10 September 2019

# MAIDEN HIGH-GRADE GOLD RESOURCE AT PICKLE LAKE

## HIGHLIGHTS:

- **Maiden high-grade Mineral Resource estimate of <u>790,000 tonnes @ 4.3 g/t for 110,000 oz gold</u> at the 100%-owned Kasagiminnis Gold Deposit.**
- **High-grade gold resource at Kasagiminnis classified as Inferred and reported in accordance with the guidelines of the JORC Code (2012).**
- **The Kasagiminnis Maiden Resource is within a limited strike length (600m) of the entire (>20km) of prospective strike length of Ardiden's Pickle Lake Gold Project, Ontario Canada.**
- **At a premium grade of 4.3 g/t gold, the Maiden Resource Estimate marks the first step towards the Company's objective of building a significant high-grade resource base at Pickle Lake.**
- **Ardiden is planning to re-commence drilling to extend the Kasagiminnis Resource along strike and is concurrently planning exploration activities at the other Pickle Lake Gold Project Prospects including South Limb, West Pickle and Dorothy-Dobie.**

Ardiden Limited (ASX: ADV) is pleased to report a Maiden Mineral Resource estimate for the **Kasagiminnis Deposit** within the Company's Pickle Lake Gold Project in Ontario, Canada. The Inferred Resource estimate of **110,000 ounces of gold is at an impressive high grade of 4.3 g/t Au** and represents the first building block of planned gold resource upgrades as drilling re-commences and exploration activities ramp up on site.

Ardiden has also commenced planning for additional drilling, including negotiations with First Nations groups and approvals aimed at extending the Resource along strike and at depth at **Kasagiminnis.** The Company is meanwhile planning geophysical surveys, compiling historical data and evaluating drill targets with the aim of also building Project Mineral Resources at the **South Limb, West Pickle and Dorothy-Dobie** prospects at Ardiden's Pickle Lake Gold Project.

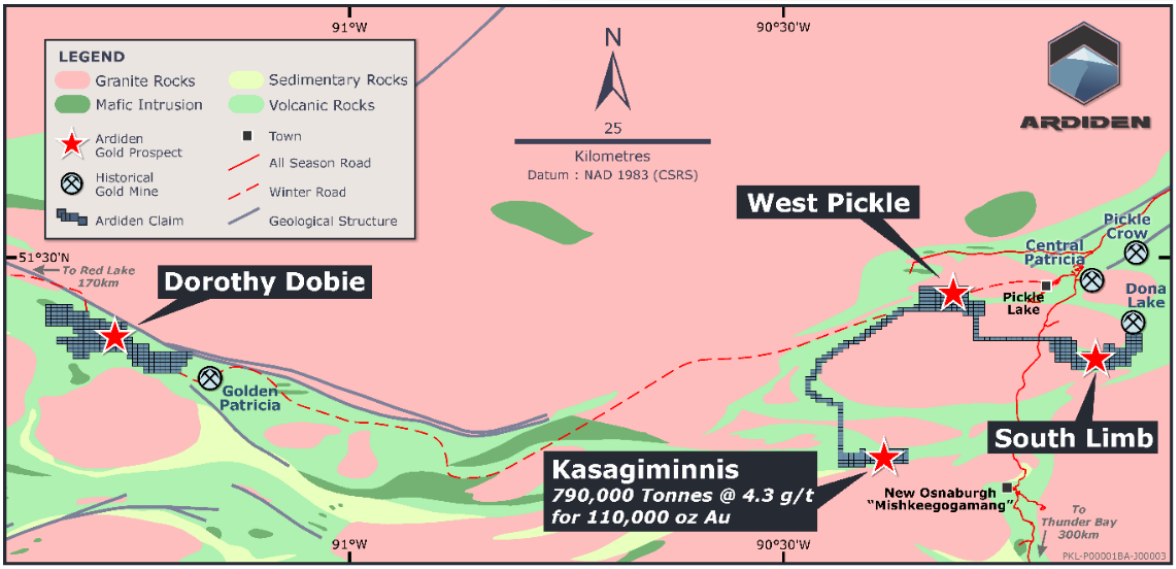


*Figure 1- Ardiden's 100%-owned Pickle Lake Gold Project showing location of the Kasagiminnis Deposit*




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Mining Consultant **Optiro Pty Ltd** completed the resource estimate and full details of Optiro's supporting Technical Report is available on the Ardiden website www.ardiden.com.au The Resource Estimate at Kasagiminnis is over 600 m (east-west), is up to 10 m wide (north-south) and extends to a maximum a depth of 280 m below the surface. The geological interpretation and resource model were developed using historical drilling data from the 1980s and drilling undertaken in 2011 by Murchison Minerals Limited (TSX-V'- 'MUR'), and most recently by Ardiden in 2018. Seven mineralised lodes were interpreted, four of which were used for resource definition.

Ardiden's CEO Rob Longley said - "*The Pickle Lake Greenstone area has been overlooked and under-loved since the 1980's, but now there is renewed interest from numerous mining and exploration companies in both the dormant underground mines and adjacent extensions of mineralised areas. A higher gold price and much improved exploration techniques has made this Gold Camp ripe for re-evaluation. Kasagiminnis is only a small part of our Pickle Lake Gold Project and following a recent site visit, I am encouraged by the prospectivity of the district in terms of mineralisation, opportunity and stakeholder willingness to advance these projects. We want to ensure the nearby First Nation Communities' cultures and traditional activities are respected, and that best practices are applied in terms of environmental management. Overall, there is excellent infrastructure in this Mining Province, and a strong desire to work together to the mutual benefit of all stakeholders*"

Ardiden's high-grade Kasagiminnis gold deposit is only 35km from First Mining Gold Corps (TSX: FF) processing plant and underground mine, 8km north-east of the Pickle Lake Township (Figure 2). Additionally, Tri-Origin Exploration (TSX-V: TOE) hold an option with Barrick over the gold deposit located 12km south-west and directly along strike of Kasagiminnis. Ardiden's South Limb prospect also abuts onto Metals Creek Resources' (TSX-V: MEK) Dona Lake Gold Project, and they have an option agreement with Newmont-Goldcorp over the nearby historic Dona Lake underground gold mine. With this significant amount of activity in the region, Ardiden is investigating potential synergies with all companies active within the Pickle Lake - Red Lake region.

