MacDonald Mines Exploration Ltd.

Exploration for Critical and Precious Mineral Deposits in the Shadow of the Prolific Sudbury Mining Camp

BMK: TSX-V
www.macdonaldmines.com

April 2023

Cautionary Statement

The information set forth in this document contains “forward-looking statements”. Statements in this document, which are not purely historical, are forward-looking and include statements regarding beliefs, plans, expectations or intentions regarding the future.

Except for the historical information presented herein, matters discussed in this document contain forward-looking statements that are subject to certain risks and uncertainties that could cause actual results to differ materially from any future results, performance or achievements expressed or implied by such statements. Statements that are not historical facts, including statements that are preceded by, followed by, or that include such words as“estimate,”“anticipate,”“believe,”“plan”, “intend”, “expect”,“may” or “should” or similar statements are forward-looking statements. Risks and uncertainties for the company include, but are not limited to, the risks associated with the impact of general economic conditions in countries in which the Company conducts business, the impact of competitive products and pricing, product demand and market acceptance, new product development, the continuation and development of key customer and supplier relationships, and the availability of high quality, qualified personnel and management.

Other risks include but are not limited to factors affecting development and expansion activities generally including access to capital to meet all of the Company’s financial requirements, and the Company’s ability to control costs. There can be no assurance that the company’s efforts will succeed, and the Company will ultimately achieve sustained commercial success. These forward-looking statements are made as of the date of this document, and the Company assumes no obligation to update the forward-looking statements, or to update the reasons why actual results could differ from those projected in the forward-looking statements. Although the Company believes that the beliefs, plans, expectations and intentions contained in this document are reasonable, there can be no assurance those beliefs, plans, expectations or intentions will prove to be accurate.

This information contained in the document has been prepared by management of the company who takes full responsibility for its contents. This document shall not constitute an offer to sell or the solicitation of an offer to buy any securities of the Company in any jurisdiction.

Unless stated otherwise herein, all scientific and technical data contained in this presentation has been reviewed, approved and verified by Jean-François Montreuil, P.Geo. and Chief Geologist of MacDonald Mines who is a Qualified Person for the purposes of NI 43-101.

Macdonald Mines - Reasons to Invest

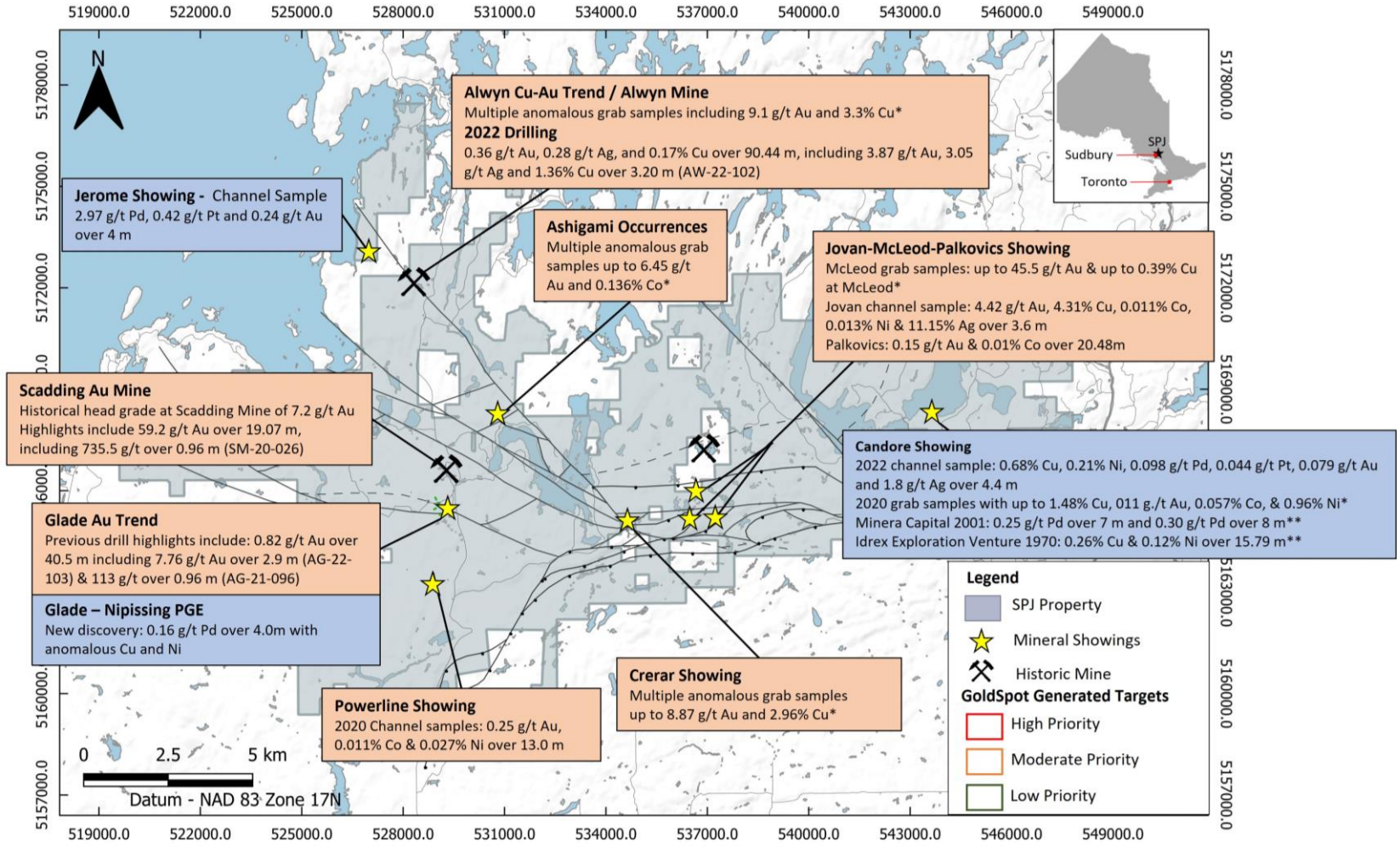
Management - Experienced in modern and systematic exploration

Tier 1 Jurisdiction- Less than 40KM from the Sudbury Mining Camp

Diverse Exploration- Exploring for Ni, Cu, Co, Au, REE and IOCG Deposits

Large Scale Potential- Connecting several centres of polymetallic mineralization

Year-round Exploration Access/Catalysts



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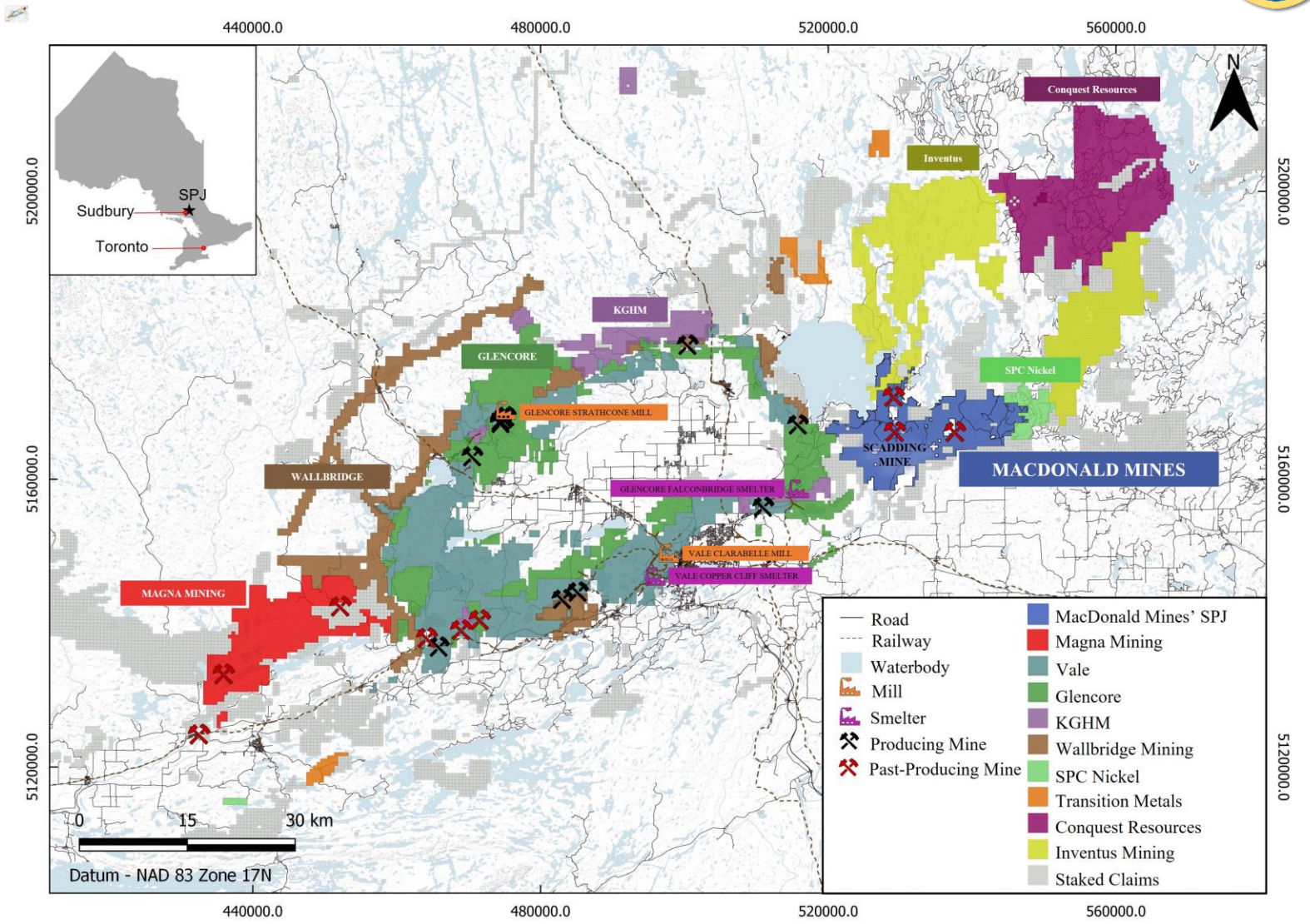
One of Canada's Most Prolific Mining Districts

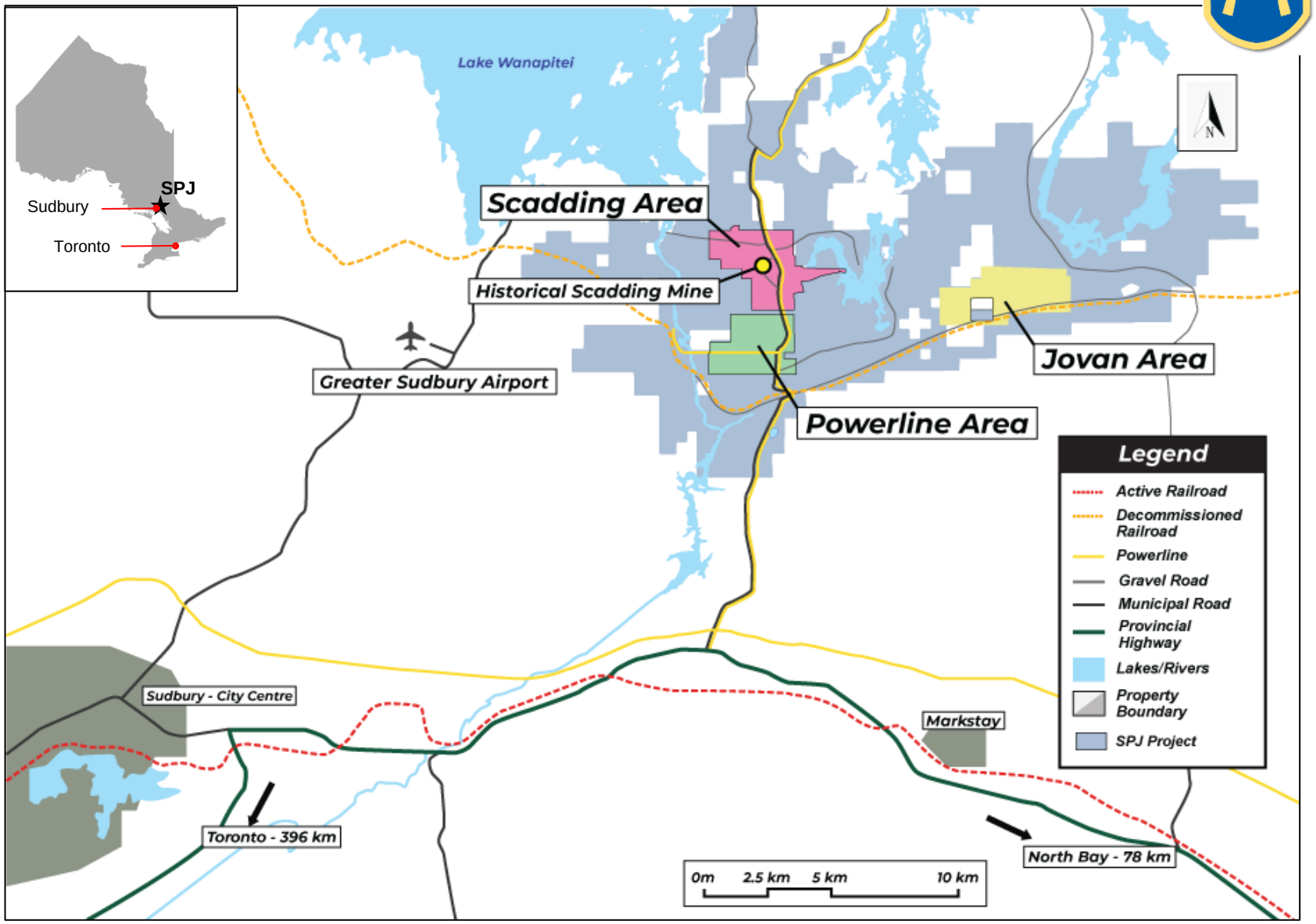
Sudbury Mining Camp

- Produced over $1 Trillion in Ni-Cu-PGe-AU
- Several nearby Mines, Mills and Smelters
  - Glencore Falconbridge Smelter, Vale Copper Cliff Smelter
  - Glencore Strathcona Mill, Vale Clarabelle Mill
- Existing Roads, Power and Infrastructure
- First Nations Partnerships



SPJ Project

- Large 100% owned 19,380 ha land package
- Potential for precious (Ag, Au) and critical metal (Co, Cu, Ni, PGE) mineralization
- Established infrastructure:
  - 10 km from Trans-Canada Highway
  - Powerline on property
  - Railroad in proximity
  - Mills nearby
- Year-round exploration access
- 135+ years mining history and skilled workforce in nearby Sudbury, On.



Macdonald Mines - Experienced Leadership

MANAGEMENT

Fiona Fitzmaurice, C.P.A - Chief Financial Officer

- Over 10 years of experience in accounting and financial control for both private and publicly listed companies
- Current CFO of MacDonald Mines Ltd., Pedro Resources Ltd. and Provenance Gold Corp
- Former CFO for Honey Badger Silver and the financial controller for Noront Resources Ltd

Jean-Francois Montreuil, PH.D.- Chief Geologist

- Over 10 years of experience in mining, exploration, permitting and field exploration and research on mineral systems that can host IOCG and precious and critical minerals
- Current VP of Exploration for Red Pine Exploration
- Obtained PH.D. from INRS-ETE (Quebec) in collaboration with the geological survey of Canada

DIRECTORS

Amanda Fullerton – Non-Executive Chairwoman

- Over 10 years of experience in corporate finance, mergers and acquisitions, corporate/commercial law and corporate governance in the mining industry
- Current Vice-President, Legal & Corporate Secretary of Gran Colombia Gold Corp. and the Corporate Secretary of Denarius Silver Corp.

Stuart Adair - Director

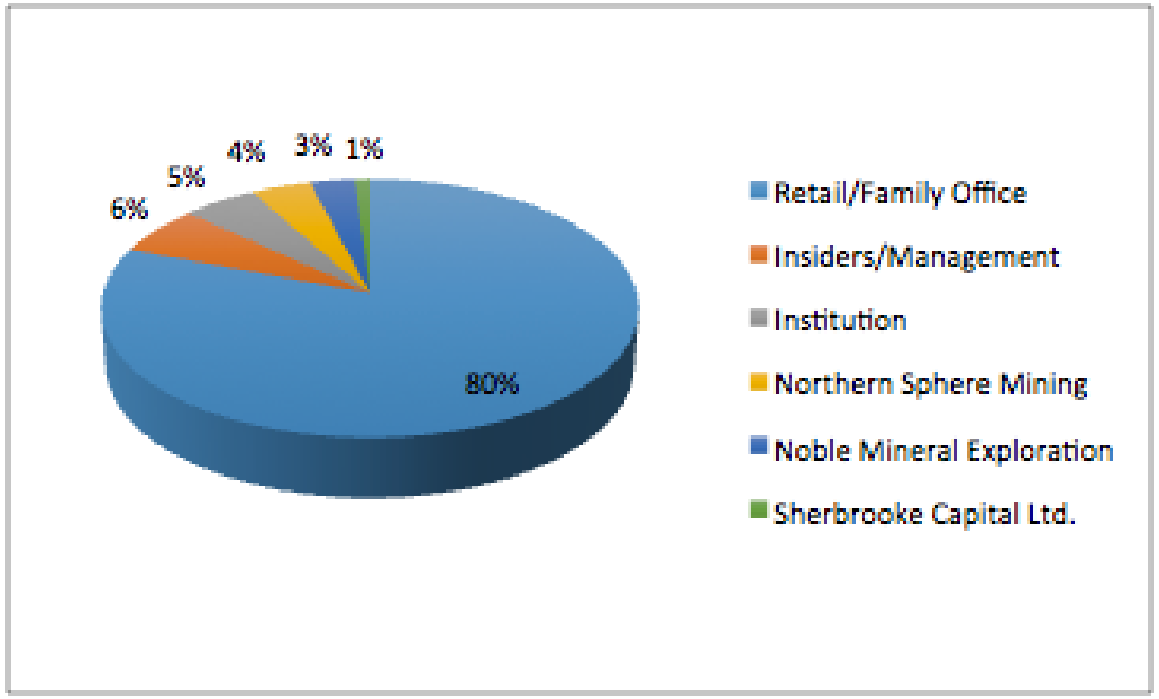
- Seasoned finance executive with over 25 years experience investing in the junior mining sector
- Current CFO of Accord Financial Corp, performing capital and risk management, strategic planning, acquisitions, corporate taxes, and financial management and reporting

Kevin Tanas - Director

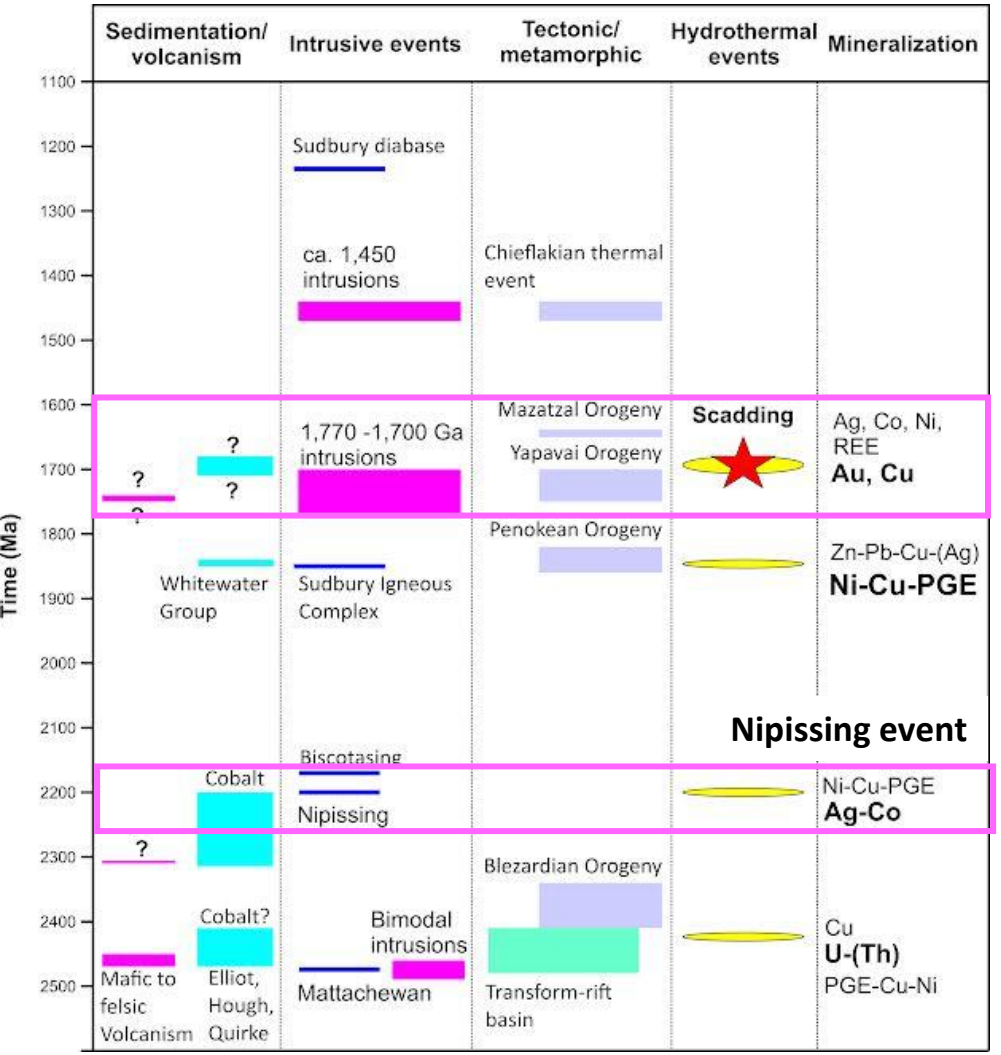
- Current Senior Principal, Technology and Expert Solutions, Mining, Minerals & Metals at Worley, a consulting, engineering, and construction services company
- Independent Engineer for various investors in due diligence review, and as Qualified Person for Technical Reports as required by global stock exchanges

