

# Manuka Resources Limited

- Operating gold & silver producer  
Exceptional exploration potential within  
the Cobar Basin, NSW Australia
- Valuable production infrastructure,  
strategically located



**A unique portfolio of assets**

**February 2024**



## South Taranaki Bight Project

- World class tier 1 project
- Offshore Vanadium Titaniferous Iron Sands
- West Coast, North Island  
New Zealand

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# Corporate Summary

## ASX: MKR

Share price (25 January 2024)	A\$0.084
Shares on issue	565.1m
Market capitalisation (undiluted)	A\$47.47m
Listed and unlisted options (\$0.05 to \$0.35 strikes)	92.3m

## Board of Directors & Senior Management

Executive Chairman	Dennis Karp
Executive Director (TTR)	Alan Eggers
Non-executive Director	Anthony McPaul
Non-executive Director	John Seton
Company Secretary	Toni Gilholme
Chief Operating Officer	Haydn Lynch
Shares held by board and management	18.3%



*“Manuka intends to grow shareholder value by optimising quality resource assets. The emerging green fuelled global economy is providing such opportunities.”*

# Board of Directors & Management



**Dennis Karp –  
Executive Chairman**

Dennis commenced his career in the Australian financial markets in 1983. He was the Head of Trading at HSBC Australia prior to joining Tennant Limited in 1997, one of Australia's largest physical commodities trading companies with operations in Asia and Europe. He was a principal shareholder of Tennant Metals until 2010, and a director until December 2014,

He led the syndicate which purchased the Manuka assets in 2016. He holds a Bachelor of Commerce from the University of Cape Town



**Alan Eggers –  
Executive Director**

Alan is a geologist with over 40 years of local & international experience. He brings with him exceptional commercial expertise and was a founding director of Summit Resources Ltd which they built from listing on the NZX in 1987 into an ASX top 200 company and an ultimate takeover by Paladin Energy for A\$1.2B in 2007. He holds a number of private directorships.

Alan holds Bachelor of Science, Honours and Master of Science degrees from Victoria University of Wellington. He's a Fellow of the Society of Economic Geologists, & a member of AusIMM, & Australian Institute of Geoscientists



**Anthony McPaul –  
Non-Executive Director**

Tony is a senior mining executive with over 40 years' experience in mining operations and mineral processing, (both underground & opencut operations). He was most recently the general manager for Newcrest's Cadia Valley Operations, in Orange NSW, and formally retired from Newcrest in 2016.

Tony has sat on a range of Boards and industry bodies including the Minerals Council Executive Committee and Mineral Industry Advisory Council. He qualified in automotive engineering from Goulburn TAFE.



**John Seton –  
Non-Executive Director**

John is an Auckland based lawyer with extensive experience in commercial law and the mineral resources sector. He was a director of Summit Resources Limited until its sale in 2007, as well as being a director of a number of other ASX and NZX listed private companies. He was a former Chairman of the Vietnam/New Zealand Business Council.

John holds a Bachelor of Laws from Victoria University, Wellington, and a Masters of Law (Honours) from the University of Auckland and was a Chartered Fellow of the New Zealand Institute of Directors until 2023.



**Toni Gilholme –  
Company Secretary**

Toni is an experienced Chartered Accountant with over 20 years' experience in Financial Accounting and Company Secretarial matters and over 10 years of experience in a variety of roles in Public Practice. She has worked in a range of senior positions both in the UK and in Australia and has a strong focus on efficiency gains through improving processes and strengthening internal controls.

She holds a Bachelor of Business from the University of Technology, Sydney and is a qualified Chartered Accountant



**Haydn Lynch –  
Chief Operating Officer**

Over 25 years of experience in M&A, financial markets and private equity, and with a substantive track record in the origination and execution of domestic & cross-border transactions in metals & mining in Australia, Africa, Japan, China, and Mongolia.

Senior management experience includes Bankers Trust Australia, Investec Bank, RBC Capital Markets and Southern Cross Equities. Haydn has degrees in Mechanical Engineering and Economics from the University of Qld and a Masters in Commerce from the University of New South Wales.

