VHM Limited

VHM Limited

1H FY24 Results Presentation

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ASX:VHM

Acknowledgement of Country

VHM acknowledges the Australian Aboriginal and Torres Strait Islander peoples as the first inhabitants of the nation and the traditional custodians of the lands where we live, learn and work. We pay our respects to past, present and emerging Elders.

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Compliance Statement

The information in this presentation that relates to the Goschen DFS refresh and the Mineral Resource and Ore Reserve estimates were reported in the ASX announcement dated 28 March 2023. The Cannie Mineral Resource estimate was reported in the ASX announcement dated 16 May 2023 and the Area 4 Ore Reserve estimate was reported in the ASX announcement dated 29 September 2023. The Nowie Mineral Resource estimate was first reported in the ASX announcement dated 24 January 2024. The Company confirms that it is not aware of any new information or data that materially affects the matters previously reported and that all material assumptions and technical parameters underpinning the Mineral Resources and Ore Reserves estimates and forecast financial information derived from the production target in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented and have not been materially modified.

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VHM Limited (ASX:VHM) overview

VHM Limited

Australian owned rare earths and mineral sands mine and processing developer

Corporate Snapshot

Market Cap[1]

A$103.68 million

Share Price

A$0.51

Issued Shares

203,101,902

Share Options

12,793,708

Top 20 Shareholders

Top 20: 34%
Ellison WA: 8.9%

Cash[2]

A$14.0 million

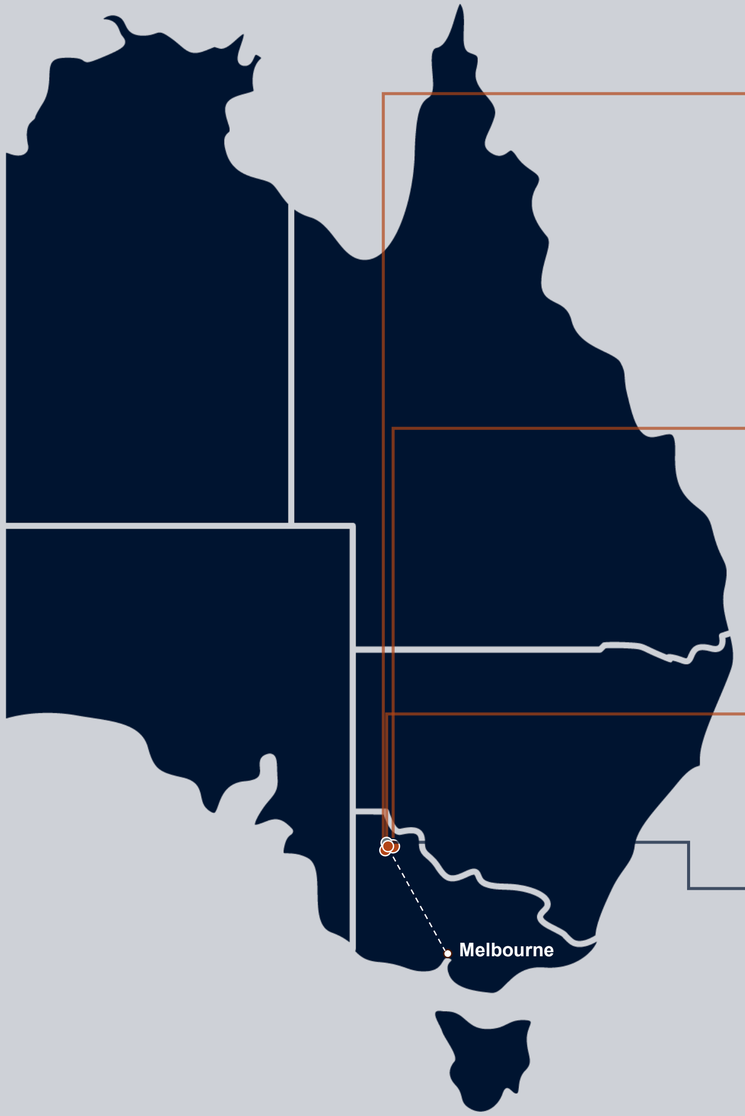
Key Assets

Goschen Project

Orion Project

Cannie Project

Nowie Project



GOSCHEN PROJECT[3]

210Mt @ 3.8% THM, MRE 629Mt, 413Kt TREO, Zircon 21.4%, Rutile 9.7%, Mon 3.5%, Xen 0.6%

CANNIE PROJECT[4]

192Mt MRE @ 3.1% THM, 176Kt TREO, Zircon 24.5%, Rutile 15.5%, Mon 4.1%, Xen 0.8%

AREA 4 ORION PROJECT[5]

11.5Mt ORE @ 5.6% THM, Zircon 19.6%, Rutile 12.2%, Mon 3.0%, Xen0.7%

NOWIE PROJECT[6]

16.4Mt MRE @ 3.8% THM, Zircon 16.1%, Rutile 15.6%, Mon 2.1%, Xen 0.5%

Notes:
(1): Market data at 27 February 2024 and sourced from the ASX
(2): Cash position reported 27 February 2024 to the ASX
(3): See Company ASX release dated 28 March 2023
(4): See Company ASX release dated 16 May 2023
(5): See Company ASX release dated 29 September 2023
(6): See Company ASX release dated 24 January 2024

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VHM Limited

Board and management team

Ian Smith
BEng Mining (Honours), BFinAdmin, FAusIMM, FIEAust
Non-Executive Chairman

40+ years executive and board experience with a career spanning domestic and international mining and mining services companies. Mr Smith's technical, operational and commercial disciplines have been attributes of his successful delivery of major capital projects and business growth for a number of listed companies and has held managing director and chief executive officer positions for Orica and Newcrest Mining.

Other Directorships:
- Chair of Rex Minerals Limited
- NED of Kestrel Coal Limited
- NED of Raven Gold Limited

Ron Douglas
BE, FAIM, MAusIMM, MAICD
Executive Director and CEO

Extensive executive and operations delivery experience gained over a 40-year career with publicly listed global mining, energy, and manufacturing companies. Mr Douglas expertise is in executive operations delivery positions with strengths in major capital program execution, and running corporate profit/loss centres, involving strategic program directorship, safety leadership and corporate transaction negotiation.

Other Directorships:
- Director of Talbot Investments

Maree Arnason
BA, FAICD
Non-Executive Director

35 years' experience across the resources, energy and manufacturing sectors and is highly experienced in the areas of governance, strategy, sustainability, risk, corporate affairs, stakeholder relations, transformations, divestments and integrations. Her broad commodity experience includes iron ore, gold, copper, timber, coal, mineral sands, and natural gas.

Other Directorships:
- NED of Gold Road Resources Limited
- NED of Ardea Resources Limited
- WA Division Director, AICD
- Chair of Juniper Aged Care
- Co-founder and Director of Energy Access Services

Don Runge
BEng Mining, MAusIMM
Non-Executive Director

40+ years' operational and project experience including industrial minerals where he managed the development of the Uley Graphite Project in South Australia. Mr Runge has held management positions for Newcrest Mining Limited, including Manager for Ridgeway Underground Project Development and General Manager of Cracow Gold Mine. Managed the team advising Philix Mining Corporation on development of its Silangan Au/Cu Project.

Michael Sheridan BEc, LLB, LLM, GradDipAppFinInv
Chief Financial Officer

30+ years' operations and financial experience as executive, having worked at senior management levels in publicly listed companies, predominantly in the international resources sector (mining and oil and gas), as well as telecommunications and corporate advisory sectors.