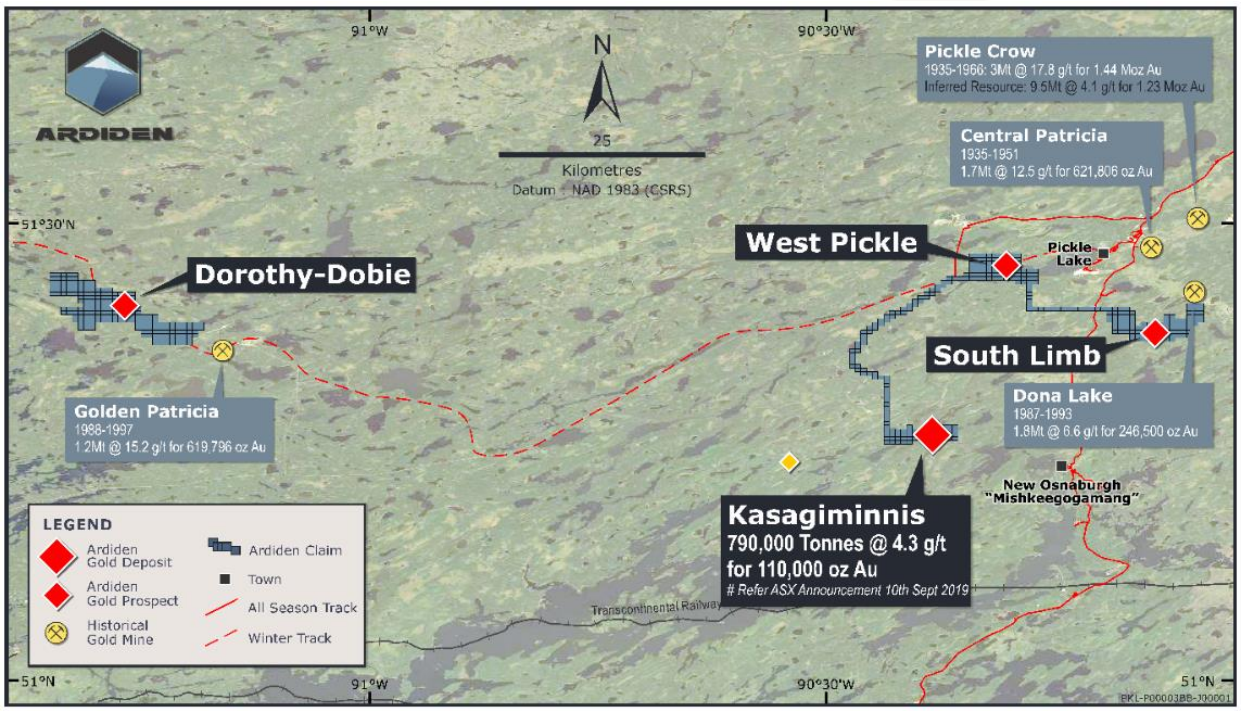


*Figure 2- Proximity of Ardiden's Prospects to Historical Underground Gold Mines* at Pickle Crow, Central & Golden Patricia & Dona Lake.*



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**Information in relation to historical gold production at the Pickle Lake Gold Camp has been referenced from three sources of publication, namely:*

- *Harron, G. A. 2009. Technical Report on Three Gold Exploration Properties Pickle Lake Area, Ontario, Canada. G.A. Harron, P.Eng., G.A. Harron & Associates Inc.*
- *Smyk, M., Hollings, P. and Pettigrew, N., 2015. Geology and Mineral Deposits of The Pickle Lake Greenstone Belt. Institute on Lake Superior Geology, May 20-24, 2015 Field Trip Guidebook.*
- *Puumala, M. A. 2009. Mineral Occurrences of the Central and Eastern Uchi Domain. Ontario Geological Survey, Open File Report 6228*

## REGIONAL SETTING:

The Pickle Lake Gold Camp historically, has produced over 3 million ounces of gold since 1935 from four underground operations; Pickle Crow, Dona Lake, Central Patricia and Golden Patricia. From the Pickle Lake location, highly prospective Archean Greenstone of the Uchi Geological Sub-Province extends 250km west to the well-endowed Red Lake Gold Camp, where Newmont-Goldcorp have current extensive underground gold mining operations. Newmont-Goldcorp are also currently operating the Musselwhite gold mine, situated 125km north of Pickle Lake.

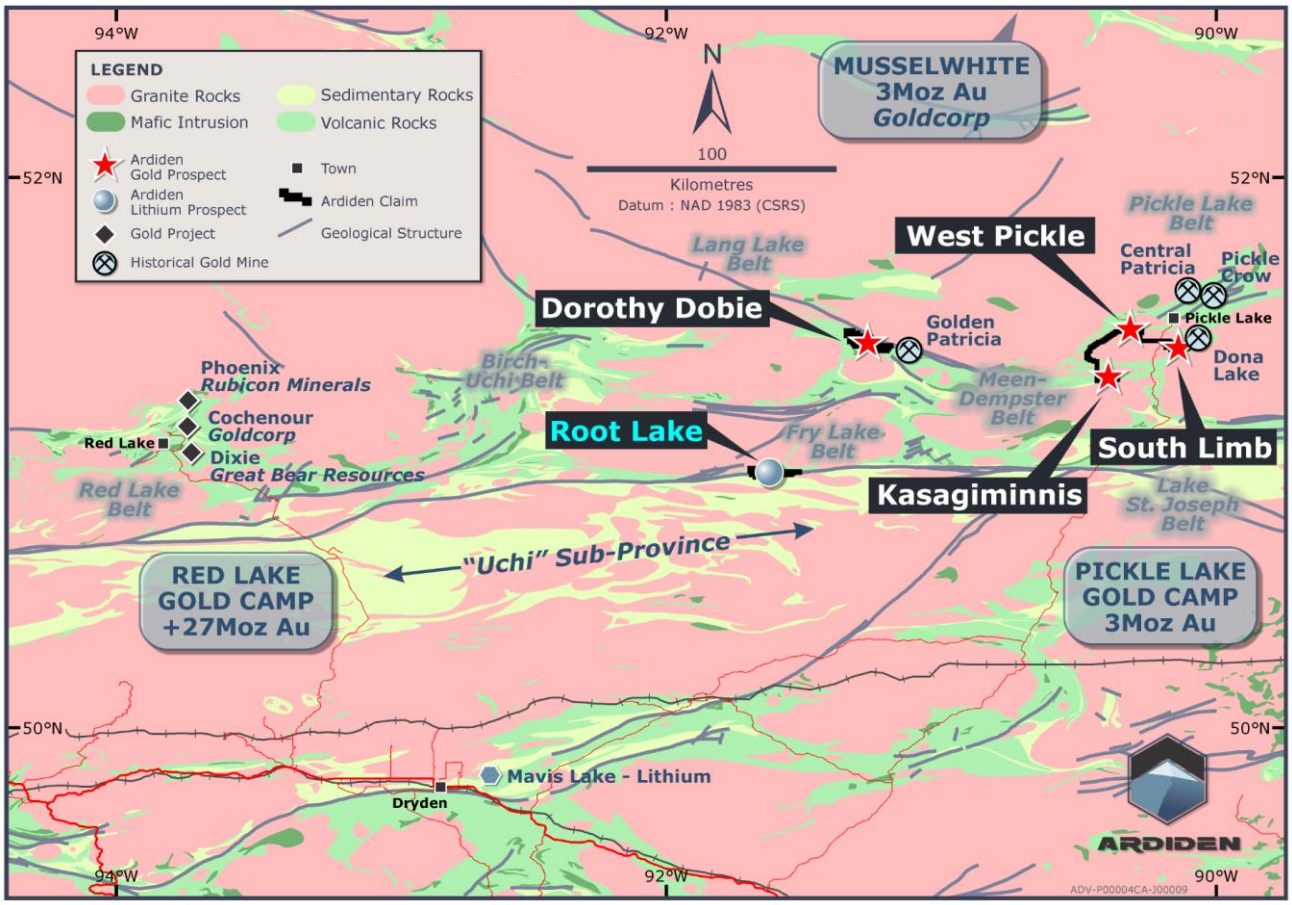


*Figure 3- Regional Setting – The Uchi Geological Subprovince of Ontario, with current World Class Gold Mining centres operational nearby at Red Lake to the west, and Musselwhite (Newmont-Goldcorp) to the North*



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## KASAGIMINNIS MINERAL RESOURCE ESTIMATE DETAIL:

Delivering on their commitment, the Ardiden Board and CEO are pleased to provide the Maiden Resource Estimate for the Kasagiminnis Gold Deposit, classified as Inferred, and compiled in accordance with the Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves, 2012 (the JORC Code). At a premium grade of 4.3 g/t gold, the Maiden Resource Estimate marks the first step towards the Company's objective of building a significant high-grade resource base at the Pickle Lake Gold Project.

| Classification | Cut-off grade g/t gold | Tonnes (x 1,000) | Grade g/t gold | Gold ounces |
|---|---|---|---|---|
| Inferred | 3.0 | 790 | 4.3 | 110,000 |
| **Total** | **3.0** | **790** | **4.3** | **110,000** |

*Table.1- Kasagiminnis Gold deposit – Mineral Resource as at September 2019, reported above a cut-off grade of 3 g/t gold*

The Mineral Resources have been classified on the basis of confidence in geological and grade continuity and taking into account data quality (including the historical nature of much of the drill data and limited quality control and quality assurance data), data density and confidence in the block grade estimation. The resource was reported to a depth of 280 m.

