



# CANEGRASS BATTERY MINERALS PROJECT

Investor Presentation

**ASX: VKA**

**06 December 2022**







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## Competent Person's Statements

Information in this release that relates to Exploration Results is based on information compiled by Mr Julian Woodcock, who is a Member and of the Australian Institute of Mining and Metallurgy (MAusIMM(CP) – 305446). Mr Woodcock is a full-time employee of Viking Mines Ltd. Mr Woodcock has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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 Woodcock consents to the inclusion in this Presentation of the matters based on this information in the form and context in which it appears.

The information in this report that relates to Mineral Resources is based on, and fairly reflects, information compiled by Mr Aaron Meakin, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Meakin is a consultant to Flinders Mines Ltd and Viking Mines Ltd, employed by CSA Global Pty Ltd, independent mining industry consultants. Mr Meakin has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as Competent Person as defined in the 2012 edition of the Australasian Code for the Reporting of Exploration Results, Mineral Resources, and Ore Reserves (JORC Code). The Company is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original announcement.

# TRANSACTION HIGHLIGHTS



- **Critical Mineral Project** with existing Vanadium, Iron (as magnetite) and Titanium Resource.
- Potential for **battery metals** (Ni, Cu, Co) and **precious metals** (PGE's & Au).
- Low cost of entry to a substantial battery minerals project with a large Inferred Resource and earn-in expenditure focussed in-ground.
- Farm-In Arrangement for **Viking to obtain 99%** for \$4M exploration spend and \$1.25M cash payments over 4 years.
- Mechanism to acquire remaining 1% for future production payments to bring ownership to 100%.
- 95km<sup>2</sup> tenements covering the most prospective horizon of the host Layered Igneous Intrusion.
- Significant upside potential for extensive resource growth with only ~20% of the prospective mineralised horizon explored.
- Demand for Vanadium Redox Flow Batteries (VFRB) is increasing as an alternate battery technology to Lithium-Ion.
- Vanadium recorded on lists of Critical Minerals published by the US, EU, Japan & India.
- Strong Australian Government support for development of critical minerals projects with the \$2B Critical Minerals Facility provide source of funding opportunities.





# CANEGRASS BATTERY MINERALS PROJECT JV

"Host to a substantial Vanadium resource which has seen little activity since initial exploration in 2011."



## Project Overview

Substantial hard-rock *Critical Mineral* existing resource (JORC 2012) located within 95km<sup>2</sup> tenement package 620km NE of Perth, Western Australia, and with sealed roads and gas pipeline only 22km away.



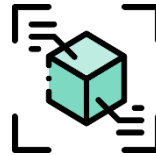
## Battery Minerals

The Project primary commodity is Vanadium, but also contains Ni, Cu & Co which have not previously been estimated. There is *potential* to add further value with these additional metals via metallurgical testwork and resource estimation.



## Exploration Potential

Only 20% of the interpreted vanadiferous titanomagnetite (VTM) horizon has been effectively explored, high grade rock chips and drillholes outside of resource areas forming immediate high priority drill targets.



## JORC (2012) Resource

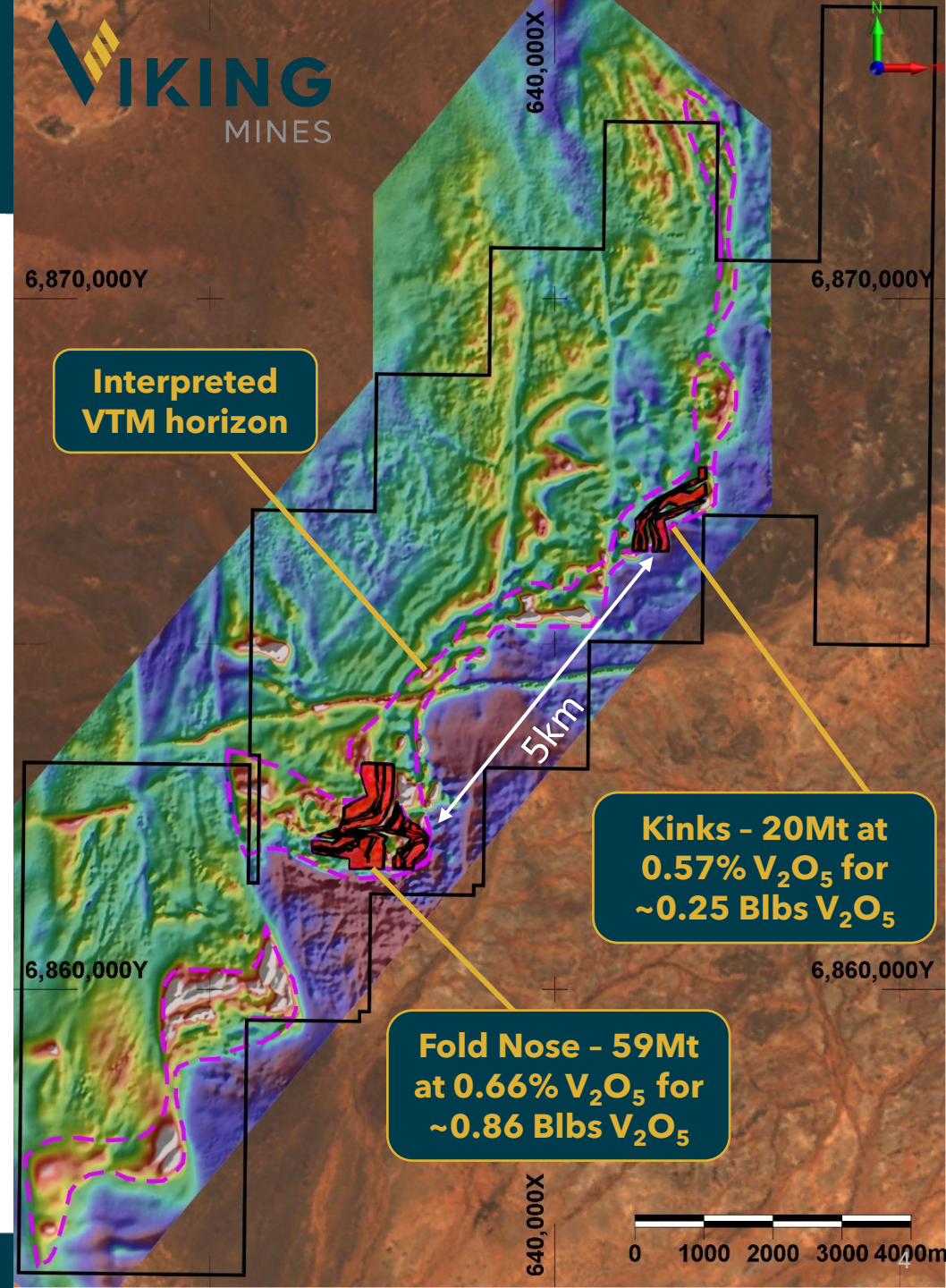
Inferred category resource containing 79Mt at;

