

# Liontown



## A FUTURE AUSTRALIAN LITHIUM PRODUCER

RESOURCES RISING STARS – GOLD COAST JUNE 2019 | ASX : LTR

# Important Information



## Forward Looking Statements

This Presentation may include statements that could be deemed "forward-looking statements". Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those expected in the forward-looking statements or not take place at all.

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## Competent Person Statement

The Information in this report that relates to the Scoping Study for the Kathleen Valley Project is extracted from the ASX announcement "Kathleen Valley Scoping Study confirms potential for robust new WA lithium mine development" released on the 29<sup>th</sup> January 2019 which is available on [www.ltresources.com.au](http://www.ltresources.com.au).

The Information in this report that relates to Mineral Resources for the Kathleen Valley Project is extracted from the ASX announcement "Maiden 21 million tonne Lithium-Tantalum Mineral Resource sets strong growth foundation for Liontown at Kathleen Valley" released on the 4<sup>th</sup> September 2018 which is available on [www.ltresources.com.au](http://www.ltresources.com.au).

The Information in this report that relates to Metallurgy for the Kathleen Valley

Project is extracted from the ASX announcement "Highly encouraging results from initial metallurgical test work at the Kathleen Valley Lithium-Tantalum Project, WA" released on the 12<sup>th</sup> November 2018 which is available on [www.ltresources.com.au](http://www.ltresources.com.au).

The Information in this report that relates to Exploration Targets is based on and fairly represents information and supporting documentation prepared by Mr David Richards, who is a Competent Person and a member of the Australasian Institute of Geoscientists (AIG). Mr Richards is a full-time employee of the company. Mr Richards has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activities 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 Richards consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The Information in this report that relates to Exploration Results for the Kathleen Valley Project is extracted from the ASX announcements "Latest drilling extends thick, high-grade zone at Kathleen Valley further north as strong assay results continue", "Spectacular intercept of 90m @ 1.3% Li<sub>2</sub>O at Kathleen Valley" and "Work commences on Kathleen Valley Resource update as drilling continues to deliver wide, high grade lithium results" released on the 9<sup>th</sup> May 2019, 20<sup>th</sup> May 2019 and 3<sup>rd</sup> June 2019 respectively which are available on [www.ltresources.com.au](http://www.ltresources.com.au).

The Information in this presentation that relates to the Exploration Results for the Buldania Project is extracted from the ASX announcements entitled "More strong assays confirm significant lithium discovery at Buldania Project in WA", "Liontown confirms second significant lithium discovery in WA with new thick, high-grade hits at Buldania", "Outstanding new drilling results continue to expand lithium mineralisation at Buldania", "Liontown further expands prospective lithium footprint at Buldania in WA's South-Eastern Goldfields", "Latest assays confirm lithium mineralisation over >1.3km strike length at the Buldania Lithium Project in WA" and "Liontown expands lithium footprint at Buldania in WA's South-Eastern Goldfields" released on the 26<sup>th</sup> March 2018, 19<sup>th</sup> September 2018, 1<sup>st</sup> November 2018, 13<sup>th</sup> November 2018, 20<sup>th</sup> November 2018 and 14<sup>th</sup> March 2019 respectively which are available on [www.ltresources.com.au](http://www.ltresources.com.au).

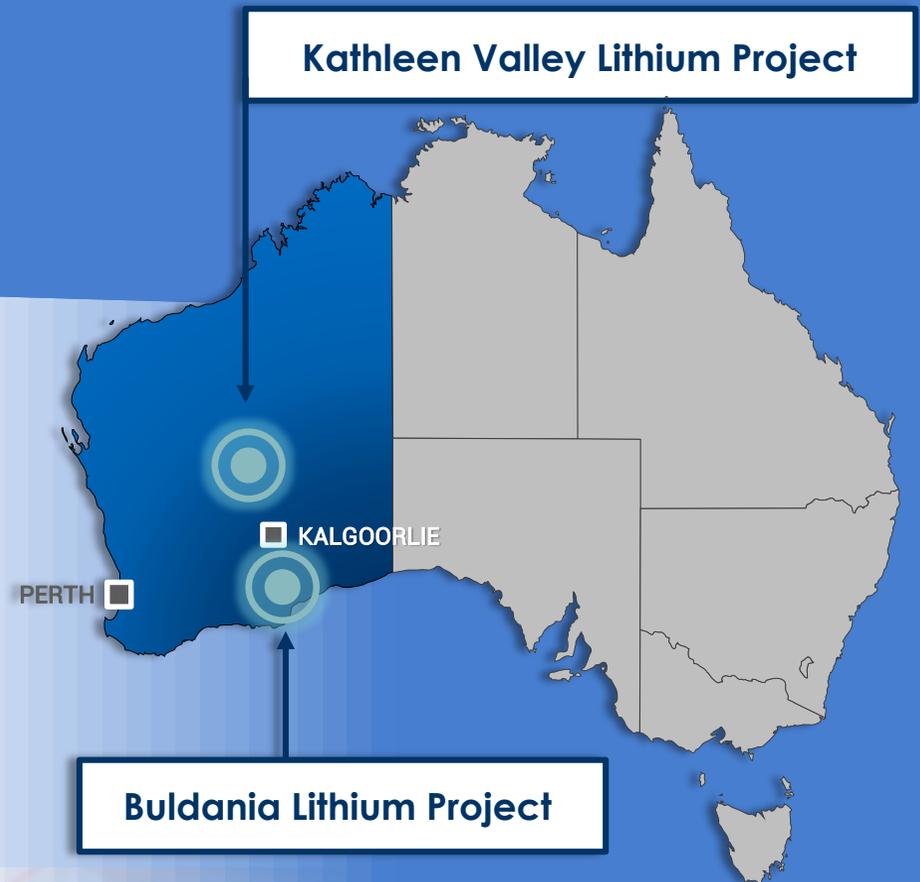
The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and 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.

**Kathleen Valley Project:**  
Progressing towards a new WA  
lithium mine

**Buldanina Project:**  
Advancing a second lithium discovery  
to a maiden resource estimate

Located in established, well serviced  
mining regions and backed by strong  
state government support for a WA  
battery metals industry

Projects are either wholly-owned or  
Liontown has 100% of the relevant  
mineral rights



**NEXT GENERATION LITHIUM PRODUCER**



# KATHLEEN VALLEY LITHIUM PROJECT

# Location , Infrastructure, **Grade** and **Growth**

MAIDEN RESOURCE  
**21.2Mt @ 1.4% Li<sub>2</sub>O**  
and 170ppm Ta<sub>2</sub>O<sub>5</sub>