Ms Carly O'Regan MBA, GDipCom
Executive General Manager, Strategy and Investor Relations

Significant business and operational experience in a diverse range of industries, including finance, commercial, mining, oil and gas, both in Australia and internationally including Barclays Global Investors (iShares), Chevron Australia Gorgon and Wheatstone Projects, KPMG, Newcrest, and Shell Australia.

Mr Bernie Hyde
Executive General Manager, Operations Readiness

25+ years supervisory and management experience in operations and maintenance roles in the mining industry.
Mr Hyde is the current Chair of the MCA (Vic) Safety and Health Working Group.

Half year activities[1]

Period ending 31 December 2023

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Goschen Permitting

- Environment Effects Statement
- Mining Licence application

Commercial

- Shenghe binding offtake agreement
- Research & Development funding
- Demerger transaction complete with transfer of four exploration licences
- Final land acquisition agreement to secure Goschen footprint

Exploration

- Maiden Mineral Resource estimate for Nowie (Inferred)
- Area 4 Orion Ore Reserve (Probable)
- Exploration Licence Renewals

Note: (1) See ASX release dated 27 February 2024

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Goschen permitting pathway

Approvals milestones achieved

Primary Approval (EES)[1]

Q4 2023

Victorian Minister for Planning approved public exhibition for Goschen EES[3]

Exhibition stage: Public Submissions[4]
Monday 20 November 2023 – Wednesday 17 January 2024

Q1 2024

Hearing stage: Directions Hearing
Tuesday 13 February 2024

Hearing stage: Public Hearing
Commencing Monday 25 March 2024[5]

Q2 2024

Report stage: IAC Panel reports back to Planning Minister and next steps

Approval stage: Ministerial approval

Secondary Approvals (Work Plans, Mining Licence)[2]

Statutory advertising for the Goschen **Mining Licence application** commenced subsequent to the period[6].

NEXT STEP

Mining Licence application assessed by Earth Resources Regulator

Source: Engage Victoria website

Notes:
(1) EES Approval process managed by the Victorian Department for Planning
(2) Secondary Work Plans and Mining Licence application assessment outcome expected H2 2024
(3) See ASX release dated 1 November 2023
(4) See ASX release dated 14 November 2023
(5) See ASX release dated 24 January 2024
(6) See ASX release dated 24 January 2024

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Binding offtake agreement for Goschen products

Period ending 31 December 2023

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Key offtake terms[1]

- Memorandum of Understanding (MOU) relates to a dual product take or pay offtake agreement of REMC and zircon-titania HMC.
- Shenghe has committed to **purchase 60%** of the **REMC** and **HMC** for each calendar year of the agreement term.
- **Initial three-year agreement term** commencing on the first commercial shipment.

About Shenghe Resources

- Shenghe Resources (Singapore) Pte Ltd is a wholly owned subsidiary of global rare earths company Shenghe Resources Holding Co Ltd.
- Shenge is listed on the Shanghai Stock Exchange and has a market capitalisation of approximately US$3.1 billion. Shenghe's operations span rare earth mining, beneficiation, refining, trading and alloy and metals production.

MOU for first production confirms the quality of Goschen products

盛和资源
SHENGHE RESOURCES

Note (1) See ASX release dated 31 January 2024

Commercial update

Period ending 31 December 2023[1]

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Research and Development (R&D) funding received

- $4.5 million R&D refund from the Australian Taxation Office.

100% payment transaction received for four Victorian Exploration Licences

- $1.3 million from former subsidiary VP Minerals Ltd, concluding the loan agreement in accordance with the Demerger term.

Land Acquisition Agreement

- Final land acquisition secured for the operational footprint of the Goschen Project.

The receipt of funds puts the Company in a strong position moving into 2024 and will be used to continue the work streams underway for the Goschen Project.

Note: (1) See ASX release dated 24 January 2024
Image : Computer animated design of the proposed Goschen Project facility

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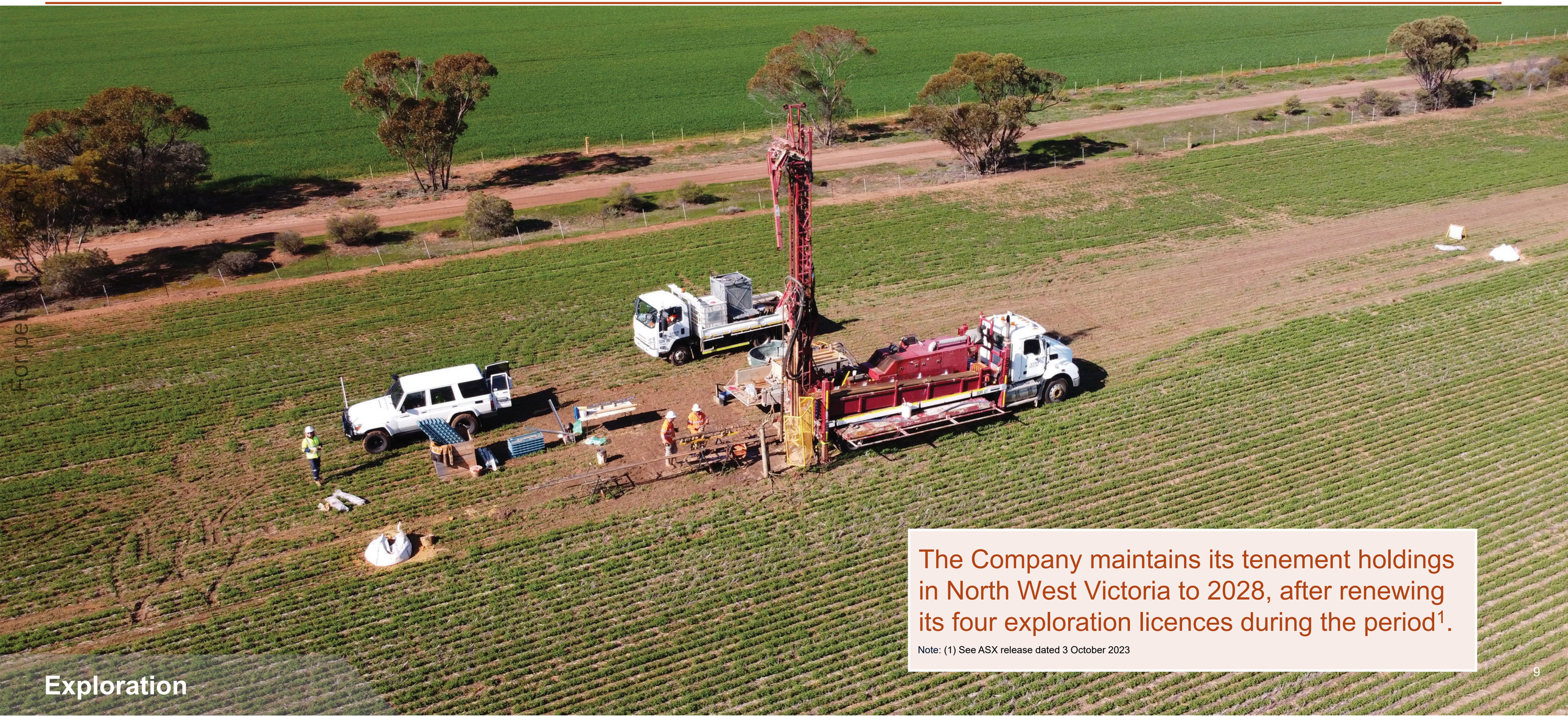
Exploration Activities

Period ending 31 December 2023



The Company maintains its tenement holdings in North West Victoria to 2028, after renewing its four exploration licences during the period[1].

