ASX : LTR

ASX ANNOUNCEMENT

9th October 2020

Updated Kathleen Valley Pre-Feasibility Study delivers substantial increase in NPV to A$1.1 billion and mine life to ~40 years

Substantially increased Mineral Resource (MRE), Ore Reserve and revised mining plan, combined with an enhanced process flowsheet drives significant improvement in project economics

- **Updated Pre-Feasibility Study (PFS) showcases the strong potential to develop a state-of-the-art, second-generation lithium-tantalum mining and processing operation at the 100%-owned Kathleen Valley Project in WA's Eastern Goldfields.**
- **Building on the Mineral Resource announced in May 2020, the PFS confirms the outstanding technical and financial viability of a standalone, long-life initial 2Mtpa operation, with key highlights including:**

HIGHLIGHTS

Description	PFS
$NPV_{8\%(real)}$ LOM (Post Tax)	A$1.12B
IRR (%) LOM (Post Tax)	37%
Payback (years)	3
OPEX US$/t Li_2O (dmt) Years 1-10 (exc. royalties)[2][3]	US$283/dmt
LOM Free Cashflow (post tax)	A$4.8B
Annual Production 6% Li_2O (dmt)	350ktpa
Annual Production 30% Ta_2O_5 (dmt)	430 tpa
Capital Cost A$M (inc. $67M Preproduction costs)	A$325M
Ore Reserve	71Mt @ 1.40% Li_2O & 130ppm Ta_2O_5
Production Inventory [1]	79Mt @ 1.40% Li_2O & 130ppm Ta_2O_5
Mine Life (at 2 Mtpa)	~40 years

Cautionary statement:

[1]The production targets and forecast financial information referred to in the PFS comprise Proven Ore Reserves (19.7%), Probable Ore Reserves (69.8%) and Inferred Mineral Resources (10.5%). The Inferred material included in the inventory is 8.28Mt @ 1.36% Li_2O & 120 ppm Ta_2O_5. The Inferred material has been scheduled such that less than 1Mt is mined in the first ten years, with 6.44Mt at the end of the underground mine life and 0.84Mt after year 25 for the open pit.

The Inferred material does not have a material effect on the technical and economic viability of the project. Refer to page 21 for additional information.

There is a low level of geological confidence associated with inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of indicated Mineral Resources or that the production target itself will be realised.

[2] Cash operating costs include all mining, processing, transport, freight to port, port costs and site administration/ overhead costs. Excludes sustaining capital.

[3]As royalties are predominantly sales-price dependent they have not been included in cash costs. At PFS average Li_2O pricing to 2040 of US$739/t royalties equates to $62/t of 6% Li_2O for the 1st 10-year case presented above. Refer to tables 4,12 & 13.

Highlights:

- **Second concentrate stream, tantalum (Ta_2O_5), now included in the product suite.**
- **Forecast average steady-state production of 350ktpa spodumene concentrate at a grade of 6% Li_2O (SC6.0) and 430tpa of 30% grade tantalum concentrate, based on initial 2Mtpa throughput.**
- **Mine planning studies based on the revised MRE have delivered an Ore Reserve Estimate of 71Mt at 1.40% Li_2O and 130ppm Ta_2O_5. The Ore Reserve was based on the MRE of 156Mt @ 1.4% Li_2O and 130ppm Ta_2O_5 published in May 2020.**
- **The Ore Reserve underpins an initial ~40-year mine life and will form the basis for a Definitive Feasibility Study (DFS) commencing in Q4 2020.**
- **Updated PFS (+/-25% Accuracy) increases project NPV by 121% and IRR by 49% compared with the previously reported 2019 PFS.**
- **Low cash operating costs (1st 5 years) ~US$261/dmt of SC6.0 (including tantalum credits, excluding royalties).**
- **Further metallurgical test work carried out in 2020 has resulted in a revised Whole-of-Ore Flotation (WOF) flowsheet which has confirmed the ability to produce a +6% Li_2O spodumene concentrate with estimated average recovery of 76% plus a 15% Ta_2O_5 concentrate with an estimated recovery of 56%. The tantalum concentrate will be further upgraded offsite to 30% Ta_2O_5 prior to shipment.**
- **First production is expected to commence in Q1 2025, when demand for lithium is forecast to accelerate significantly due to the strong adoption of electric vehicles globally.**
- **The PFS design includes key capital considerations in both the initial mine and the processing plant to enable a throughput expansion to 4Mtpa with negligible future operational impact on the base case presented.**
- **PFS includes a 4.4MW solar array to supplement plant power requirements.**
- **Concurrently, a scoping level study (+/-30%) review of downstream processing to produce lithium hydroxide monohydrate ($LiOH.H_2O$) ("LHM") or lithium sulphate monohydrate ($Li_2SO_4.H_2O$) ("LSM") is also nearing completion.**

Liontown Resources Limited (ASX: LTR; "Liontown" or "Company") is pleased to advise that it has taken a further important step towards its objective of becoming a significant second-generation Australian lithium-tantalum producer following the completion of an updated Pre-Feasibility Study PFS) for its 100%-owned **Kathleen Valley Project** in Western Australia.

The updated PFS – which builds on the recent Mineral Resource upgrade and the previous study completed in December 2019 – has delivered exceptional results including a substantial increase in project NPV to over $1 billion and an Ore Reserve which will underpin a ~40-year mine life at the planned initial 2Mtpa processing rate.

The PFS clearly demonstrates the project scale, grade, product quality and location (close to modern infrastructure), establishing a strong foundation for the forthcoming Definitive Feasibility Study (DFS) and positioning Kathleen Valley to advance rapidly to the next stage of development.

Given the scale of the MRE and Ore Reserve, key considerations have also been included in the initial design to enable a throughput expansion to 4Mtpa.

The ongoing engagement of independent highly experienced consultants ensured that the PFS was completed to a high standard.

The financial and operational outcomes demonstrated in the PFS have been significantly enhanced compared to previous studies as a result of the inclusion of a larger MRE, a tantalum circuit, a revised process plant flowsheet and optimised open pit and underground mine plans which provide early access to higher-grade mineralisation.

The outcomes of the PFS are being incorporated in a separate scoping study level review of the opportunity to undertake site-based downstream processing to produce either lithium hydroxide monohydrate (LHM) or lithium sulphate monohydrate (LSM) . The results of this study are expected shortly.

The Company recognizes the importance of the Native Title holders, the *Tjiwarl Group*, to the success of the future operation at Kathleen Valley. Negotiations regarding a formal *Native Title Agreement* for the Project are currently underway and are expected to be formally ratified during 2021.

Liontown's Managing Director, David Richards, said:

"The completion of the new PFS marks a major step towards Liontown becoming a substantial Australian lithium producer, demonstrating the benefit of taking an optimised, second-mover approach to large-scale spodumene production. Our larger resource and higher grades – combined with promising metallurgical testwork and re-worked, more selective mining methods – have provided the foundation for the project to be significantly enhanced.

"Key points of difference from the December 2019 PFS include the adoption of a Whole-of-Ore Flotation process flowsheet, a tantalum recovery circuit and the incorporation of higher-grade underground ore.

"The combined impact of these innovations is clearly reflected in the exceptional financial returns outlined in the 2020 PFS, which has delivered major increases in Ore Reserves, mine life, project NPV, IRR, and payback while, importantly, lowering project unit costs.

"This is an outstanding result which provides us with a really strong foundation to commence a Definitive Feasibility Study in Q4 2020. Thanks to the hard work of our in-house PFS team, ably supported by a dedicated team of highly experienced consultants, we have been able to produce a study of which we can all be proud. This provides a clear blueprint for Liontown to build quickly on the achievements of the past three years and unlock the enormous value of the Tier-1 Kathleen Valley asset for our shareholders over the next few years."

Kathleen Valley PFS – Project Background

The 100%-owned Kathleen Valley Lithium Project is located on four granted Mining Licences and one Mining Licence application, approximately 680km north-east of Perth and 400km north of Kalgoorlie in the Eastern Goldfields of Western Australia (***Figure 1***). The Project is readily accessible by sealed highways which connect with mineral exporting ports at Geraldton and Esperance.

Other infrastructure located close to the Project includes a power line, a natural gas pipeline and existing mine camps with sealed airstrips capable of accommodating large passenger aircraft.

The PFS testwork program and study compilation was managed by Lycopodium Minerals Pty Ltd (Lycopodium) and was completed with the assistance of a group of highly reputable, independent consultants, including:

• *Optiro Pty Ltd*	Geology and MRE
• *Orelogy Consulting Pty Ltd*	Mine Optimisation, planning, design and scheduling
• *ALS Metallurgy*	Process Testwork
• *Lycopodium Minerals Pty Ltd*	Process and Infrastructure Design, CAPEX and OPEX
• *Knight Piesold*	Tailings and Hydrogeology
• *MBS Environmental (MBS)*	Environmental
• *Peter O'Bryan and Associates (POBA)*	Geo-mechanical engineering

The PFS examined the establishment of a 2Mtpa mining and WOF processing operation delivering 350ktpa of SC6.0 and 430tpa of 30% tantalum concentrate (including offsite upgrade) in full production.

It should be noted that key capital considerations in both the mine and the processing plant have been incorporated upfront to enable a future throughput expansion to 4Mtpa with minimal impact on the operating project. At a throughput of 4Mtpa final product, production would increase to 700ktpa of SC6.0 and 860tpa of 30% tantalum concentrate.

Following conventional open pit/underground mining and delivery to the Run-of-Mine (ROM) pad, ore will be processed to concentrate the lithium and tantalum. Concentrate/s will then be transported for delivery to downstream customers.

Figure 2 shows the proposed site layout including mining areas, processing facilities and non-process infrastructure.

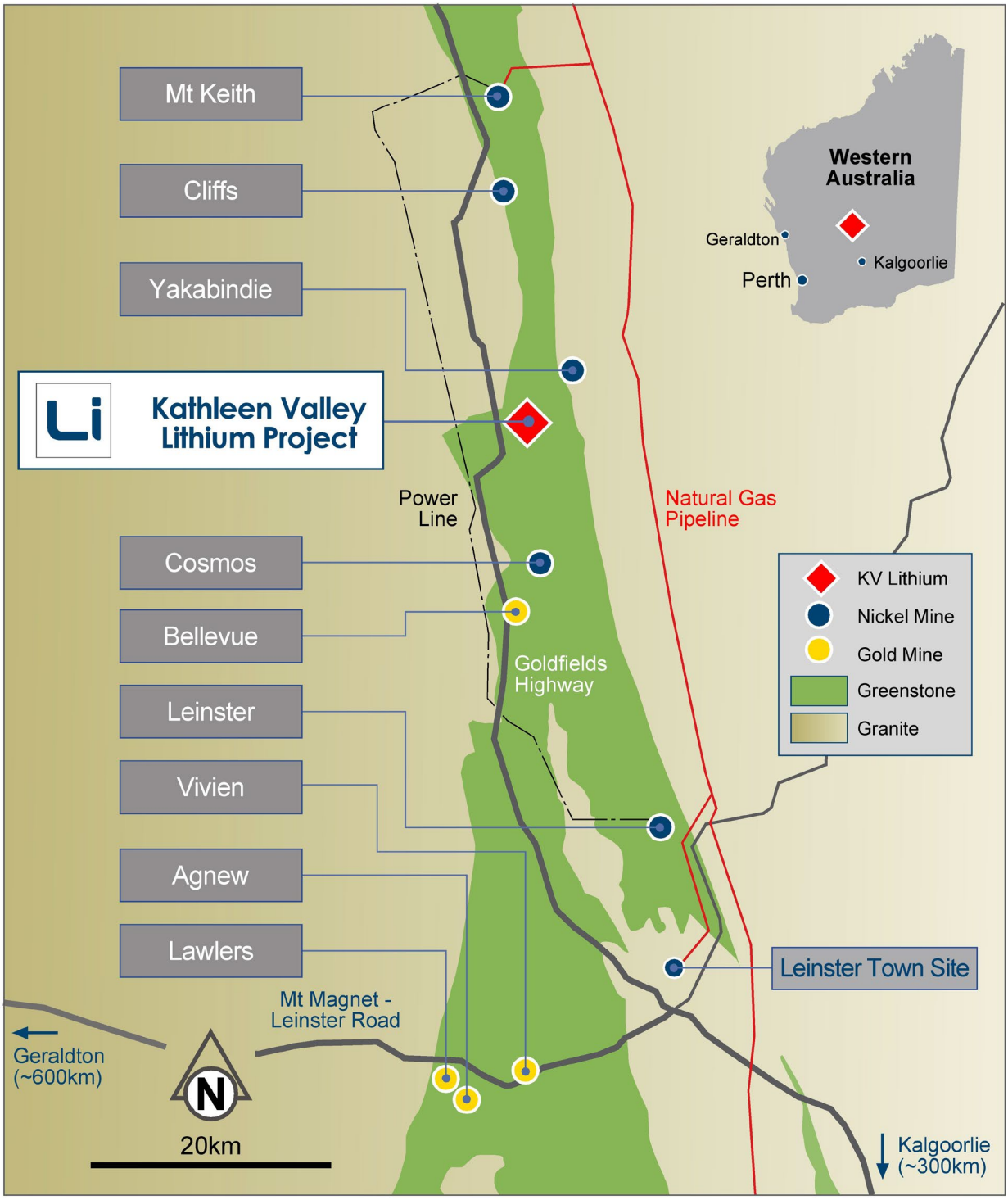

Figure 1: Kathleen Valley Project – Location, infrastructure, existing mines and regional geology

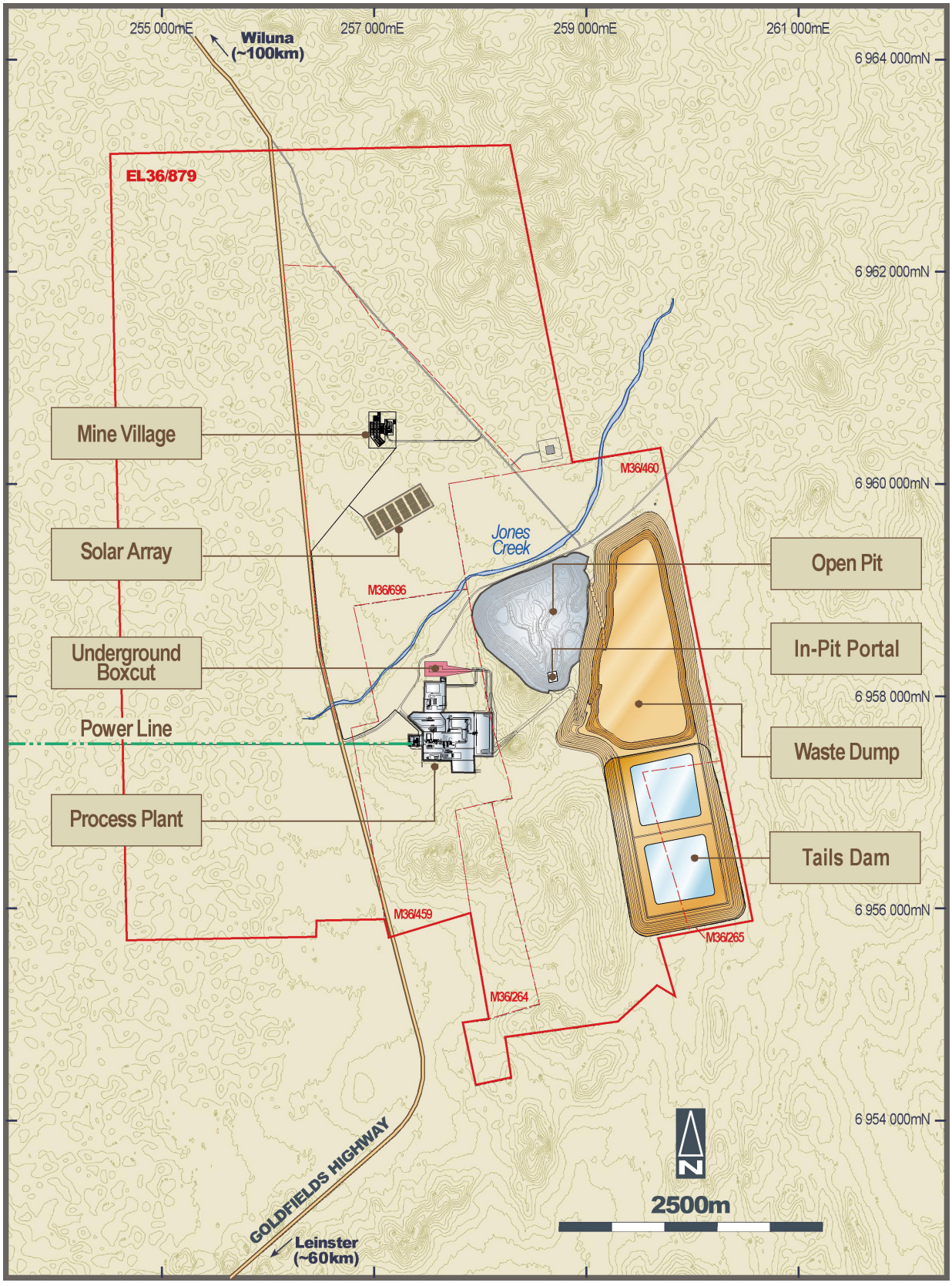

Figure 2: Kathleen Valley Project – Proposed mine site layout

Ore Reserve, Estimation and Methodology

Orelogy Consulting Pty Ltd (Orelogy) were responsible for the mining component of the PFS. As such, Orelogy has prepared an Ore Reserve Estimate for the Kathleen Valley underground and open pit as at 9th October 2020, in accordance with the guidelines of the JORC Code 2012.

The Ore Reserve Estimate is based on the MRE update released on the 11th May 2020 of 156Mt at 1.4% Li_2O and 130ppm Ta_2O_5. The Measured, Indicated and Inferred MRE was prepared by independent specialist resource and mining consulting group Optiro Pty Ltd (Optiro) and is summarised in ***Table 1***.

Table 1: Kathleen Valley Project – Mineral Resource Estimate (May 2020)

Cut-off grade Li_2O %	Resource Category	Million tonnes	Li_2O % (Equiv)	Li_2O %	Ta_2O_5 ppm
0.55	Measured	20	1.4	1.3	140
	Indicated	105	1.5	1.4	130
	Inferred	32	1.4	1.3	110
Total		**156**	**1.5**	**1.4**	**130**

Notes:
- *Reported above a Li_2O cut-off grade of 0.55%*
- *Tonnages and grades have been rounded to reflect the relative uncertainty of the estimate.*
- *Li equivalency based on overall recoveries of 50% & 76% respectively for Ta_2O_5 and Li_2O & pricing of US$69.9/lb for 30% Ta_2O_5 / $739/t for 6% Li_2O.*

The MRE is reported and classified in accordance with the guidelines of the 2012 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code; 2012). The Mineral Resource is inclusive of the Ore Reserve.

The summary of the Ore Reserve prepared by Orelogy is shown in ***Table 2***.

Table 2: Kathleen Valley Project – Ore Reserve Estimate (October 2020)

Category	Tonnage (Mt)	Li_2O (%)	Li_2O (T)	Ta_2O_5 (ppm)	Ta_2O_5 (T)
Underground					
Proved	3.9	1.4	56,000	130	**500**
Probable	37.6	1.5	572,000	120	**4700**
Sub-Total	**41.5**	**1.5**	**628,000**	**120**	**5100**
Open Pit					
Proved	11.7	1.2	142,000	140	**1,700**
Probable	17.6	1.2	205,000	130	**2,300**
Sub-Total	**29.3**	**1.2**	**346,000**	**130**	**3,900**
TOTAL	**70.8**	**1.4**	**974,000**	**130**	**9,100**

Notes:
- *Tonnages and grades are diluted and reported at Li_2O cut-off grade of 0.7-0.75% (open pit) and 1.2 -1.5% (Underground). Tonnages and grades have been rounded.*

Mineral Resources were converted to Ore Reserves in line with the material classifications which reflect the level of confidence within the resource estimate. The Ore Reserve reflects that portion of the Mineral Resource which can be economically extracted by open pit and underground mining methods.

