



ASX: AR3

28 July 2022

# Quarterly Activities Report

For the three months ended 30 June 2022

## Australian Rare Earths establishes significant high-quality resource with substantial upside

Next drilling program set to start as part of strategy to grow and upgrade Koppamurra inventory

### Highlights

- Koppamurra Resource increased by 104% to 81.4Mt at 785ppm TREO (total rare earth oxide) [ASX: 4 July 2022](#) including:
  - an initial Indicated Resource of 45Mt at 835ppm TREO;
  - a 15% increase in TREO grade versus the maiden April 2021 Inferred Resource;
  - identification of an adjoining exploration target of 90 to 220Mt, providing substantial potential for upside resource growth; and
  - several areas returning thick clay intersections up to 6m and record high TREO grade of 15,500ppm across a 2km extension of the existing Red Tail resource.
- Successful completion of a unique early stage mining trial; invaluable to:
  - improving AR3's understanding of the structural nature of the Koppamurra clays;
  - providing initial insights for mine planning;
  - collecting a bulk sample for future metallurgical pilot plant tests;
  - providing an opportunity for landowners, regulators, and community members to learn about the deposit; and
  - demonstrating the potential for continuous land rehabilitation by leveraging the unique properties of the clays.
- Raised \$8.1m via an institutional share placement, despite difficult market conditions. With ~\$12.7m in cash and no debt at 30 June 2022, the Company's next steps include:
  - A drilling program of 10,000 to 20,000m scheduled to commence in Q3 2022, to grow the resource footprint and convert existing Resources to Measured Resources
  - Environmental studies to support a Mining Lease application
  - Completion of laboratory metallurgical testwork in preparation for pilot plant tests
  - Economic studies and evaluation of downstream processing opportunities

**Australian Rare Earths Limited** ([ASX: AR3](#)) is pleased to report on its activities for the three months ended 30 June 2022.

AR3 Managing Director, Don Hyma, said “The quarter has been a pivotal period for the Company as it established Koppamurra as a significant rare earths project.”

“It was a very active period, culminating with the release of a substantial resource increase, which saw the Koppamurra inventory more than double, showing we now have the required scale and grade to support our ongoing work with confidence,” Mr Hyma said.

“There is also potential for significant resource growth, and we plan to continue unlocking this value with a new drilling program scheduled to start soon.”

Mr Hyma said “AR3 is in an enviable position given the strong determination of end users to secure sources of rare earths from Western nations, particularly deposits which host heavy rare earth elements with negligible radionuclides.”

“Koppamurra has all four of the key rare earth elements required to make high-strength permanent magnets needed for EV motors and wind turbines,” he said.

“In parallel with ongoing growth in the inventory, we will continue to undertake economic assessments of our project and consider unlocking further value through the assessment of downstream processing opportunities.”