Macdonald Mines - Share Structure

Shares Issued and Outstanding	**25.9 M**
Options	**2.07 M**
Warrants	**2.14 M**
Fully Diluted	**30.11 M**
52 Week High - Low	**$0.05-$0.01**
Market Capitalization	**$2.43 M**



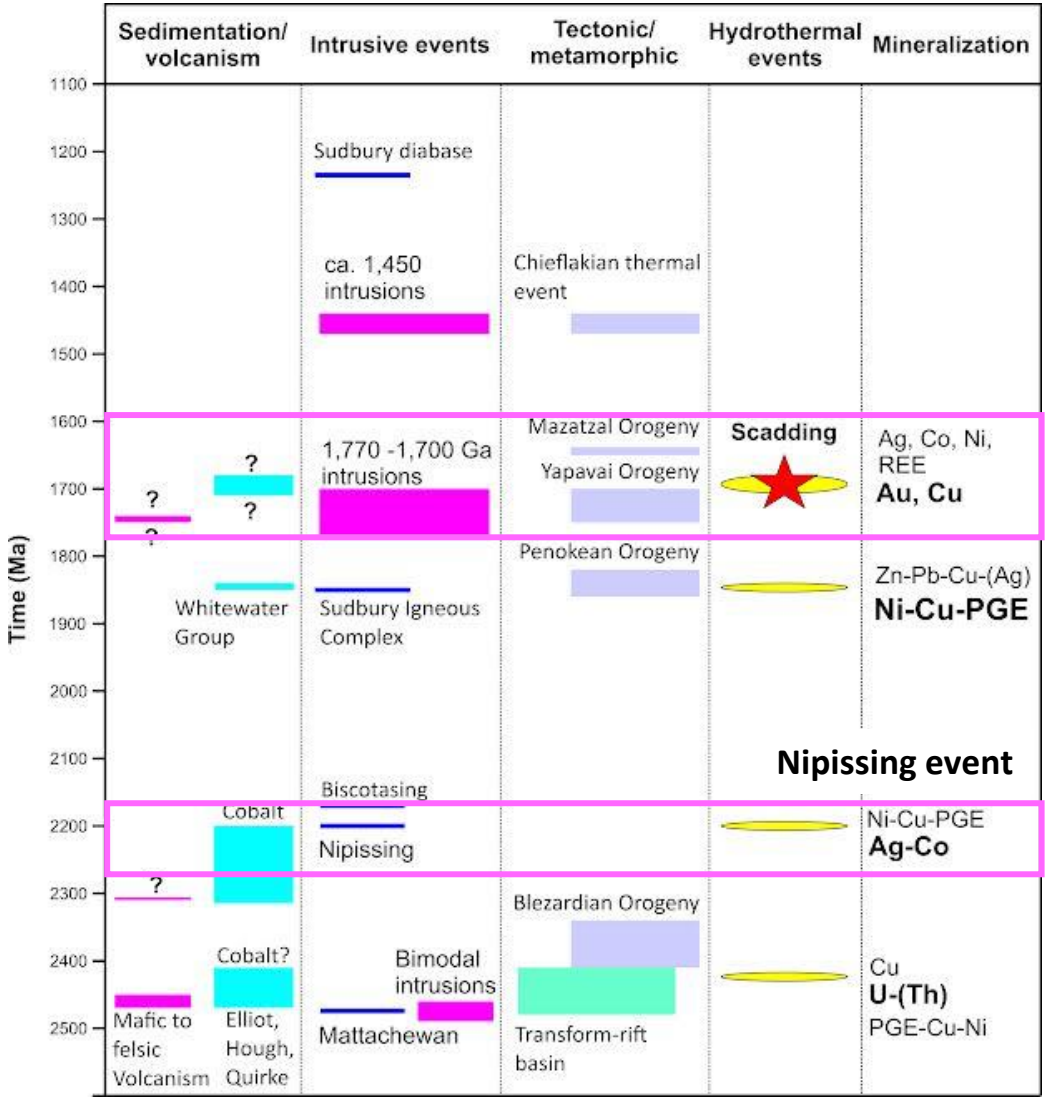
Critical (Co, Cu, Ni, PGE) and Precious (Ag-Au) Mineral Mineralization



Modified and updated from Ames et al. (2008)

- Affected by numerous tectonic and thermal events
  - Enhanced the crustal permeability
- Many episodes of precious and critical metal mineralization
  - Nipissing event
    - Ni-Cu-PGE mineralization
    - Ag-Co mineralization (Cobalt area)
  - Scadding event
    - Au-(Co-Cu) mineralization
    - Ni-Cu-PGE mineralization
- Metals from each events are available for remobilization and redistribution in a regional hydrothermal system

Nipissing event – Ni-Cu-PGE mineralization



Modified and updated from Ames et al. (2008)

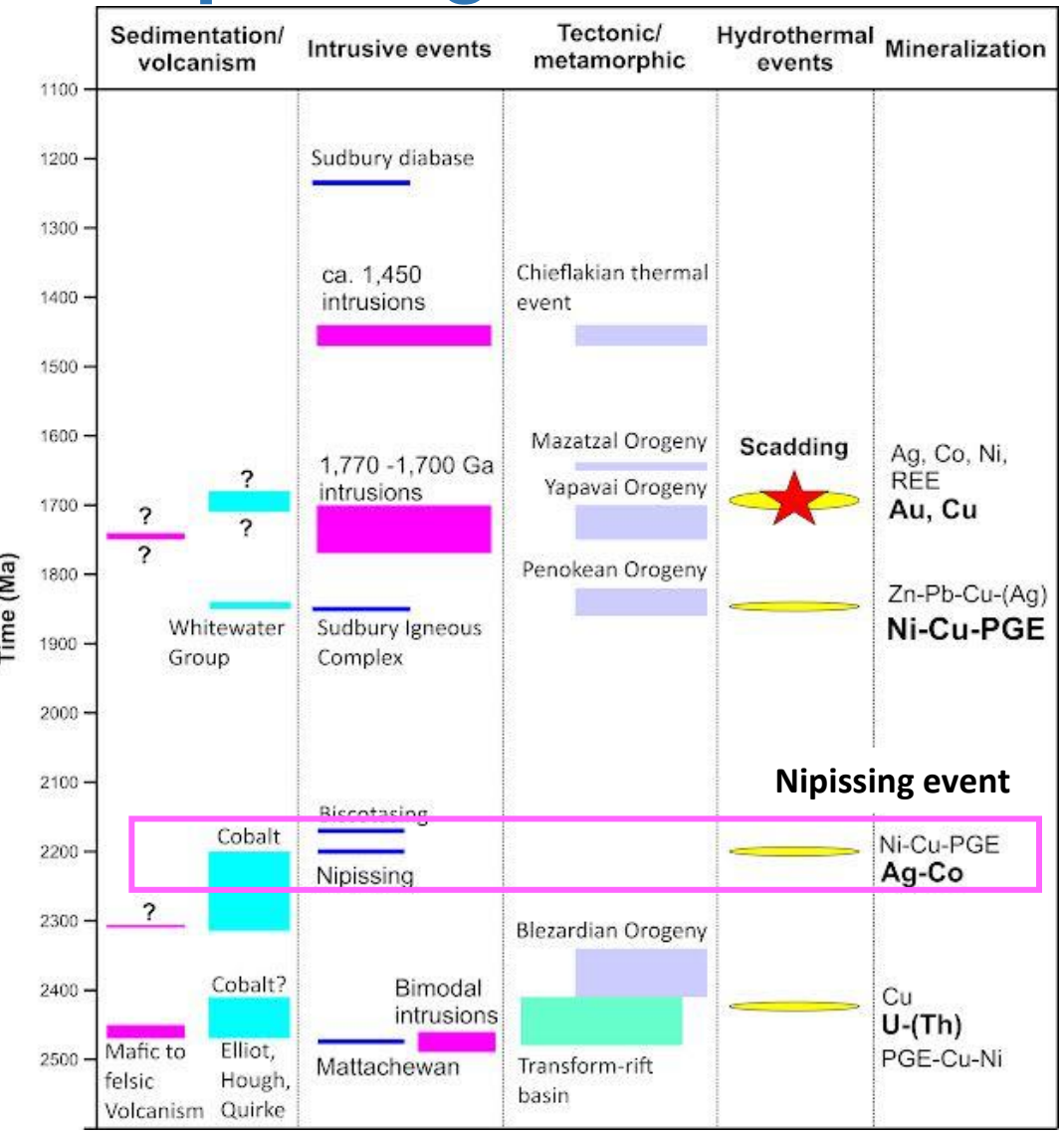
*Regional example - Shakespeare Project – Magna Mining (Project located west of Sudbury)

Source: https://magnamining.com/

M&I: 20.34 Mt @ 0.55% NiEq;
Inferred: 2.36 Mt @ 0.57% NiEq

The reader is cautioned that the above information is not necessarily indicative of comparable mineralization on BMK's SPJ property

Nipissing event – Ni-Cu-PGE mineralization



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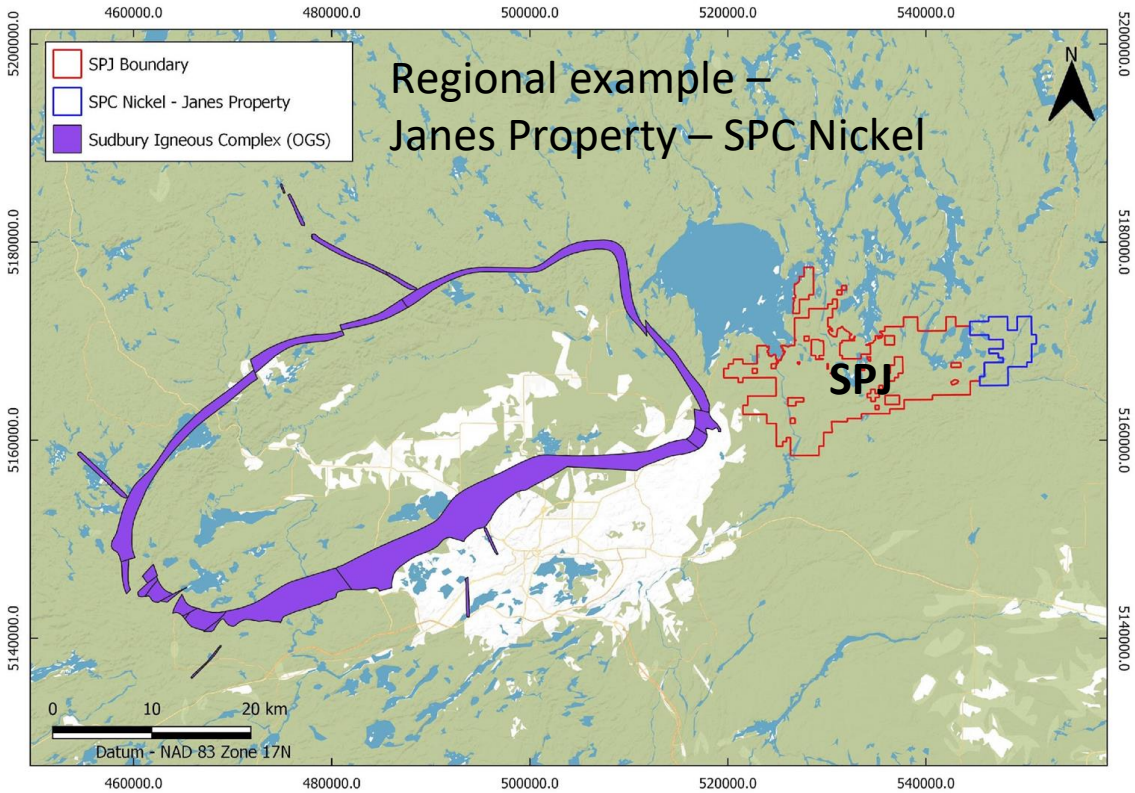

Ni-Cu-PGE mineralization identified on SPC property adjacent to BMK's SPJ project
1. **Disseminated**, 2. **Massive**, 3. **Shear-hosted high-grade** (likely remobilization during the Scadding event).

- 1) 2.71g/t PGM, 1.01% Cu, 0.27% Ni over 18.05m at 32.0m (DDH JR99 01)
- 2) 1.51% Ni, 1.86% Cu, 1.79g/t PGM over 7.9m at 172.8m (DDH 69 08)
- 3) 1,715g/t Pd, 17.25g/t Pt, 109.5g/t Au. 0.23% Cu, 0.23% Cu (grab)
- Mineralization in the FW of a folded Nipissing Sill

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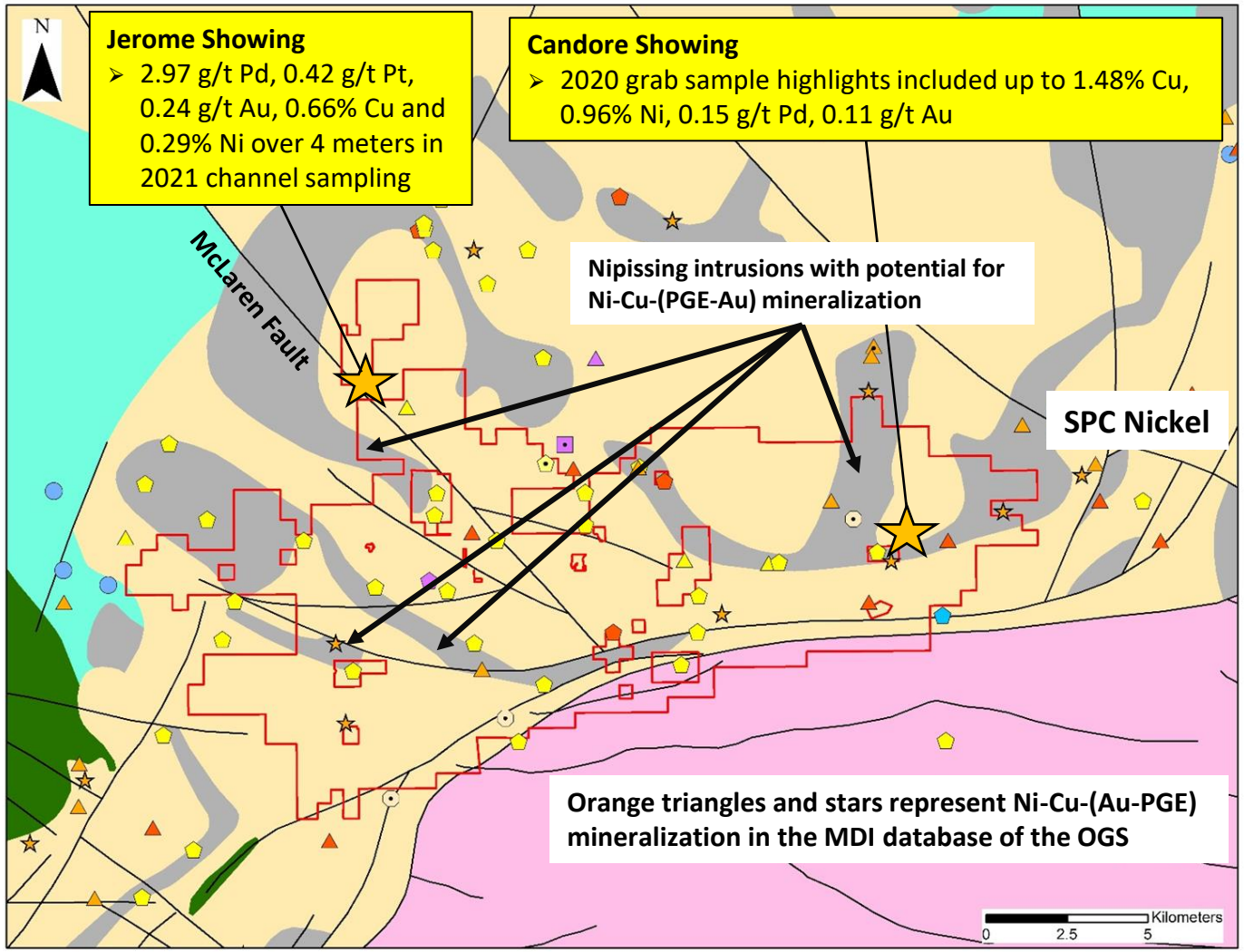
Nipissing event on the SPJ property – Ni-Cu-PGE mineralization

Magmatic Ni-Cu-PGE mineralization

- Mineralized Nipissing intrusions present on SPJ property
- MDI database indicate different centers of Ni-Cu-(Au-PGE) mineralization
- Limited exploration for magmatic Ni mineralization on the SPJ project
- Disseminated nature of mineralization may have hindered its detections by historic geophysical surveys



Note: Intersections are not true width; true width is currently unknown. The reader is cautioned that a qualified person has not done sufficient work to verify these values. These are historical values that may not be representative of the mineralization present at the Candore showing.