# The world class Taranaki VTM Project New Zealand

## Taranaki VTM Project – project highlights

- World class resource 3.2bt vanadium, titanium & magnetite (iron ore)
- Targeted lowest quartile carbon emissions\* of Fe producers globally (62kg CO<sub>2</sub>/t vs 125-250kg CO<sub>2</sub>/t)
- Anticipated lowest quartile costs for Fe producers\* US\$20-24/t FOB (PFS 2013 adj. inflation) EXCLUDING credits from vanadium or titanium
- Located within NZ EEZ (exclusive economic zone targeting gas, oil, mining)
- NZD\$85m invested to date (~US\$50m)
- Mining Licence granted 2014 (MP55581) – 5Mt pa production for 20 years
- Granted initial EPA environmental consents to operate 2017 – final approval process nearing completion
- New Zealand government focused on implementing mining code subject to appropriate environmental safeguards
- Announced Maiden Vanadium JORC Resource\*\* 1.6Mt of contained V<sub>2</sub>O<sub>5</sub>

\* based on TTR PFS: <https://www.manukaresources.com.au/site/investor-centre/pending-acquisitions> and as per ASX releases dated 1 August 2022 and 1 March 2023

\*\* ASX release 1 March 2023



## Positive Recent Developments in NZ

- National ACT NZ First coalition government elected November 2023
- Seismic shift in government sentiment for minerals and mining
- First 100 Day Plan Policies include:
  - Update Crown Minerals Act to promote use of Crown Minerals
  - Create critical minerals list with preferred pathway to development (V & Ti)
  - Prioritise regional and national projects of significance
  - Fast track one stop shop consenting for natural resource projects of significance
  - Identify strategic opportunities in mineral resources, **including vanadium**, and develop plans to develop these opportunities

