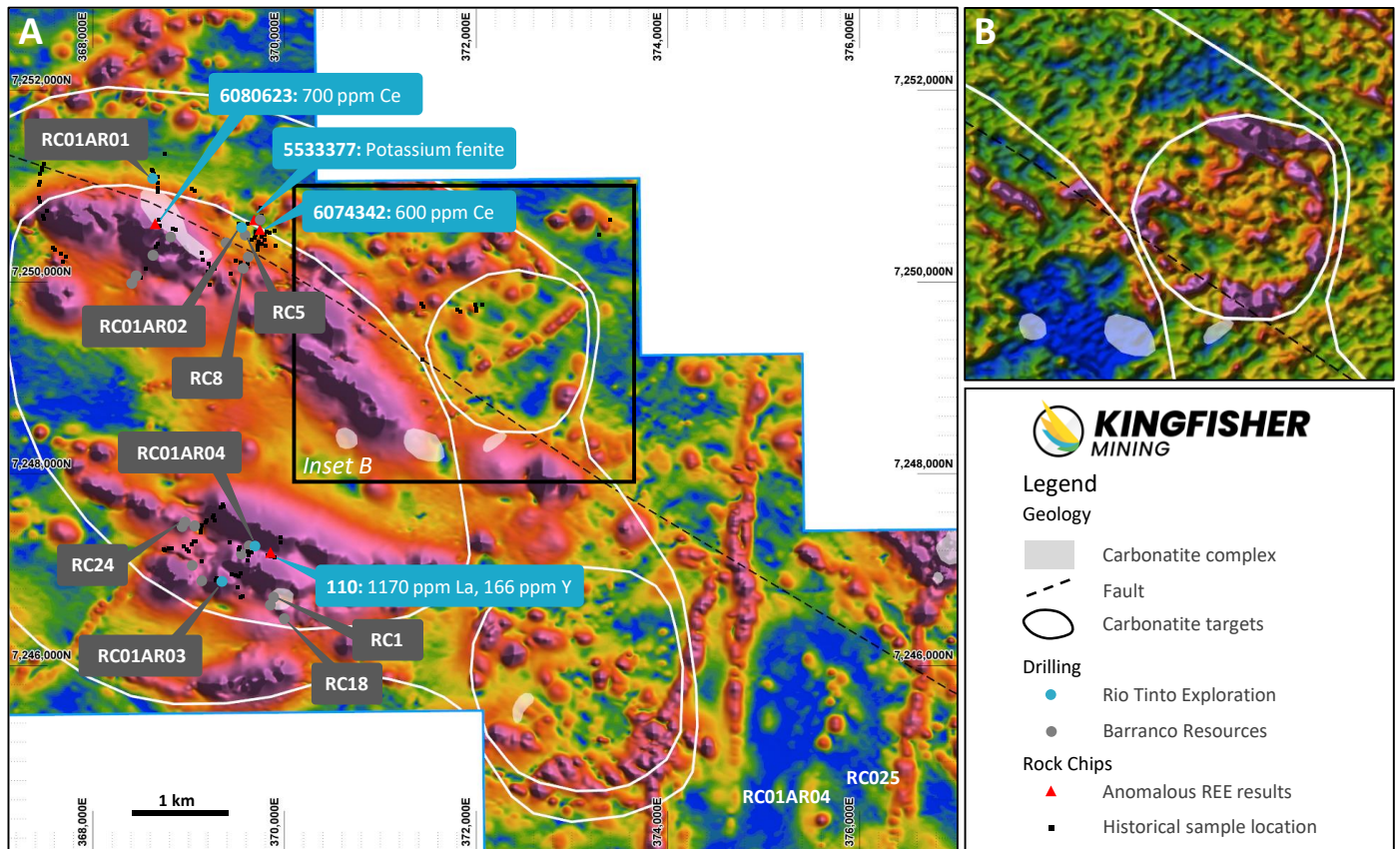
## Significant Body of Exploration Work Supports Carbonatite Mineralisation

The large-scale LK1 target is more than 9km long and more than 6.5km wide and is comprised of multiple circular features which are defined by the magnetics and thorium, with a ring-shaped thorium feature having a diameter of 1.7km (see ASX:KFM 18 January 2023). The combination of magnetic, thorium and potassium responses of the target appear similar to the architecture of the carbonatite intrusion model, with potential for carbonatite plugs and the associated vein and dyke mineralisation (Figure 2).

