



FEBRUARY 2019 ASX : LTR



Developing Two Quality Hard Rock  
Lithium Deposits in Western Australia

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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 extracted from the ASX announcement “Major resource expansion drilling program commences at Kathleen Valley Lithium Project, WA” 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 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” and “Latest assays confirm lithium mineralisation over >1.3km strike length at the Buldania Lithium Project in WA” 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 and 20<sup>th</sup> November 2018 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.

# Next Generation Lithium Producer

## 1 Kathleen Valley Lithium Project

Maiden Mineral Resource:

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

- 75% Measured and Indicated
- Located on granted mining leases
- Close to established infrastructure

- Scoping study confirms potential for a commercially robust mining operation
- Resource expansion drilling in progress aimed at significantly extending mine life
- Comprehensive test work ongoing to optimise grade and recoveries
- Feasibility studies scheduled for completion by Q1 2020

Projects strategically located in the lithium-rich Eastern Goldfields region of Western Australia

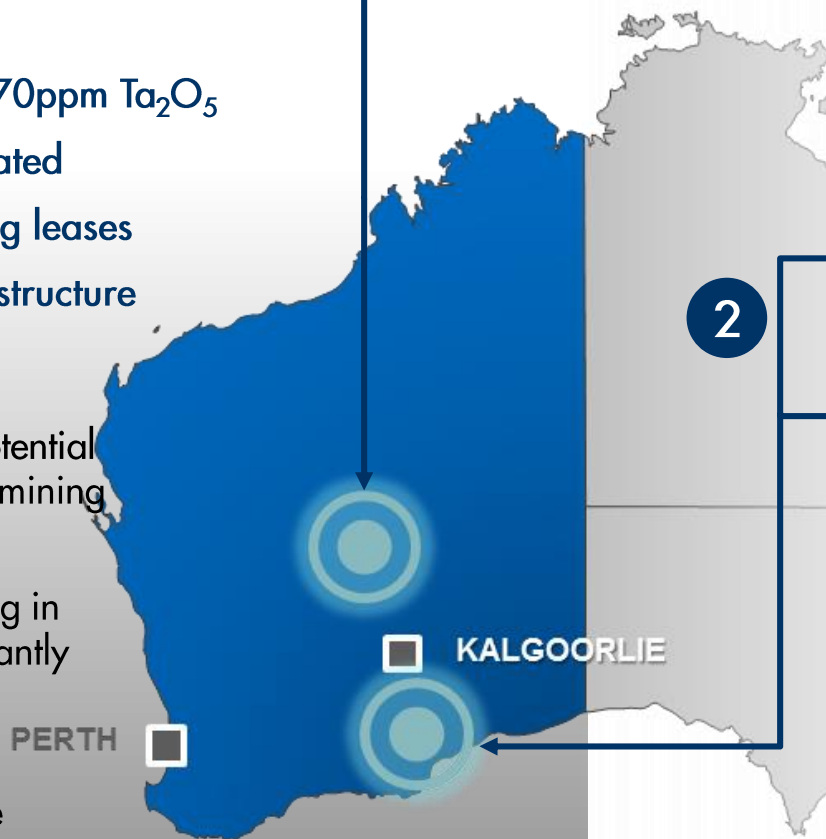
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## Buldania Lithium Project

Liontown's second lithium discovery:

up to 58m @ 1.2% Li<sub>2</sub>O in drilling

- Mineralisation confirmed over a length of >1.3km and remains open
- Further resource definition drilling to commence Q1 2019
- Maiden resource estimate Q2/Q3 2019



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



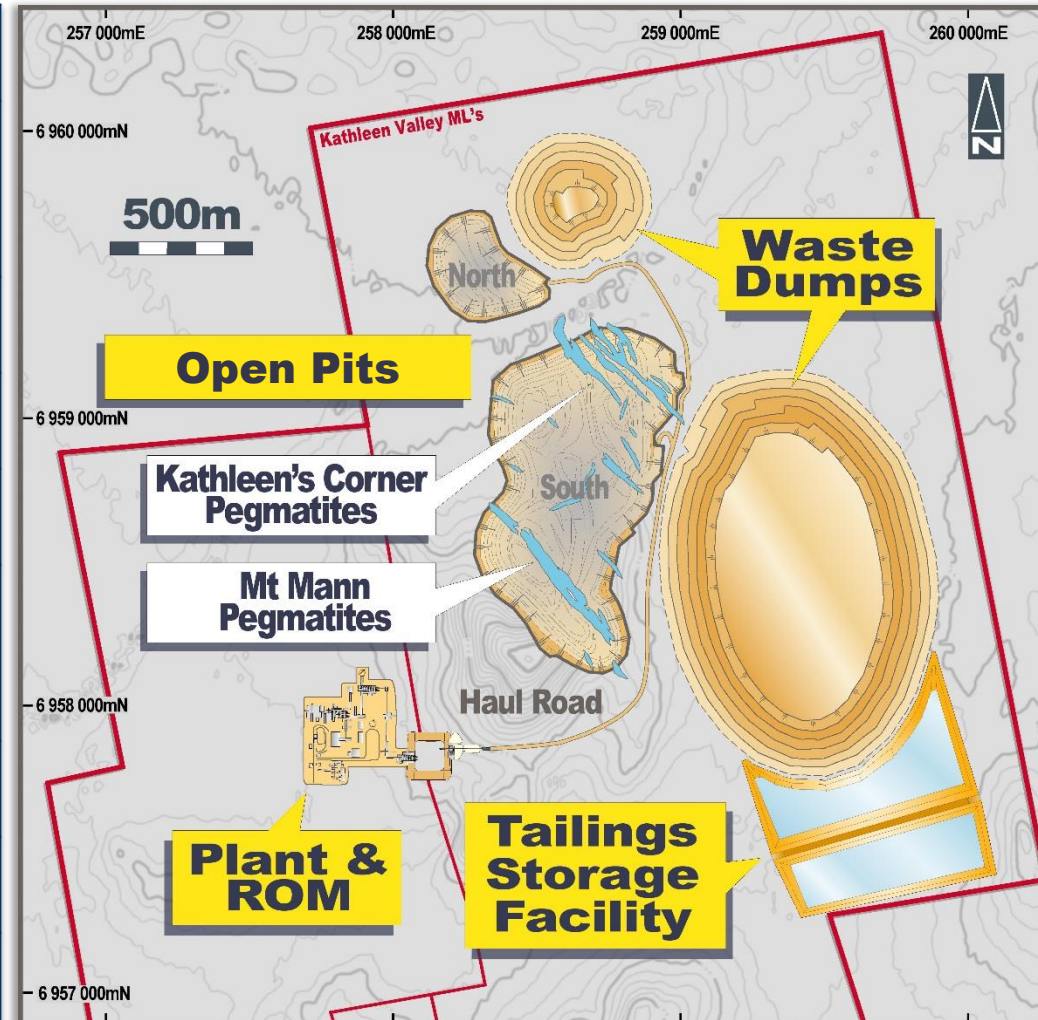
# KATHLEEN VALLEY LITHIUM PROJECT

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WESTERN AUSTRALIA

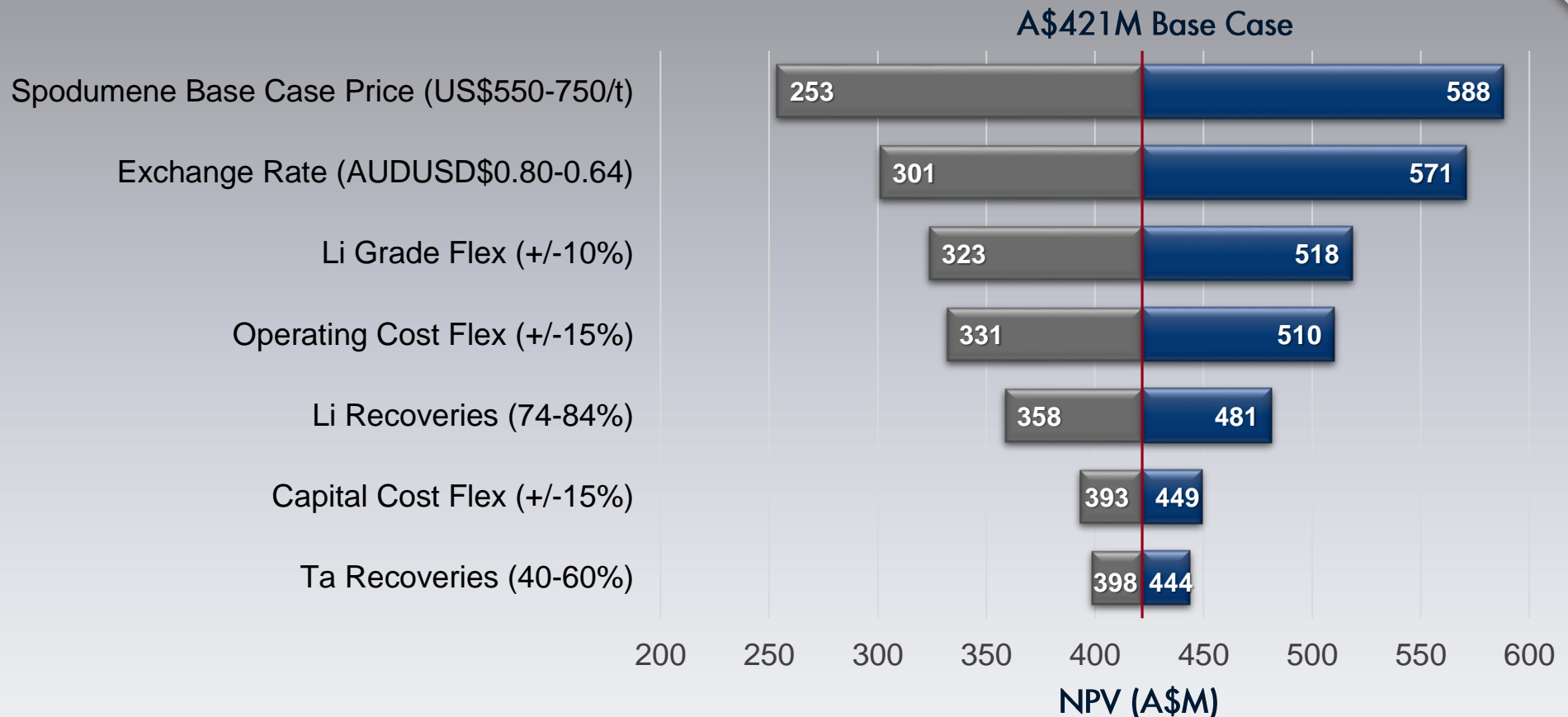
# Scoping Study Supports Potential To Develop A Standalone Lithium Mining and Processing Operation