Exploration Target of  
**19-31Mt @ 1.2-1.5% Li<sub>2</sub>O\***

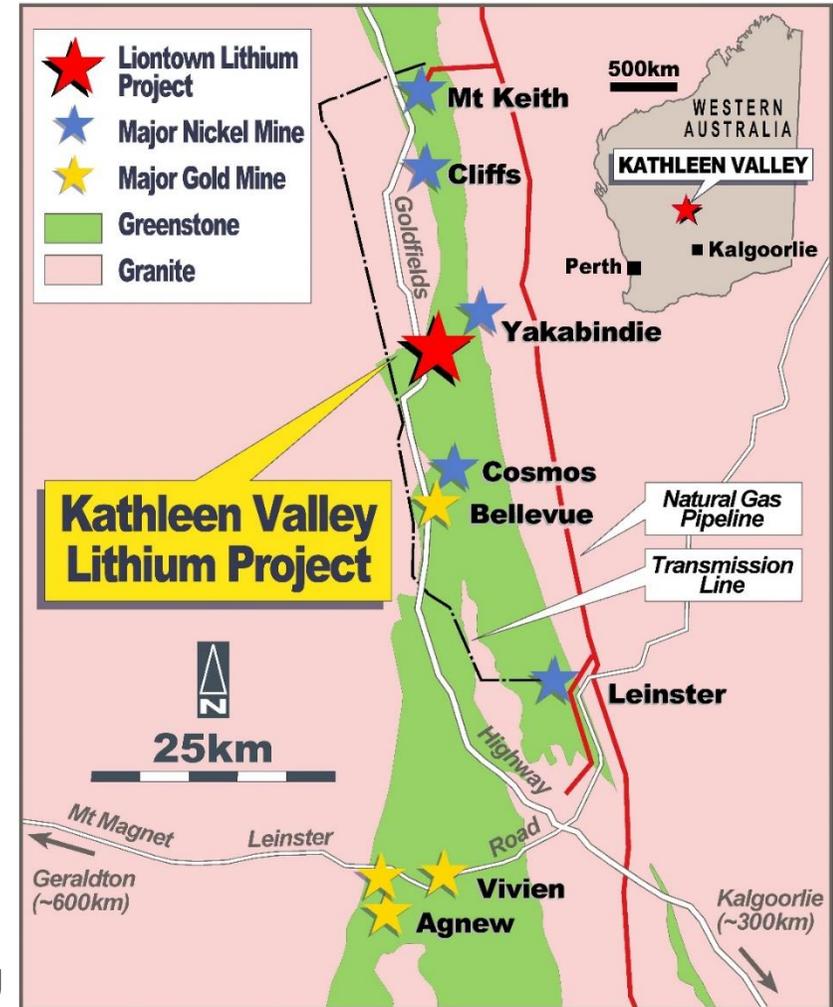
**Updated MRE due early July 2019**

**Scoping Study** on maiden MRE confirms potential for commercially robust mine

**Conventional open pit mining and processing**

Conceptual open pits largely constrained by limit of data

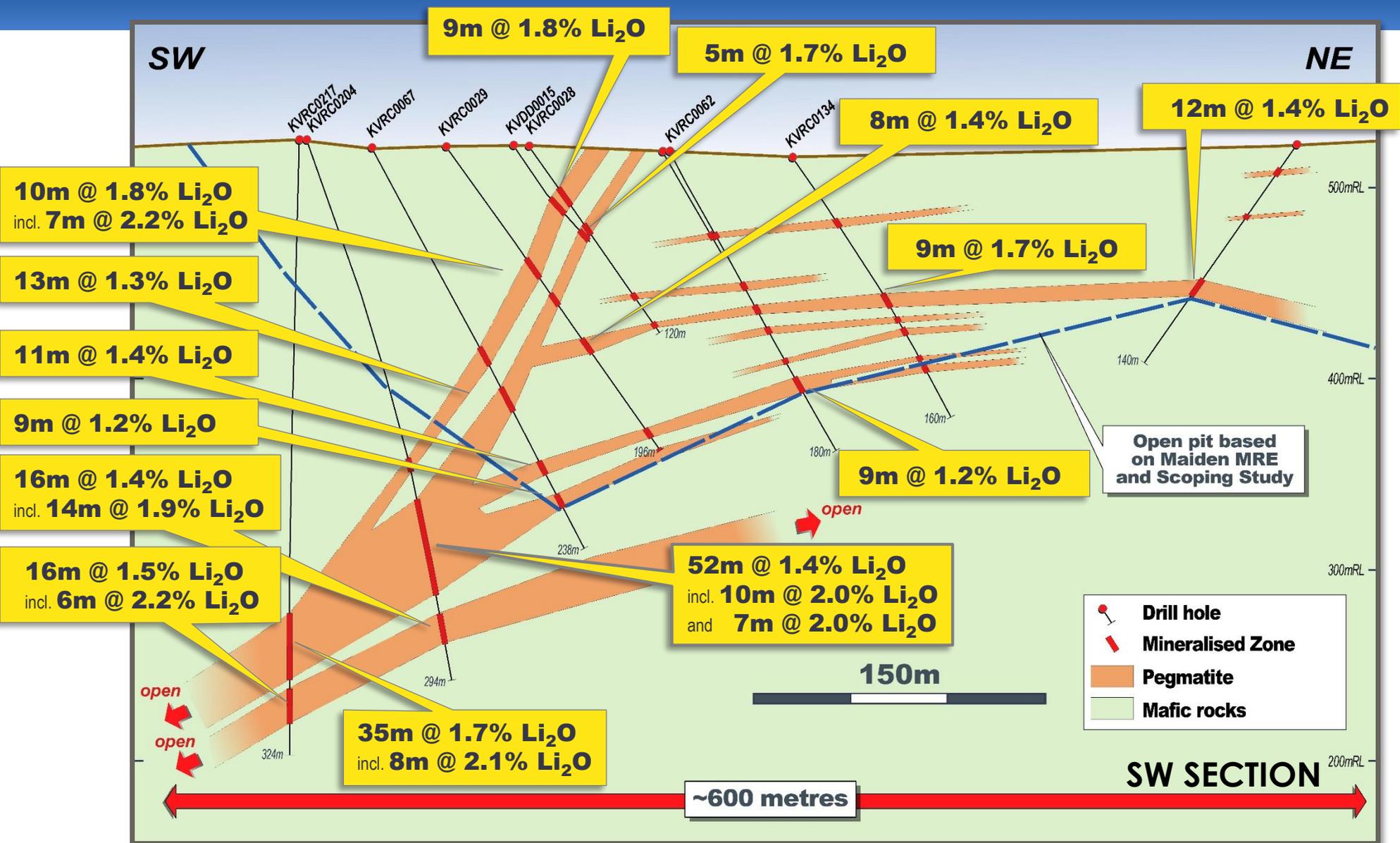
**Preliminary test work confirms saleable spodumene (Li<sub>2</sub>O) concentrate – feasibility-level test work ongoing**



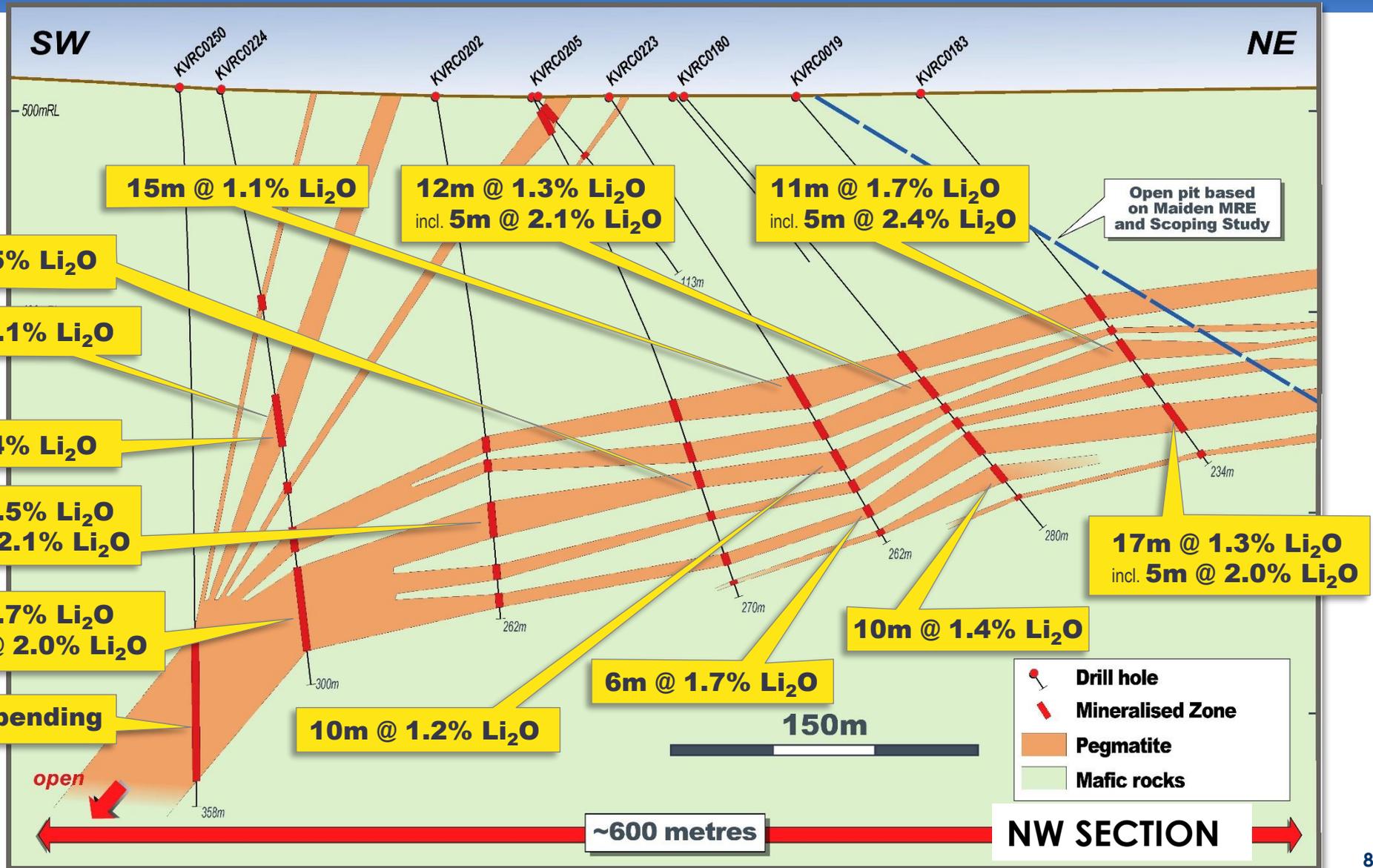
\*The potential grade and tonnage of the increased Exploration Target referred to above is conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource. See Appendix for full explanation of assumptions used to estimate ranges.



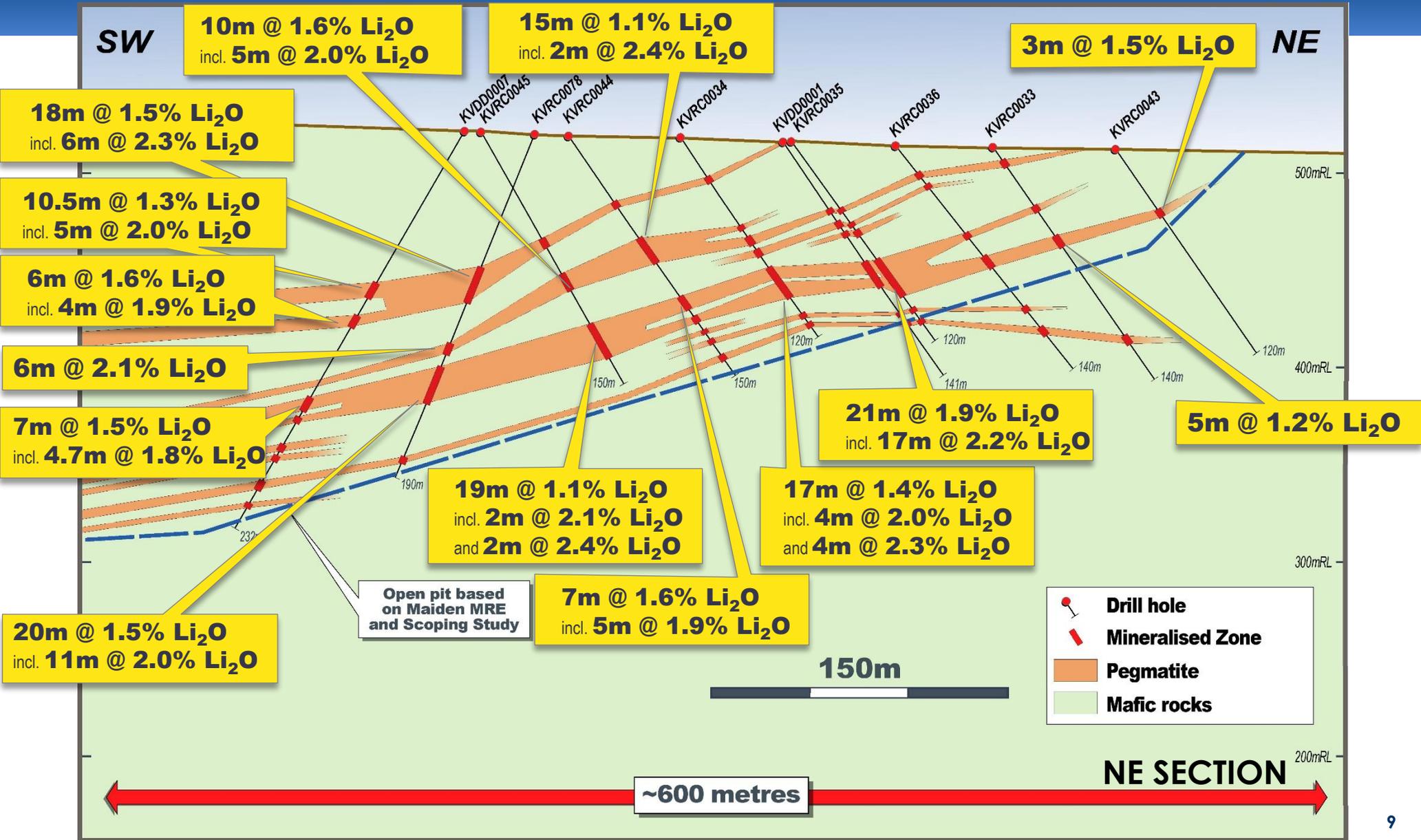
# Latest drilling extends mineralisation down dip