Previous exploration results include:

- Broad zones of ironstone and siderite intersected in multiple drill holes completed by Barranco (Wamex report A78338). Siderite-rich ironstones host the REE mineralisation within the Gifford Creek Carbonatite complex, including at Dreadnought Resources' Yin discovery^.
- Significant areas of ironstone have been mapped at surface, with limited surface sample results confirming the presence of highly anomalous rare earth elements, including 1170 ppm La and 166 ppm Y (Figure 3, Wamex report A57341) as well as other samples with 700 ppm Ce and 600 ppm Ce (Wamex report A65851). Results from samples similar La and Ce values with analysis of the full suite of REE element from Kingfisher's Mick Well are typically in the order of 0.5% and 0.3% TREO (see ASX:KFM 30 August 2022).
- Kingfisher's work in the Mick Well area has established a relationship between REEs and various pathfinder elements, including Ba, Sr, P, Co, Ni and Zn. Drilling in the LK1 area completed by Rio Tinto Exploration (four holes) was only analysed for Ce, La and Y as well as a number of pathfinder elements. Assays from the Rio Tinto drilling returned anomalous REEs and key pathfinder elements, including 340 ppm Ce, 195 ppm La, 125 ppm Y, 1100 ppm Ba and 8900 ppm P (Table 1, Wamex report A65851) supporting the potential for carbonatite-related REE mineralisation.
- Drilling by Barranco Resources targeted base metal-bearing ironstones and the 25 RC holes were not analysed for REEs. However, the drilling did return highly anomalous results for the pathfinder element Zn (Table 1), with results from ironstones which included 25m at 0.29% Zn from surface (RC5, Wamex report A78338) and 22m at 0.29% Zn from 1m (RC25, Wamex report A82640).
- Fenite alteration has been intersected in drilling and has been recorded from petrographic analysis of surface samples close to the ironstone outcrops (Wamex report A65851).

- Moderate to weak conductors coincident with the ironstones have been identified from ground-based Transient Electromagnetic (TEM) surveys in the LK1 area (Wamex report A75273). The REE mineralisation at Mick Well is also conductive, with the high grade REE mineralisation at MW2 identified from drilling a conductor target from Kingfisher's airborne electromagnetic survey (see ASX:KFM 10 January 2022).



**Figure 3:** Total magnetic intensity (A) and thorium responses (B) showing compelling carbonatite targets. Drill hole locations (grey boxes) described in Table 1 and surface sample (blue boxes) are also shown.

**Table 1:** Previous drilling results from the LK1 target area

Rio Tinto Drill Hole	Pathfinder elements: highest from 2m samples <sup>1</sup>
ARC01AR01	340 ppm Ce, 195 ppm La, 1100 ppm Ba and 1150 ppm P
ARC01AR02	280 ppm Ce, 165 ppm La, 125 ppm Y, 2600 ppm Ba and 3100 ppm P
ARC01AR03	8900 ppm P
ARC01AR04	1250 ppm Ba and 1400 ppm P
Barranco Drill Hole	Geology and elevated metals <sup>2</sup>
RC1	Ironstone with 7m at 0.25% Zn from 20m
RC5	Ironstone with 25m at 0.29% Zn from surface
RC8	Ironstone with 5m at 0.17% Zn from 20m
RC18	Ironstone with 30m at 0.13% Zn from 10m
RC24	Ironstone with 22m at 0.29% Zn from 1m

<sup>1</sup> Pathfinder elements in the reporting range are associated with REE mineralisation at MW2.