Note: (1) See ASX release dated 3 October 2023

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Exploration Activities

Area 4 Orion Strandline - Maiden Probable Ore Reserve

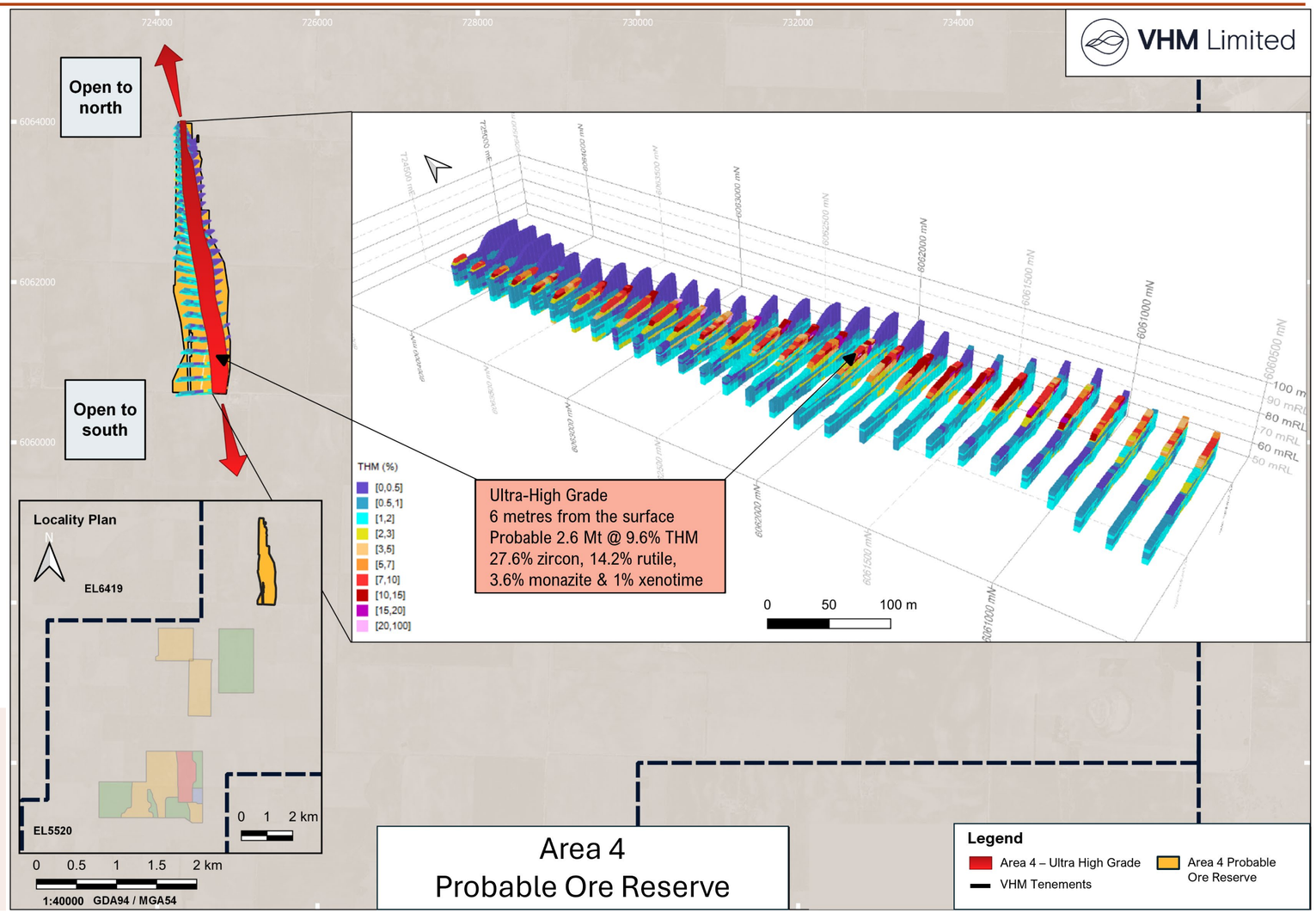
Added **11.5 Mt @ 5.6% THM** to Company Probable Ore Reserve[1].

Within this Ore Reserve a high-grade mineable horizon of 2.6 Mt @ 9.6% THM exists at the top of the ore body 6m from surface, including:

- 245,500 tonnes of mineable THM
- Average in-situ grade of TREO 2300ppm
- 67,700 tonnes of zircon at an in-situ grade of 2.6%

Area 4 is situated 8km to the north of the proposed Goschen Rare Earths and Mineral Sands process plant.

Significant high-grade ore body located near surface



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Note: (1) See ASX release dated 29 September 2023