..... and along strike

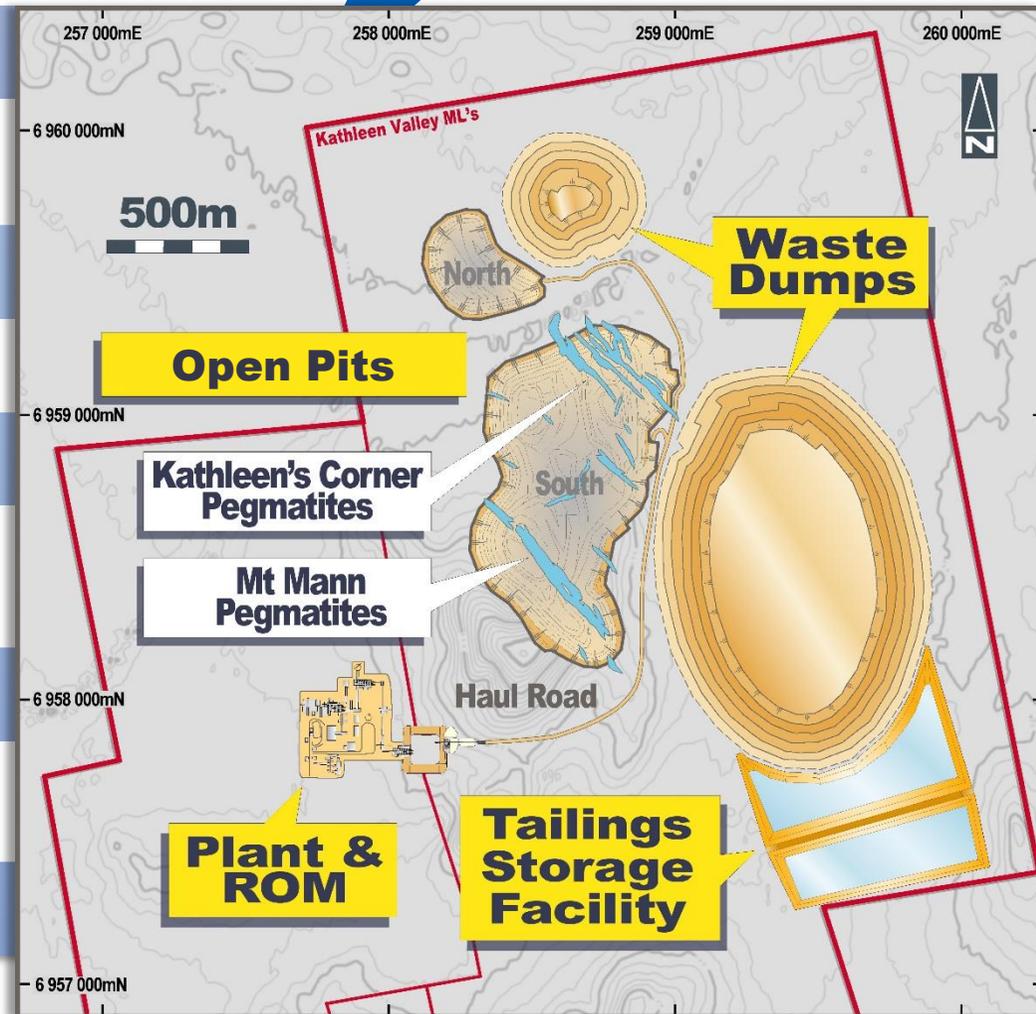


# Building on previous results included in 2018 MRE



# Scoping Study on maiden MRE supports potential to develop a standalone Lithium Mining and Processing Operation

BASE CASE	2Mtpa (Li & Ta)
NPV <sub>(8%, real, post tax)</sub>	A\$421M (Range of A\$316 to A\$526M)
IRR	38%
PAYBACK	<3 years
MINE LIFE	9 years
AVERAGE LOM OPEX	~A\$428/t conc. (net of Ta credits)
ANNUAL PRODUCTION	~360kt concentrate
LOM SPODUMENE PRICE	A\$900 (US\$650/t) FOB
CAPEX	~A\$232M



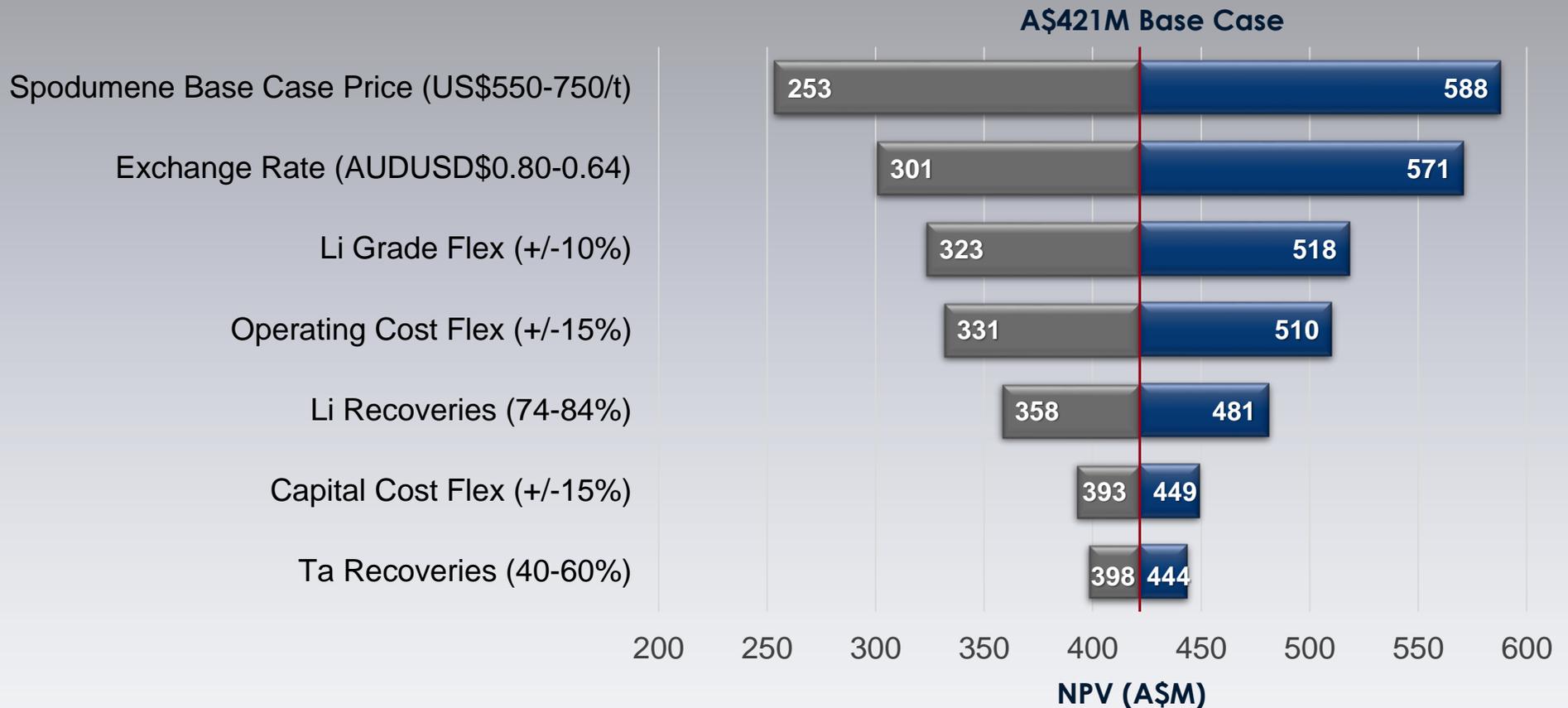
Scoping study prepared by Lycopodium Minerals Pty Ltd