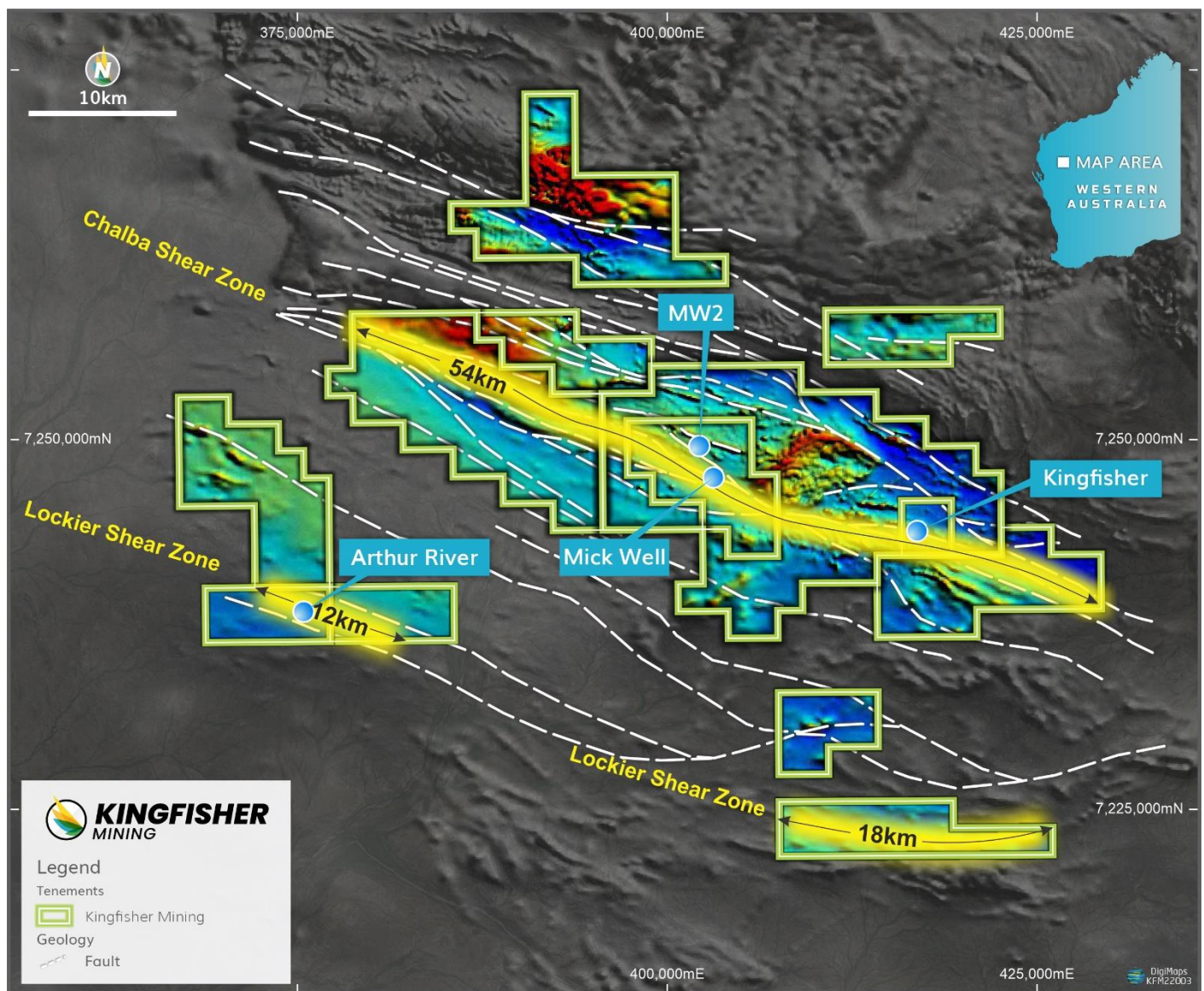
<sup>2</sup> Zinc is associated with the REE mineralisation at MW2. Drill holes not analysed for REEs.



### High-Priority Exploration Work Planned

On-ground mapping and sampling of the ironstones and potential carbonatite intrusions at the LK1 target is a high-priority for the Company and is scheduled to commence in a few weeks time. The historical drill sites of Barranco Resources will be visited and any residual drill spoils assessed for REE anomalism.

It is envisaged that the Company's 2023 exploration activities across its Gascoyne Projects will also include drilling at MW2, MW7, MW8 as well as substantial project generation work at KF3 as well as the CH1 to CH10 targets along the 54km Chalba target corridor and the LK1 to LK7 targets along the 30km Lockier target corridor (Figure 4). The 2023 exploration activities are also likely to include airborne geophysics across the Mooloo project.



**Figure 4:** Total Magnetic Intensity for the Kingfisher, Mick Well and Arthur River Projects. Kingfisher is targeting REE mineralisation associated carbonatite intrusions which intrude along faults and shear zones which extend for 54km within the Company's tenure.

### Upcoming News

- **February 2023:** Additional assay results from MW2 surface mapping.
- **March 2023:** Exploration activities for 2023.
- **March 2023:** Commencement of exploration activities for 2023 field season.
- **April 2023:** Infill and extensional drilling at MW2 as well as maiden drilling at MW7.