**0.64% V<sub>2</sub>O<sub>5</sub> = 1.1 Billion Pounds**

**29.7% Fe = 29.7Mt**

**6.0% TiO<sub>2</sub> = 4.9Mt**

Refer VKA ASX Release 30 November 2022

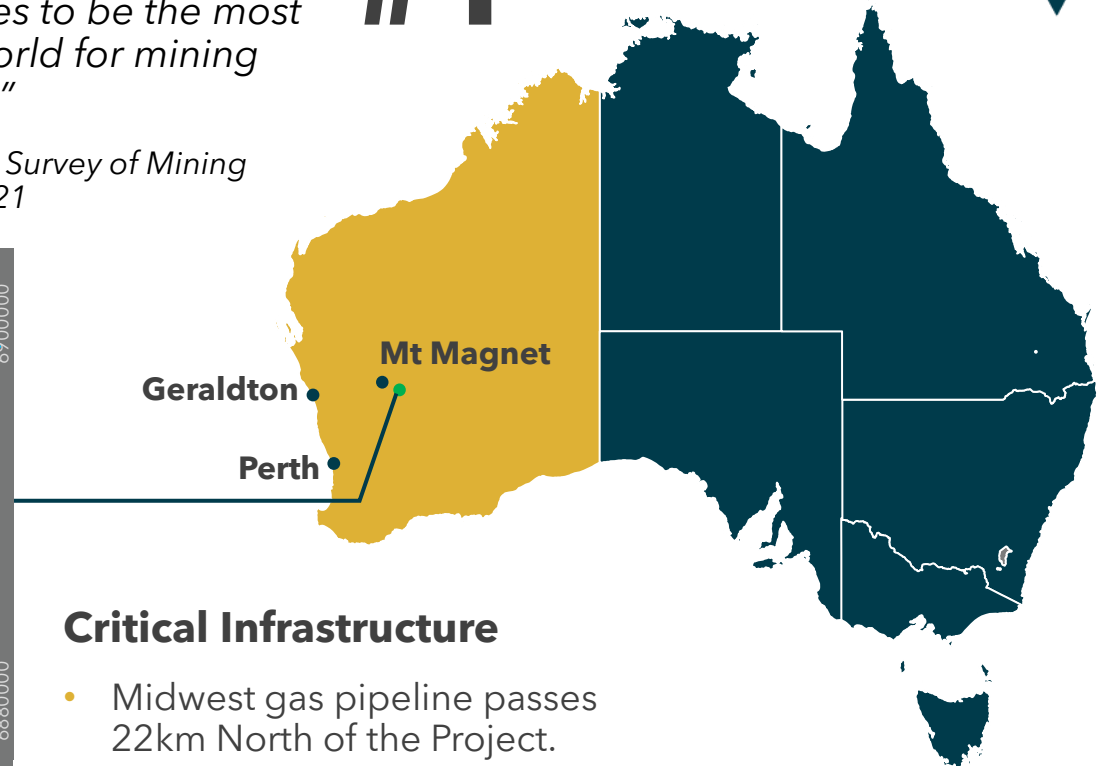
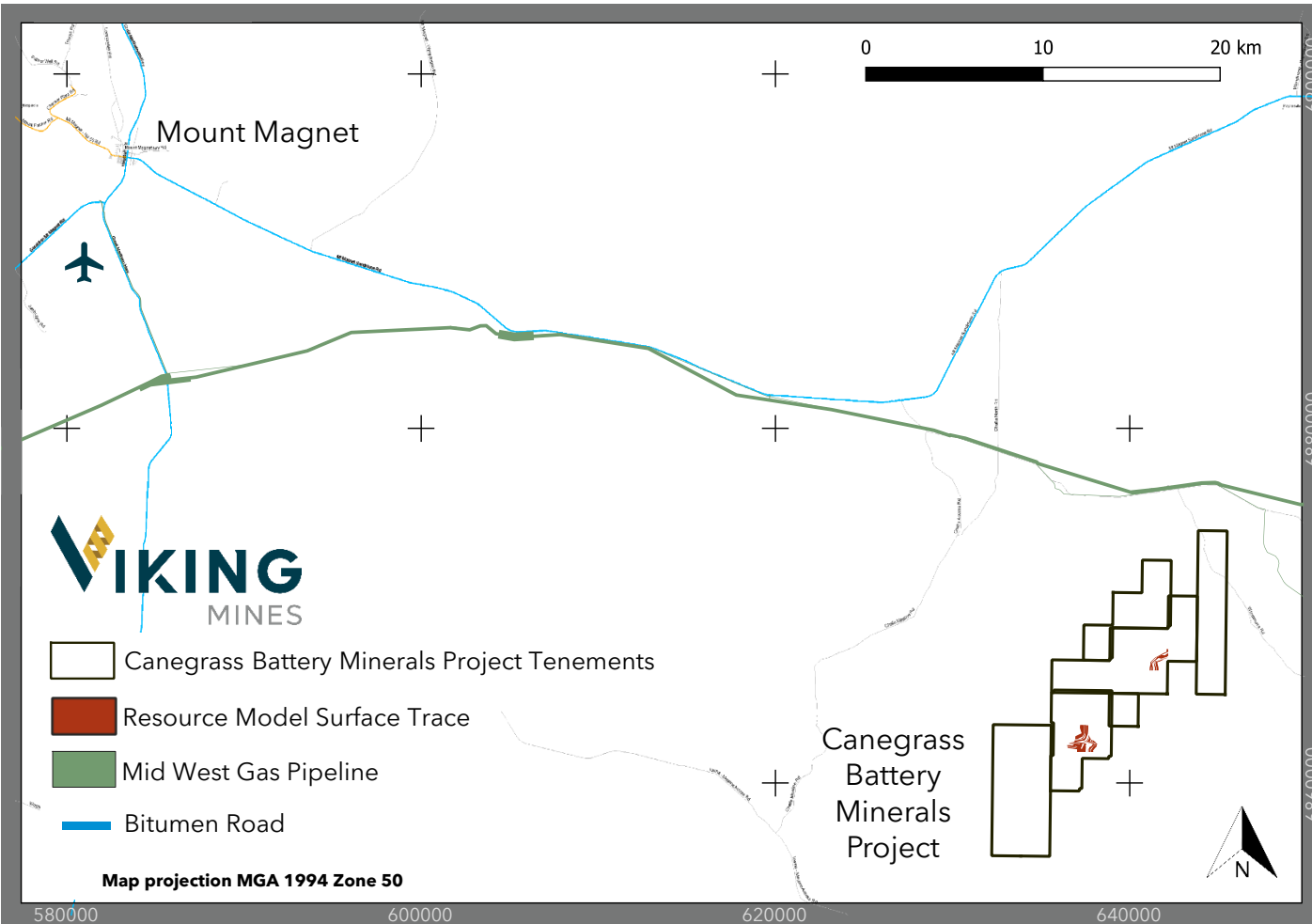


# RIGHT JURISDICTION, RIGHT LOCATION

*"Considering both policy and mineral potential, Australia continues to be the most attractive region in the world for mining investment."*

Source: Fraser Institute Annual Survey of Mining Companies 2021

# #1



## Critical Infrastructure

- Midwest gas pipeline passes 22km North of the Project.

## Location & Access

- 620km NE of Perth (WA).
- 60km from Township of Mt Magnet with sealed airstrip & regular commercial flights.
- Bitumen road to within 22km of the resources.

## Port & Rail

- 338km to Tenindewa rail head, on route to Geraldton.
- 419km to established Port at Geraldton already used to export iron ore & mineral sands.