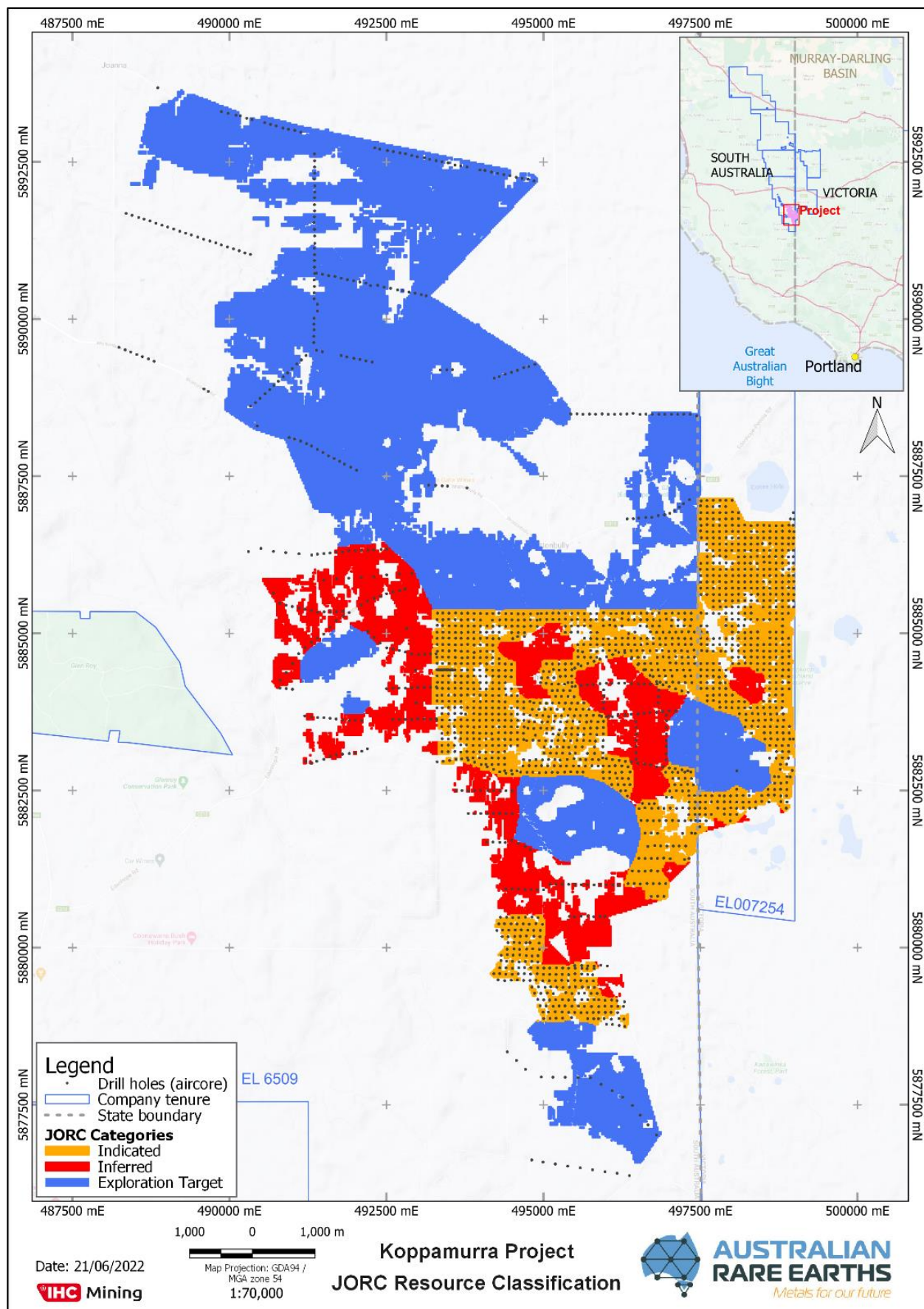
“We are also advancing metallurgical tests in preparation for a pilot plant, all of which are designed to demonstrate the technical and economic viability of the project and the potential to capitalise on the opportunity awaiting AR3.”

---

## Koppamurra Drilling and Resource

The Koppamurra deposit is emerging as a high-quality, low radionuclide clay-hosted rare earth deposit, uncommonly found outside southern China and Myanmar. Koppamurra is a shallow deposit that is amenable to low-impact air-core drilling, with an average drill hole depth of 10m and requiring a short 30 minutes from start to finish.

The updated Mineral Resource Estimate incorporates the results from two completed drilling programs announced to the ASX in February 2022 and April 2022, which also highlighted a ~30% increase in dry bulk density (1.40 to 1.78 t/m<sup>3</sup>), a potential 6km northerly and 2km southerly extension to the initial April 2021 Inferred Mineral Resource, and record grades of up to 15,500ppm TREO. The updated Mineral Resource estimate is based on drilling conducted over ~200km<sup>2</sup> or ~5% of the ~4,000km<sup>2</sup> in exploration licences held by AR3 in the region. The drilling program covered 21,400m of drilling over 2,057 holes, a significant increase over the initial 4,785m (670 holes) drilled for the Inferred Mineral Resource.



