



## MACDONALD MINES CONTINUES TO CONFIRM IOCG POTENTIAL AT THE ALWYN COPPER-GOLD TREND, SUDBURY, ONTARIO

Toronto, Ontario – December 5, 2023 - MacDonald Mines Exploration Ltd. (TSX-V: BMK, OTC: MCDMF) (“MacDonald Mines” or the “Company”) is pleased to announce the results from its 1,206 meter drill program along the prospective McLaren Lake Fault Zone (“MLFZ”) at the Alwyn Copper-Gold (“Cu-Au”) trend (“Alwyn”), as well as the Glade Gold (“Au”) trend (“Glade”) located on MacDonald Mines 100% owned’ SPJ Project near Sudbury, Ontario.

“We are extremely pleased with the results at Alwyn which continue to confirm the potential of a robust mineral system capable of forming IOCG or affiliated deposits at depth. Company personnel are actively pursuing various options to prepare for a follow-up drill program at Alwyn directed towards expanding Cu-Au mineralization in the 102 Vein and testing the most favorable geophysical targets at depth to the south-east” stated Mike England, CEO of MacDonald Mines.

### Highlights from 954 meters of drilling in the Alwyn Cu-Au trend (see tables 1 and 2 and figure 1)

- Copper-gold mineralization confirmed in the Alwyn Trend over a strike length of approximately 400 metres
  - The Alwyn Cu-Au trend is part of the McLaren Lake Fault Zone (MLFZ)
  - Other known centers of Cu-Au mineralization along the MLFZ includes the Ashigami and Crerar showings respectively located 4.5 km and 9.5 km SE from the Alwyn prospect
- Confirmation that the Alwyn 102 Vein contained within a broader halo of Cu-Au mineralization is extending at least 75 metres SE of the historical Alwyn mine
  - Near-surface intersection of 1.16% Cu and 1.64 g/t gold over 4.75 metres within a mineralization halo containing 0.47% Cu and 0.52 g/t gold and over 25 metres in AW-23-107 (see table 2)
    - Located 30 metres away from the intersection of 1.07% Cu and 3.01 g/t gold over 4.2 metres in AW-22-102
  - 1.36% Cu and 3.06 g/t gold over 0.90 metres associated with garnet-amphibole alteration in AW-23-106 within a Cu-Au mineralization halo containing 0.31% Cu and 0.31 g/t Au over 16.0 metres (see table 2)
- Zones of pervasive magnetite alteration with indications of Cu mineralization in AW-23-110 identified in the Alwyn Cu-Au trend (see figure 1)
  - Magnetite alteration is indicative of mineral systems capable of forming IOCG and affiliated deposits
  - In AW-23-109 and AW-23-110, the zones of pervasive magnetite alteration are located at the edge of aeromagnetic and gravity highs
  - This is supporting a possible relation between the geophysical anomalies and magnetite and iron-rich alteration
  - Magnetite is primarily disseminated in replacement fronts and is also forming localized veins, and was observed down to approximately 160 m vertical depth in AW-23-110
- Indications that parallel zones of Cu-Au mineralization exist in the Alwyn Cu-Au trend
  - AW-23-107 discovered a new zone of Cu-Au mineralization located south of the Alwyn 102 Vein and its mineralized halo
  - AW-23-108A intersected Cu-Au mineralization north of the Alwyn Cu-Au 102 Vein
- A diabase dyke truncated the core zone of the Alwyn 102 Vein and its mineralized halo in AW-23-109 and AW-23-110. Cu-Au mineralization associated with the halos of the Alwyn 102 Vein is observed in both holes above and below the upper and lower contacts of the diabase dyke.

## Highlights from 252 m of drilling in the Glade Au trend (see tables 1 and 2 and figure 1)

- Many zones of Au mineralization intersected
- Supports the continuity of Au mineralization at depth in the Glade Au trend

### Development of the Scadding deposit

The Company is continuing to investigate opportunities to advance the exploration and potential development of the high-grade gold zones of the Scadding deposit that remain open laterally and at depth for further exploration.

Significant drill intersections in the North Zone of the Scadding deposit include:

- 52.03 g/t over 12.3 m in SM-19-001, including 210.27 g/t gold over 2.95 m
- 376.75 g/t gold over 2.96 m in SM-20-026.

### Copper-Gold Mineralization along the McLaren Lake Fault Zone hosting the Alwyn Cu-Au trend

The MLFZ is emerging as a compelling exploration target for Cu-Au and potentially Co-Au mineralization affiliated with mineral systems capable of forming IOCG and affiliated deposits. Along the 2.5 km-long Alwyn Cu-Au trend defined in collaboration with ALS-GoldSpot, near-surface Cu-Au mineralization is associated with networks of quartz-carbonate veins with zones of stronger Cu-Au mineralization concentrated in the Alwyn 102 Vein.

The 2023 drilling program confirmed the existence of pervasive magnetite alteration zones in the SE extension of the Alwyn Cu-Au trend at the edge of positive magnetic anomalies overlapping with gravity anomalies (see figure 1). Many drill holes from the 2022 and 2023 drilling programs also contain chalcopyrite mineralization associated with the development of the following iron-rich alteration types:

- AW-22-101 - Specular hematite and quartz-specular hematite,
- AW-22-102 - Actinolite-chlorite-earthy hematite,
- AW-23-106 - Actinolite-garnet-chlorite-earthy hematite,
- AW-23-109 - Amphibole-chlorite-epidote-fluorite,
- AW-23-110 - Chlorite and chlorite with K-feldspar.

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 Crerar showings, located 4.5 km and 9.5 km southeast of the Alwyn mine, respectively.