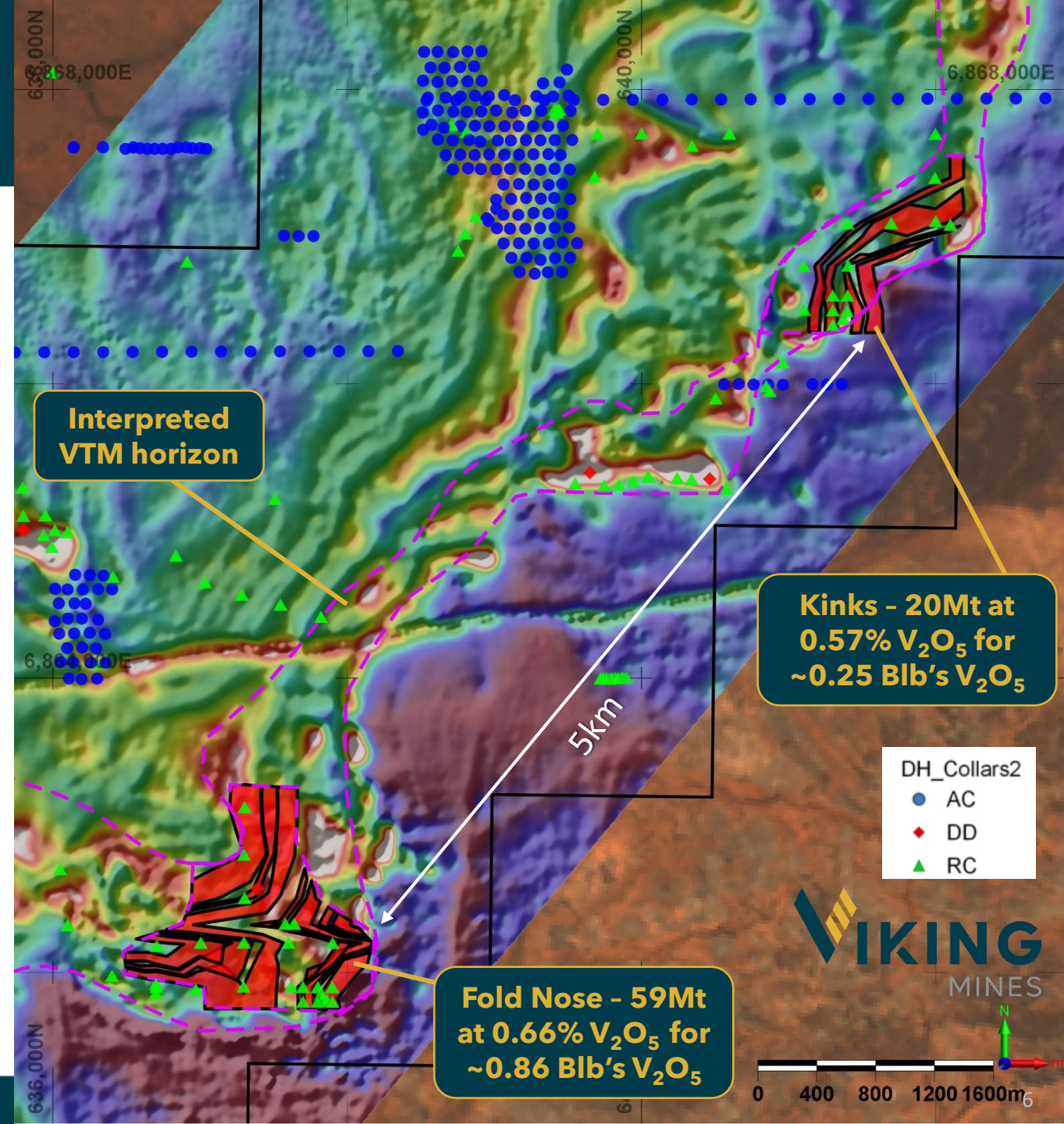


# SUBSTANTIAL RESOURCE BASE

- Project contains substantial outcropping JORC (2012) Inferred Resources.
- 2 deposits, Fold Nose & Kinks.
  - >1.1 Billion Pounds (Blb's) of  $V_2O_5$  ( $>0.5\%$ ) in-situ metal content.
- Resource represents **only 20%** of the prospective interpreted VTM horizon tested and estimated.
- No resource expansion drilling completed since 2011.
- Potential extension opportunities for immediate follow up at both resource areas.

i) Viking Mines (ASX:VKA) ASX Announcement 30 November 2022:VIKING TO FARM IN TO SUBSTANTIAL BATTERY MINERALS RESOURCE

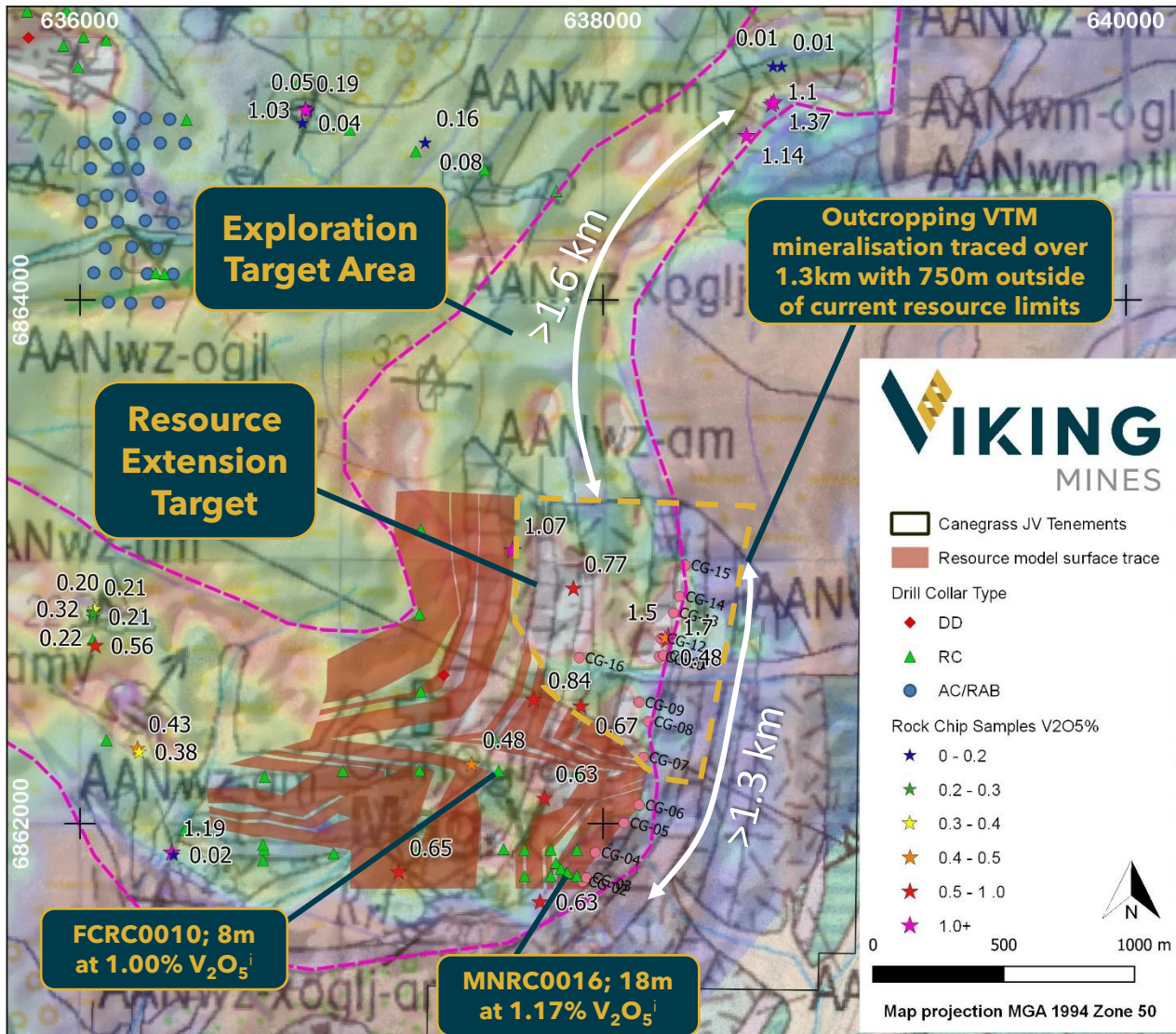
Image backdrop is magnetic geophysics RTP image provided by Flinders Mines. Note magnetic highs (white and red) defining interpreted VTM horizon (pink dash) which traces outside of the known resource areas and form high priority exploration targets





# RESOURCE GROWTH TARGETS FOLD NOSE

Fold Nose - 59Mt at  
0.66%  $V_2O_5$  for ~0.86  
Billion lbs  $V_2O_5^i$



## RESOURCE EXTENSION

- Viking field visit confirmed **outcropping** VTM mineralisation continuing north **outside** current resource limits.
- More than doubles current modelled strike length to >1,350m from 550m.
- Rock chip sampling confirms presence of **>1.0%  $V_2O_5^i$** .
- Immediate opportunity to grow resource to the north.
- Southern & Western extensions not yet evaluated.