Plan view showing the Mineral Resource boundaries and the Exploration Target areas



The updated June 2022 Mineral Resource Estimate is set out in the table below, together with the Exploration Target for the extensional areas:

Koppamurra Mineral Resource Estimate – July 2022										
JORC Category	Tonnes Mt	TREO ppm	Magnet Rare Earths							
			Pr <sub>6</sub> O <sub>11</sub>		Nd <sub>2</sub> O <sub>3</sub>		Tb <sub>4</sub> O <sub>7</sub>		Dy <sub>2</sub> O <sub>3</sub>	
			ppm	% TREO	ppm	% TREO	ppm	% TREO	ppm	% TREO
Indicated	45	835	37	4.4	142	17	4	0.5	22	2.6
Inferred	36	721	32	4.4	122	17	3	0.5	19	2.6
<b>Total</b>	<b>81</b>	<b>785</b>	34	4.4	133	17	4	0.5	21	2.6
<b>Exploration Target<sup>1</sup></b>	<b>90-220</b>	<b>629- 849</b>	29- 41	4.6- 4.8	110- 150	17-18	3-4	0.5- 0.5	16- 22	2.5- 2.6
<b>April 2021 Initial Resource <sup>2</sup></b>										
Inferred	39.9	725	32	4.4	124.6	17.2	3.5	0.5	19.2	2.6

Mineral Resources reported at a cut-off grade of 325 ppm TREO-CeO<sub>2</sub>, consistent with the previous MRE.

1 - The potential quantity and grade of the Exploration Target is conceptual in nature. Further exploration is required to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

2 - Australian Rare Earths Prospectus dated 7 May 2021

The contiguous nature of the deposit supports on-going drilling to unlock further exploration upside to establish the Koppamurra deposit as a shallow, low cost, long-life resource with potential for what could become a generational-sized deposit.

### Koppamurra Mining Trial

Local contractor, Henschke Industries, successfully completed the trial mine excavation at Koppamurra during the quarter. Henschke is a local earthworks company, headquartered in Naracoorte, and its engagement continues AR3's support and involvement of local business.

The mining trial was completed adjacent to the existing Red Tail Mineral Resource area which has been one of the most extensively drilled areas to-date, generating a large geological dataset, the results from which warranted a small-scale mining trial in this location.

All five objectives of the mining trial were accomplished, most notably the ability to demonstrate land rehabilitation:

**Objective 1:** Improve the understanding of the structural nature of the clays, including the contact with the underlying limestone layer;

**Objective 2:** Obtain information for mine planning, specifically with respect to fleet selection and selective removal methods of the clay layer to minimise dilution from the underlying limestone or other low concentrations of rare earth minerals;

**Objective 3:** Collect a 500 tonne bulk sample of rare earth oxide rich clay for future metallurgical pilot plant tests;

**Objective 4:** Provide an opportunity for landowners, regulators, and community members to witness first-hand what a rare earth rich clay looks like and to learn about its mining and extraction at Koppamurra; and

**Objective 5:** Undertake land rehabilitation with the support of soil scientists, to demonstrate the potential for continuous rehabilitation and soil improvement to support enhanced crop productivity post mining.



