



## OUTSTANDING HIGH LITHIUM GRADES FROM MAIDEN EXPLORATION PROGRAM AT ROOT BAY PROJECT, CANADA

*Grades of up to 2.54% Li<sub>2</sub>O returned from channel samples confirming project potential and assisting with drill planning*

### HIGHLIGHTS

- A reconnaissance exploration and sampling program has been completed at the newly staked and 100% owned Root Bay Lithium Project in Ontario, Canada.
- All channel samples have been analysed with outstanding grades of up to 2.54% Li<sub>2</sub>O returned from the maiden program.
- All channel samples confirmed the strong presence of lithium mineralisation, including the identification of 13m zone across the pegmatite exposure averaging 1.77% Li<sub>2</sub>O.
- The mapping and sampling program has also confirmed the orientation of the pegmatite structure, which will assist with drill targeting.
- The next phase of exploration will target the strike and dip continuity of the primary pegmatite structure and allow additional local pegmatite exposures to be mapped and sampled.
- Subject to assay results, Ardiden's geological team will aim to define drill-ready targets in preparation for resource modelling.

Ardiden Limited (ASX: ADV) is pleased to advise that it has received highly promising results from its maiden exploration and sampling program at the 100% owned **Root Bay Lithium Project** in Ontario, Canada, which was recently staked by Ardiden and received approval by the Ontario Ministry of Northern Development and Mines ("MNDM") in July 2016.

The program, which included channel sampling of the known pegmatite at the Root Bay Project, has returned impressive lithium grades – confirming the potential of the project.

### ROOT BAY LITHIUM PROJECT

Ardiden recently completed an initial reconnaissance exploration and sampling program at the greenfields Root Bay Lithium Project.

The objective was to verify the potential of the project, given that very limited exploration had been conducted in the area.

The exposed Root Bay spodumene-bearing pegmatite structure was accidentally discovered by a representative of the MNDM in 2011.

#### Board of Directors

Mr Neil Hackett (Non-Executive Chairman)

Mr Brad Boyle (Executive Director)

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Dr Michelle Li (Non-Executive Director)

#### Management Team

Mr Brad Boyle (Executive Director)

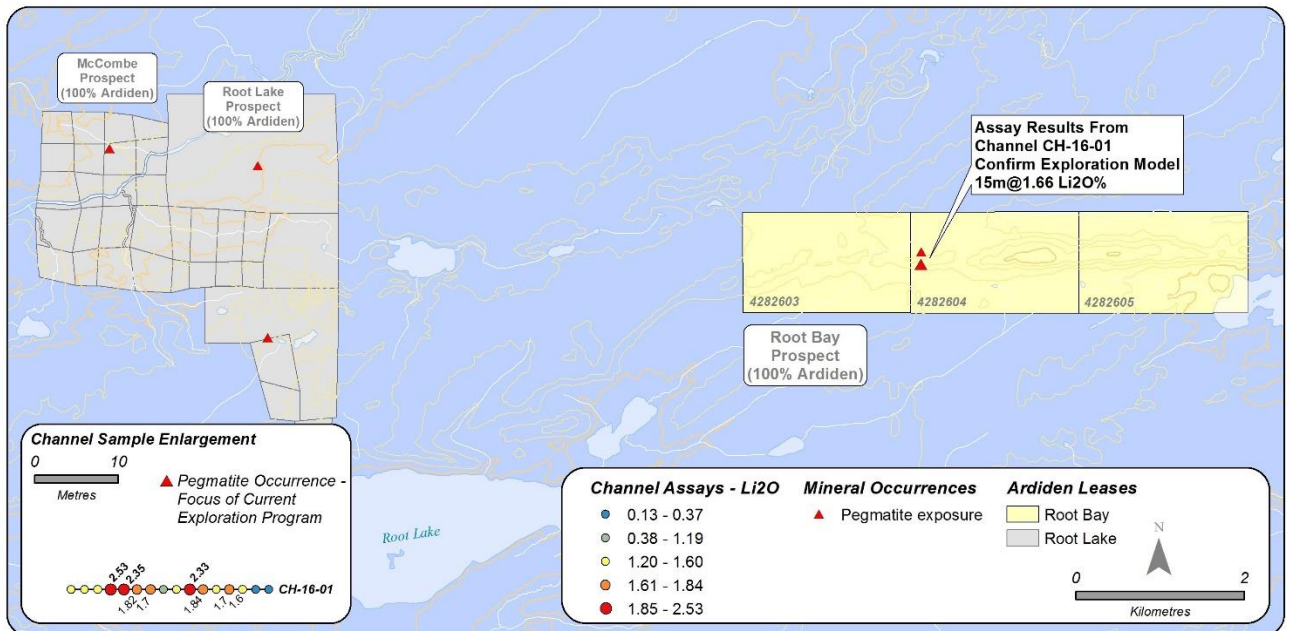
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**Figure 1.** Map showing the location of the Root Bay Pegmatite. Also included are McCombe and Root Lake pegmatites on the Root Lake lithium project. The outcropping pegmatites structures and trenches are all highlighted.