To remain conservative at this stage of evaluation, the Mineral Resources have been reported only above a 3.0 g/t gold cut-off grade (red zones in Figure 4 below) to reflect current commodity prices and likely extraction by underground mining methods. There are numerous potential down dip and along strike extensions of the ore zones that remain untested.

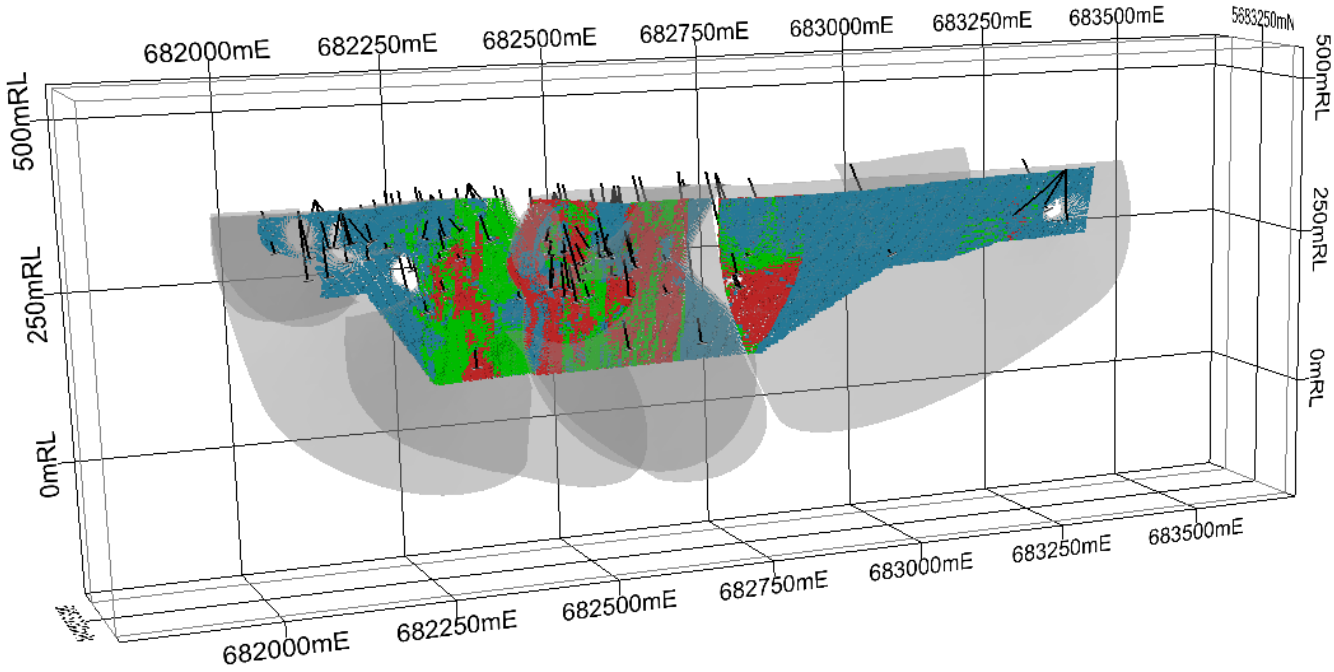


*Figure 4 - 3D view (looking north-east of drillholes and the classified resource model (red = Inferred, ≥3 g/t gold; green = Inferred, 2 to 3 g/t gold; blue = Inferred <2g/t gold; grey = not classified and mineralisation external to resource model)*



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The Kasagiminnis Deposit is located in the western part of the Pickle Lake Greenstone Belt and comprises lode style mineralisation within a steep north-dipping shear zone. Gold mineralisation is within a 10 to 13 m wide zone of mafic volcanic tuffs interlayered with iron formation. The zone is sheared, silicified and contains garnets along with 1 to 5% pyrrhotite. Contrary to historical interpretations, Ardiden's drilling and analysis has revealed that the gold mineralisation is *not* constrained to within the garnet magnetite-bearing rock and that it appears that the primary control on mineralisation at Kasagiminnis is structure (shear zone), rather than lithology.

The geological interpretation and resource model have been developed using historical data from drilling undertaken in the 1980s and more recent drilling undertaken during 2011 and by Ardiden during 2018. The drill database used for estimation of the resource comprises data from 117 diamond drillholes for a total of 14,058 m. The historical data was recorded in feet and the assay data in gold ounces/ton and Ardiden converted this to metric units. The historical data was combined with the 2011 and 2018 data and a simplified geological coding of the units was applied for import into mining software packages. Drillholes at Kasagiminnis are generally spaced at 25 m to 60 m on section with a section spacing of 50 m to 60 m. Drill sections in the eastern area of the deposit are 200 m apart. The 2018 drilling included two fans of drillholes that originated from the same drill pad and tested the down-dip continuity at spacings of up to 15 m.

A nominal cut-off grade of 0.5 g/t gold was used for interpretation of the mineralised zone. Seven mineralised lodes were interpreted, four of which were used for resource definition. The lodes contain significant proportions of un-mineralised and low-grade intervals. A categorical indicator model was developed to defined higher grade sub-domains. An indicator cut-off grade of 0.6 g/t was used for the two lower grade domains and 1 g/t gold was used for the higher-grade domains.

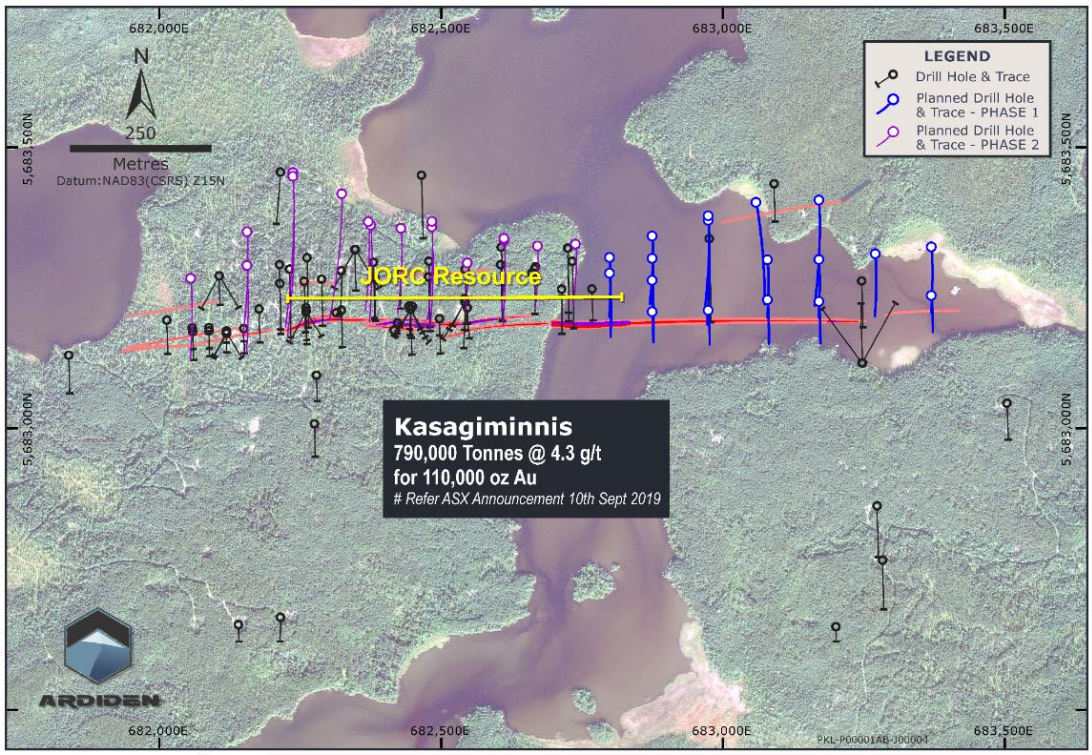


*Figure 5 – Plan view of the main mineralised zone at Kasagiminnis with satellite imagery underlay*