*Trial mine at maximum excavation extents – 17 May 2022*



*Recent rehabilitation photo – green shoots appearing – 20 July 2022*

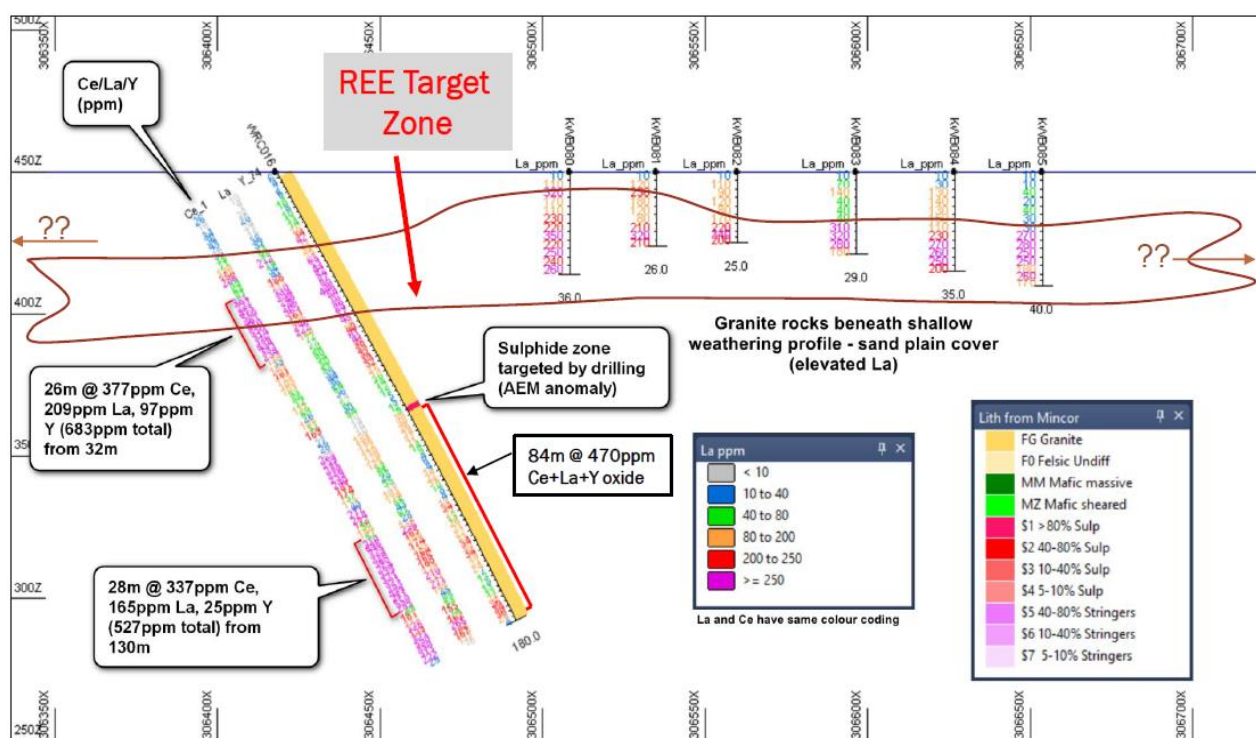




Landowners, soil scientists, and AR3 personnel come together at trial mine site – 14 May 2022