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



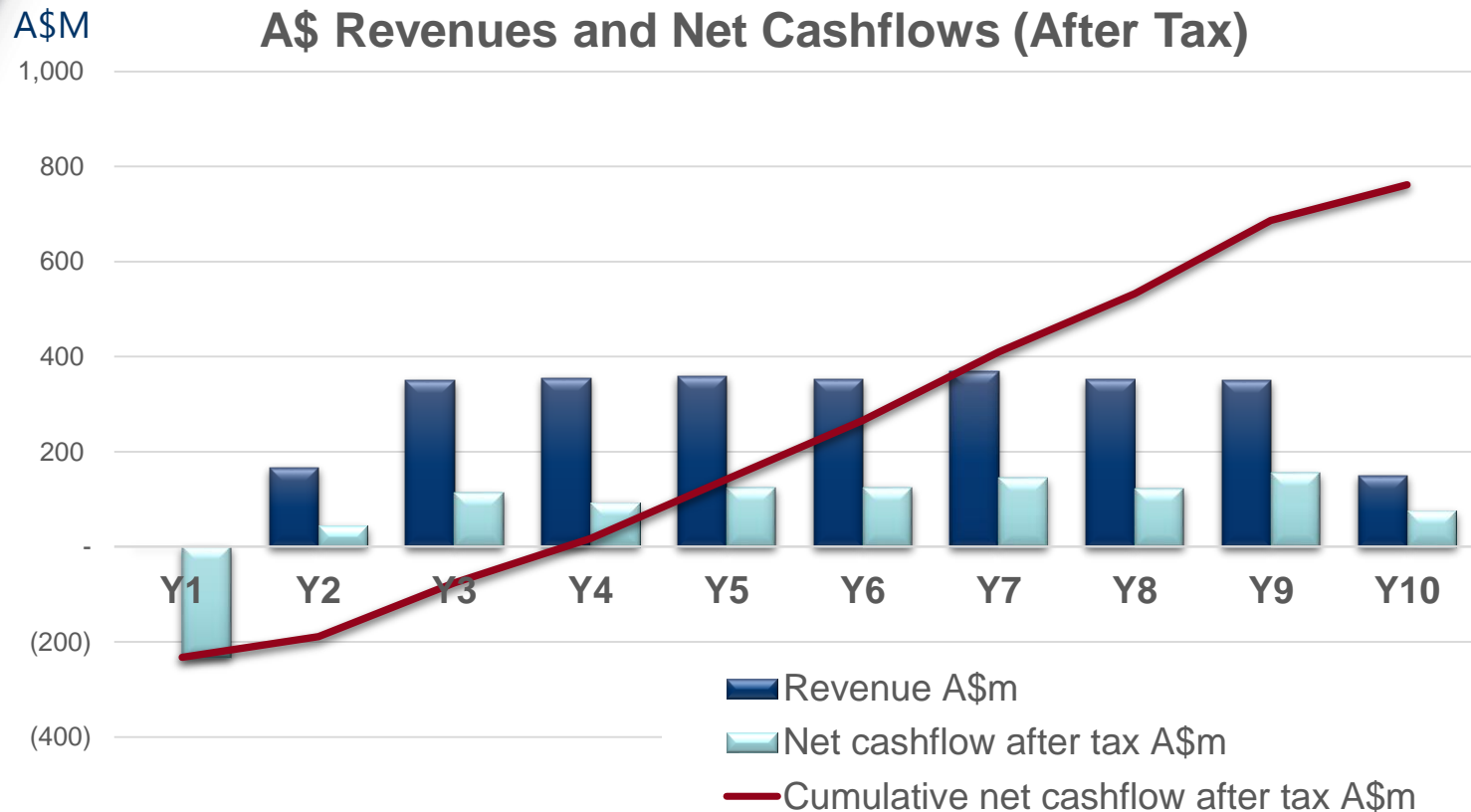
# Financial Sensitivity – Robust Project