Exploration Activities

Maiden Mineral Resource estimate for Nowie Project

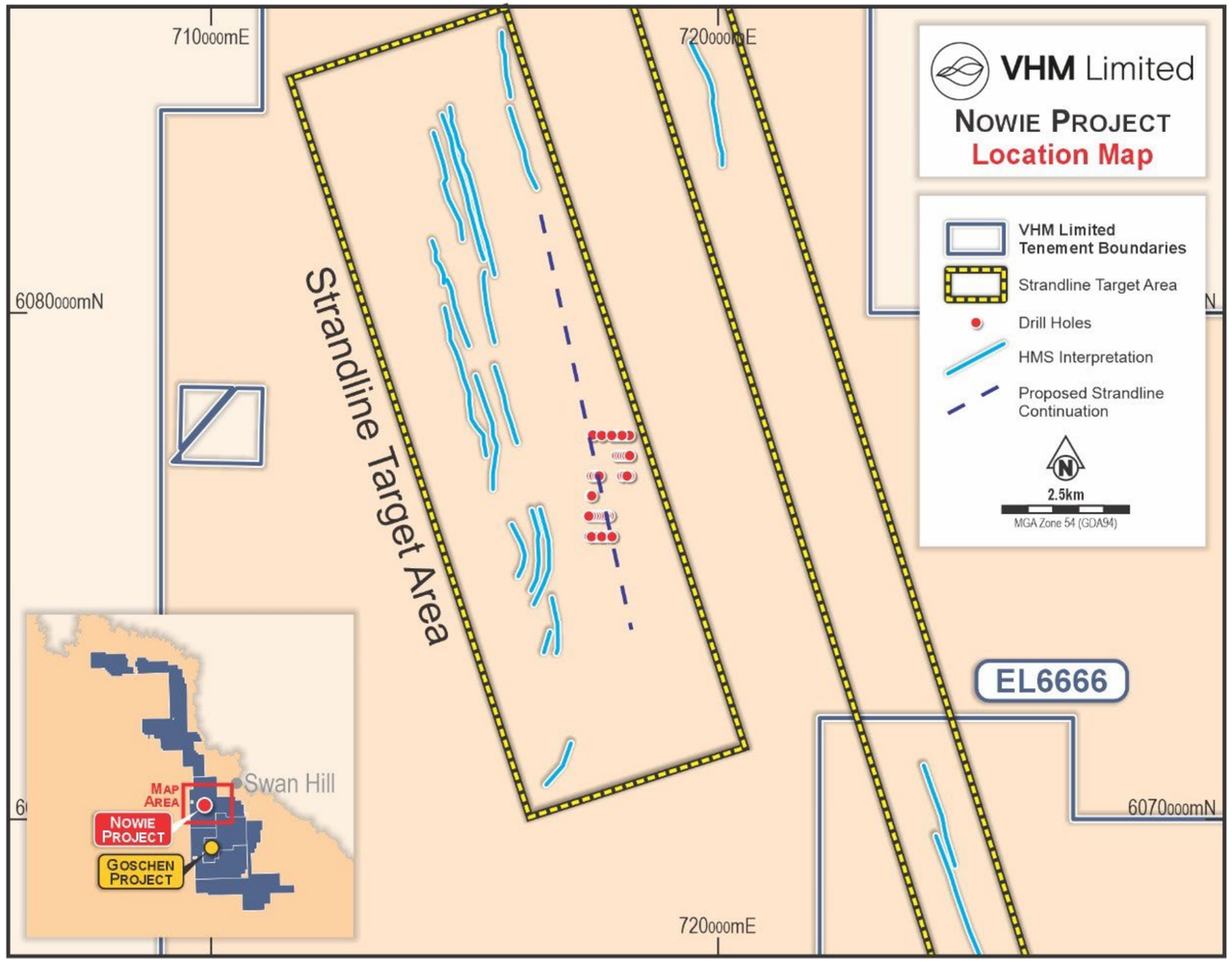

Figure: Nowie geophysics interpretations with identified strandline targets

Nowie Project is located 22 kilometres north of the flagship Goschen Project in North West Victoria.

A new *Inferred* Mineral Resource estimate (MRE) of **16.4Mt @ 3.8% THM grade** at Nowie[1].

Results include **6.4Mt @ 6.1%** THM contained in high-grade strandline deposits which remain open along and across strike.

Mineral assemblage containing **16% Zircon**, **16% Rutile**, **24% Leucoxene**, **2.1% Monazite** and **0.5% Xenotime**.

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Note: (1) See ASX release dated 24 January 2024

Community engagement and sponsorship

Period ending 31 December 2023[1]

Social

- Swan Hill Housing Summit
- Swan Hill Rotary Club's Kerang Art Show
- Golden Rivers and Central Murray Football-Netball Leagues
- Kerang Football-Netball Club
- A Good Kitchen Swan Hill
- Kerang Neighbourhood House Food Assistance Program

Education

- Teacher Earth Science Education Program (TESEP)
- Murray-Mallee Local Learning and Employment Network (MMLLEN) Swan Hill Careers Day

Local Industry

- Cross-Border Future Industry Workforce Forum - a Victoria and New South Wales government initiative
- Victorian Mine Rescue Competition (Minerals Council of Australia)
- Mallee Machinery Field Days

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Note: (1) See ASX release dated 27 February 2024
Pictured (L-R): Kerang Art Show, Teachers with TESEP Geology Consultant Dr Rodney Boucher, Cross-Border Future Industry Workforce Forum in action

Goschen Project Overview

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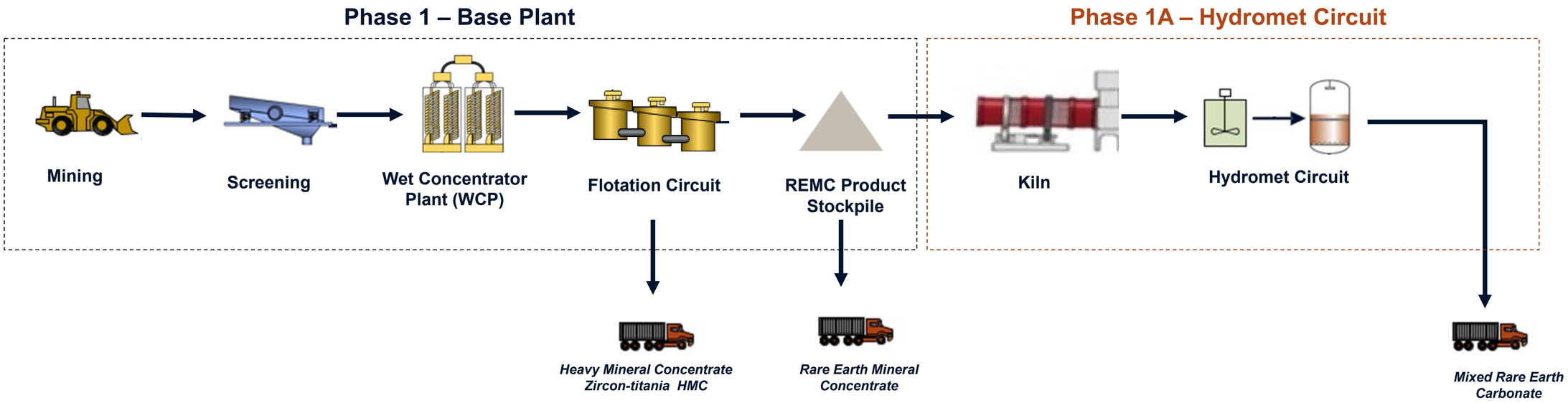
Goschen Project overview

Process and product flowsheet



High recoveries: Continuous improvements achieved through test work have demonstrated world leading recoveries of valuable rare earth, zircon and titanium products.

Final products: Zircon and titania HMC, REMC and MREC can be containerised in sealed sea containers for export.

Logistics solution: Ultima terminal (45km from the processing facility) will provide an intermodal rail solution to reach shipping ports.

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Goschen Project highlights

The DFS Refresh[1] demonstrates the Goschen Project economics to be compelling

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5Mtpa
>20 years
Conventional open cut mining methods excavation, load and haul

9.4ktpa
REMC
Target annual production rates for rare earth mineral concentrate (REMC)

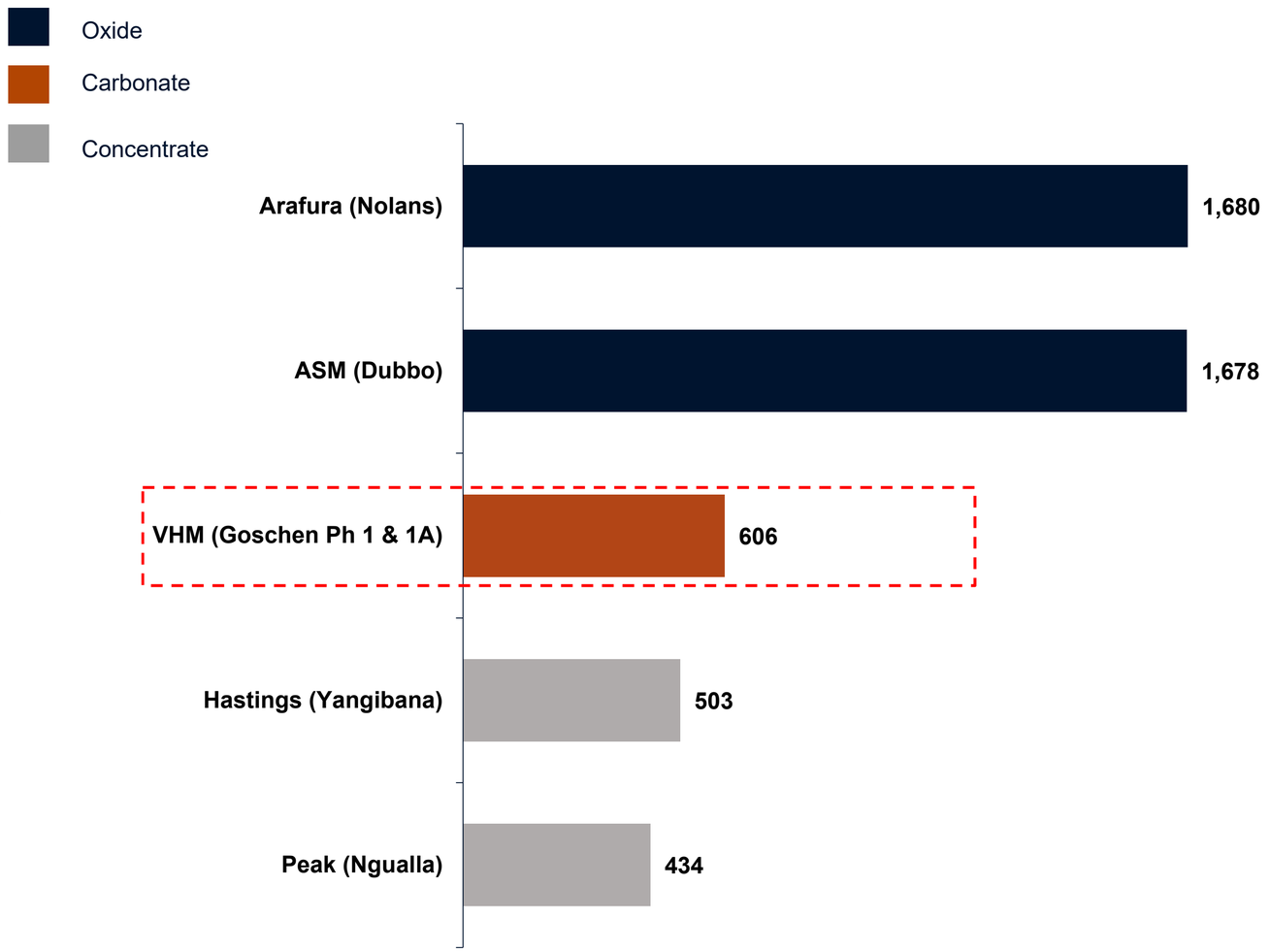
8.5ktpa
MREC
Target annual production rates for mixed rare earth carbonate (MREC)