The Ore Reserve considers the modifying factors and other parameters detailed in the Appendix of this release, including but not limited to the mining, metallurgical, social, environmental, statutory and financial aspects of the Project. ***Figure 3*** shows the proposed open pit and underground development. The open pit has been designed in two phases, the first being to supply ore for the plant in the first 3 – 4 years until the underground operation is up to full capacity. The second phase occurs after 25 years when the underground mining operation is winding down.

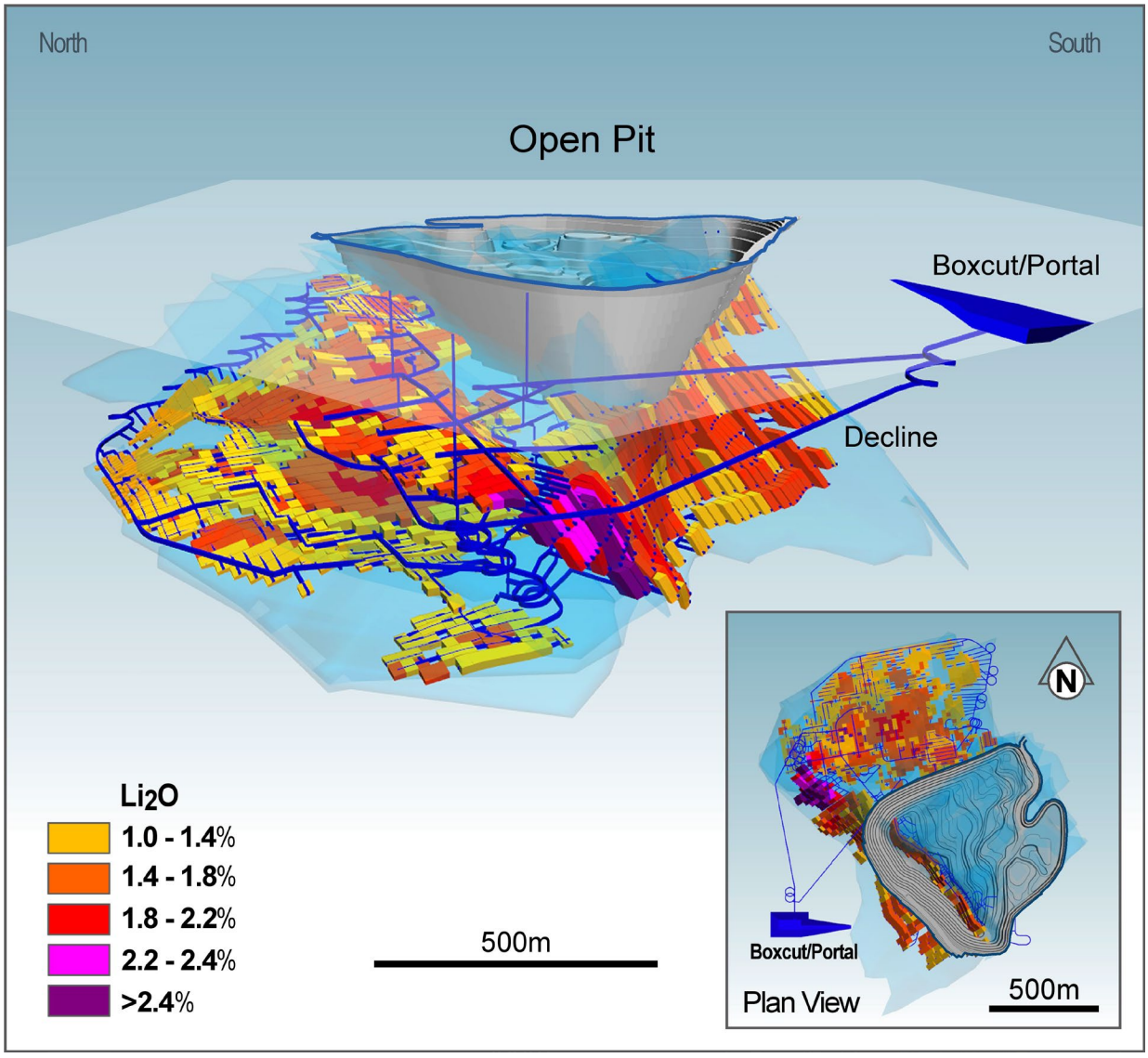

Figure 3: Kathleen Valley Project – Proposed mine development showing underground ore stopes by grade

Metallurgy

Samples were collected from across the deposit as part of the metallurgical testwork program/s. These samples include a range of grades and depths.

The metallurgical process proposed consists of 3-stage comminution including high-pressure grinding roll (HPGR), a sequential magnetic-gravity circuit for tantalum extraction followed by WOF.

The process has been tested at a PFS level in the laboratory with a grade-recovery relationship established which results in an average metallurgical recovery of 76% Li_2O into SC6.0 (inc. losses for Ta_2O_5 extraction) based on the PFS mine schedule. A separable site Ta_2O_5 recovery of 56% will enable the production of a Ta_2O_5 concentrate grading 15% Ta_2O_5 (upgraded to 30% offsite resulting in an overall Ta_2O_5 recovery of 50%).

PFS Financial Outcomes

Based on a proposed 2Mtpa standalone mining and processing operation, the PFS has demonstrated strong financial metrics for the Project (***Table 3 / Figure 4***).

Table 3: Kathleen Valley Project – PFS Base Case Key Metrics

Study Outcomes	PFS
Post-tax NPV$_{8\%\ (real,\ post\text{-}tax)}$	A$1.12B
Internal Rate of Return (IRR)	37%
Payback	3 years post-production
Life of mine (LOM)	~ 40 years
Pre-production capital cost	A$325M (inc. A$67M preproduction & A$27M contingency)
Cash operating costs (1st 5years) (1) (2)	~US$261/dmt of SC6.0 (including tantalum credits)
Cash operating costs (1st 10years)(1)(2)	~US$283/dmt of SC6.0 (including tantalum credits)
Cash operating costs (LOM) (1) (2)	~US$310/dmt of SC6.0 (including tantalum credits)
Cash operating costs (LOM) (1) (3)	~US$377/dmt of SC6.0 (including tantalum credits & Royalties)
Average steady state production	350 ktpa of SC6.0, 430 tpa of 30% Ta_2O_5 concentrate

[1] Cash operating costs include all mining, processing, transport, freight to port, port costs and site administration & overhead costs. Excludes sustaining capital.
[2]Royalties are predominantly sales price dependent hence not included, for a PFS Li_2O price of US$739/t royalties equate to US$62/t for the 1st 10 years and US$67/t for LOM. Refer to tables 4,12 & 13.
[3] Includes royalties of US$67/t for LOM.

The production targets and forecast financial information referred to in the PFS comprise Proven Ore Reserves (19.7%), Probable Ore Reserves (69.8%) and Inferred Mineral Resources (10.5%). The Inferred material included in the inventory is 8.28Mt @ 1.36% Li_2O & 121 ppm Ta_2O_5.The Inferred material has been scheduled such that less than 1Mt is mined in the first ten years with 6.44Mt at the end of the underground mine life and a further 0.84Mt after year 25 for the Open Pit

The Inferred material does not have a material effect on the technical and economic viability of the project. The Reserve Estimate has been prepared by a Competent Person in accordance with the requirements of the 2012 JORC Code. All material assumptions on which the production targets and forecast financial information in this announcement are disclosed in this announcement.

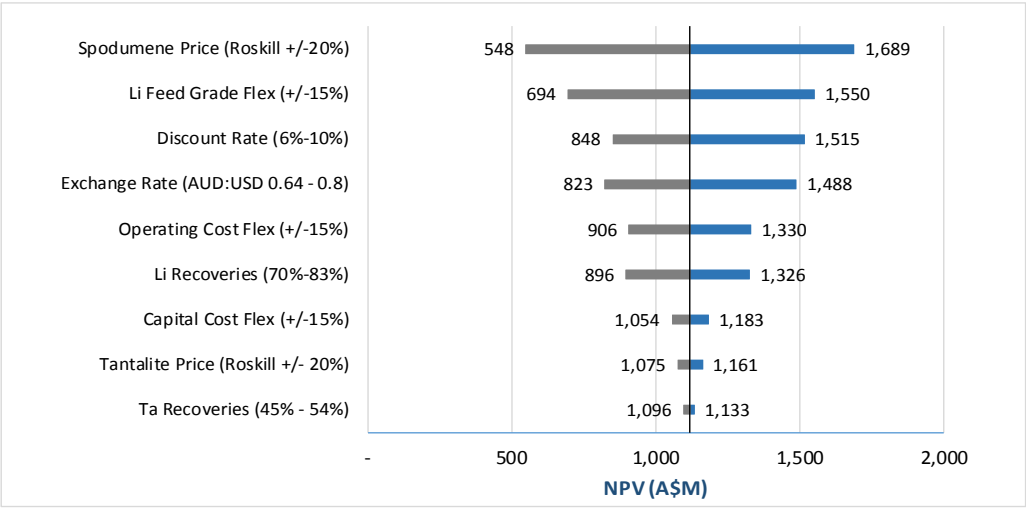

Figure 4: Kathleen Valley Project – NPV Sensitivity Analysis. Base case NPV A$1,120M

The PFS was completed to an overall +/- 25% accuracy using the key parameters and assumptions set out in ***Table 4***.

Table 4: PFS Key Parameters and Assumptions

Parameter	
General and Economic	**PFS**
Discount rate (real, post-tax)	8%
Average SC6.0 (US$ per tonne FOB Geraldton 2025-2040)	US$739/ t
Average Tantalum 30% conc. (US$ per pound FOB Fremantle 2025-2040)	US$69.9/lb
Exchange rate – AUD/USD	0.72
Mining and Production	
Average LOM strip ratio (Open pit)	8.4:1
Processing rate	2Mtpa
Ore Reserve	71Mt
Life-of-Mine Production Target (49Mt UG & 30Mt OP)	79Mt ore
Li_2O & Ta_2O_5 grades (diluted) years 1-10 processed	1.5%/ 125 ppm
LOM average Li_2O & Ta_2O_5 grades (diluted) processed	1.4%/ 130 ppm
Average Li_2O recovery (%) *	76%
Overall Ta_2O_5 recovery (% including offsite upgrade losses of ~6%)	50%
SC6.0 (grade %)	6%
Ta_2O_5 Concentrate final grade (%)	30%
Moisture content of SC6.0 concentrate	9%
Average annual Tonnes of SC6.0 concentrate	350ktpa
Average annual Tonnes of 30% Ta_2O_5 concentrate	430tpa
Cost Assumptions	
LOM average open pit mining costs ** ($/ dmt ore processed)	A$43
LOM average underground mining costs ($/ dmt ore processed)	A$55
LOM average processing cost ($/ dmt ore processed)	A$20
Logistics and transport ($/ wmt conc. Inc Port Charges)	A$65/wmt
General and admin ($/dmt ore processed including mining)	A$6
Western Australia State royalty	5%
Private royalties (does not apply to MLA M36/696)	3% gross sales & $0.5/t ore mined
Native Title Agreement	Under Negotiation
NPV Date	Start of Construction
Corporate tax rate	30%
Estimated opening tax losses	A$35M

* *Based on testwork derived grade-recovery relationship for PFS mine plan grades of Li_2O (inclusive Ta_2O_5 extraction Li_2O losses)*

** *Includes ROM rehandle for all Mill processing*

SC6.0 Spodumene Concentrate Forecast Pricing

SC6.0 is not currently sold on exchange traded markets and is largely transacted under contractual arrangements between the mining company and its customers.

Liontown has utilised the services of leading industry commodity forecasting experts Roskill for its price forecast assumptions for 6% grade spodumene concentrate (SC6.0 specification) as applied in the PFS.

Roskill has provided annual forecast pricing through to 2040 on a real, US$/dmt CIF China basis for "Arm's Length" prices (***Figure 5***). Arm's Length prices are where no related party relationship exists between the mining company and the customer.

At this stage, future production from Kathleen Valley remains 100% uncommitted in order to maintain maximum flexibility and independence over funding and development options. For the purposes of the PFS, it has been assumed that Liontown will sell 100% of its production on arm's length terms to unrelated parties on a yearly basis.

The Roskill forecast pricing results in an average price of US$769/dmt CIF China for the period 2025 - 2040 (noting that while the PFS extends beyond Roskill's 2040 forecasts, Liontown has assumed it reasonable to use the 2040 price of CIF US$825/t as the basis from 2041 - 2064).

Liontown has adjusted Roskill's CIF China prices to an FOB Geraldton price by deducting US$30 per tonne to reflect the estimated costs of shipping to China from Australia as the ultimate destination of SC6.0 produced from the Kathleen Valley Project is not known at this stage.

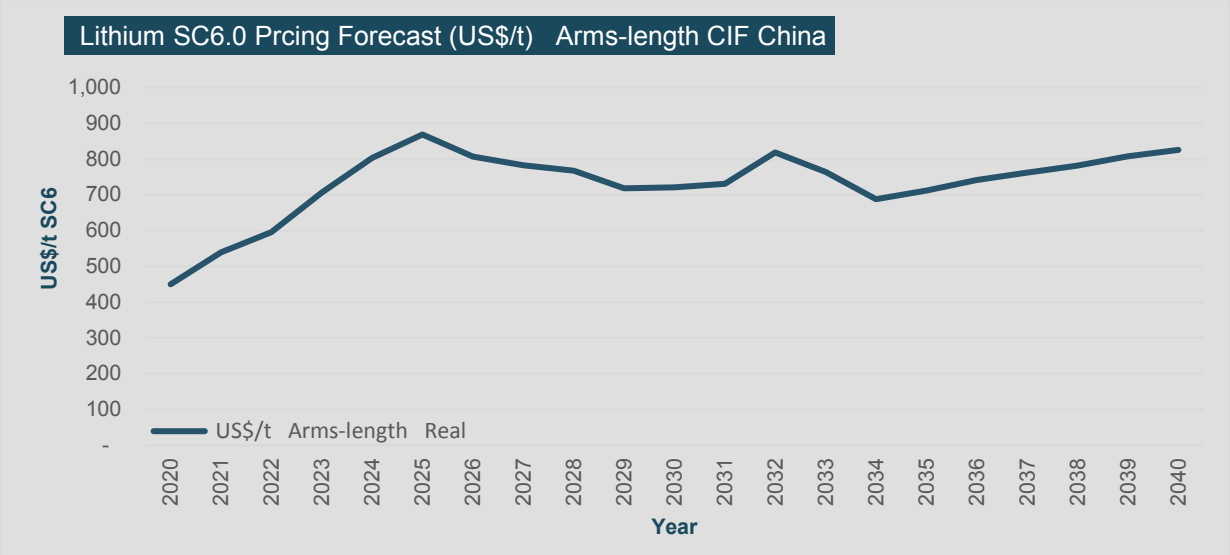

Figure 5: Roskill Forecast SC6.0 Concentrate Prices

**Source: Roskill September 2020 Arm's Length Prices 2020 – 2040*

30% Ta_2O_5 Tantalum Concentrate Forecast Pricing

Like SC6.0, tantalum concentrate is not currently sold on exchange traded markets and is transacted under contractual arrangements between the mining company and its customers.

Liontown has again utilised the services of Roskill for its price forecast assumptions for tantalum concentrate (30 Non-Class 7 Specification) as applied in the PFS.

Roskill has provided a forecast price through to 2040 on a real, US$/lb CIF China basis for "Arm's Length" pricing (***Figure 6***).

Like SC6.0, at this stage future tantalum concentrate production from Kathleen Valley remains 100% uncommitted in order to maintain maximum flexibility over funding and development options. For the purposes of the PFS, it has been assumed that Liontown will sell 100% of its production on arm's length terms to unrelated parties on a yearly basis.

Roskill provided an average price of US$70/lb CIF China for 2025 to 2040. Liontown has adjusted Roskill's CIF China prices to an FOB Fremantle price by deducting US$0.1 per pound to reflect the estimated costs of shipping to China from Australia as the ultimate destination of tantalum concentrate produced from the Kathleen Valley Project is not known at this stage. This results in an average price of US$69.9/lb FOB Fremantle.

Noting that while the PFS extends beyond Roskill's 2040 forecasts, Liontown has assumed it reasonable to use the 2040 price of CIF US$65/lb as the basis from 2041 to 2064.

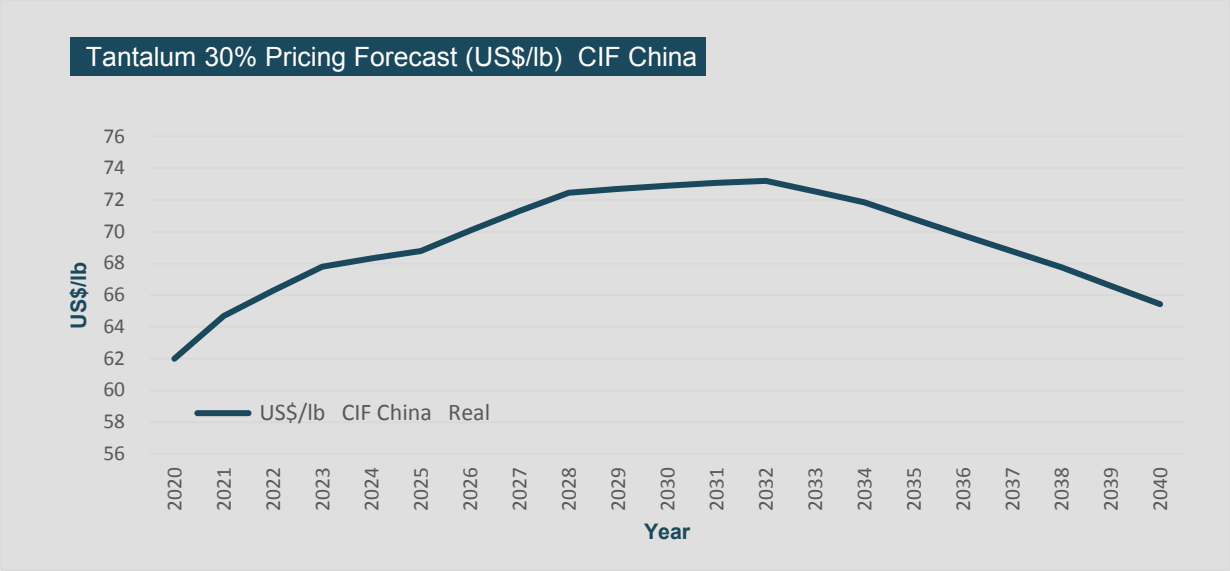

Figure 6: Roskill Forecast 30% Tantalum Concentrate Prices

**Source: Roskill September 2020 Arm's Length Prices 2020 – 2040*

Implementation & Schedule

The project execution strategy proposed for the Kathleen Valley Project is an Engineering, Procurement and Construction Management (EPCM) approach and this has formed the basis of the capital estimate and the schedule. Over the next 12 months, the Company will complete a DFS followed by a Front-End Engineering Design (FEED) program to enable an informed investment decision to be made. Assuming the decision is positive, first production would occur in Q1 2025.