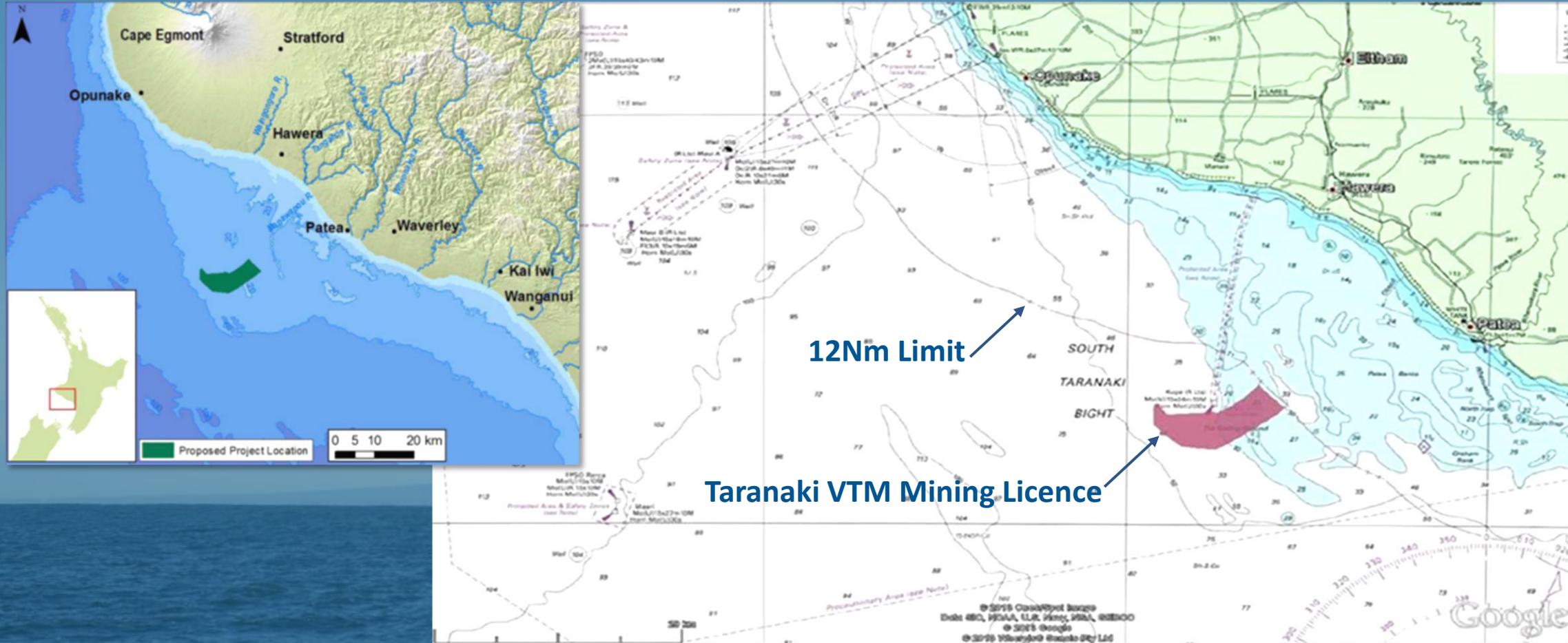


## The Vanadium Market is Coiled Like a Spring

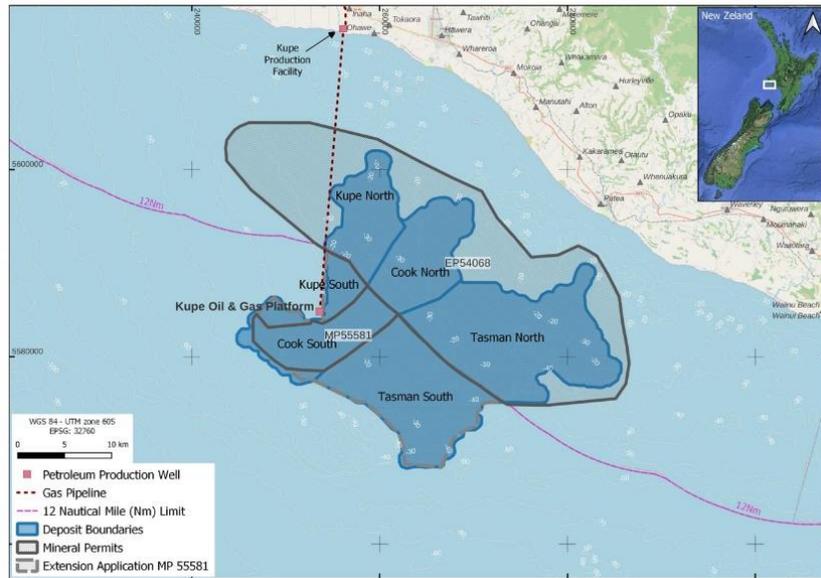
- Demand for vanadium expected to grow & double by 2030
- Extensively used as a strengthener in steel & catalyst for industrial processes
- Emerging demand in utility scale battery storage (VRFBs):
  - China leading the charge with development of VRFBs
  - If China builds half its planned VRFBs by 2030 China will go from largest vanadium exporter in world to net importer
  - Each 1,000Mw (1Gw) battery requires 10,000 tonnes vanadium
  - 180 1Gw batteries planned build next 7 years will consume 100% global supply
  - In 2018 10% deficit in vanadium supply rockets vanadium price 6x to US\$30lb

# Taranaki VTM Project

## Mining Permit MP55581



# TTR JORC Resource Estimates



- TTR has drilled a 914Mt JORC Resource in MP55581 (Stage 1) Mine Area
- 3.2Bt Indicated and Inferred Mineral Resource
- Existing approval of 5mtpa mining licence (MP55581) with initial 20 year mine life\*\*
- VTM Concentrate Grade **0.5%V<sub>2</sub>O<sub>5</sub> 8.5%TiO<sub>2</sub> 55% - 57%Fe**