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Nipissing event on the SPJ property – Ni-Cu-PGE mineralization

Candore Showing – Evidence of magmatic Ni-Cu-PGE mineralization in the Nipissing sills of SPJ property

Historic drilling highlights from the Candore showing

Hole ID	Company	Year	From (m)	To (m)	From (m)	To (m)	Length (m)	Pd (g/t)	Cu (wt. %)	Ni (wt. %)
ML-01-2001	Minera Capital Corp. (41I09NE2039)	2001	3.4	8.4			5	0.17		
			16.4	**35.4**			**19**	**0.19**		
			Including		28.4	30.4	2	0.25	0.25	0.1
			Including		28.4	35.4	7	0.37		
ML-02-2001			27	34.6			7.6	0.21		
I70-1	Idrex Exploration Venture (41I09NE0066)	1970	6.8	13.87			7.07		0.16	0.08
			20.12	21.21			1.09		0.47	0.13
I70-2			3.05	10.67			7.62		0.12	0.04
I70-3			**11.34**	**27.13**			**15.79**		**0.26**	**0.12**
I70-4			10.67	20.21			9.54		0.12	0.08
I70-5			28.59	33.53			4.94		0.22	0.1
S-11A	Alba Exploration Ltd (41I09NE0055)	1955	28.5	35.36			6.86		0.1	
			Including		34.44	35.36	0.91		0.49	0.3
S-12A			45.72	63.58			17.86		0.15	0.03
S-9A			27.61	31.09			3.47		0.68	0.27
			Including		28.22	28.96	0.73		1.6	0.57

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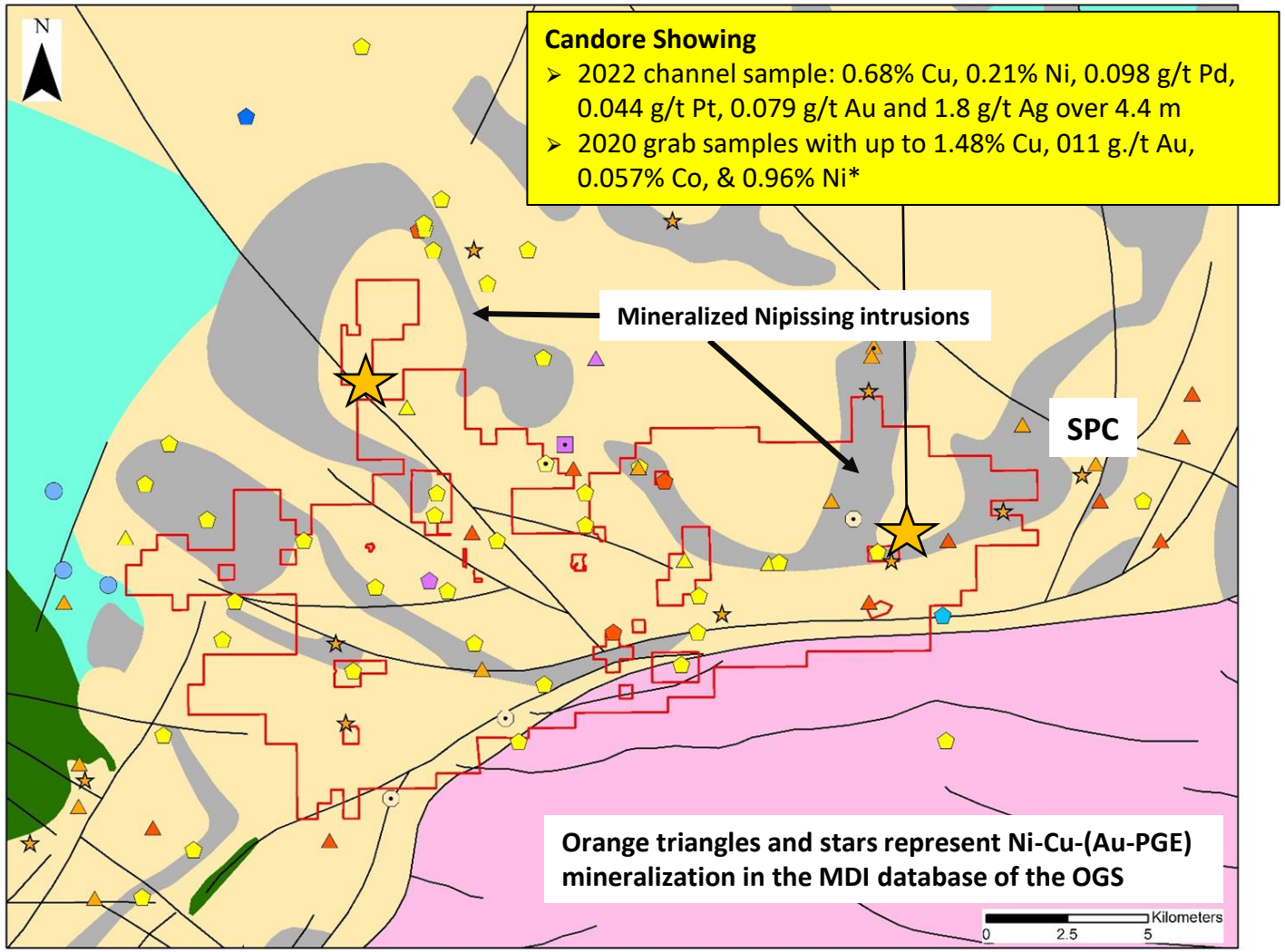

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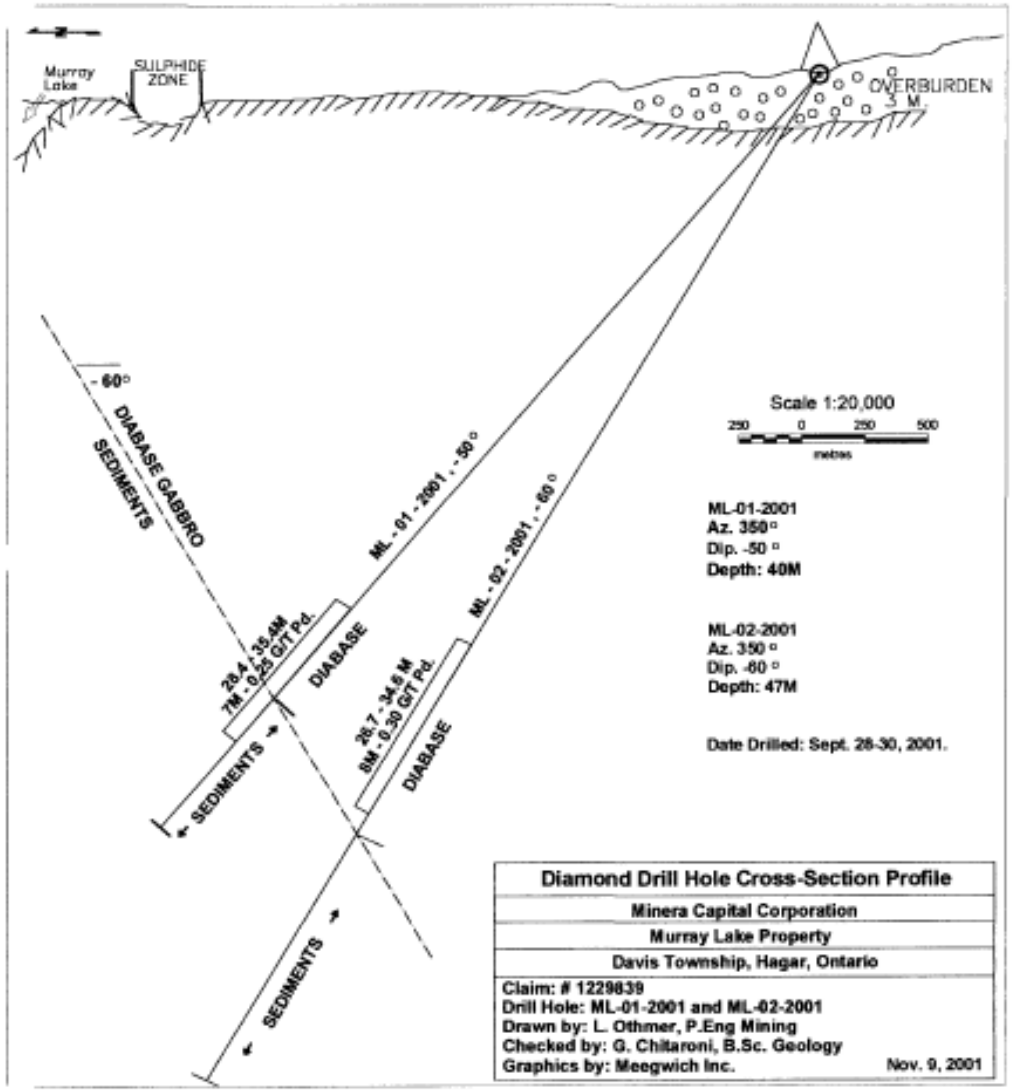
Nipissing event on the SPJ property – Ni-Cu-PGE mineralization

Candore Showing – Evidence of Magmatic Ni-Cu-PGE mineralization in the Nipissing sills of SPJ property

- Historic drilling completed in 1955 (Alba Exploration Ltd), 1970 (Idrex Exploration Ventures) and 2001 (Minera Capital Corporation),
  - 2001 drilling only reports Pd assays.
- Mineralization occurs at surface as a massive sulfide lens within an E-W striking Nipissing diabase.
- Historic drilling indicates that the lens may dip near vertically down from the showing at surface and then flatten out at the contact with sediments (Figure on the right)
- Mineralization observed in drilling consists of semi-massive to massive sulphides – primarily pyrrhotite, with lesser chalcopyrite and minor pyrite occurring as disseminations and minor stringers
- Mineralization rapidly drops off after the contact with the sediments

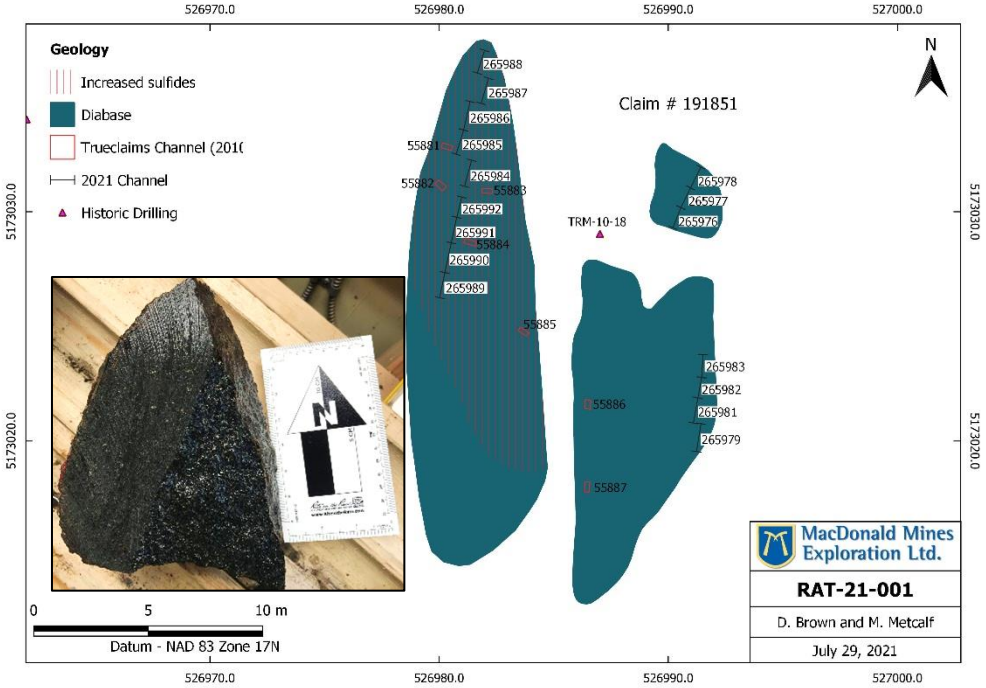


Assessment Report 41I09NW2039

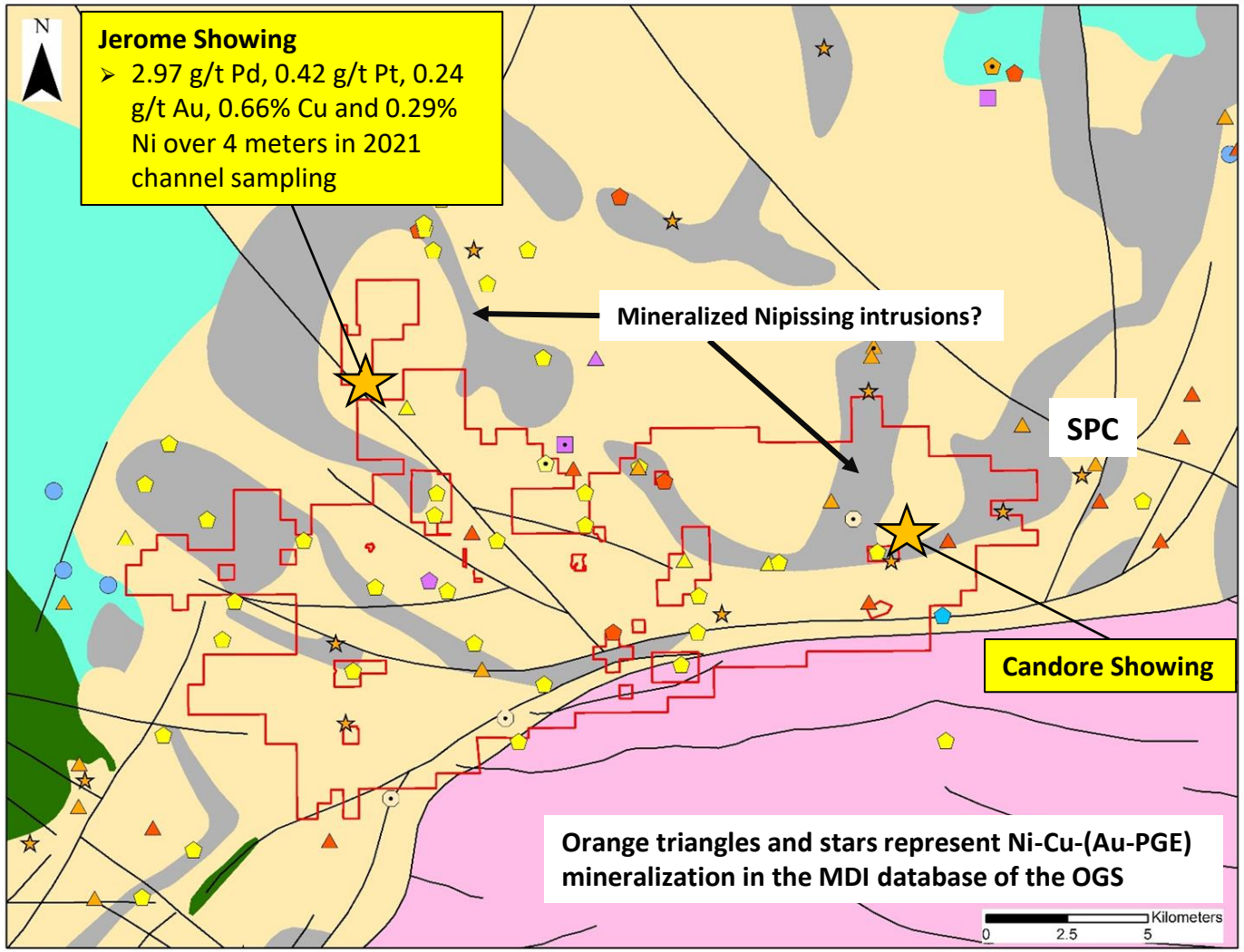
Nipissing event on the SPJ property – Ni-Cu-PGE mineralization

Jerome showing – 2021 channel sampling results

Disseminated chalcopyrite, pyrite, and pyrrhotite carrying prospective concentrations of Ni-Cu-PGE, associated with Nipissing diabase



Sample No.	From (m)	To (m)	Length (m)	Au (g/t)	Pd (g/t)	Pt (g/t)	Cu (%)	Ni (%)
265984-265987	0	4	4	0.24	**2.97**	0.42	0.66	0.29
265990-265992	1	4	3	0.24	**2.18**	0.32	0.51	0.25



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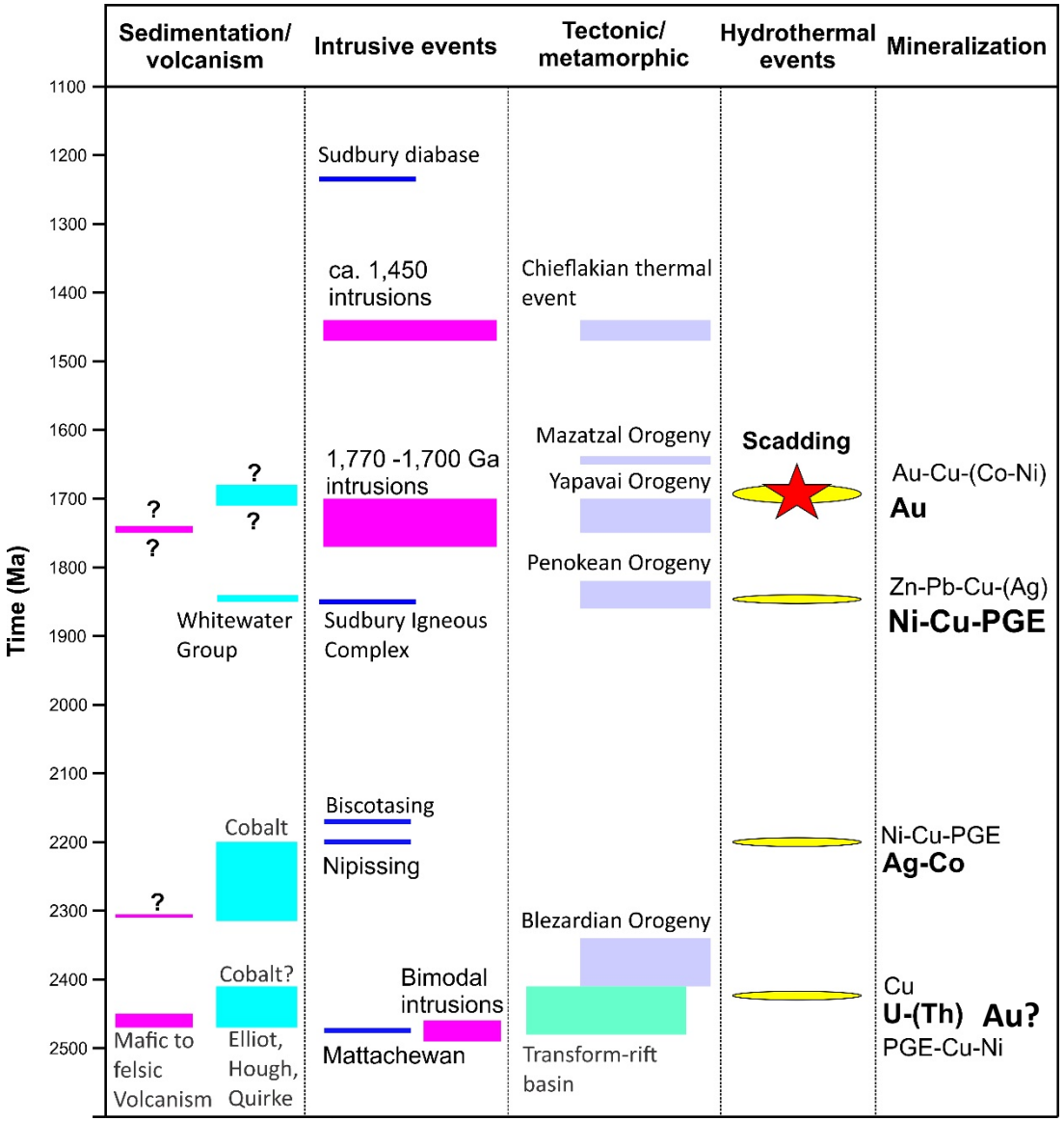
Scadding event – Precious and Critical Metal Mineralization