134.5ktpa
HMC
Target annual production rates for zircon/titania heavy mineral concentrate (HMC)

5Mtpa Goschen Project DFS Financial Metrics (Phase 1 and 1A)			
Pre-tax NPV10 (A$ m)			1,525
Pre-tax IRR			44%
Payback from commencement of production (years)			2.8
Ore Reserve LoM (years)			20.5
Average ore grade (THM)			4.0%
Average strip ratio (waste : ore)			2.6 : 1
First 10 Years of Mine	Average Production (tpa)	REMC	9,428
		MREC	8,568
		Zircon-titania HMC	134,500
	Average revenue per annum (A$ m)		564
	Average opex per annum (A$ m)		273
	Average EBITDA per annum (A$ m)		291
	Average unlevered, pre-tax FCF per annum (A$ m)		270
	Average revenue A$/t ore		118
	Average operating costs A$/t ore		57
	Payback period (years)		2.8

Note: (1) See ASX release dated 28 March 2023. Goschen Project Financial Metrics for Phase 1 estimated to +/- 10-15% accuracy and Phase 1A completed to a Class 5 level of accuracy.

Capex is amongst the lowest of selected rare earth projects



Goschen's low development capex

Note: See peer comparison table for source data in Appendix A
**All values are in Australian dollars*

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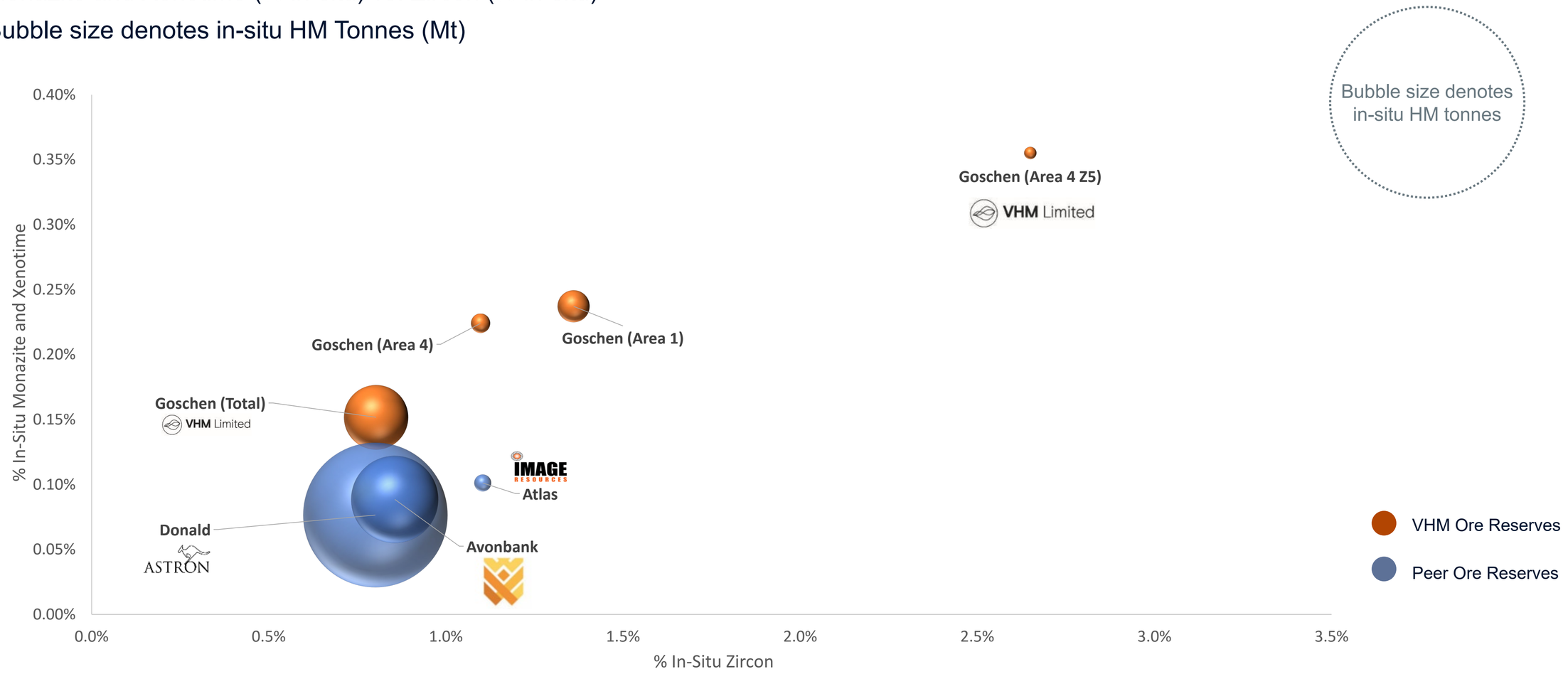
Ore Reserve peer comparison

Selected Global Rare Earth and Mineral Sand Reserves

- Monazite and Xenotime (% in-situ) vs. Zircon (% in-situ)
- Bubble size denotes in-situ HM Tonnes (Mt)



Note: See peer comparison table for source data in Appendix A

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Magnet rare earth oxide basket value peer comparison

Attractive proportion of valuable rare earth elements – heavy and light (US$/kg)