Initial observations by the MDNM state that the dyke is characterized by coarse white albite, grey quartz and pale grey-green spodumene crystals up to 10cm long.

The outcrop distribution of the pegmatite indicates that the spodumene dyke is perhaps 10m wide at this location along the limited, exposed contact of approximately 60m.



**Figure 2.** Photo of the Root Bay pegmatite exposure.





**Figure 3.** Example of Spodumene crystal in the Root Bay pegmatite exposure.

Ardiden's geological team cut a 15m channel across the surface of the outcropping pegmatite, collecting 15 samples which were each 1 metre long. The channel samples were logged and sent to Actlabs laboratory in Thunder Bay for analysis under QAQC procedures.

Logging and analysis from the maiden sampling program has **confirmed the strong presence of spodumene** with lithium mineralisation identified in all of the channel samples and outstanding grades of up **2.54%  $\text{Li}_2\text{O}$**  returned.

Ardiden considers these initial exploration results to be very encouraging, particularly the presence of a continuous 13m long lithium mineralisation zone across the surface of the primary pegmatite exposure, averaging **1.77%  $\text{Li}_2\text{O}$**  (Table 1 below).

This initial limited mapping and sampling program provided information about the geological and structural formations and confirmed the orientation of the pegmatite exposure as North-South striking.

The next phase of exploration will target the strike and dip continuity of the primary pegmatite structure and allow additional local pegmatite exposures to be mapped and sampled.

After reviewing assay results, the geological team will then endeavor to delineate further drill-ready targets, with all data collected to be included in any future resource models.

Table 1 below highlights the significant intervals of the channel samples obtained from the Root Bay exposure and which contained lithium mineralisation reporting above the cut-off grade of 1.0%  $\text{Li}_2\text{O}$  and is expressed as the average grade for each 1m channel sample.

**Table 1.** Average grade results for channel CH-16-01 at Root Bay Lithium Project, using a cut-off grade of 1.0% Li<sub>2</sub>O.

Channel	East	North	Dip	From (m)	To (m)	Interval (m)	Li <sub>2</sub> O% (1.0% cut off)
CH-16-01	600375	5642399	0	2.00	3.00	1	1.59
CH-16-01	600375	5642399	0	3.00	4.00	1	1.70
CH-16-01	600375	5642399	0	4.00	5.00	1	1.53
CH-16-01	600375	5642399	0	5.00	6.00	1	1.85
CH-16-01	600375	5642399	0	6.00	7.00	1	2.33
CH-16-01	600375	5642399	0	7.00	8.00	1	1.55
CH-16-01	600375	5642399	0	8.00	9.00	1	1.18
CH-16-01	600375	5642399	0	9.00	10.00	1	1.70
CH-16-01	600375	5642399	0	10.00	11.00	1	1.83
CH-16-01	600375	5642399	0	11.00	12.00	1	2.35
CH-16-01	600375	5642399	0	12.00	13.00	1	2.54
CH-16-01	600375	5642399	0	13.00	14.00	1	1.42
CH-16-01	600375	5642399	0	14.00	15.00	1	1.49

The Company confirms that 87% of the assay results (13 samples) from the channel samples reported above the 1.0% Li<sub>2</sub>O cut-off grade. The remaining two samples fell below the cut-off grade and have not been reported in this announcement.

