

12 May 2022

## Geophysical Survey Confirms Further Growth Potential at Mavis Lake

Critical Resources Limited (ASX:CRR) ("Critical Resources" or the "Company"), is pleased to advise that it has received interpretation of the airborne survey flown over the company's Mavis Lake Lithium Project ("the Project") in Ontario, Canada in October 2021. The interpretation has provided a significant basis for the potential of a further 28 new drill targets across the property.

### Highlights

- **28 new target areas identified from litho-structural interpretation including 11 high priority targets**
- **Exploration works on new targets will be undertaken to develop a drilling strategy to expand on the current 5,000m program**
- **Current drilling program is approximately 20% complete of which the first 8 of 9 holes have intersected visual spodumene with estimates of spodumene content up to 40%.<sup>1, 2</sup>**
- **New targets provide further growth potential at Mavis Lake**

The Company is pleased to announce it has received a highly positive litho-structural interpretation from the geophysical airborne survey flown across the Mavis Lake property in late 2021. The interpretation is based on magnetic, radiometric and VLF electromagnetic data.

Drilling is ongoing at the Project with the ~5,000m drill program approximately 20% complete. Of the first 9 holes 8 holes have intersected visual spodumene with estimates of spodumene content up to 40%.<sup>1, 2</sup>

Critical Resources Managing Director Alex Biggs said: "In conjunction with the recent drilling success at Mavis Lake, confirming further growth potential is extremely encouraging. The interpretation of the geophysical data in combination with visual results from the current program are critical in the development of future drilling campaigns and gaining further confidence in Mavis Lake's potential".

### **Geophysical Data Interpretation**

Litho-structural interpretation at a scale of 1:10 000 over the Mavis Lake project area was completed using flown magnetic/radiometric/VLF and DEM survey with the help of other supportive data and information from previous exploration efforts. Due to significant forest/forest soil cover over the project area, the structural interpretation was based primarily on the aero magnetics and to some extent also on VLF data. Radiometric, DEM, satellite data have been studied and analysed, however, these make a minor contribution to the interpretation.

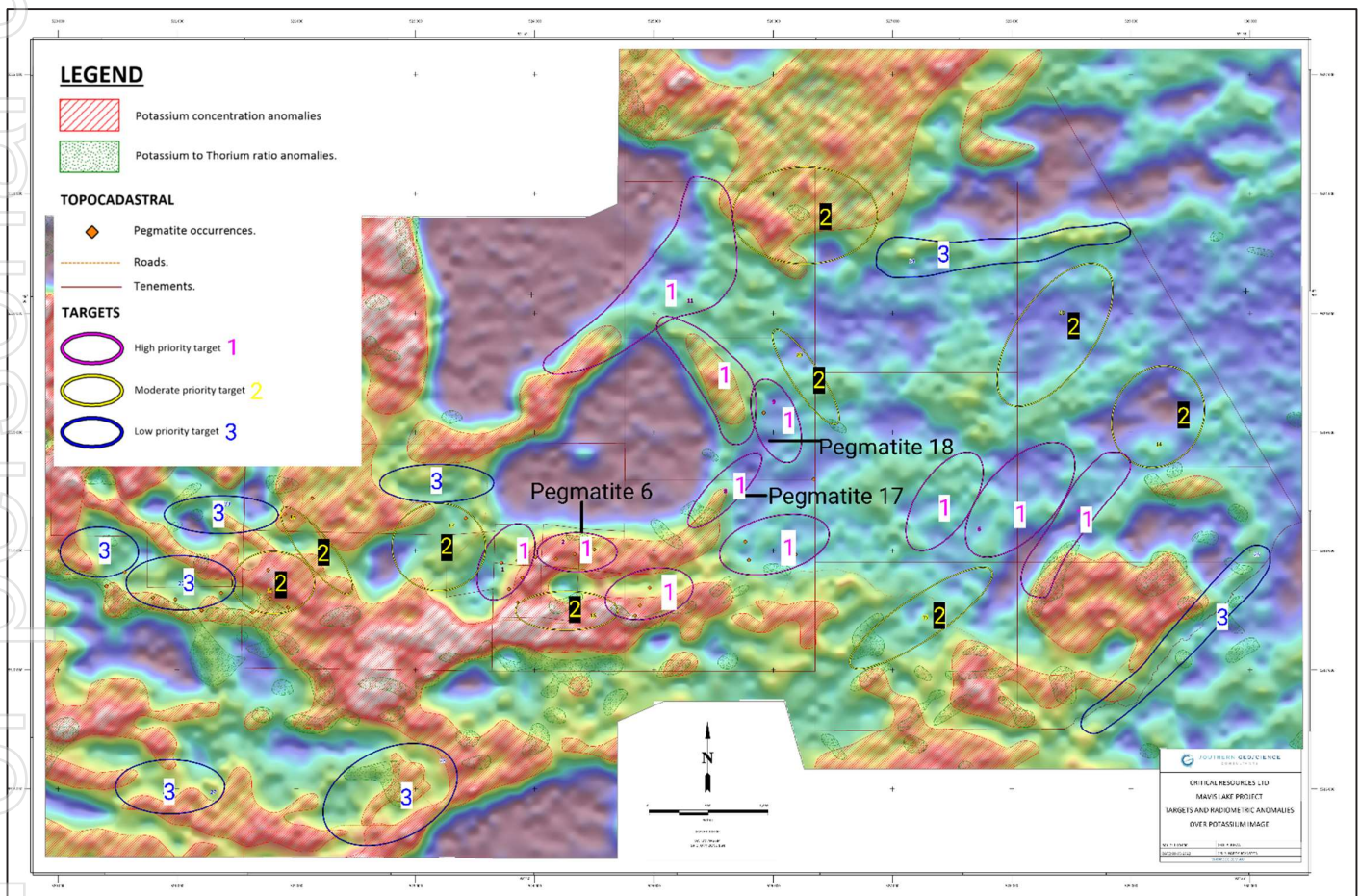
<sup>1</sup> See ASX announcements dated 28 April 22, 04 May 22 and 11 May 22