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



# Cash Flow Profile →

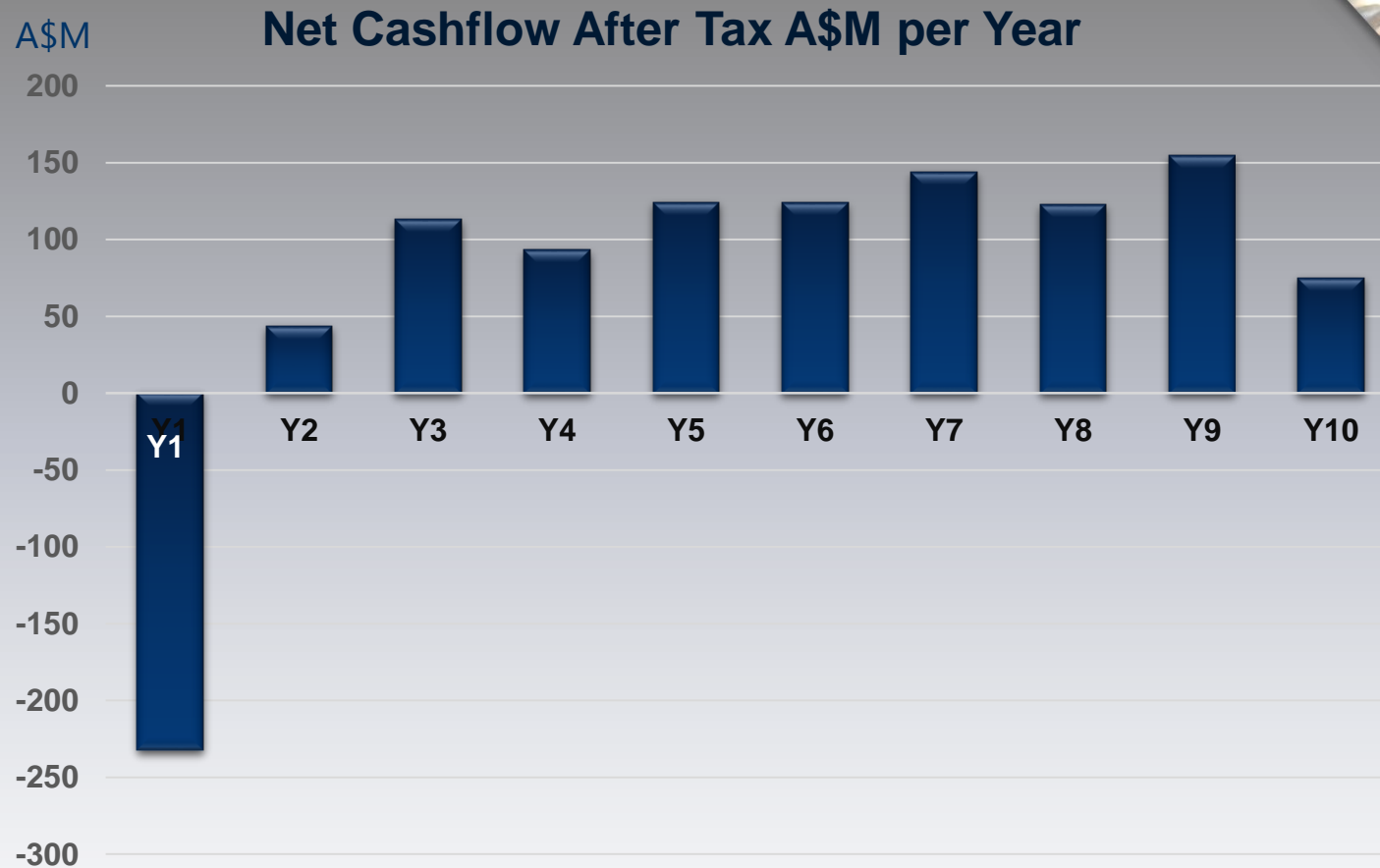
<3 Year Payback Period



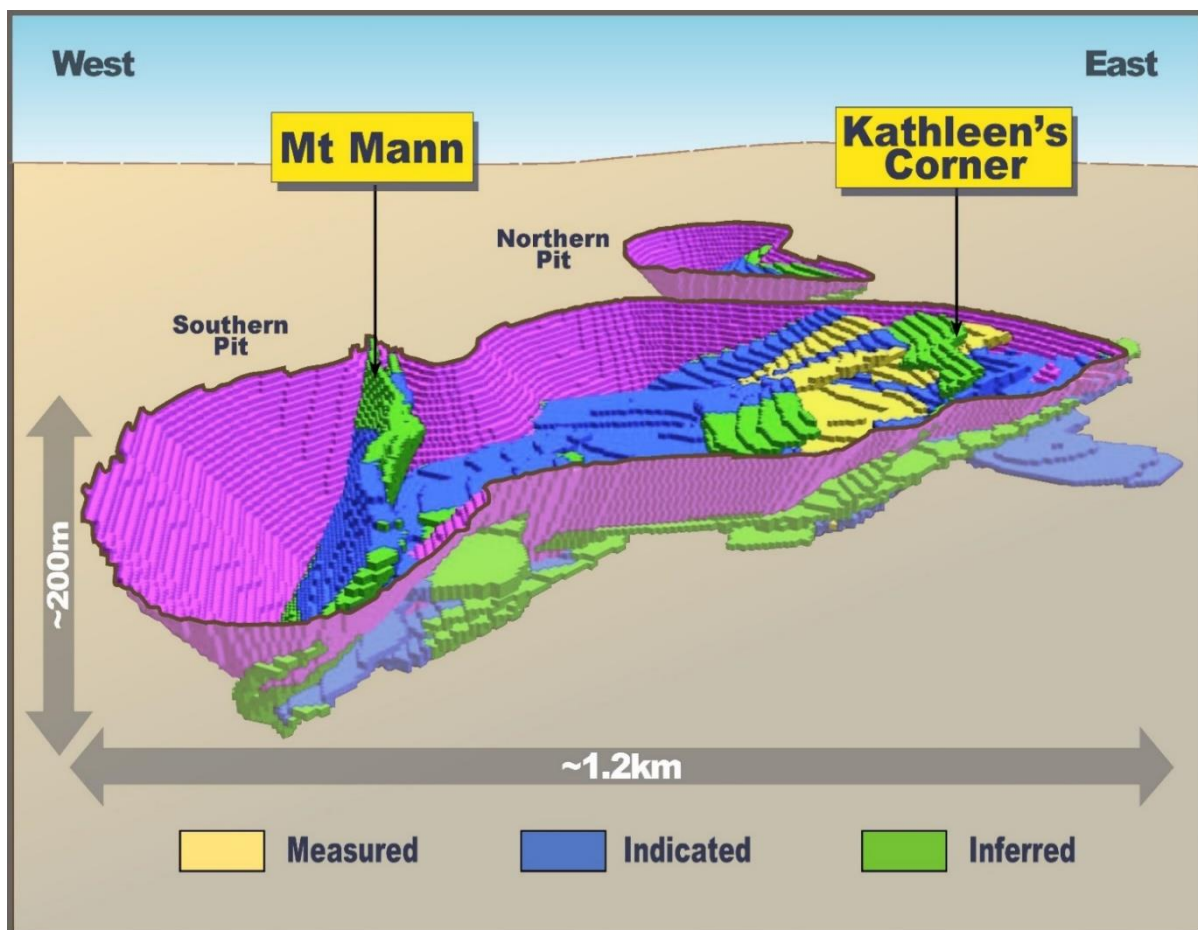
Scoping study suggests Life of Mine free cash flow of ~A\$762M

# Cash Flow Per Year

Scoping study suggests average free cash flow of >A\$100M per year



# Resources and Mining



Global resource 21.2Mt @ 1.4%  $\text{Li}_2\text{O}$  and 170ppm  $\text{Ta}_2\text{O}_5$



75% Measured and Indicated



Scoping study Production Target of 15.7Mt @ 1.26%  $\text{Li}_2\text{O}$  and 154ppm  $\text{Ta}_2\text{O}_5$



Open pits largely constrained by limit of data



Conventional open pit mining and processing



Favourable location close to established infrastructure



Access to world-class expertise and work force

# Metallurgy And Flowsheet – Preliminary Test Work Confirms a Saleable $\text{Li}_2\text{O}$ Concentrate Can Be Produced

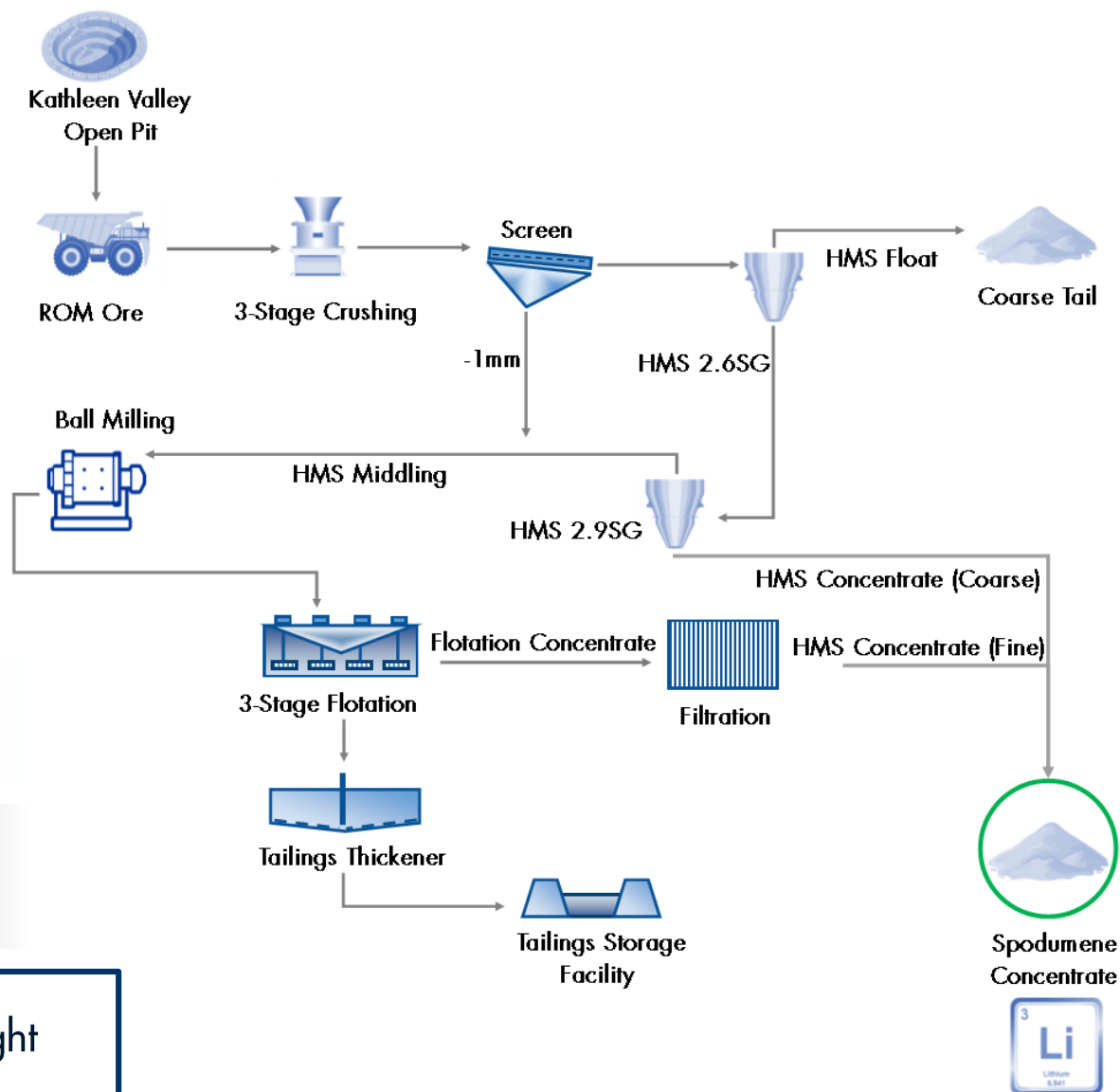
## Key outcomes

- 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.

Preliminary results unoptimised and very encouraging

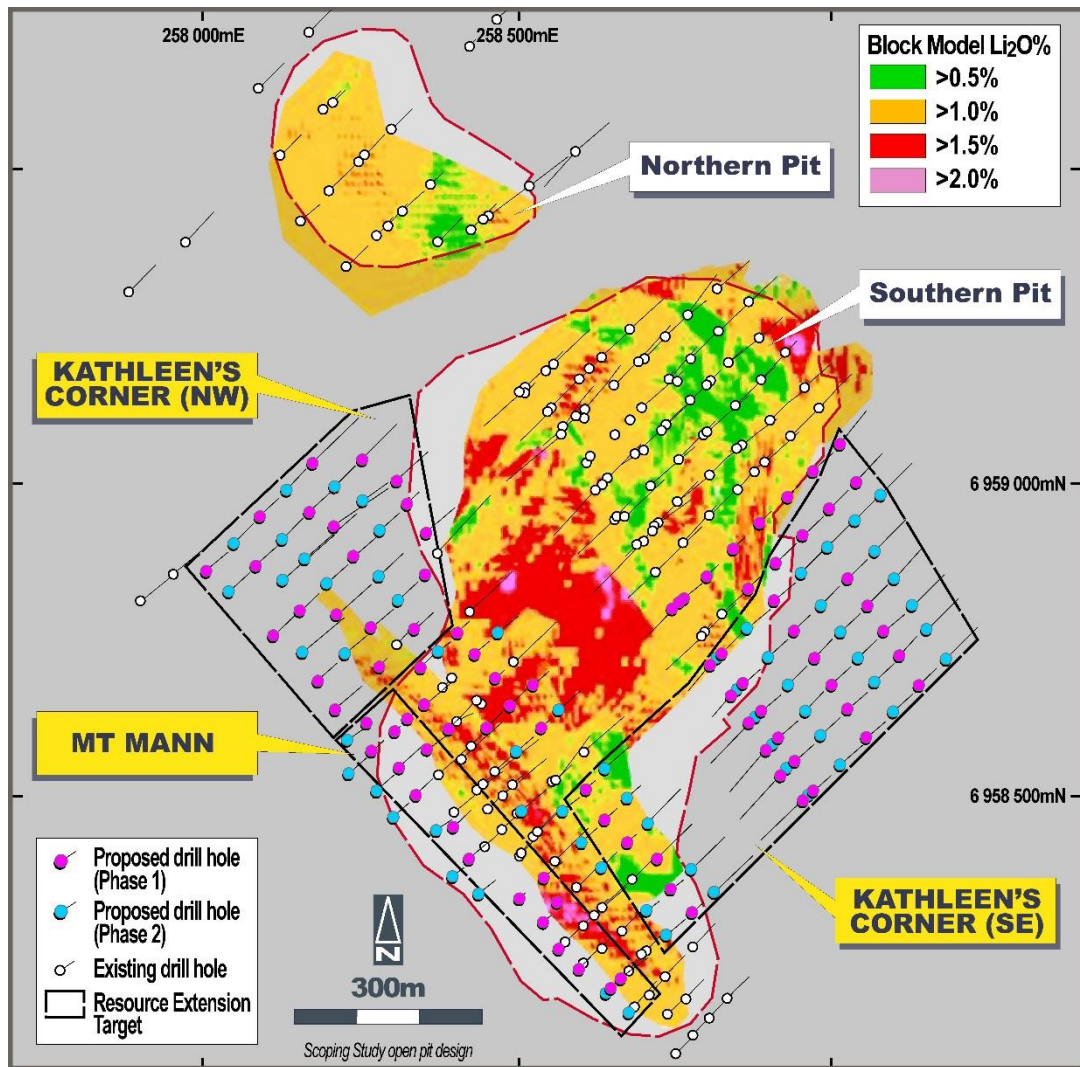
Additional test work in progress on a further 4 tonnes of sample