Ardiden looks forward to providing further updates as they come to hand.

**-ENDS-**

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**About the Ardiden Ltd**

The Seymour Lake Lithium Project (exercised option to acquire 100%) is located in Ontario, Canada. The project comprises 912 Ha of mining claims and has over 4,000m of historic drilling. Mineralisation is hosted in extensive outcropping spodumene-bearing pegmatite structures with widths up to 26.13m and grades of up to 2.386% Li<sub>2</sub>O. In addition, tantalum and beryllium grades of up to 1,180 ppm (Ta<sub>2</sub>O<sub>5</sub>) and 1,270ppm (BeO) respectively were intersected.

The 100%-owned Root Lake Lithium Project is located in Ontario, Canada. The project comprises 1,013 Ha of mining claims and has over 10,000m of historic drilling. Mineralisation is hosted in extensive outcropping spodumene-bearing pegmatite structures with widths up to 19m and grades of up to 5.10% Li<sub>2</sub>O. In addition, tantalum grades of up to 380 ppm were intersected.

The 100%-owned Root Bay lithium project is strategically located approximately 5km to the east of the recently acquired Root Lake Lithium Project and consists of three claim areas, totalling 720 hectares. The project was staked by Ardiden as part of its regional exploration focus in and around the Root Bay spodumene-bearing pegmatite. Initial observations of the exposed pegmatite is characterized by coarse white albite, grey quartz and pale grey-green spodumene crystals up to 10cm long.

The 100%-owned Manitouwadge Jumbo Flake Graphite Project is located in Ontario, Canada. The Project area is 5,300 Ha and has a 20km strike length of EM anomalies with graphite prospectivity and is being subject to systematic exploration to determine areas that have potential to be a near-term development opportunity.

Metallurgical testwork has indicated that up to 80% of the graphite is high value jumbo or large flake graphite. Testwork has also indicated that simple, gravity and flotation beneficiation can produce graphite purity levels of up to 96.8% for jumbo flake and 96.8% for large flake. With the proven caustic bake process ultra-high purity (>99.95%) graphite can be produced. The graphite can also be processed into high value expandable graphite, high quality graphene and graphene oxide.

#### **Competent Person's Statement**

The information in this report that relates to exploration and drilling results for the Root Bay Lithium project is based on, and fairly represents, information and supporting geological information and documentation in this report has been reviewed by Mr Paul Nielsen who is a member of the Association of Professional Geoscientists of Ontario. Mr Nielsen is not a full-time employee of the Company. Mr Nielsen is employed as a Consultant Geologist. Mr Nielsen has more than five years relevant exploration experience, and qualifies as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (the JORC Code). Mr Nielsen consents to the inclusion of the information in this report in the form and context in which it appears.

#### **Forward Looking Statement**

This announcement may contain some references to forecasts, estimates, assumptions and other forward-looking statements. Although the company believes that its expectations, estimates and forecast outcomes are based on reasonable assumptions, it can give no assurance that they will be achieved. They may be affected by a variety of variables and changes in underlying assumptions that are subject to risk factors associated with the nature of the business, which could cause actual results to differ materially from those expressed herein. All references to dollars (\$) and cents in this presentation are to Australian currency, unless otherwise stated. Investors should make and rely upon their own enquires and assessments before deciding to acquire or deal in the Company's securities.