<sup>2</sup> In relation to the disclosure of visual mineralisation, the Company cautions that visual estimates of mineral abundance should never be considered a proxy or substitute for laboratory analysis. Laboratory assay results are required to determine the widths and grade of the visible mineralisation reported in preliminary geological logging. The Company will update the market when laboratory analytical results become available.

The interpretation was primarily concerned with the identification of pegmatite bodies, prospective for lithium mineralisation. With no significant property contrasts between the pegmatites and the typical host rocks, (direct) targeting lithium bearing pegmatites with geophysics is difficult. The targeting strategy was therefore focused on indirect leads: a) lithological associations (proximity to granitoid bodies, associations with mafic/ultramafic sequences) b) structural context and structural complexity (looking for structures and traps that may act as conduits for Li-bearing fluids to flow and precipitate) c) reduction of the search area by eliminating strongly magnetic sequences and looking for distinct magnetic lows, consistent with presumed felsic lithology. In general, preferred were areas of significant structural deformation/fragmentation that produce favourable conditions for pegmatite precipitation and formation of structures that may act as fluid conduits.

Based on information derived from the geophysical data, a total of 28 target areas have been selected for follow up. The target areas require follow-up surface mapping, geochemical surveys and reconnaissance drilling to obtain further information about the underlying geology. The 28 targets have been ranked as high, moderate and low priority, with little to no difference between high and moderate priority. These areas are seen in the following two figures, with numerical values (High – 1, Moderate – 2 and Low – 3) placed in each target area to highlight their respective priority.