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The resource estimation at Kasagiminnis extends along strike for 600 m (east-west) is up to 10 m wide (north-south) and extends to a maximum a depth of 280 m below the surface. Significant potential for mineralisation exists to the east under a shallow section of water and as such, this extension will most likely be drilled in the Canadian Winter (January onwards) when the Lake is frozen.

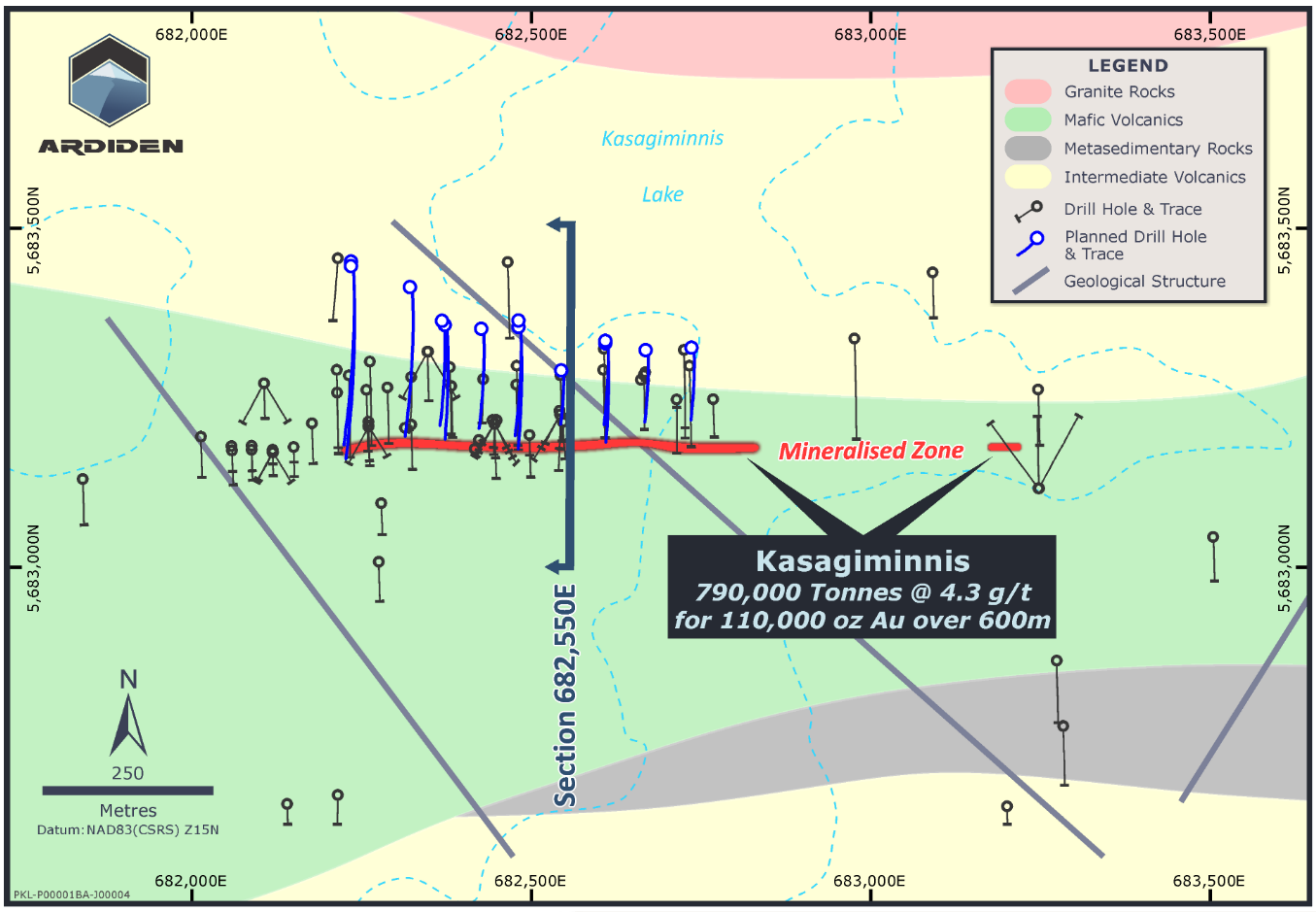


*Figure 6 – Plan view of the main mineralised zone at Kasagiminnis with Geology underlay*

## ARDIDEN'S FOCUS: 100%-OWNED PICKLE LAKE GOLD PROJECT

Ardiden's Pickle Lake Gold Project in Ontario, Canada offers significant upside exploration potential and resource-growth opportunities along more than 20km of prospective strike-length. The main projects within the overall **Pickle Lake Gold Project** are referred to as **Kasagiminnis, Dorothy-Dobie, South Limb,** and **West Pickle.**

The Board strongly believes its 100% interest in the Pickle Lake Gold Project offers the best opportunity to provide near-term shareholder value and to leverage strong investor appetite for gold within the internationally recognised Uchi Geological Sub-Province which extends 250km from the Red Lake to Pickle Lake Gold Camp.

Ardiden is developing exploration programmes across all Prospect locations to progressively build a sizeable Mineral Resource base and at the same time, reviewing synergies with neighbouring companies and Projects in the District. TSX-V listed companies hold prospective ground in the Pickle Lake area but do not necessarily



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have sufficient funding to put into place drilling campaigns and geophysical surveys. Logistics in the area with factors such as lakes, swamps, snow and ice are challenging, yet not insurmountable with the right approach and good relationships with First Nation Communities. Note that all programmed exploration work mentioned above is subject to appropriate negotiation and mutual agreement with First Nation groups and necessary Ontario Mines Department approvals of work.

Ardiden will fund the exploration program at the Pickle Lake Gold Project utilising its existing cash balance of ~AUD3.0m

## Key Ardiden ASX Announcement references:

- *1 July 2019: Ardiden Strengthens Gold Advantage by Attaining 100% of Pickle Lake JV*
- *31 August 2018: High-Grade Gold Results Underpin Potential at Pickle Lake*
- *2 August 2017: Ardiden Expands Project Portfolio with Option over Highly Prospective Gold Project*

For further information:


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**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.