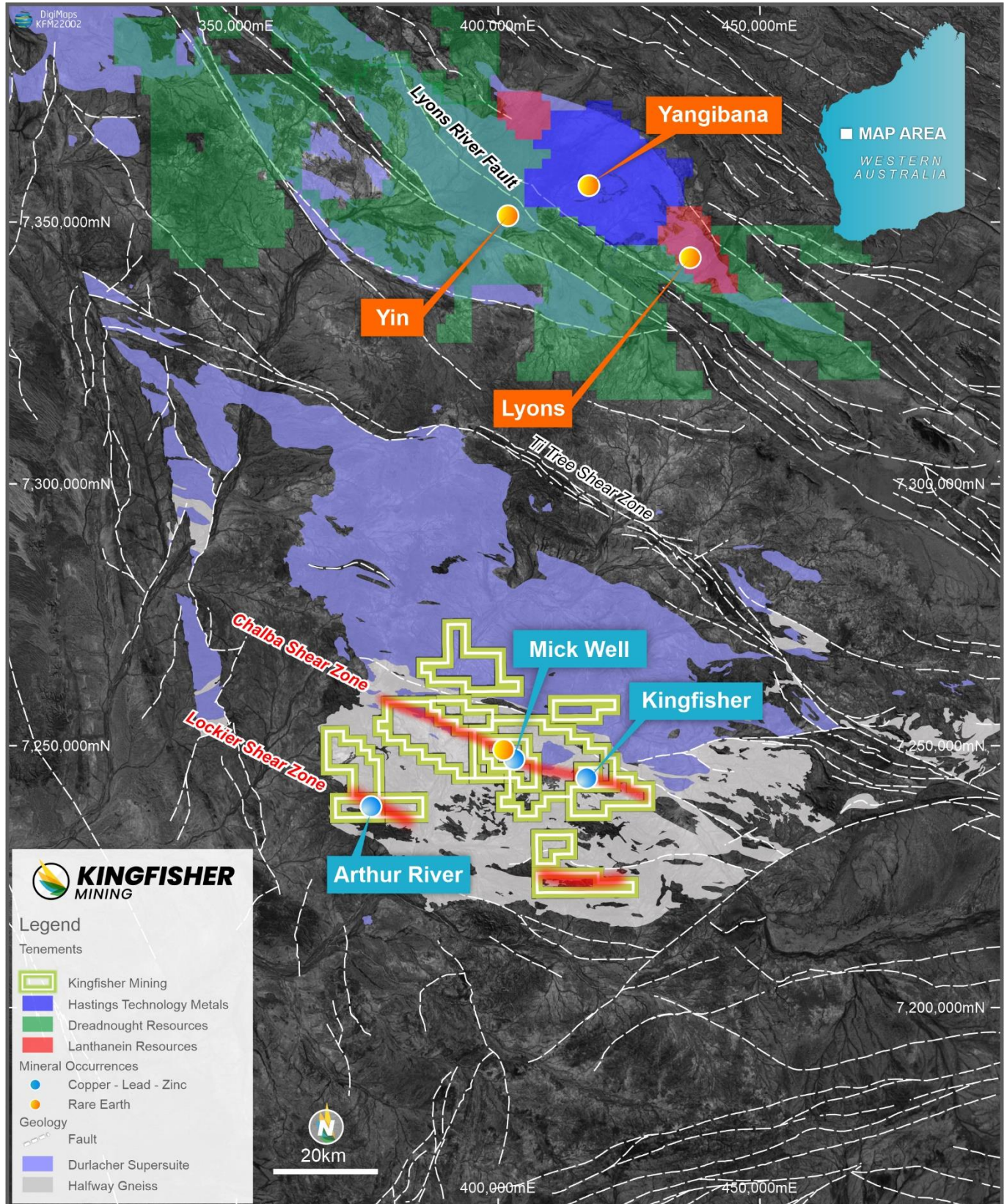
### About the Kingfisher and Mick Well Projects

The Mick Well and Kingfisher Projects are located approximately 230km east of Carnarvon, in the Gascoyne region of Western Australia. The Company holds exploration licences covering 969km<sup>2</sup> and has recently increased its interests in the Gascoyne Mineral Field by nearly 40% through the targeted pegging of additional tenure interpreted to be prospective for rare earth elements (Figure 5). The tenure includes rocks of the Proterozoic Durlacher Suite that hosts the world-class Yangibana Deposit which includes 29.93Mt @ 0.93% TREO<sup>#</sup> as well as the Archaean Halfway Gneiss.

The Company 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.