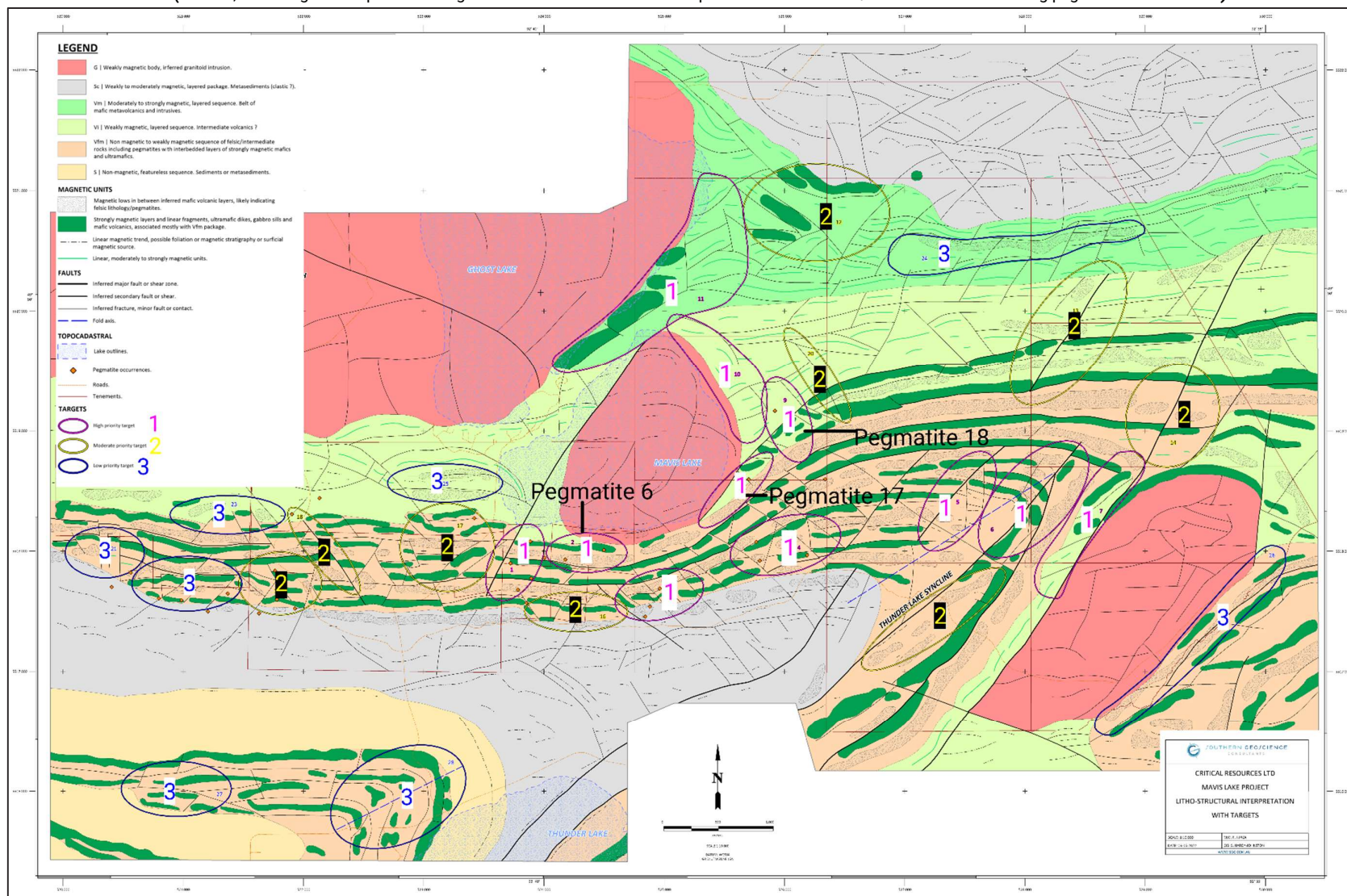
**Figure 1: Mavis Lake targets and radiometric anomalies**





**Figure 2: Litho-Structural Interpretation and Target Areas at Mavis Lake**

(Of note, the orange unit represents magnetic lows which have been interpreted as intermediate/felsic volcanics including pegmatite occurrences.)



## Mavis Lake Project Description

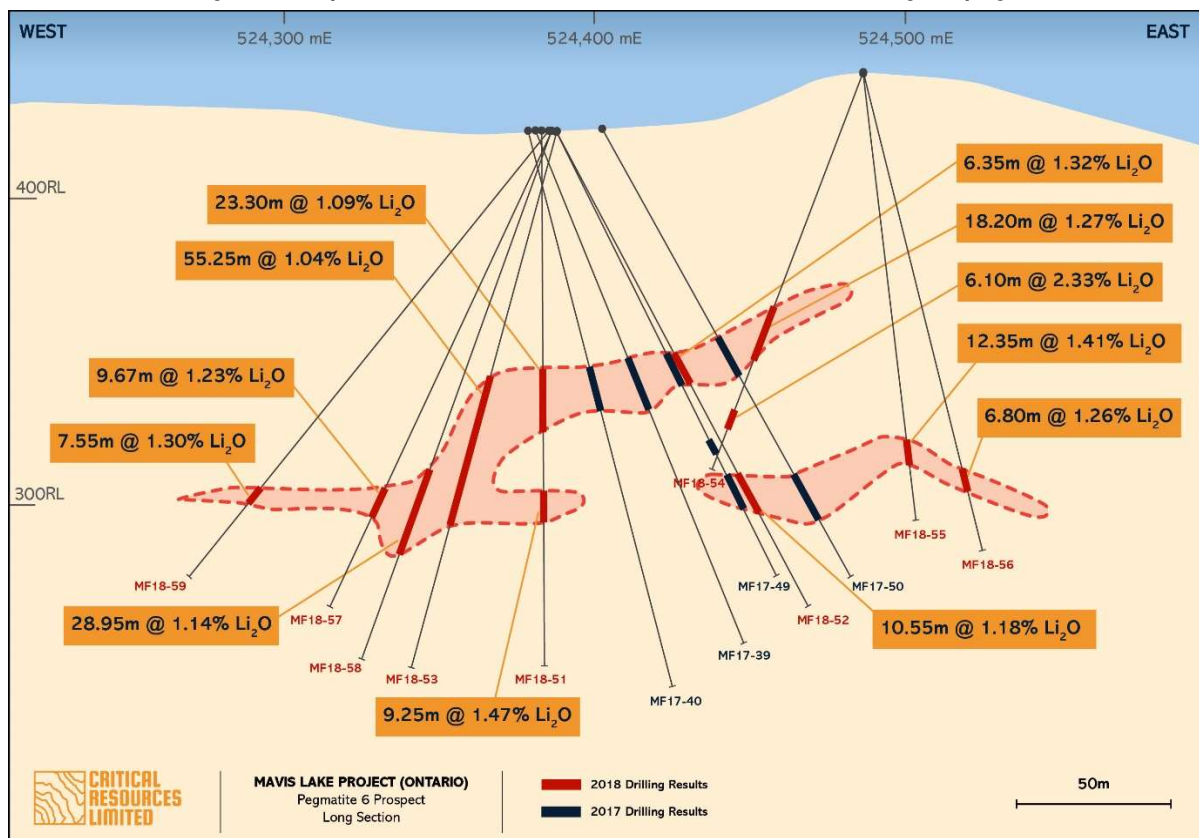
The Mavis Lake Lithium Project is 19 kilometres east of the town of Dryden, Ontario. The Project is in close vicinity to the Trans-Canada highway and railway major transportation arteries linking larger cities such as Thunder Bay, Ontario, to the southeast and Winnipeg, Manitoba, to the west. The region boasts excellent infrastructure with hydro-power located a few kilometres to the south-west of the project. The region is a well-established lithium province with multiple projects located within the vicinity.

