ASX ANNOUNCEMENT | ASX : LTR

29th November 2021

Liontown bulk concentrate program successfully produces premium +6% lithium and tantalum concentrate samples

Outstanding results reinforce Tier-1 nature of Kathleen Valley Project with samples to facilitate ongoing off-take negotiations and future lithium hydroxide testwork program

HIGHLIGHTS

- **Bulk sample testwork successfully completed on diamond core collected from Kathleen Valley (KV) to produce a large volume of representative +6% Li_2O concentrate (SC6.0), and a quantity of tantalum concentrate as part of advanced off-take discussions.**
- **Following the Definitive Feasibility Study (DFS), *ALS* has completed a large-scale concentrate program in line with the DFS flowsheet, including crushing, magnetic separation and flotation, with oversight from engineering consultant Lycopodium.**
- **Clean +6% Li_2O concentrate produced as part of the bulk sample work will be used to support both current off-take negotiations and the planned lithium hydroxide Downstream Pre-Feasibility Study (DPFS).**

Liontown Resources Limited (ASX: LTR; "Liontown" or "Company") is pleased to announce the successful completion of a large-scale spodumene concentrate production program using a bulk sample collected from its 100%-owned Kathleen Valley ("KV") Project in Western Australia's North-eastern Goldfields.

The pilot scale testwork program successfully produced premium +6% spodumene (Li_2O) concentrate and tantalum concentrate, supporting off-take discussions and further supporting the potential to develop a leading second-generation lithium-tantalum mining and processing operation at Kathleen Valley.

Figure 1 – Typical 6% Spodumene Concentrate from Kathleen Valley.

For the testwork program, the Company collected ~5 tonnes of representative mineralised pegmatite from the Company's core inventory at Kathleen Valley. Samples were selected to reflect variation in both depth and spatial distribution and composited in line with the mining zones identified as part of the recently published Definitive Feasibility Study (DFS).

The purpose of the bulk sample processing work was to produce representative high-grade +6% Li_2O KV concentrate and sufficient Tantalum Ta_2O_5 concentrate to support current off-take negotiations and to provide feedstock for the planned Lithium Hydroxide hydrometallurgical testwork program. The downstream hydrometallurgical testwork is scheduled to commence in December as part of the Company's Downstream Pre-Feasibility Study (DPFS).

The flowsheet adopted was based on the results of the extensive SC6.0 DFS metallurgical testwork program. The testwork batch flowsheet included:

- Crushing;
- Milling;
- Magnetic Separation & Tabling to produce a Tantalum Concentrate;
- Deslime and Conditioning of the Flotation Feed;
- Whole of ore Flotation; and
- Vacuum Filtration of Li_2O Concentrate.

