ASX ANNOUNCEMENT | ASX : LTR

11th November 2021

Kathleen Valley DFS confirms Tier-1 global lithium project with outstanding economics and sector-leading sustainability credentials

Mine plan optimisation, flowsheet improvements and strong lithium market drives substantial increase in production, NPV and financial returns combined with strong ESG outcomes;

DFS establishes a strong foundation to support integrated downstream operations

- **Definitive Feasibility Study (DFS) confirms the 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 North-eastern Goldfields.**

- **Building on the October 2020 Pre-Feasibility Study (PFS), the DFS base production has been increased from 2Mtpa to 2.5Mtpa, producing ~500ktpa of spodumene concentrate with a 4Mtpa expansion planned in Year 6, to deliver ~700ktpa spodumene concentrate.**

- **The DFS optimises the mine schedule, process plant design and forecast sales pricing to enhance the outstanding technical and financial viability of a standalone, long-life 4Mtpa operation. In doing so it delivers a substantial increase in the Post Tax $NPV_{(8\%)}$ to A$4.2B, a payback of 2.3 years and a Life of Mine (LOM) free cash flow (post tax) of A$12.2B.**

- **Key DFS highlights below, assume a weighted average US$1,392/t Free on Board (FOB) LOM spodumene price based on Roskill's long-term forecast prices.**

KEY HIGHLIGHTS [1]	DFS [7]
$NPV_{8\%(real)}$ LOM (A$B Post Tax) [1][5][8]	$4.2B
IRR (%) LOM (Post Tax)[1][5]	57
Payback (years) [1]	2.3
OPEX US$/t Li_2O (dmt) Yrs 1-10 (exc. royalties) [1][2][3][7][8]	US$319/dmt
AISC US$/t Li_2O (dmt) Yrs 1-10 [1][7][8][9]	US$452/dmt
LOM Free Cashflow (A$B post tax) [1][8]	$12.2B
Steady State Production 6% Li_2O (SC6.0, kdmt, p.a.)[7]	Ramped 511 to 658
Steady State Production 30% Ta_2O_5 (dmt, p.a.)	Ramped 428 to 587
Initial Project Capital Cost (A$M inc. $107M Preprod. costs)[8][10]	$473M
4Mtpa Expansion Capital Cost (A$M)[8][10]	$66M
Ore Reserve	68.5Mt @ 1.34% Li_2O,120ppm Ta_2O_5
Production inventory [1]	82.7Mt @ 1.30% Li_2O,117ppm Ta_2O_5
Mine Life at 2.5 to 4 Mtpa ramped throughput (years) [1]	~23
Sector-leading Projected ESG metrics:	
– **Projected initial CO_2 intensity / tonne LCE [4][6]**	*0.72 t CO_2-e /t LCE*
– **Planned total land usage (hectares)**	*467*
– **Calculated average water usage / tonne LCE [4][6]**	*20 m^3 /t LCE*
– **Planned initial renewable power mix (%)**	*60% Renewables*

Cautionary statement:

[1] The production inventory and forecast financial information referred to in the DFS comprise Proved Ore Reserves (3.3%), Probable Ore Reserves (79.5%) and Inferred Mineral Resources (17.2%). The Inferred material included in the inventory is 14.3Mt @ 1.11% Li_2O & 102ppm Ta_2O_5. The Inferred material has been scheduled such that less than 10% of the Inferred material is mined in the first 10 years, with the remainder mined through to the end of the mine life.

The Inferred material does not have a material effect on the technical and economic viability of the Project. Refer to pages 24 and 25 for additional information.

There is a lower 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 and tantalum credits. Excludes sustaining capital and royalties.

*[3] As royalties are predominantly sales-price dependent they have not been included in cash costs. Royalties equate to $98/t of 6% Li_2O for year 1-10. Refer to **Table 4**, **Table 12** and **Table 13**.*

[4] CO_2 emissions based on Scope 1 & 2 emissions to concentrate, being FOB. Water and land usage based on DFS design throughput and is inclusive of the land required for solar arrays.

*[5] NPV and IRR based on staged throughput to 4Mtpa over a 6-year period in line with the mining schedule presented in **Figure 7** and **Figure 8.***

[6] Lithium Carbonate Equivalent (LCE) calculated based on 6.74t of SC6.0 to 1t LCE as per the British Geological Survey conversion factors.

[7] All concentrate metrics based on a normalised 6% concentrate basis.

[8] All Costs expressed in Australian dollars unless noted otherwise. For USD denominated inputs and outputs, A$1= USD$0.73.

[9] All in Sustaining Capital Costs (AISC), as referred to in this announcement, are cash operating costs including all mining, processing, transport, freight to port, port costs, site administration/ overhead costs, tantalum credits, state and private royalties and sustaining capital.

[10] Project totals exclude working capital, finance costs, sustaining capital and corporate costs associated with project development.

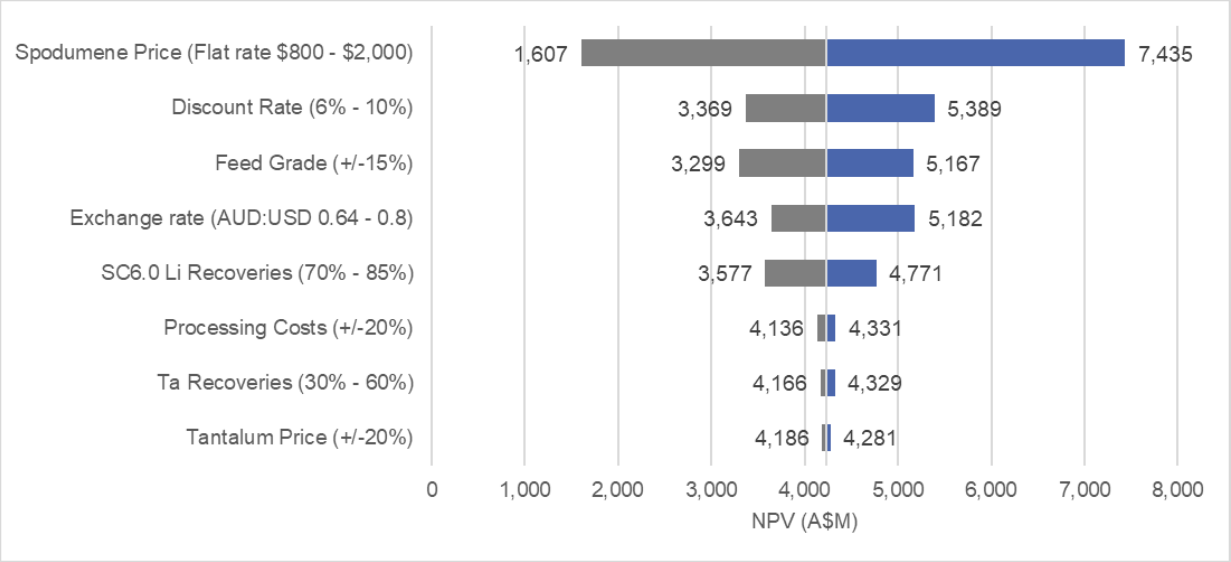
DFS Highlights:

- **Major focus on Environmental Social Governance (ESG) as part of the DFS:**
  - **The Native Title Holders (the Tjiwarl) have provided their consent for the signing of the Kathleen Valley Project Native Title Agreement (NTA), which is scheduled for 17 November 2021. Importantly, as part of this process input from the Tjiwarl was incorporated into the project design and layout from the outset;**
  - **Securing an NTA will now trigger the finalisation of remaining permitting, with key environmental permits already well advanced;**
  - **The revised power solution includes a larger initial +13MW solar array, wind, and battery hybrid power solution. Overall planned renewable power is projected to be 60% at start-up – with Liontown expected to be one of the first mining companies in Australia to have this level of renewables at start-up;**
  - **Clear real-world targeted emissions and water/land usage incorporated as part of the DFS, based on current processes and technology available today;**
  - **Corporate ESG policy updates and sustainability reporting underway; and**
  - **The Company aspires to achieve Net Zero carbon emissions by 2034, in line with the Paris Agreement, and is assessing pathways to achieve this goal.**
- **A Project $NPV_{8\%}$ of A$4.2B compared to A$1.1B from the 2020 PFS, with the DFS (+/-15% accuracy) using Roskill's long-term forecast prices resulting in a weighted average price assumption for spodumene concentrate of US$1,392/t FOB for SC6.0 product.**
- **Extensive metallurgical test work program confirms the ability to produce low impurity 6-6.5% Li_2O concentrate, while also producing a ~12% Ta_2O_5 concentrate prior to offsite upgrade to 30% Ta_2O_5.**
- **First production expected to commence in H1, 2024 – a full year earlier than originally planned as part of the PFS – when demand for lithium is forecast to accelerate significantly due to the stronger adoption of electric vehicles (EV's) globally than was originally forecast.**

- **Using the Platts SC6.0 index, the 3 monthly average spot price of ~US$1,822/t FOB increases the NPV, substantially, to A$6.6B and the IRR to 87% with a payback period of 1.4 years.**
- **Highly competitive cash operating costs (first 10 years) of ~US$319/dmt of SC6.0 (including tantalum credits and excluding royalties). AISC over the same period is US$452/dmt SC6.0 (including tantalum credits and royalties).**
- **The optimised mine plan based on the April 2021 Mineral Resource Estimate (MRE) of 156Mt @ 1.4% Li_2O and 130ppm Ta_2O_5 has delivered an Ore Reserve Estimate of 68.5 Mt at 1.34% Li_2O and 120ppm Ta_2O_5 using a conservative SC6.0 price assumption of US$740/dmt FOB.**
- **Forecast average steady-state production of 511ktpa spodumene concentrate at a grade of 6% Li_2O (SC6.0) and 428tpa of 30% grade tantalum concentrate, based on the initial 2.5Mtpa mine production.**
- **Production is scheduled to increase to 4Mtpa in year 6, at which point production of SC6.0 spodumene concentrate will increase to 658ktpa and tantalum 30% concentrate to 587tpa.**
- **Plant design has been further simplified as part of the DFS to ensure a smoother ramp-up, better operability, lower maintenance and process throughput and recovery certainty.**
- **The Ore Reserve underpins an initial ~23-year mine life based on the updated mining schedule. The resource remains open at depth and along strike and further work will be planned to investigate increasing the resource size and potential reserves.**
- **Capital cost updated as part of the DFS to reflect the current "hot market" conditions in the WA resource sector and in global supply chains generally, with an overall increase of 15-20% (weighted) in steel, copper and labour prices incorporated into cost estimates. A productivity allowance has also been incorporated to account for COVID impost.**
- **In addition, upfront provision has been made in the initial capital cost (~ $30M) to increase the base-case plant throughput capacity from 2.5Mtpa to 4Mtpa, with in-built optionality across several key items of equipment (crushing, thickening, filtration, electrical distribution and transformers).**
- **The future capital cost to expand to 4Mtpa is an additional A$66M and includes a second paste fill plant which will be funded from future cash flow. Based on this low capital intensity, this is a highly value accretive expansion.**
- **Roskill have revised their long-term price 2024-2041 forecast following the rapid acceleration of near-term spot prices for SC6.0 concentrate. Liontown has adopted Roskill annual forecast pricing through to 2041.**
- **Extremely strong levels of interest have been received from more than 50 potential customers who have expressed interest in off-take, giving Liontown a high level of confidence in its ability to execute its off-take strategy. At this stage, future production from Kathleen Valley remains 100% uncommitted, allowing it to maintain maximum flexibility over funding and development options.**
- **Project funding discussions are well advanced with a combination of debt and equity financing options being considered and proposals received from several Tier-1 financiers, institutions and equity funding groups. Liontown will target to have funding in place for a project Final Investment Decision (FID) on or before Q2, 2022.**
- **The value maximizing pathway for Liontown was confirmed today with compelling financial outcomes being generated for its downstream processing opportunity as outlined in an updated separate Downstream Scoping Study on the production of lithium hydroxide monohydrate ($LiOH.H_2O$) ("LHM") at Kathleen Valley. This will form a key pillar of Liontown's second growth horizon, underpinned by the concentrate project.**

Based on the proposed ramped 2.5 - 4Mtpa standalone mining and processing operation, the DFS has very strong fundamentals, which is clearly demonstrated by the NPV sensitivity analysis shown in Figure 1 below:

Figure 1: Kathleen Valley Project – NPV Sensitivity Analysis. Base case NPV $4.2B



Investor Webcast and Conference Call

Liontown Managing Director, Tony Ottaviano, will host a live webcast and simultaneous investor conference call to discuss the results of the DFS and DSS at **10.00am AWST / 1.00pm AEDT on Thursday, 11 November 2021**.

Webcast

Shareholders and investors who wish to listen to the live webcast and synchronised slide presentation can join via the link below:

https://webcast.boardroom.media/liontown-resources-limited/20211111/NaN618a20e4936f67001d1a5314

Participants in the webcast can ask questions using the "Ask a Question" function.

Teleconference

Brokers, fund managers, analysts and representatives of the media who wish to participate in the Teleconference, including the opportunity to ask questions over the phone, can do so via the following link: https://s1.c-conf.com/diamondpass/10017991-k8if9a.html

Please note that it is recommended that you log on at least five minutes before the scheduled commencement time.

Executive Summary

Liontown Resources Limited (ASX: LTR; "Liontown" or "Company") is pleased to announce the completion of the Definitive Feasibility Study (DFS) for its 100%-owned **Kathleen Valley Project**, with the results confirming the potential to develop a leading second-generation lithium-tantalum mining and processing operation in Western Australia's Northern Goldfields.

Building on the PFS completed in October 2020, the DFS outlines a Tier-1 global lithium project with exceptionally strong financial and technical merits, combined with a class-leading sustainability and ESG framework that is being fully integrated with the Project's development, details of which will be released in Q4, 2021.

The DFS delivers exceptional results including a further increase in project $NPV_{8\%}$ to $4.2 billion and an Ore Reserve which underpins a ~23-year mine life at a planned initial processing rate of 2.5Mtpa, ramping up to 4Mtpa in Year 6 of operations.

This will see Kathleen Valley become one of the largest new lithium producers globally, with annual production of SC6.0 commencing at ~500ktpa and ramping up to ~700ktpa at globally competitive cash operating costs of US$319/t SC6.0 (Years 1-10, excluding Royalties).

The DFS is based on a long-term weighted average price assumption for SC6.0 of US$1,392/tonne and incorporates realistic assumptions for capital and operating costs that take into account the current extremely competitive environment in the WA resource sector as well as cost escalation in materials, services and salaries.

The DFS clearly demonstrates the scale, grade, product quality and Tier-1 location of the Kathleen Valley Project (close to modern infrastructure), positioning it to advance rapidly to a Final Investment Decision (FID), targeted for Q2, 2022.

Building on the extensive work previously completed, metallurgical test work carried out in 2021 has confirmed the ability to produce a +6% Li_2O spodumene concentrate with an estimated average recovery of 81% plus a ~12% Ta_2O_5 concentrate with an average estimated site recovery of 42%. The tantalum concentrate will be further upgraded off-site to 30% Ta_2O_5 prior to shipment.

Liontown has discounted the test work derived average Li_2O recovery from the mine schedule grades from 81% to 78% in the financial model, to reflect the experience of existing operations. Significant test work on the clean, coarse grain Kathleen Valley underground ore types has consistently shown that recoveries of 80% or greater can be achieved and it is believed that 78% recovery will be exceeded with operating experience.

An exceptional level of interest has already been received from potential customers and off-takers. This has been accompanied by a very high level of interest from project financiers, investment banks and equity funding groups.

An integrated and value-adding ESG focus was adopted as part of the DFS, ensuring that project permitting, social licence and engineering-related initiatives are permeated throughout the mine schedule, power usage/supply mix and project layout. Importantly, an economic 'yardstick' was attached to all ESG considerations to ensure they add value to the project.

The Company recognises the importance of the Tjiwarl Native Title Holders (the Tjiwarl), who have been recognised by the Federal Court of Australia to hold the common law native title of the area covered by the Company's Kathleen Valley tenements, to the success of the future operation at Kathleen Valley. A formal Native Title Agreement (NTA) for the Project, with the Tjiwarl, has been negotiated concurrently with the DFS.

As announced on 5th November 2021, the Company has been advised by the Tjiwarl (Aboriginal Corporation) RNTBC (Tjiwarl AC) that the Tjiwarl have provided their consent for the signing of the Kathleen Valley Project Native Title Agreement (NTA). Arrangements are now underway to organise an official signing ceremony on the 17th of November 2021 to commemorate the parties having reached agreement.

The ongoing engagement of independent, highly experienced consultants has ensured that the DFS was completed to a high standard. Early inclusion of the Tjiwarl has ensured that vital heritage considerations have been included in project design.

The sustainability, financial and operational outcomes demonstrated in the DFS have been significantly enhanced compared to the October 2020 PFS because of a modified process plant flowsheet and, importantly, optimised mine plans which provide early access to higher-grade mineralisation without significant capital penalty.

Liontown's Chief Executive Officer and Managing Director, Tony Ottaviano, said:

"The completion of the DFS marks a major step towards Liontown becoming a substantial global lithium producer and, together with the Updated Downstream Scoping Study also released today, lays very strong foundations for our aspiration to become a world-class battery materials company.

"At the initial planned production rate of ~500ktpa of spodumene concentrate, Liontown will represent 5.7% of the world spodumene market and 4% of the lithium market on a Lithium Carbonate Equivalent (LCE) basis, with a project that has been conservatively designed to incorporate realistic capital and operating cost assumptions that take current market conditions into account.

"Importantly, the increased capital estimate of $473 million delivers an optimised and much larger initial project when compared to the 2020 PFS. It also takes into consideration the cost inflation currently seen in the resources industry and incorporates upfront allowance for several key items of plant and equipment. This will allow us to scale-up rapidly to 4Mtpa throughput and 700ktpa spodumene concentrate production in Year 6. That is a compelling and attractive growth pathway that will see Kathleen Valley very quickly grow to become a top-5 global producer in LCE terms.

