

ASX Announcement

22 December 2023

Burley receives positive metallurgy results for Chubb Lithium Project

HIGHLIGHTS

- Preliminary metallurgical testwork was conducted on two composite samples of 'high-grade' and 'low-grade' spodumene-bearing pegmatite from Chubb Central.
- Preliminary results indicate excellent lithium recoveries of 72% for high grade and 60% for low grade with both achieving > 6% Li₂O commercial concentrate grades.
- STARK Resources has been engaged to conduct direct spodumene ore sorting test work to separate spodumene from unmineralized pegmatite.
- Ore sorting technologies have the potential to provide greater beneficiation efficiency through pre-concentration for either shipment or conventional Dense Media Separation (DMS or HLS, *Heavy Liquid Separation*).

Burley Minerals Limited (ASX: BUR, "**Burley**" or "**the Company**") has received testwork results of the preliminary metallurgical testwork programme being conducted by SGS Laboratories in Québec City.

Burley Minerals Managing Director and CEO, Stewart McCallion commented:

"The preliminary metallurgical testwork provides an improved understanding of the Chubb Central Mineralised Zone, and its amenability to processing through a typical spodumene concentrator flowsheet. Through the on-going exploration activities, and now the preliminary metallurgical testwork, the Burley Minerals team continue to add value to the highly prospective Chubb Lithium claims near Val d'Or, Québec."

"Initial testwork was successful in demonstrating strong lithium recoveries of 60 to 72% whilst achieving a high grade +6% Li₂O lithium concentrate. The initial metallurgical results suggest the process flowsheet may not require a flotation or magnetic circuits potentially simplifying the process flowsheets and reducing both operating and capital costs. We will continue to improve confidence at Chubb – both from the understanding of both its mineralisation, and its metallurgical properties."

SGS Preliminary Metallurgical Testwork Results

Burley submitted two composite samples comprising a high grade and a low grade spodumene bearing pegmatite to SGS in September. The testwork programme includes:

- Chemical and mineralogical characterization,
- Comminution testwork (crushing work, ball work and abrasion indices determination),
- Heavy liquid separation test work,
- Magnetic separation test work,
- Hydro-separation test work,
- Flotation test work, and
- Environmental impact potential.

Burley has received testwork results from the chemical and mineralogical characterisation, comminution, heavy liquid separation tests, and magnetic separation tests. These results are summarised in the tables below.

Table 1: Chemical Characterisation

Method/Element	Sample 98908 High Grade	Sample 98909 Low Grade
<i>ICP-OES by Na2O2 Fusion</i>		
Li ₂ O %	1.44	0.73
<i>XRF by Borate Fusion</i>		
SiO ₂ %	75.6	73.2
Al ₂ O ₃ %	15.2	15.3
Fe ₂ O ₃ %	0.65	0.68
MgO %	0.08	0.10
CaO %	0.17	0.25
Na ₂ O %	3.70	4.13
K ₂ O %	2.48	4.26
TiO ₂ %	< 0.01	0.02
P ₂ O ₅ %	0.03	0.05
MnO %	0.07	0.1
Cr ₂ O ₃ %	< 0.01	0.01
V ₂ O ₅ %	< 0.01	< 0.01
LOI %	0.59	0.56
Sum %	98.5	98.7

Table 2: Mineralogical Characterisation

Mineral	98908 High Grade (wt %)	98909 Low Grade (wt %)
Albite low	31.5	35.8
Quartz	32.2	26.6
Microcline	12.2	22.8
Spodumene	18.4	9.3
Muscovite	4.3	4.1
Biotite	0.8	0.8
Calcite	0.3	0.5
Magnetite	0.2	0.2
TOTAL	100	100

Table 3: Abrasion Indices

Sample	AI (g)	Percentile of Abrasivity
98908 High Grade	0.377	62
98909 Low Grade	0.353	53

Table 4: Ball Work Indices

Sample Name	Mesh of Grind	F ₈₀ (µm)	P ₈₀ (µm)	Gram per Revolution	Work Index (kWh/t)	Hardness Percentile	Category
High Grade 98908	100	2583	123	1.55	15.4	63	Moderately Hard
Low Grade 98909	100	2452	124	1.79	13.8	44	Medium