The Company may revise the current project development timeline and/ or execution strategy should market conditions or funding/ offtake circumstances materially change.

Opportunities to Increase Project Returns

Scoping Study Downstream Processing/ Refinery

As part of the PFS, a scoping level study (+/-30% Accuracy) has been initiated to review the integrated downstream processing of the Kathleen Valley product. Lycopodium has evaluated and is determining scoping level operating and capital cost estimates for the production of LHM or LSM at the Kathleen Valley site. The study was carried out in parallel with the PFS (using projected outputs to ensure the plant was appropriately sized).

Throughput Options

Throughputs of 2Mtpa and 4Mtpa from a mining and a processing perspective were evaluated as part of the PFS. A staged approach to the plant development was considered prudent, however key considerations in both the mine and the processing plant have been included upfront to enable a throughput expansion with negligible impact on the 2Mtpa mining and processing presented in the PFS. Further throughput related optimisation will be undertaken as part of the DFS.

Operating costs estimates from the downstream scoping study are currently being modelled using the PFS outcomes (given the SC6.0 is the feedstock for the downstream refinery) and will be released once finalised.

Production of multiple Spodumene concentrate Grades

The PFS was evaluated on the basis of the production and sale of SC6.0. Based on testwork however the newly adopted WOF flowsheet provides considerable flexibility for the production of much higher-grade concentrates (>6.5% Li_2O) for periods of the mine life when mining higher grade ore. The ability to produce higher concentrate grades may have sales and operating cost benefits. Further grade related optimisation will be undertaken as part of the DFS.

Reserve Expansion

The PFS via underground mine planning activities has identified accessible inferred material that potentially could be added to the reserve (if further drilling was undertaken). A small drilling program is planned in Q4 2020 to convert this material to Indicated resource category. The Company cautions that there is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production targets in the PFS will be realised.

As noted in previous ASX announcements the Kathleen Valley MRE remains open at depth and along strike plus additional inferred material could be upgraded to grow the resource/reserve base in the future.

This announcement has been authorised for release by the Board.

DAVID RICHARDS
Managing Director

9th October 2020

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Competent person statements

The Information in this report that relates to Exploration Results and 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 Mineral Resources for the Kathleen Valley Project is extracted from the ASX announcement "Kathleen Valley confirmed as a world Class lithium deposit as Mineral Resource increases to 156Mt @ 1.4% Li_2O" released on the11th May 2020 which is available on 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 previous market announcement 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 information in this report that relates to metallurgical test work for the Kathleen Valley Project has been reviewed by Mr Aidan Ryan who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Ryan is an employee of Lycopodium Minerals Pty Ltd and has sufficient experience relevant to the style of processing response and type of deposit under consideration, and to the activities 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 Ryan consents to the inclusion in the report of a summary based upon his information in the form and context in which it appears.

The information in this report that relates to Open Pit Ore Reserves for the Kathleen Valley Project is based and fairly represents information compiled by Mr Jake Fitzsimons who is employed by Orelogy Consulting Pty Ltd. Mr Fitzsimons, who is a Member of the Australasian Institute of Mining and Metallurgy has sufficient experience relevant to the style of mineralisation and type of deposit under consideration, and to the activities 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 Fitzsimons consents to the inclusion in the report of a summary based upon his information in the form and context in which it appears.

The information in this report that relates to Underground Ore Reserves for the Kathleen Valley Project is based and fairly represents information compiled by Mr Ben Wilson who is employed by Orelogy Consulting Pty Ltd. Mr Wilson, who is a Member of the Australasian Institute of Mining and Metallurgy has sufficient experience relevant to the style of mineralisation and type of deposit under consideration, and to the activities 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 Wilson consents to the inclusion in the report of a summary based upon his information in the form and context in which it appears.

Forward-looking statements

This report contains forward-looking statements which are identified by words such as 'may', 'could', 'believes', 'estimates', 'targets', 'expects', or 'intends' and other similar words that involve risks and uncertainties. These statements are based on an assessment of present economic and operating conditions, and on a number of assumptions regarding future events and actions that, as at the date of this report, are considered reasonable. Such forward-looking statements are not a guarantee of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, the Directors and the management. The Directors cannot and do not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this report will actually occur and investors are cautioned not to place undue reliance on these forward-looking statements. The Directors have no intention to update or revise forward-looking statements, or to publish prospective financial information in the future, regardless of whether new information, future events or any other factors affect the information contained in this report, except where required by law or the ASX listing rules.

Kathleen Valley 2020 PFS

Material Assumptions and Additional Information

1. Geology and Mineral Resources

The Kathleen Valley Lithium Project is located on the western edge of the Norseman-Wiluna Greenstone Belt within the Archaean Yilgarn Craton of Western Australia. The belt consists of mafic and ultramafic volcanics with considerable volumes of clastic sediments, minor felsic volcanics and differentiated gabbros. The greenstones in the Kathleen Valley area have been metamorphosed to upper greenschist-lower amphibolite facies metamorphic grades and include tholeiitic lavas, differentiated gabbroic sills and ultramafic chlorite schists.

Lithium mineralisation is hosted within spodumene-bearing pegmatites, which are part of a series of lithium-caesium-tantalum (LCT)-type rare metal pegmatites that intrude mafic and sedimentary rocks in the region.

Twenty mineralised pegmatites have been identified at the Kathleen Valley Project hosted by two, outcropping, NW/SE trending pegmatite swarms – a shallowly-dipping, north-eastern swarm (Kathleen's Corner), which contains approximately 90% of the pegmatites, and a steeper dipping south-western swarm (Mt Mann). The two swarms are interpreted to merge at depth to form a single, thick, moderately dipping mineralised body which remains open down-dip and along strike.

Most of the lithium is contained within spodumene. Small, isolated zones of petalite mineralisation has been observed (this material equates to <0.5% of the resource samples) in the north-western part of the deposit.

The Measured, Indicated and Inferred Mineral Resource, which was prepared by independent specialist resource and mining consulting group Optiro, comprises 156Mt @ 1.4% Li_2O and 130ppm Ta_2O_5 and is set out in ***Table 5***.

Table 5: Kathleen Valley Mineral Resource as at May 2020

Cut-off grade Li_2O %	Resource Category	Million tonnes	Li_2O % (Equiv.)	Li_2O %	Ta_2O_5 ppm
0.55	Measured	20	1.4	1.3	140
	Indicated	105	1.5	1.4	130
	Inferred	32	1.4	1.3	110
Total		**156**	**1.5**	**1.4**	**130**

Notes:
- *Reported above a Li_2O cut-off grade of 0.55%*
- *Tonnages and grades have been rounded to reflect the relative uncertainty of the estimate.*
- *Li equivalency based on overall average recoveries of 50% & 76% respectively for Ta_2O_5 and Li_2O & pricing of US$69.9/lb for 30% Ta_2O_5 / US$739/t 6% Li_2O*

The Mineral Resource estimate has been prepared by a Competent Person and is reported and classified in accordance with the guidelines of the 2012 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code; 2012).

The Project is not sensitive to cut-off grade (***Table 6***) due to the style of mineralisation which is hosted by visually discrete pegmatites. A cut-off grade of 0.55% Li_2O has been applied based on similar operations in Western Australia.

Table 6: Mineral Resource reported by Li_2O % cut-off grades

Cut-off Li_2O %	Million tonnes	Li_2O %	Ta_2O_5 ppm
0.4	158	1.34	128
0.55	**156**	**1.35**	**128**
0.6	155	1.35	128
0.8	148	1.39	129
1.0	130	1.45	131
1.2	100	1.56	132
1.4	64	1.70	131

2. Mining and Production

The goal of the mining study was to generate a robust, high-margin mining strategy with access to higher grade material earlier in the mine life and to produce a mineable Ore Reserve from both underground and open pit sources.

Estimation and Methodology

Orelogy completed a mining study for combined open pit and underground mining of the Kathleen Valley Lithium deposit based on the May 2020 Resource model.

The Ore Reserve estimate is an outcome of the 2020 Mining PFS with geological, mining, metallurgical, processing, engineering, marketing and financial considerations to allow for the cost of discounting and tax. Engineering and cost estimations have been completed to a +/-25% level of accuracy, consistent with a study of this nature.

Detailed open pit and underground mine designs were completed in general mine planning software, incorporating all available geological, geotechnical information and practical considerations.

Modifying factors considered in the open pit mine planning process included mining dilution and ore loss, slope design criteria and practical mining considerations. Modifying factors considered in the underground mine planning process included mining method selection, minimum mining widths, mining dilution and ore loss, geotechnical stope stability criteria, pillar and filling requirements, materials handling, ventilation dewatering and other practical mining considerations.

The activities and findings of all other disciplines are summarized in this release, including details of other modifying factors which include processing recoveries, costs, revenue factors and environmental considerations.

Metallurgical factors are detailed in section 3.

Mining Methods

Open Pit

Conventional open pit mining using excavators and rigid dump trucks was selected as the preferred mining method. Experienced mining contractors will undertake all aspects of the mining operation. Supervision, grade control and planning will be undertaken by an Owner's team. All material will be blasted. Bulk waste will be blasted on 12m benches and the ore zones will be blasted on 6m benches and mined in two or three flitches for greater selectivity (depending on the point in the mine schedule) with ore delivered to blend fingers on the ROM pad.

Underground

There are two distinct mining areas in the underground mine. The Mt Mann mining area consists of steeply dipping ore domains, while the North-West Lodes mining area consists of shallowly dipping, stacked ore lodes. Mining methods have been selected based on the dip, width and geotechnical characteristics of the orebodies.

The Mt Mann mining area will be mined using transverse retreat open stoping in panels, as either single lift (30m stope height), or double lift (60m stope height). Stopes will be mined in a primary-secondary, bottom up sequence, within the stoping panel (generally 4 stopes high). The overall mining sequence will be bottom-up. Primary stopes will be filled with Cemented Paste Backfill (CPB) to maintain geotechnical stability and maximise ore recovery.

The North-West lodes will be mined using:

- Longitudinal retreat open stoping, where orebody width is greater than 10m. These stopes will be mined in a primary-secondary, bottom up sequence. Stopes will be filled with CPB to maintain geotechnical stability and maximise ore recovery.
- Room and pillar mining, where orebody width is between 5m and 10m. Ore recovery is lower for this method due to the ore pillars left behind to maintain room stability. Back filling will not be carried out in the room and pillar mining areas.

Given the relatively shallow depth (around 440m below surface) of the underground portion of the mine, access via a surface portal and 1 in 7 decline, was decided upon as the most time and cost-effective access option. An in-pit portal will also be utilised to access the southern end of the Mt Mann pegmatites. The decline will be mined in the footwall with a minimum stand-off from the orebody of 50m.

These methods were considered the most appropriate for the expected mining geometries, ground conditions, and were best aligned with the objectives of the project in terms of grade profile, ore production and costs. Other methods such as; core and shell and sublevel shrinkage were considered for Mt Mann, however the increased dilution rendered them sub-optimal.

Experienced mining contractors will undertake all aspects of the mining operation using a mechanised mining fleet with truck haulage of ore from underground stoping panels via two portals to the surface ROM. Supervision, grade control and planning will be undertaken by an Owner's team with ore delivered for further blending on the ROM pad.

The primary ventilation network consists of the two decline ramps and an intake shaft for intake air supply, and five exhaust shafts equipped with exhaust fans for primary exhaust. Inter-level exhaust raises will connect production areas with the main exhaust shafts. Air quantities have been calculated based on the expected equipment and personnel numbers and in line with WA Mining Regulations.

Geotechnical

POBA completed the geotechnical review and noted that the Kathleen Valley gabbros and spodumene-bearing pegmatites are massive and rock mass quality is consistently very good. Rock stresses are expected to be similar to those measured elsewhere in the Yilgarn Block, with low potential for mining-induced seismicity given the shallow depth of mining.

POBA confirmed that transverse retreat open stoping is expected to be a geotechnically sound mining method for the steeply dipping Mt Mann orebodies. Longitudinal retreat open stoping will be appropriate for the thicker of the shallow dipping North-West lodes, while room and pillar mining is appropriate for the narrower of the shallow dipping North-West lodes.

Hydrogeology

Knight Piesold Consulting, a specialised tailings and hydrogeological engineering consultancy, has completed a desktop study based on proposed open pit and underground mine development. The study has incorporated geologic data, mine plans and recent pump testing of water bores, drilled in the immediately east of the proposed pit and underground workings. Based on the project-specific data available and knowledge of other projects in the vicinity with broadly similar geological structural settlings, there is potential for elevated inflows of water as the underground mine is developed.

These flows should not be a project limiting factor and can even be regarded as an additional project water source. Water inflows of 10-50L/s may be encountered but will be dealt with by conventional dewatering methods. It is likely that flows will decrease as workings progress deeper.

Optimisation

Open Pit

To establish mineable quantities, a number of open pit optimisations were completed on the Resource model after applying ore loss and dilution to the edges of the mineralisation. The optimisations only considered Measured and Indicated materials, excluded the Jones Creek watercourse and applied pricing, recoveries and other modifying factors.

The shell selection was based on the business objectives of maximising the discounted cash flow whilst providing sufficient mine life.

Underground

To establish mineable quantities, a number of stope optimisations were completed on the Resource model after applying ore loss and dilution, and geotechnical parameters for the determination of stope dimensions. The optimisations considered Measured, Indicated and Inferred material, and applied pricing, recoveries and other modifying factors.

Options investigated evolved as both underground and open pit options were simultaneously progressed, with the approach by *Orelogy* as follows:-

- Development of a single new optimised open pit schedule at a 0.7-0.75% Li_2O cut-off grade which was manipulated by delaying stages or stretching over longer time periods; and
- Assessment of flat and vertical underground ore bodies separately at cut-off grades of 0.95%, 1.2% and 1.5% Li_2O respectively. The underground ore supply was sequenced in conjunction with the open pit schedule to maximise project returns

Schedules from the underground and open pit were combined to produce an optimised overall project mine plan.

Mine Designs

Open Pit

The open pit has been designed in two phases, the first being to supply ore for the plant in the first 3 – 4 years until the underground operation is up to full capacity. The second phase occurs after 25 years when the UG mining operation is winding down. The open pit designs contain a total of 30Mt of ore, at a diluted grade of 1.2% Li_2O/ 135ppm Ta_2O_5. The pits contain 253 Mt of waste material for an average strip ratio of 8.4:1. Importantly in the first 10 years of production the stripping ratio is significantly lower than the previous PFS which had an average strip ratio of 12:1.

Open pit mining dilution was applied using an edge of 0.5 m to a Selective Mining Unit (SMU) block size of 5m x 5m x 2m in the early open pit mining phase and 5m x 5m x 3m in final open pit phase.

Underground

A mine schedule was created from the designs in *Deswik* mine planning software. Discrete activities were scheduled based on a logical sequence of preceding and succeeding activities. Industry average productivities, taking cognizance of local conditions, were applied to activities to determine the Mine Plan. Resource levelling was applied to the schedule to derive periodic quantities and fleet requirements.

The underground designs contain a total of 49 Mt of ore, at a diluted grade of 1.50% Li_2O/ 125ppm Ta_2O_5. Underground mining dilution was applied in two ways; applications of Equivalent Linear Over-break Slough (ELOS) skins of 0.5m to the designed stope shapes and factors were applied to stopes that were likely to incur dilution from surrounding paste fill exposures, which varied from 1 to 4% depending upon the number of paste surfaces exposed by each stope for the vertical and flat zones respectively.

In both the open pit and underground cases dilution has been significantly improved from previous work, via more selective open pit mining and the improved understanding of the geotechnical conditions associated with the underground stoping. The proposed pit outline, underground development and overall site layout for the Kathleen Valley Project are shown in **Figures 2** and **3.**

Mine Production Schedule

The proposed combined open pit and underground mine schedule for the Kathleen Valley Project is shown below in ***Figure 7*** and details of the annualised processing physicals is shown in ***Figure 8***.

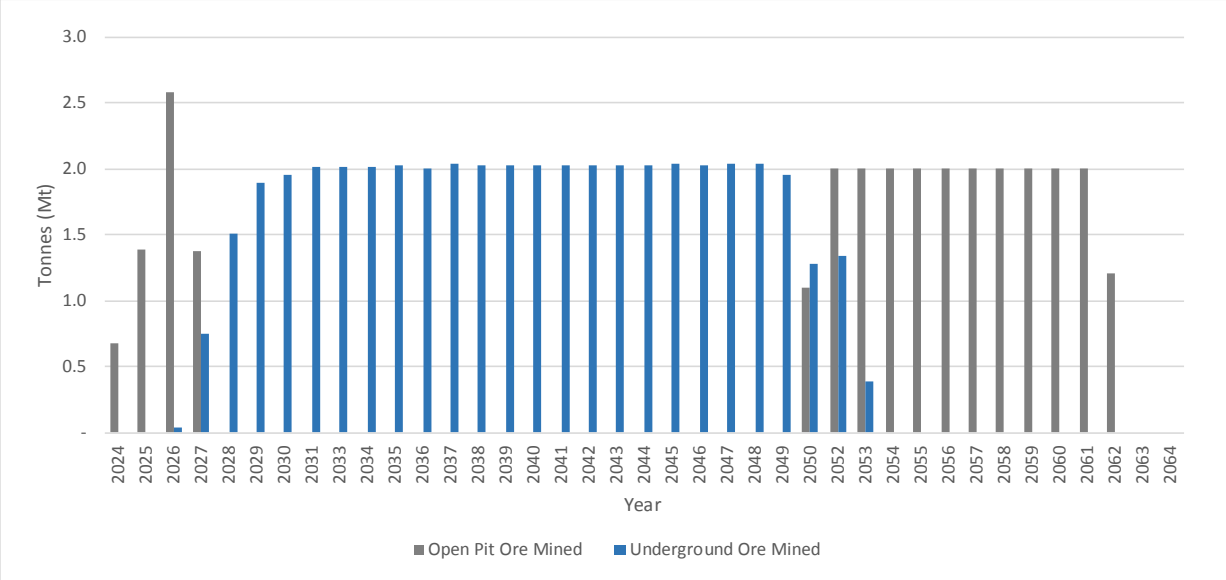

Figure 7: Mining schedule/s by year

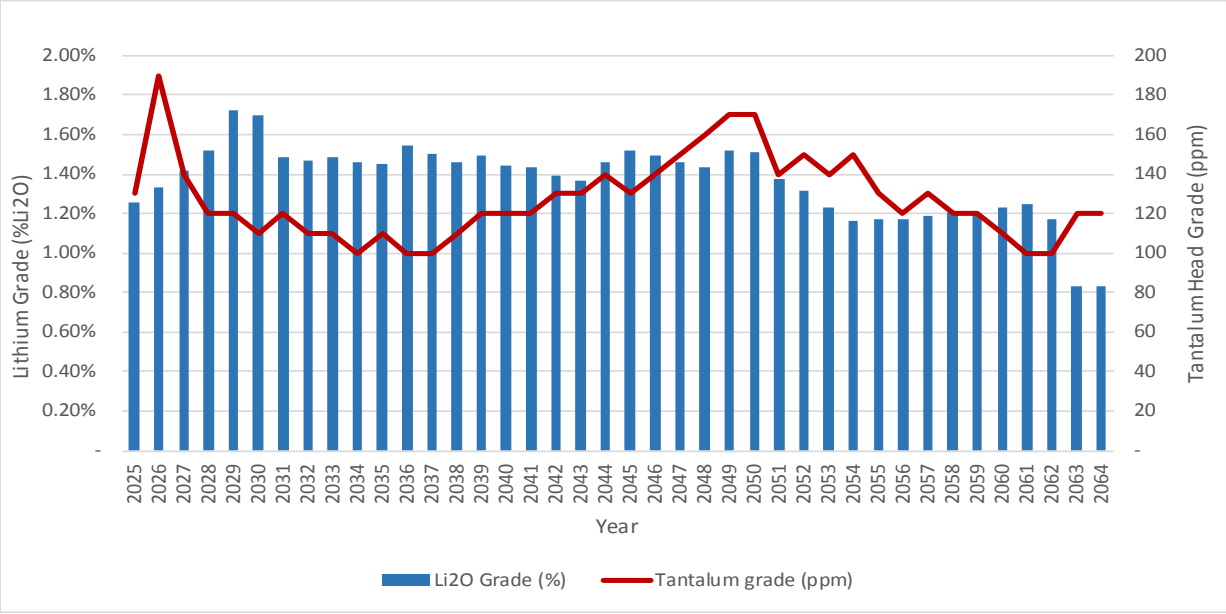

Figure 8: Annualised Schedule, Li_2O and Tantalum Grade Profile

LOM Mining Inventory & Ore Reserve Estimate

Table 7: Kathleen Valley Project – Ore Reserve Estimate (October 2020)

Category	Tonnage (Mt)	Li_2O (%)	Li_2O (T)	Ta_2O_5 (ppm)	Ta_2O_5 (T)
Underground					
Proved	3.9	1.4	56,000	130	**500**
Probable	37.6	1.5	572,000	120	**4700**
Sub-Total	**41.5**	**1.5**	**628,000**	**120**	**5100**
Open Pit					
Proved	11.7	1.2	142,000	140	**1,700**
Probable	17.6	1.2	205,000	130	**2,300**
Sub-Total	**29.3**	**1.2**	**346,000**	**130**	**3,900**
TOTAL	**70.8**	**1.4**	**974,000**	**130**	**9,100**

Notes: *Tonnages and grades are diluted and reported at Li_2O cut-off grade of 0.7-0.75% (open pit) and 1.2 -1.5% (Underground). Tonnages and grades have been rounded.*

Open Pit – Treatment of Inferred Material

Inferred material was not included in the pit optimisation used for selection of the economic shell. A total of 840kt at 1.0% Li_2O and 130ppm Ta_2O_5 of Inferred material falls within the final pit design all of which is mined in year 25 or later. The inferred material is not included in the Ore Reserve but is included within the production inventory.