## EXPLORATION TARGET

- Magnetic geophysics indicates VTM mineralisation continuing under cover.
- Additional +1,600m of prospective horizon with no outcrop for sampling and no drilling.
- Opportunity for further shallow high grade VTM extensions.

*i) Viking Mines (ASX:VKA) ASX Announcement 30 November 2022:VIKING TO FARM IN TO SUBSTANTIAL BATTERY MINERALS RESOURCE*



# FOLD NOSE VTM MINERALISATION OUTCROP



**Field Location CG3: Outcropping VTM mineralisation at the Fold Nose deposit.**

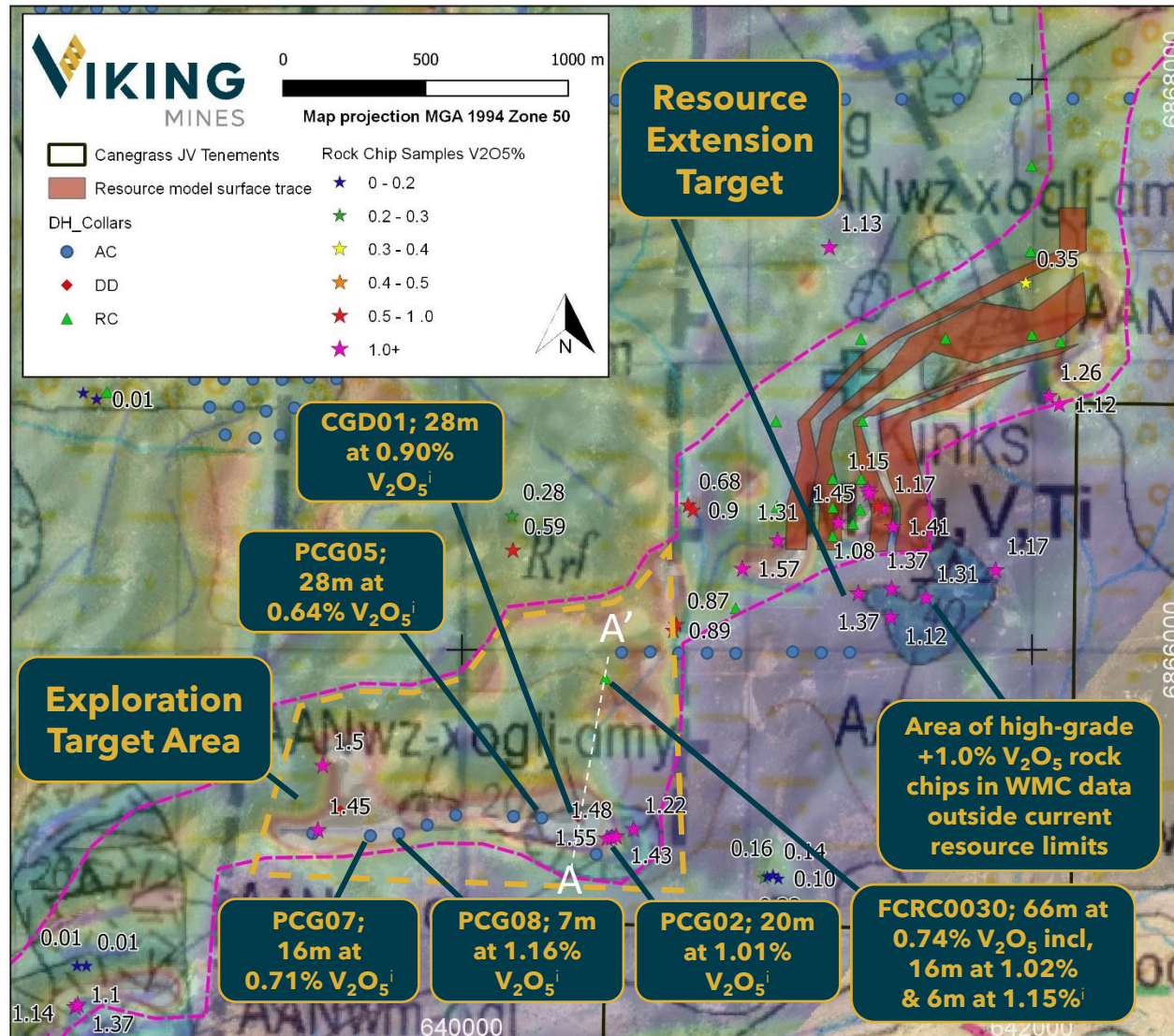


**Field Location CG6: Outcropping VTM mineralisation at the Fold Nose deposit.**



# RESOURCE GROWTH TARGETS KINKS

Kinks - 20Mt at 0.57%  $V_2O_5$  for ~0.25 Billion lbs  $V_2O_5$ <sup>i</sup>



## RESOURCE EXTENSION

- Viking field visit confirmed **outcropping** VTM mineralisation continuing south **outside** current resource limits.
- Extensive rock chip sampling confirms presence of **>1.0%  $V_2O_5$  outside of resource area<sup>i</sup>**.
- Immediate opportunity to grow resource to the south.
- Northern extensions not yet evaluated.

## EXPLORATION TARGET

- Substantial exploration target** along trend to the southwest.
- Wide, **high grade hits >1.0%  $V_2O_5$**  in historical drilling data from outcrop<sup>i</sup>.
- Mineralisation projects downdip to Flinders drillhole FCRC0030 with **66m at 0.74%  $V_2O_5$** , inc. **16m at 1.02%  $V_2O_5$ <sup>i</sup>**.
- High priority target for >1.0%  $V_2O_5$  horizon.