"The DFS also applies independently sourced long-term pricing assumptions which we believe establishes the project on very firm footing while retaining exposure to the huge upside of spot lithium pricing – which is currently significantly higher than the assumed weighted price of US$1,392/dmt FOB of SC6.0.

"The other key highlight of the DFS is the way that we will incorporate our ESG framework into the project development right from the outset. This includes the sector-leading adoption of renewable power generation to deliver a low-carbon footprint and the early inclusion of the Tjiwarl Native Title Holders, and heritage considerations in the design, planning and layout of the Project.

"We are extremely proud of the work that has been done over the past three years to get to this point especially in regard to the extensive metallurgical test work program which has consistently demonstrated the ability to make 6-6.5% grade concentrate, and I would like to acknowledge the incredible in-house team at Liontown, as well as our consultants, who have worked so hard on the delivery of this world-class DFS.

"Importantly, we have been progressing financing and off-take discussions in parallel with the DFS, and they are now at a very advanced stage. By publishing the DFS outcomes, our key stakeholders will have increased transparency and certainty around the Project parameters, putting us in a position to execute on our off-take and funding strategy and advance rapidly towards a Final Investment Decision, which we are targeting for Q2, 2022.

"With Liontown now firmly established on a trajectory to become Australia's next major lithium producer, this is an exciting time for our shareholders as we move from exploration to full-scale development at Kathleen Valley, finalise off-take and funding discussions and secure the backing we need to commence project execution. This is a major new Australian resource project, in a future-facing commodity, that we believe will deliver exceptional long-term returns for our shareholders, all of our other key stakeholders and the State of Western Australia."

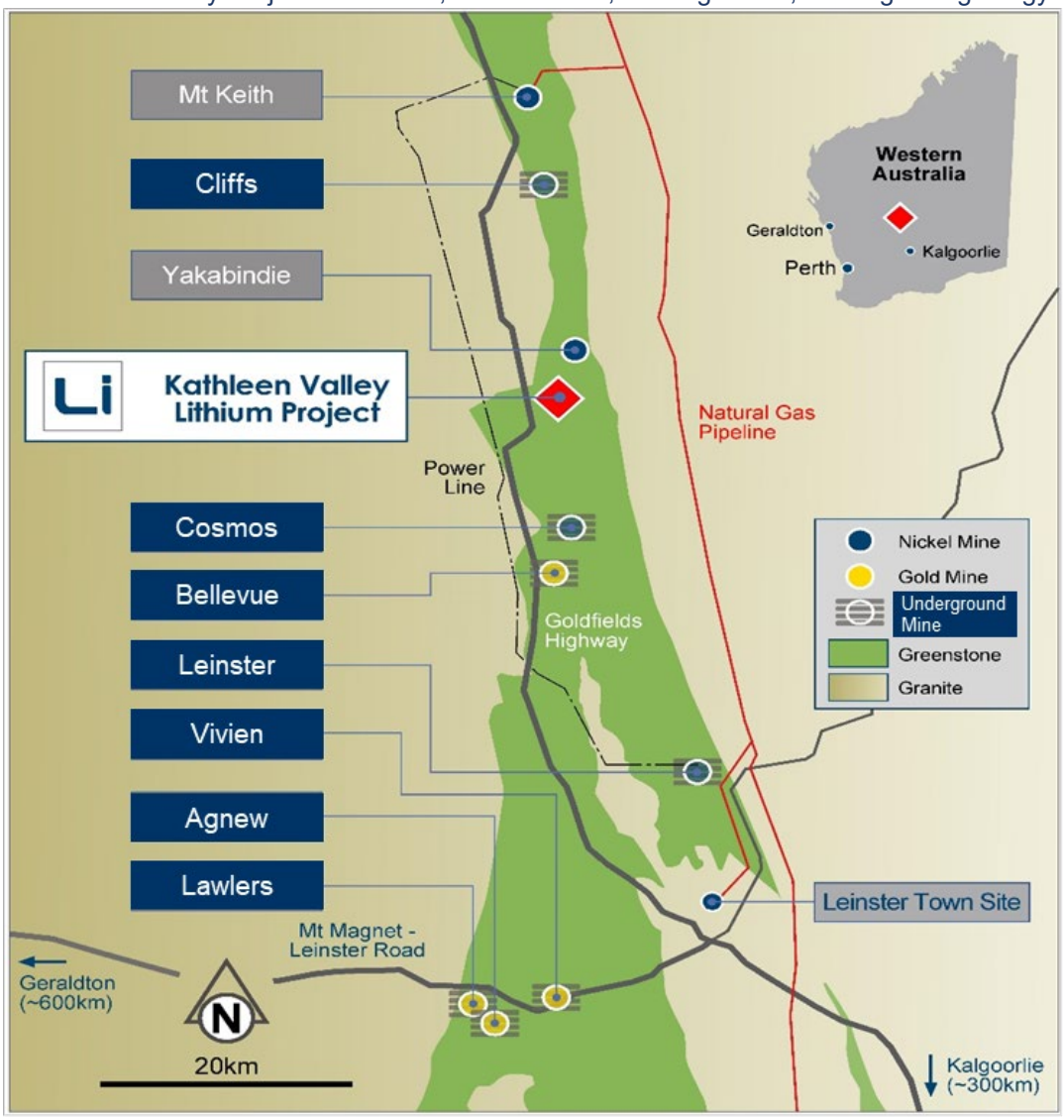
Kathleen Valley DFS – Project Background

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 North-eastern Goldfields of Western Australia.

The Project is readily accessible by sealed highways which connect with mineral exporting ports at both Geraldton and Esperance.

Other infrastructure located close to the Project includes a power line, a natural gas pipeline and existing mine camps with airstrips capable of accommodating large passenger aircraft (**Figure 2**).

Figure 2: Kathleen Valley Project – Location, infrastructure, existing mines, and regional geology



The DFS testwork program and study compilation was completed with the assistance of a group of highly reputable, independent consultants including:

- *ZOOID* ESG
- *Optiro Pty Ltd* Geology and MRE
- *Snowden Mining Industry Consultants* Mine Optimisation, Planning, Design and Scheduling
- *ALS Metallurgy* Process Testwork
- *Lycopodium Minerals Pty Ltd* Process & Infrastructure Design, CAPEX/OPEX
- *Knight Piésold* Tailings and Hydrogeology
- *MBS Environmental (MBS)* Environmental
- *Peter O'Bryan and Associates (POBA)* Geo-mechanical Engineering

The DFS examined the establishment of an initial 2.5Mtpa mining and Whole-of-Ore Flotation (WOF) processing operation delivering an annual steady state 511ktpa of SC6.0 and 428tpa of 30% tantalum concentrate (inclusive off-site upgrade) at full production.

Production will expand to 4Mtpa during Year 6, allowing production to scale-up to an annual steady state of 658ktpa of SC6.0 and 587tpa of 30% tantalum concentrate.

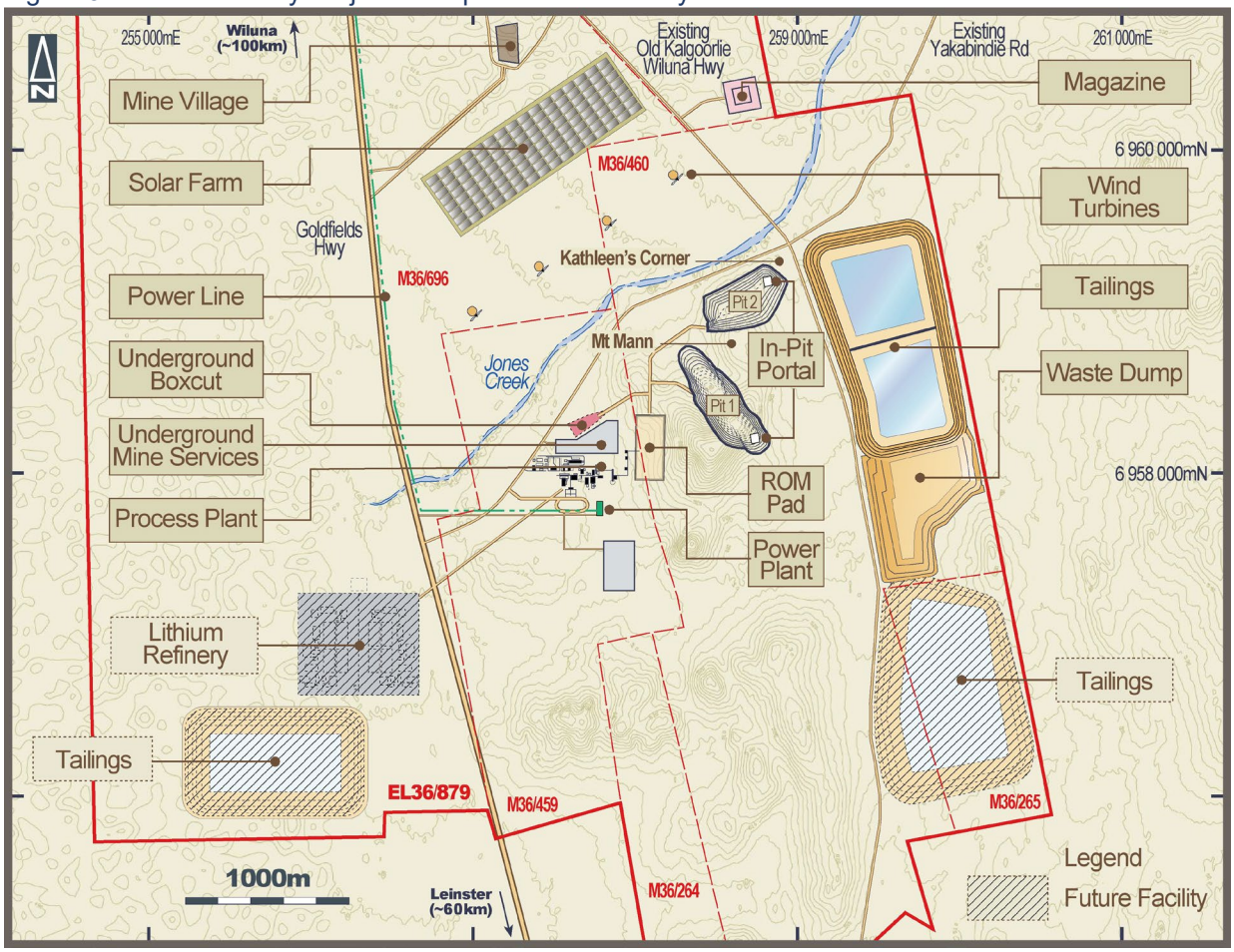
Ore will initially be sourced from two small open pits, however from Year 2 of operations ore will be sourced from underground, delivering to the Run-of-Mine (ROM) pad, with ore processed to concentrate the lithium and tantalum.

Concentrate will then be transported for delivery to downstream customers.

It should be noted that, several key capital items in both the mine and processing plant have been scaled at 4Mtpa throughput capacity as part of the initial upfront capital spend to facilitate the planned increase in production capacity to 4Mtpa in Year 6 with minimal impact on the operations of the project. The expansion to 4Mtpa will be funded from cash-flow.

Figure 3 shows the proposed site layout including mining areas, processing facilities and non-process infrastructure.

Figure 3: Kathleen Valley Project – Proposed mine site layout



Environment, Social and Governance (ESG)

A proactive, corporate-led integrated ESG approach was adopted as part of the DFS. This included:

- Key environmental studies were completed, and applications drafted for a Native Vegetation Permit, Mining Proposal, Mine Closure Plan and Works Approvals. A Section 18 Application as required under the WA Heritage Act is also being compiled and will be applied for as part of the planned detailed engineering phase which is about to commence;
- Liontown's Corporate Governance policies are being updated to reflect the NTA being entered into and global ESG targets/KPI's. In addition, a full sustainability framework is being established to support the future operation;
- Environmental KPI projections were established in-line with international best practice for emission/water and land usage. Importantly, these provisional targets were based on current technology and processing methods in use today with aspirational targets based on likely new technology;
- Mine design focused on achieving a reduced footprint, especially via underground mining and the underground deposition of tailings. The site layout was developed collaboratively with the Tjiwarl to ensure the impact on culturally important areas is minimised and appropriately managed;
- The percentage of renewable power incorporated in the Project design was increased from ~10% in the PFS to 60% as part of the DFS;
- Water recycling was closely managed and formed part of the design scope for the tails dam. This was further assisted by underground paste fill considerations which return a higher proportion of the water within the tailings to ensure greater water recovery on the site;
- The estimated financial impacts of the negotiated NTA are included in project modelling; and
- Design changes, where applicable, were evaluated to ensure that they make 'economic sense'.

Ore Reserve, Estimation and Methodology

Snowden Mining Industry Consultants (Snowden) was responsible for the mining component of the DFS. Snowden prepared the Ore Reserve Estimate (JORC 2012) for the Kathleen Valley underground and open pit mines as of November 2021, which is reported in **Table 1**.

Table 1: Kathleen Valley Project – Ore Reserve Estimate (November, 2021)

Category	Tonnage (Mt)	Li_2O (%)	Li_2O (T)	Ta_2O_5 (ppm)	Ta_2O_5 (T)
Underground					
Proved	-	-	-	-	-
Probable	65.4	1.34	878,966	119	7,799
Sub-Total	**65.4**	**1.34**	**878,966**	**119**	**7,799**
Open Pit					
Proved	2.7	1.30	33,581	141	374
Probable	0.5	0.93	4,696	148	75
Sub-Total	**3.2**	**1.21**	**38,277**	**142**	**449**
TOTAL	**68.5Mt**	**1.34%**	**917,243t**	**120ppm**	**8,247t**

Notes

i. Tonnages and grades are diluted and reported at Li_2O cut-off grade of 0.5% (open pit) and 0.7 -1.2% (Underground) and use a US$740/ dmt FOB SC6.0 pricing assumption;

ii. Tonnages and grades have been rounded.

The Ore Reserve Estimate is based on the updated MRE released on the 8th April 2021 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 2**.

Table 2: Kathleen Valley Project – Mineral Resource Estimate (April 2021)

Cut-off grade Li_2O %	Resource Category	Million tonnes	Li_2O %	Ta_2O_5 ppm
0.55	Measured	20	1.3	145
	Indicated	109	1.4	130
	Inferred	27	1.3	113
TOTAL		**156**	**1.4**	**130**

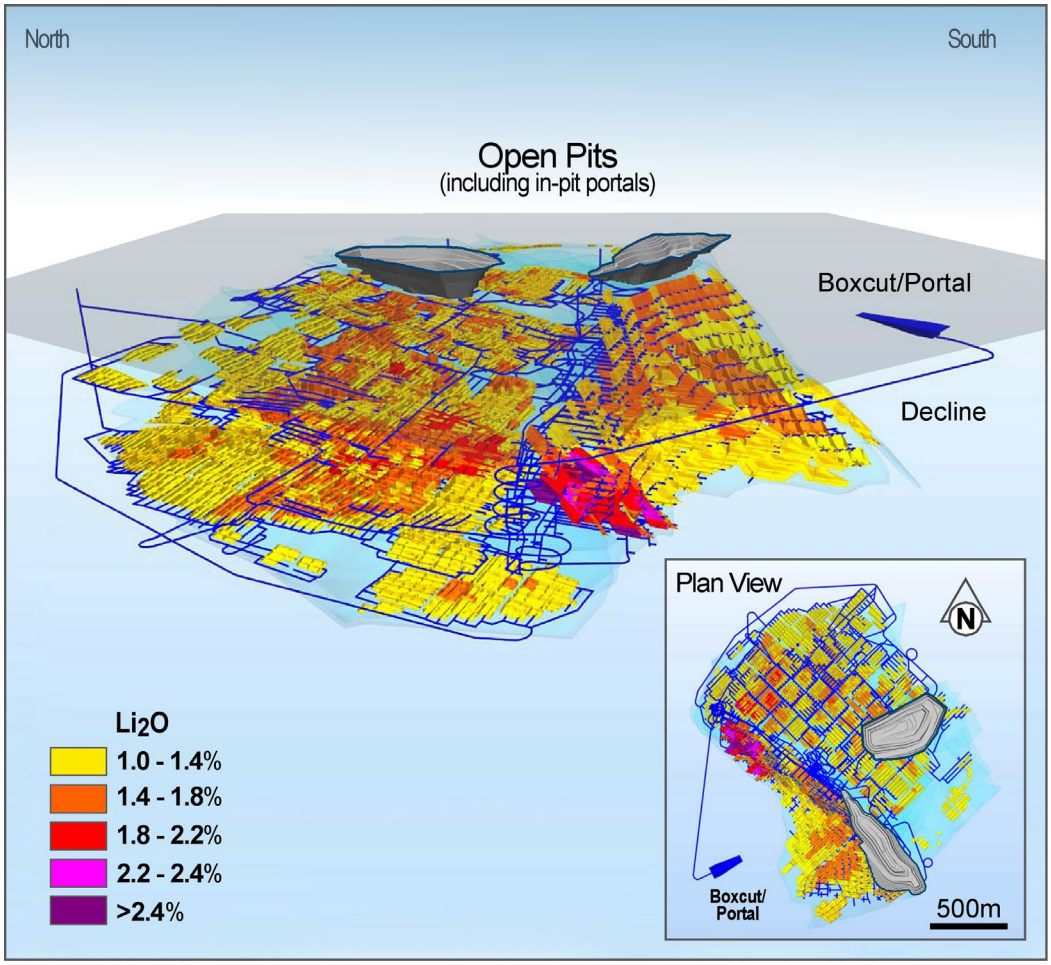
Notes:
i. *Reported above a Li_2O cut-off grade of 0.55%*
ii. *Tonnages and grades have been rounded to reflect the relative uncertainty of the estimate.*

The Ore Reserve and Mineral Resource 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 reported inclusive of the Ore Reserve.