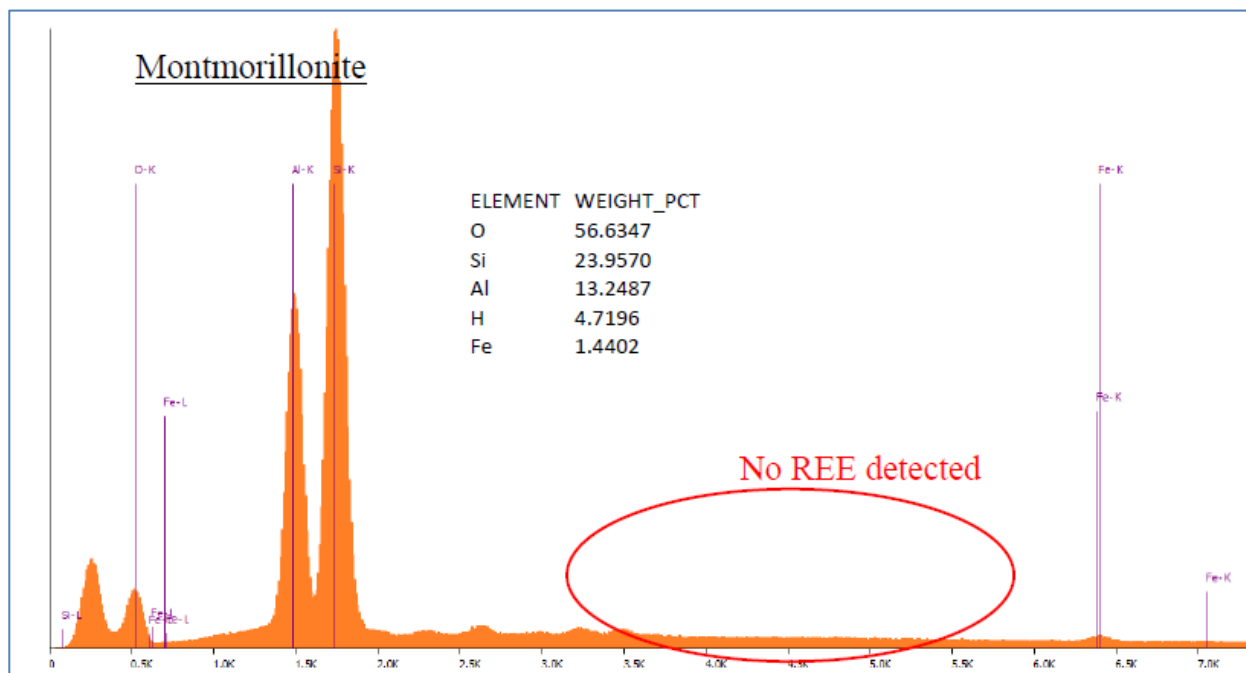
## West Australian Tenements

Belres Pty Ltd provided a selection of rare earth mineralised samples from intersections of the previously drilled Woolgangie Prospect to assess their amenability to metallurgical leaching, at ambient temperature and pressure. The test results undertaken at pH 1 showed no significant extraction of rare earths into solution. This result, despite the apparent rare earth host being a weathered granite and predominantly clay, indicated the rare earths were locked in a resistant mineral phase component of the weathered profile.

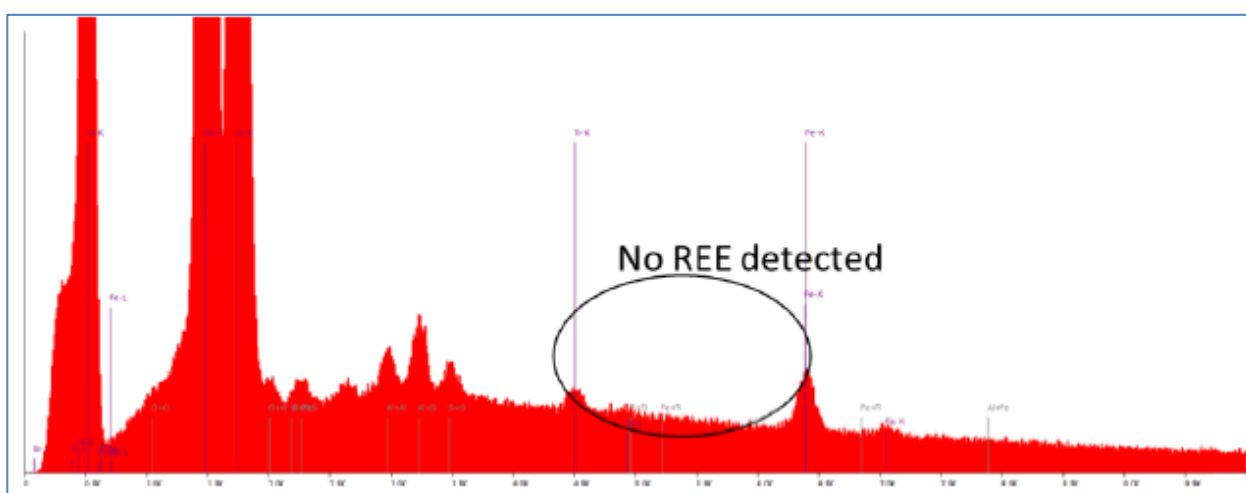


Automated mineralogical analysis on TIMA was undertaken to identify the host minerals for the rare earths. The results indicate the presence of Monazite and Florencite, both being rare earth phosphates with Cerium, Lanthanum and Neodymium enrichment.

In addition, several selected grains of clay and rare earth mineralisation were manually examined using the TIMA acquisition tool, to identify and determine the presence of rare earth elements at low concentrations and to establish the presence or absence of rare earths in the clays. The Montmorillonite in the group did not show any activity in the rare earth element region of the spectrum.



The Kaolin grain, similarly, did not show any activity in the rare earth region of the spectrum.



AR3 have reasonably established, through the application of mildly acidic leach conditions and mineralogical assessment through TIMA, that the anomalous rare earth contents within the weathered profile of the granite host at the Woolgangie prospect are held within the resistant mineral phases of fine Monazite and Florencite grains.

AR3, having undertaken this due diligence work, has elected not to proceed with exercising the option over the Woolgangie Rare Earth Element Project detailed in an announcement to the ASX 29<sup>th</sup> March 2022

### **Listing Rule 5.23 disclosure**

The Company confirms that it is not aware of any new information or data that materially affects the Exploration Results and the estimates of Mineral Resources in this release, and in respect of the estimates of Mineral Resources reported, that all material assumptions and technical parameters underpinning the estimates continue to apply and have not changed.