Table 5: Heavy Liquid Separation Recoveries

Test #	Product	Weight		Assays				Distribution (%)			
		g	%	Li2O	SiO2	Al2O3	Fe2O3	Li2O	SiO2	Al2O3	Fe2O3
High Grade 98908	Sink 2.90 (Concentrate)	1004	17	6.44	65.3	24.0	2.37	72.5	14.6	26.5	41.5
	Float 2.90	767	13	2.09	71.1	18.2	1.44	18.0	12.1	15.4	19.3
	Sink 2.50	3581	60	0.11	78.5	12.3	0.42	4.2	62.4	48.5	26.3
	Float 2.50*	0.17	-	-	-	-	-	-	-	-	-
	-850 microns	644	11	0.73	76.5	13.5	1.15	5.3	10.9	9.6	12.9
	Calc. Head	5996	100	1.49	75.1	15.1	0.96	100	100	100	100
	Direct Head			1.44	75.6	15.2	0.65				
Low Grade 98909	Sink 2.90 (Concentrate)	414	6.9	6.31	64.9	23.7	2.72	60.4	6.1	10.7	21.1
	Float 2.90	522	8.7	1.87	68.1	19.5	1.91	22.6	8.1	11.1	18.7
	Sink 2.50	4221	70	0.09	74.6	14.1	0.59	9.0	71.6	64.7	46.7
	Float 2.50*	0.69	-	-	-	-	-	-	-	-	-
	-850 microns	840	14	0.41	74.3	14.8	0.85	7.9	14.2	13.5	13.4
	Calc. Head	5997	100	0.72	73.3	15.3	0.89	100	100	100	100
	Direct Head			0.73	73.2	15.3	0.68				

Interpretation of Preliminary Testwork Results

The chemical and mineralogical testwork confirms the Li₂O and spodumene concentrations estimated in the logs and returned earlier assays. Furthermore, the analysis also indicated low iron content, as Fe₂O₃ or *magnetite*, (at less than 1%) and magnetic separation tests recorded very low (less than 0.4%) mass recovery; this is advantageous, leading to simplification of a processing flowsheet as a magnetic separation circuit may not be required. In addition, indicated abrasion indices are low, and ball work indices are mid-range, suggesting typical crushing and grind equipment may be used with lower capital and operating costs.

Both low-grade and high-grade samples recorded very good Li₂O recoveries through heavy liquid separation (HLS) tests, indicating beneficiation of Li₂O above 6%, the industry standard for a spodumene concentrate. The HLS testwork comprises passing crushed ore (particle size greater than 850 microns) through liquids of various densities (or *specific gravities* or SG) to segregate lighter minerals from heavier minerals. Spodumene is a heavy (i.e. high SG) mineral and will ‘sink’ as opposed to ‘float’, so spodumene crystals not fixed to other minerals will pass through dense liquid. Smaller spodumene crystals fixed to other minerals are buoyed and may float in dense liquids. For this preliminary HLS testwork, the crushed ore that sinks through the high SG (2.90) liquid is indicative of what may be recovered as spodumene concentrate in a typical HLS process flowsheet.

Stark Ore Sorting Testwork Overview

Burley has also engaged STARK Resources to conduct a testwork program to assess the amenability of Chubb Central ore to concentration by coarse, dry ore sorting. Stark has proposed to assess spodumene concentration amenability through both X-Ray Transmission (XRT) and ultraviolet (UV) technologies.

Burley's Exploration Team in Val d'Or selected a series of drill core samples from Chubb Central, including high and low grade spodumene-bearing pegmatite, unmineralised pegmatite, and waste rock (generally granite). The samples were shipped to the Saskatchewan Research Council (SRC) laboratory in Saskatoon, Saskatchewan. SRC will complete comprehensive elemental and mineralogical analyses of the samples to determine XRT efficacy in segregating waste rock from ore; XRT testing will ensue. Sensor detect XRT signals, and granite waste may be separated from pegmatite ore. Furthermore, as spodumene has a fluorescent signature, the samples will also be subject to UV testing, to assess how well the spodumene may be segregated from other pegmatite minerals. Sensors detect the UV light signature reflected by spodumene and the spodumene can be removed.

Ore Sorting Benefits

Ore sorting has become increasingly prevalent within the hard rock lithium industry as a pre-concentration stage to compliment DMS and flotation. Removal of mined waste rock and gangue minerals in the coarse-size, dry beneficiation stage offers numerous operational benefits including:

- Increased mineable tonnes
- Reduced energy and water consumption
- Increased process plant productivity
- Reduced haulage costs and associated emissions
- Improved consistency of feed grades
- Reduced tailings

About Stark Resources

Stark Resources is a specialised, privately held engineering group, with a global mining footprint. STARK focusses on fast-tracked design and construction of minerals processing plants, delivering projects in developing countries and Tier-1 jurisdictions. STARK's expertise bridges the understanding of in-ground ore deposits with tailored recovery solutions, ensuring a compelling and economically viable proposition across the entire mining value chain, from Greenfield exploration projects to active production mines, including the implementation of the world's first UV laser technology.

Future Work

Building on the positive results from the preliminary metallurgical testwork program, Burley is planning further metallurgical programs for 2024 including additional comminution, mineralogy, heavy liquid separation, and flotation testwork. The drilling campaign for the metallurgical testwork program was completed and the samples were being prepared for shipment.

About Burley Minerals Limited

Burley Minerals Ltd (**ASX: BUR**) is a ASX-listed, Perth-based minerals explorer with lithium and iron ore projects, located within the World-Class Tier-1 provinces of Québec, Canada and Western Australia. Burley acquired 100% ownership of the Chubb Lithium Project in Québec, Canada, and the Gascoyne Lithium Projects in Western Australia, in February 2023.

