

19 October 2016

## LITHIUM AND GRAPHITE PROJECTS – EXPLORATION UPDATE

Exploration programs continue to deliver strong results as Ardiden advances its key Canadian lithium and graphite projects and plans for next phase of development activities

#### **HIGHLIGHTS:**

#### **Seymour Lake Lithium Project**

- Excavation program successfully completed around North Aubry, South Aubry and Pye prospects
- Extensive spodumene zones identified in newly exposed pegmatites
- Data collation, ground truthing and 3D modelling almost complete
- Final preparations underway for upcoming diamond drilling program, due to commence later this month

#### **Manitouwadge Graphite Project**

- Structural and geotechnical logging of drill core from Silver Star North prospect completed by Ardiden's geological team, in conjunction with a limited exploration program around the prospect
- The additional data will assist the Company with the design of the upcoming drill program
- Preparations underway for upcoming drilling program

#### **Root Lake Lithium Project**

- A geological team have completed the 2016 mapping and channel sampling program on the newly acquired Root Lake Lithium Project in Ontario, Canada.
- 2016 sampling results will be used to validate historical data set and to confirm the structural orientation of the pegmatite structures. All data collected will be included in any future resource models.
- Survey of the current prospect also completed, resulting in the identification of extensions of the known pegmatite structures and the discovery of new pegmatite exposures.
- Negotiation Protocol Agreement executed with the Slate Falls and Cat Lake First Nations.

Ardiden Limited (ASX: ADV) is pleased to provide an update on recently completed exploration, mapping and sampling programs at the Seymour Lake and Root Lake lithium projects and the Manitouwadge graphite project, all of which are located in Ontario, Canada.

The recent programs have laid the foundations for the next phase of evaluation and resource development at these projects, which the Company will further elaborate on in the near future.

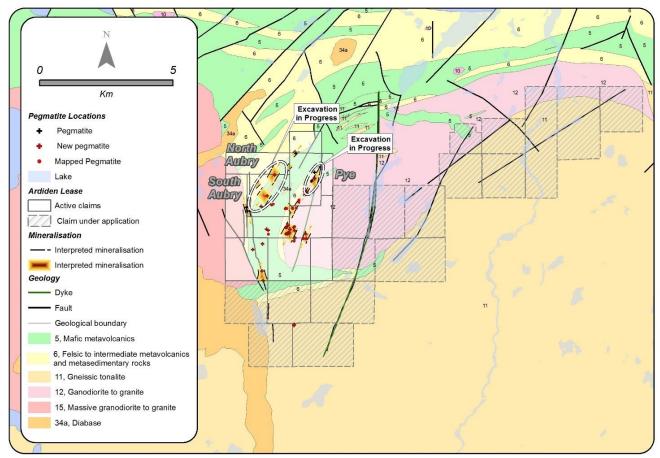
#### **SEYMOUR LAKE LITHIUM PROJECT**

Ardiden's geological team has successfully completed the first phase of a limited excavation program which focused on extending the exposure of the known lithium mineralisation zones around the North Aubry, South Aubry and Pye prospects. Further, the program allowed the exposure of a number of additional, newly identified pegmatites to be extended.

The excavation program has now successfully identified numerous and extensive spodumene (lithium hosting) mineralisation zones in the pegmatite exposures (Figures 2 & 3), all of which located within the immediate project area. Further exploration, sampling and excavation programs will be undertaken in the future to extend the exposure of the multiple known mineralised zones in a Southerly direction to assist in project planning.

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**Figure 1.** Seymour Lake project overview showing new pegmatite exposures, faults and dykes and the newly staked claim areas.



**Figure 2.** Field crew washing down the newly excavated pegmatite structure located south of the North Aubry prospect to enable the geological team to review and identify the various lithium mineralisation zones.





**Figure 3.** Example of spodumene crystals identified during the excavations of new pegmatite exposures south of North Aubry prospect.

Ardiden confirms that QAQC field and laboratory checks have been completed on the data collected for this first phase of exploration. This new data has been reconciled with the historic lithogeochemical results, grab and channel samples and the drilling assay results to create a comprehensive database.

This database will assist the Ardiden geological team with the next phase of excavation, mapping and 3D modelling of the known lithium mineralisation zones and structures.

The 3D model and database should assist the Company's geological team identify sufficient mineralisation to underpin resource delineation drilling programs, which will be aimed at defining a lithium resource in accordance with JORC (2012) guidelines. Final preparations are now almost complete for the upcoming drilling program, which is due to commence later this month.