Previous drill programs have yielded high-grade  $\text{Li}_2\text{O}$  intercepts including:

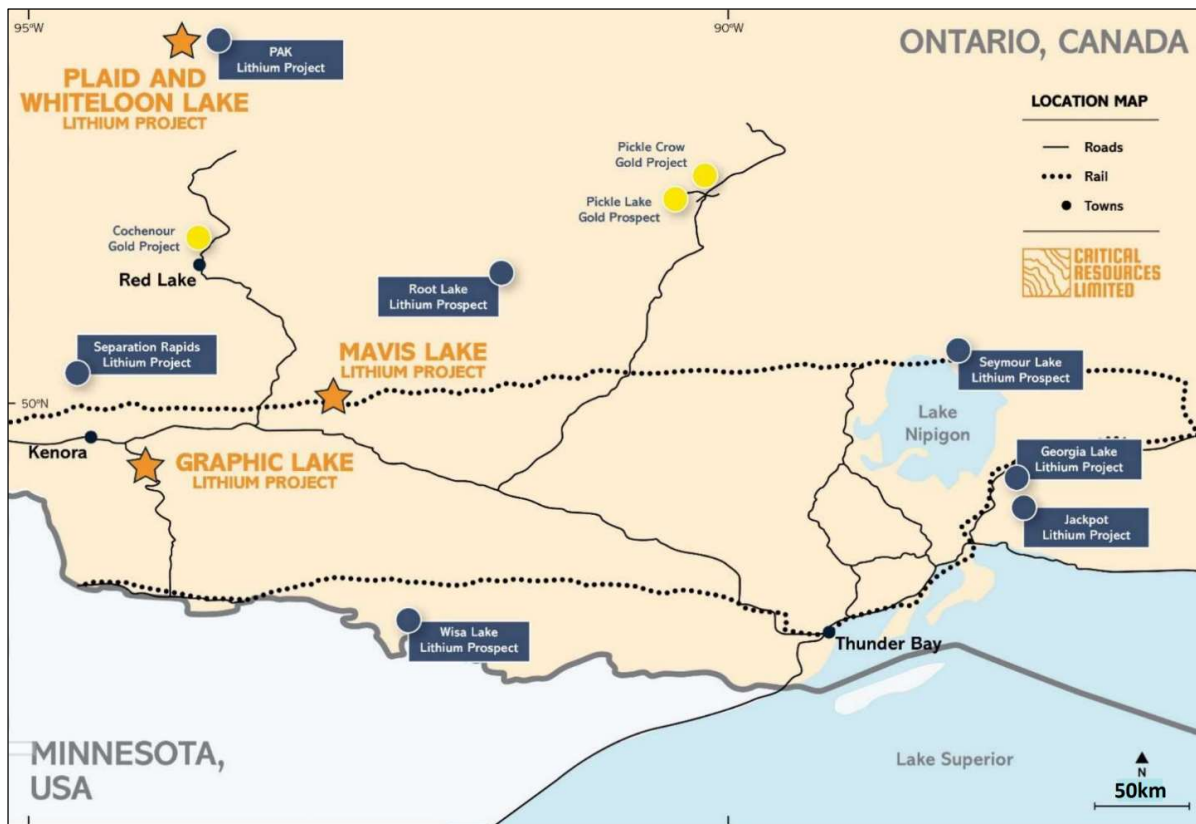
- 55.25m at 1.04%  $\text{Li}_2\text{O}$  from 80.75m in drill hole MF18-53 and
- 26.30m at 1.70%  $\text{Li}_2\text{O}$  from 111.9m inc. 7.70m at 2.97%  $\text{Li}_2\text{O}$  from 130.5m in drill hole MF17-491.