Taranaki VTM Resource Estimates Summary									
Inside 12Nm (RMA)	Indicated and Inferred Mineral Resources					DTR Concentrate			
	Cut-Off Grade	Mt	Fe <sub>2</sub> O <sub>3</sub> %	TiO <sub>2</sub> %	V <sub>2</sub> O <sub>5</sub> %	Mt	Fe%	TiO <sub>2</sub> %	V <sub>2</sub> O <sub>5</sub> %
Cook North Block	3.5% DTR*	274	11.90	1.19	0.06	21	57.19	8.12	0.52
Kupe North Block	3.5% DTR*	417	11.48	1.21	0.06	31	57.07	8.35	0.51
Tasman North Block	7.5% Fe <sub>2</sub> O <sub>3</sub>	585	9.02	0.88	0.04				
<b>Total VTM Resource RMA</b>		<b>1,275</b>	<b>10.44</b>	<b>1.05</b>	<b>0.05</b>				
Outside 12Nm (EEZ)									
Cook South Block	3.5% DTR*	914	10.95	1.12	0.05	63	55.84	8.45	0.50
Kupe South Block	3.5% DTR*	272	9.76	0.98	0.05	16	56.33	8.43	0.50
Tasman South Block	7.5% Fe <sub>2</sub> O <sub>3</sub>	695	8.81	0.89	0.04				
<b>Total VTM Resource EEZ</b>		<b>1,881</b>	<b>9.99</b>	<b>1.01</b>	<b>0.05</b>				
<b>Taranaki VTM Resource Total</b>		<b>3,157</b>	<b>10.17</b>	<b>1.03</b>	<b>0.05</b>				

\*Davis Tube Recovery (DTR) Estimate is based on analytical DTR and calculated DTR values

\*\* JORC (2012) refer ASX release dated 1<sup>st</sup> March 2023



## Environmental Advantages

- Operation has small environmental footprint with only 300m x 900m area of disturbance at any time
- Very low carbon emissions (<50%) compared to other hard rock iron ore deposits with no: Heavy machinery mining fleet, Open pits, Waste dumps, Haul roads, Energy intensive crushing & grinding circuits, Railroad or ports
- No chemical additives in processing or tailings
- Natural processes delivers rapid rehabilitation of mined areas
- Short term confined environmental impact with rapid recovery
- No impact on fish, whales or dolphins
- No legacy issues with rehabilitation part of recovery process

# TTR Project Metal Production

## ANNUAL CONCENTRATE PRODUCTION

- Iron Ore (57%Fe) 5Mt
- Vanadium Pentoxide 20,000t V<sub>2</sub>O<sub>5</sub> (11,000t V 80% recovery)
- Titanium Dioxide 340,000t TiO<sub>2</sub> (80% recovery)

### GLOBAL VANADIUM METAL PRODUCERS<sup>1</sup>

- China 40,000t V
- Russia 18,000t V
- New Zealand (TTR STB)<sup>2</sup> 11,000t V
- South Africa 7,700t V
- Brazil 5,500t V



<sup>1</sup> USGS 2022: V vanadium metal Project Economics based on 57% Fe iron ore concentrate only. Metallurgical test work to be completed to establish recoverable vanadium and titanium credits

<sup>2</sup> Based on proposed 5Mt annual VTM concentrate production

# TTR Project Economics

## COMMODITY PRICES JANUARY 2024

- Iron Ore (62%Fe) US\$136.00t
- Vanadium Pentoxide US\$6.00lb
- Titanium Dioxide US\$3,500t

### TTR METAL IN CONCENTRATE VALUE TONNE<sup>1</sup>

- Iron Ore US\$119 (11.0% discount applied to 62%)
- Vanadium<sup>2</sup> US\$55
- Titanium<sup>2</sup> US\$240
- Metal in concentrate value US\$414



*1 Note: Project Economics based on 57% Fe iron ore concentrate only. Metallurgical test work to be completed to establish recoverable vanadium and titanium credits*

*2 Based on 80% metallurgical recoveries*

# Taranaki VTM Project New Zealand



## Economic Benefits to NZ

- Directly employs 270 operational staff & 30 Admin HO support
- Indirect around 1,665 jobs nation wide
- Operation has annual operating spend \$250m
- Generates royalty revenues \$70m & corporate taxes \$180m pa
- Foreign exchange earnings US\$580m pa
- No government infrastructure or handouts required
- TTR iron sand resource provides strong commercial base that will weather shifts in commodity price cycles
- Project will be profitable long term producer >60 years