Geology mapping and sampling of the REE mineralisation at MW2 has returned rock chip results of over 40% TREO and resulted in the delineation of five parallel lodes of outcropping mineralisation within a 300m wide mineralised zone. Kingfisher's discovery drilling in the MW2 area has returned high grade monazite mineralisation with 5m at 3.45% TREO, including 3m at 5.21% TREO as well as 12m at 1.12% TREO, with 4m at 1.84% TREO. The mineralisation is associated with broad zones of potassium, sodic and mafic fenite, which are alteration styles that are associated with the intrusion of carbonatites.





**Figure 5:** 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.

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

**Ends**

**For further information, please contact:**

**Kingfisher Mining Limited**

James Farrell, Executive Director Ph: +61 (08) 9481 0389

E: [info@kingfishermining.com.au](mailto:info@kingfishermining.com.au)

**Media & Investor Enquiries**

Peter Taylor, NWR Communications Ph: +61 412 036 231

E: [peter@nwrcommunications.com.au](mailto:peter@nwrcommunications.com.au)

**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](http://www.kingfishermining.com.au)

**Previous ASX Announcements**

**ASX:KFM:** Large-Scale Carbonatite REE Targets Identified at Arthur River 18 January 2023.

**ASX:KFM:** Exciting New Carbonatite REE Targets Identified Along 54km Target Corridor 10 January 2023.

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

<sup>^</sup> ASX Announcement 'Initial High-Grade, Independent Resource over 3km at Yin – Mangaroon (100%)'. Dreadnought Resources Limited (ASX:DRE), 28 December 2022.

<sup>#</sup> 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.

**Previous Exploration Reports (WAMEX Reports)**

**A57341:** Paladin Brightstar Joint Venture. First Annual Report Report GR9321-2. Exploration Licence 09/894. Gascoyne Project 9321 – Western Australia. Report period 16 December 1997 to 15 December 1998.

**A65851:** Rio Tinto Exploration Pty Ltd. Report for the period ending 22<sup>nd</sup> April 2002 on Exploration conducted within E09/1017 Arthur River.



**A78338:** Barranco Resources NL. Mt Dalgety Project. Annual Exploration Report 2008. Tenements E09/1216, E091217, E09/1243. Report period 18 April 2007 to 17 April 2008.

**A75273:** Barranco Resources NL. Mt Dalgety Project. Annual Exploration Report 2007. Tenements E09/1216, E091217, E09/1243. Report period 30 January 2006 to 17 April 2007.

**A82640:** Barranco Resources NL. Mt Dalgety Project. Annual Exploration Report 2007. Tenements E09/1216, E091217, E09/1243. Report period 18 April 2008 to 17 April 2009.

### **Previous Exploration Reports (WAMEX Reports)**

\* 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.*

## Attachment 1: JORC Code, 2012 Edition – Table 1

### Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg '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 (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Barranco Resources NL (Barranco) reverse circulation (RC) drill samples were collected at 1m intervals and collected from a cyclone riffle splitter.</li> <li>Rio Tinto Exploration Pty Ltd (Rio Tinto) RC drill samples were collected as 2m composite split samples and collected from cyclone riffle splitter.</li> <li>Samples were crushed and a sub-fraction obtained for pulverisation.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).</li> </ul>	<ul style="list-style-type: none"> <li>Barranco drilling was completed using a HYDCO 40 reverse circulation drill rig.</li> <li>Rio Tinto reverse circulation drilling was completed by Grimwood Davies Pty Ltd.</li> <li>The reverse circulation drilling of both companies used a face-sampling hammer.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Barranco Resources reported drill sample recovery recorded for each 1m interval, the vast majority of recoveries were 100%.</li> <li>Rio Tinto recoveries were not reported.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>Historical drilling was completed to a high standard, with detailed records of geology, mineralogy and alteration.</li> </ul>
<b>Sub-sampling techniques</b>	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> </ul>	<ul style="list-style-type: none"> <li>Historical RC samples were collected from the drill rig splitter in calico and plastic bags. The RC samples were generally recorded as dry.</li> <li>Historical Drilling used a cyclone and riffle splitter.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>and sample preparation</b>	<ul style="list-style-type: none"> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>A sub-fraction was obtained for pulverisation from the crushed RC samples using a riffle splitter.</li> <li>It is not known if duplicate samples were collected and assayed. Duplicate sample results were not reported in the open file data and are not considered necessary at this early stage of exploration.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>Barranco drill samples were analysed by Genalysis Laboratory Services Pty Ltd in Perth. Sample preparation used an acid digest with perchloric and hydrochloric acids. Samples were assayed using Atomic Absorption Spectroscopy (AAS).</li> <li>Rio Tinto used Amdel laboratories for drilling assay using the Inductively Coupled Plasma Mass Spectroscopy Inductively Coupled (ICP-MS) Plasma Optical Emission Spectroscopy (ICP-OES) assay method, X-Ray Fluorescence and Fire assay.</li> <li>Rio Tinto used Amdel laboratories for rock chip analysis using the Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES), X-Ray Fluorescence and Fire assay (FA1).</li> <li>The assay method used by Paladin Resources NL (Paladin) for rock chips is not known.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>Verification of the historical samples was not reported by Rio Tinto, Barranco Paladin.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>Barranco Resources drill hole locations were surveyed using a GPS using the UTM coordinate system. Accuracy was not reported.</li> <li>Paladin rock chip locations were surveyed using a DGPS using the AMG coordinate system. Accuracy was not reported. Kingfisher converted the coordinates to a GDA94 coordinate system.</li> <li>The survey method used by Rio Tinto was not reported. The open file data was converted to GDA94 by Kingfisher.</li> <li>It is unknown the survey device Rio Tinto Exploration Pty Ltd used to record petrographic sample locations. Kingfisher Mining Pty Ltd has converted the coordinates to a GDA94 coordinate system.</li> <li>Historical downhole surveys were not recorded.</li> </ul>