The Chubb Lithium Project is located 25 km north of the mining community of Val d'Or in the heart of the world-class lithium province of Québec, Canada with a total area of 1,509 hectares. The Chubb Project is centred within the Manneville Deformation Corridor, which hosts Canada's only operating lithium mine, the North America Lithium Operation (NAL). The NAL is owned by Sayona Mining Ltd (ASX: SYA) and Piedmont Lithium Inc, with Mineral Resources of 58Mt at 1.23% Li_2O ¹ reported, plus a number of other emerging projects including the Authier Lithium Project, with resources of 17Mt at 1.01% Li_2O reported². The recommissioned NAL plant is located 10km north-east of the Chubb Lithium Project, with first production having commenced in the March 2023 Quarter³.

In Western Australia, Burley also owns a 70% interest in the Yerecoin Iron Project, located approximately 120km northeast of Perth, and which has a JORC 2012 compliant Inferred and Indicated Mineral Resource of 246.7Mt capable of producing a concentrate at >68% Fe⁴.

Burley also has the Cane Bore (exploration license application) and Broad Flat Well Prospects in the world class Hamersley Iron Ore Province. The Cane Bore Prospect has 28kms of remnant outcropping Channel Iron Deposit (CID) mineralisation which on average is 400m wide.

This announcement was authorised for release by the Board of Directors.

For further information, please contact:

Bryan Dixon

Non-Executive Chairman
Burley Minerals Limited

bryan@burleyminerals.com.au

Stewart McCallion

Managing Director & CEO
Burley Minerals Limited

stewart@burleyminerals.com.au

Alex Cowie

NWR Communications
+61 412 952 610

alexc@nwrcommunications.com.au

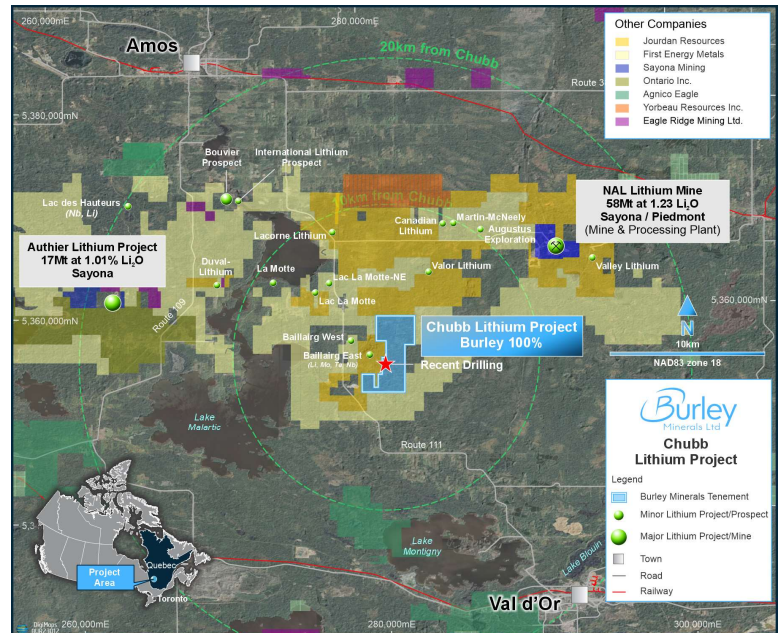


Figure 1. Location map of the Chubb Project showing proximity to the NAL lithium mine and other lithium deposits and prospects.

¹ Refer to Sayona Mining's ASX Release dated 14 April 2023

² Refer to Sayona Mining's ASX Release dated 14 April 2023

³ Refer to Sayona Mining's ASX Release dated 28 April 2023.

⁴ Refer to Burley Minerals Ltd Prospectus dated 27 May 2021 Section 10 for the Independent Technical Assessment Report.

Competent Person's Statement

The information in this announcement that relates to lithium and LCT pegmatite exploration results is based on and fairly represents information and supporting documentation supplied to Mr David Crook, who is a member of The Australasian Institute of Mining and Metallurgy (AusIMM) and the Australian Institute of Geoscientists (AIG). Mr Crook is a consultant to Burley Minerals and is a non-executive Director of the Company. Mr Crook has sufficient experience relevant to the style of mineralisation under consideration and to the activity which he is undertaking 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 Crook consents to the inclusion in this announcement of the matters based on this information in the form and context in which it appears.

The Yerecoin Main and South Mineral Resource Estimate was reported in 2014 under the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". The Mineral Resource Estimate was detailed in refer to Prospectus dated 27 May 2021 Section 10 for the Independent Technical Assessment Report. Burley confirms that it is not aware of any new information or data that materially affects the information included in this announcement regarding the mineral resources and that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.

Caution Regarding Forward-Looking Information

This announcement may include forward-looking statements regarding Burley Mineral Limited. Forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions which are outside the control of Burley. Actual values, results or events may be materially different to those expressed or implied in this document. Given these uncertainties, recipients are cautioned not to place reliance on forward looking statements. Any forward-looking statements in this document speak only at the date of issue of this ASX Release. Subject to any continuing obligations under applicable law, Burley does not undertake any obligation to update or revise any information or any of the forward-looking statements in this announcement or any changes in events, conditions, or circumstances on which any such forward looking statement is base.