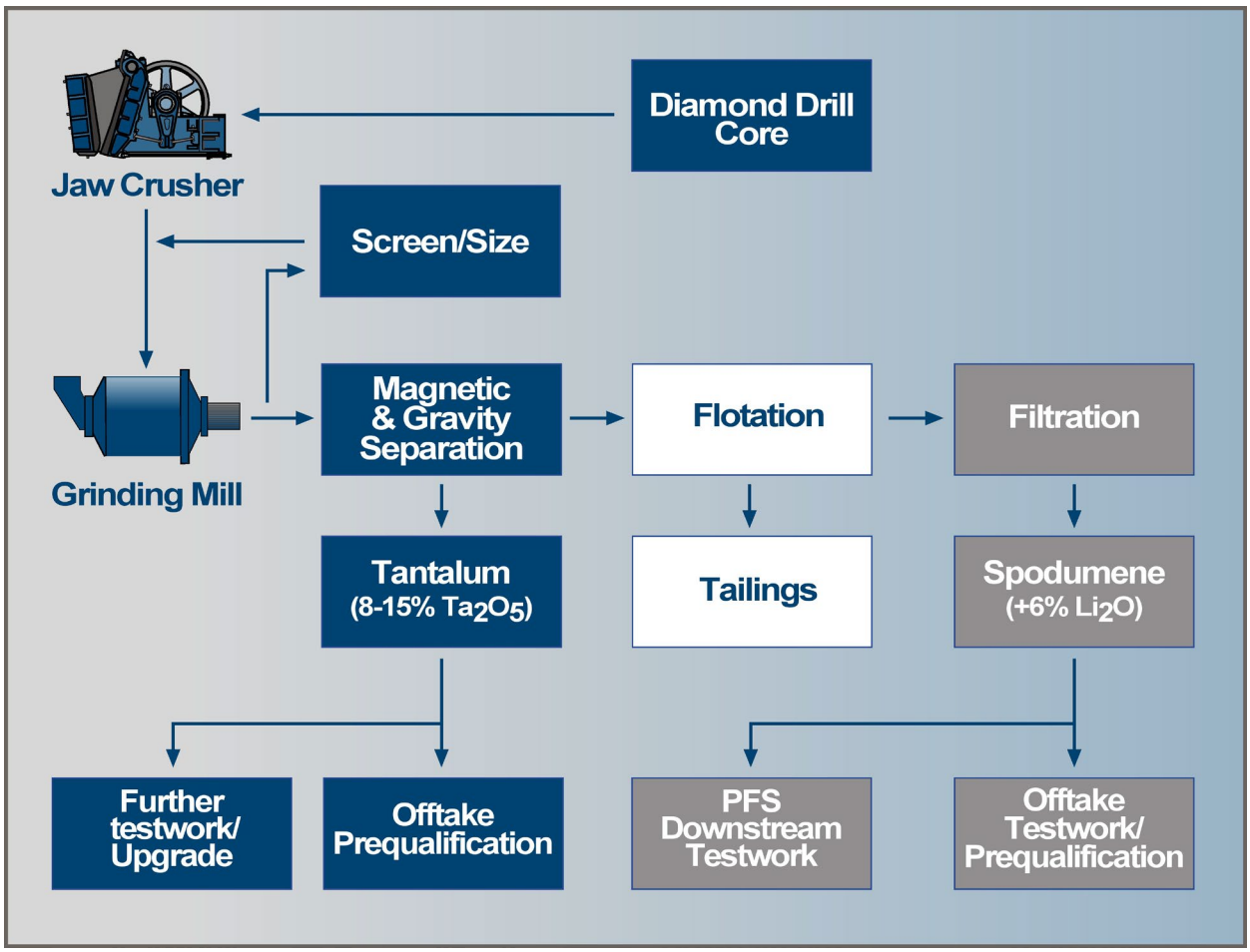
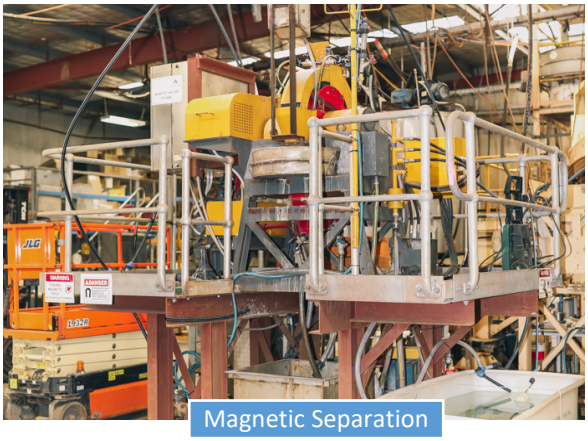


Figure 2 – Outlines the basic block flow diagram of the batch bulk sample programme.