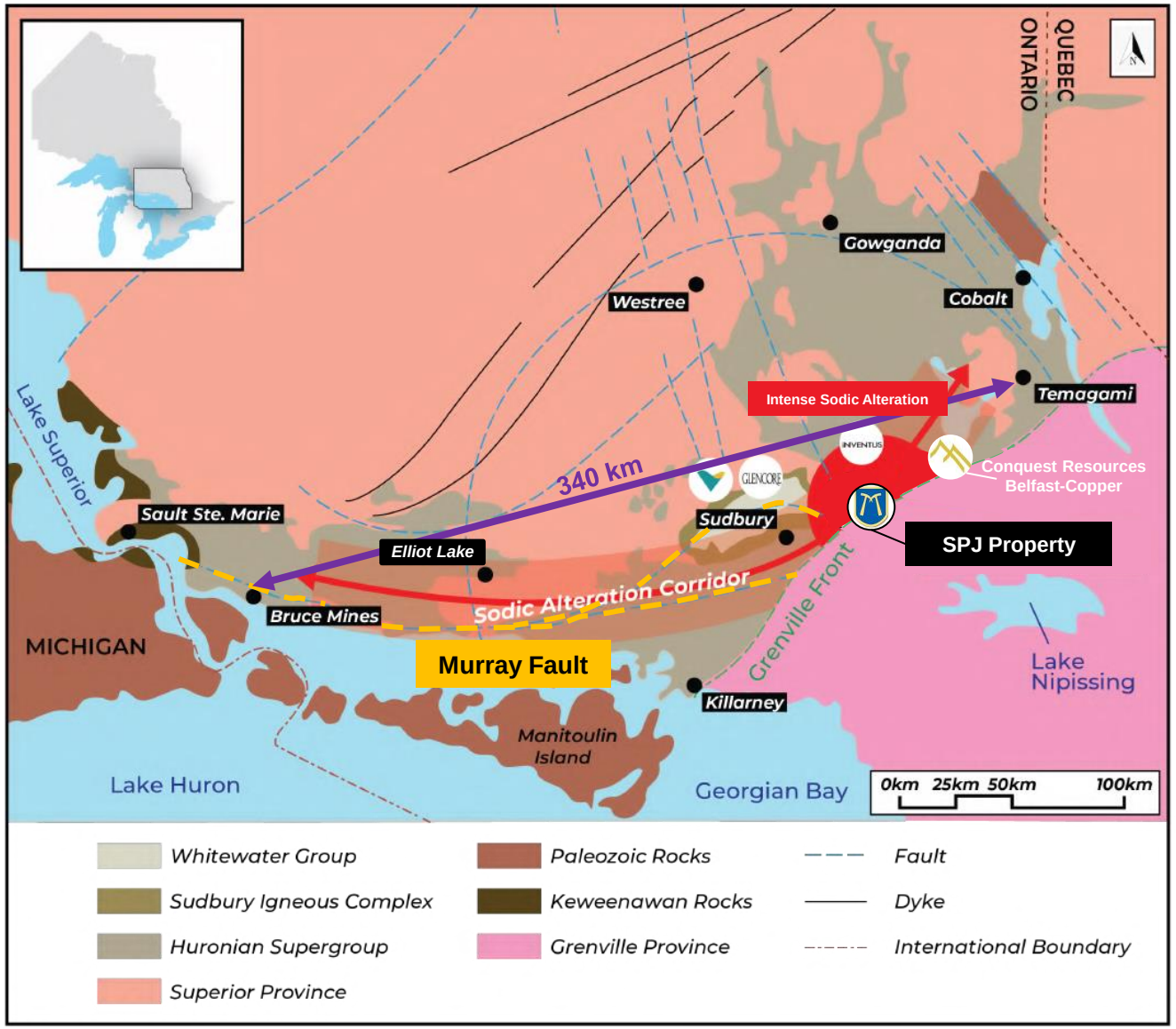


Scadding Au mineralization

Jovan Au-Co-Cu mineralization

Alwyn Mine Au-Cu mineralization

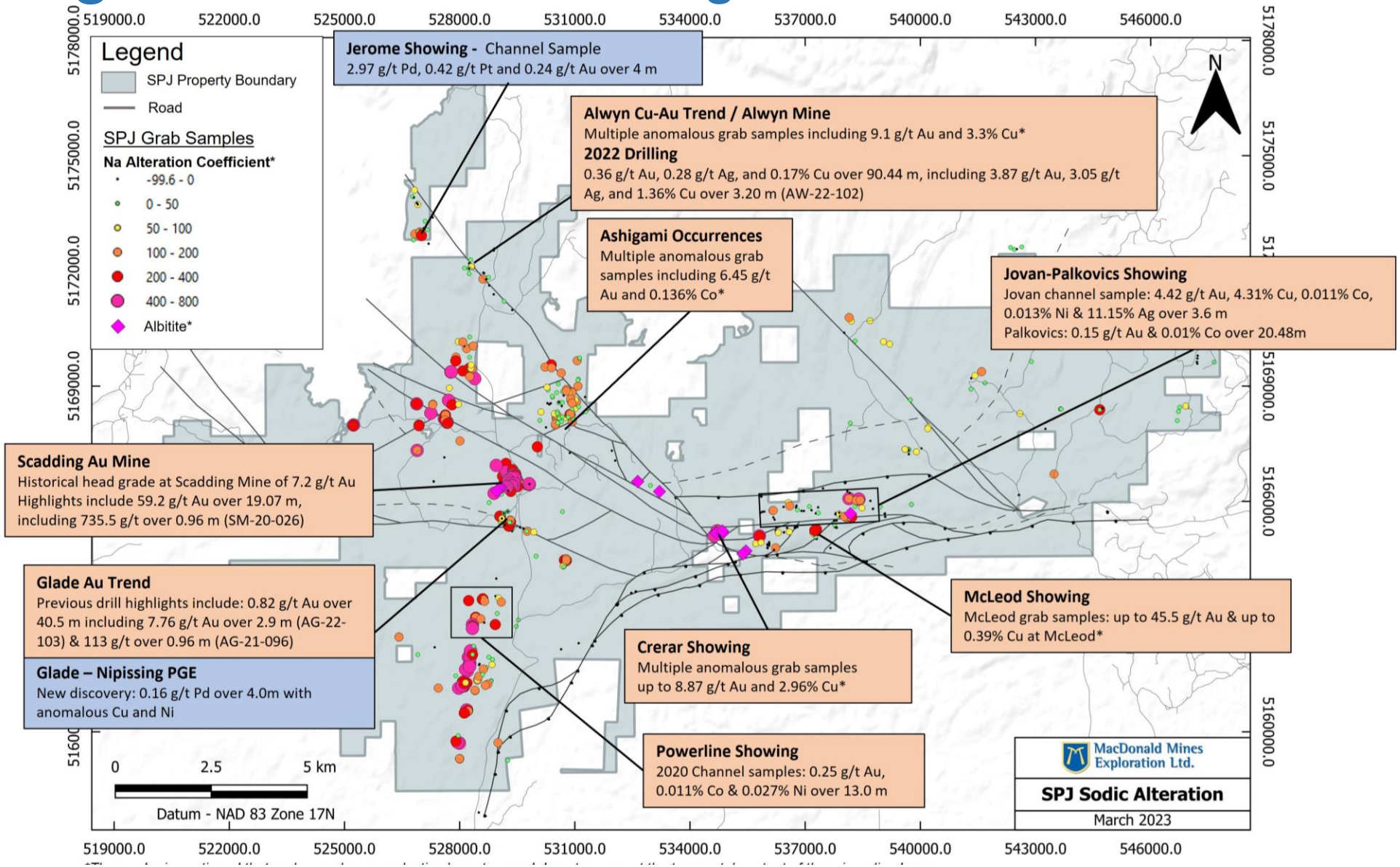
Scadding event – 1700 Ma Regional Albitization



- Sodic alteration extends from Bruce Mines to Temagami (Gates, 1991)
- Greatest intensity recognized so far is east of the SIC, south and east of Lake Wanapitei
  - Corresponds to the area of highest intensity of polymetallic gold mineralization
- Metamorphosed sodic alteration zones described in the Grenville Front Tectonic Zone (Gates, 1991)

Typical albitite of the Southern Province, Scadding deposit

Scadding Event – 1700 Ma Regional Albitization



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**Na alteration coefficient calculated using the equation [Na2O(sample)/ Na2O(unaltered)-1]x100. Na2O(unaltered) determined from SPJ surface sampling database. Diabase=1.50% (27 samples averaged), Bruce Fm = 2.44% (18 samples averaged), Gowganda Fm = 3.19% (47 samples averaged), Serpent Fm = 1.27% (17 samples averaged), Espanola Fm = 1.82% (13 samples averaged)*
**The protolith of these samples are unrecognizable due to intense sodic alteration, therefore sodic alteration coefficient could not be calculated for these grab samples*

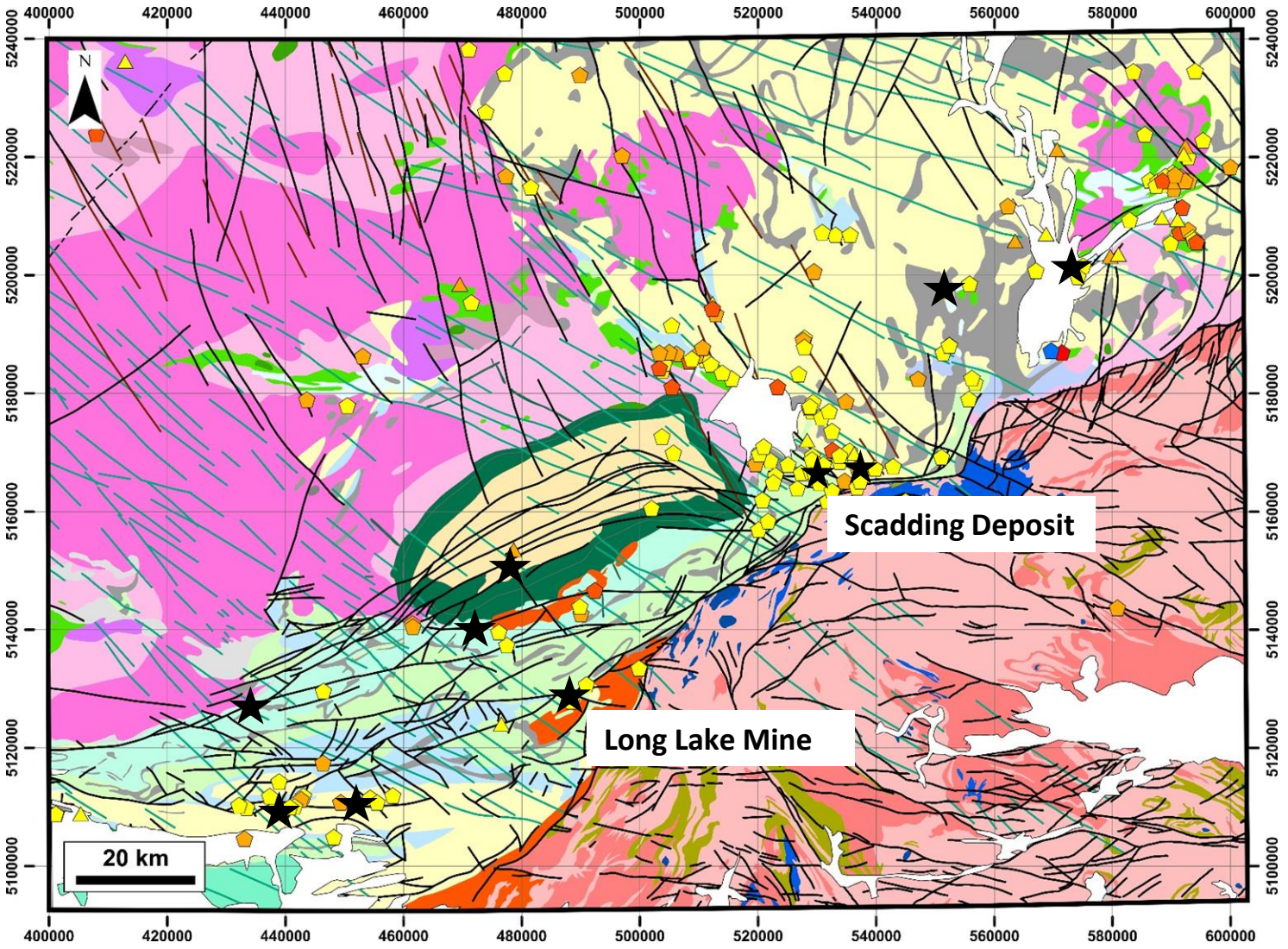
Scadding event – 1700 Regional Albitization

Albitization fronts in the Huronian Supergroup

Brecciated sodic alteration in the Huronian Supergroup

- Sodic alteration was not always recognized
  - Confused with quartzite
  - Silicification
  - Chert
- Very intense and lead to the formation of albitites
  - Na_2O may reach 10 wt. %
- Sodic alteration zones are preferential hosts of polymetallic gold mineralization

Scadding Event – Critical and Precious Metal Mineralization



Legend

Geological Units

Phanerozoic (undivded)
- Undivided sedimentary rocks

Grenville Province
- Anorthosite and alkalic igneous rocks
- Felsic igneous rocks
- Gneisses of metasedimentary origin
- Mafic rocks
- Migmatitic rocks and gneisses of undetermined protolith

Souhern Province

Sudbury Impact
- Whitewater Group
- Sudbury Igneous Complex

Southern Province and Superior
- Felsic intrusive rocks - Undivided
- Nipissing Diabase

Huronian Supergroup (2.2 Ga to 2450 Ma)
- Cobalt Group,
- Elliot Lake Group
- Hough Lake Group,
- Quirke Lake Group,
- Mafic and ultramafic intrusive rocks

Superior Province
- Diorite-monzondiorite-granodiorite suite
- Tonalite suite
- Massive granodiorite to granite
- Mafic and ultramafic rocks
- Mafic to intermediate metavolcanic rocks
- Felsic to intermediate metavolcanic rocks
- Metasedimentary rocks
- Migmatized supracrustal rocks
- Faults

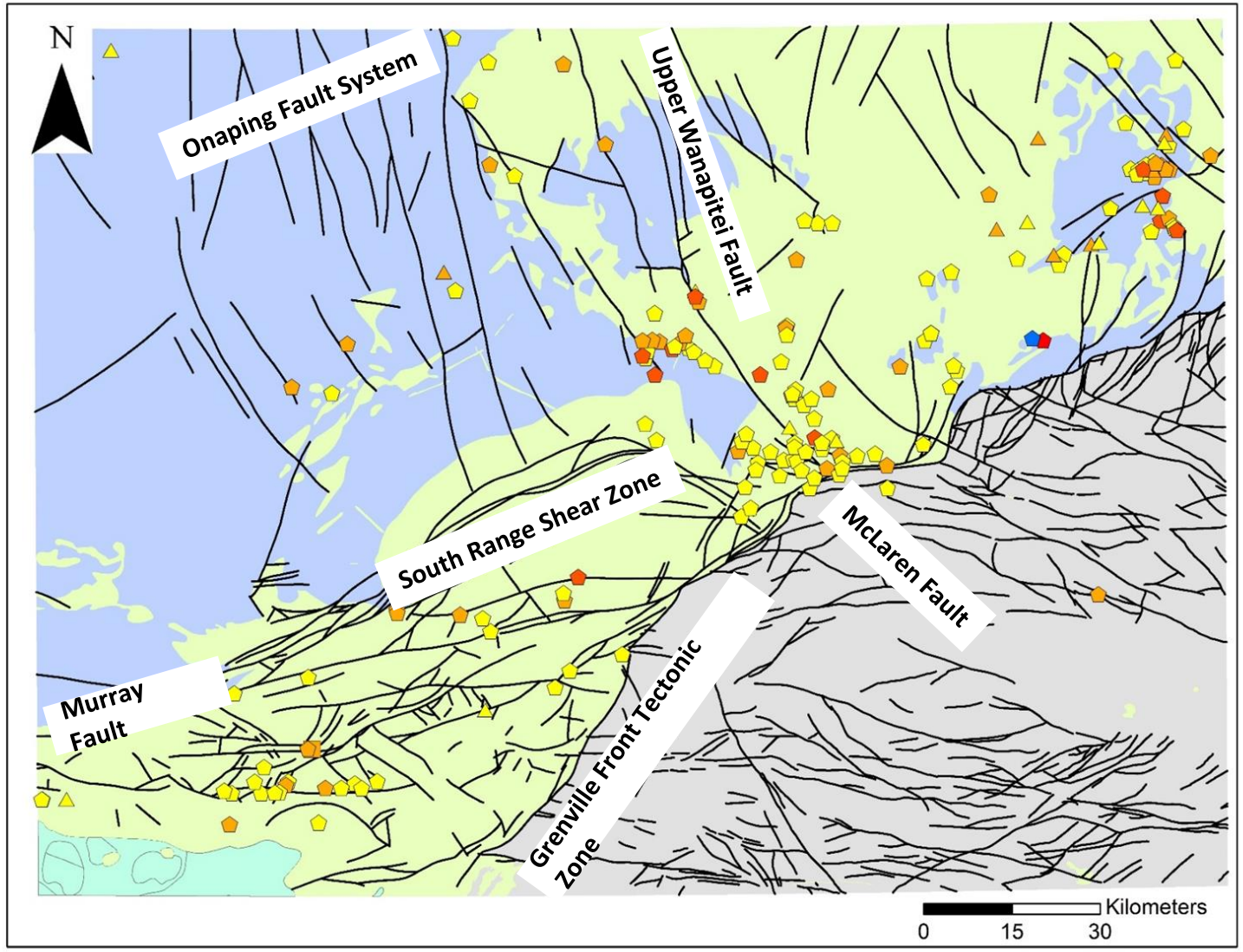
Mafic dykes
- Sudbury dykes
- Matachewan dykes
- Biscotasing dykes

Mineral occurences
- Cu-Au
- Cu-Au polymetallic
- Au
- Au polymetallic
- Au-Ag
- Au-U
- Au-Fe
- Ni-Au
- Zn-Au

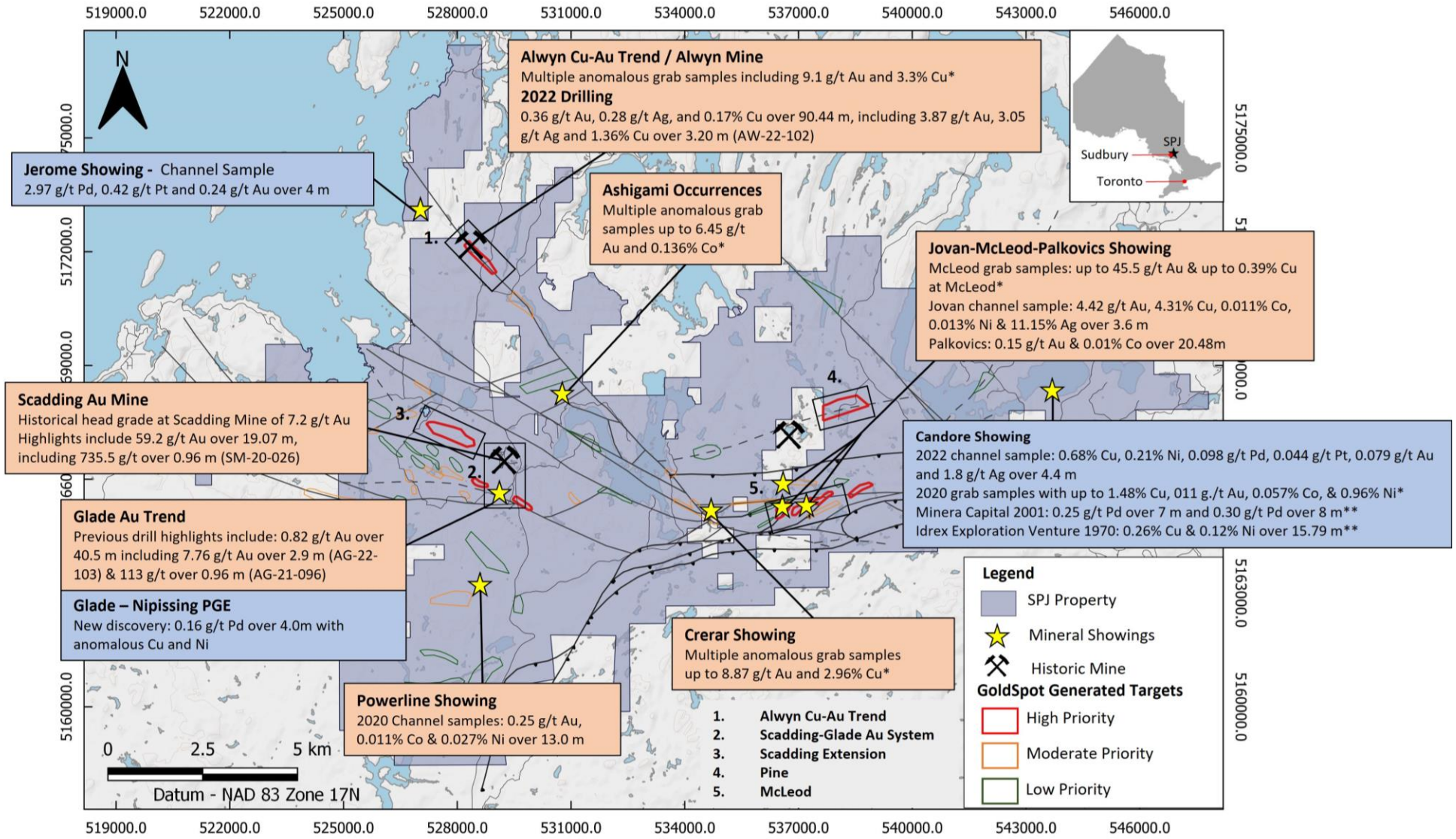
Geology from Ontario Geological Survey (OGS) open file MRD 126; Showing and deposit locations from the OGS Mineral Deposit Inventory