### **List of Tenements**

Tenement <sup>(1)</sup>	Location	Commodity	Project	Jurisdiction
EL6509	Naracoorte	Rare Earths	Koppamurra	SA
EL6613	Frances	Rare Earths	Koppamurra	SA
EL7254	Apsley	Rare Earths	Koppamurra	VIC
EL6690	Keith	Rare Earths	Koppamurra	SA
EL6691	Bordertown	Rare Earths	Koppamurra	SA
EPM27952	Massie Creek	Rare Earths	Massie Creek	QLD

1 – All tenements are 100% held by AR3

### **Finance Update**

The Company's cash balance at the end of the Quarter was A\$12,715,000.

During the quarter, the Company raised \$8.1 million (before expenses) via a placement to institutional and sophisticated investors. Under the raise, shares were issued at \$0.44 per new share. Placement participants received a free attaching unlisted option on a 1:2 basis, exercisable at \$0.57 each and expiring on 13 December 2023.

During the Quarter, the Company received \$66,700 from the ATO in respect of the AR3's R&D tax incentive for the year ended 30 June 2021.

### **Capital Structure**

Shares on issue: 129,498,220 fully paid ordinary shares.

Options on issue: 30,934,306 unlisted options, comprising:

- 6,000,000 exercisable at \$0.30 and expiring 25 January 2025
- 6,597,200 exercisable at \$0.45 and expiring 29 June 2024
- 2,000,000 exercisable at \$0.60 and expiring 29 July 2025
- 1,600,000 exercisable at \$1.44 and expiring 1 December 2024
- 2,000,000 exercisable at \$1.46 and expiring 1 December 2024
- 2,000,000 exercisable at \$1.95 and expiring 1 December 2025
- 9,237,106 exercisable at \$0.57 and expiring 13 December 2023
- 1,000,000 exercisable at \$1.02 and expiring 9 May 2025
- 500,000 exercisable at \$0.57 and expiring 4 July 2025



## Use of Funds

AR3 provides the following disclosures required by ASX Listing Rule 5.3.4 regarding a comparison of its actual expenditure as of 30 June 2022 versus listing on 29 June 2021 and the “use of funds” statement in the Prospectus dated 7 May 2021.

Funds (A\$)	Prospectus (\$k)	Actual (\$k)	Balance Remaining (\$k)
Pre-offer Cash as at 31 March 2021	732	732	-
Funds Raised Under the Offer	12,000	12,000	-
<b>Total Funds Available</b>	<b>12,732</b>	<b>12,732</b>	-
Offer Expenses	1,047	(1,047)	-
Resource Definition Drilling	4,000	(2,030)	1,970
Regional Exploration	2,000	(1,408)	592
Metallurgical Testwork and Studies	3,000	(830)	2,170
Working Capital	2,685	(2,398)	287
<b>Total Funds Applied</b>	<b>12,732</b>	<b>(7,713)</b>	<b>5,019</b>
Additional funds raised (net of costs)		7,629	
R&D tax concession receipt		67	
<b>Cash as at 30 June 2022</b>		<b>12,715</b>	

The Board of AR3 authorised this announcement to be released to the ASX.

## For further Information please contact:

Mr Don Hyma  
Managing Director  
Tel: 1300 646 100  
E: [hello@ar3.com.au](mailto:hello@ar3.com.au)

Mr Damien Connor  
Company Secretary/Chief Financial Officer  
Tel: 1300 646 100  
E: [hello@ar3.com.au](mailto:hello@ar3.com.au)

## About Australian Rare Earths Limited

Australian Rare Earths (AR3) is committed to the timely exploration and development of its 100% owned, flagship Koppamurra Project, located in South Australia and Victoria. Koppamurra is a prospective ionic clay hosted rare earth element (REE) deposit; uniquely rich in all the REE's required in the manufacture of rare earth permanent magnets which are essential components in energy efficient motors. The Company is focused on executing a growth strategy that will ensure AR3 is positioned to become an independent and sustainable source of REE's, playing a pivotal role in the global transition to a green economy.