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 Measured and Indicated Mineral Resource which can be economically extracted by open pit and underground mining methods.

The Ore Reserve estimate considers the modifying factors and other parameters detailed in the Appendix of this release, including geotechnical, mining, metallurgical, hydrology, capital and operating costs, prices and recoveries, social, environmental, statutory, and financial aspects of the Project. **Figure 4** shows the proposed open pit and underground development.

Figure 4: Kathleen Valley Project – Proposed mine development showing ore stopes by grade



Metallurgy

An extensive metallurgical test work program completed for the DFS has confirmed ability to produce a low impurity 6-6.5% Li_2O concentrate while also producing a ~12% Ta_2O_5 concentrate onsite.

Metallurgical test work was based on samples reflecting variation in both depth and spatial distribution across the Kathleen Valley Resource. Twenty-one variability samples plus multiple composited samples were tested. In addition to the comminution test work, 140+ multi-stage flotation tests were undertaken for the DFS including batch, bulk and Locked-Cycle-Tests to optimise the flowsheet and develop the grade recovery relationship by defined ore zones at Mount Mann, North West and the Open Pits.

A separable average LOM site based Ta_2O_5 recovery of 42% will enable the production of a Ta_2O_5 concentrate grading ~12% Ta_2O_5 (upgraded to 30% off-site).

The metallurgical process developed consists of 2-stage crushing followed by milling, a sequential magnetic-gravity circuit for tantalum extraction followed by whole-ore flotation (WOF) and filtration to produce a +6% Li_2O Concentrate. The plant design was optimised by Lycopodium to ensure efficient ramp-up, throughput and recovery certainty but also provisioning for better operability and maintenance.

DFS Financial Outcomes

Based on a proposed ramped 2.5-4Mtpa standalone mining and processing operation, the DFS has demonstrated very strong financial metrics for the Project as shown in **Table 3**.

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

Study Outcomes	DFS
Post-tax NPV$_{8\%\ (real,\ post\text{-}tax)}$ (A$B)	$4.2B
Internal Rate of Return (IRR %)	57%
Payback (years post-production)	2.3
Life of mine (years)	~ 23 years
Pre-production capital cost (A$M) [3][4]	$473M
Cash operating cost (Years 1-5, US$/dmt) [1][2] **(including tantalum credits)**	~US$314/dmt of SC6.0
Cash operating cost (Years 1-10, US$/dmt) [1][2] **(including tantalum credits)**	~US$319/dmt of SC6.0
Cash operating costs (LOM,US$/dmt) [1][2] **(including tantalum credits)**	~US$327/dmt of SC6.0
Cash operating costs (LOM, US$/dmt) [1][2] **(including tantalum credits and royalty)**	~US$433/dmt of SC6.0
AISC (Years 1-10 US$/ dmt) [5]	~US$452/dmt of SC6.0
Average steady state production	SC6.0 - 511ktpa first four years and 658ktpa after year six (excludes 12-month ramp-up at start), 30% Ta_2O_5 concentrate - 428tpa first four years and 587tpa after year six (excludes 12-month ramp-up at start).

[1] Cash operating costs include all mining, processing, transport, freight to port, port costs and site administration, tantalum credits and overhead costs. Excludes sustaining capital, expansion capital and royalties.

*[2] Royalties are predominantly sales price dependent therefore not included, DFS Li_2O weighted average price of US$1,172/t FOB for years 1-5, US$1,287/t FOB for years 1-10, US$1,392/t FOB for LOM. Royalties equate to US$88/t for years 1-5, US$98/t for years 1-10 and US$106/t for the for LOM. Refer to **Table 4**, **Table 12** and **Table 13**.*

[3] Pre-Production Capital Costs includes Project Capex, $107M preproduction, $23M paste fill plant & $31M contingency.

[4] Project CAPEX excludes working capital, finance costs, sustaining capital and corporate costs associated with project development.

[5] All in Sustaining Capital Costs (AISC), as referred to in this announcement, are cash operating costs including all mining, processing, transport, freight to port, port costs, site administration/ overhead costs, tantalum credits, all royalties and sustaining capital. Excludes expansion capital.

The production inventory and forecast financial information referred to in the DFS comprise Proved Ore Reserves (3.3%), Probable Ore Reserves (79.5%) and Inferred Mineral Resources (17.2%).

The Ore 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.

The DFS was completed to an overall +/- 15% accuracy using the key parameters and assumptions set out in **Table 4.** All monetary values in this document are expressed in Australian dollars unless noted otherwise.

Table 4: DFS Key Parameters and Assumptions

Parameter	
General and Economic	**DFS**
Discount rate (real, post-tax) (%)	8%
Weighted average LOM SC6.0 (US$ per tonne FOB Geraldton)	US$1,392
Weighted average Tantalum LOM 30% conc. (US$ per contained lb FOB Fremantle)	US$84
Exchange rate – AUD:USD	0.73
Mining and Production	
Average LOM strip ratio (Open pit)	6.8:1
Processing rate	2.5 to 4Mtpa
Ore Reserve	68.5Mt @ 1.34% Li_2O, 120ppm Ta_2O_5
Life-of-Mine Production Target (79.6Mt UG & 3.2Mt OP)	82.7Mt @ 1.30% Li_2O, 117ppm Ta_2O_5
% Li_2O & Ta_2O_5 grades (diluted) years 1-10 processed (%/ ppm)	1.40/126
LOM average % Li_2O & Ta_2O_5 grades (diluted) processed (%/ ppm)	1.30/117
Average Li_2O recovery (%) *	78%
Overall Ta_2O_5 recovery (% including off-site upgrade losses of ~4%)	38%
SC6.0 (grade %)	6%
Ta_2O_5 Concentrate final grade (%)	30%
Moisture content of SC6.0 concentrate (%)	9%
Average steady state annual tonnes of SC6.0 concentrate (Years 2-5/ Years 6-22)	511ktpa / 658ktpa
Average steady state annual tonnes of 30% Ta_2O_5 concentrate (Years 2-5/ Years 6-22)	428tpa / 587tpa
Cost Assumptions	
LOM average open pit mining costs ** ($/dmt open pit ore mine, excluding pre-production)	$28
LOM average underground mining costs ($/dmt underground ore mine)	$45
LOM average underground sustaining costs ($/dmt underground ore mined, excluding pre-production)	$4.7
LOM average mining G&A costs ($/dmt ore mined, excluding pre-production)	$5.4
LOM average processing cost ($/dmt ore processed) ***	$22
Logistics and transport ($/wmt conc. Inc Port Charges)	$69
General and admin ($/dmt ore processed, including mine G&A)	$8
Private and state royalties ($/dmt SC6.0)	$145
NPV Date	FID (Q2, 2022)
Corporate tax rate (%)	30%
Estimated opening tax losses ($M)	$55

* *Based on test work derived grade-recovery relationship for DFS mine plan grades of Li_2O normalised to 6%. Also note a ~3% reduction was applied to testwork results as noted in the main body text.*

** *Includes ROM rehandle.*

*** *Averaged over 6 years at 2.5 Mtpa and 17 years at 4 Mtpa.*

SC6.0 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.

Consistent with the PFS, 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) applied in the DFS.

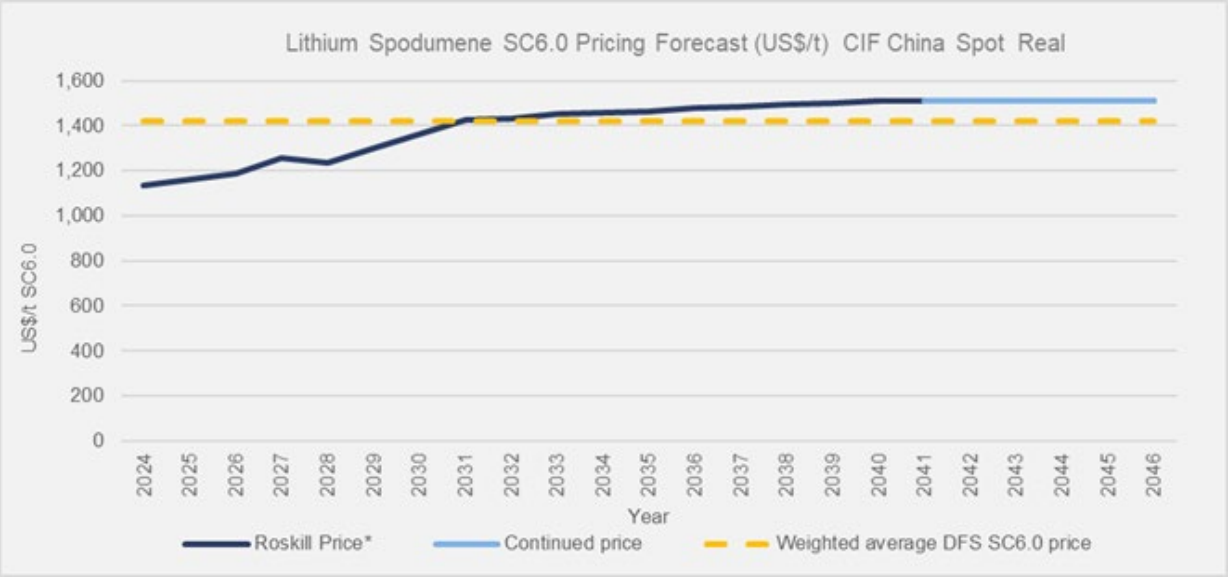
Roskill has provided annual forecast pricing through to 2041 on a real, US$/dmt CIF China basis for "Spot" prices. For the purposes of the DFS, Roskill's forecast annual spot price has been adopted (years 2024 to 2041). Liontown has assumed that it is reasonable to use the 2041 price as the basis from 2042 - 2046. The weighted average SC6.0 selling price in the DFS considering the volume and timing of SC6.0 sales is US$1,422 /dmt CIF China (or US$1392/dmt FOB) **Figure 5**.

Liontown has adjusted Roskill's CIF China prices to an FOB Geraldton price by deducting US$30 per tonne to reflect the estimated long-term 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.

Future production from Kathleen Valley remains 100% uncommitted to maintain maximum flexibility and independence over project funding and development options. For the purposes of the DFS, 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 Company has received strong levels of interest from parties who have expressed interest in off-take, giving Liontown confidence in its ability to execute its off-take strategy. Discussions with potential customers are proceeding on the basis that the price of SC6.0 will be determined with reference to the lithium hydroxide spot price, the objective of which is to achieve an outcome that is at least as favourable as the spot spodumene price, as it ensures that Liontown captures its fair share of the convertor margin.

Figure 5: Roskill Forecast SC6.0 Concentrate Pricing (US$/dmt CIF)



**Source: Roskill Lithium Pricing Forecast 2021 – 2041 (November 2021)*

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.

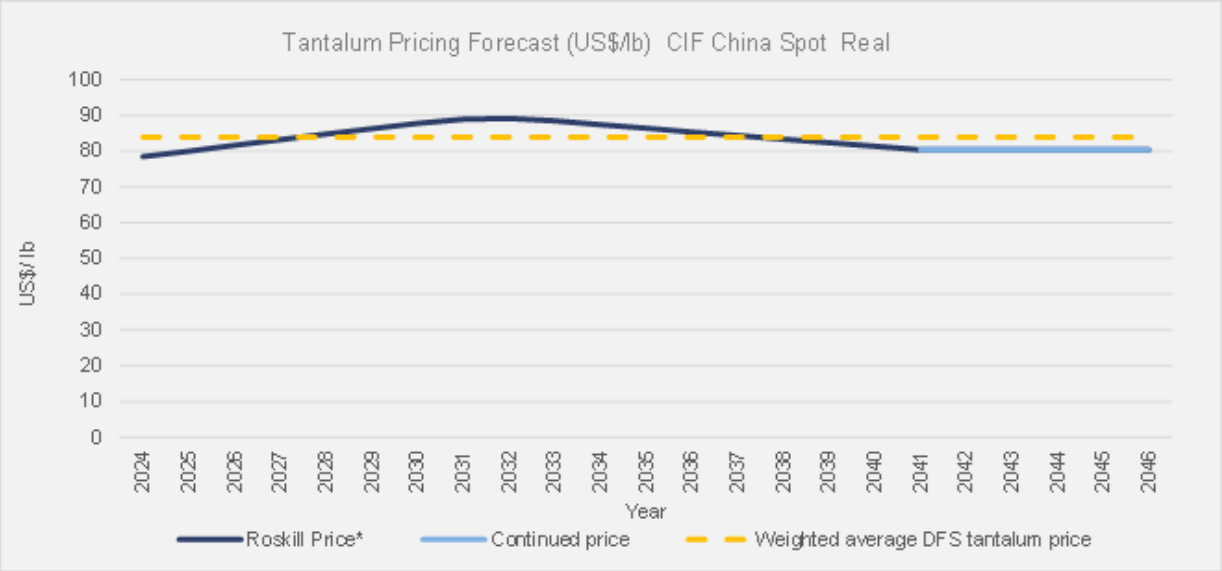
Liontown has again utilised the services of Roskill for its price forecast assumptions for tantalum concentrate as applied in the DFS.

Roskill has provided a forecast price through to 2041 on a real, US$/lb CIF China basis for spot pricing (**Figure 6**).

At this stage future tantalum concentrate production from Kathleen Valley remains 100% uncommitted to maintain maximum flexibility over project funding and development options. For the purposes of the DFS, 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 has provided annual forecast pricing through to 2041 on a real, US$/lb CIF China basis. Liontown has assumed it reasonable to use the 2041 price as the basis from 2042 - 2046. The weighted average tantalum selling price in the DFS considering the volume and timing of tantalum sales is US$84/lb CIF China. Liontown has adjusted Roskill's CIF China prices to an FOB Fremantle price by deducting US$0.15 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.

Figure 6: Roskill Forecast 30% Tantalum Concentrate Prices



**Source: Roskill Tantalum Pricing Forecast 2021 – 2041 (September 2021)*

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 six months, the Company will complete detailed engineering and further mine planning to enable an informed investment decision to be made. Assuming the decision is positive, first production would occur in H1, 2024 (a full year ahead of that envisaged in the PFS).

Opportunities to Increase Project Returns

Scoping Study Downstream Processing/ Refinery

In parallel with the DFS, an update to the October 2020 Downstream Scoping Study has been completed to review the feasibility of an integrated downstream processing refinery for the Kathleen Valley spodumene product given the revised physical and financial outcomes (ie mine grade, production and concentrate output) presented in the 2021 Kathleen Valley Lithium Project DFS, released to the ASX 11th November 2021.

A PFS-level metallurgical test work program to support potential further work in this area will commence in late Q4, 2021 utilising SC6.0 produced as part of current pilot program.

Production of Multiple Spodumene Concentrate Grades

The DFS was evaluated based on the production and sale of SC6.0. However, based on test work the WOF flowsheet gives considerable flexibility to produce multiple grades (6 - 7% Li_2O) for periods of the mine life, which is expected to deliver sales and operating cost benefits.

Further grade related optimisation will be undertaken as part of ongoing off-take discussions.

Expansion of MRE and Reserves

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 increase the Resource/Reserve base in the future.

This announcement has been authorised for release by the Board.

TONY OTTAVIANO

Managing Director
11th November 2021

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Competent person statements

The Information in this report that relates to Exploration Results and Mineral Resources for the Kathleen Valley Project is extracted from the ASX announcement "Strong progress with Kathleen Valley Definitive Feasibility Study as ongoing work identifies further key project enhancements" released on the 8th April 2021 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 and process design for the Kathleen Valley Project is based on, and fairly represents, information compiled 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 the Ore Reserves for the Kathleen Valley Project is based on, and fairly represents, information compiled by Mr Allan Earl who is a full-time employee of Snowden Mining Industry Consulting. Mr Earl is a Fellow of the Australasian Institute of Mining and Metallurgy and 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 Earl 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 2021 DFS

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 have been observed in the north-western part of the deposit (this material equates to <0.5% of the resource samples).

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 (April 2021)

Cut-off grade Li_2O %	Resource Category	Million tonnes	Li_2O %	Ta_2O_5 ppm
0.55	Measured	20	1.3	145
	Indicated	109	1.4	130
	Inferred	27	1.3	113
TOTAL		**156**	**1.4**	**130**

Notes:
I. *Reported above a Li_2O cut-off grade of 0.55%*
II. *Tonnages and grades have been rounded to reflect the relative uncertainty of the estimate.*

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).

A cut-off grade of 0.55% Li_2O has been applied based on similar operations in Western Australia (**Table 6**).

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 objective of the mining study was to generate a robust, high-margin, low-risk mining strategy that provides access to higher grade material earlier in the mine life while integrating input from the Native Title holders. Surface areas above and adjacent to the orebody have been included in an exclusion zone to protect any identified sites of cultural significance.

Estimation and Methodology

The proposed mining operations at Kathleen Valley will comprise both open pit and underground mining, with the underground operations providing most of the ore feed over the estimated 23-year mine life. Detailed open pit and underground mine designs were completed for the DFS using standard mine planning software, incorporating all available geological, geotechnical information and practical considerations.

Modifying factors assessed in the mine planning process included protecting surface areas of cultural significance, mining method, minimum mining widths, mining dilution and ore loss, geotechnical stability, paste filling, materials handling, ventilation, dewatering and other practical mining considerations. The Ore Reserve estimate is an outcome of the DFS with metallurgical, processing, engineering, marketing and financial factors also being considered. Engineering and cost estimations have been completed to a +/-15% level of accuracy, consistent with a study of this nature.

The underground mine is divided into two separate mining areas:

- The Mount Mann Vertical (MMV), which comprises a 5-40m wide orebody dipping at 50° to 60° to the south-west; and
- The NorthWest Flats (NWF), which comprises multiple stacked, flat to shallow dipping pegmatite lodes that range from 4-30m thick.