High priority placed on getting metallurgy right





# Next Steps – Unlocking Further Value



## Resource Growth

- ~16,000m RC drilling program in progress
- Testing immediate extensions of block model
- Targeting additional 8.5 – 16Mt @ 1.2 – 1.5%  $\text{Li}_2\text{O}^*$
- Potential to significantly increase mine life

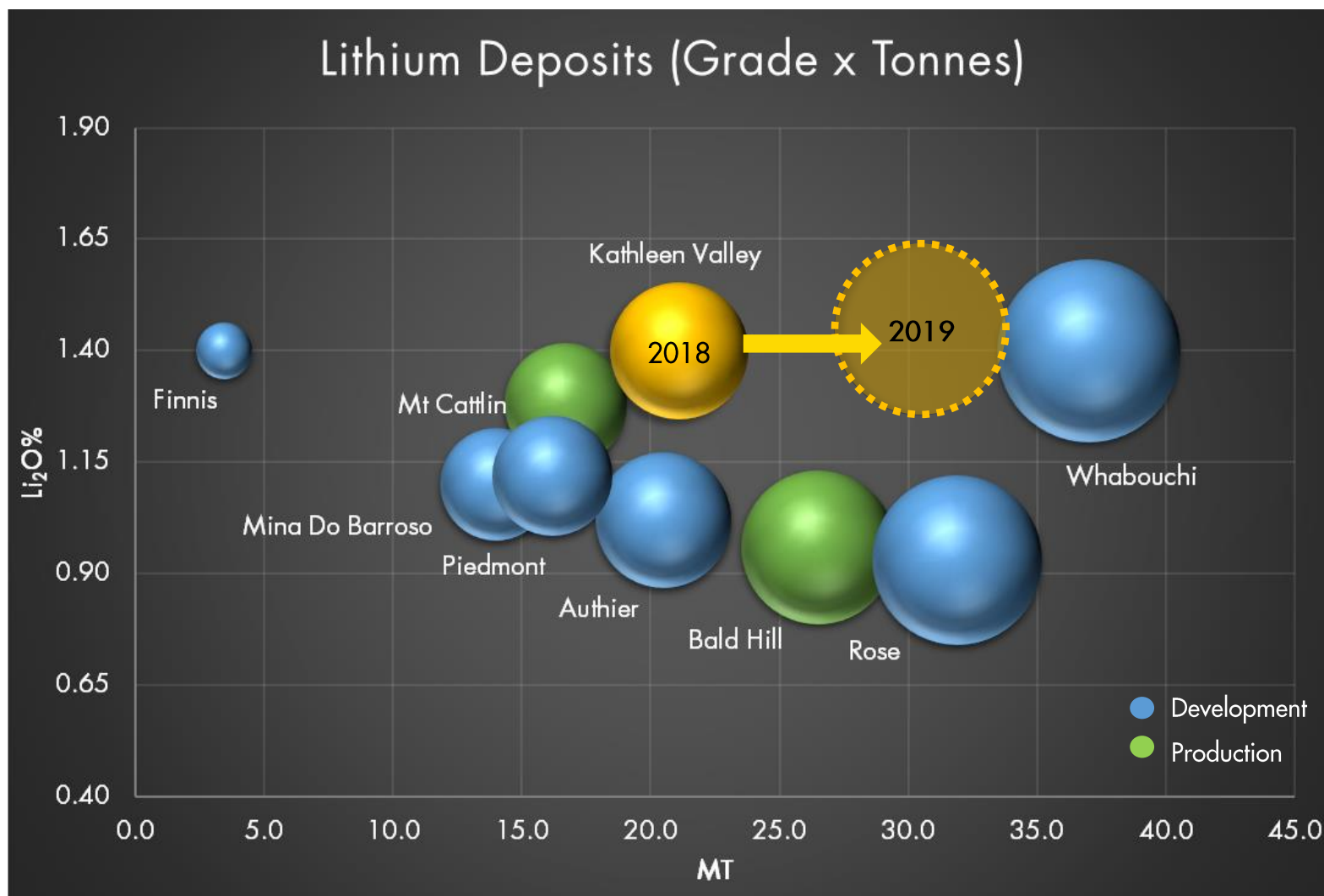


## Metallurgy

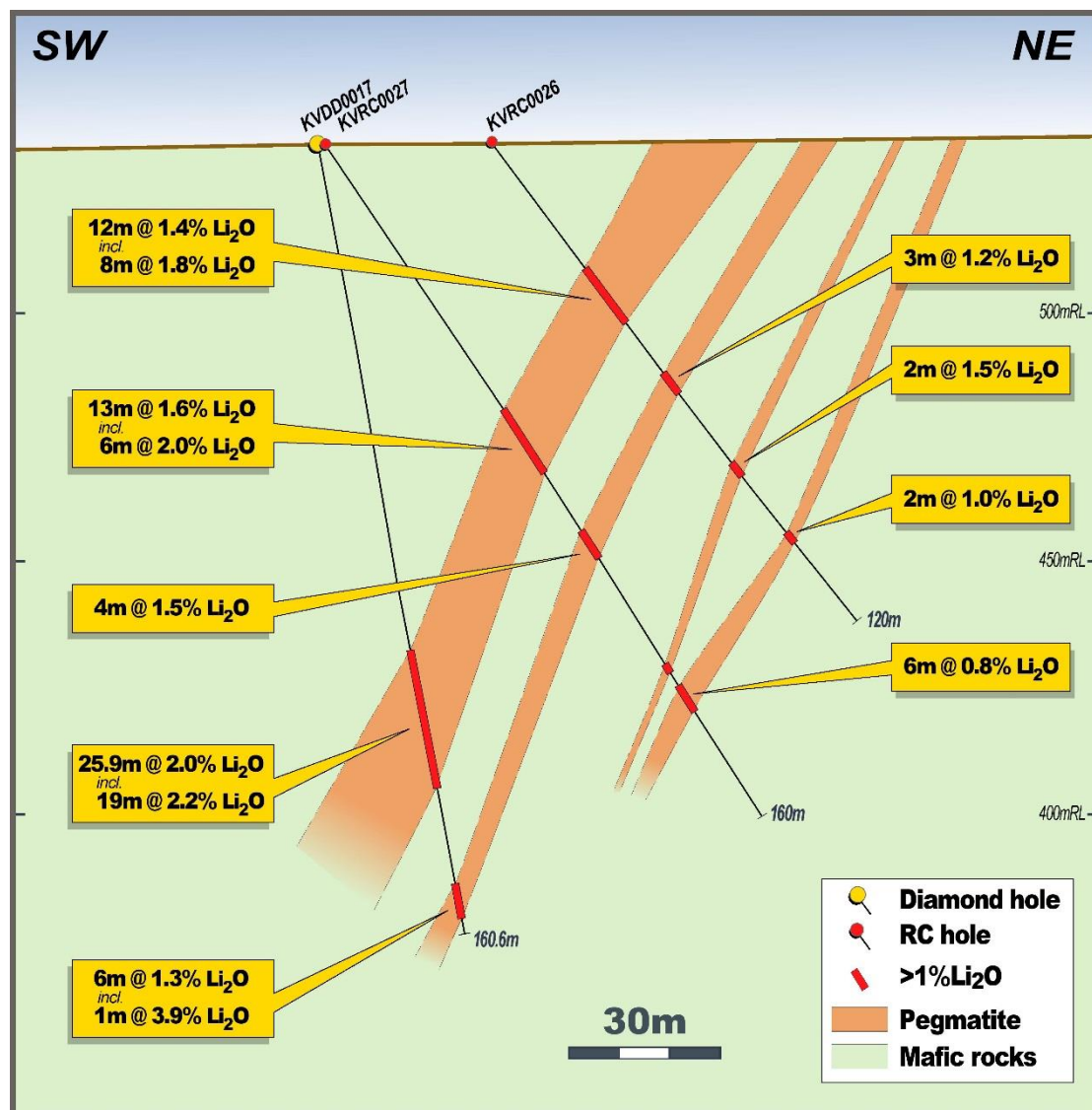
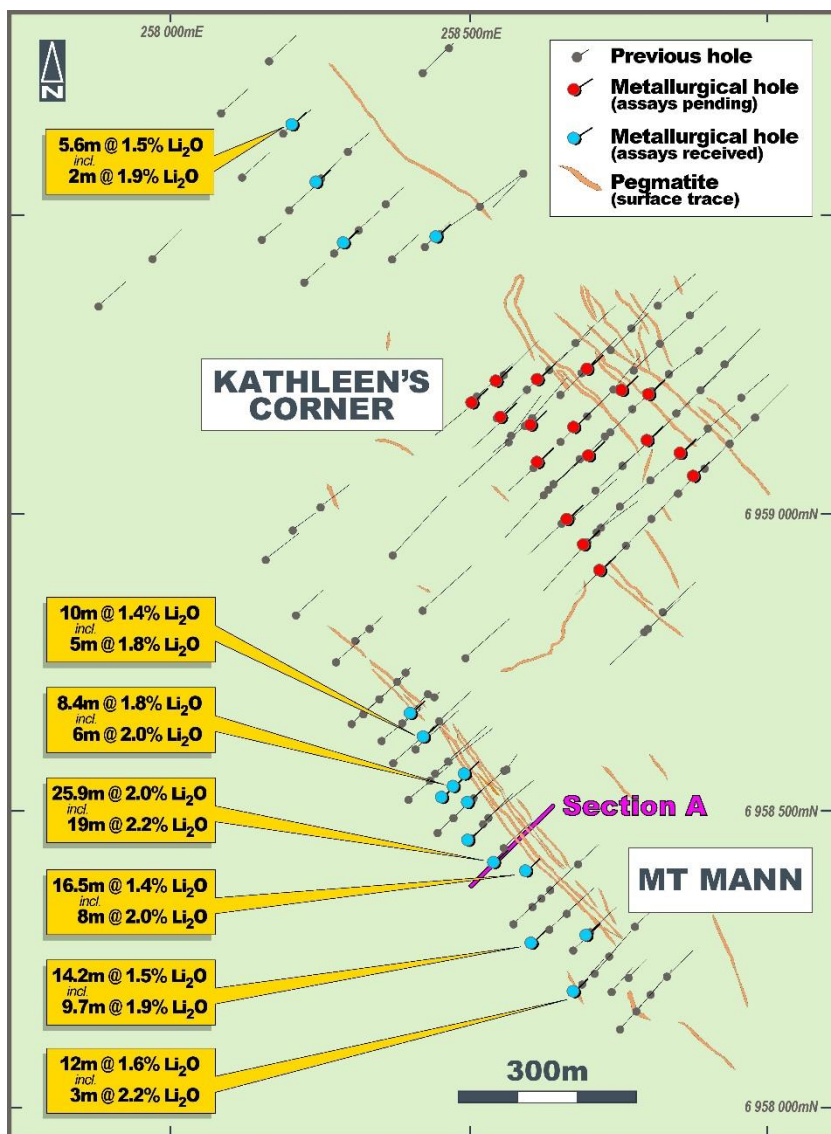
- Optimise unit processes to produce 6%  $\text{Li}_2\text{O}$  concentrate
- Confirm tantalum recovery
- Provide samples for potential offtake partners