These results present significant exploration potential, a summary of previous results can be seen in ASX announcement dated 25 October 2021. A future work program has been determined and is outlined in detail in ASX announcement dated 13 Dec 2021.

**Figure 3: Sample of Mavis Lake intersections from 2017 and 2018 drilling campaign**



**Figure 4: Mavis Lake project location**



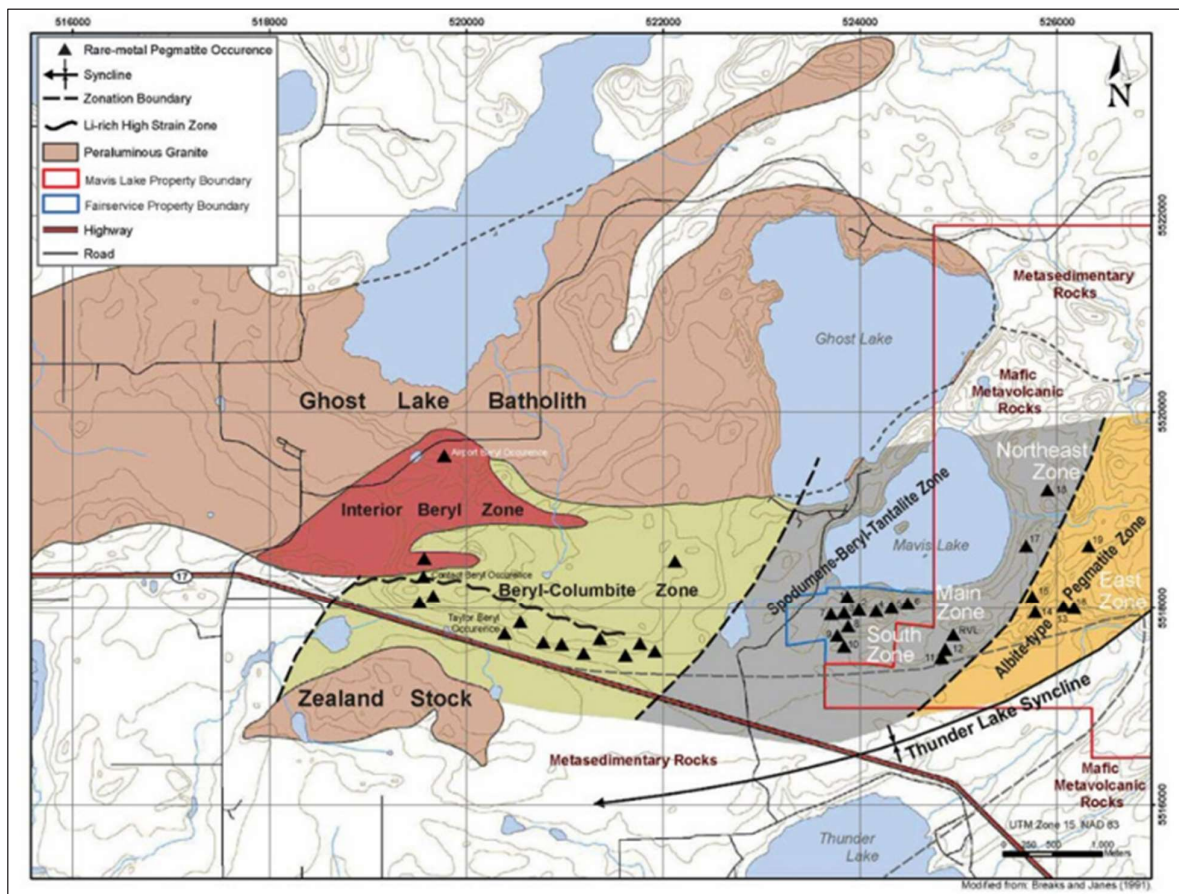
### Deposit Type and Exploration Thesis

Previous exploration campaigns at Mavis Lake have confirmed the presence of lithium-bearing pegmatites.