Open Pit

Two small open pits will be developed, one at the MMV and one at the NWF. Both open pits will be used to provide long term access portals to the underground.

The open pit has been designed to supply ore for the plant in the first 1-2 years until the underground operation is ramped-up to full capacity. The open pit designs contain a total of 3.3Mt of ore, at a diluted grade of 1.2% Li_2O / 141ppm Ta_2O_5. The pits contain 22Mt of waste material and 3.2Mt of ore for an average strip ratio of 6.8:1. Importantly most of the open pit mining is completed concurrently with the construction phase to provide ore at start-up, thereby de-risking initial operations.

Open pit mining dilution was applied using a Selective Mining Unit (SMU) block size of 5m x 5m x 3m.

Conventional open pit mining will use excavators and rigid dump trucks as the preferred mining method. Experienced mining contractors will be engaged to 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 stockpiles and blend fingers on the Run of Mine (ROM) pad.

Open pit mining will commence during the plant construction period to establish the portal and box-cut positions and will be completed early in Year 2 of production. Open pit ore will be stockpiled close to the plant for processing at the start of the mine life.

Underground Design

To establish the cut-off grade strategy for the underground several stope optimisations were completed for the MMV and NWF at a range of cut-off grades. Schedules were run using different

combinations of cut-off grade and mining areas. Options evolved as combinations of underground and open pit were assessed.

The best practical and economic outcome was to mine two small starter pits at a 0.7-0.75% Li_2O cut-off grade. The underground would target higher grades areas in the MMV and NWF at a 1.5% Li_2O cut-off. The underground cut-off would be progressively reduced over time to 0.7% Li_2O. The stope designs were constrained to allow a maximum of 10% host rock (gabbro) dilution.

The mine will be accessed via three surface decline and one internal declines:

- A portal will be established in the Mt Mann open pit to access the MMV south orebody via the No. 1 decline and No. 3 internal decline;
- The No. 2 decline will be established from a box-cut located adjacent to the plant and underground laydown area. This decline will access the deeper, high grade north-western MMV and deeper NWF area; and
- The No. 4 decline will be developed from a portal located in the Stage 2 open pit and will access the upper levels of the NWF.

The underground mines will employ conventional mechanised mining techniques using long-hole open stoping, with paste fill used in most areas to maximise extraction of the resource. Ore and waste will be trucked to surface via respective declines. Some of the narrower areas (<8 m width) in the NWF will be mined using a modified room-and-pillar method. The two underground mines will initially operate independently until a connection between the two is established in Year 3 of production.

A schematic of the proposed mine layout is shown in **Figure 4** shown earlier in the document**.** The declines will be developed 6m wide by 5.8m high at a gradient of 1:7. They will all extend to the bottom of the mine, reaching a vertical depth of approximately 500m below surface. Stockpiles will be developed along the decline at 150m intervals until level access positions are established. The declines will extend the mine services backbone into the mine.

Underground – Mount Mann Vertical

In the MMV area footwall drives will be developed to access the stopes which extend along the length of this portion of the deposit and cross-cut access will be developed from the footwall drive out to the ore body. The MMV region of the deposit is sub-vertical and typically 20-25m wide. Given the width and strike length, this area of the deposit will be mined by transverse long-hole stoping and cemented paste fill will be used as backfill. Primary stopes will be mined and paste filled first. Secondary stopes, which are adjacent to a paste fill stope, will then be extracted. The production level interval will be 30m floor-to-floor and individual stope width will be typically 30-35m.

Slots will be developed by long-hole methods with relief holes drilled to 760mm (or similar). Production holes will be nominally 89mm in diameter with maximum lengths of around 30-35m.

Holes will be charged using gassed emulsion with primers and electronic detonators installed at spacing of 10m or less along the length of the hole. A central controlled firing system will be used to initiate each blast. Once the slot is fully developed, production rings will be fired on retreat in a series of two or three ring blasts until the stope is completed.

Stope bogging will use a combination of conventional and remote methods. Conventional loading will be used until the stope brow opens, and thereafter cabin remote bogging will be used to clean the stope. All ore bogged from the stope will be placed in adjacent crosscuts or in stockpiles where it can be loaded out when safe and practical to do so. After the last ring is fired, the stope will be cleaned out using remote controlled loaders. Paste fill barricades will be erected at all entrances. The stope will be filled using cemented paste delivered via paste fill line from the paste plant on surface. The paste plant will be operated by the Company. Curing periods of at least 7 days will be observed before extraction of the adjacent stope commences.

Underground – North West Flats

Because the NWF is shallow dipping, a network of ore drives will be developed to access the flat lying long-hole stopes, which will be mined as primary and secondary or tertiary cut-and-fill stopes. Where flat lying areas are thin (< 8 m) they will be mined using room-and-pillar methods.

The NWF region of the deposit comprises shallow to flat dipping mineralisation 10-30m thick. The general stoping cycle will be the same as that described for the MMV stopes; however, these areas will be mined using a chequerboard pattern of long-hole stopes employing an extraction sequence of primary and secondary stopes, using cement paste fill. Paste holes will be drilled into the top of the stope from the extraction level, or from a level above, to enable the stope to be tight filled as far as practicable.

Narrow areas of the NWF region will be mined using room-and-pillar. Lateral development will define pillar boundaries on two sides and long hole blasting will be used to develop the rooms. These areas will not be paste filled.

Underground – General

Approximately 7Mt of waste rock will be generated from underground over the life of mine. All waste will be trucked to surface and tipped into the open pit void adjacent to the portal or taken to the surface waste stockpile, if required.

Underground – Ventilation

The primary ventilation system comprises fresh air intakes from the NW Flats portal and the Mt Mann portals, and fresh air raise intakes. There are five exhaust raises planned, located in the northern, central, and southern ends of the footwall drives. The system is currently designed for a total flow of 1,500m^3/sec with 750m^3/sec going to each mining area.

Geotechnical

Peter O'Bryan and Associates (POBA) completed the geotechnical review for the open pit and underground mining study. Geotechnical conditions within the mine have been assessed and the rock mass quality was determined to be "consistently very good". UCS rock strengths in the gabbro waste range from 140 to 280MPa and 91 to 188Mpa in the pegmatite ore. Youngs modulus values range from 70 to 105.

Hydrogeology

Ground water inflows into the workings are expected to be minimal with most of the drainage water coming from the mining process. A nominal drainage requirement of 10 to 15 l/sec is expected during steady-state production. The underground dewatering system will consist of a network of sumps and pumps in each decline. Water will be collected from active faces and sumps via submersible pumps then transferred to permanent pump stations comprising twin helical rotor pumps and hoppers. All drainage water will be pumped to the sediment pond within the turkey's nest on surface. Sumps will be located on each level to capture drainage water and sediment.

Drilling is currently underway at Kathleen Valley to test and ultimately model water extraction for the planned mining zones.

Drill & Blast

Orica's recommended drilling and blasting parameters were applied in the DFS.

An open pit and underground grade control drilling study was undertaken by *Optiro* and the recommendations were incorporated into the DFS.

Costs

Snowden received non-binding pricing from open pit and underground contractors for the mining schedule which provided for a 90-month scope of work. The contractors each provided a schedule of rates for the activities and estimated resource requirement to enable various downstream and forward-looking costs to be determined.

Liontown owner's costs, paste fill costs and power costs were estimated by Snowden based on the labour numbers, and labour and consumables costs and quantities estimated in the DFS.

Mine Production Schedule

The initial processing plant capacity will be 2.5Mtpa. In Year 6, this will ramp up to 4Mtpa, which will be entirely produced from the underground. Ore from the open pit will initially supplement the feed to the mill, until the underground is sufficiently developed to sustain this rate entirely.

The overarching mining strategy therefore comprises three phases:

1. Develop the box-cut for the No. 2 decline. Development of two small open pits over a period of approximately 30 months and includes mining of the Mt Mann pit (Stage 1) and the Northwest pit (Stage 2). This includes the establishment of decline portals in each of the pits;
2. Develop the underground mine to a sustainable production rate of 2.5Mtpa; and
3. Develop the underground mine to a sustainable production rate of 4Mtpa.

The life-of-mine underground development is shown in **Figure 7**. Yearly ore supply, process feed grades, SC6.0 and Tantalum production are shown in **Figure 8** through to **Figure 10**.

Figure 7: Lateral development by mine area yearly

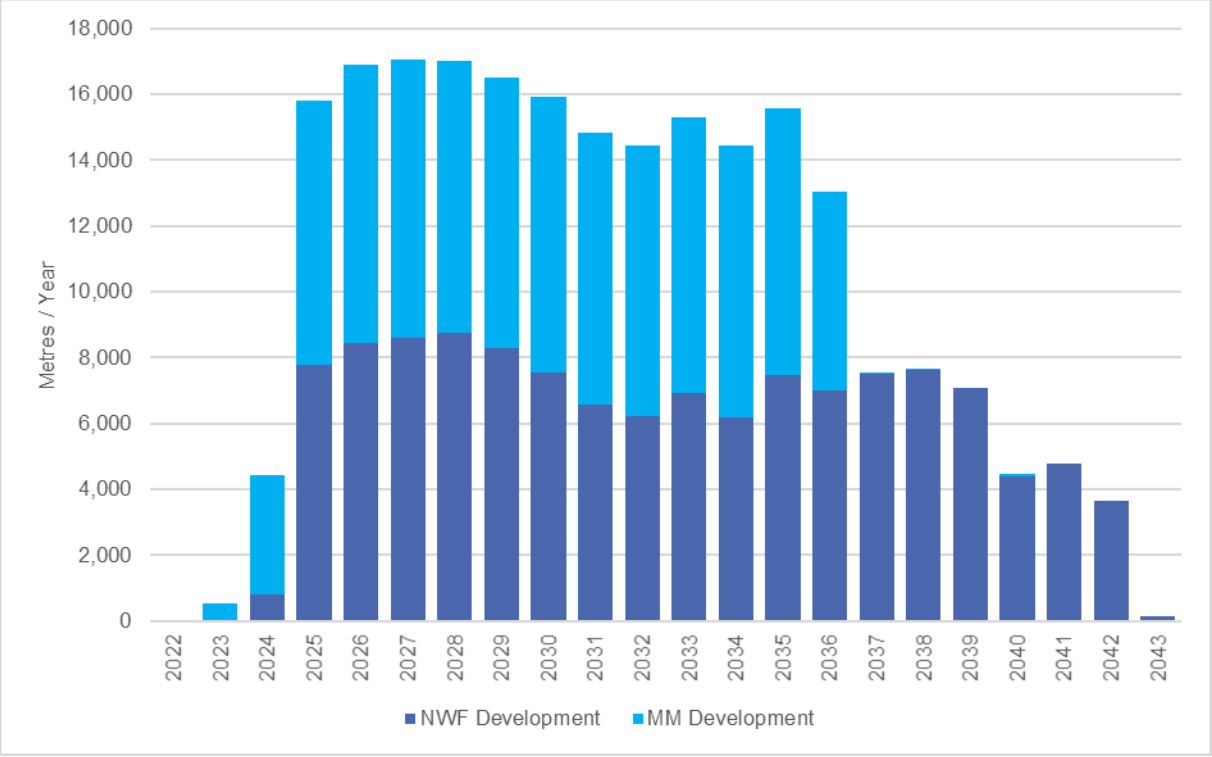


Figure 8: Ore production profile yearly

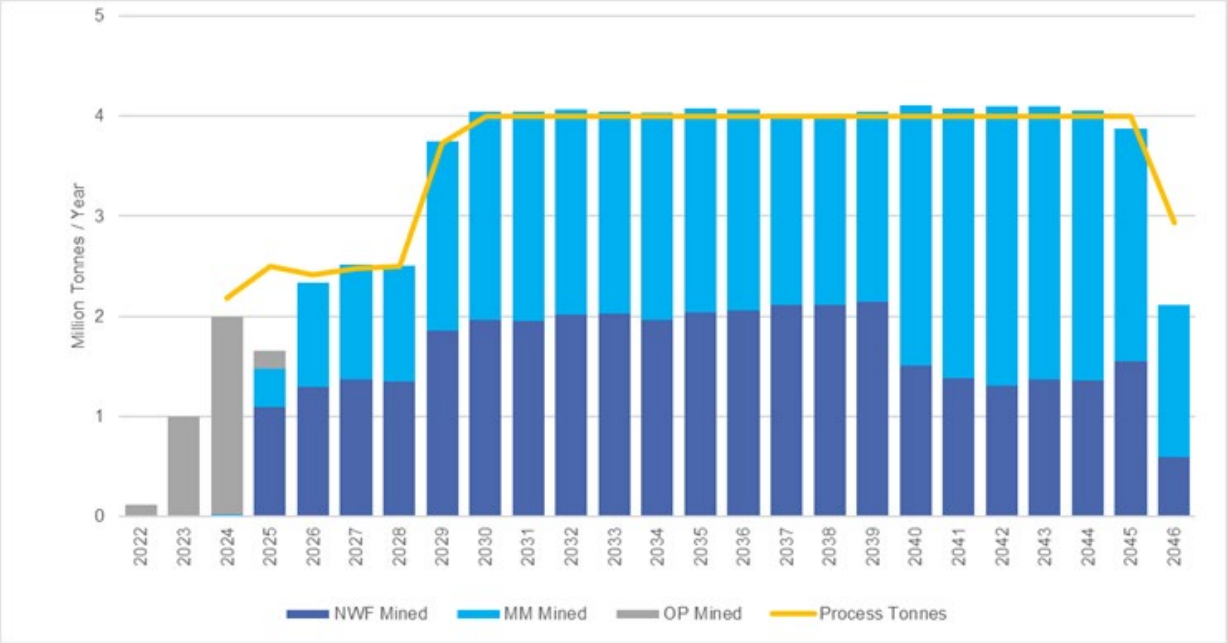


Figure 9: Annualised SC6.0 production and Li_2O feed grade profile

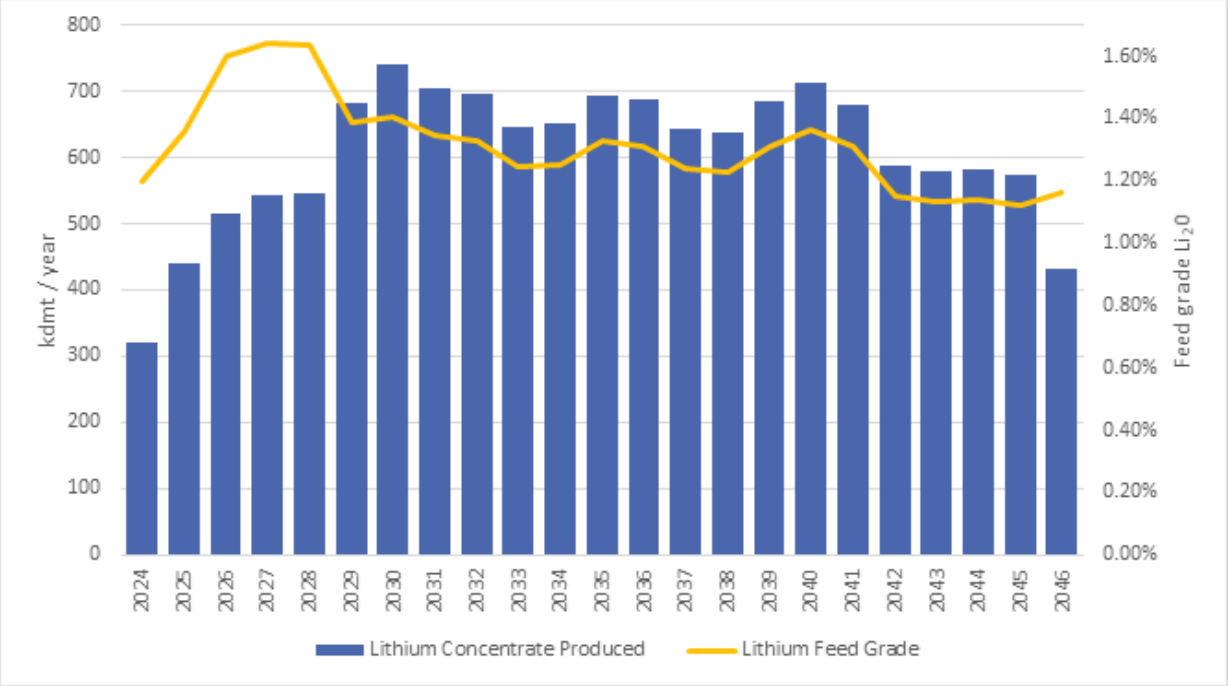
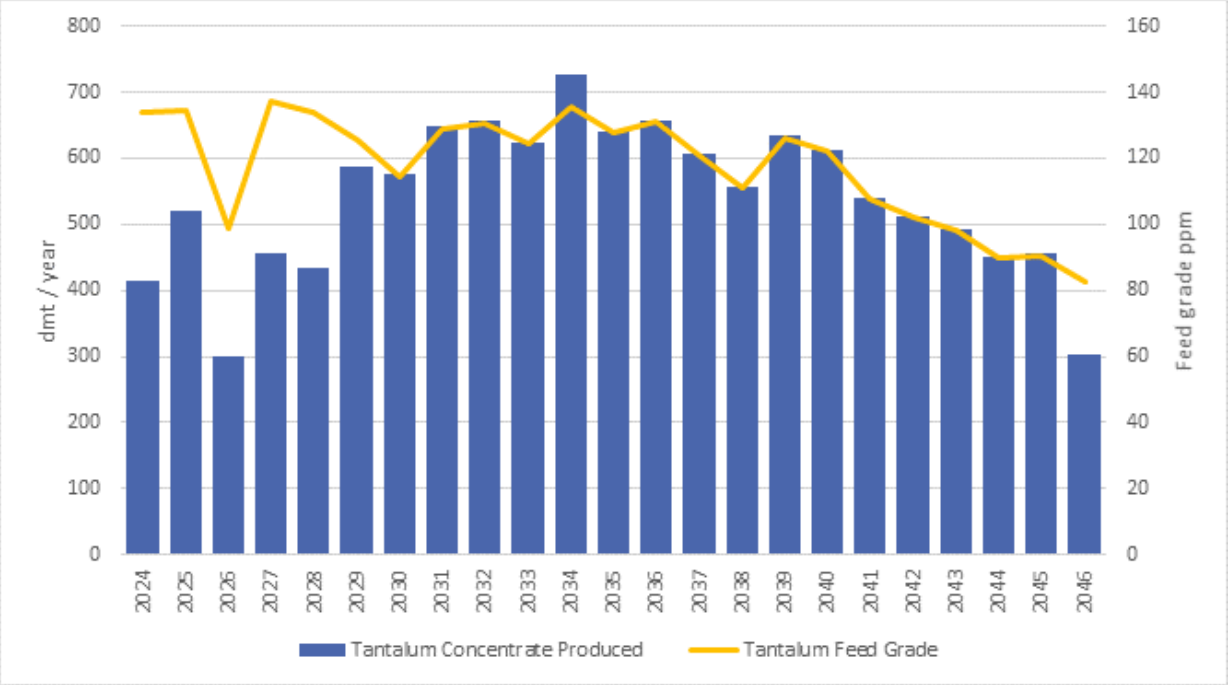


Figure 10: Annualised Ta_2O_5 production and Ta_2O_5 feed grade profile



LOM Production Inventory & Ore Reserve Estimate

The underground designs contain a total of 79.6Mt of the production inventory, at a diluted grade of 1.30% Li_2O/ 117ppm Ta_2O_5. Underground mining dilution was applied in two ways: applications of 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. Refer to **Table 7** for the Ore Reseve Estimate.