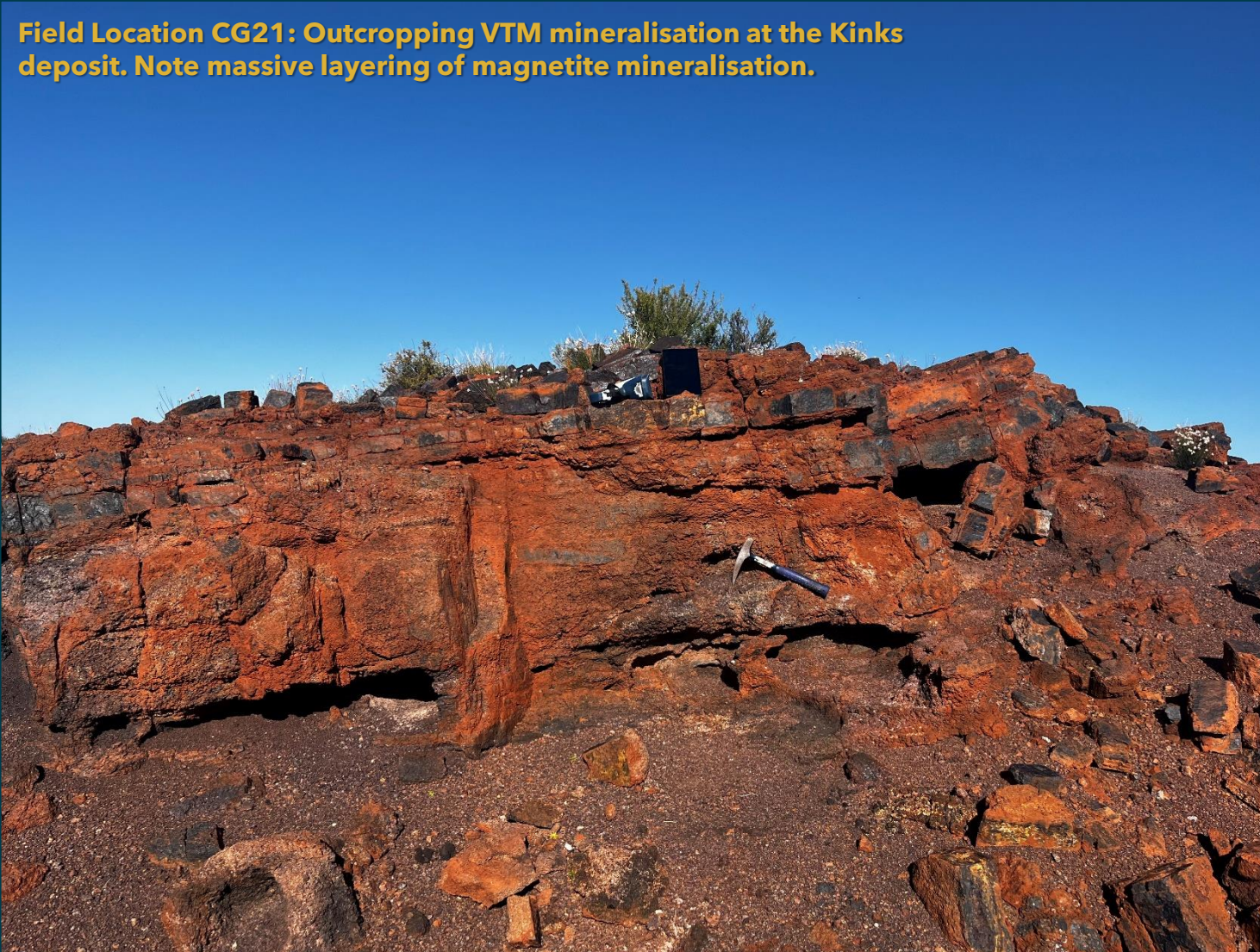
<sup>i</sup> Viking Mines (ASX:VKA) ASX Announcement 30 November 2022:VIKING TO FARM IN TO SUBSTANTIAL BATTERY MINERALS RESOURCE



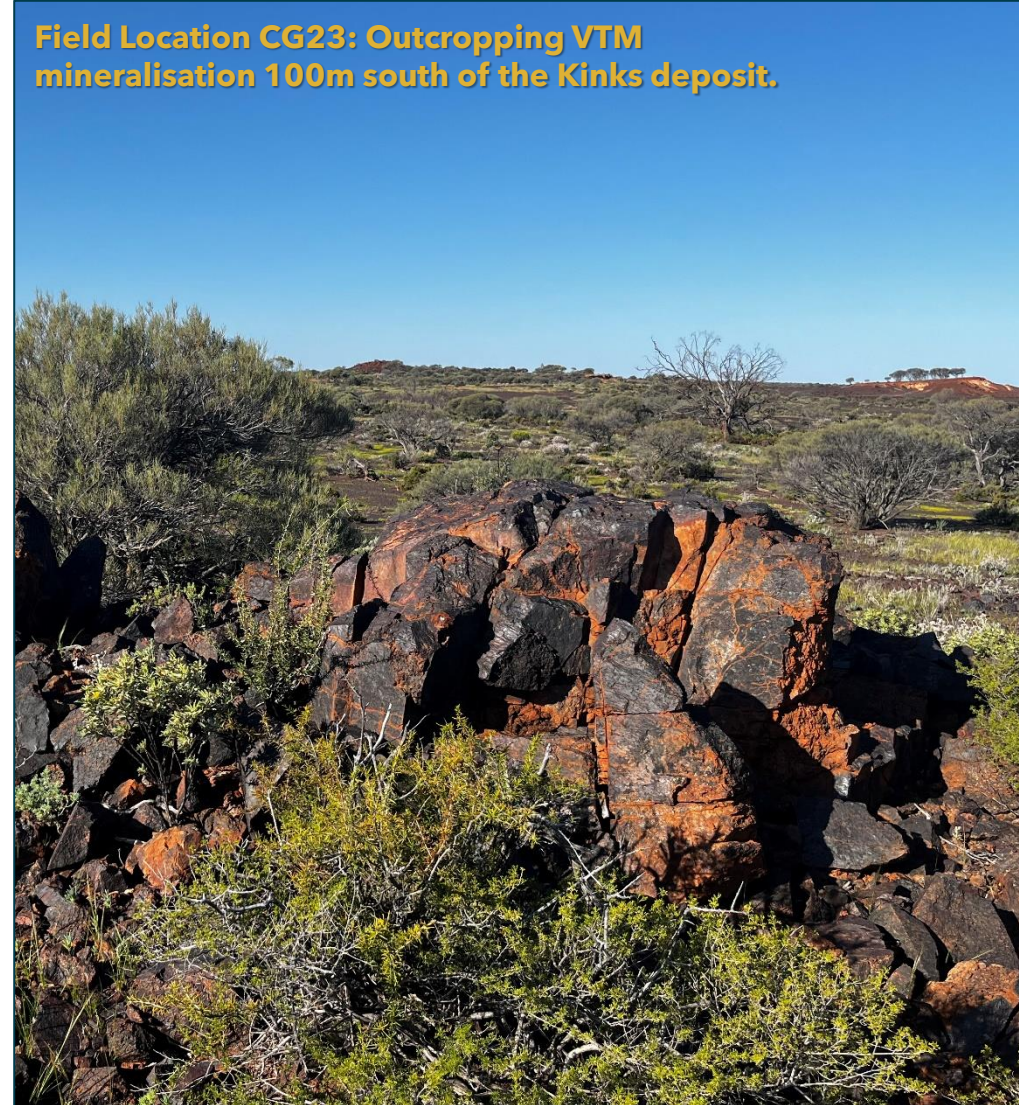
# KINKS VTM MINERALISATION OUTCROP



**Field Location CG21: Outcropping VTM mineralisation at the Kinks deposit. Note massive layering of magnetite mineralisation.**