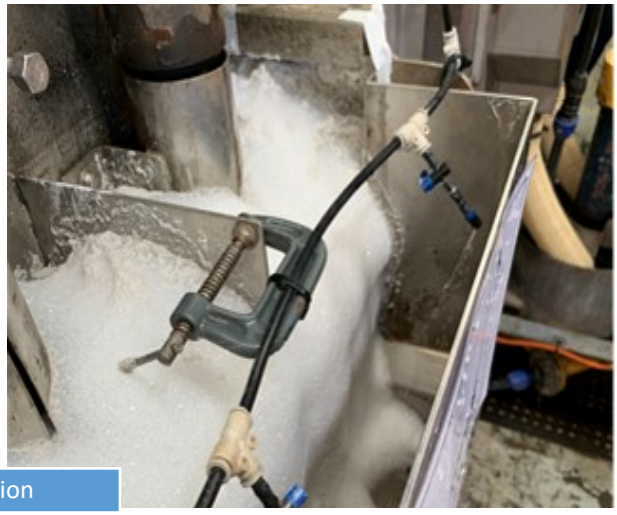
The successful completion of the large-scale test work program marks a crucial step in advancing the Kathleen Valley Project towards development. Representative diamond core was processed at ALS using their modular block/s of suitably scaled equipment, as shown in the images below:

Milling & Sizing



Magnetic Separation

Deslime & Conditioning



Flotation

Final Concentrate

Tony Ottaviano and David Richards with +6% concentrate

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

"The bulk sample testwork program is a key component of our thorough and exhaustive metallurgical testwork program for Kathleen Valley which continues to demonstrate Liontown's commitment to evidence-based design. Our partners, ALS and Lycopodium, have provided a world-class laboratory and expertise throughout the more than three years of testwork and the successful production of premium +6% lithium concentrate validates our methodical approach.

"The final product from the program will enable Liontown's potential customers to test and pre-qualify our high-quality spodumene for operating in their refinery or toll-treaters. The product will also be used to support future detailed design engineering of our both our tantalum circuit and downstream lithium hydroxide refinery."

This announcement has been authorised for release by the Managing Director.

Tony Ottaviano
CEO and Managing Director

For More Information:
Tony Ottaviano
Managing Director
T: +61 8 6186 4600

Investor Relations:
Nicholas Read
Read Corporate
T: +61 8 9388 1474

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.

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.

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

Section 1 Sampling Techniques and Data

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td rowspan="2">Sampling techniques</td><td>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.</td><td>Following the DFS metallurgical program, a bulk concentrate production program has been carried out at ALS laboratories in Perth in August through to November 2021 with process input from Lycopodium.

As reported in the 11th November 2021 DFS ASX release titled “Kathleen Valley DFS confirms Tier-1 global lithium project with outstanding economics and sector-leading sustainability credentials” three distinct ore zones were identified at Kathleen valley ie
• Two underground mining zones :-
➢ The Mount Mann Vertical, which comprises a 5-40m wide orebody dipping at 50° to 60° to the south-west; and
➢ The North West Flats, which comprises multiple stacked, pegmatite lodes that range from 4-30m thick.
• One open pit zone that comprises two small open pits.</td></tr>
<tr><td>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.</td><td>Metallurgical testwork results reported herein relate to materials sourced from diamond core drilled as part of previous exploration and metallurgical drilling programs at Kathleen Valley.

Samples were collected from potential underground-sourced ore and additional open pit samples reflecting variation in both depth and spatial distribution in-line with the identified ore zones highlighted above. In addition, a ‘commissioning sample of representative grade’ was also processed ie for commissioning the equipment assembled by ALS. Samples included:-