Table 7: Kathleen Valley Project – Ore Reserve Estimate (November 2021)

Category	Tonnage (Mt)	Li_2O (%)	Li_2O (T)	Ta_2O_5 (ppm)	Ta_2O_5 (T)
Underground					
Proved	-	-	-	-	-
Probable	65.4	1.34	878,966	119	7,799
Sub-Total	**65.4**	**1.34**	**878,966**	**119**	**7,799**
Open Pit					
Proved	2.7	1.30	33,581	141	374
Probable	0.5	0.93	4,696	148	75
Sub-Total	**3.2**	**1.21**	**38,277**	**142**	**449**
TOTAL	**68.5Mt**	**1.34%**	**917,243t**	**120ppm**	**8,247t**

Notes:-

1. *Tonnages and grades are diluted and reported at Li_2O cut-off grade of 0.5% (open pit) and 0.7 -1.2% (Underground) and use a US$740/dmt FOB SC6.0 pricing assumption;*
2. *Tonnages and grades have been rounded.*

Open Pit – Treatment of Inferred Material

A total of 0.1Mt at 1.11% Li_2O and 112ppm Ta_2O_5 of Inferred material (0.1% of the total Ore Reserve) is included in the open pit production inventory, however it is not included in the Ore Reserve.

Underground – Treatment of Inferred Material

All Measured, Indicated and Inferred material in the underground area was optimised, designed and scheduled. Stopes were classified on a dominant resource category basis, where the dominant category for the stope is reported as the resource category for the entire stope. Probable Reserve categories have an average of 3% Inferred material included in the stope and ore drive development. This is judged as reasonable dilution of the Ore Reserve.

Stopes that have a dominant resource category of Inferred are not reported as part of the Ore Reserves but have been scheduled as part of the life of mine plan.

The underground Ore Reserve has been classified as a Probable Ore Reserve. There is about 5.8 Mt of Measured Mineral Resource, which has been classified as a Probable Ore Reserve. This classification reflects the uncertainties associated with the underground mining, Modifying Factors and a lower degree of confidence in the Ore Reserves than in the corresponding Measured Mineral Resources. The classification does not imply a reduction in the level of geological knowledge or confidence. The Competent Person recognises that no underground mining has taken place at Kathleen Valley and there are no comparable operating underground lithium mines in Australia that could be used to benchmark dilution and ore loss factors. This uncertainty may be reduced once underground mining commences and reconciliation data becomes available.

The Inferred material included in the production inventory is 14.2Mt @ 1.11% Li_2O & 102 ppm Ta_2O_5, representing 18% 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 10 years, with the remainder being mined through to the end of the mine life and therefore 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

Three distinct phases of test work have been conducted for the Kathleen Valley Project.

2019 Testwork

During 2019, a PFS-level test work 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 test work 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 was 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 Whole Ore Flotation (WOF) flowsheet;
- To establish preliminary grade-recovery curves for both DMS and WOF flowsheets at a range of composite grades to enable direct comparisons to be made between each; and
- The testing and development of preliminary flowsheets to support the recovery of a tantalum concentrate.

This program of work underpinned the 2020 PFS update released on 9th October 2020.

2021 Test work

Following the 2020 metallurgical program, a substantial testwork program has again been carried out at ALS in 2021 with process input from Lycopodium. Samples were collected from potential underground-sourced ore combined with additional open pit samples across the entire ore body reflecting variation in both depth and spatial distribution.

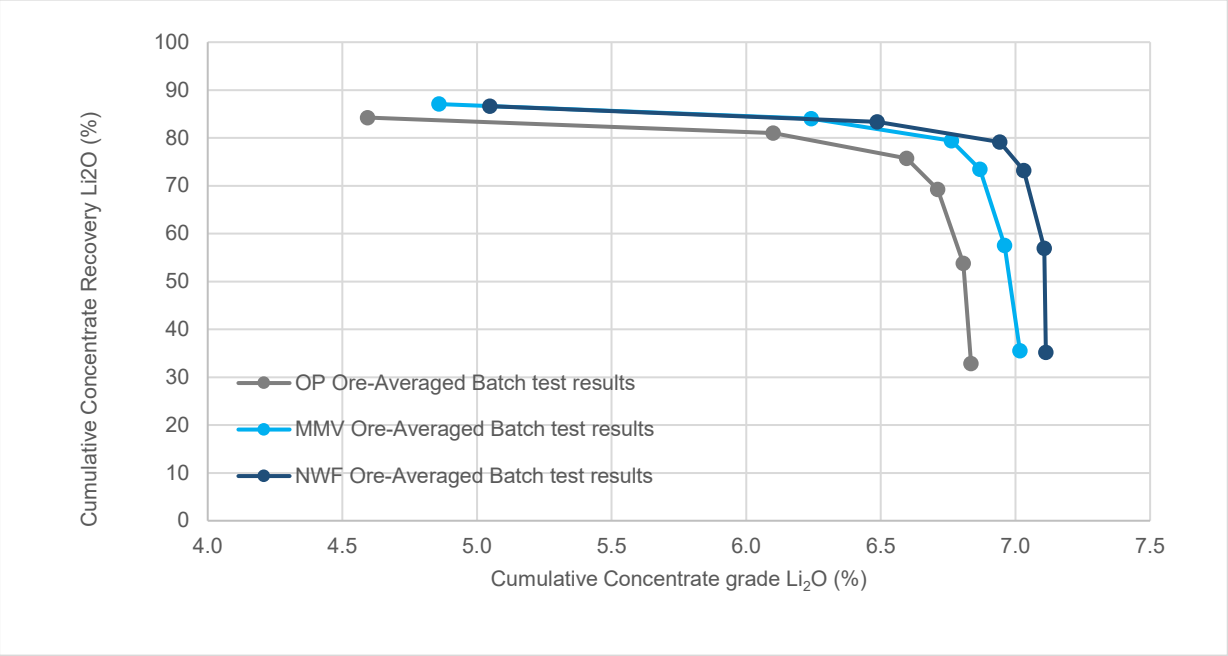
The 2021 testwork program included:

- Mineralogy and Head assays;
- Additional Comminution testing;
- Magnetic separation to remove ferrous materials with subsequent gravity concentration to recover tantalum;
- Optimisation of the Flotation flowsheet and reagent regime;
- Variability testing for both comminution and flotation;
- Locked cycle flotation test work;
- Bulk flotation to generate tails samples; and
- Ancillary tests including thickening, filtration and rheology.

Key results indicate:

- Flotation results indicated that a concentrate with a grade of more than 6% Li_2O could be consistently produced as demonstrated in **Figure 11**.
- Comminution samples were moderately competent with comminution results indicating a Bond ball work index of 15-18 kwh /t and Axb of ~55;
- Grind optimisation of the flotation feed indicated that a primary grind of 180µm gave the optimum recovery and was selected for subsequent testwork;
- The WOF process has been tested at a DFS level in the laboratory with a grade-recovery relationship established for each identified ore zone;
- Variability samples tested in the laboratory showed a consistent ability to make a concentrate grade of 6% Li_2O at an acceptable recovery;
- Simple magnetic and gravity separation used to recover tantalum also reduces already low iron levels in the flotation feed and consequently final SC6.0 concentrate;
- Using staged recoveries, the overall Ta_2O_5 reporting to concentrate has been estimated as 40-56% to a grade of ~12% based on preliminary test work. A mineralogical review indicates potential to produce a 30% Ta_2O_5 concentrate at an offsite upgrade facility;
- Flotation test work using site water has had minimal impact and further work is ongoing; and
- Test work has been completed by Mine-Fill Services evaluating the treatment of tailings for paste fill. Pre-treatment is required, and additional equipment has been included within the flowsheet.

Figure 11: DFS Cumulative Grade vs Recovery - Average of multiple Batch Tests



2021 test work results were used to prepare the Project Physicals in **Table 8.**

Table 8: 2021 Project Physicals

Feed Rate	2.5 Mtpa Years 2-5	4 Mtpa Years 6 - 10	LOM
Feed Grade (Li_2O) (%)	1.56	1.34	1.30
Recovery (%) (Li_2O – normalized to 6.0% Li_2O)	79.5	78.5	78
Li_2O Concentrate Production (ktpa)	511	658	608
Concentrate grade (% Li_2O)	6.0	6.0	6.0
Concentrate (% Fe_2O_3 Typical/ Maximum)	0.8 / <1.5	0.8 / <1.5	0.8 / <1.5
Ta_2O_5Recovery (inc. offsite upgrade losses) (%)	40	36.9	37.6
Ta_2O_5 Conc Production (tpa)	428	587	539

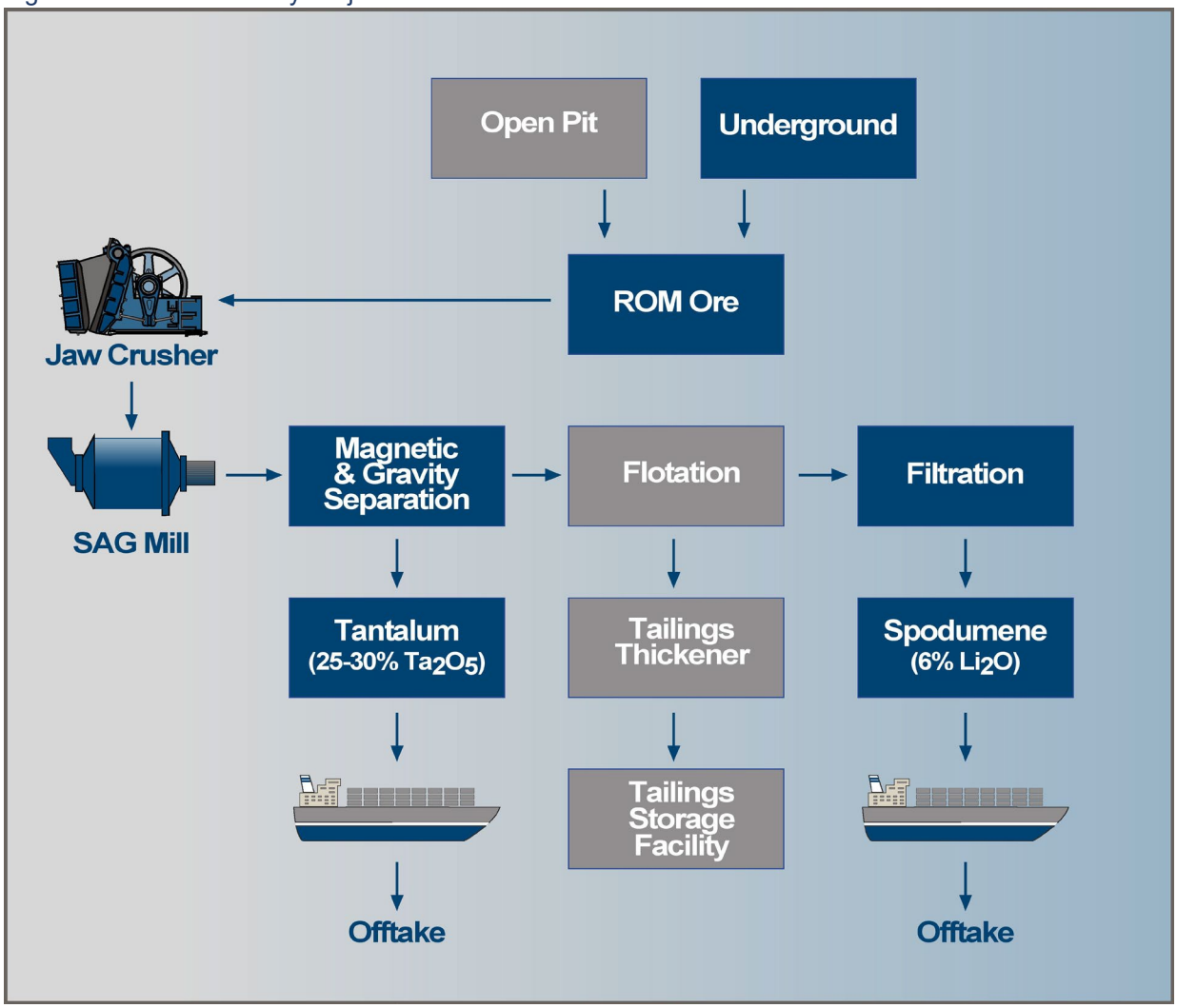
Note: Quoted recoveries based on laboratory testwork including 3% discount

Flowsheet

The Kathleen Valley Project process plant will consist of a mineral processing concentrator with associated services and ancillaries (**Figure 12**). The plant has been designed using industry standard robust equipment and processes. The process facilities include:

- Two-stage crushing circuit (designed to process 4Mtpa);
- SAG Milling;
- Low and high intensity magnetic separation combined with sequential gravity separation to produce a tantalum concentrate (which also removes ferrous impurities);
- Flotation, thickening and filtration to produce Li_2O concentrate; and
- Paste fill & Tailing disposal.

Figure 12: Kathleen Valley Project Flow Sheet



Note: Ta_2O_5 grade includes offsite 3rd party upgrade

4. Site Infrastructure

Site Development and Access Roads

The sealed Goldfields Highway is just 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 concentrate dispatch area to the Highway.

Power Supply

Power will be provided by a 3rd party via a dedicated on-site power facility. A combined gas, solar, wind and battery storage solution will ensure a start-up mix of 60% renewables (inclusive 100% gas redundancy).

Total anticipated site wide online power demand including the underground mine is ~25MW at a mining rate of 4Mtpa.

Water Supply

Considerable water investigations have been completed as part of both the PFS and the DFS. Multiple water sources/sites within the mine and adjacent exploration licences have been identified via proven hydrological techniques with drilling and pump testing carried out on five production bores as part of the DFS. Considerable high-quality water at sustainable flows was extracted from the bores supporting current production assumptions. Water exploration remains ongoing.

Accommodation and Plant buildings

An onsite camp complete with single rooms, wet mess, dry-mess and recreational facilities has been included in project capital allowances.

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

Underground Portal/s and Surface Facilities

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 access will be provided at three points, via a box-cut constructed adjacent to the plant ROM pad and an in-pit portal located within each of the two pits. Surface facilities including a paste-fill plant, power/water reticulation, emulsion plant 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 for 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 future paste fill plant for underground placement or deposition in an above ground TSF.

Environmental testing as part of the DFS indicates that tailings are essentially benign, unlikely to pose a risk to the environment and, as such, do not require specialised lining systems however to maximise water recovery a plastic liner has been included in the design.

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.

River gauging and upstream rain gauging were used to calibrate the flood modelling.

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

Dewatering studies have incorporated geological data, mine plans and recent pump testing of water bores, drilled adjacent to the proposed pit and underground workings. Further drilling is underway at the date of publishing and will be used to confirm initial assumptions and build an appropriate model as part of detailed engineering.

6. Geotechnical

Mining

Geotechnical analysis of drill core from within the proposed open pit and areas of underground development supports the DFS pit and underground designs. Geotechnical risk is managed using standard ground support processes methods used in Australia. Exploration drill core also indicates that the ground outside the current mining area is very competent. Large pillars have been designed in the NWF mining areas to provide regional instability. Regional pillars are not required in the MMV area. Geotechnical investigations and monitoring will be required during operations. Standard operating procedures will be developed to cover the risk of poor ground conditions.

A further geotechnical drilling program and down-hole teleview surveys of existing RC drill holes were undertaken in Q4 2020 combined with acoustic and numerical modelling as part of the DFS, specifically for large flat-lying zones of underground development and decline locations with no adverse findings.

Infrastructure & Process Plant Construction

A geotechnical drilling and pitting program for all major project plant and infrastructure has been undertaken which indicated no significant adverse ground conditions will be encountered during construction.