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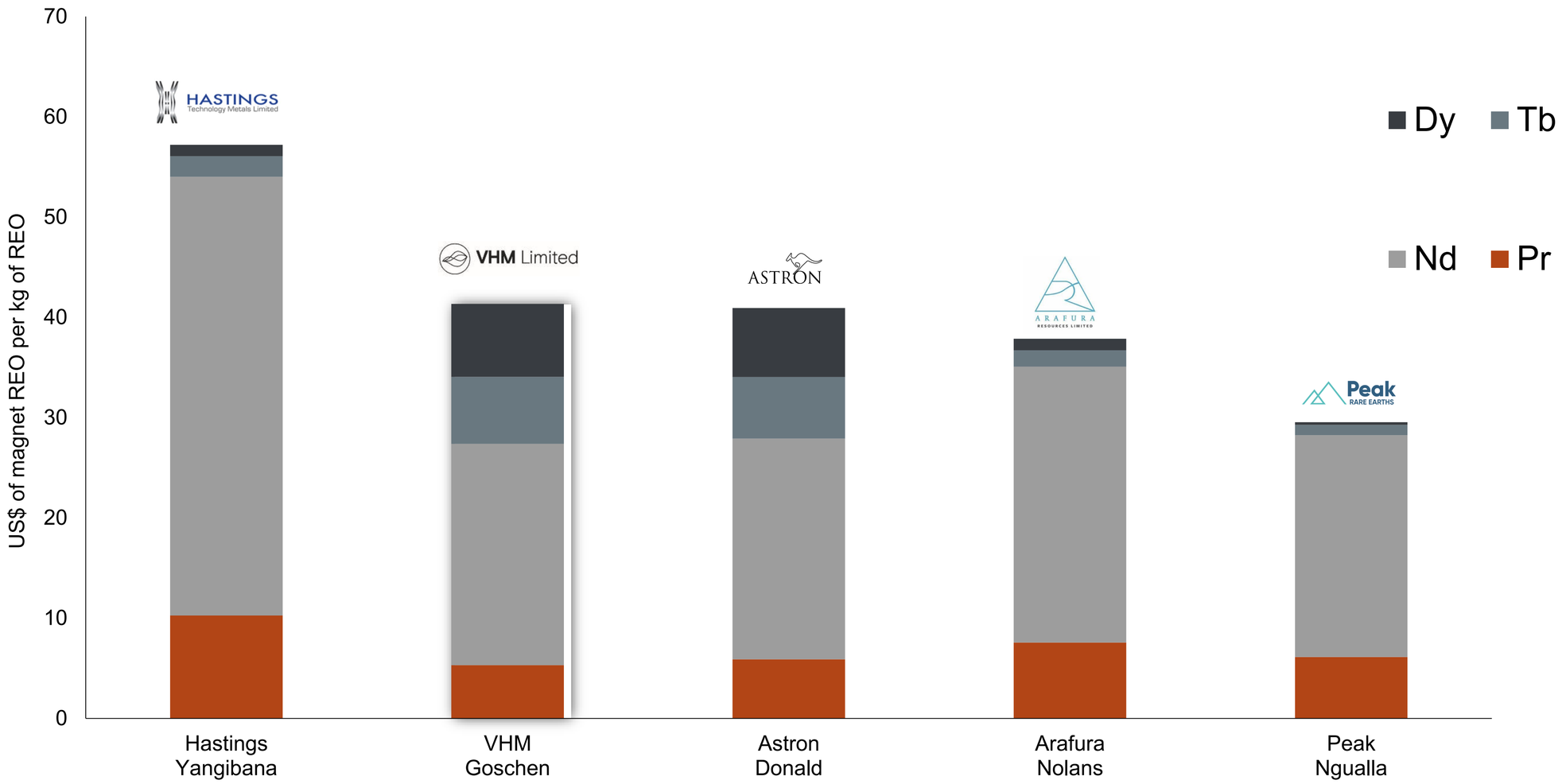

Note: See peer comparison table for source data in Appendix A

Hydromet Pilot Plant results demonstrate potential

Exceptional recoveries meet specifications required by Western strategic offtake partners

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- Market leading recoveries achieved at ANSTO producing a high purity **mixed rare earth carbonate (MREC) product**
  - **>97%** critical light rare earths **Nd/Pr**
  - **>92%** and **94%** for critical heavy rare earths **Dy** and **Tb**, respectively
- Measurements of the final content of uranium or thorium were considered exceptionally low.

Goschen MREC product contains less than 3% total impurities

Above: Goschen's rare earth product undergoing bench scale sulphation kiln testwork at ANSTO.

Left: Final MREC product from the Hydromet Pilot program.

Note: (1) See ASX release dated 6 June 2023

Acronyms : Australian Nuclear Science and Technology Organisation (ANSTO), Nd, – Neodymium, Pr – Praseodymium, Dy – Dysprosium, Tb – Terbium

Upcoming milestones

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Commence Public Hearing stage *of Goschen EES Process*

Finalise further offtake *and strategic partnerships*

Secure arrangements *for a Final Investment Decision*

Construction *for Phase 1 subject to final approvals*

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APPENDIX A

Peer Comparison Data

Project comparison table data for capex

Name	Project	Product	Plant type	Plant Feed Rate	Annual Production	Stage of Development	Location	Capital Cost ($A)
Arafura[1]	Nolans	Oxide	SX Facility	1 Mtpa	4.9ktpa	DFS	N.T.	$1.680B
ASM[2]	Dubbo	Oxide	SX Facility	1 Mtpa	1.5ktpa	DFS	N.S.W	$1.678B
VHM[3]	Goschen	Concentrate and Carbonate	Hydrometallurgical Plant	5 Mtpa	Phase 1: 9.4ktpa REMC Phase 1A: 8.5ktpa MREC	DFS	VIC	$606M
Hastings[4]	Yangibana	Concentrate	RE Flotation	1.1 Mtpa	Stage1: 37ktpa REMC	DFS	W.A.	$503M
Peak[5]	Ngualla	Concentrate	RE Flotation	0.8 Mtpa	16.2ktpa	BFS	Tanzania	$434M

Source data:
1. Arafura Rare Earths (ARU:ASX) Nolans Project sourced from “ASX Announcement – Quarterly Activities Report and Appendix 5B on 31 October 2023 - A$1,680M.
2. Australian Strategic Materials (ASM:ASX) Dubbo Project data sourced from ASX release “Chief Executive Officer’s AGM Presentation” published on 22 November 2023 - A$1,678M.
3. VHM (VHM:ASX) Goschen Project data sourced from ASX release “DFS Refresh” published on 28 March 2023. A$376M Phase 1 Plant and A$124M Phase 1A Hydromet. Includes A$106M pre-production mining and ancillary costs – A$606M
4. Hastings (HAS:ASX) Yangibana data sourced from ASX release “Binding Term Sheet Signed for Integrated Tolling and Offtake” published on 16 February 2024 - A$503M
5. Peak Rare Earths (PEK:ASX) Ngualla data sourced from ASX release “Completion of FEED Study” published on 30 November 2023. US$287M converted to A$ at 0.66 FX = A$434M.