Scadding Event - Structures and Distribution of Mineralization

Brecciated and sheared albitite in brittle-ductile shear zone



Precious & Critical Metal Showings – SPJ Project



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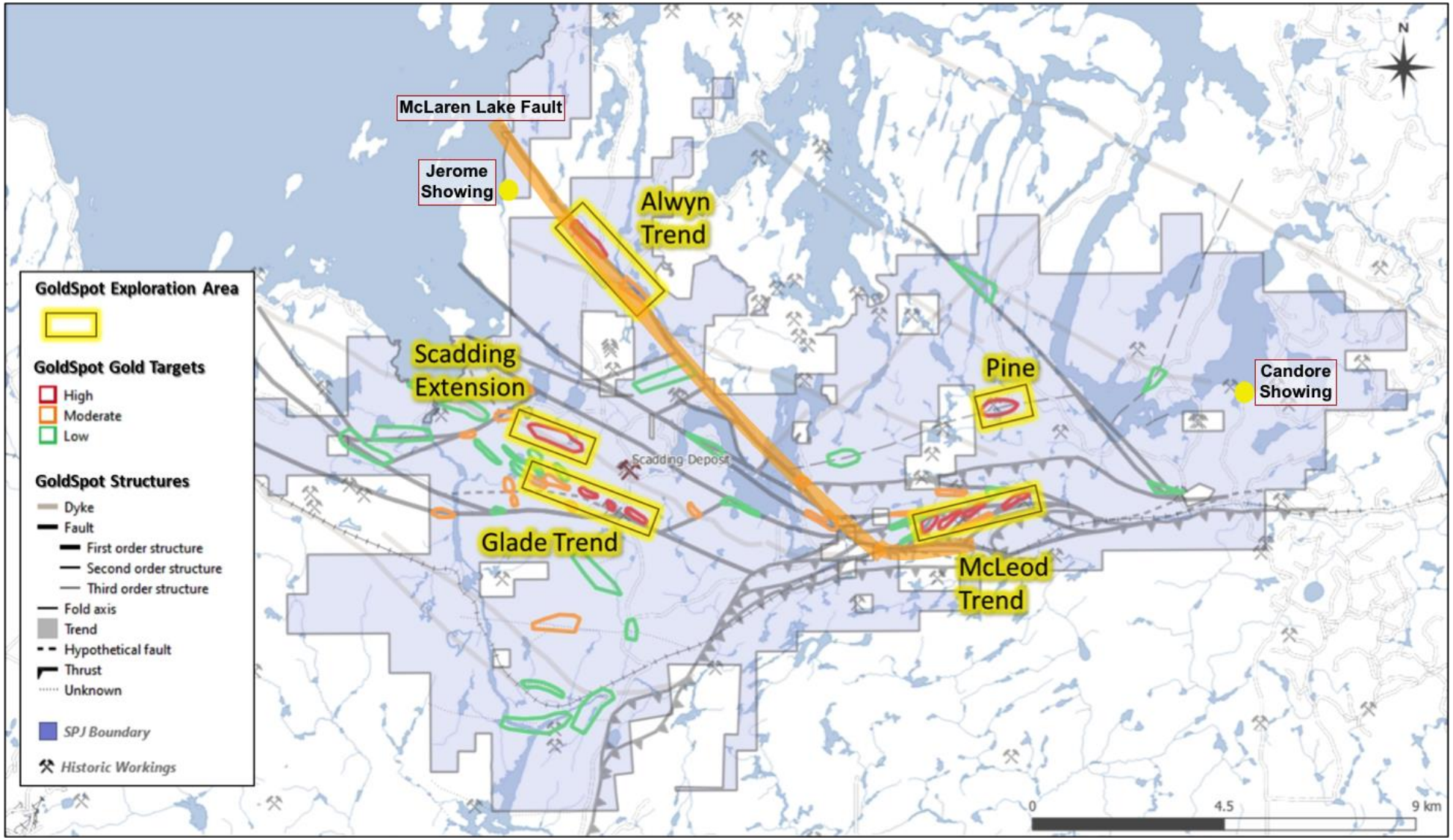
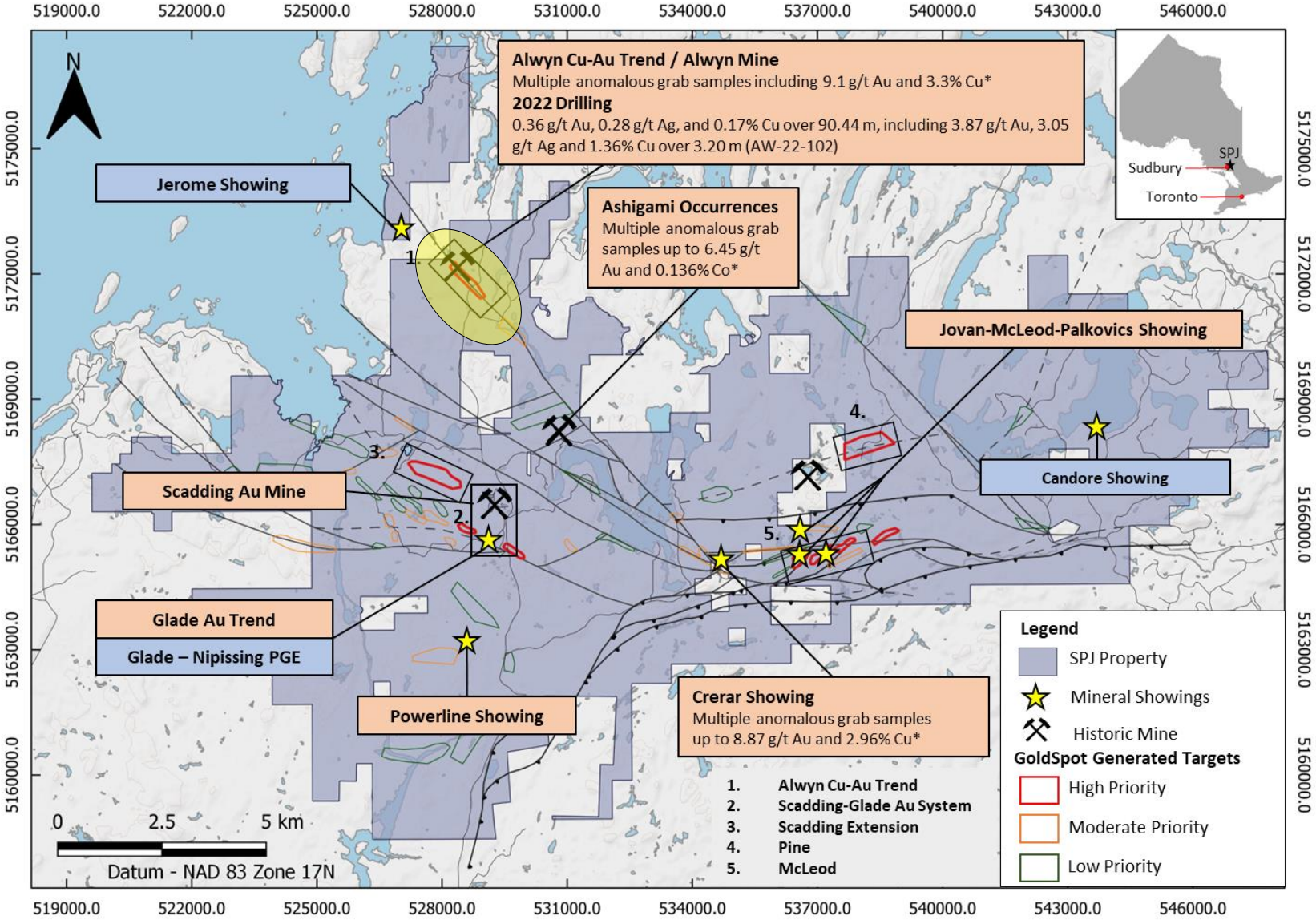
***The reader is cautioned that the qualified person has not done enough work to verify the historical results.*

GoldSpot Generated Targets on the SPJ Property



Precious and Critical Metal Showings – Alwyn Cu-Au Trend



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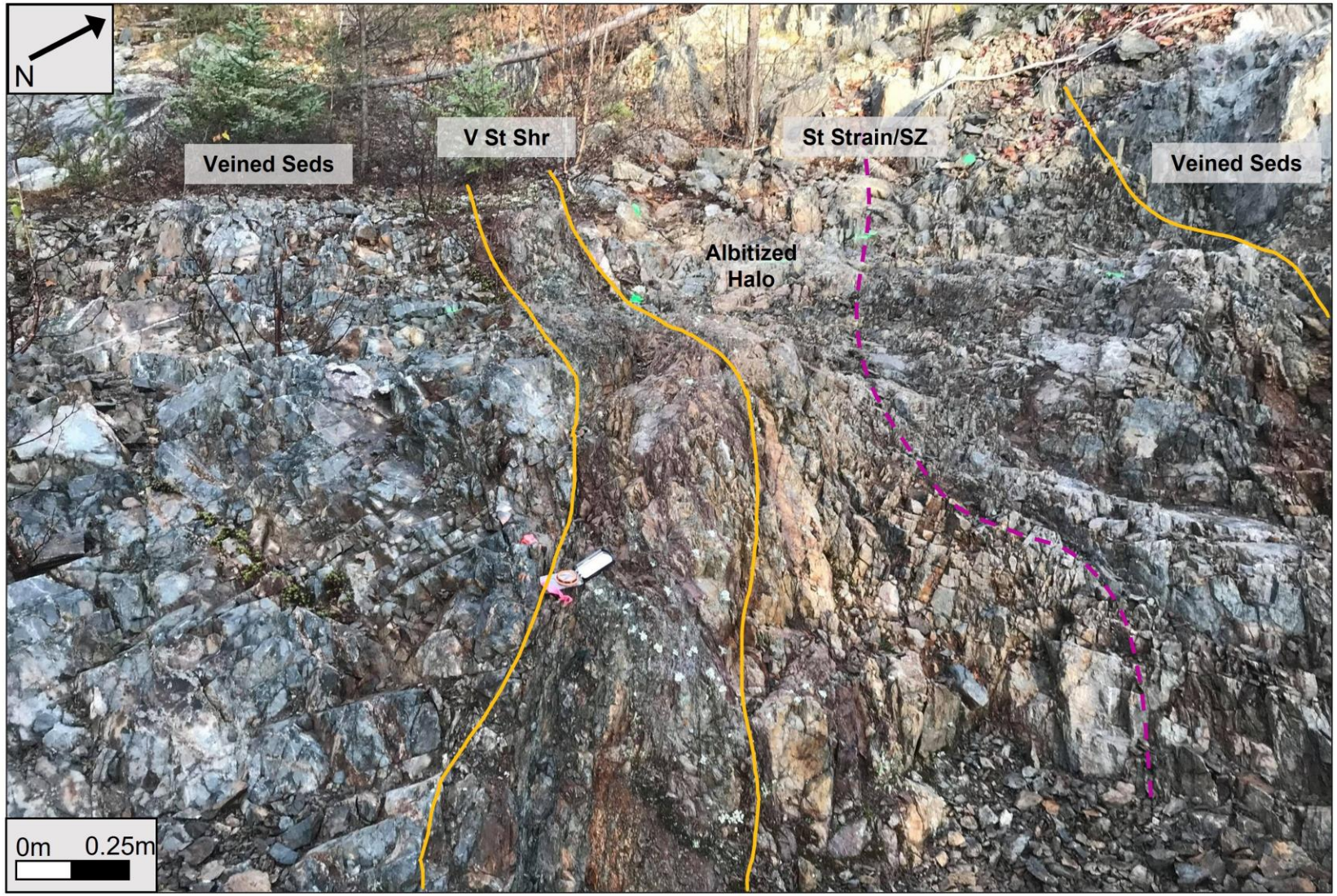
Alwyn Mine Cu-Au Target

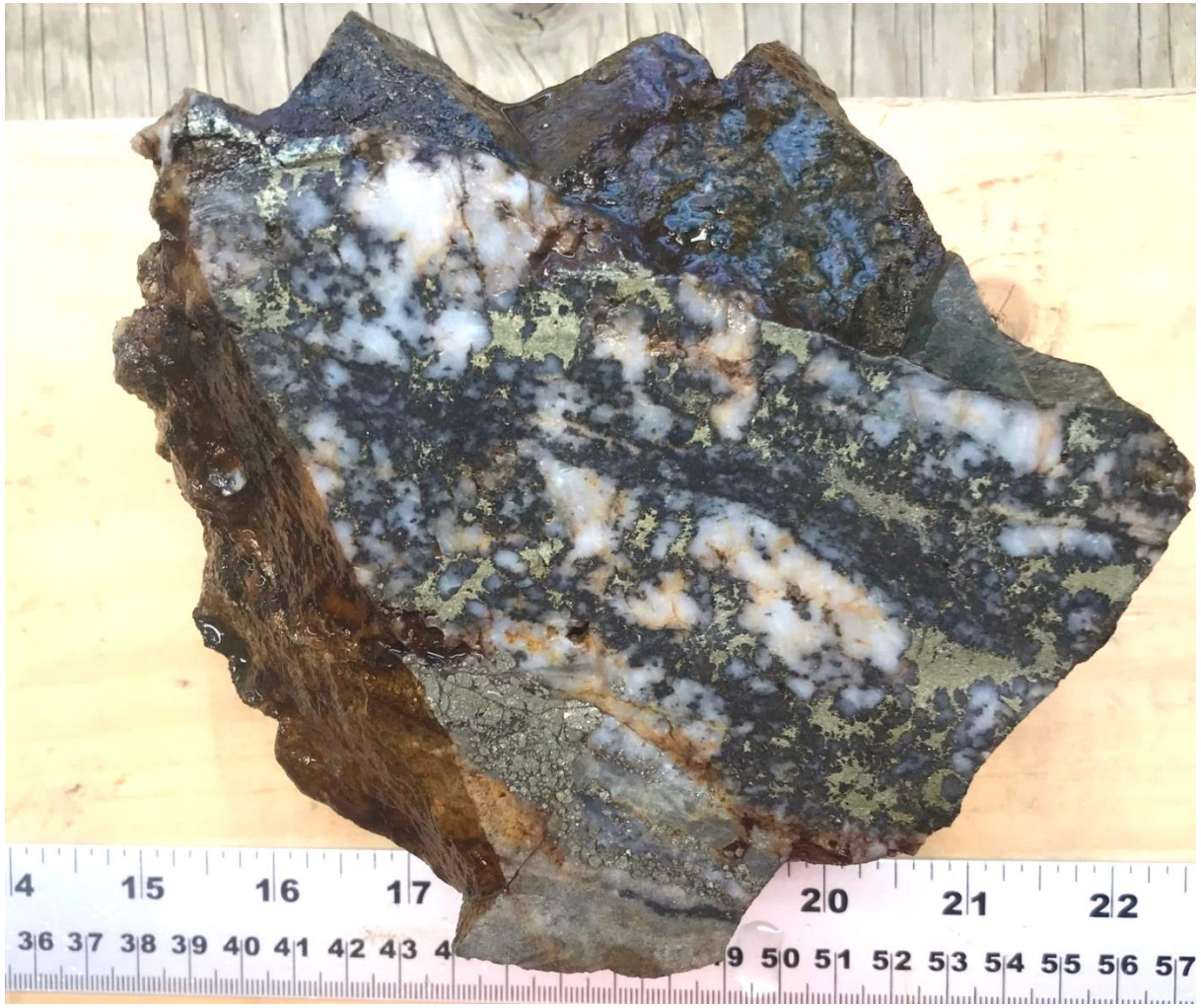
- Au-Cu mineralization in quartz-sulfide veins along the McLaren Lake Fault Zone (MLFZ), hosted by Gowganda formation sediments
- Past production by Alwyn Porcupine Mines Ltd. (1950-1959) included 7000 tons @ 5.67 g/t Au *(Report 41I10NE0158)*
- Two historic drilling programs with significant assays
  - Drilling from 1983 reported intersections of up to 1.38 g/t over 15.4 m *(Report 41I10NE0154)*
  - Drilling from the 1950s reported intersections of up to 3.19 g/t Au and 0.79% Cu over 6.04 m *(Report 41I10NE0158)*

Shear Zone associated with Cu-Au mineralization at the Alwyn Mine

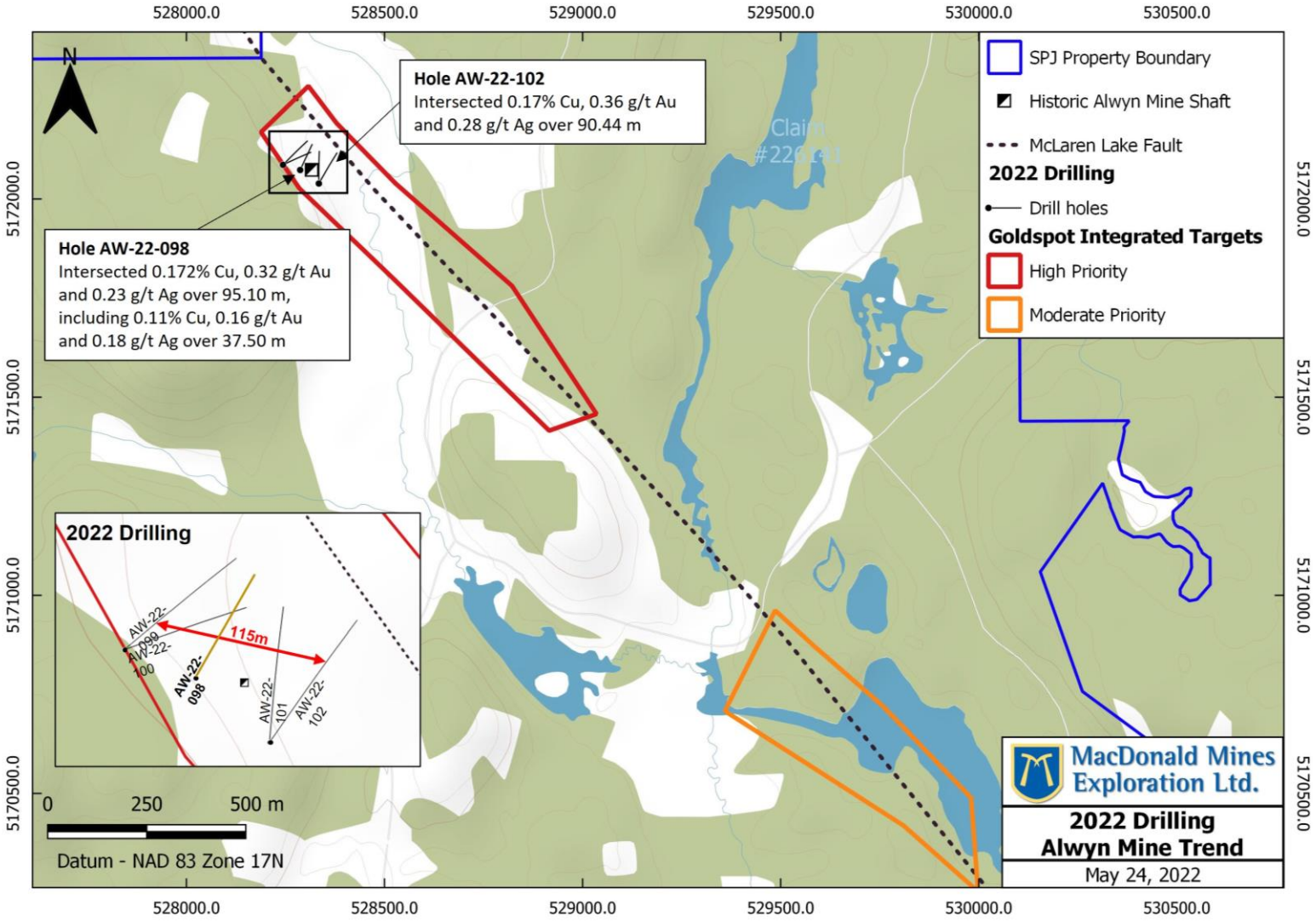


Alwyn Mine – Cu-Au-Ag Mineralization

Grab samples illustrating Cu-Au-Ag mineralization associated with Qtz-Cb veining of the Alwyn Mine