Official Name	Collar location			Hole Attributes		
	Easting (m)	Northing (m)	Elevation (m)	Final Depth (m)	Azimuth	Dip
<b>Alwyn Cu-Au Trend</b>						
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
<b>Glade Au Trend</b>						
AG-23-111	529049	5165626	292	252	135	-59

Table 1: Collar locations and attributes for drilling along the Alwyn Cu-Au and Glade Au trends.

Table 2: Reported assays –2023 drilling program

Hole ID	From (m)	To (m)	Length (m)*	Cu (wt. %)	Au (g/t)	Ag (g/t)	Co (ppm)	Zone	
AW-23-106	33.00	33.89	0.89	0.08	0.47			Alwyn Cu-Au trend	
	33.89	53.05	Diabase						
	56.00	72.00	16.00	0.31	0.31				
	Including								
	56.00	56.90	0.90	1.35	2.83	1.06			
	72.00	102.00	30.00	0.058					
AW-23-107	38.00	63.00	25.00	0.47	0.53			Alwyn Cu-Au trend	
	Including								
	55.25	60.00	4.75	1.42	1.64				
	135.00	141.00	6.00	0.27	0.16				
AW-23-108	10.00	23.00	13.00		0.34		154		
AW-23-108A	35.00	71.00	36.00	0.12	0.23			Alwyn Cu-Au trend	
	35.00	36.80	1.80	0.41	1.74				
	144.00	166.30	22.30	0.08					
	240.50	243.80	3.30	0.08					
AW-23-109	125.15	125.4	0.25	0.67	0.20			Alwyn Cu-Au trend	
	125.40	141.65	Diabase						
	141.65	144.45	2.80	0.27	0.14				
AW-23-110	31.80	34.90	3.10	0.09				Alwyn Cu-Au trend	
	128.60	131.00	2.40	0.05					
	135.00	135.90	0.90	0.13	0.18				
	135.90	150.65	Diabase						
	150.65	153.65	3.00	0.17					
AG-23-111	7.30	21.00	15.60		0.58			Glade Au trend	
	40.18	51.18	1.00		3.76				
	142.00	146.00	4.00		1.23				
	219.00	222.00	3.00		0.60				

\*Assay results are presented over core length. As they represent discoveries, additional drilling is necessary to estimate the true width of the discovered zones of mineralization.

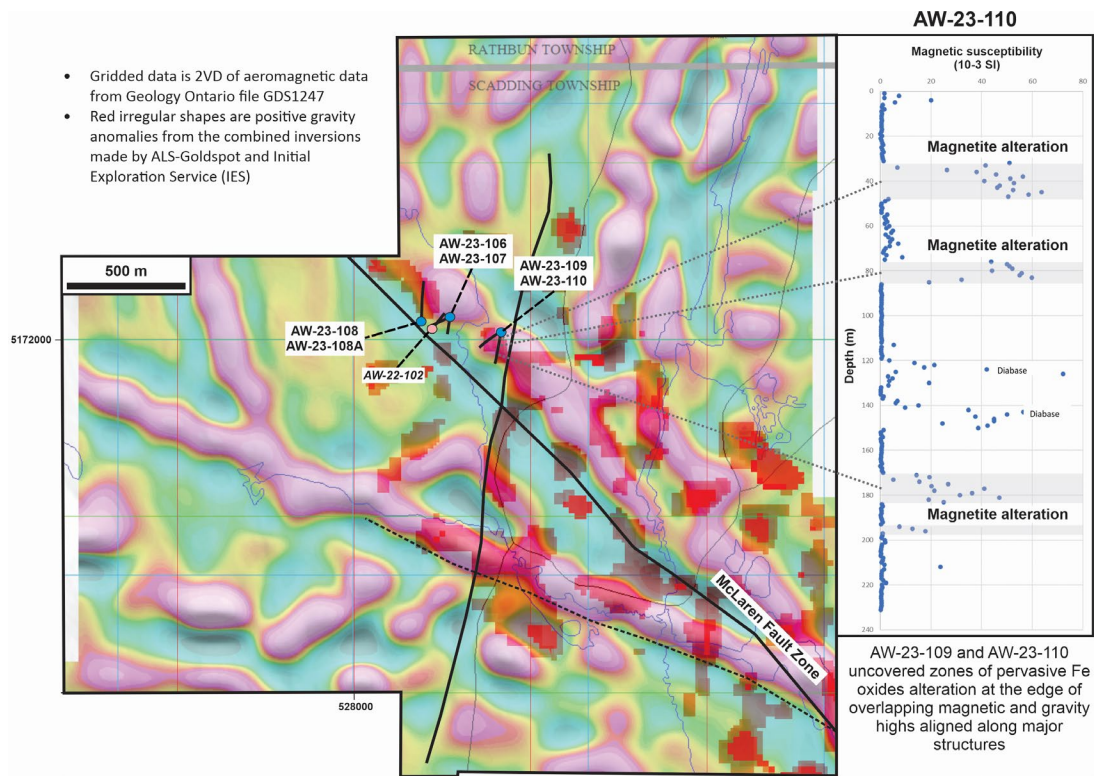


Figure 1. Magnetic susceptibility (10<sup>-3</sup> SI) measured with a KT-10 susceptibility meter versus down-hole depth (m) to show the distribution of magnetite alteration zones in the eastern extension of the drill tested area of the Alwyn Cu-Au trend.

## Qualified Person

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 km<sup>2</sup>) 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 [www.macdonaldmines.com](http://www.macdonaldmines.com)

ON BEHALF OF THE BOARD

"Mike England"

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