**All data is subject to change without notice.*

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Project comparison data table for Ore Reserve

Company	Project	Location	Commodity Product	Reserve Classification	Material tonnes (Mt)	In-situ HM tonnes (Mt)	% HM Grade	% Zircon Grade	% Rutile Grade	% Monazite & Xenotime Grade	% In-situ Zircon	% In-situ rutile	% In-situ Titanium Minerals (rutile, ilmenite and leucoxene)	% In-situ Monazite & Xenotime	Stage of Development
VHM(1)	Goschen Area 1	VIC	Rare Earth & Mineral Sands	Proved	24.5	1.3	5.4	29.9	10.8	5.1	1.6	0.6	2.4	0.28	DFS
VHM(1)	Goschen Area 1	VIC	Rare Earth & Mineral Sands	Probable	14.6	0.5	3.2	29.2	11.7	5.4	0.9	0.4	1.5	0.17	DFS
VHM(1)	Goschen (Total)	VIC	Rare Earth & Mineral Sands	Proved	24.5	1.3	5.4	29.9	10.8	5.1	1.6	0.6	2.4	0.28	DFS
VHM(1)	Goschen (Total)	VIC	Rare Earth & Mineral Sands	Probable	185.7	6.7	3.6	20.9	9.8	4.0	0.8	0.4	1.6	0.14	DFS
VHM(1)	Goschen Area 4	VIC	Rare Earth & Mineral Sands	Probable	11.5	0.6	5.6	19.6	12.2	4.0	1.1	0.7	2.7	0.2	DFS
VHM(1)	Goschen Area 4 (Zone 5)	VIC	Rare Earth & Mineral Sands	Probable	2.6	0.2	9.6	27.6	14.0	3.7	2.6	1.3	5.3	0.4	DFS
Astron(2)	Donald	VIC	Rare Earth & Mineral Sands	Proved	415	19.9	4.8	18.6	7.2	1.8	0.9	0.3	2.7	0.09	DFS
Astron(2)	Donald	VIC	Rare Earth & Mineral Sands	Probable	410	16.8	4.1	16.9	7.3	1.6	0.7	0.3	2.4	0.07	DFS
WIM Resource(3)	Avonbank	VIC	Rare Earth & Mineral Sands	Proved	220.4	9.7	4.4	20.2	14.9	2.1	0.9	0.7	2.2	0.09	BFS
WIM Resource(3)	Avonbank	VIC	Rare Earth & Mineral Sands	Probable	91.4	3.66	4.0	19.3	16.9	2.1	0.8	0.7	2.2	0.08	BFS
Image Resources(4)	Atlas	WA	Rare Earth & Mineral Sands	Proved	4.5	0.48	10.6	12.0	8.0	1.1	1.3	0.8	7.1	0.12	BFS
Image Resources(4)	Atlas	WA	Rare Earth & Mineral Sands	Probable	0.9	0.02	2.1	8.1	5.2	0.8	0.2	0.1	0.8	0.02	BFS

Source data:
1. VHM (VHM:ASX) Goschen Area 1 and Area 3 data sourced ASX release “DFS Refresh” published on 28 March 2023. Goschen Orion Area 4 and Orion Area 4 Zone 5 sourced from ASX release “Outstanding Results for Area 4 of the VHM Leases” published on 18 September 2023.
2. Astron (ATR:ASX) data sourced from ASX releases “Donald Rare Earth and Mineral Sands Project – Phase 1 Project Ore Reserves” published on 31 March 2023 and “RL2002 Ore Reserve Update & Project Financial Update” published on 27 June 2023.
3. WIM Resource data sourced from their website Projects | WIM Resource Pty Limited WIM.
4. Image (IMA:ASX) data sourced from ASX release “Revised Announcement – Atlas Project Ore Reserve Update” published on 21 December 2022.

**All data is subject to change without notice.*

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Project comparison table data for rare earth basket value

Name	Project	Product	Magnet Rare Earth Oxide % Distribution of Rare Earth Product				Stage of Development	Location	Market Cap* ($A)
			Neodymium (Nd)	Praseodymium (Pr)	Dysprosium (Dy)	Terbium (Tb)			
Arafura[1]	Nolans	Oxide	20.5	5.9	0.3	0.1	DFS	N.T.	$334.99M
Hastings[2]	Yangibana	Concentrate	32.6	8.0	0.3	0.1	DFS	W.A.	$81.50M
Peak[3]	Ngualla	Concentrate	16.5	4.8	0.1	0.1	BFS	Tanzania	$61.6M
VHM[4]	Goschen	Concentrate & Carbonate	16.5	4.1	1.9	0.3	DFS	VIC	$103.68M
Astron[5]	Donald	Concentrate	16.4	4.6	1.8	0.3	DFS	VIC	$97.28M

Source data:
1. Arafura (ARU:ASX) data sourced from ASX release “Nolans Project Definitive Feasibility Study” published on 7 February 2019.
2. Hastings (HAS:ASX) data sourced from ASX release “Yangibana Project NPV increases 84% to A$1Billion (post tax)” published on 21 February 2022.
3. Peak (PEK:ASX) data sourced from ASX release “2023 Annual Report” published on 26 October 2023.
4. VHM (VHM:ASX) data sourced from ASX release “ANSTO Testwork Demonstrates High Extraction of Rare Earth Minerals” published on 17 January 2023.
5. Astron (ATR:ASX) data sourced from ASX release “Investor Presentation – Donald Project DFS” published on 17 May 2023.

*Market capital data at 27 February 2024 and sourced from the ASX

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APPENDIX B

JORC Tables

Company Ore Reserves

210.2Mt Ore Reserve

Area	Classification	Ore	In-situ THM	THM	THM Assemblage[1]					
					Zircon	Rutile	Leucoxene	Ilmenite	Monazite	Xenotime
		(Mt)	(Mt)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Area 1	Proved	24.5	1.3	5.4	29.9	10.8	9.0	24.7	4.3	0.8
Area 1	Probable	14.6	0.5	3.2	29.2	11.7	9.2	25.5	4.5	0.9
Area 3	Probable	159.6	5.6	3.5	20.3	9.4	8.1	25.8	3.4	0.6
Area 4	Probable	11.5	0.6	5.6	19.6	12.2	10.1	24.6	3.0	0.7
Total	**Proved**	**24.5**	**1.3**	**5.4**	**29.9**	**10.8**	**9.0**	**24.7**	**4.3**	**0.8**
	Probable	**185.7**	**6.7**	**3.6**	**20.9**	**9.8**	**8.4**	**25.7**	**3.4**	**0.6**
Grand Total		**210.2**	**8.0**	**3.8**	**22.4**	**10.0**	**8.5**	**25.5**	**3.6**	**0.7**

Area	Classification	Rare Earth Oxides[1]													
		CeO_2	Dy_2O_3	Er_2O_3	Eu_2O_3	Gd_2O_3	La_2O_3	Nd_2O_3	Pr_6O_{11}	Sm_2O_3	Tb_4O_7	Tm_2O_3	Y_2O_3	Yb_2O_3	TREO
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Area 1	Proved	0.960	0.070	0.050	0.004	0.060	0.480	0.380	0.110	0.070	0.012	0.008	0.470	0.050	2.720
Area 1	Probable	0.971	0.067	0.047	0.004	0.060	0.468	0.400	0.108	0.072	0.011	0.007	0.458	0.050	2.721
Area 3	Probable	0.805	0.057	0.039	0.003	0.056	0.378	0.339	0.093	0.064	0.009	0.006	0.386	0.040	2.297
Area 4	Probable	0.655	0.049	0.035	0.002	0.046	0.310	0.277	0.073	0.050	0.008	0.006	0.335	0.037	1.884
Total	**Proved**	**0.960**	**0.070**	**0.050**	**0.004**	**0.060**	**0.480**	**0.380**	**0.110**	**0.070**	**0.012**	**0.008**	**0.470**	**0.050**	**2.720**
	Probable	**0.802**	**0.057**	**0.039**	**0.003**	**0.055**	**0.378**	**0.338**	**0.092**	**0.064**	**0.009**	**0.006**	**0.386**	**0.041**	**2.287**
Grand Total		**0.828**	**0.059**	**0.041**	**0.003**	**0.056**	**0.395**	**0.345**	**0.095**	**0.065**	**0.010**	**0.006**	**0.400**	**0.042**	**2.359**

Note: (1) Any discrepancies in totals are a function of rounding. THM Assemblage and Rare Earth Oxides are reported as a percentage of in-situ THM content.
The Ore Reserve was updated and disclosed under the JORC Code (2012) in the ASX release published 29 September 2023.