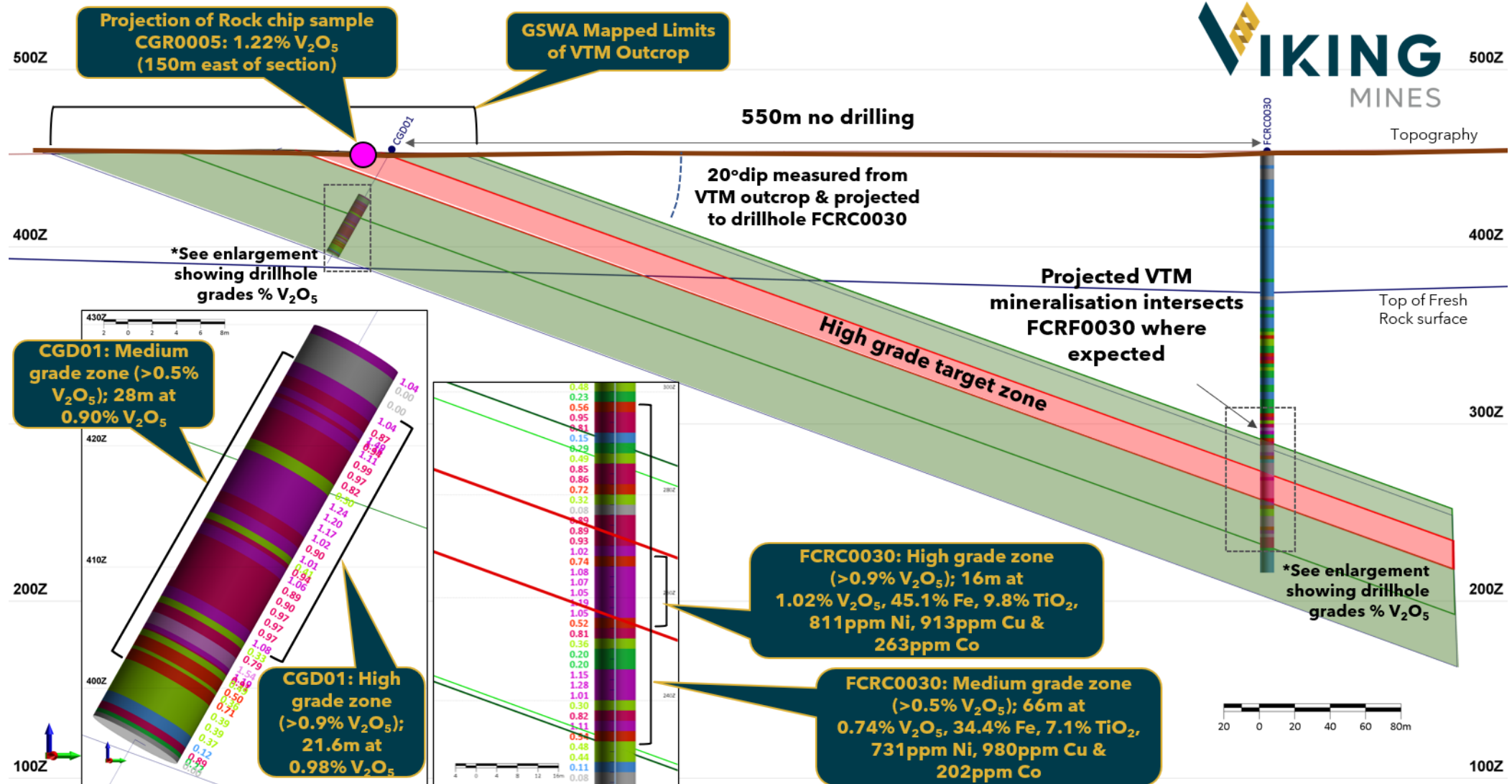


**Field Location CG23: Outcropping VTM mineralisation 100m south of the Kinks deposit.**





# RESOURCE GROWTH TARGETS KINKS





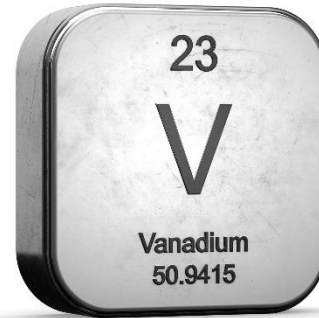
# MORE THAN JUST VANADIUM



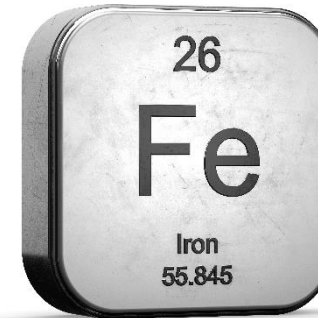
## Canegrass Battery Minerals Project Inferred Resource

**79 Mt Ore  
Contained Metal**

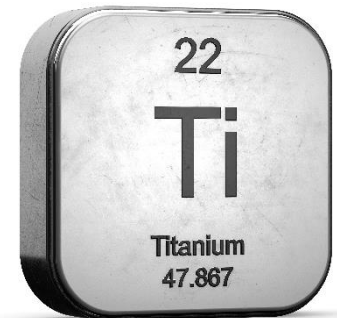
**Value Add Opportunity;  
Battery Metals assayed  
but not estimated or  
evaluated.**



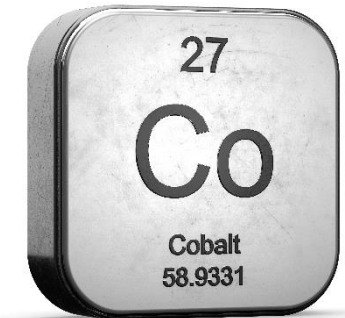
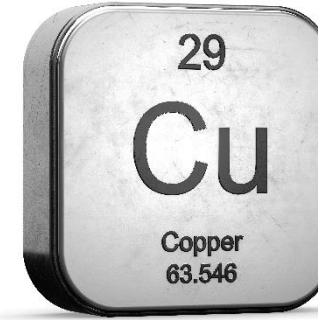
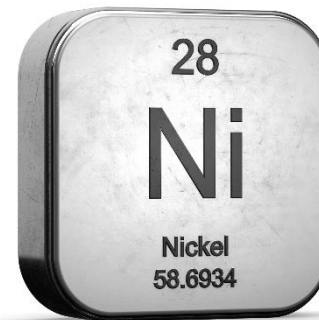
**0.64%  $V_2O_5$   
1.1 BLbs**