7. Environmental Assessment, Community and Government

Environmental, Social and Governance (ESG)

Clear real-world targeted emissions and water/land usage were established as part of the DFS based on actual processes and technology available today. An inaugural ESG Report is due to be published by the Company in Q4, 2021 which will be in line with GRi[(1)] standards, cross-linking to SASB[(1)], TCFD[(1)] and SDG's[(1)]. Projected key project metrics (**Table 9**) include:

Table 9: DFS Projected Environmental Metrics

Metric	Projections
Projected initial CO_2 Intensity/ tonne LCE [2]	0.72t CO_2-e/t LCE
Planned Total Land Usage hectares/tonne LCE [2]	467 Ha
Calculated Average Water Usage/tonne LCE [2]	20 m^3 /t LCE
Planned Initial Renewable Energy Mix (%)	60% Renewables

[1] GRi _ Global reporting Imitative, SASB- Sustainability Accounting Standards Board, TCFD- Task Force on Climate-related Financial Disclosures & SDG's Sustainable development guidelines
[2] CO_2 emissions based on Scope 1 & 2 emissions to concentrate being FOB. Water and land usage based on DFS design throughput and is inclusive of the land required for solar arrays. LCE- Lithium Carbonate Equivalent.
[3] Lithium Carbonate Equivalent (LCE) calculated based on 6.74t of SC6.0 to 1t LCE as per the British Geological Survey conversion factors

As part of the DFS, environmental consultant MBS has completed the environmental baseline studies for the Project and its surrounds. Work completed included:

- Targeted flora and fauna surveys;
- Soil and landform survey of the mine site;
- Updated waste rock and tailings characterisation to reflect updated project design;
- Final surface water impact assessment based on final site layout and surface water management requirements;
- Subterranean fauna surveys in zones where localised groundwater drawdown may result from groundwater extraction have also been undertaken with no stygofauna detected; and
- Permit preparation.

No Matters of National Environmental Significance, as defined under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) will be impacted by the Kathleen Valley Lithium Project.

Climate Strategy Roadmap

The Company is committed to developing and operating the Project in a sustainable and ethical manner, including implementation of best practice energy and emissions management.

The Company's Climate Strategy Roadmap was presented in August 2021, with a detailed plan expected to be developed in 2022 specifically for the Kathleen Valley Lithium Project. Key elements of the Company's Climate strategy include:

At Project start-up:

- Best-in-class Scope 1 and 2 emissions and reduced impact on local surroundings due to its underground mining approach
- Implementing a 60% renewable energy target to reduce reportable emissions
- Designing the Project for the electrification of underground operations
- Utilise biofuel for mobile equipment, where commercially viable
- Minimising water usage through recycling

Within five years:

- Greater than 75% renewable power
- Upgraded electric mining fleet as technology matures
- 50% biofuel powered (or equivalent) road concentrate transport fleet

Within 10 years:

- 100% renewable power
- 100% electric or clean fuel powered mining and Light Vehicle fleet

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.

Consent under the Aboriginal Heritage Act 1972 forms part of the negotiations in respect to a mining agreement. The Company recognises the importance of the Tjiwarl to the success of the future operation at Kathleen Valley and, as such, a formal NTA for the Project has been pursued concurrently with the DFS.

As announced on 5th November 2021, the Company has been advised by Tjiwarl AC that the Tjiwarl have provided their consent for the signing of the Kathleen Valley Project NTA. With documentation being finalised, arrangements are now underway to organise an official signing ceremony on the 17th November 2021 to commemorate the parties having reached agreement.

Under the agreement terms, Liontown will commit to actions in the following key areas:

- Communication
- Land and Water Management
- Aboriginal Heritage Management
- Cultural Awareness & Access
- Compensation
- Social Opportunities and Development
- Employment and Contracting

The Agreement includes consideration of the proposed 2020 Aboriginal Cultural Heritage Bill which is under review.

Governance

A corporate review of Liontown's policies has been undertaken as part of the DFS and approved by the Board of Directors with a focus on returning a positive financial outcome while:

- Minimising carbon emissions, water usage and land disturbance;
- Engaging meaningfully with the Traditional Owners and other local stakeholders; and
- Ensuring corporate governance is consistent with industry best practices.

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).

Additional water exploration miscellaneous leases have been applied for regional water exploration.

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

As part of the past work environmental consultant MBS identified the main areas of environmental work which required further investigation to gain approvals as part of the DFS. The environmental work program was designed to address these activities.

The work required comprised environmental studies followed by environmental approval applications. An approvals strategy was developed for the project which focused 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.

Approval documentation has also been prepared based on the DFS with the following permit applications ready for submission: Native Vegetation Clearing Permit; Mining Proposal; Mine Closure Plan and Works Approval.

Permit applications for the project are expected to be submitted in December 2021 following completion of the DFS. A Section 18 application will also be submitted following signing of the NTA.

8. Financial Information

A financial evaluation was completed using the Base Case Production Target of 83Mt of potential mill feed at an average mill feed grade of 1.30% Li_2O.**Table 10 – Table 13** summarise the results.

Estimated Life-of-Mine Financials

Table 10: Life-of-Mine Project Cash flows

Description		Cash flow (A$B)
Revenues (lithium)		$26.66
Operating costs (excluding royalties, net of tantalum credits)		($6.26)
Capital expenditure	- Pre-production	($0.47)
	- Ongoing & expansion capex	($0.07)
	- Sustaining	($0.45)
Royalties (State and Private)		($2.03)
Corporate tax		($5.20)
Life of Mine Project Free Cash flow (A$B, after tax)		**$12.18**

Sustaining capital is estimated at an average annual amount of $19M p.a. and $449M over the LOM.

Capital Expenditure

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

Table 11: Capital Cost Estimate Summary (A$, Q3, 2021, +/-15% accuracy)

Main Area	Capital (A$M) 2.5Mtpa	Capital (A$M) 4Mtpa Expansion
Treatment Plant	105.0	26.4
Reagents & Plant Services	38.0	0.9
Infrastructure (including paste fill plants)	86.8	16.8
Mining	1.2	-
Construction In-directs	36.5	7.7
Subtotal	**267.5**	**51.8**
Management Costs	36.1	8.0
Owners Project Costs	35.2	1.2
Pre-production	107.2	-
Subtotal	178.5	9.2
Contingency	26.5	4.6
Project Total (A$M)[(1)]	**472.5**	**65.6**

[1] *Note Project totals exclude working capital, finance costs, sustaining capital and corporate costs associated with project development*

Operating Cost Estimate

The Project has an estimated cash cost (excluding Royalties), FOB Geraldton detailed in **Table 12** below.

Table 12: Operating Cost Estimate (Exclusive of Royalties)

Operating Cost[(1)]	US$/dmt of Conc. Years 1-10	US$/dmt of Conc. LOM
Mining	185	189
Processing	89	93
Transport and logistics	55	55
G&A	38	37
Tantalum Credit	(48)	(47)
Cash Operating Cost (US$/ dmt SC6.0 exc. Royalties)	**319**	**327**

[1] All of costs based on a normalised grade of 6.0% Li_2O

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

Table 13: Operating Cost Estimate – Including Royalties

SC6.0 Sales Price (US$/dmt FOB)	Years 1-10 SC6 Cash cost excluding royalties (US$/dmt)	Royalty[1] (US$/dmt)	Years 1-10 SC6.0 Cash cost including royalties (US$/dmt)	NPV (A$B)
800	319	62	381	1.6
1,000	319	77	396	2.6
1,200	319	92	411	3.6
(DFS) 1,392	**319**	**98**	**417**	**4.2**
1,600	319	121	440	5.5
1,800	319	136	455	6.5
2,000	319	150	469	7.4

Note: Royalties include state and private for lithium and tantalum products

The operating cost estimates are detailed below:

Mining

Open pit ore has an overall mining operating cost of $66M over the life of the mine (includes G&A, excludes Pre-production). Underground ore has an overall mining operating cost of $4B over the life of the mine (including G&A, excluding Pre-production).

This equates to an average total mining cost (excluding mining G&A, excluding Pre-production) per tonne of ore of $44/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 $5.4/dmt. These costs have been estimated assuming contractor mining for both the underground and open pit.

The underground and open pit mining operating cost estimate (excluding pre-production) is summarised in **Table 14.**

Table 14: Mining and G&A Operating Cost Summary (+/-15% accuracy, Q3 2021)

Mining Cost Centre	Fixed A$M p.a	Variable A$/t Ore	Fixed A$M p.a	Variable A$/t Ore
	Open Pit		Underground	
Owner & Contractor costs	13.18	0.36	33.03	0.63
Underground Power	-	-	-	1.71
Load & Haul (inc. drill/ blast, grade control)	-	20.18	-	20.06
Underground Development & paste fill	-	-	-	12.72
Subtotal Mining	**13.18**	**20.54**	**33.03**	**35.12**
G&A	5.86	-	18.65	-
Total	**19.04**	**20.54**	**51.68**	**35.12**

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 2.5Mtpa and 4Mtpa 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 process plant operating cost estimate is summarised in **Table 15.**

Table 15: Process and G&A Input Operating Cost Summary (+/-15% accuracy, Q3 2021)

Processing Cost Centre	Fixed A$M p.a	Variable A$/t Ore	Fixed A$M p.a	Variable A$/t Ore
	2.5 MTPA		4 MTPA	
Power – Plant Site	3.48	1.83	3.13	1.54
Power – Grinding	-	1.85	-	1.95
Operating Consumables	0.31	9.42	0.41	9.09
Maintenance & Repairs	0.39	1.40	0.46	1.04
Laboratory	3.93	-	4.72	-
Mobile Equipment	0.78	-	0.95	-
Labour – Processing	15.68	-	19.54	-
Subtotal Processing	**24.57**	**14.50**	**29.21**	**13.62**
Labour – Admin.	4.25	-	4.25	-
G&A	5.52	-	6.70	-
Subtotal General and Administration	**9.77**	**-**	**10.95**	**-**
Total	**34.34**	**14.50**	**40.16**	**13.62**

Transport and logistics

The DFS assumes road transport of the SC6.0 from site to Port of Geraldton on sealed roads. Indicative quotes received from transport providers covers loading and transportation from the mine site to the ship loader and includes storage and rehandling outside of the port. Port costs are based on the Mid-West Port Authority published port fees (Geraldton).

Tantalum will be pre-concentrated to a ~12% 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 13 illustrates net cash flows after tax per annum and the SC6.0 revenue stream associated with the Project.

Figure 14 illustrates the annual unit costs of the Project.

Figure 13: A$ Net Cashflow After Tax and SC6.0 Revenue

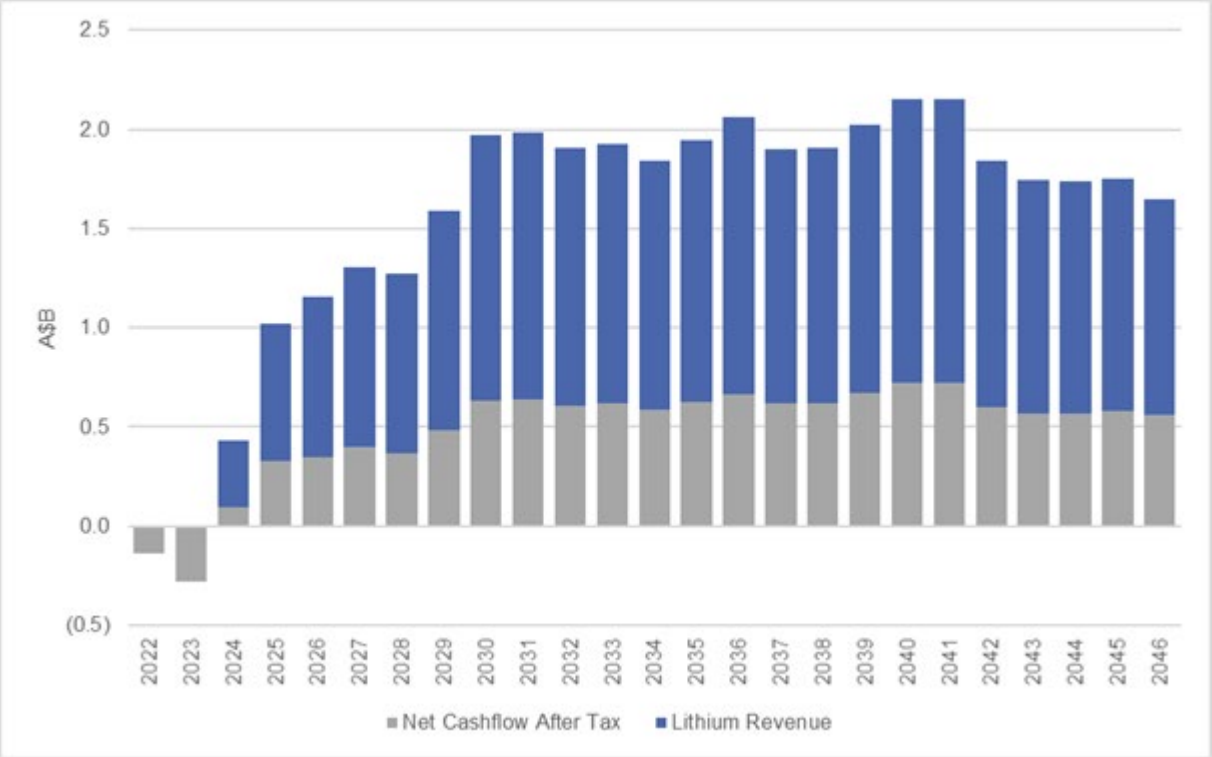
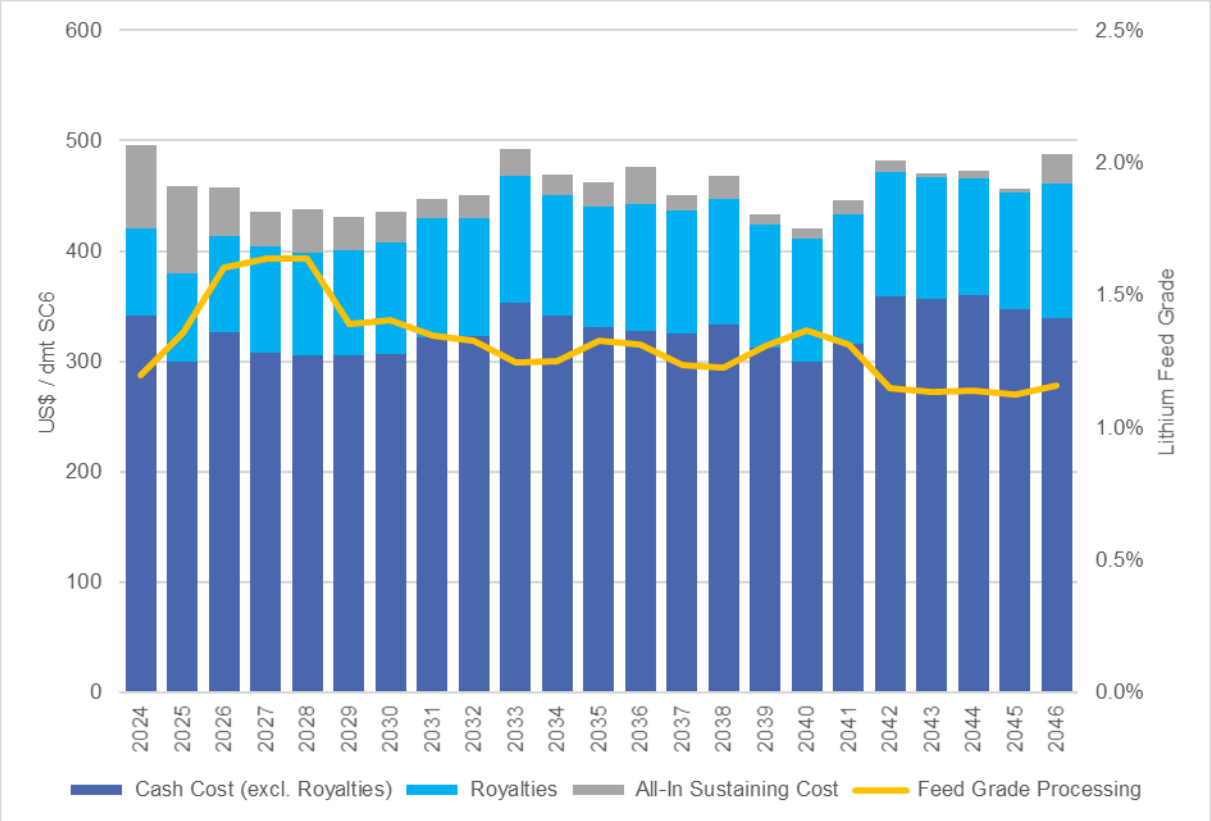


Figure 14: US$ Cash Cost and All-in Sustaining cost - Feed Grade



Foreign Exchange

A long-term FX value of A$1=US$0.73 was used in converting AUD to USD.

Commodity Pricing

See discussion in main body of report.

Marketing

The Kathleen Valley Project will produce a 6% lithium spodumene concentrate (SC6.0). While lithium has several traditional consumption markets (e.g. glass, ceramics and pharmaceuticals), recent and forecast demand is being driven predominantly by lithium-ion battery production for energy storage, and in particular electric vehicle batteries. SC6.0 can be converted into lithium hydroxide or lithium carbonate for use in electric vehicle batteries, positioning the Kathleen Valley project well for future growth in lithium demand.

At this stage, future production from Kathleen Valley remains 100% uncommitted to maintain maximum flexibility over funding and development options. At present, lithium concentrates are typically sold via specific agreements between producer and customer rather than a liquid metals exchange as with some other commodities (eg. gold and copper).

As part of its marketing strategy, Liontown intends to put in place foundation off-take agreements with customers to underpin future sales of lithium spodumene and help support financing options being considered, with the aim of delivering diversification by geography and stage in value chain.

Liontown has engaged with more than 50 parties who have expressed interest in off-take and is confident it will be able to execute on its off-take strategy. As noted in the main body of this announcement various pricing mechanisms are being explored with potential customers, including pricing based on lithium hydroxide.