#### **MANITOUWADGE GRAPHITE PROJECT**

The Company's geological team has also completed structural and geotechnical logging and analysis of drill core from the Silver Star North prospect, obtained during the 2015 drill program at the 100%-owned Manitouwadge Graphite Project.

Additionally, the team has completed a ground truthing exercise around the prospect to confirm the known orientation, structural controls and morphology of the graphite mineralisation zones.

This additional information from the Silver Star North prospect should assist the Company's geological team to identify sufficient mineralisation to underpin resource delineation drilling programs, which are aimed at defining a graphite resource in accordance with JORC (2012) guidelines.

Preparations and planning are now underway for an upcoming drilling program, which is due to commence late next month.

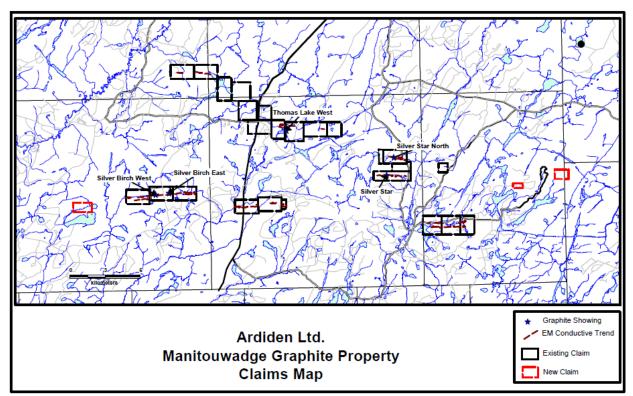


Figure 4. Claims map for Manitouwadge Graphite project, highlighting the Silver Birch and Silver Star North prospects.

#### **ROOT LAKE LITHIUM PROJECT**

The Company's geological team has now also completed the 2016 exploration, mapping and sampling program at the 100%-owned Root Lake lithium project. This program was undertaken in conjunction with a further in-depth analysis of the current and historical drill and sampling data from the project.

The exploration program included detailed geological and structural mapping in order to develop a better understanding of the known pegmatites and the influence of the surrounding structures at the Root Lake Project. The geological team were able to confirm the extension of the pegmatite exposures of the Root Lake prospect about 150m further to the west, which will be the focus of exploration at the project during the 2017 field season



Figure 5. Photo looking west along the Root Lake pegmatite



Figure 6. Excavation and preparation for channel sampling on the Root Lake pegmatite.



Figure 7. Excavation and mapping of the Root Lake pegmatite by removal of the moss cover.

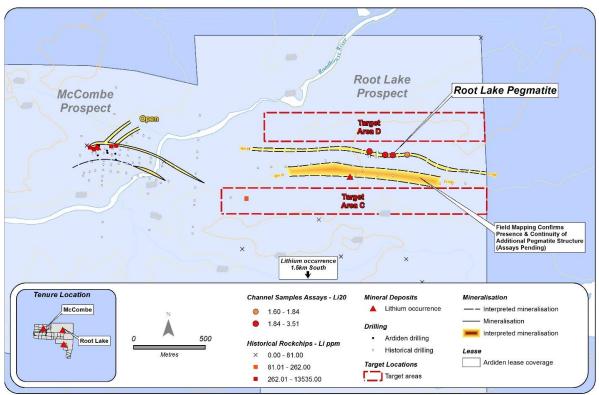


The Company's geological team obtained grab and channel samples from the known outcropping pegmatite structures at the Root Lake prospect.

During this mapping and exploration program, channel and grab samples were taken to reconcile the quality of the historical data previously obtained from the Root Lake prospect. These samples are also being used to confirm the grade of the lithium mineralisation identified during the mapping phase of this program.



Figure 8. The 4.9m wide lithium mineralisation zone at Channel 4 on the Root Lake pegmatite.



**Figure 9.** Overview of the Root Lake project showing the known and newly identified pegmatite exposures and the interpreted mineralised zones and structures. Also highlighted are some of the channel sample locations and the areas of interests for further exploration.



The assay results from 50 channel samples have confirmed the presence of several broad zones of lithium mineralisation, up to 4m wide with one zone having an average grade of 2.49% Lithium Oxide ( $Li_2O$ ) from Channel CM-CH-16-01. Also of note is the 4m wide lithium mineralised zone in Channel GDW-CH-16-03, which averages 1.72%  $Li_2O$ .