# TTR Integrated Mining Vessel (IMV)

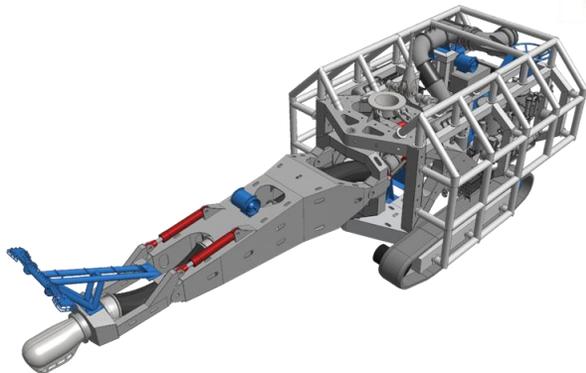


# TTR Submerged Crawler Technology

- Integrated Mining Solution Proven Design
- DeBeers & IHC Marine to Supply (Have Built 8 Crawlers over 20 Years Experience)
- DeBeers to Commission and Operate First 2 years (Option to Extend)
- DeBeers to Provide Local Training
- Technology & Skills Transfer to NZ
- Reduced Commissioning Risk for TTR



DE BEERS



## TTR Trans Shipment & Export

- Iron Ore Concentrate Transferred to the FSO (Floating Storage Offloading) from IMV
- FSO Dewateres Ore
- FSO Tranships to Cape Sized Ore Carriers
- Cape Sized Vessel Delivers VTM Ore Concentrate to customers
- An Anchor Handling Tug (AHT) Assists with:





## Business Milestones

### STB Iron Sands Project – What’s Next

- EPA Consents reissued Q2 2024
- Metallurgical Tests and Marketing Report Q3 2023
- Final Design & BFS Q4 2024
- Finance USD\$600m A\$250m Q1 2025
- Construction Contracts & Build Q1 2025
- Commission & First Production Q3 2026 – Q4 2026



## Development of STB Seabed Mineral Recovery Project is a significant opportunity for New Zealand

**Delivers essential and critical minerals for the shift towards net zero carbon**

- **World demand for VTM product, diversification of supply and security of supply chains of critical minerals for western nations**
- **NZ will be a global leader in Seabed Mining including:**
  - **Mineral recovery technology**
  - **Marine environmental research, monitoring & permitting**
  - **Potential to propel NZ to world's third largest vanadium supplier**
  - **Western world's largest supplier vanadium at 20,000t V<sub>2</sub>O<sub>5</sub>**
- **STB operation will set a benchmark for seabed mining operations**
- **EEZ well regulated, has high environmental safeguards and protection**

# Cobar Assets – gold and silver precious metal assets in the Cobar Basin



## Mt Boppy Gold Project (100% owned)

### Restarted Mt Boppy screening project in May 2023

- Open pit mine (previously produced circa 500,000oz Au @ 15g/t Au)
- 42 person mining camp, power & water, administration office, exploration office
- Currently reprocessing tailings, ROM stockpiles and waste dump
- Mineral Resource update 160,100oz gold @2.01g/t\*, currently awaiting results of Sonic drill program over waste dump
- Fantastic exploration potential from Mt Boppy (beneath pit) and also Pipeline Ridge etc
- Mt Boppy was previously one of the richest gold mines in NSW

Au

## Wonawinta Silver Project (100% owned)

- Total resource 38.3Mt @ 41.3g/t Ag & 0.54% Pb (containing 50.94M oz Ag, 207,200t Pb)\*\*
- ~200,000t stockpile remaining – production halted January 2023
- 850,000t-1.0Mt.p.a. plant, mine camp and all necessary infrastructure
- Further confirmation of Cobar style Pb Zn Ag Wonawinta Deeps as announced 1 June 2021
- Exceptional exploration potential

Ag

# Mt Boppy tenements – key exploration programs 2023/24 financial year

2023/24 exploration activities are to be focussed on the following:

## 1. Pipeline Ridge

**Targeting:** add substantially to existing resource est. (looking to add up to 210,000oz Au @2.4g/t Au)

**Objective:** evaluate for shallow oxide opencut gold, as well as copper, zinc & lead underground options

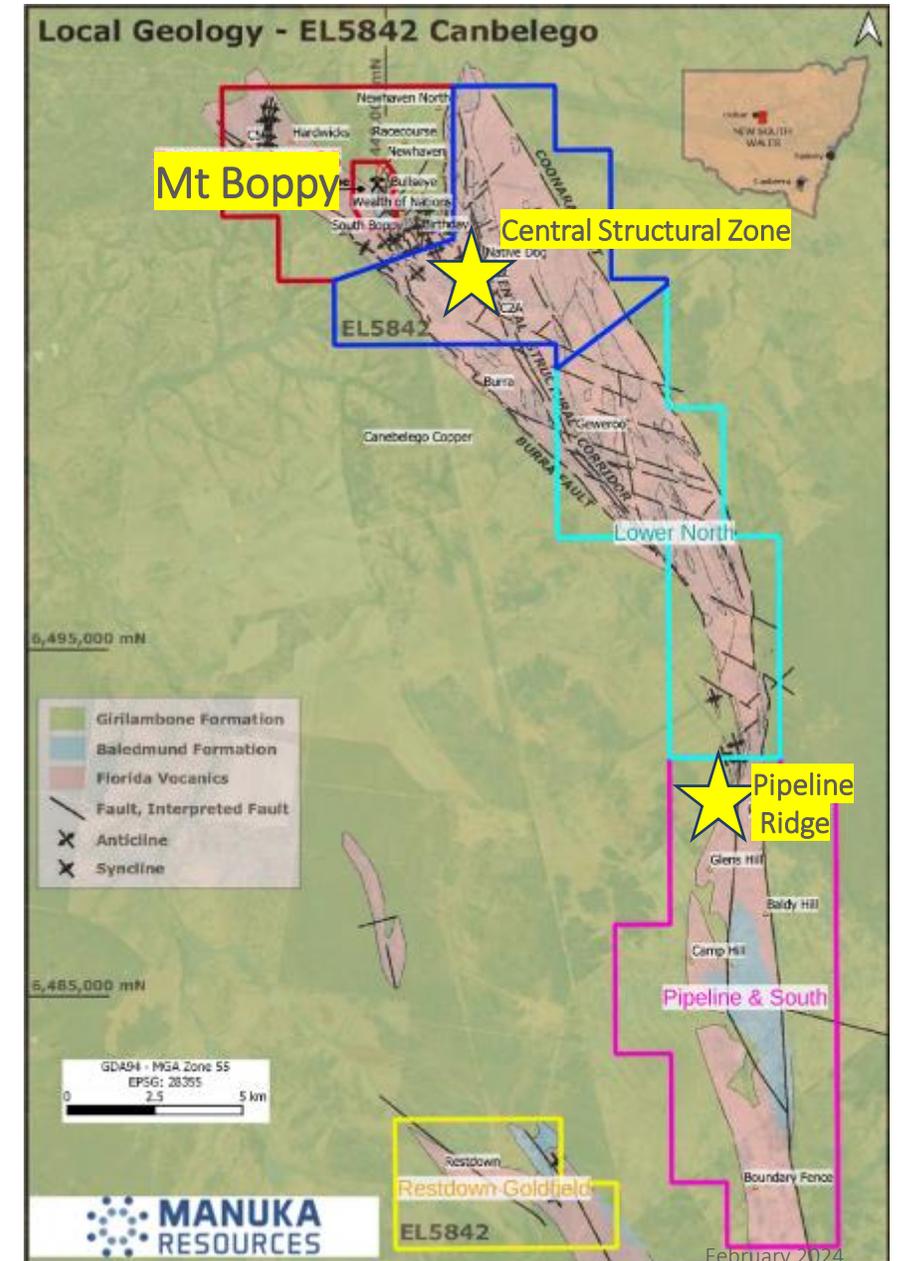
**Activity:** in-fill, RC & DD

## 2. Mt Boppy (beneath recently mined pit shell)

**Targeting:** resource expansion within existing ML

**Objective:** grow existing resource >100,000oz Au

**Activity:** combine RC and DD drill programs, targeting mineralisation between 300m – 600m deep



# Manuka's Gold and Silver Resource Base

On 25<sup>th</sup> August 2023 a Resource Update was announced for the Mt Boppy gold project.

On 1<sup>st</sup> April 2021 a Resource Upgrade was provided for Wonawinta Silver Project reflecting a 43% increase in the Measured and Indicated Resource Categories.