\*The potential grade and tonnage of the 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.

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

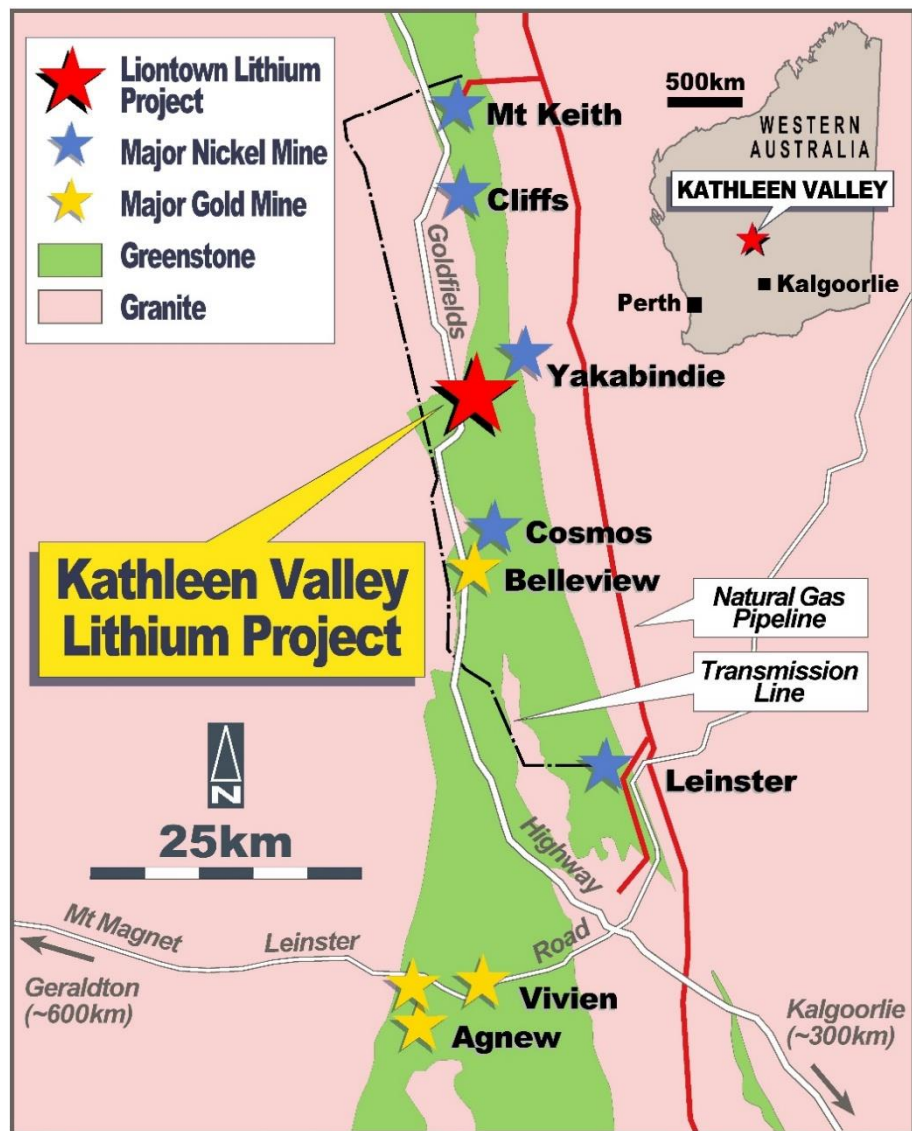


# Recent Metallurgical Drilling Confirms Continuity of Geological Model



Grades appear to be increasing with depth

# Investment Case



Robust, high grade resource



First world location and expertise



Active, well serviced mining region



Conventional mining and processing



Resource upside – 16,000m RC drilling program in progress



Strong focus on optimising recoveries – further test work in progress



Very experienced, well-credentialed management team



Further feasibility studies ongoing



Highly positive financial outcomes from Scoping Study

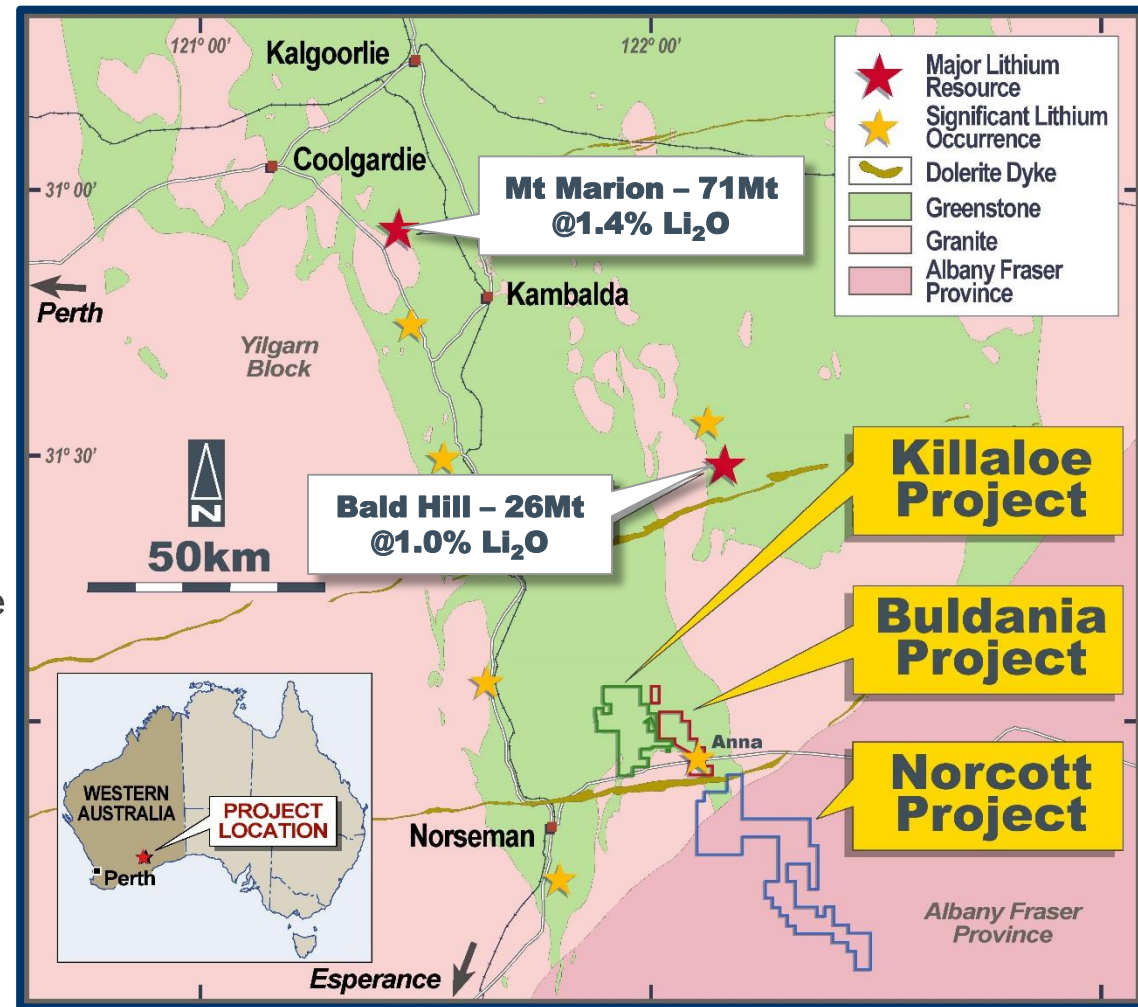


# BULDANIA LITHIUM PROJECT

WESTERN AUSTRALIA

# Buldania Is Strategically 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, 650km<sup>2</sup> strategic land holding