Underground – Treatment of Inferred Material

Inferred material was optimised, designed and scheduled. Stopes have been classified on a dominant resource category basis, where the dominant category for the stope is reported as the resource category for the entire stope. Proved and Probable Reserve categories have an average of 3% Inferred material and 2% waste material that is included in the stope shapes. This is judged reasonable dilution of the Ore Reserve. Stopes that have a dominant resource category of Inferred are not reported as part of the Ore Reserves, and similarly have an average of 5% Indicated Resources and 5% waste material contained within the Inferred stope shapes.

The production inventory schedule for the PFS includes Inferred material as well as Measured and Indicated material (which have been converted into Ore Reserves). The inferred material included in the inventory is 7.44Mt @ 1.4% Li_2O & 120 ppm Ta_2O_5, 15% of the total underground inventory. However, this Inferred material has been scheduled such that less than 1.0Mt is mined from underground in the first ten years, with the remainder at the end of the underground mine life and does not have a material effect on the technical and economic viability of the project.

Most of the Inferred material has been included in the production inventory schedule on the basis that it is contiguous with the surrounding Indicated mineralisation and forms part of the overall extraction sequence for that area of the deposit.

3. Metallurgy and Flowsheet Development

Metallurgy

Two distinct phases of testwork have been conducted for the Kathleen Valley Project.

2019 Testwork

During 2019, a PFS level testwork program was conducted at ALS (Perth) to provide sufficient test data to develop the process design criteria for the Project. The program was based on a conventional DMS/Flotation flowsheet and included comminution, heavy liquids and DMS, flotation and ancillary testwork on a total of 81 samples from across the three main areas of the deposit.

2020 Testwork

Following the 2019 metallurgical program, an R&D test work program has been carried out at ALS in 2020 with process input from Lycopodium. Samples from the 2019 program combined with additional open pit and potential underground-sourced ore were used. The focus of this work was:

- To develop and test a WOF flowsheet;
- To establish grade-recovery curves for both DMS and WOF flowsheets at a range of composite grades to enable direct comparisons between each; and
- The testing and development of preliminary flowsheets to support the extraction of tantalum.

The WOF flowsheet was investigated as it was believed to offer:-

- A simpler, more robust circuit with greater operational certainty, especially relating to the upscaling of laboratory-based recoveries to a full-scale, commercial, operating mine plant;
- The potential to produce higher grade 6.5 or 7% Li_2O concentrate without large recovery losses;
- The opportunity to process the entire plant feed for tantalum recovery compared with ~50% in a combined DMS/Flotation scenario; and
- The ability to extract deleterious elements (such as iron) prior to Li_2O concentration.

Following the positive outcomes of the 2020 testwork, a decision was made to base the 2020 PFS on a WOF flowsheet, as outlined in the Company's ASX release dated 9th June 2020.

To date, the 2019/ 2020 testwork has included the following:

- Mineralogy and Head assay/s;
- Comminution testing;
- Heavy liquids and DMS testing;
- Magnetic separation to remove ferrous materials with subsequent gravity concentration to recover tantalum;
- Flotation to examine collector choice, residence time, desliming and conditioning;
- Ancillary tests including thickening, filtration and rheology.

Key results indicate:

- Samples were moderately competent with comminution results indicating 18kwh /t.
- Grind optimisation of the flotation feed indicated a primary grind of 125µm gave the best recovery and was selected for subsequent testwork. Further work on coarser grind sizes remains ongoing and will be incorporated into the DFS.
- Flotation results indicated a saleable concentrate with a grade of more than 6% Li_2O could be produced.

- The WOF process has been tested at a PFS level in the laboratory with a grade-recovery relationship established.
- Using staged recoveries, the overall Ta_2O_5 reporting to concentrate has been estimated as 56% to a grade of 15.3% based on preliminary test work. A mineralogical review indicates potential to produce a 30% Ta_2O_5 concentrate at an offsite upgrade facility.
- Magnetic and gravity separation used to recover tantalum also reduces already low iron levels in the potential flotation feed by up to a further 55%.

Metallurgical testwork remains ongoing.

2020 test work results were used to prepare the mass balance in ***Table 8***

Table 8: 2020 Design Mass Balance at 1.6% Li_20 feed grade (Whole of Ore Flotation)

Stage	% mass	tph	Li_2O%	Li_2O dist	Ta_2O_5 ppm	Ta_2O_5 dist
Plant Feed	100.0	250	1.60	100.0	190	100.0
Tantalum Concentrate	0.1	0.174	0.22	0.01	153,000	56
Secondary Magnetics	2.1	5.3	2.4	3.3	754	8
Tantalum Tail	97.8	244.5	1.59	96.9	69	36
Slimes Losses	14.8	36	1.3	11.6	105	8
Float Feed	83.3	208.5	1.64	85.3	63	28
Total SC6.0 Concentrate	20.8	52	6.0	78	126	14
Float Tail	62.5	156.3	0.19	7	42	14
Total Tail[1]	79.2	198	0.45	22	73	30

[1]*Note that intermediate float products have been included in the tail*

Target Lithium Product Grade is given in ***Table 9***

Table 9: Lithium SC6.0 Target Grade

Element	LTR Target
SC6.0 (Li_2O) Grade	6%
Fe_2O_3	<0.75%

Flowsheet

The Kathleen Valley Project process plant consists of a mineral processing concentrator with associated services and ancillaries (***Figure 9***). The plant has been designed using robust equipment and processes and significantly simplified following the adoption of WOF processing.

The process facilities include:

- Three-stage crushing (including HPGR);
- Low and high intensity magnetic separation combined with sequential gravity separation to produce a tantalum concentrate (also removes ferrous impurities);
- Ball-milling of the tantalum circuit non-magnetics;
- Flotation thickening and filtration to produce Li_2O concentrate; and
- Tails disposal.

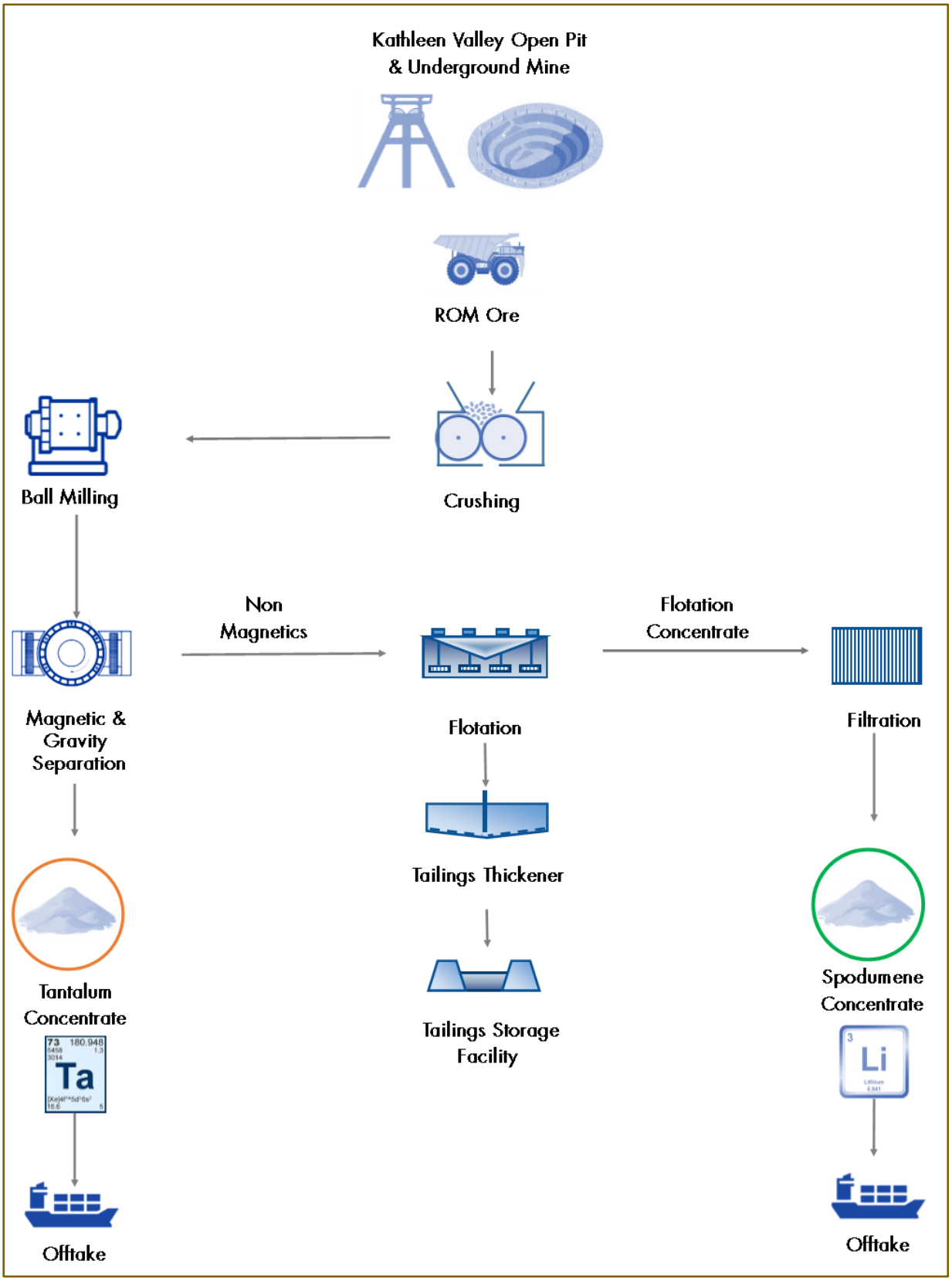

Figure 9: Kathleen Valley Project Flow Sheet

4. Site Infrastructure

Site Development and Access Roads

The sealed Goldfields Highway is 0.8km west of the proposed mine site and will provide the main access to the Project. A new sealed access road will connect the plant-site to the Highway.

Power Supply

A 132kV overhead power line runs adjacent to the main highway. A tee-off sub-station will be built together with a transformer to drop the voltage from 132kV to 11kV with an overhead powerline to an HV switch room at the plant site.

A 4.4MW solar farm located adjacent to the proposed accommodation village plus backup emergency power supply generator/s of 2MW has also been included within capital allowances. Total anticipated site wide *online* power demand including underground is 13.5MW.

Water Supply

A borefield developed on current mine licences, exploration licences and regional targets has been proposed to supply the raw water demand for the process plant. This will be supplemented by water obtained from mine dewatering and return flow from the tailing's storage facility.

Accommodation

A 300-person camp complete with single rooms (with ensuite bathrooms), wet mess, dry mess and recreational facilities has been included. Accommodation will be on a hotel-style basis.

Plant Buildings

Several plant buildings have been allowed including administration office, clinic/ First Aid, plant office, ablutions, crib room, maintenance workshop, warehouse, reagent store, laboratory, emergency response and control room.

Sewage Treatment

A packaged sewage treatment plant will process wastewater from both the plant-site and accommodation village.

Mine Service Areas

Both an underground and open pit mine service area has been allowed for and would be used by the selected mining contractor/s. A magazine with earth bunding has been included.

Underground Portal/s and Surface Facilities

Underground access will be provided at two points, via a boxcut constructed adjacent to the plant ROM pad and via a portal located at the southern end of the Stage 1 pit. Surface facilities including a paste-fill plant, power/water reticulation and multiple vent fans will be provided to support underground mining activities.

Concentrate transportation and shipping

Kathleen Valley is located adjacent to the Goldfields Highway allowing for the transport of lithium concentrate on sealed roads to the Port of Geraldton and subsequent export overseas. Covered storage for all concentrates will be provided on site with offsite storage and ship loading provided by contractors.

Tantalum will be upgraded further offsite, bagged/ containerised and shipped overseas via the Port of Fremantle.

5. Tailings and Water Management

Tailings Storage

Tailings from the Process plant will be thickened and then pumped to either the underground paste fill plant for underground placement or deposition in an above ground tailings storage facility.

Initial environmental testing of both waste rock and tailings has been completed. Results indicate that tailings are essentially benign, unlikely to pose a risk to the environment and as such do not require specialised lining systems.

Water Management

Flood management

Flood modelling has shown that 1:100-year flood events do not result in the local drainage overtopping its banks in the area adjacent to the mine.

Site surface water management

Storm water run-off around the mine area and associated infrastructure will be managed to limit the environmental impacts in the area. Flooding from adjacent streams will be directed away from mine infrastructure (waste rock dumps, open pits, process plants, roads and mine camp infrastructure, for example). Also, run-off generated from mine infrastructure – potential "dirty water" – will be managed to make certain that any water discharged off the mine areas has no impact on the downstream environment.

All exploration drill holes beneath tailings storage, mine waste and above planned underground development will be cement grouted.

Dewatering

A desktop study based on proposed open pit and underground mine development has been undertaken as part of the PFS. The study has incorporated geological data, mine plans and recent pump testing of water bores, drilled adjacent to the proposed pit and underground workings.

Water supply

Considerable water investigations have been completed and remain ongoing at the date of the PFS publication. Multiple water sources/ sites within the mine and exploration licences have been identified via proven hydrological techniques for drilling and subsequent pump testing with the intent being that a number of additional sources will be defined/ fully evaluated and targeting methodology confirmed as part of the DFS. Drill testing of newly identified water targets on mine and exploration licences is planned for Q4 2020.

Additional regional water source targets have also been identified and will be pursued during the DFS.

6. Geotechnical

Geotechnical analysis of drill core from within the proposed open pit and areas of underground development supports the PFS pit and underground designs. Exploration drill core also indicates that the ground is very competent, and no allowance has been made to cover the risk of poor ground conditions.

Further geotechnical drilling programs and down-hole teleview surveys of existing RC drill holes are planned for Q4 2020 as part of the DFS, specifically for large flat-lying zones of underground development and decline locations.

Visual inspection of areas where major infrastructure is proposed to be sited supports the assumptions that no significant adverse ground conditions will be encountered during construction. Key plant site equipment locations will be subject to confirmatory geotechnical drilling in Q2 2021.

7. Environmental Assessment, Community and Government

Environmental

MBS has completed the majority of the required environmental base line studies for the Project and its surrounds. Considerable further work is planned as part of the DFS in 2021. Primary environmental management will be focussed on surface water management and the potential for groundwater dependent ecosystems.

Aboriginal Heritage

The proposed mining operations overlap with registered Aboriginal Heritage sites and Liontown will need to apply for formal Section 18 (Aboriginal Heritage Act) clearance over the proposed mining area to comply with relevant government legislation.

The Company has executed a number of agreements with the Tjiwarl Group, the Native Title holders at Kathleen Valley, and constructive negotiations are in progress regarding a specific Mining Cooperation agreement for the Project.

Liontown is currently engaging with the Tjiwarl Aboriginal Corporation to minimise the impact of the project on Aboriginal sites and has engaged in and funded a number heritage surveys to further understand the cultural heritage landscape of the proposed development area.

A consent under the *Aboriginal Heritage Act 1972* will form part of the negotiations in respect to a mining agreement. A formal, written, draft agreement which includes consideration of the proposed *2020 Aboriginal Cultural Heritage Bill* is currently under review. The Company is working together with the Tjiwarl to have all points agreed and ratified during 2021.

Governmental & Regulatory Approvals

The Project is located within the Shire of Leonora and is situated across Crown Reserve 8560 (Kathleen Town Common) and Yakabindie Pastoral Station (DMIRS 2018b) and is principally situated within four granted Mining Leases (M36/264, M36/265, M36/459 and M36/460).

The proposed mine village, solar farm, and electrical power transmission lines are located on Mine Lease Application M36/696. Additional mining or miscellaneous licences will be required for infrastructure not currently located in Mining Leases held by the Company.

An environmental review of the project by MBS identified the main areas of environmental work which will require further investigation to gain approvals. The environmental work program has been designed to address these activities which will be confirmed once the DFS is complete. The work required comprises environmental studies followed by environmental approval applications.

An approvals strategy has been developed for the project and focuses on:

- Engagement with primary stakeholders;
- Early completion of baseline studies required to inform project design;
- Maximising flexibility of project design;
- Staging baseline studies to align with the phases of project design; and
- Introduction of the project to government agencies including regulatory agencies likely to be involved in future impact assessment.

Environmental approvals are anticipated to include a Mining Proposal and Mine Closure Plan under the Mining Act 1978 as well as a Native Vegetation Clearing Permit and Works Approval under Part V of the Environmental Protection Act 1986 and a Groundwater Licence under the Rights in Water and Irrigation Act 1914.

Development and assessment timeframes for these approvals have been incorporated into project schedules and the DFS budget.

8. Financial Information

A financial evaluation was completed using the Base Case Production Target of 79 Mt of potential mill feed at an average mill feed grade of 1.40% Li_2O. ***Tables 10 – 13*** summarise the results.

Life of Mine Financials

Table 10: Life of Mine Project Cash flows

		Cash flow(A$B)
Revenues (lithium)		$14.7
Operating costs		$5.9
Capital expenditure	**- pre-production**	$0.3
	- sustaining	$0.4
Royalties (State and Private)		$1.3
Corporate tax		$2.0
Life of Mine Project Free Cash flow (after tax)		A$4.8B

Capital Expenditure

The Project capital cost estimate was compiled by Lycopodium and reflects the assumptions and parameters outlined in the PFS.