The pegmatite occurrences at Mavis Lake are found within the correct zonation for lithium enrichment from the Ghost Lake Batholith, a fertile granite intrusion. The zonation of pegmatite occurrences can be seen in Figure 5.



Figure 5: Regional zonation of Mavis Lake Pegmatite group



Sources: Demmeier and Mercier (2011), modified from Breaks and James (1991)

### Forward Work Program

The Company plans an aggressive approach to exploration at Mavis Lake with a view to delineating a JORC compliant Mineral Resource estimate. Planned activities are as laid out below.

### Diamond Drilling and Assaying

Continuation of inaugural 5,000m drill program and strategy development for subsequent drilling campaigns. Assaying will be completed in line with drill results and appropriate mineralised intersections.

### Surface Mapping and Sampling

Surface mapping and sampling of outcropping pegmatites will assist in identifying targets in collaboration with the airborne survey data. Further surface exploration of the lease outside of the known Pegmatite 6 and Pegmatite 18 prospects is expected to yield further target areas.

### Core Logging and Data Interpretation

Ongoing review of previous drill core and data as well as incorporation of new data to support development of a JORC compliant Resource estimate.

### Metallurgical Testing

Metallurgical test work will be conducted on suitable core samples to identify and confirm mineral processing properties and allow flow sheet development in an attempt to produce a low-impurity, high-grade spodumene concentrate

## **The Lithium Industry in Ontario**

### *Canadian Government's C\$3.8 Billion Critical Minerals Strategy*

Recently announced strategy by the Canadian government to boost domestic production of lithium, copper and other strategic minerals to help propel the country's efforts to become a key part of the global electric vehicle supply chain. The spending, announced during Canada's federal budget unveiling on 7 April 22, promises grants for mineral surveying, processing and recycling, as well as tax credits for development of new mines and subsidies for infrastructure.

### *Ontario's First-Ever Critical Mineral Strategy*

In March of 2022 the government of Ontario announced their first-ever critical minerals strategy. The strategy aims to secure Ontario's position as a global leader of responsibly sourced critical minerals. To achieve this, collaboration is dependent between government, industry, Indigenous peoples, communities, and other stakeholders. Working together, this strategy will build a stronger, more resilient economy and revitalise local communities. The strategy is comprised of six pillars, or areas of government action, which will solidify Ontario's position as a global leader of responsibly sourced critical minerals. The pillars are; Enhancing geoscience information and supporting critical minerals exploration, Growing Domestic processing and creating resilient supply chains, Improving Ontario's regulatory framework, Investing in innovation, research, and development, Building economic development opportunities with Indigenous partners, and Growing labour supply and developing a skilled labour force.

### *Tesla Battery Gear Manufacturing Plant Opens*

Tesla has recently announced the opening of a battery gear manufacturing plant in Markham, Ontario demonstrating the significant opportunity for Ontario to become one of the world's leading lithium provinces. The facility will be the first branded Tesla Canada manufacturing facility in Canada. A significant amount of activity in the lithium exploration sector is currently occurring in Ontario. Due to the quality of lithium assets in the region, the fundamental drivers behind the lithium market and the intent of North American manufacturers to source lithium for battery manufacturing from localised supply-chains, it is an excellent time to be gaining a foothold in Ontario.

### *Thunder Bay Regional Lithium Refinery*

Avalon Advanced Materials Inc (TSX:AVL) has recently announced the agreement of a binding letter of intent to develop a regional battery supply chain in Ontario and elsewhere. The first step of this development will be establishing a lithium refinery in Thunder Bay, Ontario, approximately 350km from the Mavis Lake Lithium Project. The plant aims for a production capacity of 20,000 tonnes per annum of lithium hydroxide and/or lithium carbonate. Sources of lithium concentrate will be initially from Avalon's Separation Rapids Lithium Project while other projects begin production.

**This announcement has been approved for release by the Board of Directors.**

-End-

## **EXPLORATION WORK – COMPETENT PERSONS STATEMENT**

The information in this ASX Announcement that relates to Exploration Results is based on information compiled by Troy Gallik (P. Geo), a Competent Person who is a Member of the Association of Professional Geoscientists of Ontario. Troy Gallik is a full-time employee of Critical Resources Ltd. Troy Gallik has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Troy Gallik consents to the inclusion in this ASX Announcement of the matters based on his information in the form and context in which it appears.

## **ABOUT CRITICAL RESOURCES LIMITED**

Critical Resources is a base metals and lithium exploration and development focused company headquartered in Perth, Western Australia and is listed on the Australian Securities Exchange (ASX:CRR). The Company has recently been undergoing a structured process of change at the Director and Executive level. These changes mark the commencement of a renewed focus by the Company on providing shareholder value through the exploration, development and advancement of the Company's long held NSW assets, its newly acquired Lithium assets in Canada and also of its Copper assets in Oman.