**Competent Person's Statement**

*The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr Robin Longley, a Member of the Australian Institute of Geoscientists, and Mrs Christine Standing, a Member of the Australian Institute of Geoscientists and a Member of the Australasian Institute of Mining and Metallurgy. Mr Longley is a full-time employee of Ardiden Limited. Mrs Standing is employed by Optiro Pty Ltd and is a consultant to Ardiden. Mr Longley and Mrs Standing have sufficient experience which is relevant to the style of mineralisation and type of deposit and to the activity which they are 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 Longley and Mrs Standing consent to the inclusion in this report of the matters based on this information in the form and context in which it appears.*

*For more information including modelling parameters and details, the ASX announcements pertaining to Exploration Results and Mineral Resources are available from the Company's website:* www.ardiden.com.au

## Summary of JORC 2012 Table 1:

**A summary of JORC Table 1 (below) is provided below for compliance with the Mineral Resource and in-line with requirements of ASX listing rule 5.8.1.**

***Geology and Mineralisation Interpretation***

Kasagiminnis is located in the western part of the Pickle Lake Greenstone Belt. The Kasagiminnis gold deposit comprises lode style mineralisation within a steep north-dipping shear zone. The gold mineralisation is within is a 10 to 13 m wide zone of mafic volcanic tuffs interlayered with iron formation. The zone is sheared, silicified and contains garnets along with 1 to 5% pyrrhotite (with occasional concentrations up to 50%). The gold mineralisation is not constrained to within the garnet magnetite-bearing rock and it appears that the primary control on mineralisation at Kasagiminnis is structure (shear zone), rather than lithology.

***Drilling techniques***

The geological interpretation and resource model have been developed using historical data from diamond drilling undertaken in the 1980s and more recent drilling undertaken during 2011 and by Ardiden during 2018. The drill database used for estimation of the resource comprises data from 117 diamond drillholes for a total of 14,057.9 m. The historical data was recorded in feet and the assay data in gold ounces/ton and Ardiden converted this to metric units.

***Sampling techniques***

Diamond core samples from the 2011 and 2018 drilling programmes were typically collected in intervals of 1 m where possible, otherwise as intervals as close as possible to 1 m based on geological boundaries. Diamond core samples from the 1980's drilling programmes were typically collected in intervals of 3 feet where possible, otherwise as intervals based on geological boundaries.

***Sampling Analyses***

Samples from the holes drilled in the 1980s was analysed for gold using fire assay and where significant values were returned the pulps were re-assayed or the core was quartered and resubmitted. The samples from the 2011 drilling programme were analysed Accurassay Laboratories using standard fire assay procedures followed with an AA/ICP finish and the samples from the 2018 drilling programme were analysed Actlabs using fire assay and an inductively coupled plasma optical emission spectrometry (ICP-OES) technique. Samples from the 2011 and 2018 drilling programmes with assay results of >2.5 g/t gold were re-run with a gravimetric finish.

***Mineral Resource Classification***

The Mineral Resources at the Kasagiminnis Lake gold deposit has been **classified as Inferred** in accordance with the guidelines of the Australasian Code for Reporting of Identified Mineral Resources and Ore Reserves, 2012 (the JORC Code). The Mineral Resources have been classified on the basis of confidence in geological and grade continuity and taking into account data quality (including the historical nature of much of the drill data and limited quality control and quality assurance data), data density and confidence in the bock grade estimation. The resource was reported to a depth of 280 m (above 105 mRL).

***Estimation methodology***

Block grades for gold g/t were estimated using ordinary kriging (OK) with an appropriate top-cuts applied. Variogram analyses were undertaken to determine the grade continuity and the kriging estimation parameters used for the OK. Search ellipses were oriented within the plane of the interpreted mineralisation.

***Cut-off grades***

The Inferred Mineral Resources have been reported **above a 3.0 g/t gold cut-off grade** to reflect current commodity prices and likely extraction by underground mining methods. This cut-off grade was selected by Ardiden and is commensurate with cut-off grades applied for reporting of gold Mineral Resources that may be extracted by underground mining methods.

***Mining Factors***

The mineralisation at Kasagiminnis Lake is steeply dipping. Overburden comprises glacial till and there is a lake in the vicinity of the mineralisation. Ardiden anticipates that potential extraction will be by underground mining.

***Metallurgical Factors***

Metallurgical test work has not yet been undertaken and metallurgical factors have not been applied for the Inferred Mineral Resource.



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# JORC Code, 2012 Edition – Table 1

**JORC Code Table 1 Criteria -** The table below summaries the assessment and reporting criteria used for the Kasagiminnis Mineral Resource estimate and reflects the guidelines in Table 1 of *The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves* (the JORC Code, 2012).

## Section 1 Sampling Techniques and Data

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Sampling techniques* | • *Nature and quality of sampling.*<br>• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* | ***2018 Ardiden Ltd. Sampling and Assays***<br>• Samples from the Kasagiminnis property have been derived from diamond drill core. The core has been logged, cut and sampled by qualified personnel to industry best practise and samples submitted to Actlabs in Ontario, a reputable and certified facility.<br>• Prior to shipping, all samples were routinely subjected to wet/dry weight SG determination by Ardiden Ltd. personnel and geological comments on each sample documented. The entire half-core sample was used in this process.<br>• All samples received by Actlabs were crushed to 80% passing 10mm. This was then riffle split to a 350g charge which was pulverised to 90% passing 150 microns.<br>• A 30g subsample was then subject to Fire Assay for Au, Pt through an inductively coupled plasma optical emission spectrometry (ICP-OES) technique.<br>• Another 0.5g subsample is subjected to an Aqua Regia digest and ICP for Ag, Al, As, B, Ba, Be, Bi, Ca, Cd, Co, Cr, Cu, Fe, Ga, Hg, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, S, Sb, Sc, Sr, Te, Ti, Tl, U, V, W, Y, Zn, Zr.<br>• A 0.2g subsample is subjected to Infra-Red analysis in an induction furnace to determine S content.<br>• Lab SG determinations were made at a rate of 1 in 50 as a check against the values derived by Ardiden Ltd.<br>• These techniques are considered appropriate for the mineralisation expected at the Kasagiminnis Property.<br><br>***2011 Manicouagan Minerals Inc.***<br>• Nine diamond drillholes (KAS-11-01 to KAS-11-14) totalling 2,024 metres were drilled to test a 400-metre interval along the 1,300-metre-long gold bearing zone (the Kasagiminnis Gold Zone).<br>• A total of 2,880 samples representing a combined length of 572.19 metres were collected for gold assay.<br>• A selection of core samples were sawed, while all of the other samples were split.<br>• Sampling lengths ranged from 0.4 to 2.4 metres and averaged 1.0 metre. Samples collected were individually bagged and labelled; individually bagged samples were then put into rice bags for shipping to **Accurassay Laboratories** in Thunder Bay.<br>• The samples were first analysed using standard fire assay procedures with an AA/ICP finish.<br>• Assay results greater than 2.5 g/t Au were rerun using a gravimetric finish. |