# Financial Sensitivity



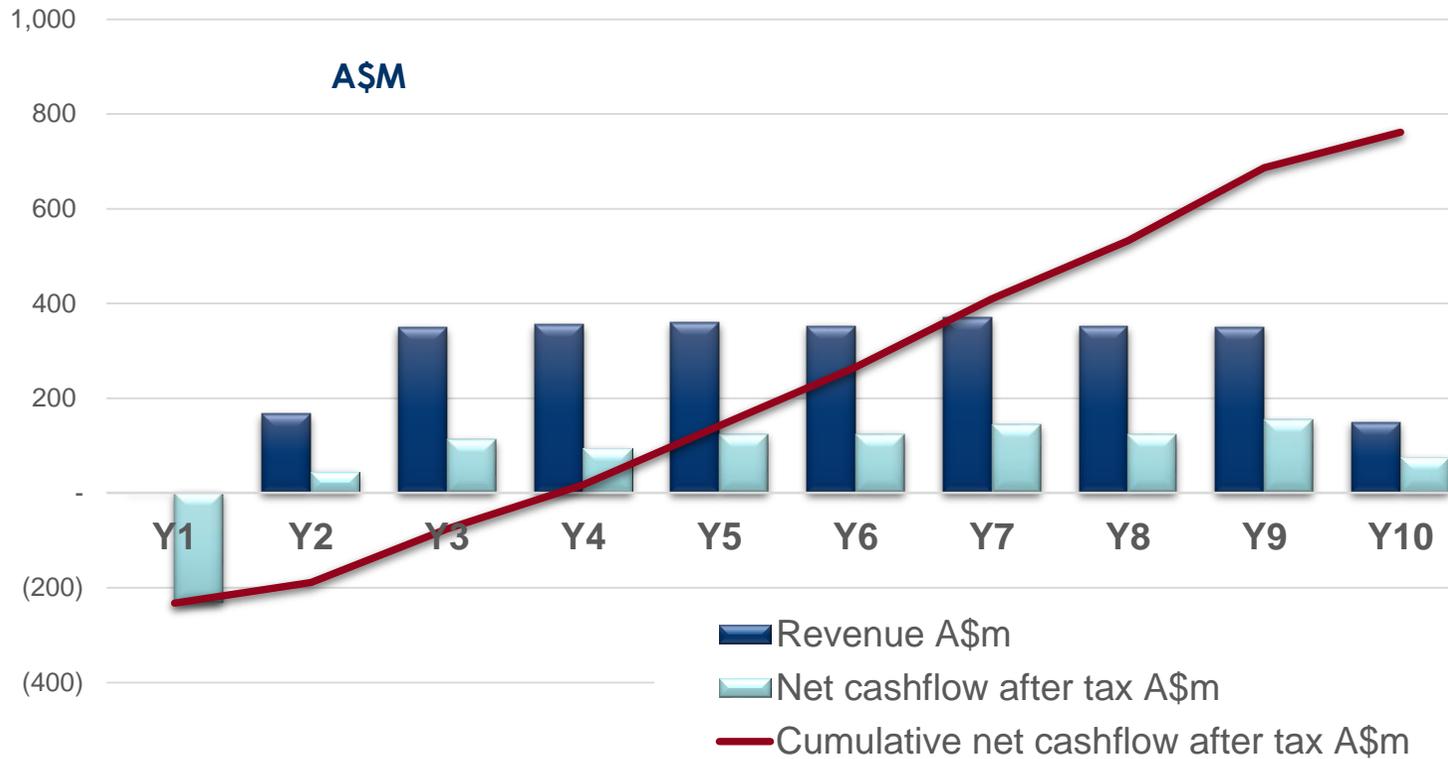
**Robust Project**

## Kathleen Valley Project - NPV Sensitivity Analysis (A\$M)



# Cash Flow Profile <3 Year Payback Period

## Average net cash flows >A\$100mpa (After Tax)



Scoping study suggests Life of Mine free cash flow of ~A\$762M



# METALLURGY AND FLOWSHEET

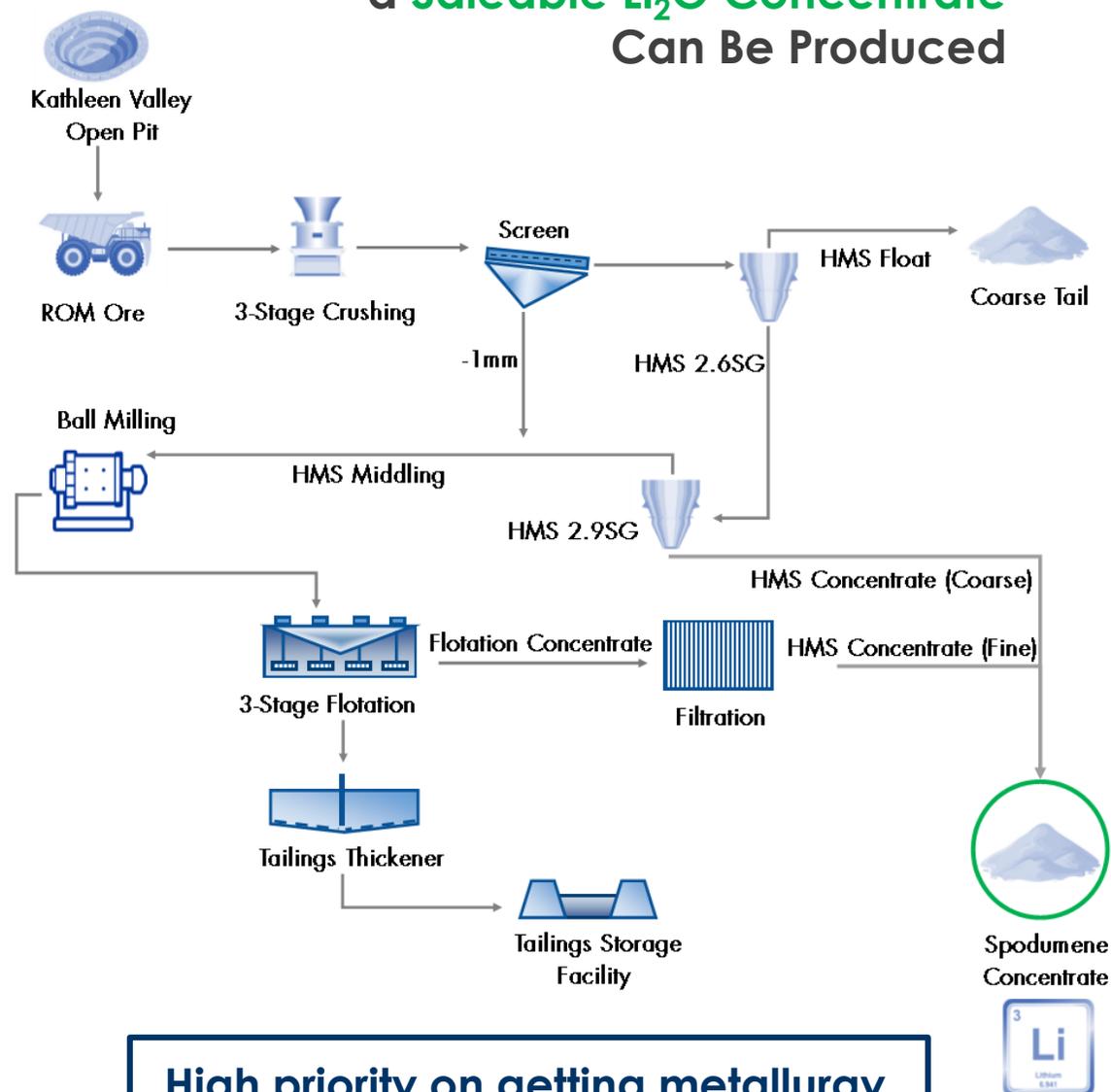
## KEY OUTCOMES

- 5.9%  $\text{Li}_2\text{O}$  from DMS conc.
- 36% mass rejection from 2-stage DMS
- 5.5%  $\text{Li}_2\text{O}$  from flotation
- Low iron (<0.5%  $\text{Fe}_2\text{O}_3$ )
- Predicted 79%  $\text{Li}_2\text{O}$  recovery
- Preliminary  $\text{Ta}_2\text{O}_5$  conc.

## FEASIBILITY-LEVEL TEST WORK IN PROGRESS ON A FURTHER 4 TONNES OF SAMPLE TO:

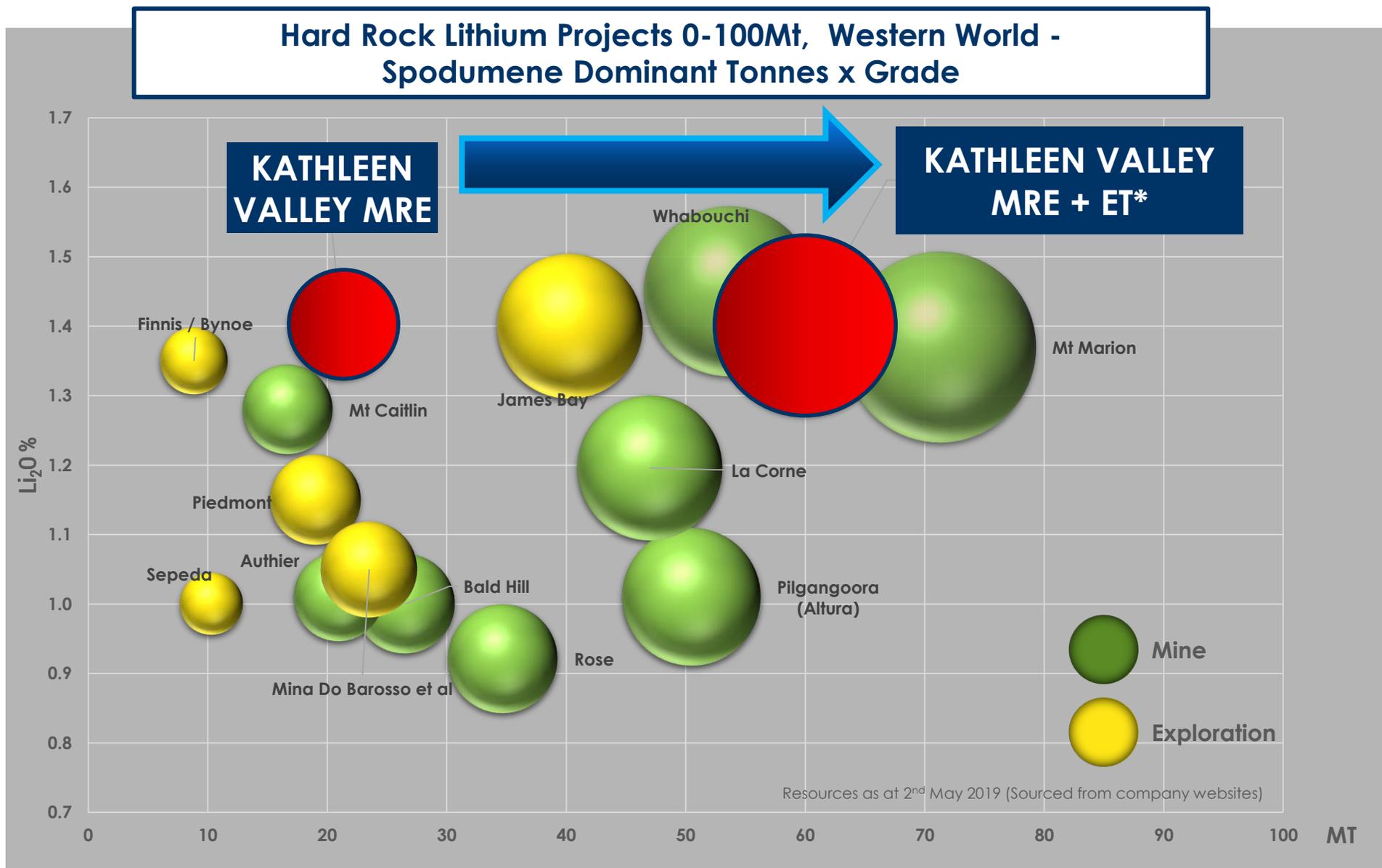
- Refine process parameters to produce a 6%  $\text{Li}_2\text{O}$  concentrate at optimal recovery
- Provide samples for potential strategic partners
- Confirm tantalum recovery