## **FORWARD LOOKING STATEMENTS**

Information included in this release constitutes forward-looking statements. Often, but not always, forward looking statements can generally be identified by the use of forward looking words such as "may", "will", "expect", "intend", "plan", "estimate", "anticipate", "continue", and "guidance", or other similar words and may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production or construction commencement dates and expected costs or production outputs.

Forward looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause the Company's actual results, performance and achievements to differ materially from any future results, performance or achievements. Relevant factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs, the speculative nature of exploration and project development, including the risks of obtaining necessary licences and permits and diminishing quantities or grades of reserves, political and social risks, changes to the regulatory framework within which the Company operates or may in the future, environmental conditions including extreme weather conditions, recruitment and retention of personnel, industrial relations issues and litigation.

Forward looking statements are based on the Company and its management's good faith assumptions relating to the financial, market, regulatory and other relevant environments that will exist and affect the Company's business and operations in the future. The Company does not give any assurance that the assumptions on which forward looking statements are based will prove to be correct, or that the Company's business or operations will not be affected in any material manner by these or other factors not foreseen or foreseeable by the Company or management or beyond the Company's control.

Although the Company attempts and has attempted to identify factors that would cause actual actions, events or results to differ materially from those disclosed in forward looking statements, there may be other factors that could cause actual results, performance, achievements or events not to be as anticipated, estimated or intended, and many events are beyond the reasonable control of the Company. Accordingly, readers are cautioned not to place undue reliance on forward looking statements. Forward looking statements in these materials speak only at the date of issue. Subject to any continuing obligations under applicable law or any relevant stock exchange listing rules, in providing this information the Company does not undertake any obligation to publicly update or revise any of the forward-looking statements or to advise of any change in events, conditions or circumstances on which any such statement is based.

## **NO NEW INFORMATION**

Except where explicitly stated, this announcement contains references to prior exploration results, all of which have been cross-referenced to previous market announcements made by the Company. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements.



# Appendix 1: JORC Table 1 – Geophysical Interpretation Exploration Results

1.1 Section 1: Sampling Techniques and Data  
(Criteria in this section apply to all succeeding sections.)

Criteria	JORC-Code Explanation	Commentary
<b>Sampling techniques</b>	<i>Nature and quality of sampling (e.g., 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.</i>	•Not relevant for this announcement
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	• Not relevant for this announcement
	<i>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 (e.g., '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 (e.g., submarine nodules) may warrant disclosure of detailed information.</i>	•Not relevant for this announcement
<b>Drilling techniques</b>	<i>Drill type (e.g., core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g., 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).</i>	•Not relevant for this announcement

Criteria	JORC-Code Explanation	Commentary
<b>Drill sample recovery</b>	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	• Not relevant for this announcement
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	
	<i>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.</i>	
<b>Logging</b>	<i>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.</i>	• Not relevant for this announcement
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i>	
	<i>The total length and percentage of the relevant intersections logged.</i>	
<b>Sub-sampling techniques and sample preparation</b>	<i>If core, whether cut or sawn and whether</i>	• No sampling completed at this stage
	<i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i>	
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	
	<i>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.</i>	

Criteria	JORC-Code Explanation	Commentary
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	
<b>Quality of assay data and laboratory tests</b>	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	<ul style="list-style-type: none"> <li>• No assays have been conducted for this drill program. Techniques will be updated when assays are completed.</li> </ul>
	<i>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.</i>	
	<i>Nature of quality control procedures adopted (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision have been established.</i>	
<b>Verification of sampling and assaying</b>	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	<ul style="list-style-type: none"> <li>• No independent verification completed at this stage</li> </ul>
	<i>The use of twinned holes.</i>	
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	<ul style="list-style-type: none"> <li>• Not relevant for this announcement</li> </ul>
	<i>Discuss any adjustment to assay data.</i>	
<b>Location of data points</b>	<i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i>	<ul style="list-style-type: none"> <li>• Not relevant for this announcement</li> <li>• WGS 1984 UTM Zone 15N</li> <li>• No specific topography survey has been completed over the project area</li> </ul>
	<i>Specification of the grid system used.</i>	
	<i>Quality and adequacy of topographic control.</i>	
<b>Data spacing and distribution</b>	<i>Data spacing for reporting of Exploration Results.</i>	<ul style="list-style-type: none"> <li>• Not relevant for this announcement</li> </ul>
	<i>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.</i>	<ul style="list-style-type: none"> <li>• Not relevant for this announcement</li> </ul>
	<i>Whether sample compositing has been applied.</i>	<ul style="list-style-type: none"> <li>• No sample compositing has been applied.</li> </ul>



