

MacDonald Mines Completes Drilling at Alwyn Cu-Au and Glade Au Trends Observes Visible Gold at Glade

Toronto, Ontario – July 26, 2023 - MacDonald Mines Exploration Ltd. (TSX-V: BMK, OTC: MCDMF) ("MacDonald Mines" or the "Company") is pleased to provide an update on the spring drill program undertaken at the Alwyn copper-gold trend and the Glade gold trend on its 100% owned SPJ Property in Sudbury, Ontario.

Summary of Drill Program

- On June 28, 2023 the Company completed **1,206 meters of oriented diamond drilling**, including 954 meters of drilling at the Alwyn Cu-Au trend and 252 meters of drilling at the Glade Au trend.
- Intersection of a broad and near-surface potential zone of gold mineralization at Glade
 - Visible gold in quartz-carbonate-chlorite veining identified periodically over 40 meters in hole AG-23-111. This zone is located 20 to 60 meters away from intercepts identified in 2021 drilling in hole AG-21-097 (see news release of May 13, 2023).
 - This area has been selected for rush assay analysis and drill core will be sent shortly.
 - Extension of possible PGM mineralization at depth
 - Disseminations of pyrrhotite and chalcopyrite occurs in Nipissing diabase and within quartz-carbonate veins between 128 to 149 meters and 212 to 222 meters in hole AG-23-111.
 - Comparable sulfide assemblage was associated with PGM mineralization in hole AG-22-103, 45 meters northeast (see news release from September 19, 2022).
- Hydrothermal iron enrichments observed in drilling 300 meters southeast of historic Alwyn mine
 - Stringers to zones of semi-pervasive replacement of sedimentary textures by magnetite and/or Fe-rich chlorite, as well as veinlets of K-feldspar-chlorite-fluoritechalcopyrite and specular hematite in holes AW-23-109 and AW-23-110 could be suggestive of the presence of iron-rich copper-gold mineralization affiliated with an iron oxide copper-gold ("IOCG") deposit.

Dr. Jean-François Montreuil, P.Geo and Chief Geologist of MacDonald Mines commented, "Observing seeping and intensifying iron oxide and silicate alteration in the Alwyn Cu-Au trend, as well as an association of chalcopyrite mineralization with iron-rich alteration types is a positive development of our drilling program in the area. These observations are supportive of the presence of a hydrothermal system capable of forming iron-rich mineralization types affiliated with iron oxide copper-gold ("IOCG") deposits."

Dr. Montreuil added, "In the Glade Au trend, our initial observations from our 2023 drilling program indicate that the gold mineralized system discovered in 2021 extends at depth in the Nipissing intrusions and along the Espanola-Nipissing contact. With additional observations indicative of an association between Fe-rich chlorite and gold mineralization in the Glade Au trend, we also have additional evidence supporting an association with gold mineralization at the Scadding deposit."



Example of visible gold observed in hole AG-23-111.



Figure 1: Drilling at the Glade Au trend, with significant intercepts from 2021-2022 and new visible gold observations in AG-23-111.



Figure 2: Drilling at the Alwyn Cu-Au trend, with gravity anomalies and ALS GoldSpot integrated targets.

Official Name	Collar location			Hole Attributes		
	Easting (m)	Northing (m)	Elevation (m)	Final Depth (m)	Azimuth	Dip
Alwyn Cu-Au Trend						
AW-23-106	528406	5172103	274	126	190	-58
AW-23-107	528406	5172103	274	153	235	-50
AW-23-108 (Recollared)	528287	5172073	284	21	0	-50
AW-23-108A	528287	5172073	284	261	0	-50
AW-23-109	528623	5172033	280	162	240	-47
AW-23-110	528623	5172033	280	231	185	-55
Glade Au Trend						
AG-23-111	529049	5165626	292	252	135	-59

Table 1: Collar details for drilling along the Alwyn Cu-Au and Glade Au trends. Note that these are the planned collar coordinates and orientations, which will be updated during post drilling surveying.

Glade Gold Target

2023 drilling at Glade continues to demonstrate near surface zones of gold mineralization hosted in quartzcarbonate veins, as demonstrated by visible gold found in four locations over 40 meters in hole AG-23-111, at 8.9, 17.9, 28.0 and 51.0 meters. These observations occur approximately 55 meters laterally from the significant intercept measured in 2021 in hole AG-21-097, which consisted of 113 g/t gold over 0.96 meters core length (see news release of May 13, 2021). Gold mineralization and Fe-rich alteration types observed in the Glade Au trend are comparable to the styles observed at the Scadding deposit, located approximately 1 km to the north of Glade. In the Glade Nipissing intrusion, the 2022 drilling program intersected 0.16 g/t Pd over 4.00 meters in hole AG-22-103 with anomalous Cu and Ni within a more mafic domain of the Glade Nipissing intrusion. This was a new observation for the Nipissing diabase in the Glade area, suggesting PGE-Ni-Cu potential for the intrusive unit. Observations of increased pyrrhotite and chalcopyrite between 128 and 149 meters, as well as between 212 and 222 meters in the new drilling from hole AG-23-111 could provide new insights into the variability of PGM's and size potential for this mineralization.

Copper-Gold Mineralization along the McLaren Lake Fault Zone

The MLFZ is emerging as a compelling exploration target for copper-gold and potentially cobalt-gold mineralization. Along the 2.5 km Alwyn Cu-Au trend defined in collaboration with ALS GoldSpot, nearsurface copper-gold mineralization is associated with networks of quartz-carbonate veins. The 2023 gravity survey and data from the 2022 and 2023 drilling programs indicate that Cu-Au mineralization can also be associated with iron-rich alteration in the lateral and deeper extensions of the systems (see Figure 2 and news release of March 3, 2023 and June 13, 2023).

Regionally, the MLFZ is highly prospective for critical and precious metals mineralization. In addition to Alwyn, along the MLFZ on the SPJ Project the primary targets include the Ashigami and the Crerar showings, located 4.5 km and 9.5 km southeast of the Alwyn mine, respectively (Figure 2).

Qualified Person

Dr. Jean-François Montreuil, P.Geo., Chief Geologist of MacDonald Mines, is the qualified person as defined by National Instrument 43-101 *Standards of Disclosure for Mineral Projects*, responsible for preparing, supervising, and approving this news release's scientific and technical content.

About MacDonald Mines Exploration Ltd.

MacDonald Mines is a Canadian exploration company focused on exploring for critical and precious metals in a Metasomatic Iron alkali-calcic (MIAC) mineral system on its 100 %-owned, 19,720 ha (197.2 km²) SPJ Project. MIAC systems are known for hosting IOCG and affiliated deposits. The property is located 20 km southeast of the prolific Sudbury Mining Camp in Northern Ontario. The Company's primary exploration focuses are the polymetallic and iron-poor to possibly iron-rich Ag-Au-Cu-Co showings and prospects along the McLaren Lake Fault System that includes the Alwyn Cu-Au-(Ag-Co) trend and the Ashigami Co-Cu-Au showings, and the iron-rich to iron-poor Glade Au trend recognized to host Au mineralization comparable to the Scadding deposit. In addition, a potential for nickel, cobalt, copper, and platinum group elements in the Nipissing intrusions that are hosting the Candore, Jerome and Glade showings within the SPJ Project.

To learn more about MacDonald Mines, please visit <u>www.macdonaldmines.com</u>

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"Mike England"

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