Criteria	JORC Code explanation	Commentary
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Barranco exploration drilling was completed on sections spaced between 25m and 120m.</li> <li>Rio Tinto drilled four exploration holes. The drill holes are not on sections and are more than 500m apart.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The base metal mineralisation targeted by Rio Tinto and Barranco has a WNW strike and is moderately dipping to the SW.</li> <li>The true width of the mineralisation is likely to be close to the drill interval widths.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Samples were given individual samples numbers for tracking.</li> <li>The sample chain of custody was not reported.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>It is not known whether audits or reviews of sampling techniques and analytical data were completed.</li> </ul>

## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>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, historical sites, wilderness or national park and environmental settings.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The project area is located 50km northeast of the Gascoyne Junction and 200km east of Carnarvon.</li> <li>The project includes 12 granted Exploration Licences, E09/2242, E09/2349, E09/2319, E09/2320, E09/2481, E09/2494, E09/2495, E09/2653, E09/2654, E09/2655, E09/2660 and E09/2661.</li> <li>The tenements are held by Kingfisher Mining Ltd.</li> <li>The tenements lie within Native Title Determined Areas of the Wajarri Yamatji People and Gnulli People.</li> <li>All the tenements are in good standing with no known impediments.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>No previous systematic exploration for carbonatite-associated mineralisation had been previously completed.</li> <li>Exploration at Arthur River was undertaken by Barranco Resources NL from 2007 to 2010. Paladin Resources NL in 1998. Pasminco Ltd in 1994 and Rio Tinto Exploration Pty Ltd in 2002.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The Company's tenements in the Gascoyne Mineral Field are prospective for rare earth mineralisation associated with carbonatite intrusions and associated fenitic alteration.</li> </ul>

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<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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 should clearly explain why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>The source reports for all available information have included in this report. Original copies of the reports are available from wamex by searching using the 'A number'.</li> <li>No information has been excluded.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>Intervals that comprise more than one sample have been reported using averages. Length-weighting was used where the aggregated sample lengths were not equal.</li> <li>A cut-off grade of has not been used for the reported intervals.</li> <li>Metal equivalents have not been used in this report.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>The base metal mineralisation targeted by Rio Tinto and Barranco has a WNW strike and is moderately dipping to the SW.</li> <li>The true width of the mineralisation is likely to be close to the drill interval widths.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>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 drill hole collar locations and appropriate sectional views.</li> </ul>	<ul style="list-style-type: none"> <li>A map showing relevant data has been included in the report along with documentation.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>All of the relevant historical exploration data has been included in this report.</li> </ul>

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<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>All of the relevant historical exploration data has been included in this report.</li> <li>All historical exploration information is available via wamex.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>On-going exploration in the area is a high priority for the Company.</li> <li>Exploration to include tenement-scale acquisition of geophysics data to define the extents of carbonatites, mapping and rock chip sampling as well as additional RC drilling.</li> </ul>