Table 11: Capital Cost Estimate Summary (A$, Q4, 2020, +/-25% accuracy)

Main Area	Capital (A$M)
Treatment Plant	$84.8
Reagents & Plant Services	$16.0
Infrastructure – general	$53.3
Mining Infrastructure	$2.0
Construction In-directs	$23.8
Subtotal	$179.9
Management Costs	$23.0
Owners Project Costs	$19.8
Mining Pre-production (Underground & open pit)	$67.1
Owners Pre-production	$8.5
Subtotal	**$298.3**
Contingency	**$26.8**
Project Total	**A$325.1M**

Sustaining capital is estimated at an average annual amount of A$10.8Mpa and A$433.6M over the LOM.

Operating Cost Estimate

The Project has an estimated cash cost, FOB Geraldton (exclusive of royalties) as detailed in ***Table 12*** below.

Table 12: Operating Cost Estimate (Exclusive of Royalties)

Operating Cost	US$/dmt of Conc Yr 1-5	US$/dmt of Conc Yr 1-10	US$/dmt of Conc. LOM
Mining	$172	$188	$209
Processing[(1)]	$65	$63	$70
Transport and logistics	$51	$51	$51
G&A	$23	$24	$24
Other	$2	$2	$2
Tantalum Credit	($52)	($45)	($46)
Cash Operating Cost (exc. Royalties)	**US$261/ dmt**	**US$283/ dmt**	**US$310/ dmt**

[1] Lithium Processing cost reduced by an apportioned Tantalum processing cost which is allocated to and netted against the Tantalum Credit

As royalties are not predominantly a cost of production but are dependent on the sales price, they have been displayed separately. ***Table 13*** and ***Table 14*** illustrates the impact of the Royalty on the site cash operating costs for both dry and wet metric tonnes of SC6.0.

Table 13: Operating Cost Estimate Inclusive Royalty (Yrs 1-5 US$261/t Cash cost per Table 12)

SC6.0 Sales Price	Applicable Royalty US$/t	SC6.0 Cash cost US$/dmt	SC6.0 Cash cost US$/wmt[1]
Sales Price of SC6.0 $400 FOB	$36	$297	$272
Sales Price of SC6.0 $500 FOB	$43	$304	$279
Sales Price of SC6.0 $600 FOB	$51	$312	$286
Sales Price of SC6.0 $700 FOB	$58	$319	$293
Sales Price of SC6.0 per PFS	***$62***	***$323***	***$296***
Sales Price of SC6.0 $800 FOB	$66	$327	$300

[1]Based on 9% moisture

Table 14: Operating Cost Estimate Inclusive Royalty (Yrs 1-10 US$283/t Cash cost per Table 12)

SC6.0 Sales Price	Applicable Royalty US$/t	SC6.0 Cash cost US$/dmt	SC6.0 Cash cost US$/wmt[1]
Sales Price of SC6.0 $400 FOB	$36	$319	$293
Sales Price of SC6.0 $500 FOB	$44	$327	$300
Sales Price of SC6.0 $600 FOB	$52	$335	$307
Sales Price of SC6.0 $700 FOB	$59	$342	$314
Sales Price of SC6.0 per PFS	***$62***	***$345***	***$317***
Sales Price of SC6.0 $800 FOB	$67	$350	$321

[1]*Based on 9% moisture*

The operating cost estimates are detailed below:

Mining Estimate

The total ore excavated for the Project is 79 Mt. Open pit ore has an overall mining operating cost of $1.3B over the life of the mine (exc. Preproduction). Underground ore has an overall mining operating cost of $2.7B over the life of the mine.

This equates to an average cost per tonne of ore of $51/dmt ore to the ROM, inclusive of rehandle, secondary breakage, coarse waste haulage, paste fill and rehabilitation of the waste dump. Applicable all-in mining G/A per tonne of ore is $2.39/t. These costs have been estimated assuming contractor mining for both the underground and open pit.

Processing and G&A Estimate

Process plant operating cost estimates for the Project have been developed by Lycopodium, based on a design treatment rate of 2Mtpa with the plant operating 24 hours per day, 365 days per year and a 91.3% plant utilisation (nominal 8,000 hours per year).

The plant operating cost estimate is summarised in ***Table 15***.

Table 15: Process and G&A Operating Cost Summary (+/-25% accuracy, Q4 2020)

Processing Cost Centre	Fixed A$ p.a	Variable A$/t Ore
Power	$3,024,941	$3.11
Operating Consumables	$29,400	$7.71
Maintenance and Repairs	$400,000	$1.80
Laboratory	$2,414,797	$0.17
Mobile Equipment	-	$0.27
Labour – Processing	-	$3.86
Subtotal Processing	**$5,869,138**	**$16.92**
Labour – Administration	$3,160,052	-
General and Administration Cost	$3,845,020	-
Subtotal General and Administration	**$7,005,071**	**-**
Total	**$12,874,209**	**$16.92**

Transport and logistics

The PFS assumes road transport of the SC6.0 from site to Port of Geraldton on sealed roads and highways per the 2019 PFS. The indicative quotes received from transport and assay providers covers loading and transportation from the mine site to the ship loader and includes storage and rehandling outside of the port as well as assaying and certification of product shipments. Port costs are based on the Mid-West Port Authority published port fees (Geraldton).

Tantalum will be pre-concentrated to a 15% Ta_2O_5 grade before trucking to Perth for offsite upgrade to a grade of 30% Ta_2O_5 and subsequent bagging and export in containers via the port of Fremantle.

Life of Mine Cash Flows

Figure 10 and ***Figure 11*** illustrate net cash flows after tax per annum and the SC6.0 revenue stream associated with the Project. This demonstrates a potential payback period of 3 years (from commencement of production).

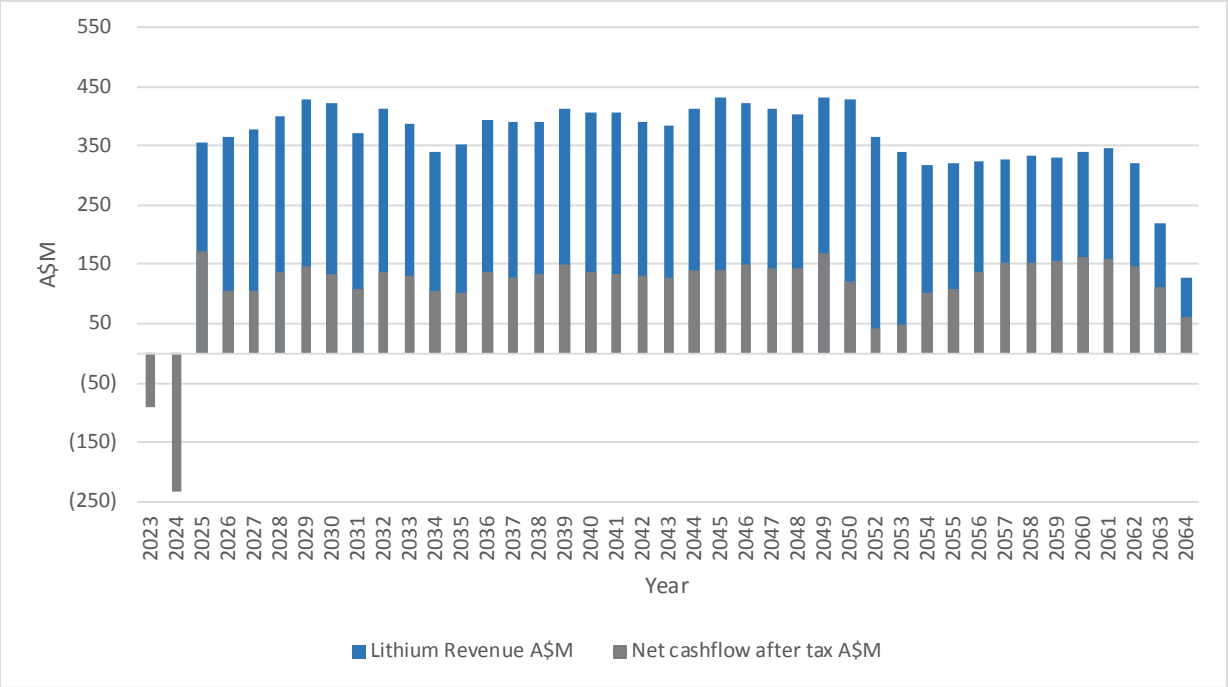

Figure 10: Net Cashflow After Tax

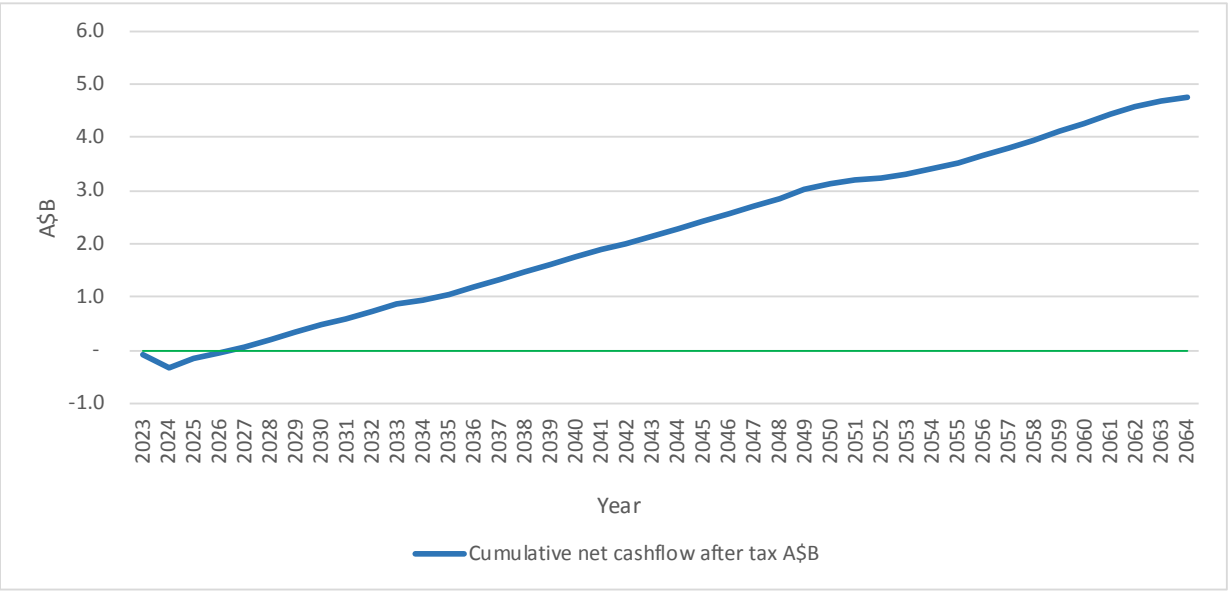

Figure 11: Cumulative Free Cash Flow and Payback Period

Foreign Exchange

A long-term FX value of A$1=US$0.72 was used in converting USD to AUD.

Commodity Pricing

See discussion in main body of report.

Funding

As disclosed in Table 11, pre-production funding in the order of A$325M is required to achieve the 1st production indicated by the PFS.

Based on the strong financial metrics presented as part of the PFS results, there are reasonable grounds to believe that the Kathleen Valley Project can be financed in the future. It is most likely that any financing would be undertaken via a combination of debt and equity, similar to a number of comparable projects in Western Australia which have been funded in the past five years.

Under current conditions, debt may be secured from several sources including Australian banks, international banks, the high yield bond market and resource credit funds.

There are several factors that will influence the ability of Liontown to secure funding including (but not limited to) a requirement to have "bankable" lithium offtake agreements and favourable prevailing market conditions (being both the lithium market and the wider equity and debt markets).

It is possible that funding may be dilutive to, or otherwise affect the value of the Company's existing shares. It is also possible that the Company could pursue other strategies to provide alternative funding options including undertaking a corporate transaction, seeking a joint venture partner/s.

9. Implementation and Schedule

The project execution strategy proposed for the Kathleen Valley Project is an Engineering, Procurement and Construction Management (EPCM) approach and this has formed the basis of the capital estimate and the schedule. This approach will be reviewed at the next stage of study.

An indicative schedule for the Project is listed in ***Table 16***.

Table 16: Development Schedule

Activity	Target Start	Target Complete
DFS	Q4 2020	Q4 2021
Front End Engineering Design (FEED)	Q4 2021	Q2 2022
Financial Investment Decision	Q3 2021	Q3 2022
Early works	Q2 2022	Q3 2022
Detailed Design	Q3 2022	Q3 2023
Plant Construction	Q3 2023	Q4 2024
Commissioning	Q4 2024	Q1 2025
Plant nameplate	-	Q2 2025

10. Opportunities

Scoping Study Downstream Processing/Refinery

In parallel with the PFS, a scoping level study (+/-30% Accuracy) has been initiated to review the integrated downstream processing of the Kathleen Valley product. Lycopodium was engaged to evaluate and determine scoping level operating and capital cost estimates for the production of LHM or LSM at Kathleen Valley. The study has been carried out in parallel with the PFS.

Operating cost estimates from the downstream scoping study are currently being modelled using the PFS outcomes (given the spodumene produced is the feedstock for the downstream processing) and results will be released once finalised.

The proposed downstream refinery flowsheet consists of either an LHM or LSM refinery with associated services and ancillaries (**Figure 12)**. The additional downstream refinery facilities would include:

Common Processes

- Calcination (α-β)
- Acid Roasting
- Leaching & Filtration
- Neutralisation, Impurity Removal & Filtration
- Tails disposal; and
- Reagents and Services.

To produce LHM

- PLS Concentration
- Causticisation & Filtration
- Glauber Salt Crystallisation & Melting
- Sodium Sulphate Crystallisation
- Sodium Sulphate Drying & Packaging
- LHM Crystallisation Drying & Packaging

To produce LSM

- Ion Exchange
- PLS Concentration
- LSM Crystallisation
- LSM Drying & Packaging

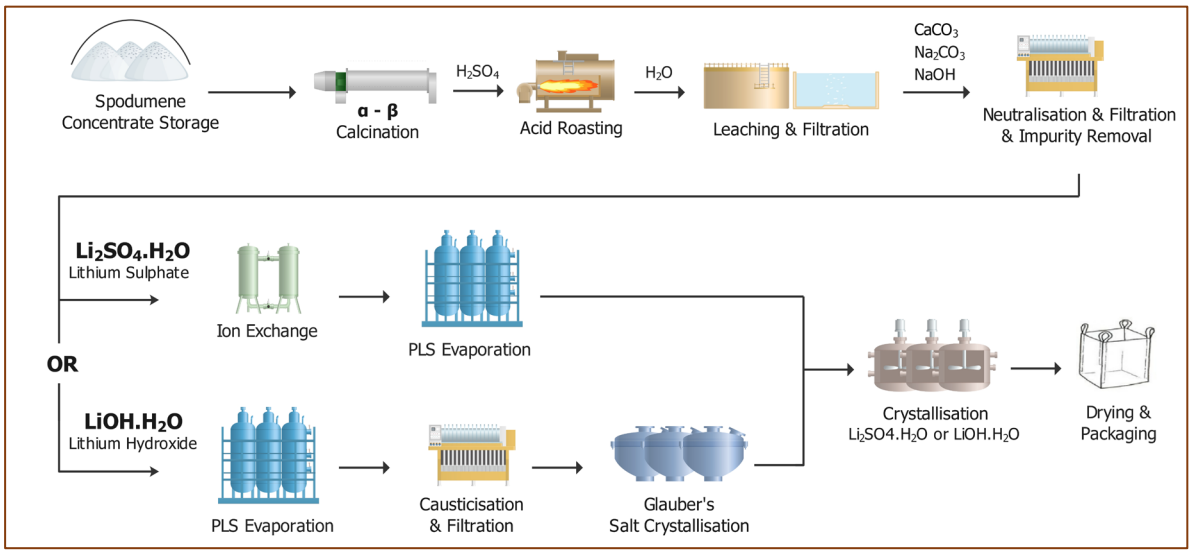

Figure 12: Kathleen Valley Project Downstream Flow Sheet LHM or LSM

Throughput Options

Throughputs of 2 and 4Mtpa from a mining and processing perspective were evaluated as part of the PFS. While 2Mtpa has been selected as the throughput rate for the PFS, key considerations in both the mine and the processing plant have been included upfront to enable a staged expansion with negligible impact. These considerations include:-

- Open pit and underground mine-scheduling/ design has been undertaken to evaluate the feasibility of throughputs of 2 and 4Mtpa. This work demonstrated no constraints in an ore supply of 4Mtpa.
- The primary jaw crusher has been sized to suit 4Mtpa.
- The secondary crusher and screen layout have been designed to enable a doubling of capacity (2 to 4Mtpa) with specific space/layout considerations for an additional crusher and screen.
- The HPGR scalping screen and associated conveyors have been sized to suit 4Mtpa.
- The milling, flotation, reagents and thickening circuit has been designed about a 'central spine' to enable *'mirroring'* of the 2Mtpa circuit with space allowance/s for the expansion included in the overall process plant footprint.
- The concentrate storage area has been designed to suit 4Mtpa concentrate volumes.

Further throughput related optimisation will be undertaken as part of the DFS.

Production of Multiple Spodumene Concentrate Grades

The PFS was evaluated on the basis of the production and sale of SC6.0. Based on testwork however, the newly adopted WOF flowsheet gives considerable flexibility to produce much higher grade (>6.5% Li_2O) spodumene concentrates for periods of the mine life which may have sales and operating cost benefits. Further grade related optimisation will be undertaken as part of the DFS.

Reserve Expansion

The PFS via underground mine planning activities has identified accessible inferred material that potentially could be added to the reserve (if further drilling was undertaken). A small drilling program is planned in Q4 2020 with a view to converting this material to Indicated resource category. The Company cautions that there is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production targets in the PFS will be realised.

As noted in previous ASX announcements the Kathleen Valley resource remains open plus additional inferred material could be upgraded to grow the resource/ reserve base in the future.

Appendix 1 – Kathleen Valley – JORC Code 2012 Table 1 Criteria

The table below summaries the assessment and reporting criteria used for the Kathleen's Corner and Mt Mann deposits, Kathleen Valley Lithium Project Mineral Resource estimate and reflects the guidelines in Table 1 of *The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves* (the JORC Code, 2012).