**29.7% Fe  
29.7Mt**



**6.0%  $TiO_2$   
4.9Mt**





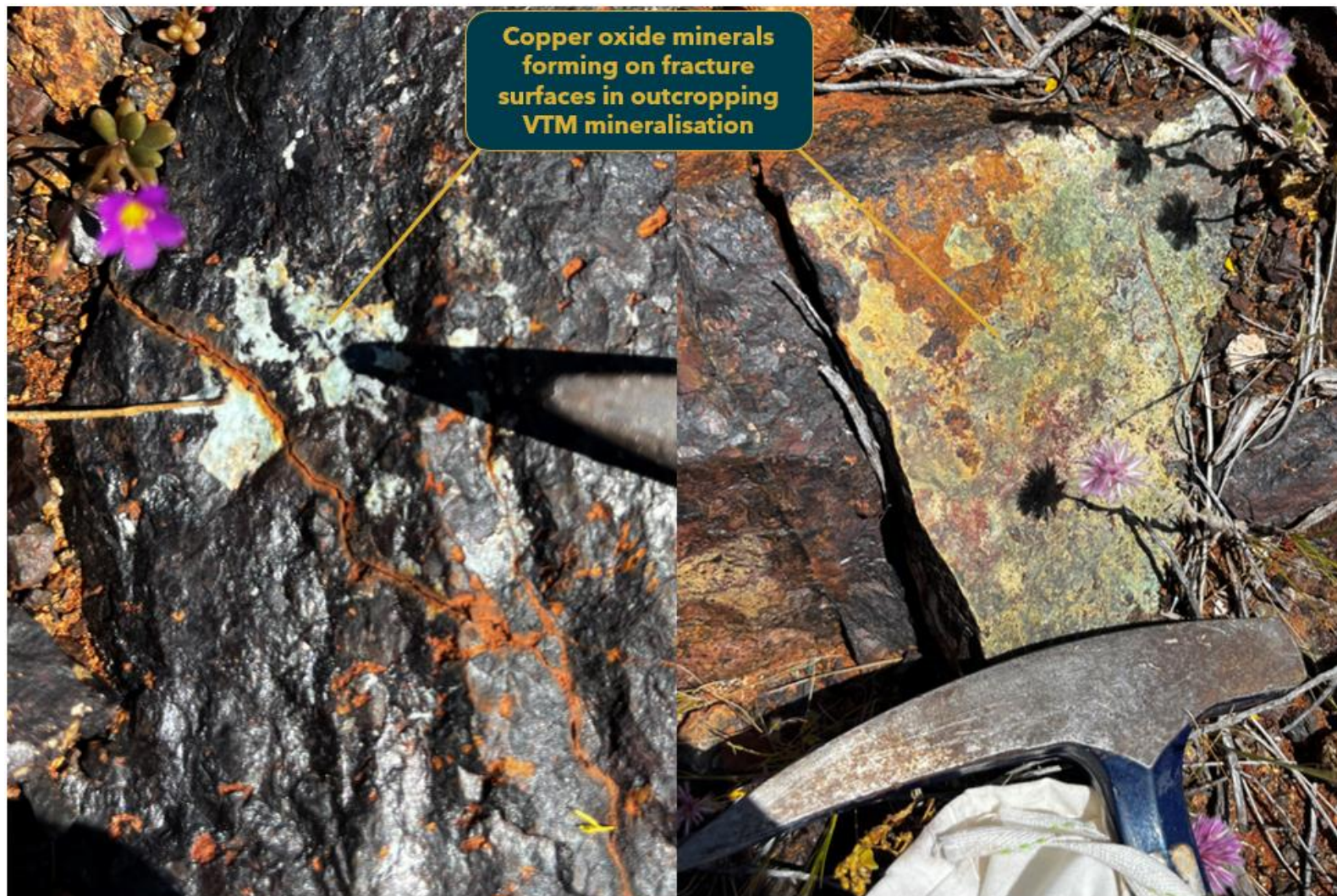
# Ni, Cu, Co POTENTIAL



- Copper oxides seen in outcropping VTM mineralisation
- Historical DH Results include:
  - Kinks Resource - CGRC0010; 40m at **793ppm Ni, 801ppm Cu & 185ppm Co.**
  - Fold Nose Resource - FCRC0010; 40m at **650ppm Ni, 661ppm Cu & 209ppm Co.**
  - Kinks South target - FCRC0030; 66m at **731ppm Ni, 980ppm Cu & 202ppm Co.**
  - Kinks South Target - CGD01; 21.6m at **549ppm Ni and 1021ppm Cu** (Co not assayed).

## OPPORTUNITY

- Include analysis for Ni, Cu & Co in future exploration programmes.
- Estimate metals into the resource model.
- Undertake metallurgical testwork to determine recovery of these metals into a sulphide concentrate.





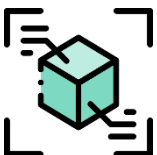
# STAGE 1: EXPLORATION PROGRAMME



**Geological interpretation & targeting** to define targets and develop exploration programme.



**Drilling** ~4,000m to expand resource and test exploration targets.



**Resource modelling** to update resource estimate and expand to include Ni, Cu & Co.



**Metallurgical testing** to expand on preliminary testwork & evaluate Ni, Cu, Co potential.

Category	Activity	Dec Q FY23		Mar Q FY23			Jun Q FY23			Sep Q FY24			Dec Q FY24			Mar Q FY24			Jun Q FY24		
		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Geological interpretation & targeting	Historical data compilation and database review																				
	Field mapping & rock chip sampling																				
	Geophysical data review & reprocessing																				
	Structural geology interpretation and modelling																				
	Geological interpretation & drill targeting/planning																				
Drilling & resource update	Heritage review & surveys																				
	Resource drilling & exploration target testing																				
	Resource update																				
Metallurgy	Metallurgical consultant engagement																				
	Mineralogical studies																				
	Metallurgical testwork																				
JV Mile -stones	Agreement signed																				
	Due Diligence																				
	Stage 1 Earn-in Period			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Stage 2 decision point																				

*Disclaimer; The timelines and activities listed in this table are indicative and subject to change based on knowledge gained at any point in the exploration process. The work programmes outlined are conceptual and require further activity to determine the most effective course of action to advance the Canegrass Battery Minerals Project. The Company reserves the right to amend or suspend any of the listed items at its discretion.*



# TRANSACTION TERMS



**Binding Farm-In Agreement signed on the Canegrass Battery Minerals Project.**



**\$50,000 signing fee and \$1.2M of payments split over each of the 4 Farm-In stages.**



**56 month Farm-In Period split over 4 Stages with \$4M of exploration spend.**



**Viking can earn up to 99% equity in the Project by completing exploration spend and cash payments.**



**On completing Farm-In to 99%, remaining 1% can be bought for \$845k of payments over 10 years from commencement of production.**



Item	Cash Payment at completion of each stage	Exploration Spend	Duration (months)	Stage Equity Earned (VKA)	Cumulative Equity Earned (VKA)
<b>Signing of agreement</b>	\$50,000	\$0	n/a	0%	0%
<b>Stage 1 Farm-In</b>	\$225,000	\$1,000,000	18	25%	25%
<b>Stage 2 Farm-In</b>	\$275,000	\$1,000,000	12	26%	51%
<b>Stage 3 Farm-In</b>	\$325,000	\$1,000,000	12	24%	75%
<b>Stage 4 Farm-In</b>	\$375,000	\$1,000,000	12	24%	99%
<b>TOTAL</b>	<b>\$1,250,000</b>	<b>\$4,000,000</b>	<b>54</b>	<b>-</b>	<b>-</b>

Period	\$ payment on annual anniversary of 1 <sup>st</sup> production	\$ Total
<b>Grant of Mining Lease</b>	\$100,000	\$100,000
<b>Years 1-3</b>	\$50,000	\$150,000
<b>Years 4-6</b>	\$75,000	\$225,000
<b>Years 7-9</b>	\$90,000	\$270,000
<b>Year 10</b>	\$100,000	\$100,000
<b>TOTAL</b>		<b>\$845,000</b>



# VANADIUMS ROLE IN DECARBONISATION – VRFB's



## VANADIUM REDOX FLOW BATTERY (VRFB) SECTOR IS DEVELOPING AS AN ALTERNATE ENERGY STORAGE SOLUTION



Significant advantages over lithium-ion in specific **large energy storage** applications.



**No degradation in capacity or performance** over time with long life cycles exceeding 20 years.



Unlike Li-Ion, **storage capacity can simply be increased** by installing more electrolyte tanks



Vanadium electrolyte **fully recyclable** at the end of the battery installation lifespan.



VRFB Sector forecast to grow **>900%** by 2031.