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| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | • These techniques are considered appropriate for the mineralisation expected at the Kasagiminnis Property.<br><br>***Other Sampling and Assays***<br>• Exploration during the 1980s included diamond drilling.<br>• Samples from the holes drilled in the 1980s was analysed for gold using fire assay and where significant values were returned the pulps were re-assayed or the core was quartered and resubmitted.<br>• Ardiden Ltd. is unable to verify the sampling techniques previously used on the Pickle Lake Gold Properties.<br>• All reference to historical drilling results at the Kasagiminnis Lake gold deposits were sourced from publicly available documents<br>• Sources included:<br>o Technical Report on Three Gold Exploration Properties Pickle Lake Area, Ontario, Canada, for Manicouagan Minerals Inc., G.A. Harron, P.Eng., G.A. Harron & Associates Inc., October 13, 2009;<br>o Manicouagan Minerals Inc. Work Report of 2009 Diamond Drilling Program Dorothy-Dobie Lake Project Pickle Lake Area, Ontario, Bruce W. Mackie P.Geo., Bruce Mackie Geological Consulting Services, 30 December 2009;<br>o Manicouagan Minerals Inc. Work Report of 2011 Phase One and Two Diamond Drilling Programs Kasagiminnis Lake Project Pickle Lake Area, Ontario, Bruce W. Mackie P.Geo., Bruce Mackie Geological Consulting Services, October 2011;<br>o Blackburn, C.E., Hailstone, M.R., Parker, J. and Story, C.C., 1989, Kenora Resident Geologist's Report – 1988; p. 3-46 in Report of Activities 1988, Resident Geologists edited by K.G. Fenwick, P.E. Giblin and A.E. Pitts, Ont. Geol. Surtv, MP 142, 391 p;<br>o Seim, G.W., 1993, Mineral Deposits of the Central Portion of the Uchi Subprovince, Vol. 1, Meen Lake to Kasagiminnis Lake Portion, Ont. Geol. Surv. OFR 5869, 390p;<br>o the Trillium North Minerals Ltd. *Summer 2007 Dorothy Dobie Property Diamond Drill Program Dobie Lake, Meen Lake and Kawashe Lake Areas Patricia Mining District Ontario*, Caitlin Jeffs, P.Geo. Fladgate Exploration Consulting Corporation, 12 Jun 2008; and<br>o White Metal Resources Corporate Presentation, January 2017. |
| *Drilling techniques* | • *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).* | ***2018 Ardiden Ltd.***<br>• All samples and geological information have been derived from diamond core using standard equipment of BTW size (41.3mm diameter)<br>• The holes were completed by Forage M3 Drilling of Ontario in 2018<br>• The drill core was not oriented. |



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| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | ***2011 Manicouagan Minerals Inc.***<br>• All samples and geological information have been derived from diamond core using standard equipment of BTW size (41.3mm diameter)<br>• The holes were completed by Cartwright Diamond Drilling Company of Newfoundland in 2011<br>• The core was unoriented<br>***Other Historical Drilling***<br>• Ardiden Ltd. is unable to verify the drilling techniques used on Pickle Lake Gold Properties. All reference to historical diamond drilling results were sourced from publicly available documents as listed above. |
| *Drill sample recovery* | • *Method of recording and assessing core and chip sample recoveries and results assessed.*<br>• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*<br>• *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.* | ***2018 Ardiden Ltd.***<br>• All drill core was measured and compared to actual drilled depths on a run-by-run basis to determine core recovery and Rockmass Quality Data (RQD). Recoveries averaged higher than 99.9% with the only loss of material coming from the overburden. This horizon is not considered prospective for Ardiden Ltd.'s purposes.<br>• Core recovery through the mineralised zones is 100%.<br>***2011 Manicouagan Minerals Inc.***<br>• Core recovery for the program was not reported<br>• Only one section of poor recovery was documented in hole KAS-11-01 from 67.6m to 70.15m which was not in the mineralised zone.<br>***Other Historical Drill Sample Recovery***<br>• Ardiden Ltd. is unable to verify the drilling sample techniques used on Pickle Lake Gold Properties. All reference to historical drilling results were sourced from publicly available documents as listed above.<br>○ |
| *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 studies.*<br>• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*<br>• *The total length and percentage of the relevant intersections logged.* | ***2018 Ardiden Ltd.***<br>• All diamond core has been marked up, inspected and logged by suitably trained and qualified personnel.<br>• Logging detail includes Depth, Hole Orientation, Lithology, Alteration, Veining, Mineralogy, Mineralised Zonation, RQD, Magnetic Susceptibility and Structure. These methods involve a combination of both qualitative and quantitative determinations.<br>***2011 Manicouagan Minerals Inc.***<br>• All diamond core was marked up, inspected and logged by suitably trained and qualified personnel.<br>• Lithologies were described in sufficient detail so as a favourable direct comparison could be made with the 2018 drilling to confirm the historical geology<br>***Other Historical Diamond Core Logging***<br>• Ardiden Ltd. is unable to verify the drill core logging completed on Pickle Lake Gold Properties.<br>• All reference to historical drilling results were sourced from publicly available documents |
| *Sub-sampling techniques and sample preparation* | • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* | ***2018 Ardiden Ltd.***<br>• All samples have been derived from BTW diamond core and have been cut in half or quartered using a standard brick saw. Foliation is aligned perpendicular to the cut. This technique is considered appropriate for the mineralisation historically observed at the Kasagiminnis Lake Property. |



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| | • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>• *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.*<br>• *Whether sample sizes are appropriate to the grain size of the material being sampled.* | • Field duplicates (half-core cut in half again) have been submitted to the lab at a rate of 1 in 50 to evaluate the sampling technique as per standard industry practise.<br>• Ardiden Ltd. has retained and stored all remaining half-core samples for future reference/use.<br><br>***2011 Manicouagan Minerals Inc.***<br>• A total of 472 samples representing a combined length of 458.2 metres were collected for gold assay.<br>• A selection of core samples were sawed, while all of the other samples were split. This method is considered adequate for the mineralisation historically observed at the Kasagiminnis Property.<br>• Sampling lengths ranged from 0.4 to 1.8 metres and averaged ~1.0 metres.<br>• No field duplicates were recorded as taken.<br>***Other Historical Sampling***<br>• Ardiden Ltd. is unable to verify the sampling techniques used on Pickle Lake Gold Properties.<br>• All reference to historical drilling results were sourced from publicly available documents. |
| *Quality of assay data and laboratory tests* | • *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*<br>• *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.* | ***2018 Ardiden Ltd.***<br>• Actlabs is a certified lab and subject to its own internal QAQC processes.<br>• Actlabs digest processes are considered total and appropriate for this style of mineralisation.<br>• Ardiden Ltd. determined SG values have been derived from whole-sample wet/dry weights using a suitable set of electronic scales as per industry standard practise.<br>• Field duplicates have been derived at a rate of 1 in 50 samples.<br>• Certified Gold standards and blanks have been inserted into the sample stream at a rate of 1 in 25.<br>• Actlabs is subject to its own internal QAQC determinations. A duplicate sample is generated for *crushed* samples at a rate of 1 in 50. Another duplicate for *pulverised* samples is generated at a rate of 1 in 30.<br>• Laboratory instruments are calibrated every 45 samples.<br>• Laboratory blanks (x2), certified reference materials (x2) and sample duplicates (x3) are analysed within every 42 samples in the batch tray.<br>• Ardiden has viewed the QAQC results and they are considered acceptable<br><br>***2011 Manicouagan Minerals Inc.***<br>• Actlabs digest processes are considered total and appropriate for this style of mineralisation.<br>• Certified gold standards and blanks were inserted into the sample stream at a rate of 1 in 25.<br>• No bias from the sampling and assay techniques employed is expected.<br>• Actlabs is subject to its own internal QAQC determinations. A duplicate sample is generated for *crushed* samples at a rate of 1 in 50. Another duplicate for *pulverised* samples is generated at a rate of 1 in 30.<br>• Ardiden has viewed the QAQC results and they are considered acceptable<br>***Other Historical QAQC***<br>• Ardiden Ltd. is unable to verify the assay techniques used on Pickle Lake Gold Properties. |