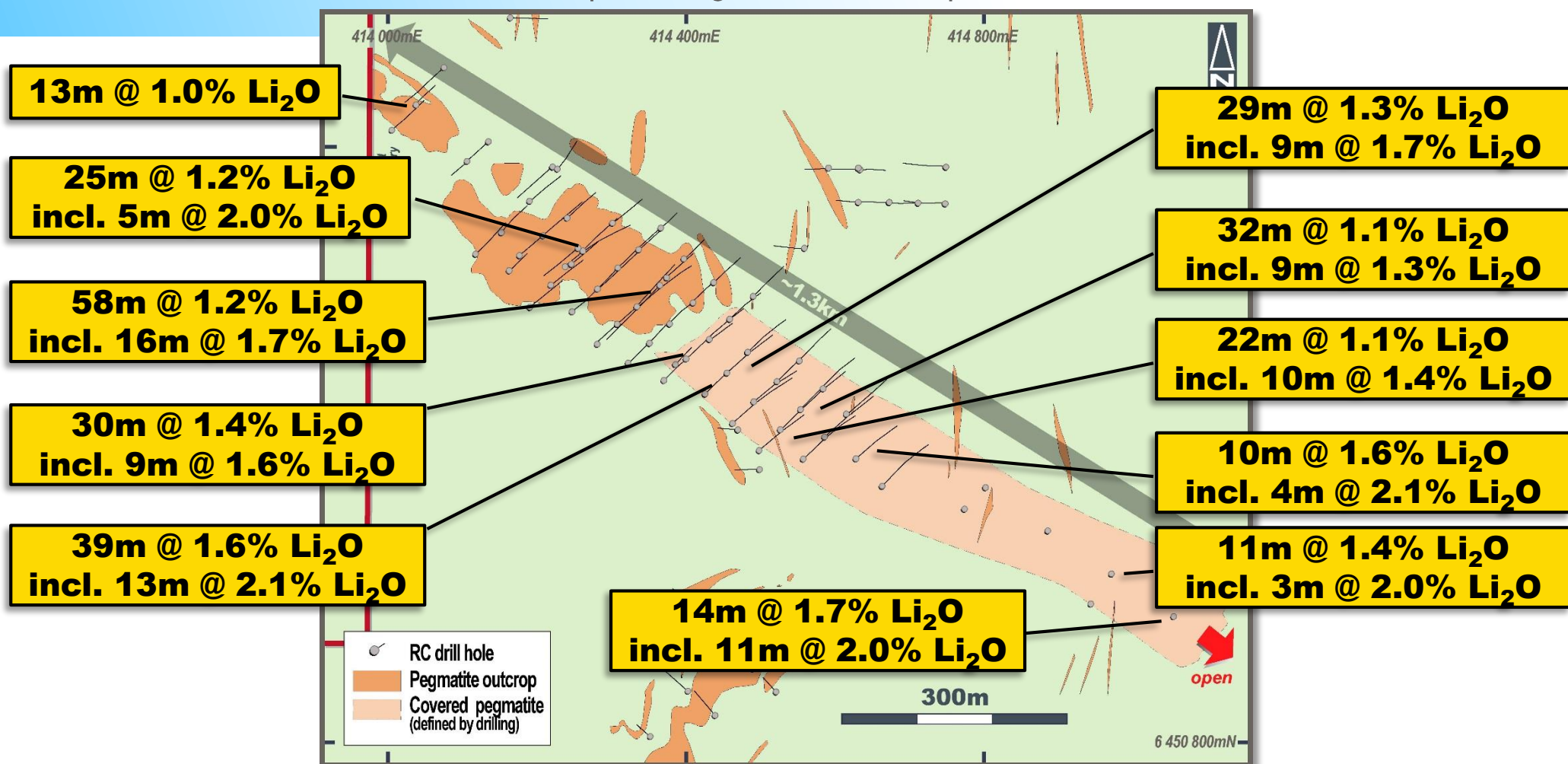
Significant lithium discovery

Total land position ~650km<sup>2</sup>

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

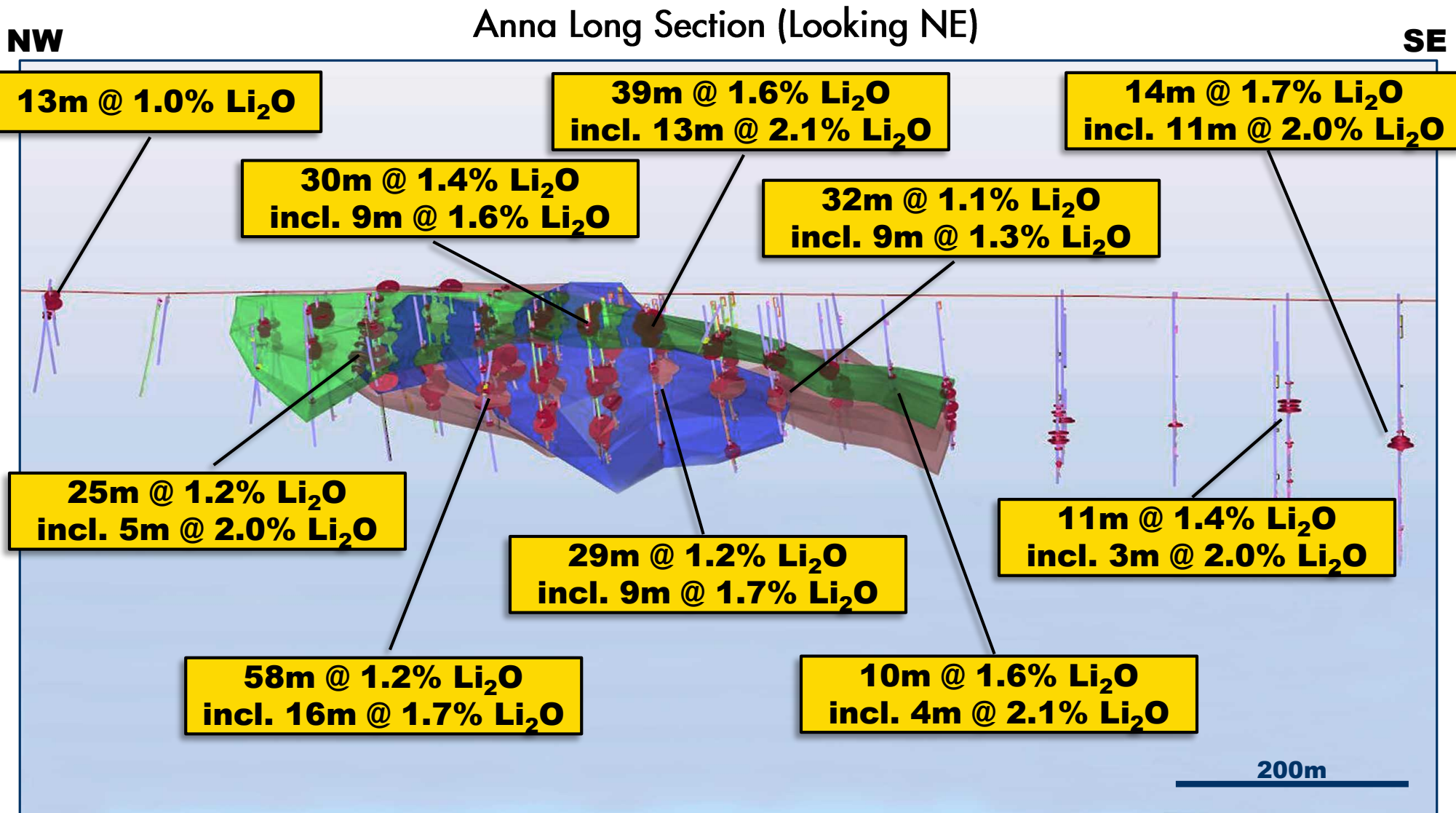


Mineralisation fresh from surface and open along strike and at depth



Further definition drilling planned as precursor to maiden Mineral Resource estimate