Preliminary Test Work Confirms  
a **Saleable  $\text{Li}_2\text{O}$  Concentrate**  
Can Be Produced



High priority on getting metallurgy  
and processing right

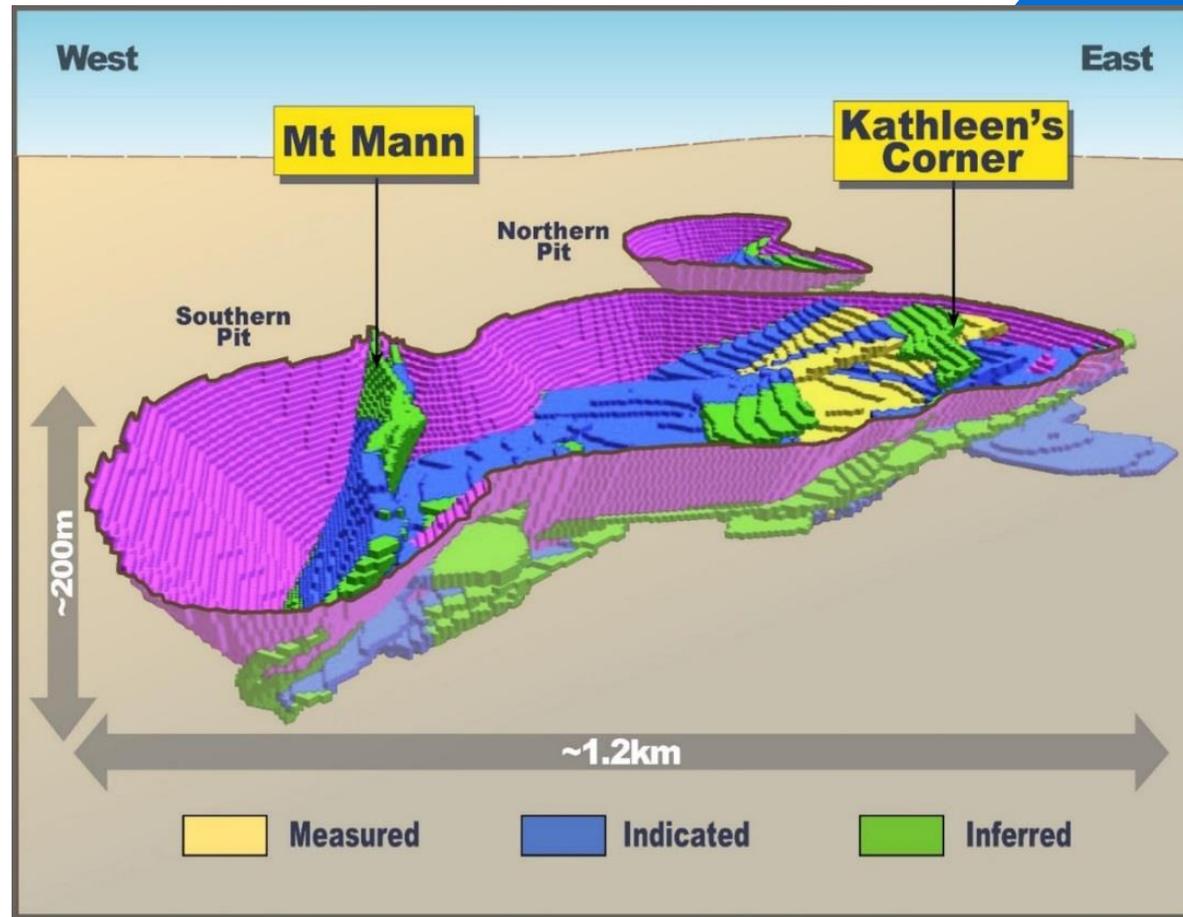
# High Grade Compared With Most Peers - Plus Potential to Grow



\*The potential grade and tonnage of the increased Exploration Target (ET) referred to above is conceptual in nature and there has been insufficient exploration to estimate an increased Mineral Resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource. See Appendix for full explanation of assumptions used to estimate ranges.

# KATHLEEN VALLEY INVESTMENT CASE

- Updated MRE due July 2019
- Strong focus on optimising recoveries—further test work in progress
- Robust, high grade maiden resource
- Further feasibility studies ongoing
- First world location and expertise
- Active, well serviced mining region
- Conventional mining and processing



Experienced, well-credentialed  
management team

The only non-committed  
spodumene resource  
in Australia



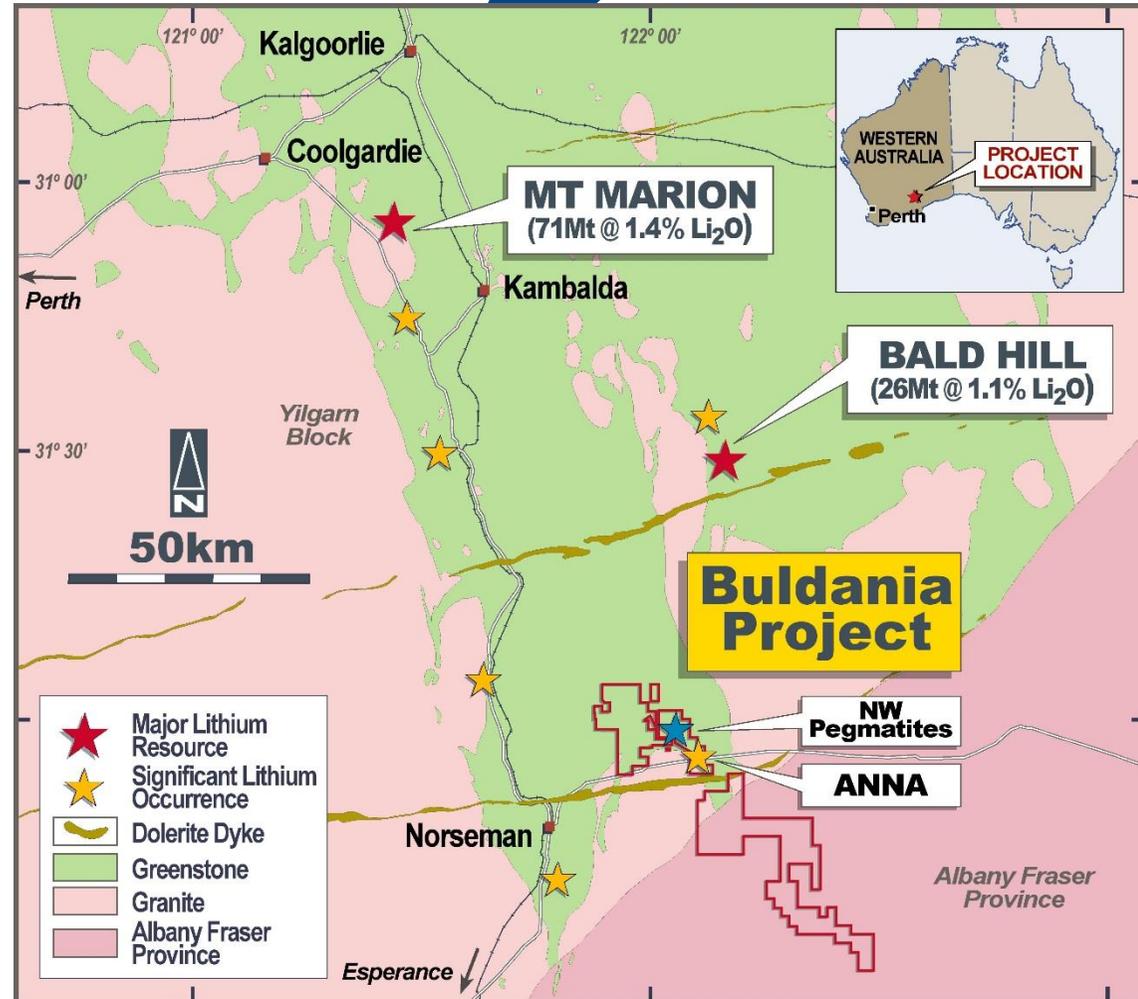
PERTH



# BULDANIA LITHIUM PROJECT

# Buldania is Located in a Lithium-Rich Mineral Province

- Outcropping, fresh, spodumene-related mineralisation
- Mineralisation at Anna extended to the SE under shallow cover – strike length >1.3km and open
- Similar geology to the Mt Marion and Bald Hill lithium deposits (71Mt and 26Mt respectively)
- Good infrastructure – located on Eyre Highway ~30km east of Kalgoorlie-Esperance railway
- Liontown has 100% of the lithium and related metal rights\*
- Part of larger, 600km<sup>2</sup> strategic land holding