## Appendix 5B

### Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Name of entity

Australian Rare Earths Limited

ABN

73 632 645 302

Quarter ended ("current quarter")

30 June 2022

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (12 months) \$A'000
<b>1.</b>	<b>Cash flows from operating activities</b>		
1.1	Receipts from customers	-	-
1.2	Payments for		
	(a) exploration & evaluation	(64)	(281)
	(b) development	-	-
	(c) production	-	-
	(d) staff costs - <i>net of allocations to capitalised exploration assets</i>	(151)	(663)
	(e) administration and corporate costs	(291)	(1,130)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	1	4
1.5	Interest and other costs of finance paid	-	-
1.6	Income taxes paid	-	-
1.7	Government grants and tax incentives – R&D Tax incentive	67	67
1.8	Other (provide details if material)		
<b>1.9</b>	<b>Net cash from / (used in) operating activities</b>	<b>(438)</b>	<b>(2,003)</b>

<b>2.</b>	<b>Cash flows from investing activities</b>		
2.1	Payments to acquire or for:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	(7)	(251)
	(d) exploration & evaluation	(1,532)	(3,866)
	(e) investments	-	-
	(f) other non-current	-	-

<b>Consolidated statement of cash flows</b>		<b>Current quarter \$A'000</b>	<b>Year to date (12 months) \$A'000</b>
2.2	Proceeds from the disposal of:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	-	-
	(d) investments	-	-
	(e) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (provide details if material)	-	-
<b>2.6</b>	<b>Net cash from / (used in) investing activities</b>	<b>(1,539)</b>	<b>(4,117)</b>

<b>3.</b>	<b>Cash flows from financing activities</b>		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	8,129	8,129
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	-	-
3.4	Transaction costs related to issues of equity securities or convertible debt securities	(500)	(1,385)
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings	-	-
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other (provide details if material)	-	-
<b>3.10</b>	<b>Net cash from / (used in) financing activities</b>	<b>7,629</b>	<b>6,744</b>

<b>4.</b>	<b>Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1	Cash and cash equivalents at beginning of period	7,063	12,091
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(438)	(2,003)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(1,539)	(4,117)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	7,629	6,744



## Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (12 months) \$A'000
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	<b>Cash and cash equivalents at end of period</b>	<b>12,715</b>	<b>12,715</b>

5.	Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	12,615	6,963
5.2	Call deposits	100	100
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>12,715</b>	<b>7,063</b>

6.	Payments to related parties of the entity and their associates	Current quarter \$A'000
6.1	Aggregate amount of payments to related parties and their associates included in item 1 <i>* The payments disclosed here relate to fees and salaries paid to all Directors (including the Managing Director and Technical Director) during the quarter.</i>	196
6.2	Aggregate amount of payments to related parties and their associates included in item 2	-
<i>Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.</i>		

## Mining exploration entity or oil and gas exploration entity quarterly cash flow report

<b>7.</b>	<b>Financing facilities</b> <i>Note: the term "facility" includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.</i>	<b>Total facility amount at quarter end \$A'000</b>	<b>Amount drawn at quarter end \$A'000</b>
7.1	Loan facilities	-	-
7.2	Credit standby arrangements	-	-
7.3	Other (please specify)	-	-
7.4	<b>Total financing facilities</b>	-	-
7.5	<b>Unused financing facilities available at quarter end</b>		
7.6	Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		

<b>8.</b>	<b>Estimated cash available for future operating activities</b>	<b>\$A'000</b>
8.1	Net cash from / (used in) operating activities (item 1.9)	(438)
8.2	(Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	(1,532)
8.3	Total relevant outgoings (item 8.1 + item 8.2)	(1,970)
8.4	Cash and cash equivalents at quarter end (item 4.6)	12,715
8.5	Unused finance facilities available at quarter end (item 7.5)	-
8.6	Total available funding (item 8.4 + item 8.5)	12,715
8.7	<b>Estimated quarters of funding available (item 8.6 divided by item 8.3)</b>	6.45 quarters
<i>Note: if the entity has reported positive relevant outgoings (ie a net cash inflow) in item 8.3, answer item 8.7 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.7.</i>		
8.8	If item 8.7 is less than 2 quarters, please provide answers to the following questions:	
8.8.1	Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?	
Answer: n/a		
8.8.2	Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?	
Answer: n/a		
8.8.3	Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?	
Answer: n/a		
<i>Note: where item 8.7 is less than 2 quarters, all of questions 8.8.1, 8.8.2 and 8.8.3 above must be answered.</i>		

## Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: .....28 July 2022.....

Authorised by: .....By the Board.....  
(Name of body or officer authorising release – see note 4)

## Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 6: Exploration for and Evaluation of Mineral Resources* and *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.