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| | | • All assay results reported are historical and were sourced from publicly available documents. |
| *Verification of sampling and assaying* | • *The verification of significant intersections by either independent or alternative company personnel.*<br>• *The use of twinned holes.*<br>• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *Discuss any adjustment to assay data.* | ***2018 Ardiden Ltd.***<br>• Significant intersection assays, widths and calculations are verified by external consultants in both Canada and Australia.<br>• Twinned holes have not been employed as a check to the current program at this stage.<br>• All data is electronically logged in Excel and stored in a Dropbox. A master copy of this data exists on the Ardiden Ltd. server in Australia.<br>• The data is imported into Micromine software for visual checks and database validation<br>• Grades for significant intersections are calculated on length and SG weighted averages.<br>***2011 Manicouagan Minerals Inc.***<br>• Significant intersection assays, widths and calculations have been verified by external consultants after drilling and checks have been conducted by Ardiden Limited.<br>• Ardiden's 2018 drilling drilled close to but did not twin earlier holes.<br>• All data was logged and then entered electronically into Gemcom software and the data retained by Manicouagan Minerals.<br>• Ardiden has received an electronic copy of this data from White Metals and has run it through validation checks.<br>***Other Historical Sample Verification***<br>• Ardiden Ltd. is unable to verify the assay techniques used on Pickle Lake Gold Properties.<br>• All assay results reported are historical and were sourced from publicly available documents. |
| *Location of data points* | • *Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*<br>• *Specification of the grid system used.*<br>• *Quality and adequacy of topographic control.* | ***2018 Ardiden Ltd.***<br>• The 2018 program of drilling was subject to suitable location and orientation techniques given the technically difficult nature of the location and magnetic lithologies.<br>• Initially, hole locations have been placed in NAD83-15 using a hand-held GPS and notes have been recorded on how these locations relate to existing holes and clearing. A DGPS was employed at the end of the program to survey Ardiden Ltd.'s recent drill collars and also existing historical collars in the immediate area.<br>• The drill rig was aligned to planned azimuth using a Reflex Northfinder APS, a true-north seeking gyro prior to collaring. A second APS reading was taken after collaring and applied to the first survey of the hole as minor deviation when collaring through glacial till is common.<br>• Downhole surveys were conducted using a Reflex multishot digital camera. This instrument records dip, magnetic azimuth, roll, temperature and magnetism. Surveys generally became magnetically affected by the mineralisation host rock after the third or fourth survey and on other occasions no effect was observed. By this time, it was possible to use the APS bearing and first couple of hole surveys to predict the azimuth of the hole trace accurately given the history of drilling in the area. Dip readings are not affected by magnetism. |



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| | | • Surveys were all calculated to UTM (Grid North) taking into account magnetic declination (2018 Canadian Geological Survey Model model) and grid convergence at Kasagiminnis.<br><br>***2011 Manicouagan Minerals Inc.***<br>• Drillhole collars were spotted using a handheld GPS device in NAD83-15. The holes were aligned using a Silva Compass.<br>• In 2018 Ardiden located and surveyed using a DGPS the following holes; KAS-11-04 to KAS-11-09; KAS-11-12 and KAS-11-13.<br>• Downhole surveys were accomplished using a magnetic downhole camera, the make of which cannot be verified.<br>• Ardiden has reviewed the camera shots and minor adjustments have been made to downhole magnetic readings to better approximate normal deviation observed at Kasagiminnis in both historical and the 2018 Ardiden drilling.<br><br>***Other Historical Sample Locations***<br>• Ardiden Ltd. is unable to verify the location of the data points used on Pickle Lake Gold Properties.<br>• All drill locations reported are historical and were sourced from publicly available documents. |
| *Data spacing and distribution* | • *Data spacing for reporting of Exploration Results.*<br><br>• *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.*<br><br>• *Whether sample compositing has been applied.* | • The drillholes are generally spaced at 25 m to 60 m on section with a section spacing of 50 m to 60 m. Drill sections in the eastern area of the deposit are 200 m apart. The 2018 drilling included two fans of drillholes that originated from the same drill pad and tested the down-dip continuity at spacings of up to 15 m.<br>• The data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource estimation and classification applied.<br>• No sample composites have been created. |
| *Orientation of data in relation to geological structure* | • *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*<br><br>• *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.* | ***2018 Ardiden Ltd.***<br>• Due to the difficulty in mobilising and moving drill rigs at Kasagiminnis, a series of holes were drilled from one location. Both dip and azimuth changes were performed. Thus, it will be rare that any drillhole will intersect the mineralisation in a purely perpendicular manner.<br>• There is no expected assay bias resulting from the orientation of drilling due to the nature of mineralisation observed at the Kasagiminnis Lake Property.<br>***2011 Manicouagan Minerals Inc.***<br>• The 2011 drilling followed a similar approach to the 2018 Ardiden drilling, essentially intersecting mineralisation perpendicular to strike but had varying degrees of dip.<br>• There is no expected assay bias resulting from the orientation of drilling due to the nature of mineralisation observed at the Kasagiminnis Lake Property.<br>***Other Historical Sampling***<br>• Ardiden Ltd. is unable to verify the orientation of the data in relation to the geology on Pickle Lake Gold Properties. |
| *Sample security* | • *The measures taken to ensure sample security.* | ***2018 Ardiden Ltd.***<br>• Samples are kept on location until a drillhole is fully sampled. The samples are then taken directly to the lab by Ardiden Ltd. personnel without the use of any intermediaries.<br>***2011 Manicouagan Minerals Inc.*** |



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| | | • Samples collected were individually bagged and labelled; individually bagged samples were then put into rice bags for shipping to Accurassay Laboratories in Thunder Bay.<br>***Other Historical Chain of Custody***<br>• Ardiden Ltd. is unable to verify the security of historical data. |
| *Audits or reviews* | • *The results of any audits or reviews of sampling techniques and data.* | • A full sample review was conducted prior to writing sampling, logging and QAQC procedures to be implemented for any future drilling.<br>• These procedures were then used for the current program and supervised internally by Ardiden Ltd. personnel in charge of the due-diligence program. |

## Section 2 Reporting of Exploration Results

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Mineral tenement and land tenure status* | • *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.*<br>• *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.* | • The Kasagiminnis Lake Gold deposit consists of three granted Mining claims 4207793, 4207794 4207795,<br>• Ardiden Limited owns the tenements 100%.<br>• There are no known issues affecting the security of title or impediments to operating in the area |
| *Exploration done by other parties* | • *Acknowledgment and appraisal of exploration by other parties.* | • The Pickle Lake Project is located within the Pickle Lake area, Kenora (Patricia) Mining Division, Ontario. Significant gold deposits including the historical Pickle Crow Gold Mine.<br>• Over 25,000 m of historical diamond drilling were completed across the Pickle Lake Gold Properties by previous owners, confirming the potential for multiple extensive gold mineralised zones at both Dorothy-Dobie Lake and Kasagiminnis Lake deposit, with gold mineralisation remaining open along strike and at depth.<br>• A list of technical reports prepared by previous exploration companies is included in Section 1 of this table. |
| *Geology* | • *Deposit type, geological setting and style of mineralisation.* | • The Pickle Lake Project is located within the Meen-Dempster greenstone belt and the adjoining Pickle Lake greenstone belt, which contain the known gold deposit (Kasagiminnis) and prospects (South Limb, West Pickle and Dorothy-Dobbie). Both greenstone belts are located on the southern margin of the North Caribou terrane within the Uchi domain.<br>• Rocks within the Uchi domain greenstone belts display petrochemical characteristics of arc and back-arc volcanism.<br>• The Kasagiminnis gold deposit comprises lode style mineralisation within a steep north-dipping shear zone. Overburden comprises glacial till and there is a lake in the vicinity of the mineralisation. |
| *Drillhole Information* | • *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:* | • Exploration results are not being reported for the Mineral Resources areas. |