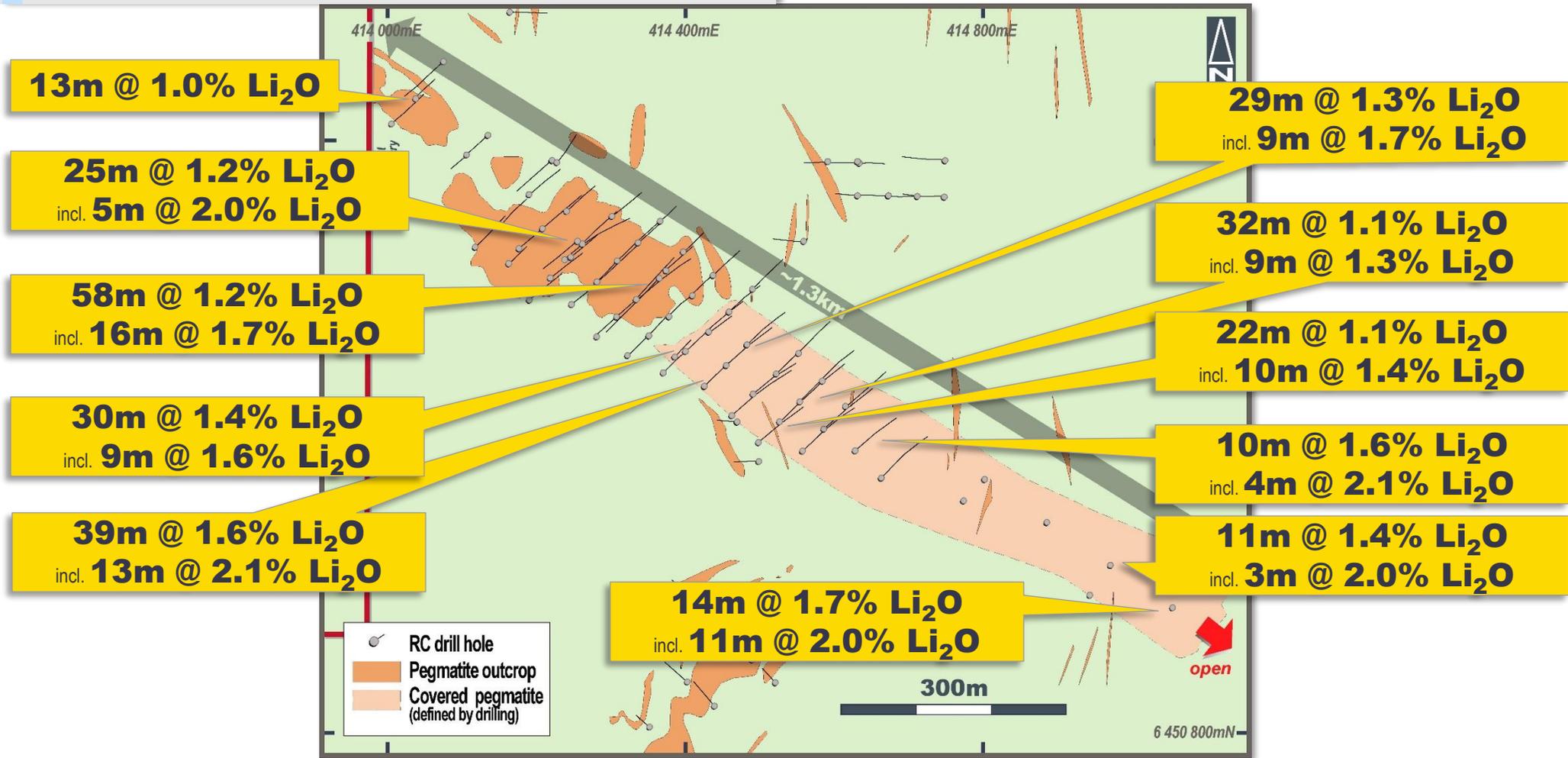
**Significant lithium discovery**

**Total land position ~600km<sup>2</sup>**

\*Secured via an agreement with Westgold Resources which holds royalty rights

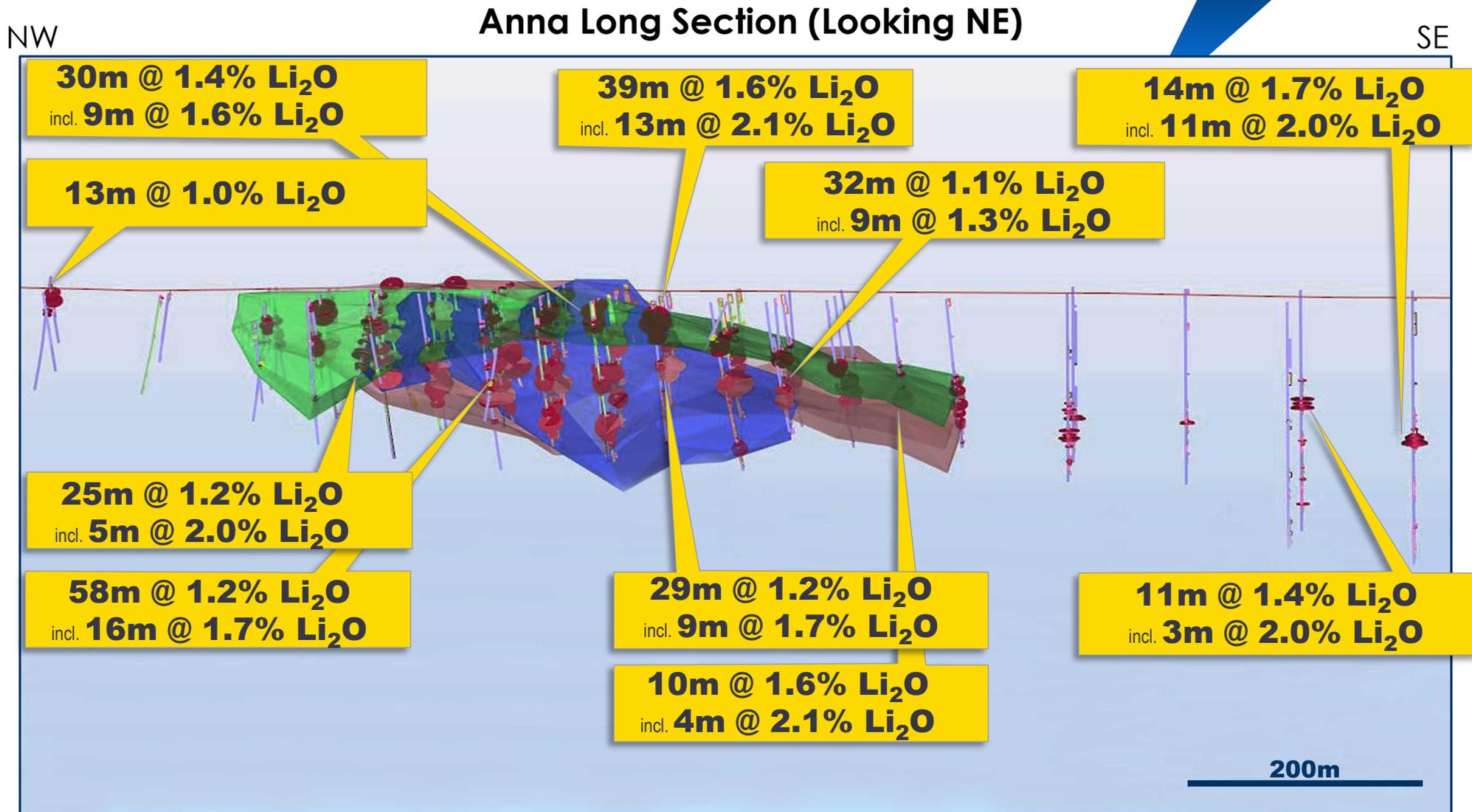
Large Lithium (Spodumene)  
Mineralised Pegmatite  
Defined at the Anna Prospect

Mineralisation fresh from surface  
and open along strike and at depth



Further definition drilling in progress as precursor to maiden Mineral Resource estimate