It is anticipated that off-take agreements would commence as SC6.0 only, with the potential to shift to lithium hydroxide in the future as the Company further advances its downstream processing strategy and that capability is developed.

Any uncontracted spodumene production (expected c. 10 – 15%) will be sold into a openly traded and transparent market. Various options are being explored, including auction platforms (such as the Battery Material Exchange (BMX), where other spodumene producers have recently achieved outstanding results).

Off-take for tantalum is also being concurrently explored.

Funding

As disclosed in Table 11, project specific funding in the order of A$473M (excluding working capital, finance costs, sustaining capital and corporate costs associated with project development) is required to achieve the first production indicated by the DFS.

The Company continues to explore and assess available options to fund this pre-production capital. A combination of debt and equity financing options are being considered with discussions with potential financiers have commenced and these continue to progress positively.

Based on the strong financial metrics presented as part of the DFS results, and the progress of various ongoing discussions, the Company considers there are reasonable grounds that the construction of the Kathleen Valley Project can be financed.

There are several factors that will influence the ability of the Company to secure certain forms of funding which may include (but are not limited to) a requirement to have ‘bankable’ lithium offtake agreements (to provide some certainty over the project’s future cash flows) and favourable prevailing market conditions (being both the lithium market and the wider equity and debt markets).

Current funding conditions for both equity and debt sources of funding are positive, however there is no guarantee these conditions will continue in the future.

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 or seeking a joint venture partner(s). The ultimate financing structure for the project will be dependent on several factors but will be determined on the basis of delivering an optimal outcome for shareholders.

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 point an investment decision is made for Project.

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

Table 16: Indicative Development Schedule

Activity	Target Start	Target Complete
Detailed Engineering Design	Q4 2021	Q4 2022
Financial Investment Decision	Q4 2021	Q2 2022
Pre-production (open Pit)	Q3 2022	Q4 2023
Plant Construction	Q3 2022	Q4 2023
Commissioning	Q3 2023	Q1 2024
Plant nameplate	-	Q2 2024

10. Opportunities and Risks

Opportunities

Scoping Study Downstream Processing/Refinery

In parallel with the DFS, an update to the previously published Downstream Scoping Study has been completed to review the integrated downstream processing of the Kathleen Valley product given the revised mine schedule and throughput scenario presented in the 2021 DFS. Refer to ASX announcement released on 11th November titled *"Updated Downstream Scoping Study Highlights Next Growth Horizon for Kathleen Valley Project"*

A PFS-level metallurgical test work program to support further work in this area is being planned to be commenced in 2022.

Production of Multiple Spodumene Concentrate Grades

The DFS was evaluated based on the production and sale of SC6.0. However, based on testwork, the WOF flowsheet gives considerable flexibility to produce multiple grades (6-7% Li_2O) for periods of the mine life which may have sales and operating cost benefits. Further grade related optimisation will be undertaken as part of ongoing off-take discussions.

Expansion of MRE and Reserves

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 increase the Resource/Reserve base in the future.

Risks

Identified risks and initial mitigation measures are summarised below:

Further cost inflation, labour shortages and supply chain interruptions due to COVID

- Critical path equipment and contracts have already been identified as part of the DFS.
- Equipment with long lead times will be ordered early to negate supply constraints on critical plant.
- Key contracts will be tendered and awarded early in the project cycle to ensure sufficient time for contractor mobilization.
- Construction execution strategy will likely involve multiple packages being broken into smaller parcels to broaden the contractor base.
- Operations labour will not largely be required for the next 18 months at which time current border restrictions and manning constraints being experienced in WA are thought to ease.
- The CAPEX includes low productivity and higher man-hour rates in line with the current tight market conditions.

Water sources not all defined as date of DFS

- A$7M “allowance” has been included in project CAPEX for ongoing water exploration and development.
- An allowance for a large-scale water treatment plant has also been included within capital estimates to enable water source/ quality flexibility.

Permitting and Approvals

- Permit compilation has been largely completed in parallel with the DFS.
- The NTA is considered a key enabler for finalizing government permit applications and subsequent approvals such as a Section 18 application.
- A formal signing ceremony is scheduled for November 17, 2021 for the NTA.

Geraldton Port – Landside infrastructure and capacity allocation

- This is not considered critical path and is expected to be resolved over the next 12-18 months concurrently with project development post FID.

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 appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	• All RC drillholes are logged on 1 m intervals and the following observations recorded: ○ Recovery, quality (i.e., degree of contamination), wet/dry, hardness, colour, grainsize, texture, mineralogy, lithology, structure type and intensity, pegmatite and vein type and

Criteria	JORC Code explanation	Commentary
		%, 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. • Analysis of blank, silica only material inserted as part of QAQC protocols indicated iron contamination of the samples during sample preparation at the assay laboratory (Nagrom).
	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 precision for

Criteria	JORC Code explanation	Commentary
		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. • QAQC results indicated iron contamination of the samples during sample preparation at the assay laboratory (Nagrom). Twenty-one samples that were analysed using Liontown's usual analysis procedures at Nagrom were also analysed by ALS Metallurgy as part of the metallurgical variability testwork. Results indicate a high correlation (r^2>0.97) between drillhole and metallurgical assays, with no bias for LiO_2, Ta_2O_5 and K_2O. There is a bias for the Fe_2O_3 data while there is still a high correlation (r^2 = 0.93) between the two data sets. The regression formula indicates that the metallurgical samples contain ~25% of the Fe_2O_3 that was reported from the drillhole data analysed by Nagrom, indicating that Fe contamination has occurred in the laboratory. This formula was applied to the Fe_2O_3 data within the pegmatites.
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 programmes largely designed to test the down-dip potential of mineralised outcrops. The drill section spacing ranges from 30 m to 100 m, with drillholes spaced at between 25 m and 60 m on section.
	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 except where access prevents this.
	If the relationship between the drilling orientation and the orientation of key	• Drilling orientation intersects the mineralisation at appropriate

Criteria	JORC Code explanation	Commentary
	mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	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 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 ~680 km NE of Perth and ~45 km NNW of Leinster in Western Australia. The Project comprises four granted mining leases - MLs 36/264, 36/265, 36/459, 36/460 and one Exploration License - E36/879. • The 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. • The lithium Royalty with Ramelius was cancelled via a tenement termination Deed completed in August 2021. • 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 is in the name of Liontown Resources Limited with no third-party obligations apart from statutory and native title Agreement 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 to undertaking proposed field activities. • LRL (Aust) Pty Ltd has also received Section 18 consent to drill on certain areas with M36/459, M36/460 and E36/879.
	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

Criteria	JORC Code explanation	Commentary
		of the methods and procedures used have not been documented. • There has been no previous drill testing of the Li and Ta prospective pegmatites prior to Liontown acquiring the Project.
Geology	*Deposit type, geological setting and style of mineralisation.*	• 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.
Drillhole Information	*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.*	• Exploration results are not being reported for the Mineral Resources area.
Data aggregation methods	*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.*	• Exploration results are not being reported for the Mineral Resources area.
Relationship between mineralisation widths and intercept lengths	*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').*	• Drillholes intersected mineralisation at near perpendicular to the dip orientation of the host lithologies and mineralisation. • Exploration results are not being reported for the Mineral Resources area.
Diagrams	*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 of drillhole collar locations and appropriate sectional views.*	• Relevant diagrams have been included within the report.
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.*	• Exploration results are not being reported for the Mineral Resources area.
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).*	• Detailed engineering and project early works.

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 programmes. • 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 programmes 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-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 300 m 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*	• 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.

Criteria	JORC Code explanation	Commentary
	estimation method was chosen include a description of computer software and parameters used.	• 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. • Fe_2O_3 was estimated using OK. Analysis of blank, silica only material inserted as part of QAQC protocols indicated iron contamination of the samples during sample preparation at the assay laboratory (Nagrom). Twenty-one samples that were analysed using Liontown's usual analysis procedures at Nagrom were also analysed by ALS Metallurgy as part of the metallurgical variability testwork. Results indicate a high correlation (r^2>0.97) between drillhole and metallurgical assays, with no bias for LiO_2, Ta_2O_5 and K_2O. There is a bias for the Fe_2O_3 data while there is still a high correlation (r^2 = 0.93) between the two data sets. The regression formula indicates that the metallurgical samples contain ~25% of the Fe_2O_3 that was reported from the drillhole data analysed by Nagrom, indicating that Fe contamination has occurred in the laboratory. This formula was applied to the Fe_2O_3 data (total of 2,994 analysed samples) within the pegmatites. This data was used as the input data for an OK estimate for Fe_2O_3 in the pegmatites. • 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 for 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 pass, 14% within the second search pass and 2% estimated in the third search pass. • Within the pegmatites 76% of the Ta_2O_5 block grades were estimated in the first pass, 23% 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

Criteria	JORC Code explanation	Commentary
		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 updated 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 updated in February 2020. The February 2020 Mineral Resource, comprising 139 Mt at an average grade of 1.3% 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 increased from 139 Mt in February 2020 to 156 Mt in May 2020, the average grade of the resource of 1.3% Li_2O is the same for both resource estimates and the Ta_2O_5 has decreased from 140 ppm to 130 ppm. • Since the May 2020 Mineral Resource was estimated data from an additional 10 reverse circulation (RC) holes (for a total of 1,018 m) and 6 diamond core (DD) holes (for a total of 1,311.78 m) have been incorporated into the resource database. Three of the diamond drillholes were within the Mineral Resource area and the other drillholes are outside the resource area and were designed purely for geotechnical and water exploration studies. • The total resource tonnage and average LiO_2 and Ta_2O_5 grades have not changed. The Indicated tonnage increased by 4% (from 105 to 109 Mt) and the Inferred Resource tonnage decreased by 13% (from 32 to 27 Mt). The average LiO_2 and Ta_2O_5 grades of the Indicated and Inferred Resources have not changed. • No production has occurred.
	The assumptions made regarding recovery of by-products.	• No assumptions have been applied for the recovery of by-products. • Metallurgical testwork is ongoing to determine the recoveries that could be expected.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	• 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 have undertaken mining studies for Liontown) advised that mining is likely to be

Criteria	JORC Code explanation	Commentary
		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 estimating Mineral Resources may not always be rigorous.*	• 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 and 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 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.*	Three 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 core intercepts from across the three main areas of the deposit. **2020 Testwork** Following the 2019 metallurgical program, an R&D test work program was 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 Whole Ore Flotation (WOF) flowsheet; • To establish preliminary grade-recovery curves for both DMS and WOF flowsheets at a range of composite grades to enable direct comparisons between each; and

Criteria	JORC Code explanation	Commentary
		• The testing and development of preliminary flowsheets to support the recovery of a tantalum concentrate. This program of work underpinned the 2020 PFS update released 9th October 2020. **2021 DFS metallurgical testwork** Following the 2020 metallurgical program, a substantial testwork program has again been carried out at ALS in 2021 with process input from Lycopodium. Samples were collected from potential underground-sourced ore combined with additional open pit samples across the whole ore body reflecting variation in both depth and spatial distribution. The 2021 test work included: • Mineralogy and Head assays; • Additional Comminution testing; • Magnetic separation to remove ferrous materials with subsequent gravity concentration to recover tantalum; • Optimisation of the Flotation flowsheet and reagent regime; • Variability testing for both comminution and flotation; • Locked cycle flotation test work; • Bulk flotation to generate tails samples; and • Ancillary tests including thickening, filtration and rheology. Key results indicate: • Comminution samples were moderately competent with comminution results indicating a Bond ball work index of 15-18 kwh /t and Axb of about 55. • Grind optimisation of the flotation feed indicated a primary grind of 180µm gave the best recovery plus size distribution and was selected for subsequent testwork. • Flotation results indicated a concentrate with a grade of more than 6% Li_2O could be consistently produced. • The WOF process has been tested at a DFS level in the laboratory with a grade-recovery relationship established for each identified ore zone. • Variability samples tested in the laboratory showed a consistent ability to make a concentrate grade of 6% Li2O at an acceptable recovery. • Using staged recoveries, the overall Ta_2O_5 reporting to concentrate has been estimated as 40-56% to a grade of 12% 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. • Preliminary site water tests have indicated that the impact of site water on flotation may only be minor. Further work is ongoing. • Vacuum filtration trials have supported previous work indicating a moisture level as low as 8% is achievable. • Recent testwork on the slime tails has indicated the material can be thickened in a high-rate thickener. Some minor modification to flotation tails thickening is planned following

Criteria	JORC Code explanation	Commentary
		testwork. Previous testwork on rheology is being repeated at the new grind size. Testwork has been completed by Mine-Fill Services evaluating the treatment of tailings for paste fill. Some pre-treatment is required, and additional equipment has been included within the flowsheet.
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 the May 2020 resource estimate for 3,873 core samples (including 3,083 samples of pegmatite) from diamond holes using Archimedes measurements. • The density data overall ranged 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 were screened out of average density 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. • Almost 99.5% of the mineralised pegmatite is within the fresh material. • Data from an additional 293 drill core samples were obtained in late 2020, which confirmed the average values for the fresh pegmatite and mafic sequences.
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 drillholes with a spacing of up to 50 m by 50 m and 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).
	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

Criteria	JORC Code explanation	Commentary
		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 Plt	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 in March 2021 with Christine Standing, employee of Optiro, as the Competent Person. The block model was updated by Optiro in August 2021 to include Fe_2O_3. The total Mineral Resource of 156Mt at 1.4% Li_2O and 130ppm Ta_2O_5 includes: - • 20 Mt of Measured at 1.3% Li_2O and 145ppm Ta_2O_5, • 109 Mt of Indicated at 1.4% Li_2O and 130ppm Ta_2O_5; and • 27 Mt of Inferred at 1.3% Li_2O and 113ppm 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 Competent Person, Mr Allan Earl, visited the proposed Project site in June 2021. The following observations were made: • A proportion of the mining lease above, and adjacent to, the orebody contains areas of cultural significance. Jones Creek is an ephemeral watercourse which passes over the North West Flats mining area. • 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. • Suitable sites exist for mining infrastructure close to the plant and further east. The site is easily accessed from the Goldfields Highway. The proposed waste dump sites are flat and easily accessed. Mr Peter O'Bryan of Peter O'Bryan and Associates (POB) visited the site on 28th September 2019.	As per Open Pit.
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.*	The 2021 Definitive Feasibility Study (DFS) forms the basis of the Ore Reserve. The 2021 DFS report was compiled by Lycopodium on behalf of Liontown with input from: - • Optiro (geology)	As per Open Pit

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
	• *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 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.*	• Snowden (mine planning) • Lycopodium (metallurgical testwork, process design and non-process infrastructure) • MBS Environmental (environmental) • Knight Piesold (tailings storage, hydrology and hydrogeology) • Liontown (financial analysis) The DFS has considered all material modifying factors and has identified a mine plan that is technically achievable and economically viable at the concentrate prices assumed.	
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	The Open Pit Ore Reserves are reported at a 0.5% Li_2O cut-off grade. 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. Open pit and underground trade-off studies were undertaken with the approach as follows: • Development of an optimised open pit designs at a 0.5% Li_2O cut-off grade for Stages 1, 2 and 3 for the early mining phase • Assessment of flat and vertical underground ore bodies separately at cut off grades of 0.70%, 0.90%, 1.2% and 1.5% Li_2O • Optimised cut-off grade schedules were developed using the Stage 1, 2 and 3 open pit and remaining underground; or Stage 1 and 2 open pit only with the Stage 3 mineralisation included in the underground. Schedules were run using fixed and variable cut-off grades to identify the best overall project mine planning and sequencing strategy. The Stage 1 and 2 open pit-only, plus underground produced a strategy that minimized surface disturbance while delivering the required ramp up and throughput rate. Project value was maximized using a declining underground cut-off grade.	The Ore Reserves are reported as material contained within stope designs at cut off grades ranging from 1.2% Li_2O to 0.7% using a declining cut-off grade strategy. Underground mining targets higher-grade areas early in the mine schedule to maximize concentrate production. The cut-off grade is lowered later in the schedule. A maximum 10% gabbro has been allowed in the stope optimisation process to minimize Fe_2O_3 content.
Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility*	The Open Pit andUnderground Ore Reserves are based on a mine plan that mines pegmatites from open pit and underground for processing on site to produce a 6%	Detailed mine designs were undertaken in the Deswik.CAD mining software package, incorporating available geotechnical and practical considerations and the declining cut-off grade strategy.

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
	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.*	spodumene concentrate (SC6.0) for export via the Geraldton port. The open pits are constrained to the south of Jones Creek and clear of areas of cultural significance. The open pit mine planning includes stage designs to access the portal positions, final designs, mine scheduling and cost estimation. 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 6m and 12m benches and the ore zones will be blasted on 6m benches and mined in two or three flitches for greater selectivity with ore delivered to blend fingers on the ROM pad. Drill spacing and power factors are based on blasting studies undertaken by Orica using rock property parameters provided POB. Open pit geotechnical guidance was provided by POB with an allowance for ramps on the footwall and geotechnical berms on the hanging walls. Where present highly weathered, weak near-surface materials merge into fractured transitional to slightly weathered rock and encounter fresh rock at ≤ 20m depth, typically at ≤ 15m below surface. Standing groundwater lies at ~ 15m to 20m below the natural surface. Base case geotechnical design parameters for open pit walls have been based on information derived from 15 fully cored boreholes and reference to geological logs from over one hundred reverse circulation (RC) boreholes drilled in the prospective open pit mining area of the deposit. Recommended base case wall design parameter limits for all walls in the proposed Kathleen Valley open pit are: Face height 6m Surface to 514mRL 12m 514mRL to 502mRL 18m 502mRL to 484mRL	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 conditions. 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 Flats, which are stacked, flat dipping overlaid lodes located to the north-west of the property. 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 longhole open stoping as a series of primary and secondary stopes mined from bottom-up. Cemented paste backfill (paste fill) will be used to stabilize the workings and to provide a working surface. Stope dimensions will be typically 35 m (along strike) by 30 m (across strike) by 30 m levels (floor to floor). The North West Flats has been divided into 100 m x 100 m stope blocks. Each stope block is separated by a regular grid of regional pillars. The width of the regional pillars is 0.7 * stope height. In the North West Flats area, where the orebody width is greater than about 8m, longitudinal retreat open stoping with paste fill will be used. Stopes will typically be 20 m wide and 100 m long and mined over the full height of each lode. Where lodes are <10 m apart vertically, stopes have either been combined with the inclusion of gabbro waste, or only the higher value lode has been extracted. In narrower areas of the North West Flats, where stope widths are less than about 7 m, room and pillar (R&P) stoping, without paste fill, will be used. R&P stopes are a minimum 4 m high.