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Company Mineral Resources

836.8Mt Mineral Resource estimate – at end of period 31 December 2023

Area	Mineral Resource Category	Material	In Situ THM	Bulk Density	Total Heavy Mineral (THM)	Slimes	Oversize material >2mm	THM Assemblage[4]						Rare Earth Oxides													
								Zircon	Rutile	Leucoxene	Ilmenite	Monazite	Xenotime	La_2O_3	CeO_2	Pr_6O_{11}	Nd_2O_3	Sm_2O_3	Eu_2O_3	Gd_2O_3	Tb_4O_7	Dy_2O_3	Er_2O_3	Tm_2O_3	Yb_2O_3	Y_2O_3	TREO + Y_2O_3
		(Mt)	(Mt)	(gcm3)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Area 1	Measured	30.7	1.8	1.76	5.72	15	5	29.9	10.8	9.0	24.7	4.3	0.8	0.48	0.96	0.11	0.38	0.07	0.004	0.06	0.01	0.07	0.05	0.01	0.05	0.47	2.72
	Indicated	62.2	1.4	1.72	2.31	18	2	26.6	11.5	9.2	25.0	4.6	0.9	0.53	1.11	0.12	0.46	0.08	0.004	0.07	0.02	0.07	0.05	0.01	0.05	0.48	3.04
	Total[1]	**92.9**	**3.2**	**1.73**	**3.44**	**17**	**3**	**27.7**	**11.2**	**9.1**	**24.9**	**4.5**	**0.8**	**0.51**	**1.06**	**0.12**	**0.43**	**0.08**	**0.004**	**0.07**	**0.02**	**0.07**	**0.05**	**0.01**	**0.05**	**0.48**	**2.94**
Area 2 West	Indicated	26.0	0.7	1.72	2.80	20	8	22.0	16.0	12.0	25.0	3.0	1.0	0.31	0.66	0.07	0.28	0.05	0.003	0.05	0.01	0.06	0.04	0.01	0.04	0.39	1.97
	Total[1]	**26.0**	**0.7**	**1.72**	**2.80**	**20**	**8**	**22.0**	**16.0**	**12.0**	**25.0**	**3.0**	**1.0**	**0.31**	**0.66**	**0.07**	**0.28**	**0.05**	**0.003**	**0.05**	**0.01**	**0.06**	**0.04**	**0.01**	**0.04**	**0.39**	**1.97**
Area 3	Indicated	204.1	6.9	1.73	3.38	19	3	19.2	9.0	8.0	25.0	3.2	0.6	0.36	0.78	0.09	0.33	0.06	0.003	0.05	0.01	0.05	0.04	0.01	0.04	0.37	2.19
	Inferred	287.7	6.7	1.72	2.32	18	3	17.2	8.7	7.5	22.7	2.9	0.5	0.35	0.76	0.08	0.31	0.06	0.003	0.05	0.01	0.05	0.03	0.01	0.03	0.36	2.10
	Total[1]	**491.8**	**13.6**	**1.73**	**2.76**	**18**	**3**	**18.2**	**8.9**	**7.7**	**23.9**	**3.0**	**0.6**	**0.36**	**0.77**	**0.09**	**0.32**	**0.06**	**0.003**	**0.05**	**0.01**	**0.05**	**0.03**	**0.01**	**0.04**	**0.36**	**2.14**
Area 4	Indicated	18.0	0.8	1.74	4.60	20	5	19.0	11.0	10.0	24.0	3.0	1.0	0.32	0.67	0.07	0.28	0.05	0.002	0.05	0.01	0.05	0.03	0.01	0.04	0.33	1.90
	Total[1]	**18.0**	**0.8**	**1.74**	**4.60**	**20**	**5**	**19.0**	**11.0**	**10.0**	**24.0**	**3.0**	**1.0**	**0.32**	**0.67**	**0.07**	**0.28**	**0.05**	**0.002**	**0.05**	**0.01**	**0.05**	**0.03**	**0.01**	**0.04**	**0.33**	**1.90**
Cannie	Inferred	191.7	5.9	1.70	3.1	19	6	24.5	15.5	24.3	2.1	4.1	0.8	0.49	1.06	0.12	0.45	0.08	0.004	0.07	0.01	0.07	0.05	0.01	0.05	0.49	3.00
	Total[2]	**191.7**	**5.9**	**1.70**	**3.1**	**19**	**6**	**24.5**	**15.5**	**24.3**	**2.1**	**4.1**	**0.8**	**0.49**	**1.06**	**0.12**	**0.45**	**0.08**	**0.004**	**0.07**	**0.01**	**0.07**	**0.05**	**0.01**	**0.05**	**0.49**	**3.00**
Nowie	Inferred	16.4	0.6	1.73	3.8	19	5	16.1	15.6	24.4	5.0	2.1	0.5	0.28	0.61	0.07	0.26	0.05	0.000	0.04	0.01	0.05	0.04	0.01	0.04	0.33	1.80
	Total[3]	**16.4**	**0.6**	**1.73**	**3.8**	**19**	**5**	**16.1**	**15.6**	**24.4**	**5.0**	**2.1**	**0.5**	**0.28**	**0.61**	**0.07**	**0.26**	**0.05**	**0.000**	**0.04**	**0.01**	**0.05**	**0.04**	**0.01**	**0.04**	**0.33**	**1.80**
Grand Total	**Measured**	30.7	1.8	1.76	5.72	15	5	29.9	10.8	9.0	24.7	4.3	0.8	0.48	0.96	0.11	0.38	0.07	0.004	0.06	0.01	0.07	0.05	0.01	0.05	0.47	2.72
	Indicated	310.3	9.8	1.73	3.19	19	3	20.5	10.1	8.6	24.9	3.4	0.7	0.38	0.81	0.09	0.34	0.06	0.003	0.05	0.01	0.05	0.04	0.01	0.04	0.38	2.27
	Inferred	495.8	13.1	1.71	2.67	18	4	20.4	12.0	15.8	12.7	3.4	0.7	0.41	0.89	0.10	0.37	0.07	0.003	0.06	0.01	0.06	0.04	0.01	0.04	0.42	2.49
	TOTAL	**836.8**	**24.7**	**1.72**	**2.98**	**18**	**4**	**21.1**	**11.2**	**12.4**	**18.4**	**3.4**	**0.7**	**0.40**	**0.86**	**0.10**	**0.36**	**0.07**	**0.003**	**0.06**	**0.01**	**0.06**	**0.04**	**0.01**	**0.04**	**0.41**	**2.42**

	Material	In-Situ TREO + Y_2O_3 Grade[5]	In-Situ TREO + Y_2O_3
	(t)	(%)	(t)
Area 1, Area 2 West, Area 3, Area 4, Cannie, Nowie	836,764,884	0.07	601,965

Notes: *Any discrepancies in totals are a function of rounding*
1 Mineral resources reported at a cut-off grade of 1.0% THM
2 Mineral resources reported at a cut-off grade of 1.75% THM
3 Mineral resources reported at a cut-off grade of 1.0% TVHM
4 Mineral assemblage, via QEMScan Particle Analysis, is reported as a percentage of in-situ THM content.
5 In-situ TREO Grade is calculated by THM Grade (2.98%) multiplied by TREO Grade (2.42%)

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