All channels from the program reported with lithium mineralisation, including an exceptional grade of 3.51% Li<sub>2</sub>O being identified at the Root Lake prospect in Channel CM-CH-16-01.

The logging of the channel samples again confirmed that the mineralisation is associated with spodumene. In addition, the assay results confirmed the visual logging grade estimates, with 64% (32 samples) of all channel samples returning assay results greater than 0.5% Li<sub>2</sub>O and 38% (19 samples) of channel samples with grades above 1.5% Li<sub>2</sub>O.

Table 1 below highlights the various intervals of significant lithium mineralisation obtained from 11 different channels completed at the Root Lake prospect. Not all assay results from the channel samples have been reported in this announcement.

**Table 1.** Overview of significant channel sample results obtained from the Root Lake prospect at the Root Lake Lithium Project. The samples refer to significant intervals from Channels GDW-CH-16-03, CM-CH-16-01 to CM-CH-16-05.

Channel	East	North	Dip	From	То	Interval	Li₂O%
Citatine	2000	110.11.1	2.6	(m)	(m)	(m)	2.2070
GDW-CH-16-03	592830	5643587	0	1.0	2.0	1	0.69
GDW-CH-16-03	592830	5643587	0	2.0	3.0	1	2.02
GDW-CH-16-03	592830	5643587	0	3.0	4.0	1	2.71
GDW-CH-16-03	592830	5643587	0	4.0	5.0	1	1.44
						4	Average 1.72
CM-CH-16-01	592731	5643581	0	2.75	3.75	1	1.79
CM-CH-16-01	592731	5643581	0	3.75	4.75	1	3.51
CM-CH-16-01	592731	5643581	0	4.75	5.75	1	3.21
CM-CH-16-01	592731	5643581	0	5.75	6.75	1	1.46
						4	Average 2.49
CM-CH-16-02	592784	5643581	0	1.00	2.00	1	1.59
CM-CH-16-02	592784	5643581	0	2.00	3.00	1	2.13
CM-CH-16-02	592784	5643581	0	2.00	3.00	1	0.65
						3	Average 1.46
CM-CH-16-03	592830	5643587	0	3.00	4.00	1	0.99
						1	Average 0.99
CM-CH-16-04	592884	5643582	0	0.00	0.40	0.4	0.60
CM-CH-16-04	592884	5643582	0	0.40	1.40	1	1.38
CM-CH-16-04	592884	5643582	0	2.40	3.40	1	1.72
CM-CH-16-04	592884	5643582	0	3.40	4.40	1	1.68
CM-CH-16-04	592884	5643582	0	4.40	5.90	1.5	0.93



						4.9	Average 1.26
CM-CH-16-05	592910	5643577	0	0.00	0.50	0.5	1.25
CM-CH-16-05	592910	5643577	0	0.50	1.50	1	0.65
						1.5	Average 0.95

Although the Company's recent focus has been on the development of the Seymour Lake Lithium Project, the Ardiden geological team was also tasked to undertake a limited exploration program to identify further pegmatite exposures surrounding the Root Lake prospect. Even though some of terrain at Root Lake is quite challenging with a number of low-lying swampy areas, the team was still able to locate approximately 20 new pegmatite dykes, structures, exposures and boulders at various locations throughout the project claims.

Not all of these new pegmatites contained visible spodumene, but Ardiden considers the identification of new pegmatite structures and exposures in previously unexplored areas of the project as a very encouraging indication that the project could host a number of larger spodumene bearing structures.

Further detailed exploration and mapping are required to allow the Company to develop a better understanding of the orientation, structural controls and morphology of the pegmatites at the Root Lake Project. It is likely that these additional programs will be undertaken by Ardiden during next year's field season.

#### **ROOT LAKE FIRST NATION GROUPS**

Ardiden is pleased to confirm that it has successfully negotiated and executed a Negotiation Protocol Agreement between the Company and the local Slate Falls and Cat Lake First Nations Groups.

This agreement helps to strengthen relations and provides guidelines on how the Company and the First Nation Groups can work together and establish commercial processes which are mutually beneficial for all parties for the development of the Root Lake Lithium Project.

**ENDS** 

For further information:

Investors: Media:
Brad Boyle Nicholas Read
Ardiden Ltd Read Corporate
Tel: +61 (0) 8 6555 2950 Mobile: 0419 929 046

#### **About Ardiden Ltd**

Ardiden Limited (ASX: ADV) is an emerging international strategic metals company which is focused on the exploration, evaluation and development of two 100 per cent owned projects located in the established mining jurisdiction of Ontario, Canada.