# Drilling Extends Mineralisation At Anna To South East – System Remains Open



# Large (~600km<sup>2</sup>) Land Position Highly Prospective For Lithium

No lithium exploration prior to Liontown

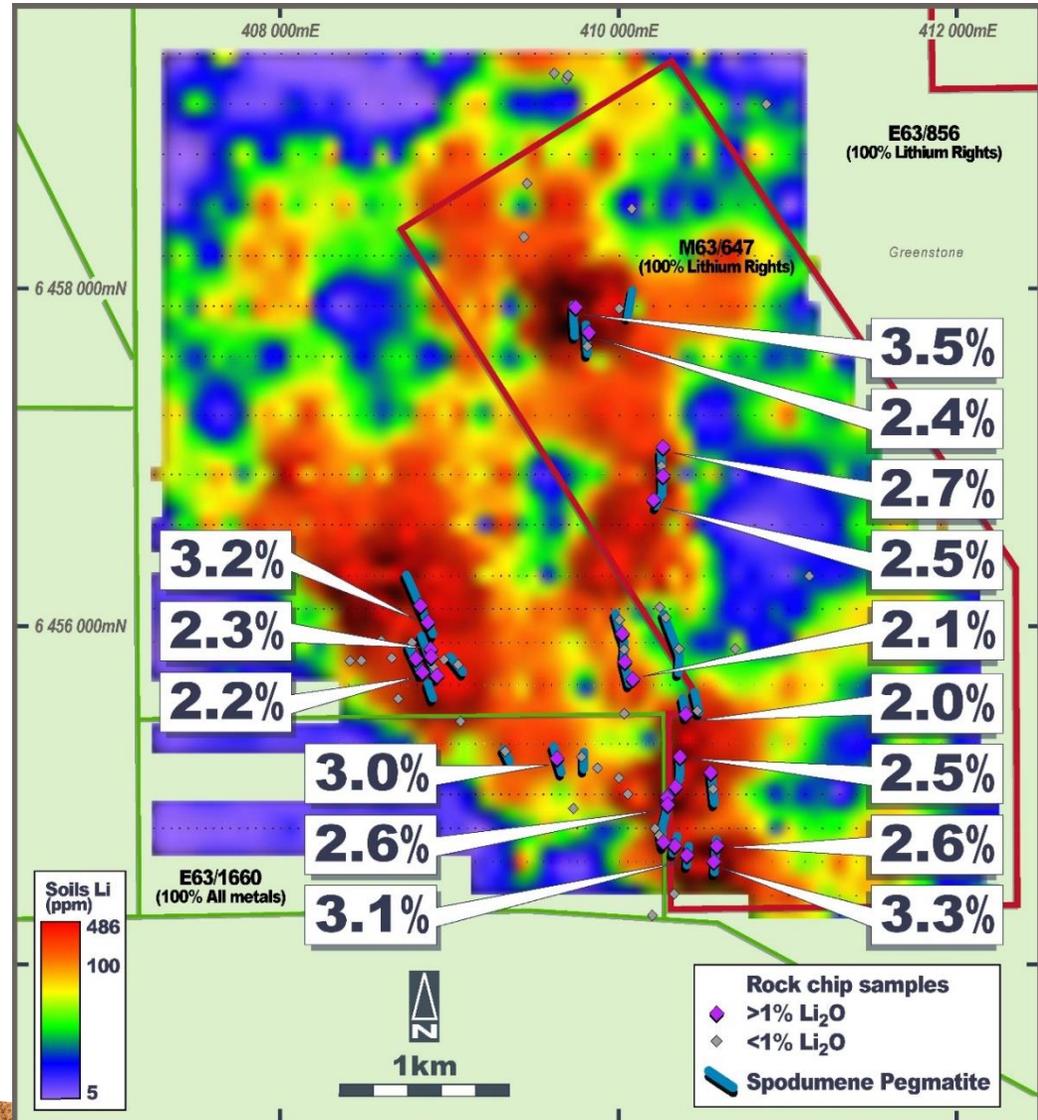
~20km strike length of prospective stratigraphy

Multiple spodumene-bearing pegmatites up to 800m long and 20m wide mapped

Rock chip assay values up to 3.5% Li<sub>2</sub>O

Initial drill testing Q2 2019

Multiple undrilled spodumene pegmatites



# Catalysts for Continued Re-Rating

## Kathleen Valley Project

- 1 Continuing drill results
- 2 Resource Upgrade: July 2019
- 3 Metallurgical studies focused on optimising grade and recoveries
- 4 PFS due for completion Q4 2019



## Buldania Project

- 5 Maiden Mineral Resource: Q3 2019
- 6 Regional exploration and discovery drilling
- 7 Preliminary metallurgical test work ongoing
- 8 Progressing towards Scoping Study

“...the quality of the exploration results from LTR’s dual drilling programs at its Kathleen Valley and Buldania lithium projects in Western Australia, cannot be questioned. LTR’s management approach has typically been lowkey, preferring substance over hype, which adds further credibility to its exploration successes and resource growth.” Mine Life Bulletin, Gavin Wendt

# A Proven, Experienced Board



**DAVID RICHARDS**  
Managing Director

- +35 years experience
- Discovered multi-million ounce Vera Nancy Gold Deposits



**TIM GOYDER**  
Chairman

- +40 years experience
- Executive Chairman Chalice Gold Mines



**CRAIG WILLIAMS**  
Non-Executive Director

- +40 years experience
- Founder and CEO of Equinox Minerals



**ANTHONY CIPRIANO**  
Non-Executive Director

- +30 years experience
- Former Senior Partner at Deloitte



**STEVEN CHADWICK**  
Non-Executive Director

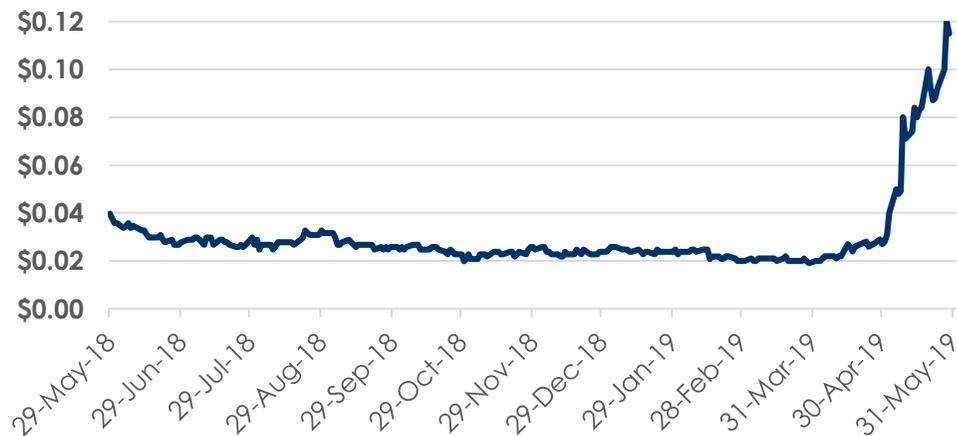
- +40 years experience
- Director of Lycopodium Minerals

## Corporate Snapshot

ASX CODE	LTR
SHARES ON ISSUE	~1,528M
MARKET CAPITALISATION	~\$175M (AT 11.0CPS)
MAJOR SHAREHOLDER	TIM GOYDER ~18%
TOP 20 SHAREHOLDERS	~46%
CASH	~A\$5M*

\*As at 20 May 2019

## SHARE PRICE - ASX:LTR (AU\$)



# APPENDIX

## Kathleen Valley Project Additional Information



# Scoping Study – Key Parameters And Assumptions



Parameter	
<b>General and Economic</b>	
Discount rate (real, post tax)	8%
Spodumene concentrate price	US\$650 per tonne FOB
Tantalum concentrate price (contained Ta <sub>2</sub> O <sub>5</sub> )	US\$71 per pound FOB
<b>Exchange rate – AUD/USD</b>	0.72
<b>Mining and Production</b>	
Average Life-of-Mine strip ratio	8.24:1
Processing rate	2Mtpa
Life-of-Mine Production Target	15.7Mt ore
Average Li <sub>2</sub> O grade (diluted)	1.26%
Average Ta <sub>2</sub> O <sub>5</sub> grade (diluted)	154ppm
Li <sub>2</sub> O recoveries	79%
Ta <sub>2</sub> O <sub>5</sub> recoveries	50%
Spodumene concentrate grade	5.6%
Tantalite concentrate grade	30%
Moisture content of concentrate	13%

Parameter	
<b>Cost Assumptions</b>	
LOM average open pit mining costs (\$/t ore mined)	A\$37.72
LOM average processing cost (\$/t ore milled)	A\$19.32
Logistics and transport (\$/t concentrate)	A\$75.65
General and admin (\$/t ore milled)	A\$6.01
Western Australia State royalty	5%
Other royalties	3% gross sales and \$0.5/t ore mined
Corporate tax rate	30%
Estimated opening tax losses available	A\$25M



# Scoping Study – LoM Financials And Capital Expenditure



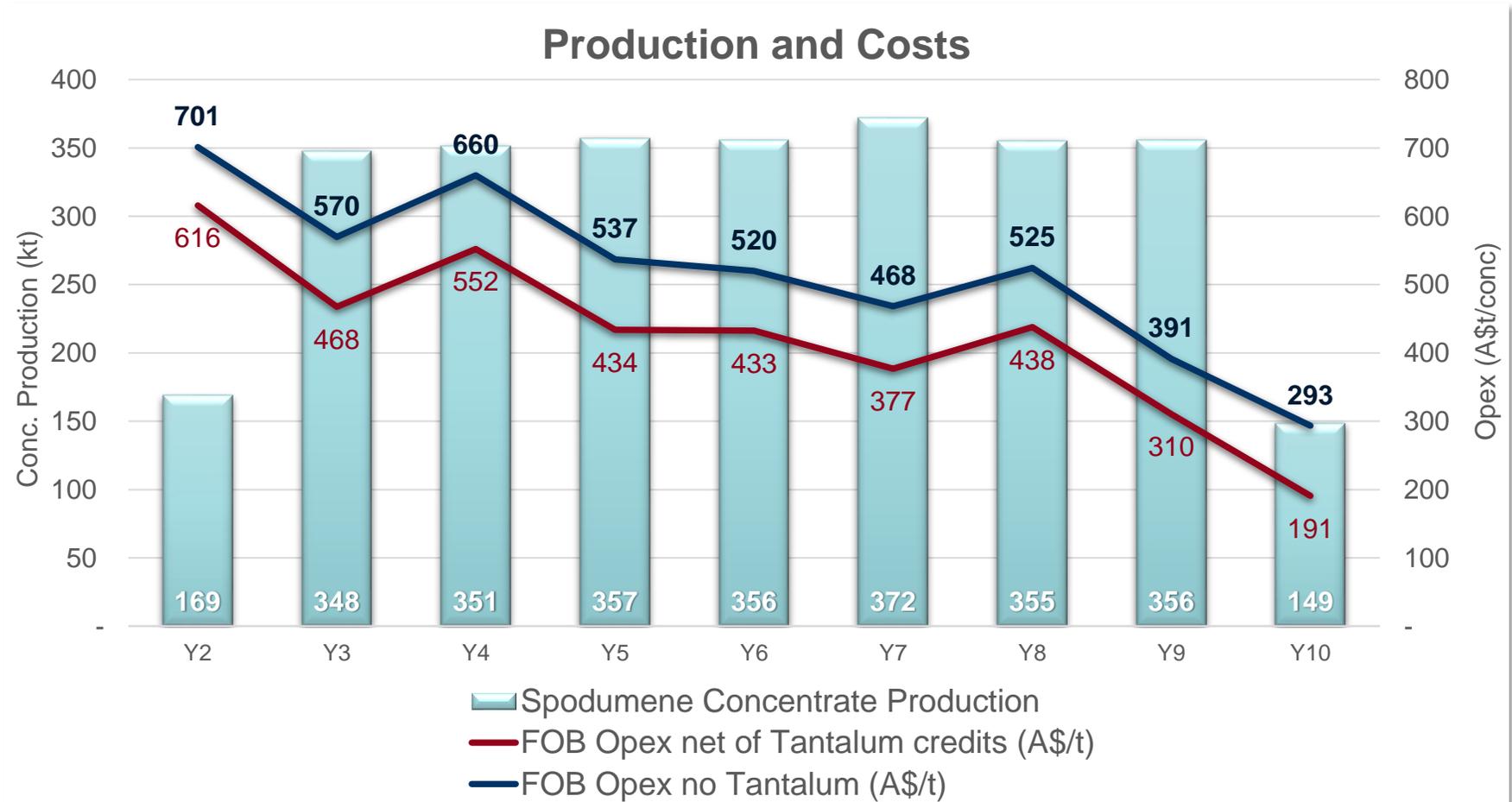
## Life of Mine Financials

	A\$M
<b>Revenues</b>	2,802
<b>Operating costs</b>	(1,236)
<b>Capital expenditure</b>	
- pre-production	(232)
- sustaining	(25)
<b>Royalties</b>	(232)
<b>Corporate tax</b>	(315)
<b>Life of Mine Project Free Cash flow</b>	762