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



# Buldania is Part of a Large (~650km<sup>2</sup>) Land Position Highly Prospective For Lithium

Li

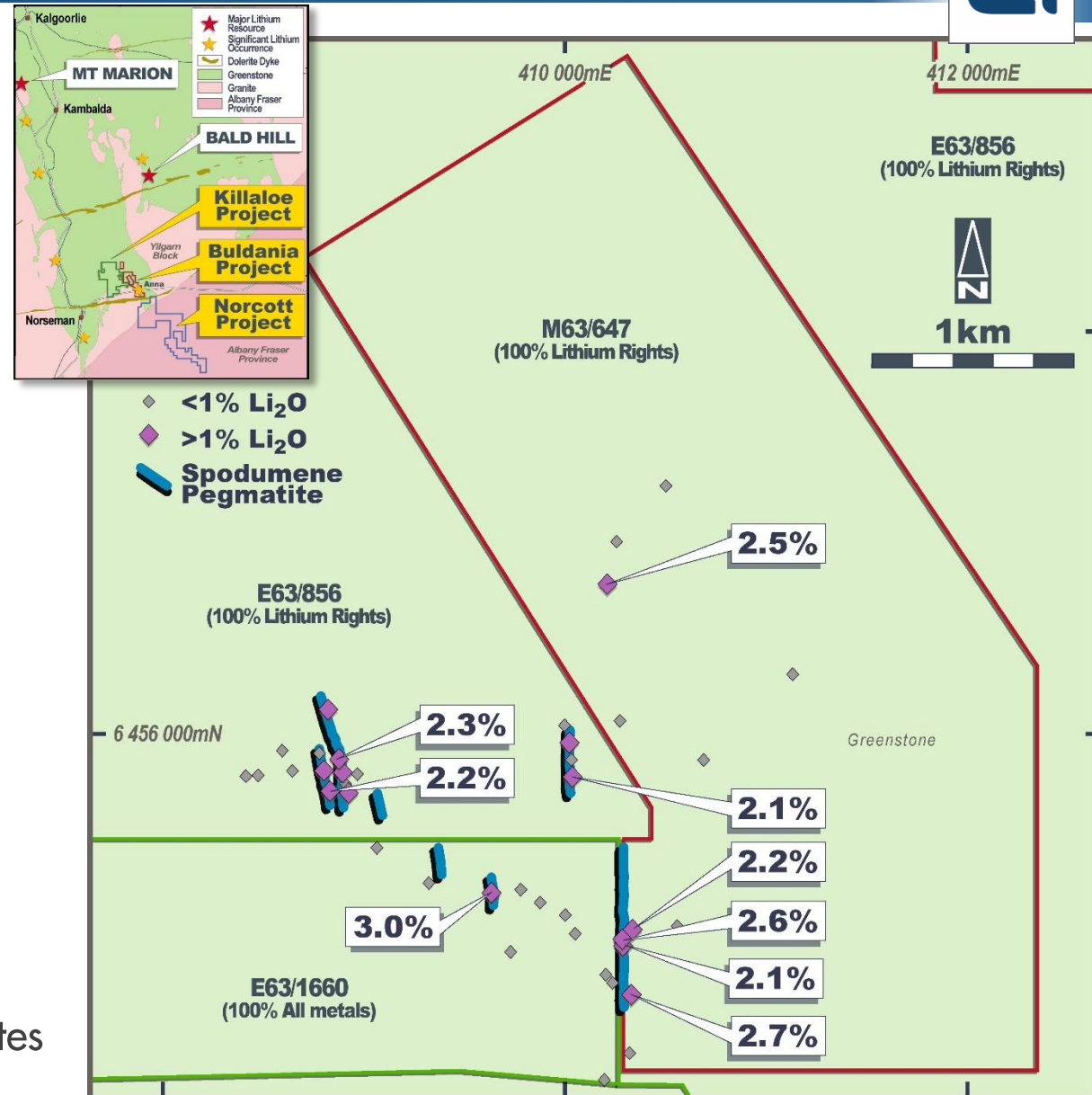
## KILLALOE PROJECT

- 163km<sup>2</sup> area located immediately north west of the Buldania Project – covers strike extension of Anna trend
- ~20km strike length of prospective stratigraphy
- Multiple spodumene-bearing pegmatites up to 800m long and 20m wide mapped
- Assay values up to 3.0% Li<sub>2</sub>O

## NORCOTT PROJECT

- 377km<sup>2</sup> area located 4km to the south and along strike of the Buldania Project
- Up to 1.8% Li<sub>2</sub>O recorded from reconnaissance rock chip sampling

Multiple undrilled spodumene pegmatites



# Going Forward



## Kathleen Valley Lithium Project

- 01 Resource Expansion (Q1 2019)
- 02 Comprehensive Metallurgy (Q1/Q2 2019)
- 03 Feasibility Studies (Q1 2019 - Q1 2020)
  - ✓ Metallurgy
  - ✓ Hydrology
  - ✓ Optimisation/Engineering Studies
  - ✓ Process Plant and Infrastructure
  - ✓ Environmental

## Buldania Lithium Project

- 01 Resource Expansion and Infill (Q1/Q2 2019)
- 02 Regional Exploration (Q2 2019)
- 03 Maiden Mineral Resource Estimate (Q2/Q3 2019)

Projects are either Wholly Owned or Liontown has 100% of the Relevant Mineral Rights



# A Proven, Experienced Board



**DAVID RICHARDS**

Managing Director

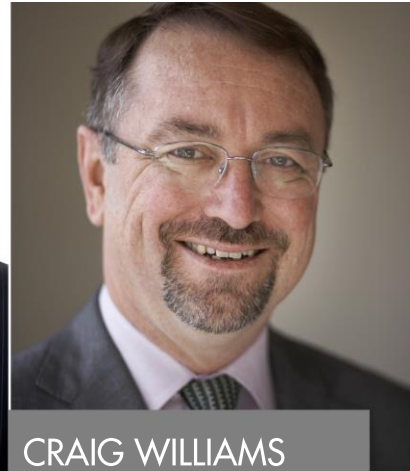
- +35 years experience
- Discovered Vera Nancy Gold Deposits



**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



**STEVE CHADWICK**

Non-Executive Director

- +40 years experience
- Director of Lycopodium Minerals

## Corporate Snapshot

ASX CODE	LTR
SHARES ON ISSUE	~1,134M
MARKET CAPITALISATION	\$28M (AT ~2.5CPS)
MAJOR SHAREHOLDER	TIM GOYDER ~20%
TOP 20 SHAREHOLDERS	50.8%



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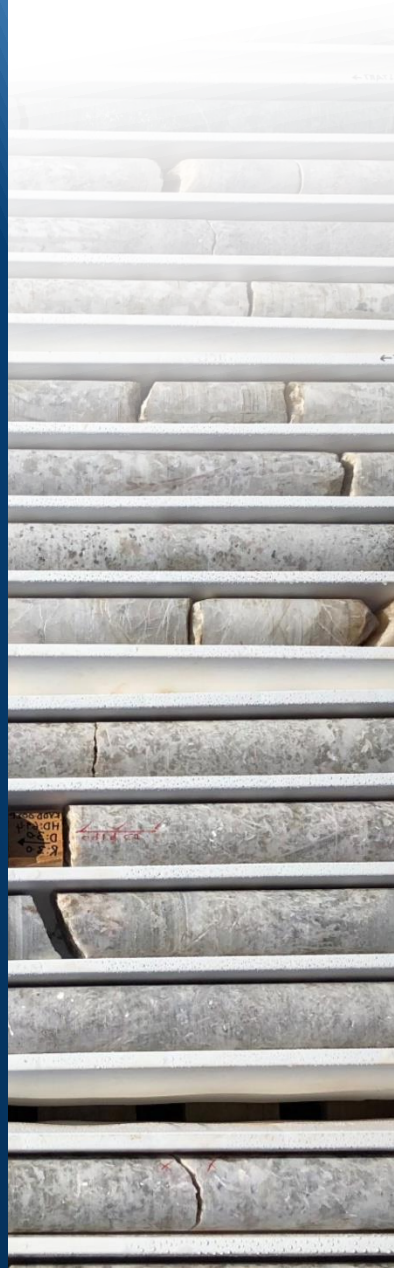
<https://au.linkedin.com/company/liontown-resources-limited>



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# 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
Exchange rate – AUD/USD	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