**Table 2: Root Bay Lithium Project****Section 1 Sampling Techniques and Data**

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Channel sampling was conducted across a single pegmatite exposure at Root Bay</li> <li>A total of fifteen (15), one metre long channel continuous samples along the channel were completed resulting in fifteen individual one metre intervals being assayed.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>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).</li> </ul>	<ul style="list-style-type: none"> <li>This report does not present drilling results</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>This report does not present drilling results</li> </ul>
Logging	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>This report does not present drilling results</li> <li>Channel samples were logged by consulting geologists from the Caracle Creek International Consulting group.</li> </ul>

Criteria	JORC Code explanation	Commentary
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>• If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>• For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>• 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.</li> <li>• Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>• Samples consisted of fifteen, one metre long channel samples across a single pegmatite exposure at Root Bay (Channel ID CH-16-01)</li> <li>• Individual one metre samples were assayed</li> <li>• Average sample size was 1.5kgs</li> <li>• Quality control procedures included the insertion of certified standards and blanks into the sample stream</li> <li>• Sample sizes are appropriate for the grain size of the material</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>• 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.</li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• All samples were analysed by Actlabs in Thunder Bay, Ontario Canada a SCC (Standards Council of Canada) accredited laboratory.</li> <li>• The assay technique was FUS-Na202</li> <li>• Quality control procedures included the insertion of certified standards and blanks into the sample stream.</li> </ul>
verification of sampling and assaying	<ul style="list-style-type: none"> <li>• The verification of significant intersections by either independent or alternative company personnel.</li> <li>• The use of twinned holes.</li> <li>• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>• Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>• Assay data has been transcribed from original laboratory reports.</li> <li>• An independent QAQC analysis was undertaken by consulting geologists from the Caracle Creek International Consulting group.</li> <li>• Assay data has been uploaded to a Microsoft Access database</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Specification of the grid system used.</li> <li>• Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>• The channel and sample locations were recorded using handheld WAAS enabled GPS units (+/- 3m accuracy) set for recording UTM NAD27 Zone 16 projection coordinates.</li> </ul>



Criteria	JORC Code explanation	Commentary
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>The channel samples were spaced at 1m intervals continuously along CH-16-01</li> <li>This report does not present any Mineral Resource or Ore Reserve Estimation</li> <li>No sample compositing has been applied</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The channel samples were developed perpendicular to the strike of mineralisation</li> <li>The orientation of the channel samples is designed to not bias sampling</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>Samples were secured and delivered to the assay lab under chain of custody controls by the Caracle Creek International Consulting group</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>No audits or reviews of sampling techniques have been conducted</li> </ul>

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <li>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.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.</li> </ul>	<ul style="list-style-type: none"> <li>All Claim areas in the Root Bay project were staked by Ardiden in March 2016. All claims are 100% owned by Ardiden and the MDNM approved the grant of Claims 4282603, 4282604 and 4282605 in July 2016.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>Other parties have not appraised the exploration carried out to date</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>Root Bay area pegmatites have been classified as belonging to the Complex-type, Spodumene-subtype. Mineralization is dominated by spodumene (Li), with lesser tantalite(Ta) hosted in a series of steeply</li> </ul>



Criteria	JORC Code explanation	Commentary
		dipping pegmatite dykes.
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <li>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:               <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>See Figure 1 for the location of the channel samples.</li> <li>See Table 1 for the significant channel sample assay results</li> </ul>
<i>Data aggregation methods</i>	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>With the homogeneity of the mineralised material, sample intervals for the most part were kept at one metre intervals</li> <li>Li<sub>2</sub>O is calculated from Li% using a factor of 2.153</li> </ul>
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>True width not known - significant intervals reported are not necessarily representative of true widths</li> </ul>
<i>diagrams</i>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>See Figure 1 for the location of the surface channel samples</li> </ul>
<i>Balanced reporting</i>	<ul style="list-style-type: none"> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades</li> </ul>	<ul style="list-style-type: none"> <li>No comprehensive report has been completed to date to include the latest Arden exploration results.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i>	
Other substantive exploration data	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>All meaningful and material data is reported</li> </ul>
Further work	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Refer to text within the report.</li> </ul>