## Mineral Resource Summary 25 August 2023 Mt Boppy Resources

Resource Category	Tonnes	Grade Au (g/t)	Contained gold ounces
Measured	106,850	5.25	18,028
Indicated	605,200	3.01	58,500
Inferred	1,770,355	1.47	83,608
<b>Total</b>	<b>2,482,405</b>	<b>2.01</b>	<b>160,100</b>

## JORC Resources Wonawinta Silver Project as at 1 April 2021\*

Resource Category	Material (Mt)	Ag (g/t)	Ag Moz	Pb (%)	Pb kt
Measured	1.1	47.3	1.65	0.69	7.5
Indicated	12.3	45.5	18.04	0.83	102.8
Inferred	24.9	39	31.25	0.39	96.9
<b>Total</b>	<b>38.3</b>	<b>41.3</b>	<b>50.94</b>	<b>0.54</b>	<b>207.2</b>
Stockpile	0.515	70	1.16		

# Mt Boppy (past, present & future) Au

Mt Boppy produced 500koz @ 15 g/t from a very contained area

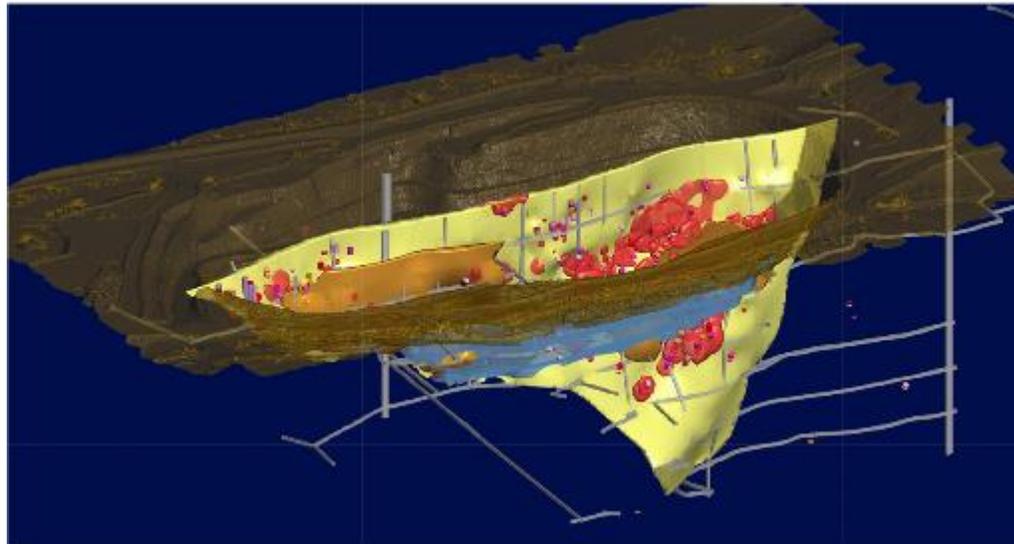
Manuka commenced production of Mt Boppy ores in April 2020 IPO estimated Phase 1 of 22-24koz Au (actual >41,000koz)

Higher grades + plant operating efficiencies combined to drive Phase 1 production to nearly double original forecast\*

Mt Boppy is open at depth with along-strike extensions to the South

Currently includes Measured\*\* resource of ~107,000t @ 5.25g/t Au (18,020oz gold) as well as an Indicated resource of 605,000t @3.01g/t Au (58,500oz gold)

Awaits Mt Boppy Deeps drill program (now planned to commence H1 2024)



Perspective view looking south-east. West lode is shown in orange, east lode shown in yellow and current pit design in blue, and high-grade zone (5 g/t Au) shown in red. Historical workings are shown in grey



- Refer ASX releases dated 4 March 2022
- \*\*refer ASX release dated 19 May 2022

# Silver production at Wonawinta

- Wonawinta produced approx. 3.0Moz silver during 2012-2013, and an additional 500,000oz silver in 2022
- Previously Australia's largest primary silver producer
- JORC mineral resource estimate following extensive infill drilling ~51M oz silver (also 207Kt Pb not included as silver equivalent)
- Substantial plant capacity >850k-1.0m t/a (processed part of the stockpiles in bottom photo on the right during 2<sup>nd</sup> half 2022 as a trial program, for recoveries of approx. 400,000oz silver)
- Provides fantastic optionality for future silver production, project fully permitted, plant and all infrastructure operational