Commissioning Composite
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<tr><td>OVERALL:-</td><td>573 drill core INTERVALS</td><td>Ta_2O_5</td><td>Li_2O</td></tr>
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<tr><td></td><td>Min</td><td>1</td><td>0.008</td></tr>
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</table></td></tr>
<tr><td>Drilling techniques</td><td>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).</td><td>• No drilling being reported – Metallurgical bulk sample production program results</td></tr>
<tr><td>Drill sample recovery</td><td>Method of recording and assessing core and chip sample recoveries and results assessed.
Measures taken to maximise sample recovery and ensure representative nature of the samples.
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.</td><td>• No drilling being reported – Metallurgical bulk sample production program results</td></tr>
<tr><td>Logging</td><td>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.
Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.
The total length and percentage of the relevant intersections logged.</td><td>• No drill assays being reported – Metallurgical bulk sample production program results</td></tr>
<tr><td>Sub-sampling techniques and sample preparation</td><td>If core, whether cut or sawn and whether quarter, half or all core taken.
If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.
For all sample types, the nature, quality and appropriateness of the sample preparation technique.
Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.
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.</td><td>• No drill assays being reported – Metallurgical bulk sample production program results</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
	Whether sample sizes are appropriate to the grain size of the material being sampled.	
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.*	• No drill assays being reported – Metallurgical bulk sample production program results
	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.	
	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.	
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	• Senior technical personnel have visually inspected and verified the metallurgical results.
	The use of twinned holes.	
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	
	Discuss any adjustment to assay data.	
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.*	• No drilling being reported – Metallurgical bulk sample production program results
	Specification of the grid system used.	
	Quality and adequacy of topographic control.	
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	• No drilling being reported – Metallurgical bulk sample production program results
	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.	
	Whether sample compositing has been applied.	
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.*	• No drilling being reported – Metallurgical bulk sample production program results
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• No drilling being reported – Metallurgical bulk sample production program results

Criteria	JORC Code explanation	Commentary
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 mineralization. • Nevertheless, the use of recognized 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 through to ALS laboratories in Perth. The same field geologist arranges delivery of samples to ALS laboratories in Perth via courier or personally.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	• Core used for the metallurgical testwork was part of prior exploration drilling – no specific additional audits or reviews outside of that reported previously were undertaken of core selected for this work.

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 Royalty 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 and recently signed a Native title agreement on the 17th November 2021 • 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 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.

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<tr><td>Geology</td><td>Deposit type, geological setting and style of mineralisation.</td><td>• The Project is located on the western edge of the Norseman- Wiluna Belt within the Archaean Yilgarn Craton.
• The Kathleen Valley Project contains a series of quartz-feldspar-muscovite-spodumene pegmatites hosted in mafic rocks related to the Kathleen Valley Gabbro or the Mt Goode Basalts.
• The pegmatites are LCT type lithium bearing-pegmatites.</td></tr>
<tr><td>Drillhole Information</td><td>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:
• easting and northing of the drillhole collar
• elevation or RL (elevation above sea level in metres) of the drillhole collar
• dip and azimuth of the hole
• down hole length and interception depth
• hole length.</td><td>• No drilling being reported – Metallurgical bulk sample production program results</td></tr>
<tr><td>Data aggregation methods</td><td>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</td><td>Metallurgical testwork results reported herein relate to materials sourced from diamond core drilled as part of previous exploration and metallurgical drilling programs at Kathleen Valley.

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<tr><td>Relationship between mineralisation widths and intercept lengths</td><td>If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.
If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. ‘down hole length, true width not known’).</td><td>• No drilling being reported – Metallurgical bulk sample production program results</td></tr>
<tr><td>Diagrams</td><td>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drillhole collar locations and appropriate sectional views.</td><td>• No drilling being reported – Metallurgical bulk sample production program results</td></tr>
<tr><td>Balanced reporting</td><td>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.</td><td>• All meaningful and material data has been reported.</td></tr>
<tr><td>Other substantive exploration data</td><td>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.</td><td>• Where relevant, this information has been included or referred to elsewhere in this Table.</td></tr>
<tr><td>Further work</td><td>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</td><td>• Detailed engineering and project early works associated with Kathleen Valley development.
• Provision of sample to potential off-takers ie marketing samples
• Further Downstream LiOH testwork
• Additional tantalum upgrade testwork</td></tr>
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