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| | • easting and northing of the drillhole collar<br>• elevation or RL (elevation above sea level in metres) of the drillhole collar<br>• dip and azimuth of the hole<br>• down hole length and interception depth<br>• hole length. | |
| *Data aggregation methods* | • *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.* | • Exploration results are not being reported for the Mineral Resources areas.<br>• Metal equivalent values have not been used. |
| *Relationship between mineralisation widths and intercept lengths* | • *If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.*<br>• *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect.* | • Exploration results are not being reported for the Mineral Resources area. |
| *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 drillhole collar locations and appropriate sectional views.* | • Relevant diagrams have been included within the announcement.<br>• Exploration results are not being reported for the Mineral Resources area. |
| *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.* | • Exploration results are not being reported for the Mineral Resources areas. |
| *Other substantive exploration data* | • *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.* | • Exploration results are not being reported for the Mineral Resources area. |
| *Further work* | • *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* | • Infill and extensional drilling along strike and down dip, aimed at growing the resource. is planned. |



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## Section 3 Estimation and Reporting of Mineral Resources

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Database integrity* | • *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*<br>• *Data validation procedures used.* | • Drillhole data has been compiled by Ardiden Ltd. from current and historical data files.<br>• The drillhole database is managed by Ardiden Ltd. using Micromine software. It has been validated by several company geologists and database administrators.<br>• Additional data validation, by Optiro, included checking for out of range assay data and overlapping or missing intervals |
| *Site visits* | • *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* | • **Mrs C Standing** has not visited the Pickle Lake Gold Project.<br>• **Mr Rob Longley** visited the Pickle Lake property during July 2019 and inspected core, outcrop and historical drill sites. |
| *Geological interpretation* | • *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*<br>• *Nature of the data used and of any assumptions made.*<br>• *The effect, if any, of alternative interpretations on Mineral Resource estimation.*<br>• *The use of geology in guiding and controlling Mineral Resource estimation.*<br>• *The factors affecting continuity both of grade and geology.* | • Leapfrog Geo 3D software was used to produce an interpretation of the lithological units and the gold mineralisation at Kasagiminnis Lake.<br>• The magnetic sediments were interpreted into three units; Main structure, hangingwall and footwall lodes.<br>• The mineralisation was modelled using a nominal cut-off grade of around 0.5 g/t gold to produce lode style mineralisation domains. Seven mineralised lodes were defined, four of which were used for resource estimation.<br>• The lodes contain significant proportions of un-mineralised and low-grade intervals. A categorical indicator model was developed to defined higher grade sub-domains. An indicator cut-off grade of 0.6 g/t gold was used for the two lower-grade domains and 1 g/t gold was used for the higher-grade domains. |
| *Dimensions* | • *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.* | • The Mineral Resource extends for 600 m along strike (east-west), is from 1 to 10 m wide (north-south) and is up to 280 m deep. |
| *Estimation and modelling techniques* | • *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*<br>• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*<br>• *The assumptions made regarding recovery of by-products.* | • Leapfrog Geo 3D software was used for geological and mineralisation interpretation. Data analysis and estimation was undertaken using Snowden Supervisor and Datamine software.<br>• Drillhole sample data was flagged from mineralised interpretations.<br>• Sample data was composited to a 1 m downhole length.<br>• Resource interpretations were extended by up to 100 m along strike and to 20 m below the base of drilling.<br>• The data has a moderate to high coefficient of variation. High-grade outliers are present in two of the mineralised domains and top-cut grades of 7 g/t and 20 g/t gold were applied. The top-cut grades were selected by examining histograms, log probability plots, population disintegration.<br>• A preliminary mineral inventory of 2.6 million tonnes at an average grade of 4.79 g/t gold was estimated for the Kasagiminnis Lake deposit by Kenora in 1988. Details of how this was estimated, and the dimensions of the interpreted mineralisation are not known. This mineral inventory is substantially larger than the Inferred Resource estimated in |



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| | • *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).*<br>• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*<br>• *Any assumptions behind modelling of selective mining units.*<br>• *Any assumptions about correlation between variables.*<br>• *Description of how the geological interpretation was used to control the resource estimates.*<br>• *Discussion of basis for using or not using grade cutting or capping.*<br>• *The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.* | July 2019 and may have been extended at depth and along strike.<br>• No assumptions have been made regarding the recovery of by-products.<br>• Only gold has been estimated.<br>• Gold mineralisation continuity was interpreted from variogram analyses to have a long range of 55 m in the down dip direction, 20 m across strike and 2 m perpendicular to the mineralisation plane.<br>• Grade estimation was into parent blocks of 6 mE by 1 mN on 6 m benches. Block sizes were selected based on kriging neighbourhood analysis.<br>• Estimation was carried out using ordinary kriging at the parent block scale. The search ellipses were oriented within the plane of the mineralisation.<br>• Three estimation passes were used; the first search was based upon the variogram ranges in the three principal directions; the second search was two times the initial search and the third search was five times the first search.<br>• The model was screened to above 105 mRL and within the reported resource 16% of the block grades were estimated in the first pass, 29% in the second pass and 55% in the third search pass.<br>• The estimated gold block model grades were visually validated against the input drillhole data, comparisons were carried out against the drillhole data and by northing, easting and elevation slices and comparison of the mean input data and block model grades for each mineralised lode. |
| *Moisture* | • *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.* | • Tonnes have been estimated on a dry basis. |
| *Cut-off parameters* | • *The basis of the adopted cut-off grade(s) or quality parameters applied.* | • The Mineral Resource estimate have been reported at a cut-off grade of 3 g/t gold, which is considered appropriate for the likely underground mining method. |
| *Mining factors or assumptions* | • *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous.* | • Planned extraction is by underground mining.<br>• Mining factors such as dilution and ore loss have not been applied. |
| *Metallurgical factors or assumptions* | • *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and* | • No metallurgical assumptions have been built into the resource models. |



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| | *parameters made when reporting Mineral Resources may not always be rigorous.* | |
| *Environmental factors or assumptions* | • *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation.* | • No assumptions have been made regarding waste and process residue. |
| *Bulk density* | • *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.*<br>• *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.*<br>• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.* | • A total of 878 bulk density determinations have been undertaken on core samples from the 2018 diamond drillholes.<br>• Bulk density measurements were obtained from drill core samples using the water immersion (Archimedes) method.<br>• Average values have been calculated from the dataset and applied to the resource model based on the lithologies in the area<br>• A density value of 3.0 t/$m^3$ was assigned to the resource model. |
| *Classification* | • *The basis for the classification of the Mineral Resources into varying confidence categories.*<br>• *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*<br>• *Whether the result appropriately reflects the Competent Person's view of the deposit.* | • The Mineral Resources have been classified on the basis of confidence in geological and grade continuity and taking into account data quality (including the historical nature of much of the drill data and limited quality control and quality assurance data), data density and confidence in the block grade estimation. **The Mineral Resource has been classified as Inferred.**<br>• Typically drill density for the Inferred category is around 50 m by 50 m and above 105 mRL (up to 280 m depth). Drill spacing within the eastern area of the deposit is up to 200 m along strike.<br>• The classification considers all available data and quality of the estimate and reflects the Competent Person's view of the deposit. |
| *Audits or reviews* | • *The results of any audits or reviews of Mineral Resource estimates.* | • The 2019 Mineral Resource estimate for has been peer reviewed by Optiro. |
| *Discussion of relative accuracy/ confidence* | • *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person.*<br>• *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation.* | • The assigned classification of Inferred reflects the Competent Person's assessment of the accuracy and confidence levels in the Mineral Resource estimate.<br>• The statement relates to global estimates of tonnes and grade.<br>• No production data exists for the Kasagiminnis Gold deposit. |



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