30 September 2022 / Ellen Phiddian

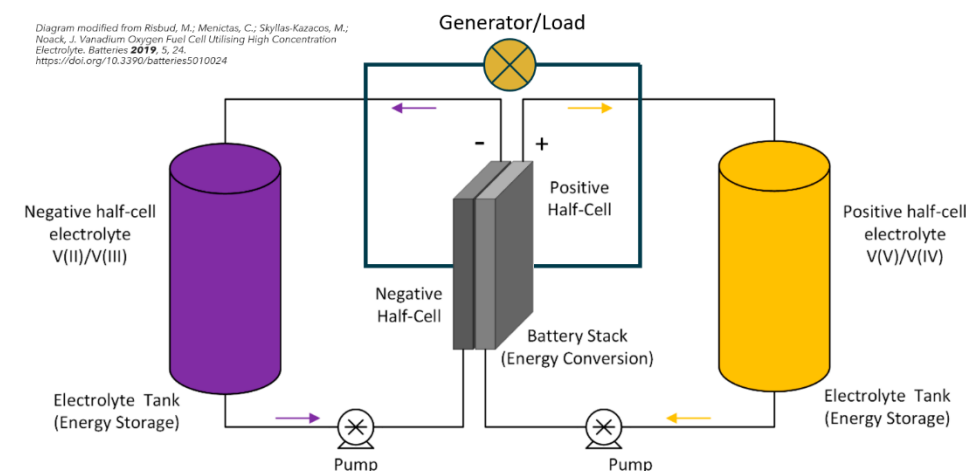
## World's biggest flow battery opens in China

Source: <https://cosmosmagazine.com/technology/flow-battery-china/>

The vanadium flow battery represents a paradigm shift in big storage.



Diagram modified from Risbud, M.; Menictas, C.; Skyllas-Kazacos, M.; Noack, J. Vanadium Oxygen Fuel Cell Utilising High Concentration Electrolyte. *Batteries* **2019**, 5, 24. <https://doi.org/10.3390/batteries5010024>





# CRITICAL MINERAL PROJECT

- Vanadium listed as a Critical Mineral in the Australian Government Critical Minerals Strategy 2022.
- “The government has implemented a range of initiatives aimed at addressing the main challenges facing Australian critical minerals projects” which include:

## Critical Minerals Facility;

A\$2B facility to support projects overcome gaps in private finance to get off the ground.

## Critical Minerals Accelerator Initiative (CMAI);

The CMAI will help projects overcome technical and market barriers by supporting activities such as feasibility studies, engineering design work, pilot testing & demonstration plants.

## Modern Manufacturing initiative;

A\$1.3B fund to help firms pilot, demonstrate or scale up techniques and processes they need to achieve commercial close.

- Titanium (Ti) & Cobalt (Co) also listed as Critical Minerals and occur within the Canegrass Battery Minerals Project.



Australian Government  
Department of Industry, Science,  
Energy and Resources

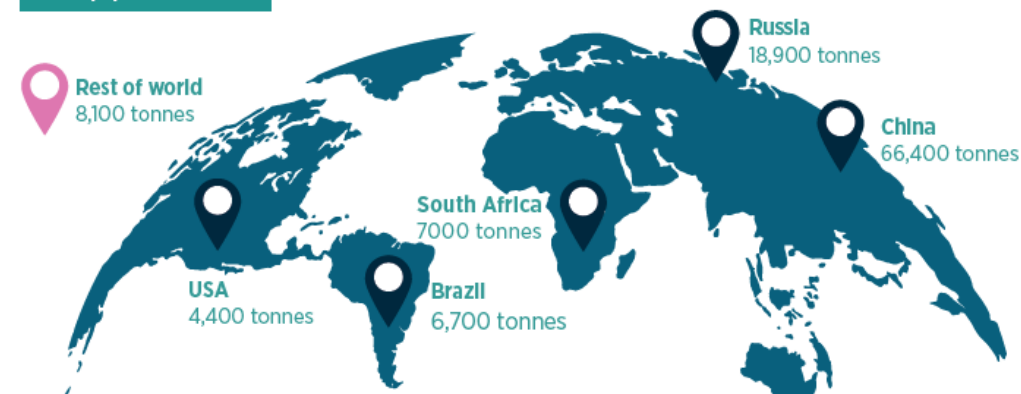
## 2022 CRITICAL MINERALS STRATEGY

March 2022

### Vanadium



#### Top producers



#### Top consumers

Country	Tonnes
China	62,000
Europe	12,000
North America	10,000

Australia has two advanced projects evaluating mining as well as downstream processing.

Australia's Vanadium resources are the **3rd largest** in the world, accounting for **18 per cent** of world economic demonstrated resources but Australia's current production levels are **negligible**.







# CORPORATE OVERVIEW - ASX:VKA

## Metals that matter & Projects with potential

Total shares on issue <sup>1</sup>	1,025,258,431
Cash <sup>2</sup>	\$4.2M
Market Capitalisation (undiluted)	\$~10.2M
Share Price (05 December 2022) <sup>1</sup>	\$0.01



### MAJOR SHAREHOLDERS

1. VANGUARD SUPERANNUATION PTY LTD - 8.92%
2. ING INVESTMENT FUND PTY LTD - 7.93%
3. SYRACUSE CAPITAL PTY LTD - 4.00%
4. BARBARY COAST INVESTMENTS PTY LTD - 3.77%
5. CITYSCAPE ASSET PTY LTD - 2.93%
6. SYRACUSE CAPITAL PTY LTD - 2.73%
7. LESAMOURAI PTY LTD - 2.44%
8. CITICORP NOMINEES PTY LIMITED - 2.39%
9. MR ANTHONY KEITH AVOTINS - 1.92%
10. GTT GLOBAL OPPORTUNITIES PTY LTD - 1.46%

Top 20	50.07%
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Management & Board	2.35%
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# DIRECTORS & MANAGEMENT



**Chairman**  
**Charles Thomas**

Mr. Charles Thomas holds a Bachelor of Commerce from UWA majoring in Corporate Finance.

Mr. Thomas is an Executive Director and Founding Partner of GTT a leading boutique corporate advisory firm based in Australia. Mr. Thomas has worked in the financial service industry for more than 17 years and has extensive experience in capital markets as well as the structuring of corporate transactions.

Mr Thomas is currently the Executive Chairman of of Marquee Resources Limited (ASX:MQR) and non-executive director of Chase Mining Limited (ASX:CML)

Mr. Thomas brings significant experience through sitting on numerous ASX boards spanning the mining, resources and technology space and significant experience operating in the capital markets.



**Managing Director  
& CEO**  
**Julian Woodcock**

Mr. Woodcock holds both a Bachelor of Science (Geology) from the University of Manchester (UK) and a Master of Science (Mining Geology) from the Camborne School of Mines (UK). Mr. Woodcock is also a Chartered Professional geologist with the AusIMM and a Fellow of the Geological Society of London. His career spans 2 decades in the exploration and production of various commodities across multiple counties.

Previous engagements include Senior Management roles with Kinross Gold (NYSE:KGC), Gold Fields (NYSE:GFI), Evolution Mining (ASX:EVN) and Gold Road Resources (ASX:GOR). Experience ranges from international open pit and underground production geology roles through to a decade working as Exploration Manager in the WA Goldfields, leading large exploration teams with multi million-dollar budgets taking exploration projects from discovery through to development.

Notable accomplishments involve significant gold discoveries and resource ounce growth including the +2Moz Invincible Deposit at St Ives which advanced from discovery drillhole to production in <3 years, the 0.3Moz Gilmour deposit at Yamarna defined in <12 months and +1Moz resource conversion at Gruyere.

Mr. Woodcock brings a significant amount of technical and operational experience to Viking Mines in the exploration and development of resource projects.



**Non-Executive Director**  
**Michael Cox**

Mr. Cox holds both a Bachelor of Science (Geology) and a Bachelor of Law.

He has run a private corporate advisory services firm since 2008.

He commenced his career as a mining analyst for stockbroking firms followed by a role being responsible for the delineation and grade control of a developing bentonite deposit. He then moved into various board positions and corporate development roles with a number of listed and unlisted public companies including NSX Ltd, CEAL Ltd, Syngas Ltd, Benitec Ltd, Queensland Opals NL and MultiEmedia Ltd.





**For more information please contact:**

Julian Woodcock

Managing Director & CEO

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