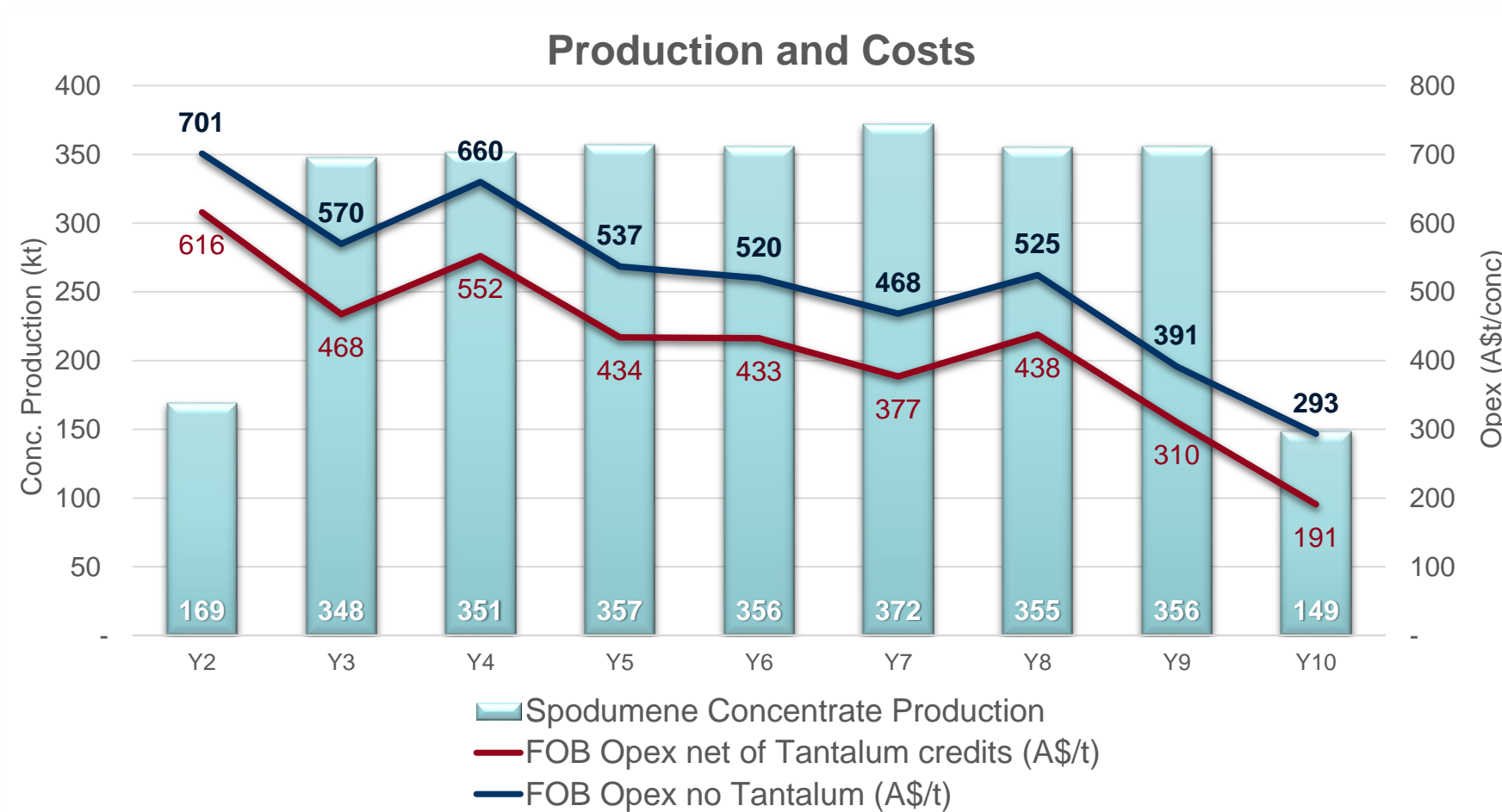
## Life of Mine Financials

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

## Capital Costs Summary

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

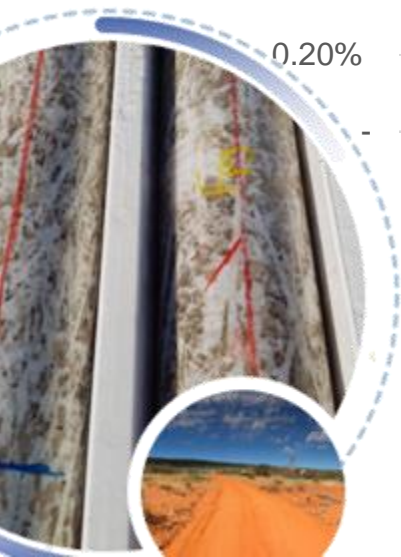
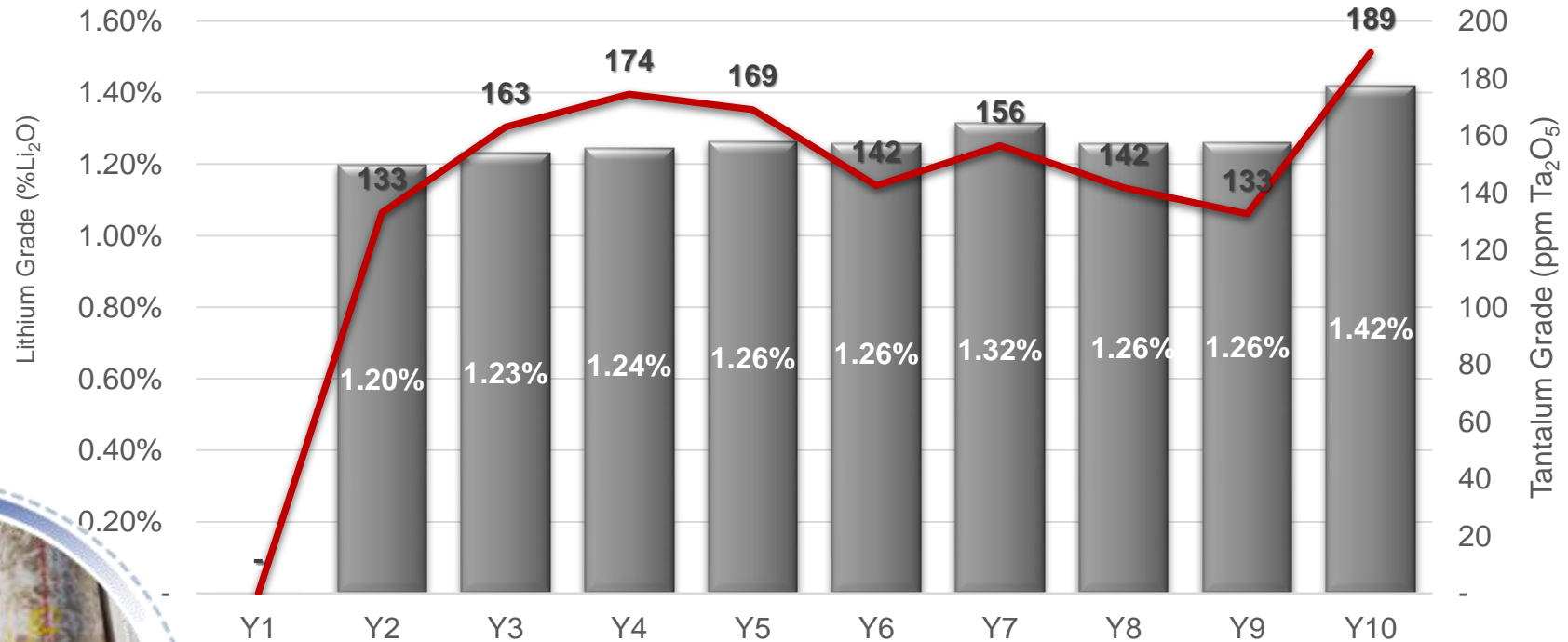
# Scoping Study – Production And Costs



# Scoping Study – Grade Profiles



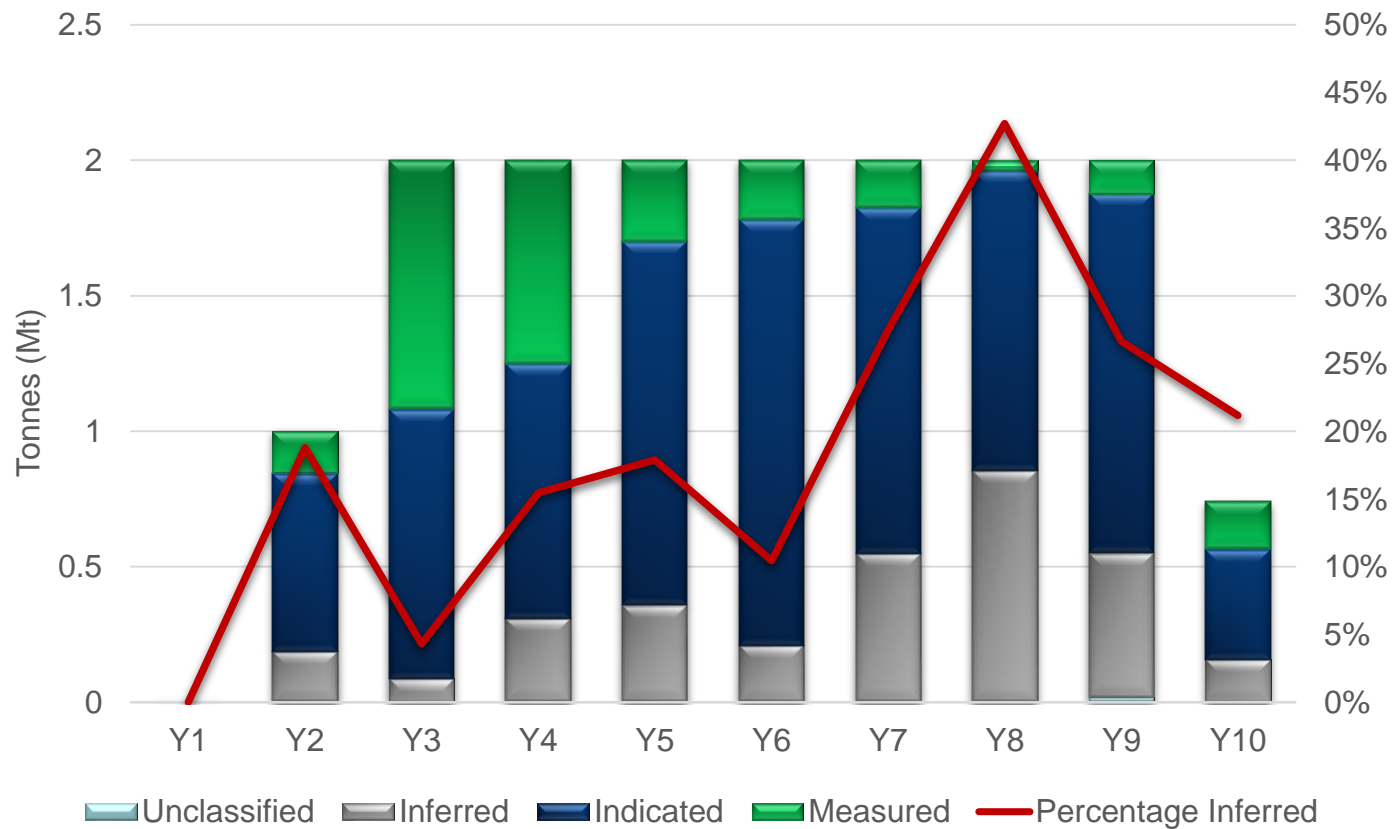
## LOM Lithium and Tantalum Grade Profile



# 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	700 – 800m	300	200	Based on 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	12 – 20m	12 -18m	10 - 15m	
Down Dip extent	100 – 125m	250 – 350m	500 - 600m	
Specific gravity	2.75	2.75	2.75	Measured from diamond core drilling
Total tonnage	2.3 – 5.5Mt	2.5 – 5.2Mt	4.1 – 5.0Mt	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.



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