## Capital Costs Summary

Main Area	Capital (A\$M)
<b>Treatment Plant</b>	82.8
<b>Reagents &amp; Plant Services</b>	9.5
<b>Infrastructure – general</b>	39.9
<b>Mining</b>	6.1
<b>Contractor and Construction Indirects</b>	18.6
<b>Subtotal</b>	156.9
<b>Management Costs</b>	20.6
<b>Owners Costs</b>	14.4
<b>Subtotal</b>	35.0
<b>Contingency</b>	40.3
<b>Project Total</b>	232.2

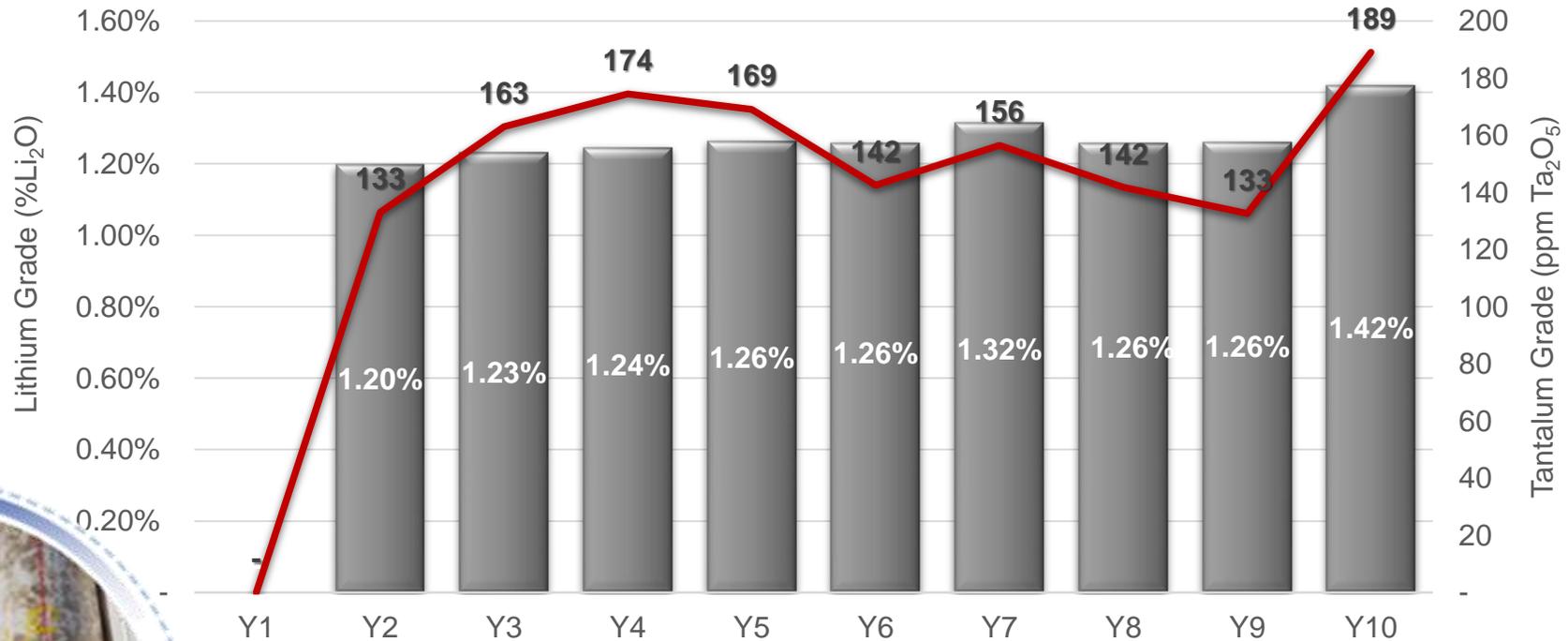
# Scoping Study – Production And Costs



# Scoping Study – Grade Profiles



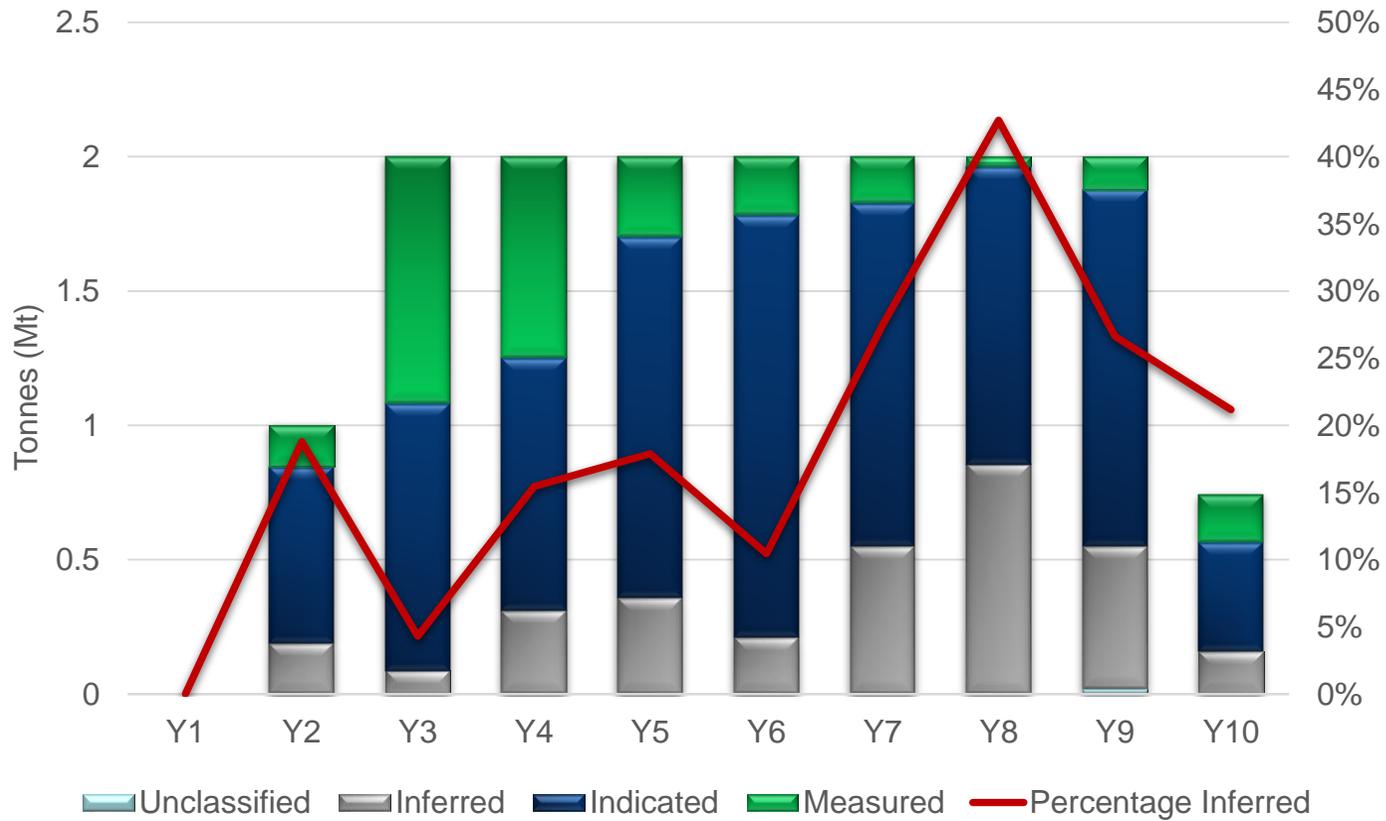
## LOM Lithium and Tantalum Grade Profile



# Scoping Study – Production Classification



## Production Classification by Year



# Exploration Target Parameters and Assumptions



Parameter	Mt Mann	Kathleen's Corner (NW)	Kathleen's Corner (SE)	Rationale
Combined strike length of pegmatites	800m	400	200	Based on recent and previous drilling and extrapolation of block model used in preparation of maiden Mineral Resource Estimate (released 4 <sup>th</sup> September 2018)
Average cumulative true width	11 – 15m	35 - 40m	5 - 10m	
Down Dip extent	250 – 300m	300 – 400m	500 - 600m	
Specific gravity	2.75	2.75	2.75	Measured from diamond core drilling
Total tonnage	6 – 10Mt	11.6 – 17.6Mt	1.4 – 3.3Mt	Strike x width x dip x S.G
Average grade	1.2 – 1.5%	1.2 – 1.5%	1.2 – 1.5%	Based on maiden Mineral Resource Estimate



The grade and tonnage ranges referred to above are conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource.

# Liontown



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