Criteria	JORC-Code Explanation	Commentary
<b>Orientation of data in relation to geological structure</b>	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i>	• Not relevant for this announcement
	<i>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.</i>	• Not relevant for this announcement
<b>Sample security</b>	<i>The measures taken to ensure sample security.</i>	• Not relevant for this announcement
<b>Audits or reviews</b>	<i>The results of any audits or reviews of sampling techniques and data.</i>	• Not undertaken at this stage

## 2 Section 2: Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC-Code Explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>• The Mavis Lake Lithium Project consists of 189 unpatented Single Cell Mining Claims and six separate surface leases which secure the surface rights of the land required for the Project footprint.</li> <li>• All claims and leases are active and in good standing. The leases have a term of 21 years and are not set to expire until 2032, at which time they can be renewed for an additional 21 years if required.</li> </ul>
	<i>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.</i>	
<b>Exploration done by other parties</b>	<i>Acknowledgment and appraisal of exploration by other parties.</i>	<ul style="list-style-type: none"> <li>• Previous exploration has been conducted by a number of parties including Lun-Echo Gold Mines Limited (1956), Selco Mining Corporation (1979-1980), Tantalum Mining Corporation of Canada Limited (1981-1982), Emerald Field Resources (2002), International Lithium Corp (2006-2021) and Pioneer Resources Limited/Essential Metals Limited (2018-2021).</li> </ul>

Criteria	JORC-Code Explanation	Commentary
<b>Geology</b>	<i>Deposit type, geological setting and style of mineralisation.</i>	<ul style="list-style-type: none"> <li>The Fairservice and Mavis Lake Prospects host zoned pegmatites that are prospective for lithium and tantalum</li> </ul>
<b>Drill hole Information</b>	<p><i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i></p> <p><i>easting and northing of the drill hole collar</i></p> <p><i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></p> <p><i>dip and azimuth of the hole</i></p> <p><i>down hole length and interception depth</i></p> <p><i>hole length.</i></p> <p><i>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</i></p>	<ul style="list-style-type: none"> <li>Not relevant</li> </ul>
<b>Data aggregation methods</b>	<p><i>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.</i></p> <p><i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</i></p> <p><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></p>	<ul style="list-style-type: none"> <li>Uncut</li> <li>All aggregate intercepts detailed on tables are weighted averages.</li> <li>None used</li> </ul>

Criteria	JORC-Code Explanation	Commentary
<b>Relationship between mineralisation widths and intercept lengths</b>	<i>These relationships are particularly important in the reporting of Exploration Results.</i>	<ul style="list-style-type: none"> <li>• Not relevant for this announcement</li> </ul>
	<i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i>	<ul style="list-style-type: none"> <li>• Not relevant for this announcement</li> </ul>
	<i>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').</i>	<ul style="list-style-type: none"> <li>• Not relevant for this announcement</li> </ul>
<b>Diagrams</b>	<i>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 drill hole collar locations and appropriate sectional views.</i>	<ul style="list-style-type: none"> <li>• The provided maps provide as much information as the Company possesses. The current drill program continues to provide further information which is continually being updated.</li> </ul>
<b>Balanced reporting</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>• Representative reporting of all relevant grades is provided in tables to avoid misleading reporting of Exploration Results.</li> </ul>
<b>Other substantive exploration data</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>• The litho-structural, 1:10,000 scale interpretation was based on processing and analysis of recent airborne geophysical survey data. Survey data included magnetic, radiometric, VLF and DEM data. The interpretation primarily utilised a 2021 magnetic/radiometric survey dataset flown at 75m line spacing and 70m ground clearance (which is higher than today's usual ground clearance 35-50m) that covers the whole project area, along with all relevant and available auxiliary information. This airborne dataset was previously processed by SGC to produce a full set of images and vectors.</li> <li>• Also collected were VLF data using a TOTEM VLF instrument. The Totem 2 VLF-EM system uses three orthogonal receiver coils (LINE, ORTHO, ERECT) to derive the total field and vertical quadrature component of the signal from two VLF transmitters. These transmitters should be in different directions from the surveyed area to provide optimum coupling to conductors with different strike directions. The principal antenna for LINE is aligned with the flight direction, ORTHO is transverse to the flight line direction and ERECT is in vertical direction. The Totem system designates the measured signals as LINE and ORTHO, each with a total field and vertical quadrature component.</li> </ul>
<b>Further work</b>	<i>The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).</i>	<ul style="list-style-type: none"> <li>• Drill program of 49 holes for a total of 5,000m to confirm, infill and extend previous drilling conducted by various parties.</li> </ul>