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	*Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*	• Sub-surface samples have been collected by reverse circulation (RC) and diamond core drilling techniques (see below). • Drillholes are oriented perpendicular to the interpreted strike of the mineralised trend except where limited access necessitates otherwise.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. *Aspects of the determination of mineralisation that are Material to the Public Report.* *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• RC samples are collected by the metre from the drill rig cyclone as two 1 m cone split samples in calico bags and a bulk sample in plastic mining bags. • The 1 m samples from the cyclone are retained for check analysis. Only samples of pegmatite and adjacent wall rock (~4 m) are collected for assay. • Diamond core has been sampled in intervals of ~1 m (up to 2.0 m within the main project area) where possible, otherwise intervals less than 1 m have been selected based on geological boundaries. Geological boundaries have not been crossed by sample intervals.
Drilling techniques	*Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• Drilling techniques used at Kathleen Valley comprise: ○ Reverse Circulation (RC/5.5") with a face sampling hammer ○ NQ2, HQ and PQ Diamond Core, standard tube to a depth of ~650 m. ○ Diamond core holes drilled directly from surface or from bottom of RC pre-collars. Core orientation was provided by an ACT REFLEX (ACT II RD) tool.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	• Sample recoveries are estimated for RC by correlating sample heights in the plastic bag to estimate a recovery for each metre. • For diamond core the recovery is measured and recorded for every metre.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	• RC drill collars are sealed to prevent sample loss and holes are normally drilled dry to prevent poor recoveries and contamination caused by water ingress. Wet intervals are noted in case of unusual results. • For diamond core loss, core blocks have been inserted in sections where core loss has occurred. This has then been written on the block and recorded during the logging process and with detailed photography of dry and wet core.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• It has been demonstrated that no relationship exists between sample recovery and grade. No grade bias was observed with sample size variation.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support*	• All RC drillholes are logged on 1 m intervals and the following observations recorded: ○ Recovery, quality (i.e. degree of contamination), wet/dry,

Criteria	JORC Code explanation	Commentary
	appropriate Mineral Resource estimation, mining studies and metallurgical studies.	hardness, colour, grainsize, texture, mineralogy, lithology, structure type and intensity, pegmatite and vein type and %, lithium mineralogy and %, alteration assemblage, UV fluorescence. • Diamond core is logged in its entirety as per detailed geological description listed above. Geotechnical logging has been completed for the entire hole.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	• Logging is quantitative, based on visual field estimates. • Diamond core is photographed post metre marking, for the entire length of the hole, two trays at a time, wet and dry.
	The total length and percentage of the relevant intersections logged.	• Drillholes are logged in their entirety.
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.*	• The core has been cut in half and then quartered for sample purposes. Half core used for metallurgical studies with the remaining quarter stored as a library sample. • Density measurements have been taken on all quarter core samples using the Archimedes method.
	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	• RC samples are collected as rotary split samples. Samples are typically dry.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	• Sample preparation follows industry best practice standards and is conducted by internationally recognised laboratories; i.e. ○ Oven drying, jaw crushing and pulverising so that 80% passes -75 microns.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	• Duplicates and blanks submitted approximately every 1 in 20 samples. • Standards are submitted every 20 samples or at least once per hole. • Cross laboratory checks and blind checks have been used at a rate of 5%.
	Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.	• Measures taken include: ○ regular cleaning of cyclones and sampling equipment to prevent contamination ○ industry standard insertion of standards, blanks and duplicate samples. • Analysis of duplicates (field, laboratory and umpire) was completed and no issues identified with sampling representatively. • Analysis of results from blanks and standards indicates no issues with contamination (or sample mix-ups) and a high level of accuracy.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	• Sample size is considered appropriate and is in-line with industry standards.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	• Initial assaying (2017) completed by ALS Perth. Subsequent assaying (2018 onwards) completed by Nagrom laboratories Perth. • Both laboratories use industry standard procedures for rare metals such as Li and Ta. Analytical techniques are total.
	For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.	• None used.
	Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	• Duplicates and blanks submitted approximately every 20 samples. • Standards are submitted every 20 samples or at least once per hole. • Cross laboratory checks and blind checks have been used at a rate of 5%. • Analysis of reference blanks, standards and duplicate samples show the data to be of acceptable accuracy and

Criteria	JORC Code explanation	Commentary
		precision for the Mineral Resource estimation and classification applied.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	• Internal review by alternate company personnel.
	The use of twinned holes.	• 11 diamond holes have been drilled as twins or in close proximity to existing RC drillholes. Results compare well with the original RC drillholes.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	• Drilling and logging data are entered directly into Microsoft Excel spreadsheets onsite while drilling is ongoing. Data is then entered into Access Database and validated before being processed by industry standard software packages such as MapInfo and Micromine. • Representative chip samples are collected for later reference.
	Discuss any adjustment to assay data.	• Li% is converted to Li_2O% by multiplying by 2.15, Ta ppm is converted to Ta_2O_5 ppm by multiplying by 1.22.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	• All drill collars and geochemical samples are initially located using a handheld GPS. • Drill collars are subsequently surveyed accurately by a licensed surveyor using DGPS techniques. Eastings and northings are measured to within +/-2 cm while elevations are measured to within +/-10 cm. • All RC drillholes have been surveyed by a multi-shot digital downhole camera provided by the drilling contractor. • All diamond drillholes have been surveyed with a REFLEX EZI-SHOT (1001) magnetic single shot camera.
	Specification of the grid system used.	• GDA 94 Zone 51.
	Quality and adequacy of topographic control.	• Initial collar elevations are based on regional topographic dataset. • Drillhole collars are surveyed post drilling with DGPS (see above). • Further topographic data (20 cm contours) has been provided for the Project by a LIDAR flown by Fugro.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	• Drillhole spacing varies due to initial drill programs largely designed to test the down-dip potential of mineralised outcrops. The drill section spacing is 40 m to 100 m and on-section spacing is generally 30 m to 60 m.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	• The data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource estimation and classification applied.
	Whether sample compositing has been applied.	• None undertaken.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	• Drilling is typically oriented perpendicular to the interpreted strike of mineralisation.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• Drilling orientation intersects the mineralisation at appropriate angles so as to be mostly unbiased and suitable for resource estimation of the major pegmatite bodies.
Sample security	*The measures taken to ensure sample security.*	• Sample security is not considered to be a significant risk given the location of the deposit and bulk-nature of mineralisation. • Nevertheless, the use of recognised transport providers, sample dispatch procedures directly from the field to the laboratory, and the large number of samples are considered sufficient to ensure appropriate sample security. • Company geologist supervises all sampling and subsequent

Criteria	JORC Code explanation	Commentary
		storage in field. The same geologist arranges delivery of samples to Nagrom laboratories in Perth via courier.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	• Independent, expert competent person reviews have been completed by Ms. Wild of Wildfire Resources Pty Ltd and Mrs. Standing of Optiro Limited on the resource drilling, sampling protocols and data. • This included a laboratory visit to Nagrom by Ms. Wild. • Results indicate sampling and QAQC procedures are in-line with industry standards.

Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*	• The Kathleen Valley Project is located ~670 km NE of Perth and ~45 km NNW of Leinster in Western Australia. The Project comprises four granted mining leases - MLs 36/264, 265, 459, 460, one Exploration License (EL) - E36/879 and one mining lease application (MLA) – M36/696. • The granted mining leases (MLs) and rights to pegmatite hosted rare-metal mineralisation were acquired from Ramelius Resources Limited via a Sales Agreement completed in 2016. The MLs have been transferred to LRL (Aust) Pty Ltd, a wholly owned subsidiary of Liontown Resources Limited (Liontown). • Ramelius acquired 100% of the Kathleen Valley Project MLs in June 2014 from Xstrata Nickel Operations Pty Ltd (Xstrata). Xstrata retains rights to any nickel discovered over the land package via an Offtake and Clawback Agreement. • The Gold Rights were acquired from Ramelius via a Sales Agreement completed in June 2019. • LRL (Aust) Pty Ltd has assumed the following Agreement: ○ Bullion and Non-Bullion Royalty Agreement of a 2% Gross Production Royalty affecting M36/264-265 and 459-460. • The EL and MLA are in the name of Liontown Resources Limited with no third-party obligations apart from statutory requirements. • The tenements are covered by the Tjiwarl Determined Native Title Claim (WC11/7). Liontown has signed a number of agreements with the Tjiwarl which provide protocols for field activities by the Company. • LRL (Aust) Pty Ltd has received Section 18 consent to drill on MLs 36/264, 265, 459, 460.
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• All tenements are in good standing.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	• Multiple phases of exploration have previously been completed for gold and nickel. This has not been reviewed in detail due to Liontown's focus on rare metal pegmatites. • There has been limited sporadic prospecting for Li, Ta and Sn, principally by Jubilee Mines (subsequently taken over by Xstrata). Work comprised geological mapping, broad spaced soil sample lines and rock chip sampling of the pegmatites. Details of the methods and procedures used have not been documented. • There has been no previous drill testing of the Li and Ta

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>prospective pegmatites prior to Liontown acquiring the Project.</td></tr>
<tr><td>Geology</td><td>Deposit type, geological setting and style of mineralisation.</td><td>• The Project is located on the western edge of the Norseman-Wiluna Belt within the Archaean Yilgarn Craton.
• The Kathleen Valley Project contains a series of quartz-feldspar-muscovite-spodumene pegmatites hosted in mafic rocks related to the Kathleen Valley Gabbro or the Mt Goode Basalts.
• The pegmatites are LCT type lithium bearing-pegmatites.</td></tr>
<tr><td>Drillhole Information</td><td>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:
• easting and northing of the drillhole collar
• elevation or RL (elevation above sea level in metres) of the drillhole collar
• dip and azimuth of the hole
• down hole length and interception depth
• hole length.</td><td>• When reporting Exploration Results, see figures and appendices in accompanying report
• When reporting Mineral Resource Estimate, diagrams in the announcement show the location of and distribution of drill holes in relation to the resource.</td></tr>
<tr><td>Data aggregation methods</td><td>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</td><td>• Li_2O intercepts calculated using 0.4% cut off with a maximum 2m internal dilution typically applied except where drill hole logging (e.g. continuous pegmatite) and assays indicate wider dilution is warranted as overall grade is high enough to allow mining to take entire geological unit.
• Higher grade intervals calculated using 1.5% Li_2O cut off. No upper cuts applied.
• Ta_2O_5 values only quoted when lithium intersections reported.
• Metal equivalents have been used on the following basis:-
➢ Li (equiv %) = Tant grade % * ($/t Tantalum/ $/tonne Lithium) * (% Tantalum recovery / % Lithium recovery)
<table>
<tr><th colspan="3">Inputs</th><th colspan="2">Outputs</th></tr>
<tr><td>Tantalite (Ta_2O_5) $/lb</i></td><td>69.9 (B2)</td><td>US$</td><td></td><td></td></tr>
<tr><td>Spodumene $/tonne</i></td><td>739 (B3)</td><td>US$</td><td></td><td></td></tr>
<tr><td>Tantalite recovery</td><td>50% (B4)</td><td>Per LTR testwork</td><td>Ta_2O_5 LI2O Equiv=</td><td>0.107 (F4)</td></tr>
<tr><td>Spodumene Recovery</td><td>76% (B5)</td><td>Per LTR testwork</td><td></td><td></td></tr>
<tr><td>Ta_2O_5 Grade</td><td>30% (B6)</td><td></td><td>Equiv Li2O grade =</td><td>1.5</td></tr>
<tr><td>Li_2O Grade</td><td>6% (B7)</td><td></td><td>(Li_2O% +Ta_2O5)</td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Grade Ta_2O_5 in resource</td><td>130ppm (B9)</td><td>(per resource)</td><td></td><td></td></tr>
<tr><td>Grade Li_2O in resource</td><td>1.35% (B10)</td><td>(per resource)</td><td></td><td></td></tr>
</table>
As an equation:-
➢ F4=B9*((B2)/(B3/B7))*(B4/B5)*2204*0.0001
➢ Equiv Li_2O grade (Li_2O% + Ta_2O5%) = F4/(100+B10)</td></tr>
<tr><td>Relationship between mineralisation widths and intercept lengths</td><td>If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.
If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</td><td>• Drillholes intersected mineralisation at near perpendicular to the dip orientation of the host lithologies and mineralisation.
• Estimates of true widths provided at end of Appendices attached to ASX announcements which list drill hole statistics</td></tr>
<tr><td>Diagrams</td><td>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view</td><td>• Relevant diagrams have been included within the announcement.</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
	of drillhole collar locations and appropriate sectional views.	
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• All recent exploration results reported and tabulated.
Other substantive exploration data	*Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• Where relevant, this information has been included or referred to elsewhere in this Table.
Further work	*The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).*	• 2020/ 21 Definitive Feasibility Study (DFS).

Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	*Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*	• Drillhole data was extracted directly from the Company's drillhole database, which includes internal data validation protocols. • Data was further validated by Optiro upon receipt, and prior to use in the estimation.
	Data validation procedures used.	• Validation of the data was confirmed using mining software (Datamine) validation protocols, and visually in plan and section views.
Site visits	*Comment on any site visits undertaken by the Competent Persons and the outcome of those visits.*	• Liontown personnel Mr. Richards and Mr. Day have visited the site on numerous occasions to supervise the drilling programs. • Ms. Wild (Principal Geologist and Director of Wildfire Resources Pty Ltd) and Mrs. Standing (Optiro Pty Ltd) have visited the site on separate occasions during resource definition drilling programs to review sampling procedures. • Ms. Wild reported that, in general, site practices were quite good, core quality was excellent and RC sample quality was moderate. • Mrs. Standing has confirmed site practices are appropriate and satisfactory for the preparation of a Mineral Resource Estimate.
Geological interpretation	*Confidence in (or conversely, the uncertainty of the geological interpretation of the mineral deposit.*	• The confidence in the geological interpretation is reflected by the assigned resource classification.
	Nature of the data used and of any assumptions made.	• Both assay and geological data were used for the mineralisation interpretation. • The lithium mineralisation is defined by a nominal 0.4% Li_2O cut-off grade. • Continuity between drillholes and sections is good.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	• No alternative interpretations were considered. • Any alternative interpretations are unlikely to significantly affect the Mineral Resource estimate.
	The use of geology in guiding and controlling Mineral Resource estimation.	• Geological logging (including spodumene crystal orientation from the diamond core) has been used for interpretation of the pegmatites.
	The factors affecting continuity both of grade and geology.	• The mineralisation is contained within pegmatite veins that are readily distinguished from the surrounding rocks. • Sectional interpretation and wireframing indicates good continuity of the interpreted pegmatite veins both on-

Criteria	JORC Code explanation	Commentary
		section and between sections. • The confidence in the grade and geological continuity is reflected by the assigned resource classification.
Dimensions	*The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• Twenty lithium mineralised pegmatites have been identified at the Kathleen Valley Project which extend from surface to a depth of 640 m. • At Mt Mann, two steeply-dipping (-70° west) pegmatites have been drilled over a strike length of 1,200 m and to a vertical depth of around 300m to 400 m. The two pegmatites are up to 35 m thick and have average thicknesses of 9 m and 11 m. • At Kathleen's Corner, 18 sub-horizontal pegmatites have been drilled over an area of 1,800 m by 1,300 m. These pegmatites outcrop in the northeast and are up to 40 m thick with an average thickness of 8 m. The pegmatites coalesce and merge with the Mt Mann pegmatites at approximately 300 m to 400 m below surface to form a single, thick (35 m to 75 m) mineralised body that extends for a further 600 m to 700 m down-dip.
Estimation and modelling techniques	*The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	• Data analysis and estimation was undertaken using Snowden Supervisor and Datamine software. • Lithium oxide (Li_2O) % and tantalum pentoxide (Ta_2O_5) ppm block grades were estimated using ordinary kriging (OK). Optiro considers OK to be an appropriate estimation technique for this type of mineralisation. • Caesium (Cs), potassium (K), niobium (Nb), rubidium (Rb), phosphorus (P) and tin (Sn) block grades were estimated using ordinary kriging (OK). These additional variables were included for analysis of the mineralisation and fractionation trends of the pegmatite, from the K/Cs, K/Rb and Nb/Ta ratios. • The nominal spacing of the drillholes is 50 m by 50 m. The along section spacing ranges from 30 m to 100 m and on-section spacing ranges from generally 30 m to 60 m. • Almost 90% of the assay data within the lithium mineralised pegmatites is from samples of 1 m intervals, 1.5% is from sample of >1 m (to a maximum of 2 m) and almost 9% is from intervals of less than 1 m. The data was composited to 1 m downhole intervals for analysis and grade estimation. • Variogram analysis was undertaken to determine the kriging estimation parameters used for OK estimation of Li_2O and Ta_2O_5. • Li_2O mineralisation continuity was interpreted from variogram analyses to have an along strike range of 145 m to 230 m and a down-dip (or across strike) range of 110 m to 230 m. • Ta_2O_5 mineralisation continuity was interpreted from variogram analyses to have an along strike range of 58 m to 150 m and a down-dip (or across strike) range of 47 m to 170 m. • A maximum extrapolation distance of 50 m was applied along strike and down dip extrapolation was generally 30 m. • Kriging neighbourhood analysis was performed in order to determine the block size, sample numbers and discretisation levels. • Three estimation passes were used for Li_2O and Ta_2O_5; the first search was based upon the variogram ranges; the second search was two times the initial search and the third search was up to four times the second search and the second and third searches had reduced sample numbers required for estimation. • Within the lithium mineralised pegmatites almost 84% of the total Li_2O block grades were estimated in the first search

Criteria	JORC Code explanation	Commentary
		pass, 14% within the second search pass and 2% estimated in the third search pass. • Within the pegmatites 75% of the Ta_2O_5 block grades were estimated in the first pass, 24% in the second pass and 1% in the third pass. • The estimated block model grades were visually validated against the input drillhole data and comparisons were carried out against the declustered drillhole data and by northing, easting and elevation slice.
	Description of how the geological interpretation was used to control the resource estimates.	• Geological interpretations were completed on sections which were wireframed to create a 3D interpretation of the mineralised pegmatites. • The interpretation of mineralisation was based on geological logging and Li_2O content. A nominal grade of 0.4% Li_2O was used to define the mineralisation within the interpreted pegmatites. • The mineralised domain is considered geologically robust in the context of the resource classification applied to the estimate.
	Discussion of basis for using or not using grade cutting or capping.	• Li_2O and Ta_2O_5 have low coefficients of variation (CV). Some higher-grade outliers were noted and the Ta_2O_5 grades were capped (top-cut). • Cs, K, Rb, P and Sn have low coefficients of variation and Nb has a moderate coefficient of variation (1.4). A small number of high-grade outliers are present in the Cs, Nb, Rb, P and Sn data and grades were capped. • The top-cut level was determined using a combination of top-cut analysis tools, including grade histograms, log probability plots and the CV.
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	• The Mineral Resource was first estimated for the Kathleen's Valley Lithium Project in August 2018. The Mineral Resource, comprising 21 Mt at an average grade of 1.4% Li_2O and 170 ppm Ta_2O_5, was reported above a cut-off grade of 0.5% Li_2O • Additional drilling was undertaken during 2019 and the resource was in July 2019. The July 2019 Mineral Resource, comprising 74.9 Mt at an average grade of 1.3% Li_2O and 140 ppm Ta_2O_5, was reported above a Li_2O cut-off grade of 0.5% for open pit potential (above 200 mRL) and 0.7% for underground potential (below 200 mRL). • Additional drilling was undertaken in 2019 and 2020 and the resource was in February 2020. The February 2020 Mineral Resource, comprising 139 Mt at an average grade of 1.33% Li_2O and 140 ppm Ta_2O_5, was reported above a cut-off grade of 0.55% Li_2O. • Since the February 2020 Mineral Resource was estimated data from an additional 16 RC holes (for a total of 6,616 m) and 28 DD holes (for a total of 9,682 m) have been incorporated into the resource database. • The resource tonnage has increased from 139 Mt in February 2020 to 156 Mt in May 2020, while the average grade has increased from 1.33% Li_2O to 1.35% Li_2O. The Ta_2O_5 grade has decreased from 140 ppm to 130 ppm. • No production has occurred.
	The assumptions made regarding recovery of by-products.	• An Investigation of tantalum recovery by magnetic separation and gravity upgrade to produce a tantalum by-product was undertaken in 2020. Using stage recoveries, the overall Ta_2O_5 reporting to concentrate has been estimated as 56% to a grade of 15.3% based on test work. A mineralogical review indicates potential to produce a 30% Ta_2O_5 concentrate at an offsite upgrade facility. • Further work on tantalum recovery is anticipated as part of the planned DFS.