The Seymour Lake Lithium Project comprises 7,019 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. These high-grade pegmatite structures have been defined over a 5km strike length. Drilling program to establish a maiden JORC resource is scheduled to commence in October 2016.



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% Li2O. 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 are characterized by coarse white albite, grey quartz and pale greygreen spodumene crystals up to 10cm long.

The 100%-owned Manitouwadge Jumbo Flake Graphite Project covers an area 5,300 Ha and has a 20km strike length of EM anomalies with graphite prospectivity. Following systematic field exploration programs, Ardiden is planning to commence its maiden resource drilling program in November 2016 to underpin economic development studies.

Previous preliminary metallurgical test work indicated that up to 80% of the graphite at Manitouwadge is high value jumbo or large flake graphite. Test work 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.

All projects located in an established mining province, with good access to infrastructure (road, rail, power, phone and port facilitates) and local contractors and suppliers

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

The information in this report that relates to exploration results for the Seymour Lake and Root Lake Lithium projects and Manitouwadge Graphite 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 Lake 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> <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> <li>Channel sampling was conducted across a 6 pegmatite exposures at Root Lake</li> <li>One metre long continuous channel samples were completed for the full length of each channel</li> </ul>
Drilling techniques	<ul> <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>	This report does not present drilling results
Drill sample recovery	<ul> <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>	This report does not present drilling results
Logging	Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical	<ul> <li>This report does not present drilling results</li> <li>Channel samples were logged by consulting geologists from the</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul> <li>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>	Caracle Creek consulting group
Sub-sampling techniques and sample preparation	<ul> <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> <li>Channel sampling was conducted across a 13 pegmatite exposures at Root Lake</li> <li>One metre long continuous channel samples were completed for the full length of each channel</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 grainsize of the material</li> </ul>
Quality of assay data and laboratory tests	<ul> <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> <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> <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> <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 consulting group.</li> <li>Assay data has been uploaded to a Microsoft Access database</li> </ul>
Location of data points	<ul> <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>	The channel and sample locations were recorded using handheld WAAS enabled GPS units (+/- 3m accuracy) set for recording UTM NAD83 Zone 15 projection coordinates.

Criteria	JORC Code explanation	Commentary
Data spacing and distribution	<ul> <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>	The channel samples were spaced at 1m intervals continuously along each channel This report does not present any Mineral Resource or Ore Reserve Estimation No sample compositing has been applied
Orientation of data in relation to geological structure	<ul> <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> <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	The measures taken to ensure sample security.	Samples were secured and delivered to the assay lab under chain of custody controls by the Caracle Creek Consulting group
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits or reviews of sampling techniques have been conducted

## Section 2 Reporting of Exploration Results

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

Criteria	JORC	Code explanation	Co	ommentary
Mineral tenement and land tenure status	agroven hist sett	pe, reference name/number, location and ownership including reements or material issues with third parties such as joint natures, partnerships, overriding royalties, native title interests, torical sites, wilderness or national park and environmental tings.  The security of the tenure held at the time of reporting along with any own impediments to obtaining a license to operate in the area.	•	All claims are in good standing and are 100% owned by Ardiden Ltd. This announcement refers to current and future exploration activities on Claim number 4283915 and Patent numbers KRL36778, KRL36779, KRL36780, KRL36781, KRL36782, KRL36783, KRL36784, KRL36785 and KRL36786.
Exploration done by other parties	• Ack	knowledgment and appraisal of exploration by other parties.	•	Other parties have not appraised the exploration carried out to date
Geology	• Dep	posit type, geological setting and style of mineralisation.	•	Root Lake 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 dipping pegmatite dykes.

Criteria	JORC Code explanation	Commentary
Drill hole Information	<ul> <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> <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> <li>See Figure 9 for the location of the channel samples.</li> <li>See Table 1 for the significant channel sample assay results</li> </ul>
Data aggregation methods	<ul> <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> <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>
Relationship between mineralisation widths and intercept lengths	<ul> <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>	True width not known - significant intervals reported are not necessarily representative of true widths
diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	See Figure 9 for the location of the surface channel samples
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	No comprehensive report has been completed to date to include the latest Ardiden exploration results.
Other substantive	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	All meaningful and material data is reported

Criteria	JORC Code explanation	Commentary
exploration data	method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	
Further work	<ul> <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>	Refer to text within the report.