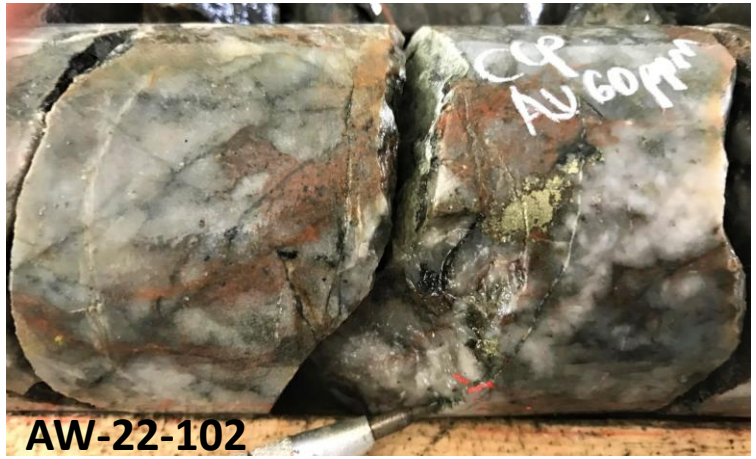


Alwyn Mine Cu-Au Target – 2022 Drilling

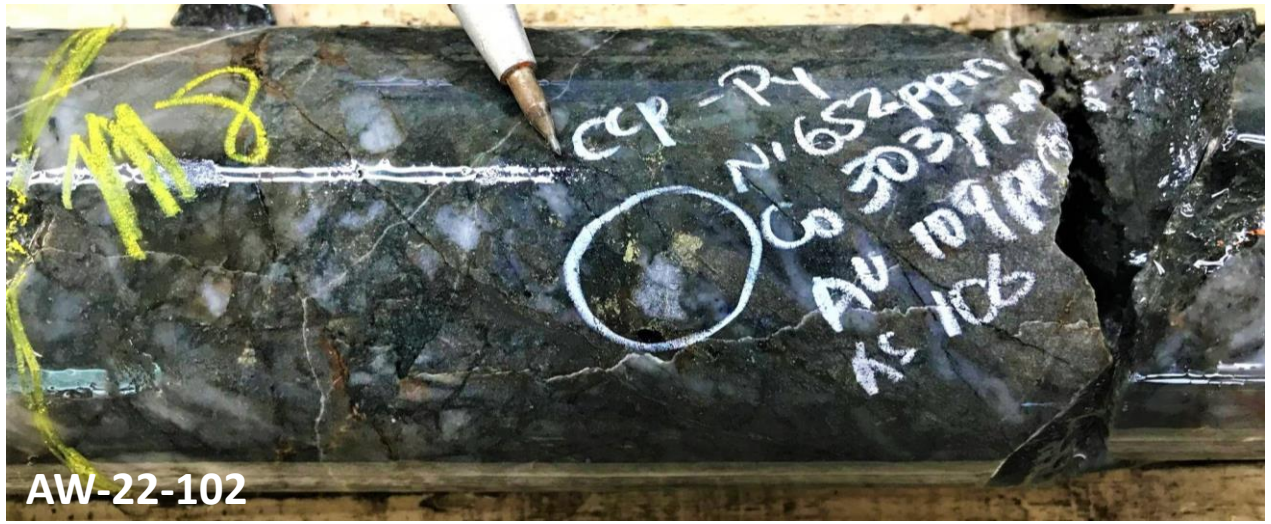


696m of oriented diamond drilling in 5 drillholes completed in May 2022

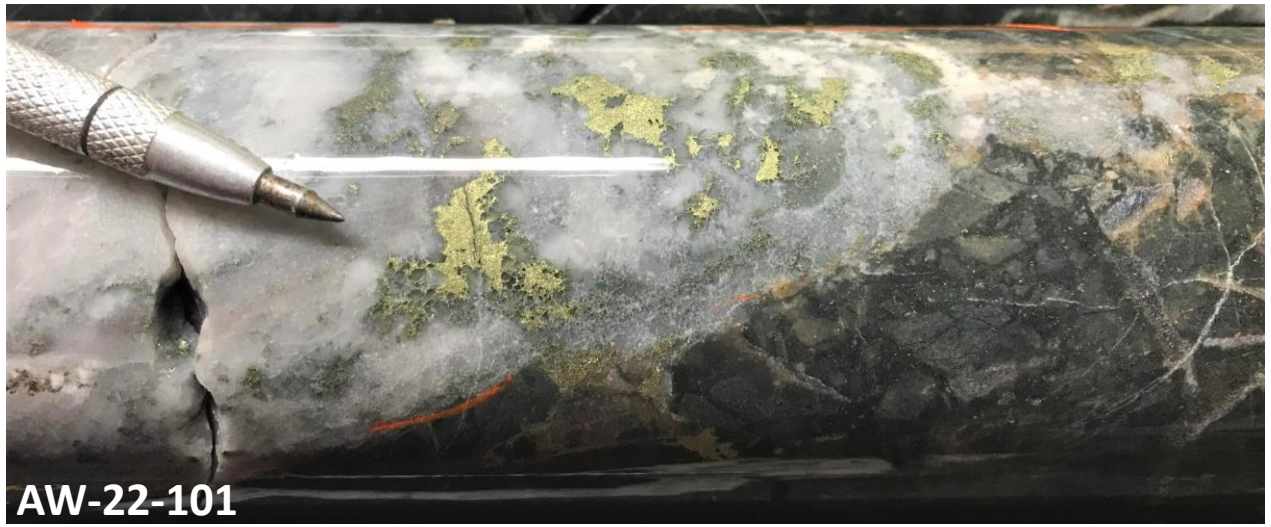
- Copper-gold mineralization confirmed over a strike length of 115m and remains open in all directions
- Intersection in 4/5 holes completed in the Alwyn Mine area, of broad intervals (30-116m – core length) containing up to 2% chalcopyrite, traces of bornite and variable pyrite
- Hole AW-22-102 intersected 0.17% Cu, 0.36 g/t Au and 0.28 g/t Ag over 90.44m including two zones of stronger mineralization:
- Upper Zone: 41.53m at 0.24% Cu, 0.43 g/t Au and 0.41 g/t Ag including 1.36% Cu, 3.87 g/t Au and 3.05 g/t Ag over 3.20m
- Lower Zone: 13.00m at 0.29% Cu, 0.82 g/t Au and 0.33 g/t Ag
- Sulfide mineralization associated with multi-directional networks of quartz-carbonate to carbonate veins representing an average of 5-10% of the mineralized zones.



Alwyn Mine Cu-Au Target – 2022 Drilling



AW-22-102



AW-22-101

- Identification of cobalt anomalies in most of the drill holes completed in the Alwyn system with the broadest intersection being 0.015 % Co over 26.50 meters in AW-22-101
- Widest and most significantly mineralized interval intersected during this initial five hole program at Alwyn was located southeast of the Alwyn Mine beyond the historically known footprint (AW-22-102)

➢ **0.17 % Cu, 0.36 g/t Au and 0.28 g/t Ag over 90.44 m** in hole AW-22-102, including two zones of stronger mineralization

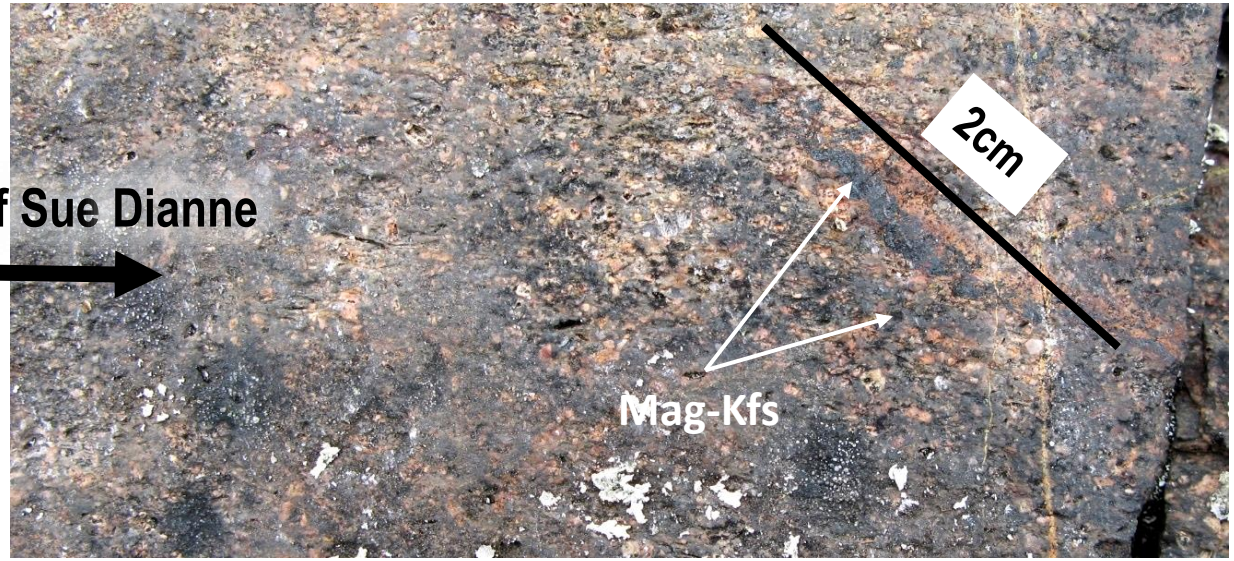
- Upper zone: 41.53 m at 0.24 % Cu, 0.43 g/t Au and 0.41 g/t Ag, including **1.36 % Cu, 3.87 g/t Au and 3.05 g/t Ag over 3.20 m**
- Lower zone: 13.00 m at 0.29 % Cu, 0.82 g/t Au and 0.33 g/t Ag

Alwyn Mine Cu-Au Target – Emerging Evidence for MI-Cu Deposit

Magnetite to hematite Cu-Au mineralization forming the Sue Dianne MI Cu – (Mag-Hem) IOCG type deposit (NWT – Canada)

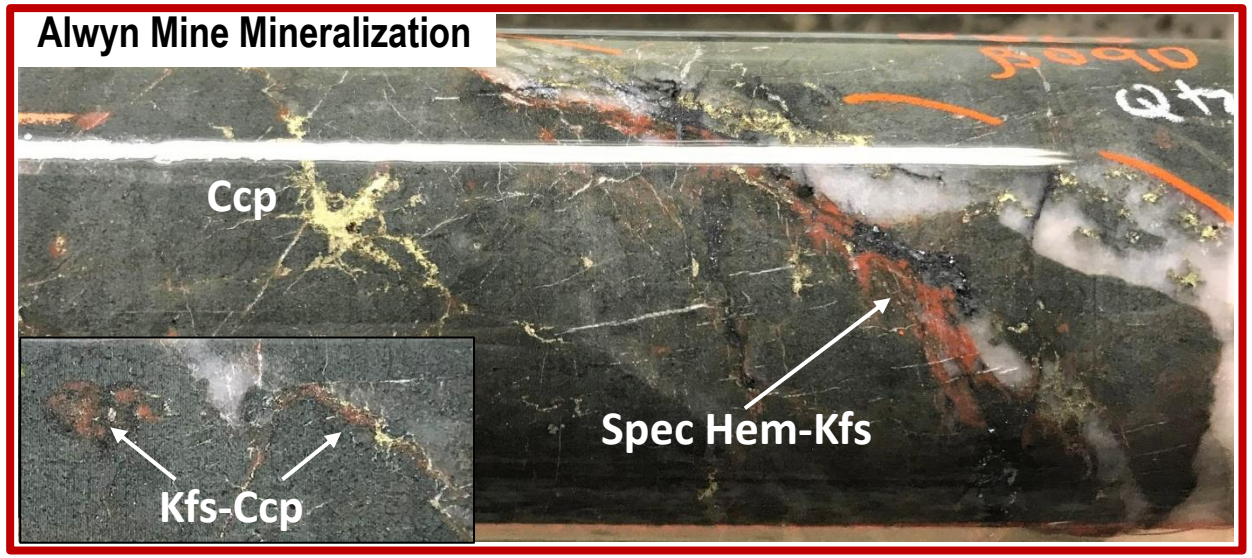
8.4 Mt at 0.80% Cu, 0.07 g/t Au, 3.2g/t Ag

600m east of Sue Dianne



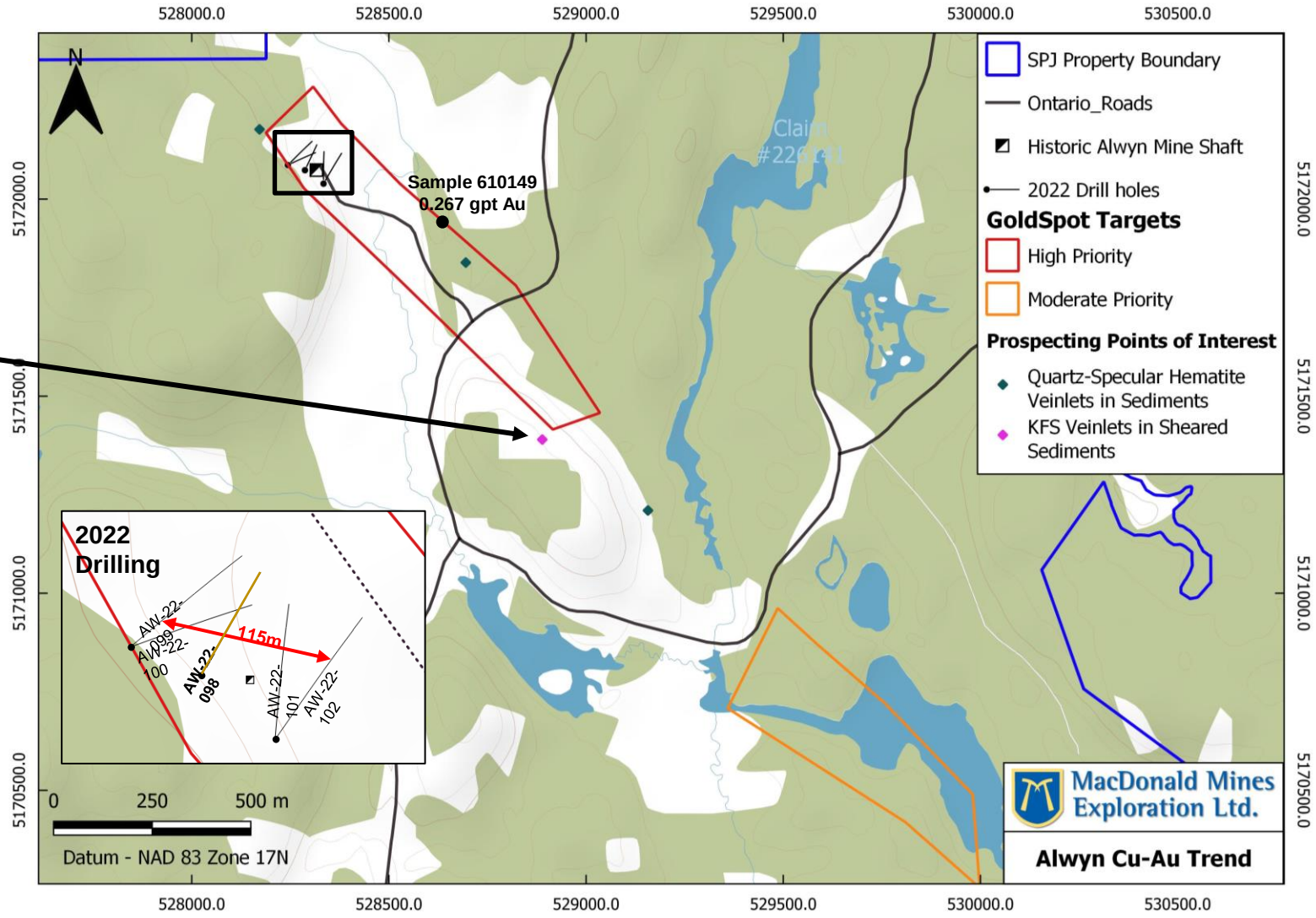
2022 Drilling at Alwyn Mine:

- Earthy hematite, specular hematite and k-felspar alteration associated with mineralized zones
- Alteration intensity appear to be increasing with depth and towards the southeast
- Further ground exploration (prospecting/mapping/geophysics) and drilling required to locate source

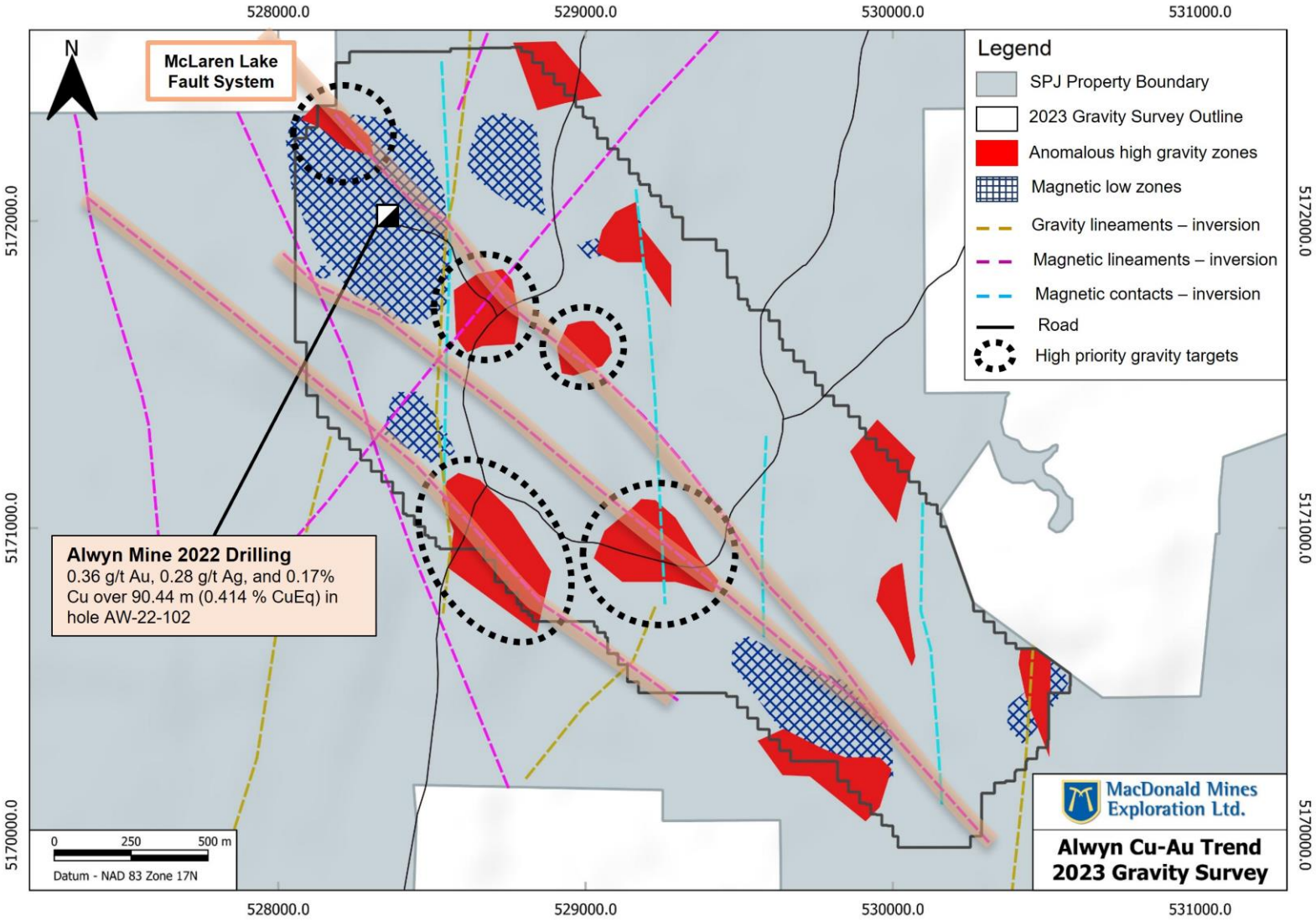


Alwyn Mine Cu-Au Target – 2022 Prospecting Trends

- Prospecting this summer has found evidence of specular hematite and potassium feldspar in veining at surface, surpassing the 1.0 km long high priority GoldSpot Target.