Criteria	JORC Code explanation	Commentary

	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	• Deleterious elements were not included in the Mineral Resource estimate.
		• Liontown does not routinely assay drill samples for iron, the main deleterious element, due to:
		  ○ contamination from drill bits and rods during drilling operations; and
		  ○ contamination during sample preparation from crushing and milling equipment.
		  ○ Assaying of blank, silica only material inserted as part of QAQC protocols indicates that contamination from sample preparation adds 0.1% to 1% Fe_2O_3 to the sample.
		  ○ Analysis of data indicates the iron content in the pegmatites averages <0.5%.
		• Sulphur assays have been determined for more than 27,000 host rock samples – results indicate that acid mine drainage will not be a significant environmental factor.

	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	• Grade estimation was into parent blocks of 10 mE by 10 mN by 3.0 mRL. • Orelogy Consulting Pty Ltd (who are undertaking mining studies for Liontown) advised that mining is likely to be undertaken using a block size of 10 mE by 10 mN on 3 m benches • This block dimension was confirmed by kriging neighbourhood analysis and reflects the variability of the deposit as defined by the current drill spacing and mineralisation continuity determined from variogram analysis. • Sub-cells to a minimum dimension of 2.5 mE by 2.5 mN by 0.5 mRL were used to represent volume.
	Any assumptions behind modelling of selective mining units.	• Selective mining units were not modelled.
	Any assumptions about correlation between variables.	• Li_2O and Ta_2O_5 are not correlated. Both Li_2O and Ta_2O_5 were estimated independently. • Correlation coefficients for Cs, K, Nb, Rb, P and Sn within the pegmatites indicate that they are not correlated, except for K and Rb which have a high positive correlation (0.87). All variables were analysed and estimated independently.
	The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.	• No production has taken place and thus no reconciliation data is available.
Moisture	*Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages have been estimated on a dry basis.
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	• A cut-off grade of 0.55% Li_2O has been selected to represent the portion of the resource that may be considered for eventual economic extraction by a combination of open pit and underground mining methods. • This cut-off grade has been selected by Liontown Resources in consultation with Optiro based on current experience and in-line with cut-off grades applied for reporting of Mineral Resources of lithium hosted in spodumene bearing pegmatites elsewhere in Australia.
Mining factors or assumptions	*Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when*	• The mineralisation at Kathleen Valley extends from surface and would be suitable for open pit mining. High grade mineralisation is present at depth and would be suitable for underground mining. • The Kathleen Valley Lithium Project is located in a well-established mining region in close proximity to existing transport, energy and camp infrastructure. • On the basis of these assumptions, it is considered that there are no mining factors which are likely to affect the

Criteria	JORC Code explanation	Commentary
	estimating Mineral Resources may not always be rigorous.	assumption that the deposit has reasonable prospects for eventual economic extraction.
Metallurgical factors or assumptions	*The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous.*	2019 Pre-feasibility study • A Pre-feasibility level test work program was conducted at ALS in Perth to provide sufficient test data to develop the process design criteria for the Project. A total of 81 samples from across the three main areas (Mt Mann, Kathleen Corner and Kathleen Valley North) were selected for the Pre-feasibility study. A master composite was created for testing from these samples which are representative of the whole deposit and include a range of grades and depths. No variability test work has been undertaken at this time. • Key aspects of the metallurgical test work included the following: o head assay o SMC testing on five comminution samples o size by size assay o crushing and wet screening at three sizes o heavy liquid separation (HLS) at three crush and screen sizes o Dense media separation (DMS) of a bulk sample o bond ball work index on DMS middling's o magnetic separation to remove ferrous materials o rougher flotation to examine collector choice, residence time, desliming and conditioning o cleaner flotation to examine residence time and number of stages o thickening of flotation and slime tailings (in progress) o filtration of concentrate o rheology of tailings. • Key results from the test work indicated that: o Samples were moderately competent with comminution results similar to other pegmatites. o Size by size and wet screening data indicated that there was a trade off in crush size and screen size with liberation. A finer crush size increased liberation in the HLS stage but increased fines production. A crush size of 6 mm was selected. o DMS testing showed a saleable concentrate with a grade of more than 6% Li2O could be produced together with a low-grade coarse tail. o Grind optimisation of the flotation feed indicated a primary grind of 125 microns gave the best recovery and was selected for subsequent test work. o Rougher flotation test work indicated that a modified oleic acid collector gave the best flotation performance. o Batch cleaner flotation results indicated a concentrate with a grade of more than 6% Li2O could be produced together. o Concentrate filtration test work, currently being finalised, has indicated that vacuum filtration will be adequate for dewatering. o Rheology test work indicated the tailings had low viscosity at the proposed tailings density. • The metallurgical process consisted of three-stage comminution including high-pressure grinding rolls (HPGR), Dense Medium Separation (DMS) followed by flotation. • The feed composite used in the PFS test work consisted of diamond drill core and was compiled based on the mine plan for the study. The feed composite was deliberately diluted/blended with 10% iron-rich gabbro which hosts the mineralised pegmatites. • The PFS test work did not include any iron removal ahead of

Criteria	JORC Code explanation	Commentary
		DMS separation and only low intensity magnetic separation or iron removal ahead of flotation. A combined concentrate with a grade of 6.1% Li2O containing 1.42% Fe2O3 was produced from the PFS composite sample. **2020 Metallurgical Testwork** The 2019 testwork program was focused on developing preliminary design data for a flowsheet incorporating Dense Media Separation (DMS) of a coarse feed followed by flotation of the DMS middling's and fines. Several areas were further investigated post the PFS program in 2020 and included: • The impact of change in lithium head grade on overall recovery. • Further investigation of Whole Ore Float (WOF) • Investigation of tantalum recovery by magnetic separation and gravity upgrade to produce a tantalum by-product. The 2020 program investigated these areas as part of the 2020 pre-feasibility study. The source of the grade variation samples were the intercepts remaining from the original drill program in 2019. The drill hole intercepts were sorted by lithium grade (based on geological assays) and grouped into the following grade targets: 1.0%, 1.1% 1.2%, 1.3%, 1.4%, 1.7% 2.0%. WOF was tested on all the grade samples. The same flotation regime was used as tested in the PFS at a grind size P80 of 125 µm. The DMS-Flotation route was tested for all the grade samples under the same conditions as for the 2019 PFS. Outcomes:- ➢ Higher grade material for both processing options has a higher recovery which supports the strategy of targeting high grade zones using underground mining and optimised open-pit shells; ➢ WOF has the potential to produce a higher grade SC6.0 and improved performance with a greater degree of control; Following the outcomes of the testwork a decision was made to base the 2020 PFS on a WOF flowsheet per ASX release dated 9th June 2020 An Investigation of tantalum recovery by magnetic separation and gravity upgrade to produce a tantalum by-product was undertaken. A sample of PFS composite was used for the testwork as it provided a control against other treatment routes already tested. The sample was ground to a P80 passing size of 125 µm like all the flotation feed samples. The ground sample was then treated through a laboratory WHIMS separator followed by gravity separation. Following the gravity concentration of the primary magnetic separation magnetics, the remaining tails was subjected to sequential magnetic separation. Outcomes:- ➢ Using stage recoveries, the overall Ta_2O_5 reporting to concentrate has been estimated as 56% to a grade of 15.3% based on test work. A mineralogical review indicates

Criteria	JORC Code explanation	Commentary
		potential to produce a 25-30% Ta2O5 concentrate at an offsite upgrade facility; and ➢ Magnetic and gravity separation used to recover tantalum also reduces iron levels in the potential flotation feed by up to 55%. As both the WOF and Ta_2O_5 flowsheets have considerable scope for further optimisation, this will form part of the DFS upgrade test work program to be completed in 2021. Testwork remains ongoing as part of the DFS
Environmental factors or assumptions	*Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation.*	• Baseline flora and fauna studies have been completed and it is considered unlikely, given current knowledge that impacts on conservation significant flora, fauna and ecological communities will result from development of the Project. • Further baseline studies are scheduled during the DFS
Bulk density	*Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• Bulk density was measured for 3,873 core samples (including 3,083 samples of pegmatite) from diamond holes using Archimedes measurements. • The density data overall ranges from 1.74 to 4.38 t/m^3 and the density data within the pegmatites has a range of 1.74 to 4.14 t/m^3. Outliers have been screened out of average SG applied to resource model by Optiro. • A bulk density of 2.71 t/m^3 was applied to the pegmatite with spodumene mineralisation within the oxidised horizons and a value of 2.74 t/m^3 was applied to the fresh pegmatite with spodumene mineralisation for tonnage estimation. • A lower density, of 2.51 t/m^3, was applied for areas of fresh pegmatite that was interpreted to contain petalite mineralisation. • For the pegmatite material that is external to the lithium mineralisation, a density of 2.64 t/m^3 was applied within the oxidised horizons and 2.66 t/m^3 was applied to the fresh pegmatite. • Most (99.5%) of the mineralised pegmatite is within the fresh material.
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	• Mineral Resources have been classified as Measured, Indicated or Inferred. • In general, the pegmatites that have been tested by the 50 m by 50 m spaced drillholes have high confidence in the geological interpretation and, having higher estimation quality, were classified as Measured. • Areas where the drill spacing is up to 60 m by 100 m that have good confidence in the geological interpretation and where the majority of block grades were estimated within the first search (but where the estimation quality is lower than the Measured areas) were classified as Indicated. • Areas where the drill spacing is up to 60 m by 100 m, that have good confidence in the geological interpretation and where the majority of block grades were estimated in the second and third search passes or in areas of grade extrapolation have been classified as Inferred.
	Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).	• The Mineral Resource has been classified on the basis of confidence in geological and grade continuity and taking into account the quality of the sampling and assay data, data density and confidence in estimation of Li_2O and Ta_2O_5 content (from the kriging metrics).

Criteria	JORC Code explanation	Commentary
	Whether the result appropriately reflects the Competent Person's view of the deposit	• The assigned classification of Measured, Indicated and Inferred reflects the Competent Person's assessment of the accuracy and confidence levels in the Mineral Resource estimate.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	• The Mineral Resource has been reviewed internally as part of normal validation processes by Optiro. • No external audit or review of the current Mineral Resource has been conducted.
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person.*	• The assigned classification of Measured, Indicated and Inferred reflects the Competent Person's assessment of the accuracy and confidence levels in the Mineral Resource estimate.
	The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.	• The confidence levels reflect potential production tonnages on a quarterly basis, assuming open pit mining.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• No production has occurred from the deposit.

Section 4 -Estimation and Reporting of Ore

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	The mineral Resource Estimate used as a basis for the conversion to the Ore Reserve was provided on the 11th May 2020 with Christine Standing, employee of Optiro, as the Competent Person. The total Mineral Resource of 156Mt at 1.4% Li_2O includes: - • 20 Mt of Measured at 1.3% Li_2O and 140ppm Ta_2O_5, • 105 Mt of Indicated at 1.4% Li_2O and 130ppm Ta_2O_5 and; • 32 Mt of Inferred at 1.3% Li_2O and 110ppm Ta_2O_5. The Mineral Resources are reported inclusive of the Ore Reserve.	As for Open Pit.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	The Open Pit Competent Person, Mr Jake Fitzsimons, visited the proposed Project site on 28th September 2019. The following observations were made: • The site is accessed directly from the Goldfields Highway. • The site is dominated by Mt Mann which rises approximately 50 m above the surrounding terrain, and Jones Creek dry watercourse which passes through the northern half of the mining area flowing from east to west. • Existing access between the North and South deposits is across Jones Creek via a 10 m wide concrete ford with opportunity to widen to 12-15 m without disturbing any trees. • Pegmatite outcrop exists across the site. • Drilling core examined on site was hard and very competent in both the gabbro hanging wall rock and pegmatite ore zones.	The underground Competent Person, Mr Ben Wilson has not visited the site, based on the visit by Mr Jake Fitzsimons detailed above who is a coworker at Orelogy. The data collected on the site visit by Mr O'Bryan & Mr Fitzsimons has been shared with Mr Wilson. Peter O'Bryan of Peter O'Bryan and Associates, visited the site on 28th September 2019.
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will*	An initial pre-feasibility study was completed in 2019 and was updated in 2020, based on the provision of an updated Mineral Resource in May 2020. The 2020 PFS forms the basis of most of the assumptions for reporting an Ore Reserve. The 2020 PFS report was compiled by Lycopodium on behalf of Liontown with input from: - • Optiro (geology) • Orelogy Consulting (mine planning)	The 2020 PFS forms the basis of the assumptions for reporting an Ore Reserve.

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
	have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	• Lycopodium (metallurgical testwork, process design and non-process infrastructure) • MBS Environmental (environmental) • Knight Piesold (tailings storage, hydrology and hydrogeology) • Liontown (financial analysis) Orelogy undertook the mining component of this PFS, and in the course of the study, produced optimisations, designs, schedules and a cost model. Modifying factors considered in the open pit mine planning process included mining dilution and ore loss, slope design criteria and practical mining considerations. The activities and findings of all other disciplines are summarized in the 2020 PFS document, including details of other modifying factors such as processing recoveries, costs, revenue factors, environmental and heritage considerations, etc. Overall, the result of the open pit and underground mine plans demonstrate that the Kathleen Valley Lithium Project is technically achievable and economically viable at the forecast spodumene price.	Modifying factors considered in the underground mine planning process included mining method selection, minimum mining width, mining dilution and ore loss, geotechnical stope stability criteria, pillar and filling requirements, and practical mining considerations, for example, materials handling, ventilation and dewatering.
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	The Ore Reserves are reported at a 0.7 - 0.75% Li_2O cut-off grade depending on the timing with 0.75% used in the early open pit mining phase and 0.7% used for the final open pit phase. This cut-off is above the theoretical economic cut-off of 0.35% Li_2O and has been adopted as the grade tonnage curve shows very little material below this grade.	The Ore Reserves are reported as material contained within stope designs done at cut off grades of 1.2 & 1.5% Li_2O cut-off grade based on flat or vertical zones within the deposit. This cut-off has been adopted in the context of the prevailing market conditions and surrounding open pit Ore Reserve. The cut-off is above the theoretical underground economic cut-off of 0.95% Li_2O as the grade tonnage curve shows very little material below this grade. A development cut-off grade of 0.8% Li_2O has been used. This cut-off grade represents the grade at which additional haulage and treatment costs are exceeded by the value of the ore recovered during processing.

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary – Open Pit</th><th>Commentary - Underground</th></tr>
<tr>
<td>Mining factors or assumptions</td>
<td>

The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).
The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.
The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.
The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).
The mining dilution factors used.
The mining recovery factors used.
Any minimum mining widths used.
The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.
The infrastructure requirements of the selected mining methods.

</td>
<td>
The open pit and underground Ore Reserves are underpinned by a mine plans that deliver pegmatites for processing on site to produce SC6.0 for export via the Geraldton port.

The mine planning activities included open pit and underground optimisation, final and interim stage designs, mine scheduling and cost estimation.

The mine plans indicated that the combined Ore Reserve derived from the Mineral Resource Estimate can easily meet the processing feed requirements for the 2.0 Mtpa production target with a mine life of approximately 40 years.

A conventional open pit mining method using excavators and rigid dump trucks was selected as the preferred mining method. Experienced mining contractors will undertake all aspects of the mining operation. Supervision, grade control and planning will be undertaken by an Owner's team. All material will be blasted. Bulk waste will be blasted on 12 m benches and the ore zones will be blasted on 6 m benches and mined in two or three flitches for greater selectivity (depending on the point in the mine schedule) with ore delivered to blend fingers on the ROM pad.

Open pit geotechnical guidance was provided by Peter O'Bryan and Assoc. with an allowance for ramps on the footwall and geotechnical berms on the hanging walls.

Oxidation is shallow from 5-20 m in depth with slope angles of ~50° on the hanging wall and ~37 ° on the footwall. Overall slope angles in fresh material were ~57 ° on the hanging wall and ~45 ° on the footwall. As the Kathleen Valley orebody dips at substantially less than wall angle constraints, the pit shells are optimally shallower than these angles to the south-west.
An allowance for Grade Control drilling was made based on a dedicated RC drilling program at 24 m vertical intervals.

The May 2020 Datamine Mineral Resource model (kv_or_apr2020.dm) was used as a basis for the conversion to an Ore Reserve.
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<td>
As for Open Pit.

Detailed mine designs were undertaken in the Deswik.CAD mining software package, incorporating all available geotechnical and practical considerations.

The Kathleen Valley gabbros and spodumene-bearing pegmatites are massive, and rock mass quality is consistently very good, allowing the consideration of mass mining methods in the steeper and wider orebodies. Underground operations are expected to be carried out in essentially dry ground. The deepest mining planned is at ~440m below surface.

The underground mining area consists of two main mining areas, the Mt Mann steeply dipping ore domains, located underneath and to the south-west of the open pit, and the North-West Lodes, flat dipping overlaid lodes ("the Flats"), located to the north-west of the open pit.

Due to the significant variation in dip and orebody width across the mining areas, three different mining methods have been selected. The steeply dipping Mt Mann orebodies will be mined by transverse retreat open stoping, with Cemented Paste Backfill (CPB). In the North-West Lodes area, where the orebody width is greater than 10m, longitudinal retreat open stoping with CPB will be employed. In narrower areas of the North-West Lodes, Room and Pillar Mining, without filling, will be employed.

Within these mining methods, several different variations will be employed, in order to meet geotechnical stability guidelines while maximising productivity. These variations are summarised in the table below:
<table>
<tr><th>Mining Area</th><th>Orebody Dip</th><th>Mining Method</th><th>Orebody Width</th><th>Stope Length x Width</th><th>Stope Height</th><th>Pillar Dimensions</th></tr>
<tr><td rowspan="4">Mt Mann</td><td rowspan="4">Steep to moderately steep</td><td rowspan="4">Transverse Retreat Open Stoping</td><td><25m</td><td>30m x 30m</td><td>Single lift 30m</td><td rowspan="5">Stopes to be filled to avoid requirement for pillars</td></tr>
<tr><td><25m</td><td>30m x 30m</td><td>Single lift 30m</td></tr>
<tr><td>>25m</td><td>30m x 45m</td><td>Double lift 60m</td></tr>
<tr><td>>25m</td><td>30m x 45m</td><td>Double lift 60m</td></tr>
<tr><td rowspan="3">North-West Lodes</td><td rowspan="3">Shallow</td><td>Longitudinal Retreat Open Stoping</td><td>10m-30m</td><td>20m x 25m</td><td>10m - 30m</td></tr>
<tr><td rowspan="2">Room and Pillar</td><td>5m-7m</td><td>20m x 25m</td><td>7m</td><td>5m x 6.25m</td></tr>
<tr><td>7m-10m</td><td>20m x 25m</td><td>10m</td><td>6m x 7m</td></tr>
</table>
</td>
</tr>
</table>

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
		To establish mineable quantities, a number of open pit optimisations were completed on the Resource model after applying ore loss and dilution to the edges of the mineralisation. The base case optimisations considered Measured and Indicated materials only, excluded the Jones Creek watercourse and applied pricing, recoveries and other modifying factors. All other optimizations include Measured, Indicated and Inferred after it was shown that the Inferred material had no impact on shell size. The shell selection was based on the business objectives of maximising the discounted cash flow whilst providing sufficient mine life. Options investigated evolved as both Underground and open pit options were simultaneously progressed, with the approach by *Orelogy* as follows:- • Development of an optimised open pit schedule at a 0.75% Li_2O Cut-off grade for Stages 1 and 2 for the early mining phase and 0.7% Li_2O Cut-off grade for the final three stages. The open pit schedule was manipulated by delaying stages or stretching over longer time periods. • Assessment of flat and vertical Underground ore bodies separately at cut off grades of 0.95%, 1.2% and 1.5% Li_2O respectively and sequenced Underground ore in conjunction with the open pit schedule to maximise project returns Schedules from Underground and open pit were combined to produce an optimised overall project mine plan	These mining methods are considered appropriate, as they provide a good balance of economic recovery of the resource, cost minimisation, and safety. The Mt Mann mining sequence is bottom up within each stoping panel, generally four stopes high. The overall sequence is top down. Stopes will be mined in a primary-secondary sequence. The lower 15m of the bottom stope of each panel will be filled with a higher strength CPB (8% rather than the standard 4%), to maintain geotechnical stability when the lower panel is mined underneath. Stopes will be mined from footwall to hangingwall, to avoid undercutting previously filled CPB stopes. Where practicable, in the secondary stopes, rock filling has been utilized to minimize waste haulage to surface. In the North-West Lodes, the mining sequence for the open stopes is similarly bottom up, with CPB used to maintain geotechnical stability. The Room and Pillar stopes will also be mined bottom up, but will not be filled. The use of fill in the open stopes avoids the need for pillars between stopes to maintain stope stability. Given the width of the orebody, appropriately sized pillars would significantly reduce the extraction percentage, and hence the economic viability of the orebodies. Stopes are sequenced to manage the open voids underground and maintain geotechnical stability. Access to the mine, for personnel, equipment and ore haulage, will be via a main surface portal to the south-west of the pit, and an in-pit portal, as the pit progresses. Open stope designs were based upon a design Hydraulic Radius of 10.0m, derived using empirical methods by Peter O'Bryan, of Peter O'Bryan and Associates. Sub-level intervals and hence stope heights were selected to maintain stable hydraulic radii, balanced with what would be achievable by production drilling with an acceptable level of accuracy. Room and pillar designs were also derived using empirical methods by Peter O'Bryan, of Peter O'Bryan and Associates. Two different pillar sizes were recommended based on orebody width, as detailed in the previous table.