Criteria	JORC Code explanation	Commentary – Open Plt	Commentary - Underground
		24m below 484mRL Face angle 70° surface to 484mRL 80° below 484mRL Berm width 5m for 6m high batters 6m for 12m high batters 8m for 18m high batters 10m for 24m high batters For the open pit, the model was diluted by regularisation to a SMU size of 5 m x 5 m x 3 m. No additional mining recovery factors were applied. Only Measured and Indicated material were used in reporting of Ore Reserves. Inferred material was treated as waste in the two. The LOM schedule included a total of 0.1 Mt of Inferred material within the open pit.	These mining methods provide a good balance of economic recovery of the resource, while taking advantage of the very good ground strength at Kathleen Valley. The Mt Mann mining sequence is bottom up within each stoping panel, generally three or four stopes high. The overall panel 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 paste fill to maintain geotechnical stability when the lower panel is undercut. Stopes will be mined from hangingwall to footwall. In the North West Flats paste fill is used to maintain geotechnical stability in the wider stopes. The use of fill in the open stopes avoids the need for pillars in the Mt Mann area. Regional pillars are required in the North West Flats. Access to the mine, for personnel, equipment and ore haulage, will be via a main surface portal and two in-pit portals. Stope designs were based upon design parameters derived by empirical methods by POB as summarized in the table below. 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 POB.

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground

Area	Dip	Mining Method	Orebody Thickness	Stope Length x Width	Stope Height	Pillar Dimensions
Mt Mann	Steep to mod.	Long-hole Open Stoping	<30 m	30m x 35m	Single lift 30m	Stopes to be filled to avoid pillars
North-West Lodes	Shallow	Long-hole Open Stoping	7 m – 35 m	20m x 20m	7 m – 35m	
		Room and Pillar	4 m – 7 m	20m x 25m	7m	5m x 6.25m

Mining dilution has been modelled with design dilution, overbreak and paste dilution.

Design dilution: During the generation of stope shapes, a dilution skin of 0.5m was added to the footwall and hangingwall of all stopes. This was applied geometrically.

Paste dilution: Mining of secondary stopes underneath and next to paste fill 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.

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 is not exceeded.

Mining recoveries of 95% were applied to all stopes to account for ore within the stope shape that could not be extracted. This occurs primarily due underground loaders being unable to fully reclaim all blasted ground.

Due to the requirement to leave behind local ore pillars in the R&P stopes, mining recovery is further reduced to 84%.

Mining recoveries of 100% were applied to all development.

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
			The minimum mining width used depended on the mining area and method. The minimum mining width for the project is 5m, which comprises a 4m orebody width and 0.5m of dilution in both hangingwall 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. Stopes that have a dominant resource category of Inferred are not reported as part of the Ore Reserves. The recovered Li_2O concentrate tonnage incorporates the grade/recovery curves were provided by Lycopodium for the three mining areas; the open pit, Mt Mann underground and North West Flats underground. The base case schedule for the DFS includes 14.2 Mt of Inferred material at 1.1% Li_2O. 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. The bulk of Inferred material is scheduled from 2029 to 2038 where it makes up, on average, less than 0.5 Mtpa. After 2029 the amount of Inferred material ramps up to about 2Mtpa by the end of the mine life.
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.*	Three distinct phases of testwork were conducted for the Kathleen Valley Project in both 2019, 2020 and 2021. The Initial work resulted in the development of a DMS-Flotation flowsheet which was revised in June 2020 to a Whole Ore Flotation flowsheet. Following the 2020 metallurgical program, a substantial testwork program has again been carried out at ALS in 2021 with process input from Lycopodium. Samples were collected from potential underground-sourced ore combined with additional open pit samples across the whole ore body reflecting variation in both depth and spatial distribution. The 2021 test work included: • Mineralogy and Head assays; • Additional Comminution testing;	As for Open Pit.

Criteria	JORC Code explanation	Commentary – Open Plt	Commentary - Underground
	• *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*	• Magnetic separation to remove ferrous materials with subsequent gravity concentration to recover tantalum; • Optimisation of the Flotation flowsheet and reagent regime; • Variability testing for both comminution and flotation; • Locked cycle flotation test work; • Bulk flotation to generate tails samples; and • Ancillary tests including thickening, filtration and rheology. Key results indicate: • Comminution samples were moderately competent with comminution results indicating a Bond ball work index of 15-18 kwh /t and Axb of about 55. • Grind optimisation of the flotation feed indicated a primary grind of 180µm gave the best recovery plus size distribution and was selected for subsequent testwork. • Flotation results indicated a concentrate with a grade of more than 6% Li_2O could be consistently produced. • The WOF process has been tested at a DFS level in the laboratory with a grade-recovery relationship established for each identified ore zone. • Variability samples tested in the laboratory showed a consistent ability to make a concentrate grade of 6% Li_2O at an acceptable recovery. • Using staged recoveries, the overall Ta_2O_5 reporting to concentrate has been estimated as 40-56% to a grade of 12-15% based on preliminary test work. A mineralogical review indicates potential to produce a 30% Ta_2O_5 concentrate at an offsite upgrade facility.	

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
		• Magnetic and gravity separation used to recover tantalum also reduces already low iron levels in the potential flotation feed. • Preliminary site water tests have indicated that the impact of site water on flotation may only be minor. Further work is ongoing. • Vacuum filtration trials have supported previous work indicating a moisture level as low as 8% is achievable. • Recent testwork on the slime tails has indicated the material can be thickened in a high-rate thickener. Some minor modification to flotation tails thickening is planned following testwork. Previous testwork on rheology is being repeated at the new grind size. Grade/recovery curves were developed for the open pit, Mt Mann and North West Flats mining areas which were incorporated into the process schedule to calculate the quantity of SC6.0 concentrate produced in each month. **Recovery Assessment** The Kathleen Valley Lithium-Tantalum DFS testwork program is based on a total of 140 multi-stage flotation tests. These were spread over three main composites and 21 variability composites. The tests were a combination of roughing, single and two stage cleaning as well as seven locked cycle tests and seven larger scale tests to generate bulk tails for downstream testing. The recovery data has been used to predict recovery with head grade in a two-stage process: ***Stage 1*** The batch data has been used to generate recovery equations relating head grade to recovery for use in the process plant production schedule. The data has been filtered to remove tests where the variable tested has shown a significant deviation such as reduced collector or change in grind size. Regressions were developed for each of the three composites. ***Stage 2*** Past experience with locked cycle tests that incorporate recycled water have shown in some cases a reduction in	

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
		performance from the batch to locked cycle. A review of the grade recovery curves for locked cycle to batch tests shows a change in shape, which has biased the expected performance and this has been addressed by applying a penalty to the batch grade/recovery equation. Comparison of the batch and locked cycle tests showed a displacement in recovery curve for the Mount Mann and Open Pit samples. The North West sample was closely aligned with the batch tests. Based on this displacement an adjustment was made to the Mount Mann recovery calculation and the Open Pit recovery calculation. Three regression equations were developed and used in the process schedule. Geochemical characterisation of waste rock in 2020 was undertaken 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. 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 testwork 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.	

Criteria	JORC Code explanation	Commentary – Open Pit	Commentary - Underground
		Further work was undertaken by Knight Piésold in 2021 as part of the DFS did not identify significant variance to the works performed as part of the PFS detailed above.	
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). The process plant and waste stockpiles can be constructed on existing mining licenses. Boreholes have been proposed for water supply. 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. Site facilities such as camp accommodation and facilities, sewerage plant, processing plant, maintenance facilities, and tailings storage will be required. Other surface facilities will include a paste fill plant (required for underground mining), 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. 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 an exploration license that is subject currently to conversion to a mining license application.	Paste fill plant - The flotation tailings will have a relatively coarse particle size distribution (PSD) which requires additional grinding for paste fill purposes. An additional fine grinding mill was added to the flowsheet and capital budget as part of the DFS to achieve this. The option of using hydraulic fill was not pursued, primarily because of the safety concerns, the requirement for higher binder additions and the need to handle large volumes of percolated water. Four sets of paste fill rheology and UCS testwork and three sets of filtration testwork were carried out. From the testwork results it is believed that by optimising the regrind of the tailings, a suitable paste fill tailings will be produced. It is planned to initially install a single paste fill plant complete with a 158m^2 vacuum belt filter, sited south of Jones Creek and above Mt Mann. This plant will be sized for 194-241tph (solids) at 60% utilisation and will reticulate to most of the Mt Mann stopes by gravity. This plant will be required to be operational by early 2026. To provide fill to the shallow Mt Mann stopes (that are further away), the paste fill will be pumped on surface to the borehole collar. Likewise, to provide fill to the North West Flats area, the paste fill will be pumped on surface to the borehole collar or collars. This initial Plant (Mt Mann Plant) will provide paste fill to both mining areas as underground production ramps up to 2.5Mtpa. A second, identical, parallel plant to service the North West Flats will be constructed to come into operation as the mine ramps up to 4Mtpa. Once commissioned, each plant will run at 194tph at 60% utilisation. Reticulation will then be two parallel systems each at 194tph, with the nearer, deeper stopes being filled by gravity. Paste fill will be pumped on surface to boreholes sited above shallow, further stopes. Ventilation - The overall primary airflow requirement for the project that will satisfy statutory diesel dilution criteria for the peak fleet is estimated to be 1100m^3/s. The airflow requirement to satisfy mining activity is 1,500m^3/s. With a ventilation on demand (VoD) strategy in place the airflow requirements will be as follows for the different mining areas: • Mt Mann 750m^3/s

Criteria	JORC Code explanation	Commentary – Open Plt	Commentary - Underground
		The mine is location within driving distance of Kalgoorlie and the region is serviced by regular charter flights to Mt Keith and Leinster from Perth.	• North West Flats 750m^3/s. The overall design airflow allocation of 1,500m^3/s will satisfy the diesel requirements and provide sufficient airflow for mining activity. The underground mine has a large footprint with several available working areas and therefore VoD is essential to ensure the available airflow is distributed efficiently. VoD can reduce primary airflow needs by as much as 25%. Without VoD it is estimated that the peak airflow demand could be as high as 1,800m^3/s. At the shallow depth of mining refrigerated air cooling will not be required. The primary fan stations will be located underground and will be either axial or mixed flow fans. The basis of the fan station selection considers: • Environmental and culturally sensitive surface land areas make UG fan stations the preferred selection as they have a lower surface footprint and are less visible as there is no tall fan and fan ducting; and • The close vicinity of the mine site accommodation, UG fans are preferred to manage noise levels. Communications - It is planned to provide extensive communications and data systems for to open pits and underground. This will include communications and data infrastructure covering the whole surface and underground operations, and installed progressively as the mine develops, and a mining operations control room and data capture and backup. Dewatering - The anticipated water inflow into the open pits and underground is expected to be low – typically 10-20 L/sec (to a maximum 50 L/sec) and it is anticipated that with progressive mining there will be an increasing dewatered cone and drop in pumping requirements. Electrical - The underground electrical equipment is comprised of electrically powered production equipment (development jumbos, production drill rigs, diamond drills and raiseborers), auxiliary ventilation fans, pump stations, sump pumps (1,000V) and 240V supply for lighting and general services. Provision is also made to charge battery powered mobile vehicles (LHDs, trucks and drill rigs) that are predicted to replace the initial diesel- powered units during the life of mine.
Costs	• *The derivation of, or assumptions made,*	Mining costs are based on a non-binding schedule of rate from three open pit contractors and five underground contractors.	As for Open Pit.

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	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 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 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 to 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 0.73 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 royalty - 2% gross sales. This does not include ore sourced from exploration license E36/879 (Mining license application M36/696). • Tjiwarl Native title royalty	
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates,*	SC6.0 is not currently sold on exchange traded markets and is largely transacted under contractual arrangements between the mining company and its customers.	As for Open Pit.

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	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.*	Consistent with the PFS, 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) applied in the DFS. Roskill has provided annual forecast pricing through to 2041 on a real, US$/dmt CIF China basis for "Spot" prices. For the purposes of the DFS, Roskill's forecast annual spot price has been adopted (years 2024 to 2041). Liontown has assumed that it is reasonable to use the 2041 price as the basis from 2042 - 2046). The weighted average SC6.0 selling price in the DFS considering the volume and timing of SC6.0 sales is US$1,422 /dmt CIF China (or US$1392/dmt FOB). Liontown has adjusted Roskill's CIF China prices to an FOB Geraldton price by deducting US$30 per tonne to reflect the estimated long-term 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. Future production from Kathleen Valley remains 100% uncommitted to maintain maximum flexibility and independence over project funding and development options. For the purposes of the DFS, 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 Company has received strong levels of interest from parties who have expressed interest in off-take, giving Liontown confidence in its ability to execute its off-take strategy. Discussions with potential customers are proceeding on the basis that the price of SC6.0 will be determined with reference to the lithium hydroxide spot price, the objective of which is to achieve an outcome that is at least as favourable as the spot spodumene price, as it ensures that Liontown captures its fair share of the convertor margin. Like SC6.0, tantalum concentrate is not currently sold on exchange traded markets and is transacted under contractual	

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		arrangements between the mining company and its customers. Liontown has again utilised the services of Roskill for its price forecast assumptions for tantalum concentrate as applied in the DFS. Roskill has provided a forecast price through to 2041 on a real, US$/lb CIF China basis for "Arm's Length" pricing. At this stage future tantalum concentrate production from Kathleen Valley remains 100% uncommitted to maintain maximum flexibility over project funding and development options. For the purposes of the DFS, 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$84/lb CIF China for 2024 to 2041. Liontown has assumed it reasonable to use the 2041 price as the basis from 2042 - 2046). The weighted average tantalum selling price in the DFS considering the volume and timing of tantalum sales is US$84/lb CIF China. Liontown has adjusted Roskill's CIF China prices to an FOB Fremantle price by deducting US$0.15 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. No penalties for contaminants were assumed or considered applicable for either Spodumene or Tantalum products.	
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*	Demand for lithium is forecast to increase significantly over the next decade driven using lithium ion batteries in automotive applications. With continued strong demand and consumption growth, a supply deficit is expected to occur in the early-mid-2020's. Tantalum is used in high performance capacitors, superalloys and other applications consumed widely in aerospace, military and consumer electronics.	As for Open Pit.

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	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.*	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.	
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* • *NPV ranges and sensitivity to variations in the significant assumptions and inputs*	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. 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.	As for Open Pit.
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.	As for Open Pit.

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		The Company recognises the importance of the Tjiwarl Native Title Holders (the Tjiwarl), who have been recognised by the Federal Court of Australia to hold the common law native title of the area covered by the Company's Kathleen Valley tenements, to the success of the future operation at Kathleen Valley and, as such, a formal Native Title Agreement (NTA) for the Project has been pursued concurrently with the DFS. As announced on 5th, November 2021, the Company has been advised by the Tjiwarl (Aboriginal Corporation) RNTBC (Tjiwarl AC) that the Tjiwarl have provided their consent for the signing of the Kathleen Valley Project Native Title Agreement (NTA). With documentation being finalised, arrangements are now underway to organise an official signing ceremony on the 17th November to commemorate the parties having reached agreement.	
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 materiality*	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 2021 DFS were handled appropriately and have not put the Project at risk.	

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	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.	The underground Ore Reserve has been classified as a Probable Ore Reserve. There is about 5.8 Mt of Measured Mineral Resource which has been classified as a Probable Ore Reserve. This classification reflects the uncertainties associated with the underground mining Modifying Factors and a lower degree of confidence in the Ore Reserves than in the corresponding Measured Mineral Resources. The classification does not imply a reduction in the level of geological knowledge or confidence. The Competent Person recognises that no underground mining has taken place at Kathleen Valley and there are no comparable operating underground lithium mines in Australia that could be used to benchmark dilution and ore loss factors. This uncertainty may be reduced once underground mining commences and reconciliation data becomes available. These results reflect the Competent Person/s view of the deposit.
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	The Ore Reserve estimate has been peer reviewed internally by Snowden.	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*	The open pit Ore Reserve estimate is an outcome of the 2021 DFS with geological, mining, metallurgical, processing, engineering, social, environmental, marketing and financial considerations. Engineering and cost estimations have been completed to a +/-15% level of accuracy, consistent with a study of this nature. Liontown's financial model estimated a post-tax $NPV_{8\%}$ of approx. **A$4.2B, and IRR of 57%,** 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.	The underground Ore Reserve estimate is an outcome of the 2021 DFS with geological, mining, metallurgical, processing, engineering, social, environmental, marketing and financial considerations. Engineering and cost estimations have been completed to a +/-15% level of accuracy, consistent with a study of this nature. The combined open pit and underground financial model demonstrates that the Project is economic at the Ore Reserve forecast price which are lower than the Project forecast prices (see open pit). Sensitivity analysis undertaken during the underground optimisation demonstrates that the chosen inventory is: • Is sensitive to the cut-off grade strategy applied • Is sensitive to the amount of gabbro dilution allowed • is relatively insensitive to costs or dilution changes and mildly sensitive to price and recovery.

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	relative accuracy and confidence of the 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.* • *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.	• 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.