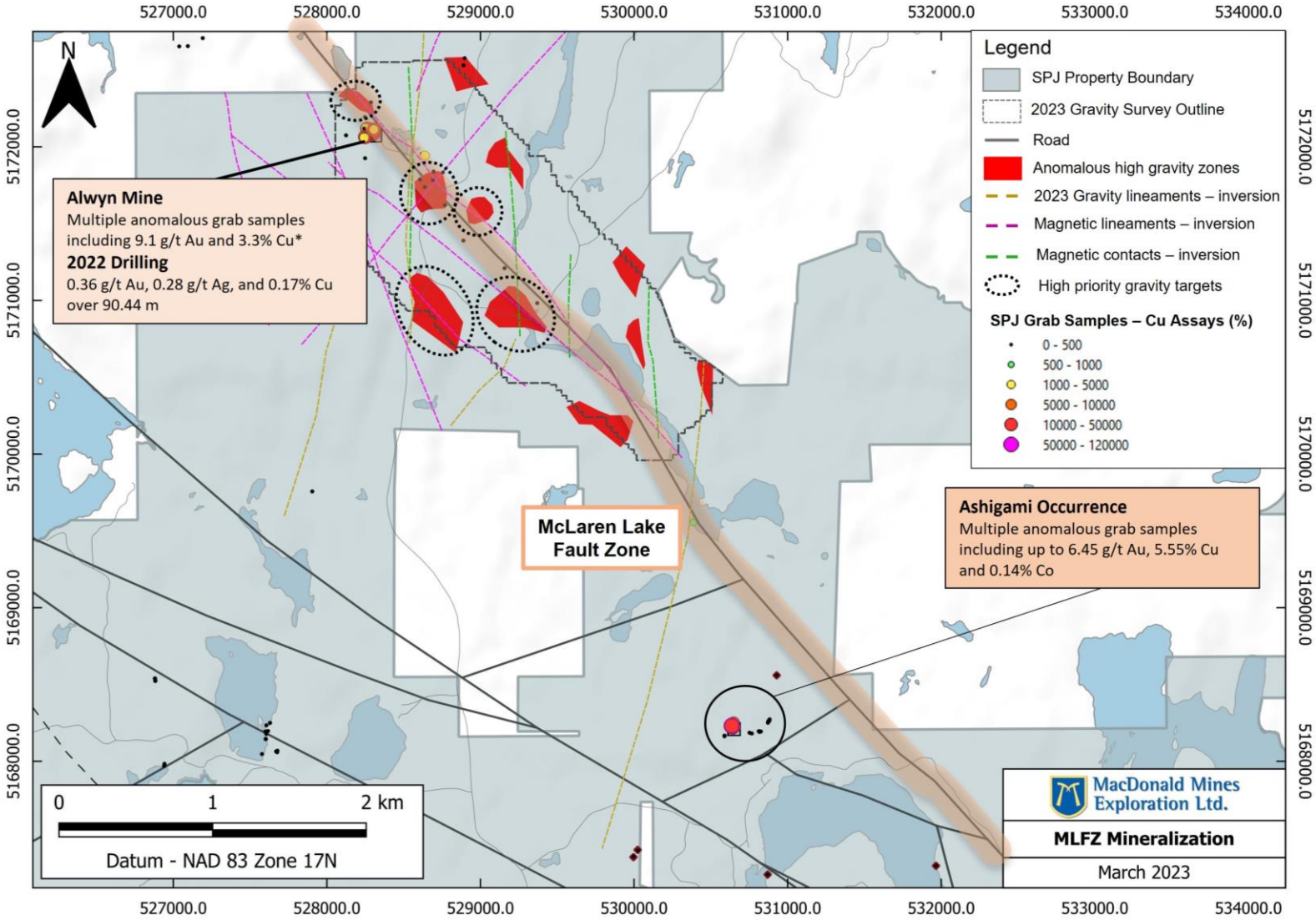


Alwyn Mine Cu-Au Target – Gravity Survey



- **ALS GoldSpot Discoveries Ltd. has identified 5 high priority gravity targets along the prospective McLaren Lake Fault Zone** by integrating MacDonald Mines' newly completed Alwyn gravity survey with regional magnetic surveys
  - All anomalous gravity high zones are spatially associated to the MLFZ, as well as intersections of structural lineaments that provide the primary plumbing for mineralizing fluids in this system.
- **A 250 m long, northwest trending positive gravity target was identified immediately adjacent to the 2022 Alwyn drilling**
  - Combined with observations of increasing iron enrichment at depth with the persistence of Cu mineralization in drilling, this anomaly supports the hypothesis for a zone of iron-rich alteration with potential to host IOCG mineralization at Alwyn.
- **Magnetic lows highlighted by ALS GoldSpot's *MinusONE* inversion methods outline possible regions of strong albitization associated with the MLFZ**

MLFZ Cu-Au Targets – Alwyn & Ashigami Showings

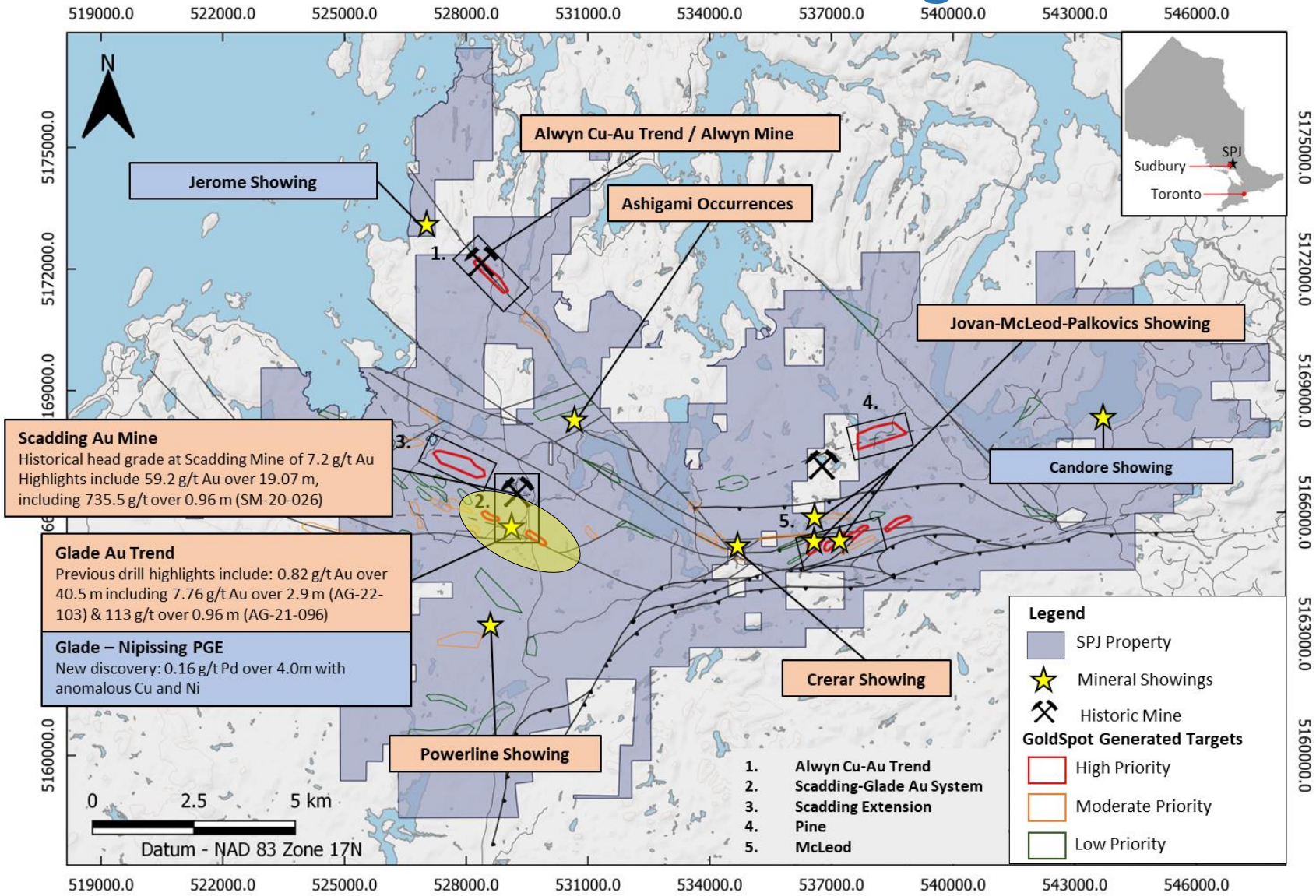


- **New grab samples from Ashigami blast pit containing 1.0 to 6.45 g/t gold, 3.11 to 5.55 % copper and 133 to 211 ppm cobalt.**
- Mineralization consists primarily of chalcopyrite with pyrite within dense multidirectional networks of quartz-carbonate veins, hosted in Gowganda formation sediments
  - Very comparable to veining and mineralization observed in the Alwyn Cu-Au trend.
- Located 4.5 km southeast of the historic Alwyn Mine and adjacent to the prospective MLFZ, Ashigami Cu-Au occurrence

May represent a broader extension of the mineralized system observed along the Alwyn Cu-Au trend drilled in 2022

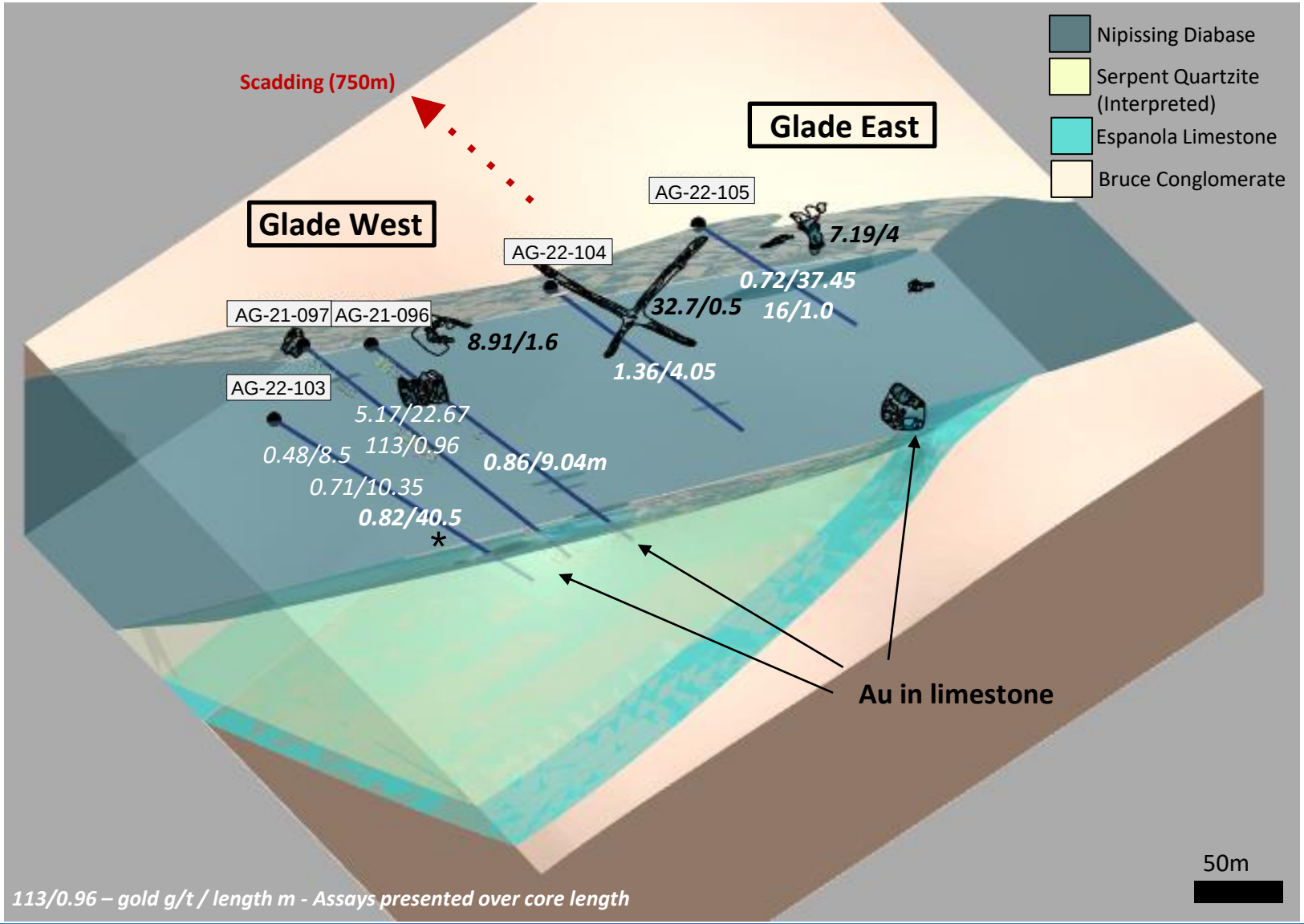
**The reader is cautioned that grab samples are selective by nature and do not necessarily represent the true metal content of the mineralized zones.*

Precious and Critical Metal Showings – Glade Au Trend



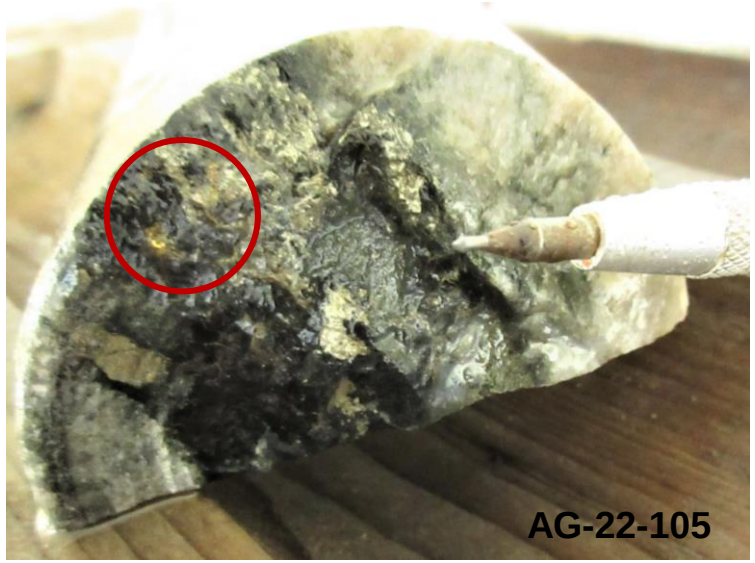
Glade Au Target – 2021-2022 Drilling Results Overview

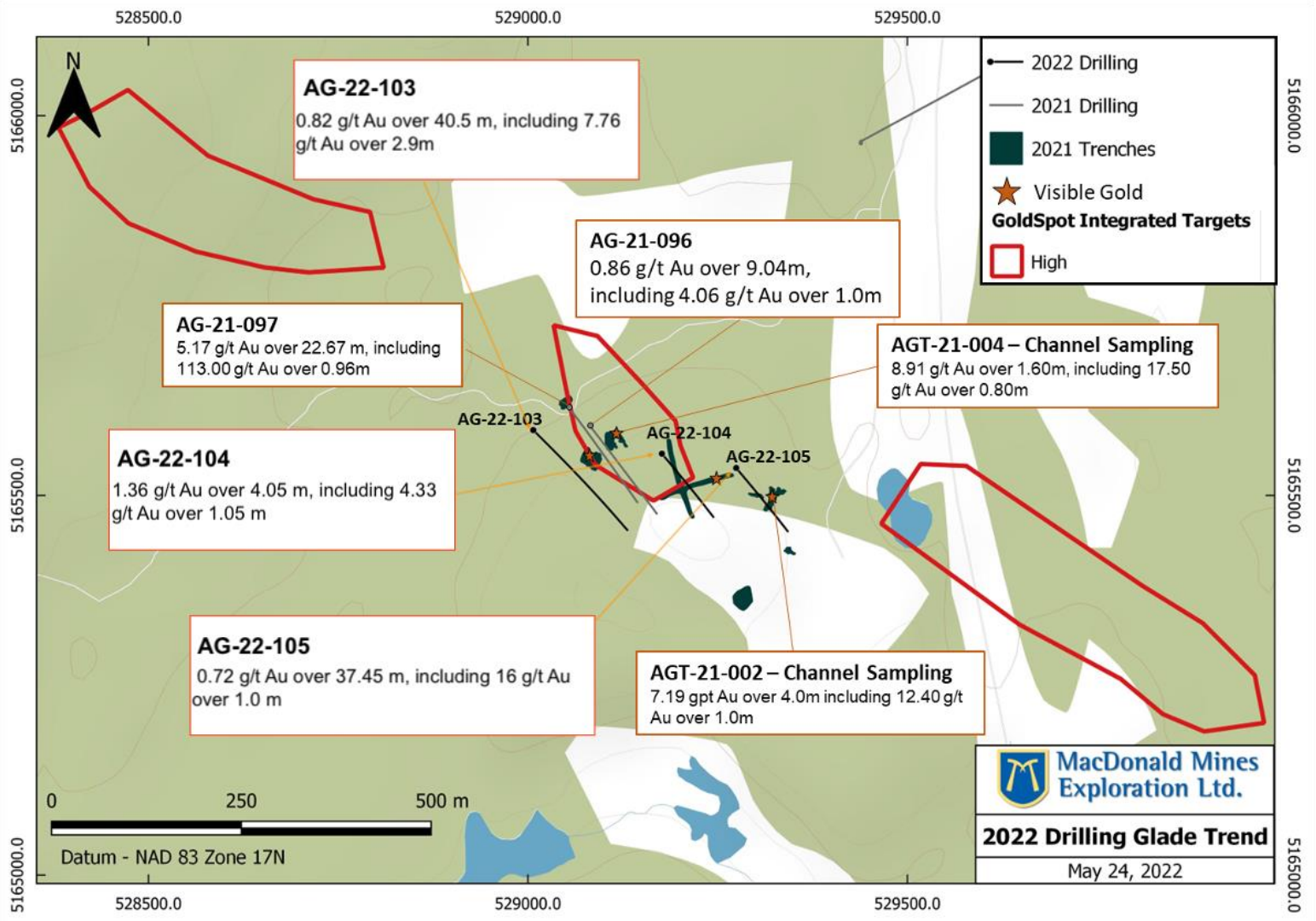
- Discovery in drill holes AG-21-096 and -097.
- Gold in networks of multi-directional quartz veins at contact between diabase and metasediment.
- Veins hosted in the Nipissing Diabase demonstrate potential for stacked gold zones (observed in AG-22-103 and AG-21-097)
- New potential for gold in limestone associated with iron metasomatism and folding
- New potential for PGM mineralization in the Glade Nipissing intrusion*



Glade Au Target – May 2022 Drill Program

- GoldSpot's high-priority Glade Trend has a strike length of approximately 1.7 km
- 503m of oriented diamond drilling in 2022 confirmed mineralization across 350m with visible gold observed in all three new drill holes