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
		For the open pit, the model was diluted in a two-step process: • Regularisation to a SMU size of 5 m x 5 m x 2 m for the material within the 0.6 revenue factor shell for phase 1 mining • Regularisation to a SMU size of 5m x 5m x 3m for the material outside the 0.6 revenue factor shell for phase 2 mining. • Secondary edge dilution was applied to the edges of the ore zones to account for the steeply dipping Mt Mann mineralisation. The resulting mining model reported: • 2.6% dilution and 6% ore loss for the 2 m flitch height in Stage 1 and Stage 2 at 0.75% Li_2O cut-off grade. • 3.2% dilution and 6% ore loss for the 3 m flitch height in the other 3 stages at 0.7% cut-off grade. No additional mining recovery factors were applied. The final pit and stages were designed with 40 m minimum mining width between cutbacks and 25 m at the base of the pit. Only Measured and Indicated material were used in reporting of Ore Reserves. Inferred material was treated as waste in the Stage 1 and 2 pits. The LOM schedule included a total of 840kt of Inferred material with the later pit stages.	Mining dilution has been modelled with design dilution, CPB dilution and development dilution. Design dilution: During the generation of stope shapes, a dilution skin of 0.5m was added to the footwall and hanging-wall of all stopes. This was applied geometrically. CPB dilution: Mining of secondary stopes underneath and next to CPB will likely result in some dilution of ore. This has been estimated at 0.3m from the walls of the stope and 0.5m from the back. This volume of paste was added to the stope tonnage on a per-stope basis at zero grade (pure dilution). Development dilution: similarly, where part of an ore development heading protrudes beyond the orebody contact, the ore grade of the volume mine is lowered accordingly. No additional tonnage allowance for overbreak has been made. Indicative ring designs were undertaken for representative stopes from each mine area, and the three dilution factors estimated based on the geometry of the design. The capacity of the paste plant is limited by the volume of tailings produced by the processing plant. Mining has been scheduled to ensure the maximum filling capacity of 584,000m^3 per year is not exceeded. Mining recoveries of 95% were applied to all open stopes, and 90% for all room and pillar stopes, to account for ore within the stope shape that could not be extracted. This occurs primarily due to geometry issues of boggers navigating around 90-degree corners and being unable to fully reclaim all blasted ground. Due to the requirement to leave behind ore pillars in the Room and Pillar stopes, mining recovery is further reduced from operational mining recovery, to 84% for the 5m-7m wide stopes, and 82% for the 7m-10m wide stopes. Mining recoveries of 100% were applied to all development, with the expectation that development headings could be bogged clean. The minimum mining width used depended on the mining area and method. These widths are shown in the Mining Method table above. However, the absolute minimum mining width for the

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
			project is 5 m, which comprises a 4 m orebody width and 0.5 m of dilution in both hanging-wall and footwall. Inferred material was optimised, designed and scheduled. Stopes have been classified on a dominant resource category basis, where the dominant resource category for the stope is reported as the resource category for the entire stope. Proven and Probable Reserve categories have an average of 3% Inferred material and 2% waste material that is included in the stope shapes. This is judged reasonable dilution of the Ore Reserve. Stopes that have a dominant resource category of Inferred are not reported as part of the Ore Reserves, and similarly have an average of 5% Indicated Resources and 5% waste material contained within the Inferred stope shapes. The base case schedule for the PFS includes Inferred material as well and Measured and Indicated material. However, this Inferred material has been scheduled as much as possible at the end of the underground mine life, and as such does not have a material effect on the technical and economic viability of the project. The majority of the Inferred material has been included in the base case schedule on the basis that it is contiguous with the surrounding Indicated mineralisation, and forms part of the overall extraction sequence for that area of the deposit.
		External infrastructure requirements for the project are minimised due to the project's location in the Goldfields area of Western Australia. The Goldfields highway and 132 kV TransAlta overhead electrical power line are located within 1 km of the site. A borehole has been proposed for water supply, and typical site facilities such as camp accommodation and facilities, sewerage plant, processing plant, maintenance facilities, and tailings storage will be required. The underground access portal will be constructed in a box-cut adjacent to the plant ROM pad. Other surface facilities will include a paste fill plant, power/water reticulation, ventilation fans to support underground mining activities, a ROM pad, haul roads, areas for Contractor built/supplied workshops and other Contractor facilities. Lithium concentrate can be transported via the Goldfields Highway to the Port of Geraldton, for shipment overseas.	As for Open Pit.

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* • *Whether the metallurgical process is well-tested technology or novel in nature.* • *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* • *Any assumptions or allowances made for deleterious elements.* • *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole. For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?* *Environmental* • *The status of studies of potential environmental impacts*	Two distinct phases of testwork were conducted for the Kathleen Valley Project in both 2019 and 2020. The Initial work resulted in the development of a DMS-Flotation flowsheet which was revised in June 2020 to a Whole Ore Flotation flowsheet. In 2019 a total of 81 intercepts from across the three main areas (Mount Mann, Kathleen Corner and North) were selected for the pre-feasibility study. These samples include a spatial spread, grade range and depth. A master composite was created for testing. A grade- recovery relationship was defined from testwork utilizing a WOF flowsheet. During 2020 further work was undertaken in order: • To develop and test a WOF flowsheet; • To establish grade-recovery curves for both DMS and WOF flowsheets at a range of composite grades to enable direct comparisons between each; and • Test and develop of preliminary flowsheets to support the extraction of tantalum. Following the outcomes of the testwork a decision was made to base the 2020 PFS on a WOF flowsheet per ASX release dated 9th June 2020 The process has been tested at pre-feasibility level in the laboratory and further work is ongoing. Refer to main body of announcement and JORC table Section3. Geochemical characterisation of waste rock has been completed with representative samples (70 fresh rock, 24 oxide and transitional waste and 4 low grade ore samples) assessed for potential for saline, neutral or acid and metalliferous drainage (AMD) as well as other general geochemical properties. Several minor pockets of potentially acid forming (PAF) material was identified to be present in the dolerite gabbro and contact zone waste rock materials of the Mt Mann mine area.	As for Open Pit.

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
		Provided parcels of PAF material originating from the dolerite gabbro and contact zone mine wastes are managed appropriately, there is a low risk of fresh waste rock adversely impacting groundwater and surface water quality via seepage or run-off from rainfall. Characterisation of tailings generated by metallurgical test work has been completed. Samples were assessed for potential of saline, neutral or acid and metalliferous drainage (AMD) as well as other general geochemical and some physical properties. Results indicate tailings are unlikely to pose risk to the environment and as such do not require specialized storage facilities	
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	The Project is well served by existing infrastructure with the Goldfields Highway which runs adjacent to the Project. There is a 132 kV powerline (5 km to the West) and the goldfields gas pipeline (11 km to the East) to provide mains power or a site-based power station. The process plant and waste stockpiles can be constructed on existing mining licenses. Preliminary modelling and site-based pumping trials provides confidence that sufficient available bore water of good quality is available from within the Liontown tenements and regional sources. A desktop study confirms that the concentrate can be trucked on sealed roads from site to the port of Geraldton where an environmental license would be required to export the SC6.0 – due to the benign nature of the product, approval is unlikely to be withheld. The study assumes a camp will be constructed on a exploration license that is subject currently to conversion to a mining license application.	As for Open Pit.

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
		The current tenements and labour supply is not considered unusual due to its location within driving distance of Kalgoorlie and the region is serviced by regular charter flights to Mt Keith and Leinster from Perth.	
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.* • *The methodology used to estimate operating costs.* • *Allowances made for the content of deleterious elements.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private*	The capital cost estimate has been based on a mechanical equipment list with budget pricing for major equipment together with recent database rates for bulks such as concrete and steel. Electrical and earthworks were estimated separately. Operating cost estimates were based on budget quotes for consumables and a benchmarked salary schedule. Other costs have been supplied by Liontown and from Lycopodium database. A sequential magnetic separation and gravity circuit has been included in the process flowsheet to concentrate tantalum and also remove iron which is considered deleterious in the final concentrate. Forecast exchange rates for USD: AUD were sourced from a third party providing long term forecasts with a range of 0.65 to 0.80 (excluding outliers). Liontown has assumed 0.72 as its life of mine exchange rate. Haulage and ship loading costs were provided by an established haulage company that currently provides stevedoring services at the port of Geraldton. Port costs were obtained from the Port of Geraldton. Estimated shipping costs were used to determine CIF costs to potential off-takers. The following government royalties and private royalties have been included in the financial analysis as detailed below: • WA state Royalty - 5% gross sales • Third Party private royalties - 3% gross sales and A$0.50/t ore mined and milled for material sourced from within Mining leases M36/460 & M36/459 No third party royalties apply for ore sourced from exploration license E36/879 (Mining license application M36/696).	As for Open Pit.

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* • *The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	Spodumene pricing was based on forecast estimates provided by Roskill as discussed in the main body of this announcement. Roskill has provided annual forecast pricing through to 2040 on a real, US$/dmt CIF China basis for "Arm's Length". Arm's Length prices are where no related party relationship exists between the mining company and the customer. At this stage, future production from Kathleen Valley remains 100% uncommitted in order to maintain maximum flexibility and independence over funding and development options. For the purposes of the PFS, it has been assumed that Liontown will sell 100% of its production on arm's length terms to unrelated parties on a yearly basis. The Roskill forecast pricing results in an average price of US$769/dmt CIF China for the period 2025 - 2040 (noting that while the PFS extends beyond Roskill's 2040 forecasts, Liontown has assumed it reasonable to use the 2040 price of CIF US$825/t as the basis from 2041 - 2064). Liontown has adjusted Roskill's CIF China prices to an FOB Geraldton price by deducting US$30 per tonne to reflect the estimated costs of shipping to China from Australia as the ultimate destination of SC6.0 produced from the Kathleen Valley Project is not known at this stage. Other revenue factors were: • An exchange rate of 0.72 USD/AUD • In country transport and port charges of A$65/wmt conc. • Export shipping costs of A$41.67/wmt conc (US$30/dmt) • State royalty of 5% and private royalties of 3% gross sales and a A$0.50 per tonne mined and milled for material sourced from within Mining leases M36/460 & M36/459 • No third party royalties apply for ore sourced from exploration license E36/879 (Mining license application M36/696)	As for Open Pit.

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
		Liontown has again utilised the services of Roskill for its price forecast assumptions for tantalum concentrate (30 Non-Class 7 Specification) as applied in the PFS. Roskill has provided a forecast price through to 2040 on a real, US$/lb CIF China basis for "Arm's Length" pricing. Like SC6.0, at this stage future tantalum concentrate production from Kathleen Valley remains 100% uncommitted in order to maintain maximum flexibility over funding and development options. For the purposes of the PFS, it has been assumed that Liontown will sell 100% of its production on arm's length terms to unrelated parties on a yearly basis. Roskill provided an average price of US$70/lb CIF China for 2025 to 2040. Liontown has adjusted Roskill's CIF China prices to an FOB Fremantle price by deducting US$0.1 per pound to reflect the estimated costs of shipping to China from Australia as the ultimate destination of tantalum concentrate produced from the Kathleen Valley Project is not known at this stage. This results in an average price of US$69.9/lb FOB Fremantle. Noting that while the PFS extends beyond Roskill's 2040 forecasts, Liontown has assumed it reasonable to use the 2040 price of CIF US$65/lb as the basis from 2041 to 2064. Other Tantalum revenue factors were: • An exchange rate of 0.72 USD/AUD • In country transport charges of A$194/dmt conc. • Shipping costs of US$0.1/lb conc. • State royalty of 5% and private royalties of 3% gross sales and a A$0.50 per tonne mined and milled for material sourced from with Mining leases M36/460 & M36/459. • No third-party royalties apply for ore sourced from exploration license E36/879 (Mining license application M36/696) No penalties for contaminants were assumed or considered applicable for either Spodumene or Tantalum products.	

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
Market assessment	• *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* • *A customer and competitor analysis along with the identification of likely market windows for the product.* • *Price and volume forecasts and the basis for these forecasts.* • *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	Demand for lithium is forecast to increase significantly over the next decade driven using lithium ion batteries in automotive applications. Whilst there is a current oversupply of SC6.0 largely because of new mine capacity in Australia, it is expected that reduction in mine output from mines in Australia in 2021-2023 may initiate a phase of rebalancing. With continued strong demand and consumption growth, a supply deficit is expected to occur in the mid-2020's. Tantalum is used in high performance capacitors, superalloys and other applications consumed widely in aerospace, military and consumer electronics. Tantalum is a critical material for high performance applications, but global production is relatively small and limited to a few key regions and producers. With ongoing electrification of homes and vehicles, tantalum should play an increasingly important role from ensuring safety in autonomous vehicles to maintaining performance in the next generation of electrical devices and communications technology. While capacitors will remain the largest application (accounting for around 36% of the 2.4kt Ta of estimated demand in 2019), the largest growth will come from chemical applications and tantalum mill products. Supply-side disruptions have traditionally had the biggest impact on concentrate price trends in recent years, including the introduction of the Dodd-Frank Act in 2010, the fire at AMG's Brazilian Mibra operation in 2017, and more recently, variance in Australian by-product supply. A customer and competitor analysis was not undertaken however market windows for the product have been considered with pricing forecasts also provided by Roskill.	As for Open Pit.
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic*	An 8% real discount rate (using industry standard assumptions in calculating a WACC) has been utilised to determine the NPV for the Kathleen Valley Project.	As for Open Pit.

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
	inputs including estimated inflation, discount rate, etc. • *NPV ranges and sensitivity to variations in the significant assumptions and inputs*	A range of sensitivities to significant assumptions and inputs has been provided in the body of this announcement including spodumene prices, exchange rates, metallurgical recoveries, lithium grade, capex and opex.	
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	The Tjiwarl People are Traditional Owners of the area that actively overlays the Project. The Project area is largely located on granted mining leases and Liontown has signed a Heritage Agreement with the Tjiwarl People relating to exploration activities. Liontown has signed a Negotiation Protocol with the Tjiwarl People in respect to completing a mining agreement for the Project. Discussions are currently ongoing in terms of negotiating a project specific *Mining Cooperation Agreement* for the Project with the Tjiwarl.	As for Open Pit.
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.* • *The status of material legal agreements and marketing arrangements.* • *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the*	There are no obvious or likely naturally occurring risks that have been identified or which may negatively impact the Project or Project area. Liontown is a 100% owner of the deposit and has not entered into any arrangements regarding future off take arrangements. All statutory government agreements permits and approvals commensurate to the status of the Project are current and in good order. A mining license application has been submitted on the 16/6/20 to convert part of exploration tenement E36/879 (mining lease application # M36/696) on which a portion of the underground reserve and likely solar farm plus accommodation camp will be sited. Timeframes for Agreements relevant to the 2020 PFS were handled appropriately and have not put the Project at risk.	As for Open Pit.

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
	materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	Agreement timeframes in respect to the Project will be handled with similar accord so as not to put the future studies and Project development at risk also.	
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	Proved Ore Reserves were determined from Measured Resource material and Probable Ore Reserves were determined from Indicated Resource material as per the guidelines. These results reflect the Competent Person/s view of the deposit. Probable Ore was derived from Indicated material only.	Proved Ore Reserves were determined from Measured Resource material and Probable Ore Reserves were determined from Indicated Resource material as per the guidelines. Small percentages of Inferred material (3% on average) and waste material (2% on average) were included in dominantly classified Proved and Probable stope shapes. Dominantly classified Inferred stope shapes were not included in Ore Reserves. These results reflect the Competent Person/s view of the deposit. Probable Ore was derived from Indicated material only, not Measured material.
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	The Ore Reserve estimate has been peer reviewed internally by Orelogy Consulting Pty Ltd.	As for Open Pit.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local,*	The Mineral Resource, and hence the associated Ore Reserve, relate to global estimates. The Ore Reserve estimate is an outcome of the 2020 Mining Pre-Feasibility Study with geological, mining, metallurgical, processing, engineering, marketing and financial considerations to allow for the cost of finance and tax. Engineering and cost estimations have been completed to a +/-25% level of accuracy, consistent with a study of this nature. Liontown's financial model estimated a post-tax $NPV_{8\%}$ of approx. **A$1.12B, and IRR of 37%,** which demonstrates that the Project is economic at forecast prices. Sensitivity analysis undertaken during the open pit and underground optimisation demonstrates that: • Overall open pit size is insensitive to costs or slope changes and mildly sensitive to price and recovery.	As for Open Pit. The Ore Reserve estimate is an outcome of the 2020 Mining Pre-Feasibility Study with geological, mining, metallurgical, processing, engineering, marketing and financial considerations to allow for the cost of finance and tax. Engineering and cost estimations have been completed to a +/-25% level of accuracy, consistent with a study of this nature. Liontown's financial model estimated a post-tax $NPV_{8\%}$ of approx. **A$1.12B, and IRR of 37%,** which demonstrates that the Project is economic at forecast prices. Sensitivity analysis undertaken during the underground optimisation demonstrates that the chosen inventory is: • is relatively insensitive to costs or dilution changes and mildly sensitive to price and recovery. • Discounted cash flow for the Project is highly sensitive to parameters that directly affect revenue (i.e. commodity prices,

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
	state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* • *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• Open pit ore tonnes recoverable are moderately sensitive to dilution, ore loss and recovery and slightly sensitive to costs or slope angles. • Discounted cash flow for the Project is highly sensitive to parameters that directly affect revenue (i.e. commodity prices, recovery and exchange rate) and far less so to other parameters. The low sensitivity to cost variations provide reasonable confidence in the Ore Reserve estimate. However, there is no guarantee that the price assumption, while reasonable, will be achieved.	recovery and exchange rate) and far less so to other parameters. The low sensitivity to cost variations provide reasonable confidence in the Ore Reserve estimate. However, there is no guarantee that the price assumption, while reasonable, will be achieved.