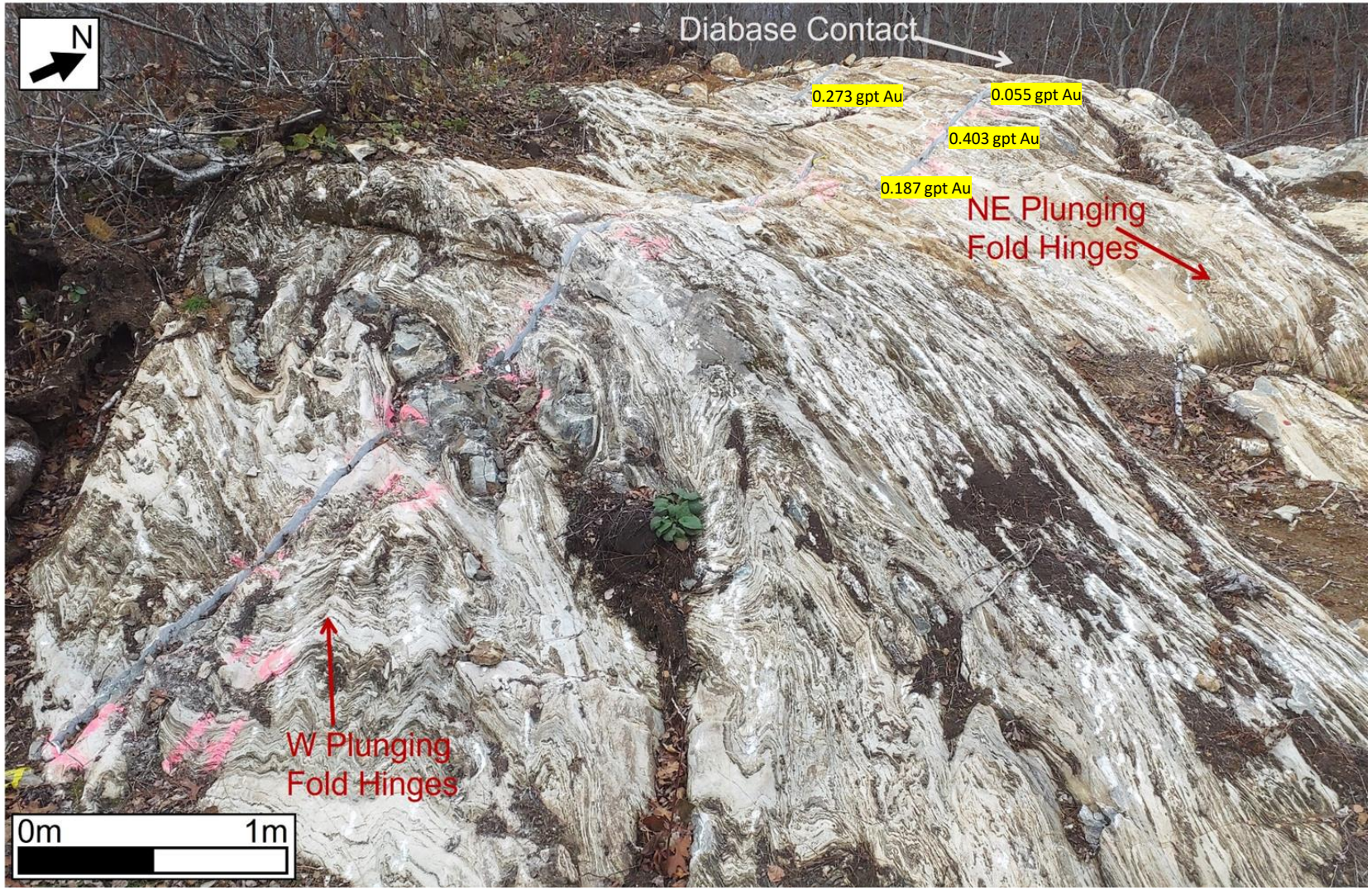




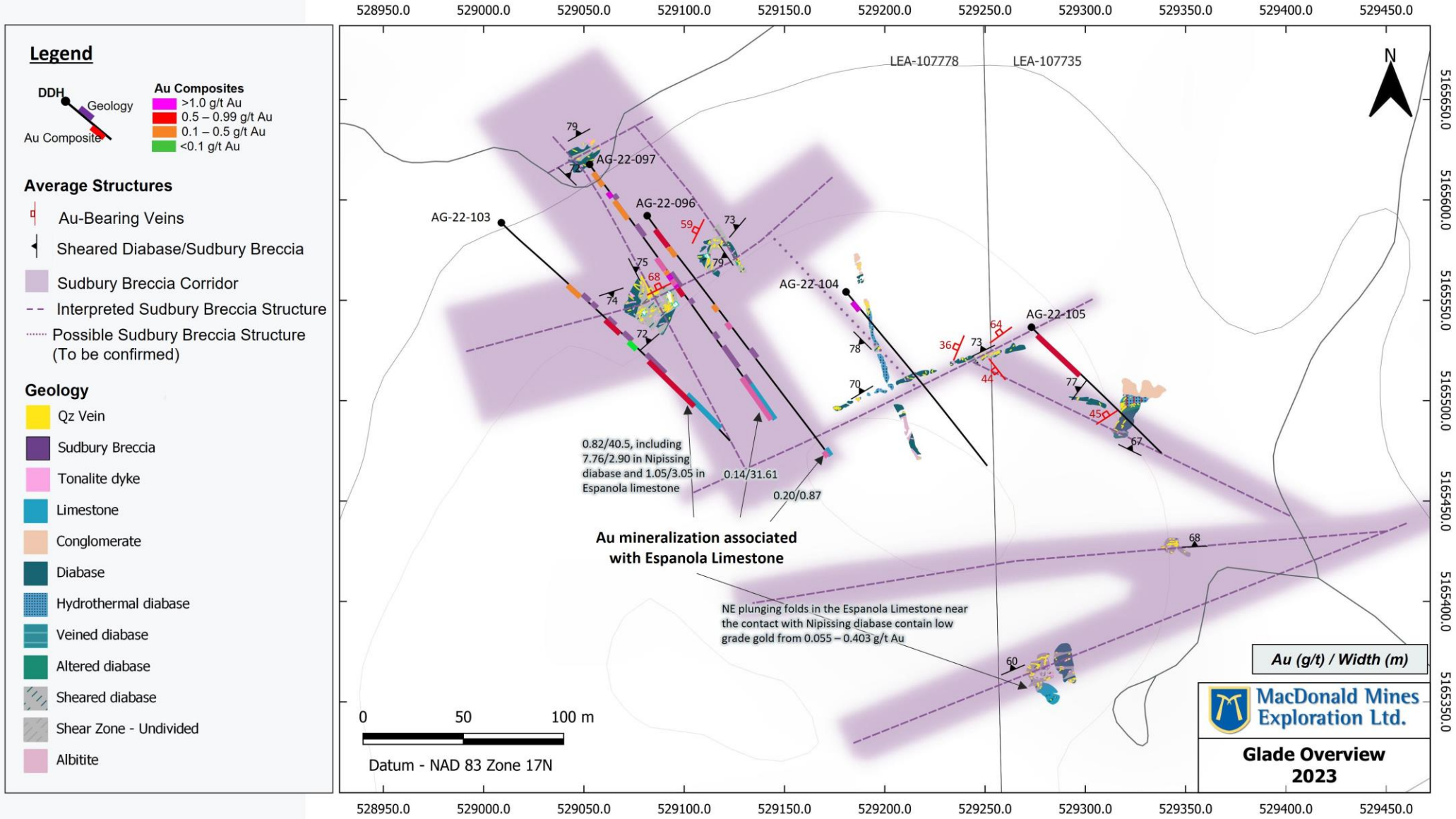
Glade Limestone – Geological Concepts

NE plunging folds in the Espanola Limestone near the contact with Nipissing diabase contain low grade gold from 0.055-0.403 gpt Au

This suggests a regional mineralization event along this contact concentrated by folding, although mineralization is not as strongly developed at Glade



Glade Au Mineralization – Geological Concepts



Glade Limestone – Geological Concepts

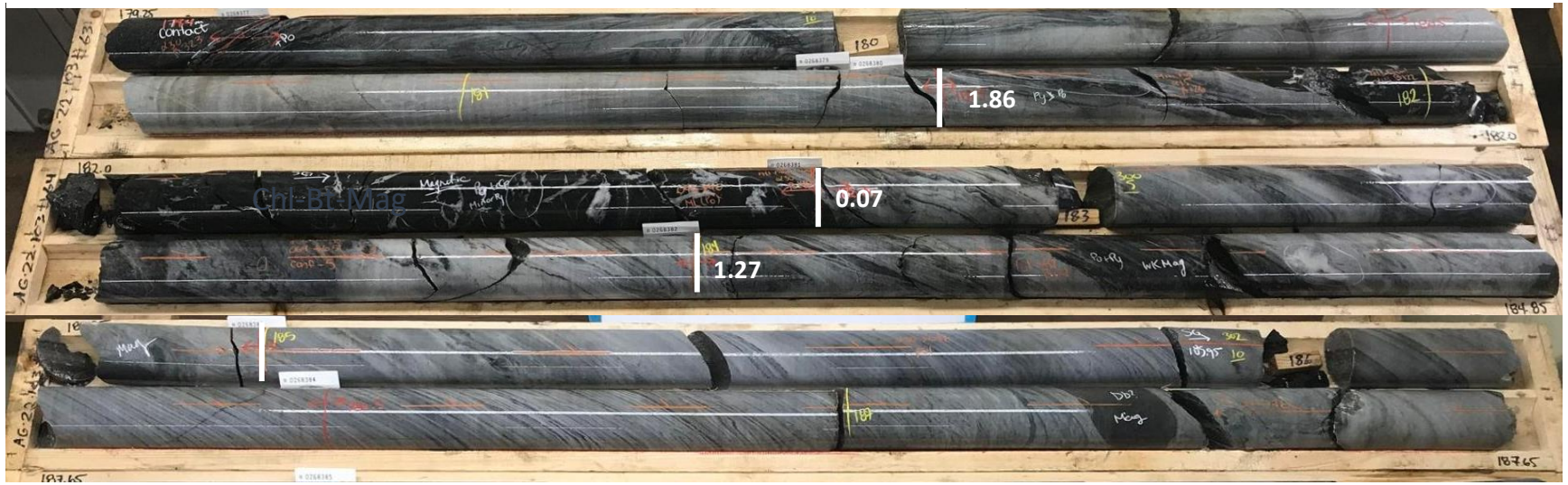
Strong hydrothermal Fe alteration (chlorite-biotite and magnetite) at the Nipissing-Espanola contact

Disseminated Apy and Py in the Espanola Limestone associated with Au

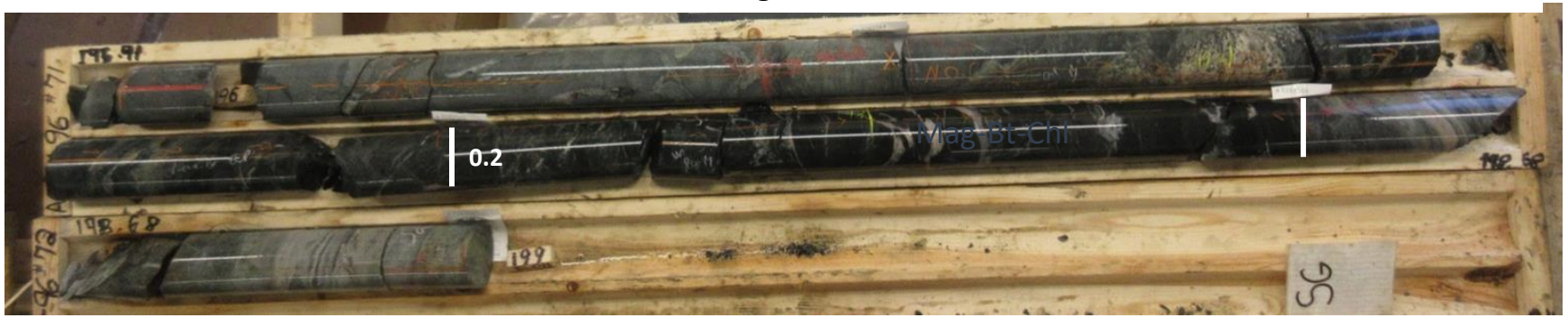
Sample 267684:
0.41 g/t Au over 1.23m (AG-21-097)

Anomalous Au mineralization in the Espanola Limestone in the Glade Mineralized system
AG-21-097 – 0.16 g/t Au over 20.14 m and 0.26 g/t Au over 21.10m in AG-22-103

AG-22-103: 1.05 g/t Au over 3.50m



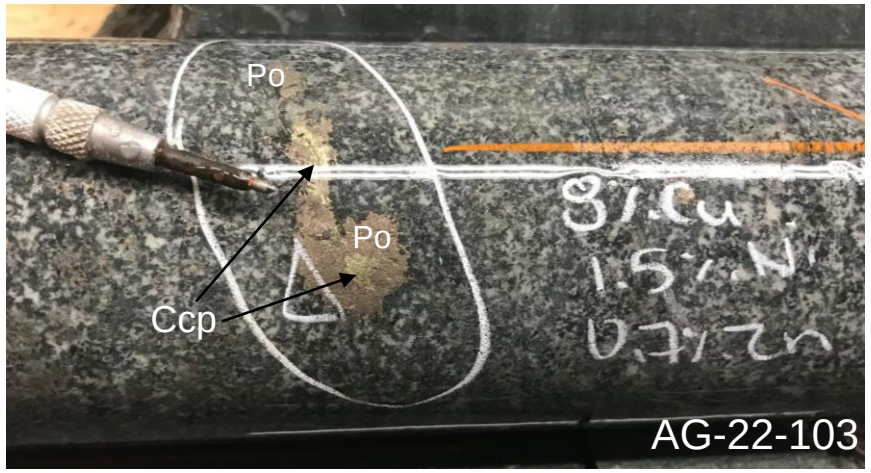
AG-21-096 : 0.2 g/t Au over 0.87m

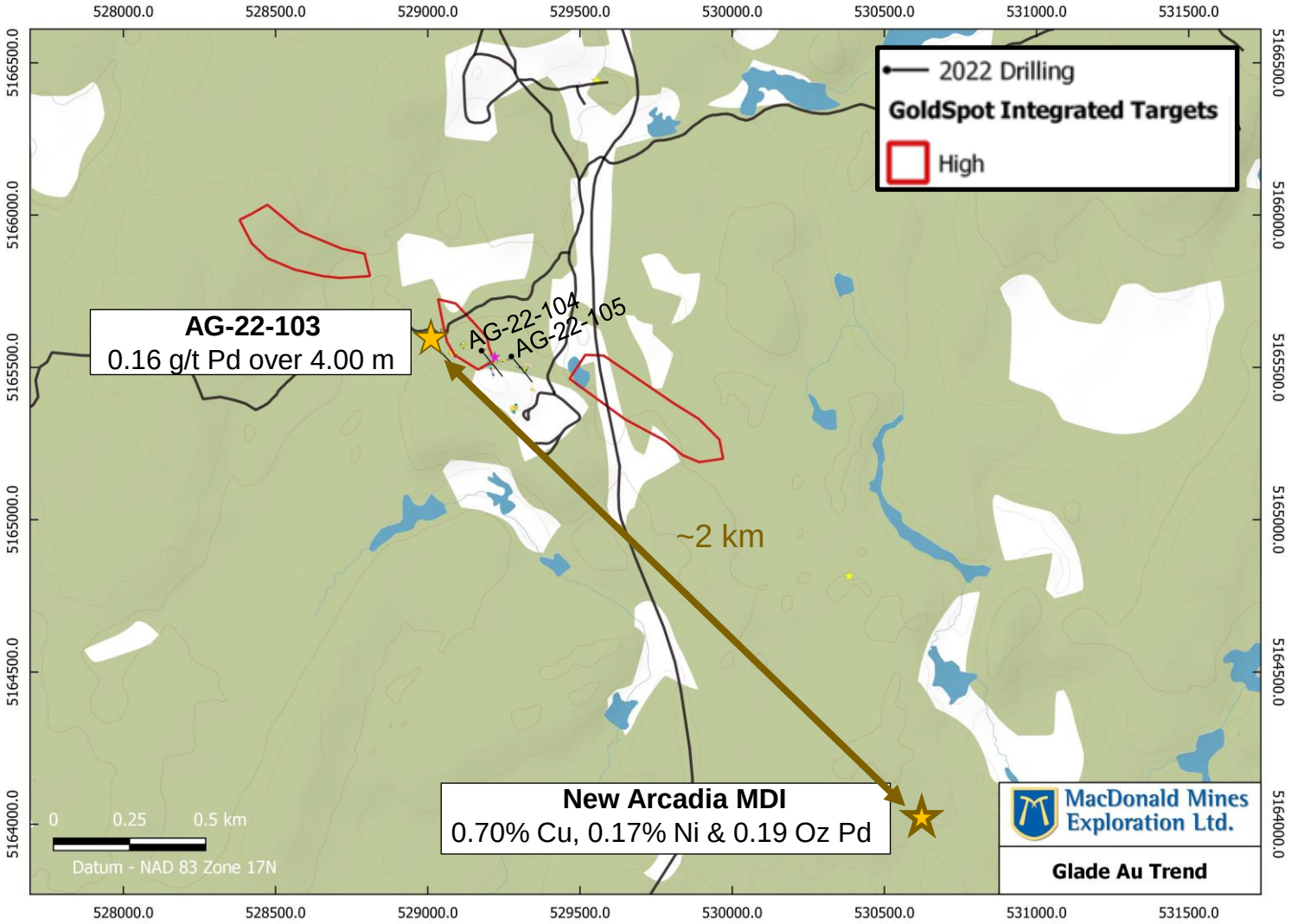


Glade PGM Mineralization – Geological Concepts

0.16 g/t Pd over 4.00 m in AG-22-103 with anomalous Cu and Ni at the contact between two intrusions forming the Glade Nipissing diabase.

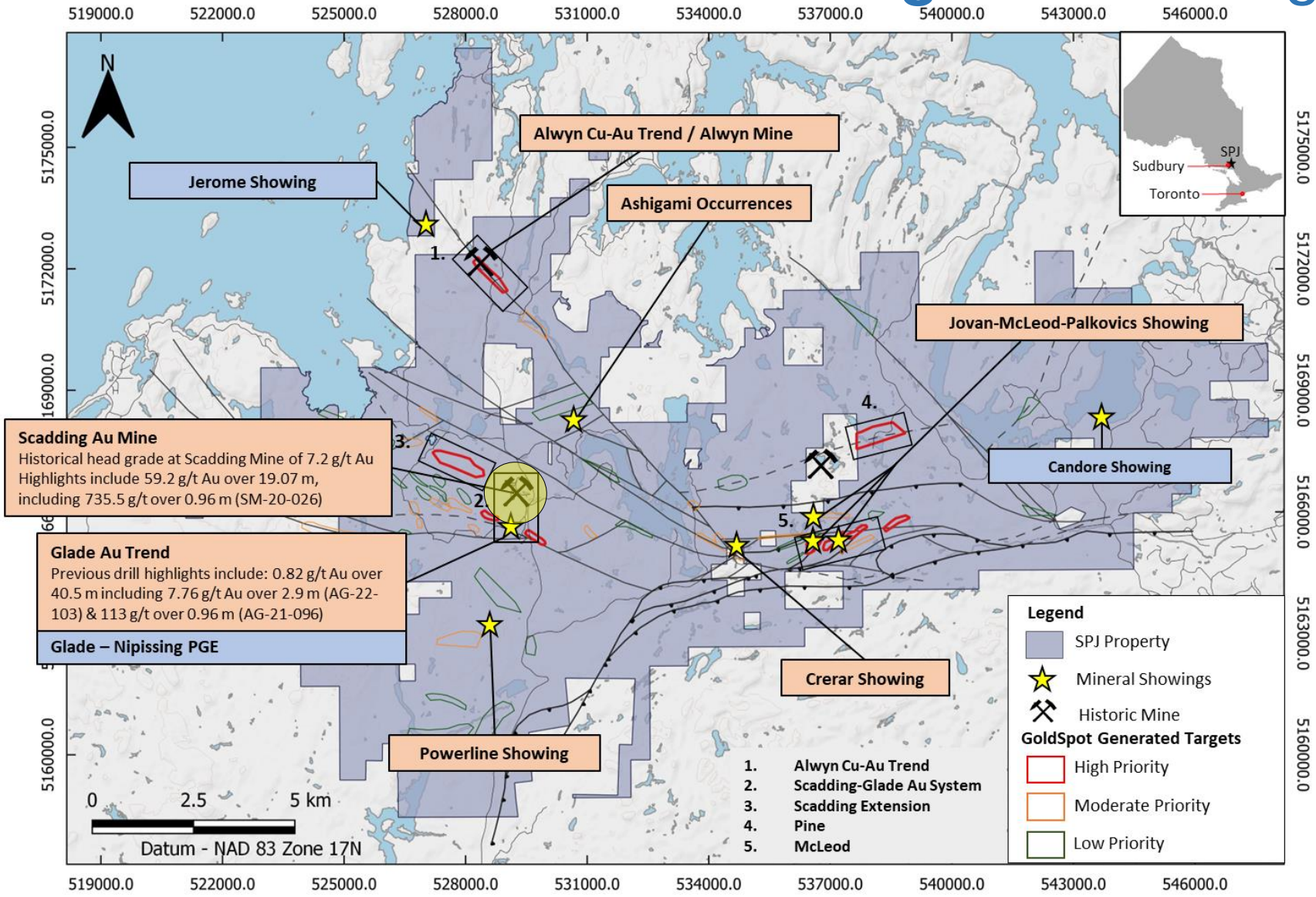
- New palladium anomaly in AG-22-103 is located approximately 2 km northwest from the New Arcadia occurrence that is also hosted in the Glade Nipissing diabase.
- Suggests PGE-Cu-Ni potential for that intrusive unit



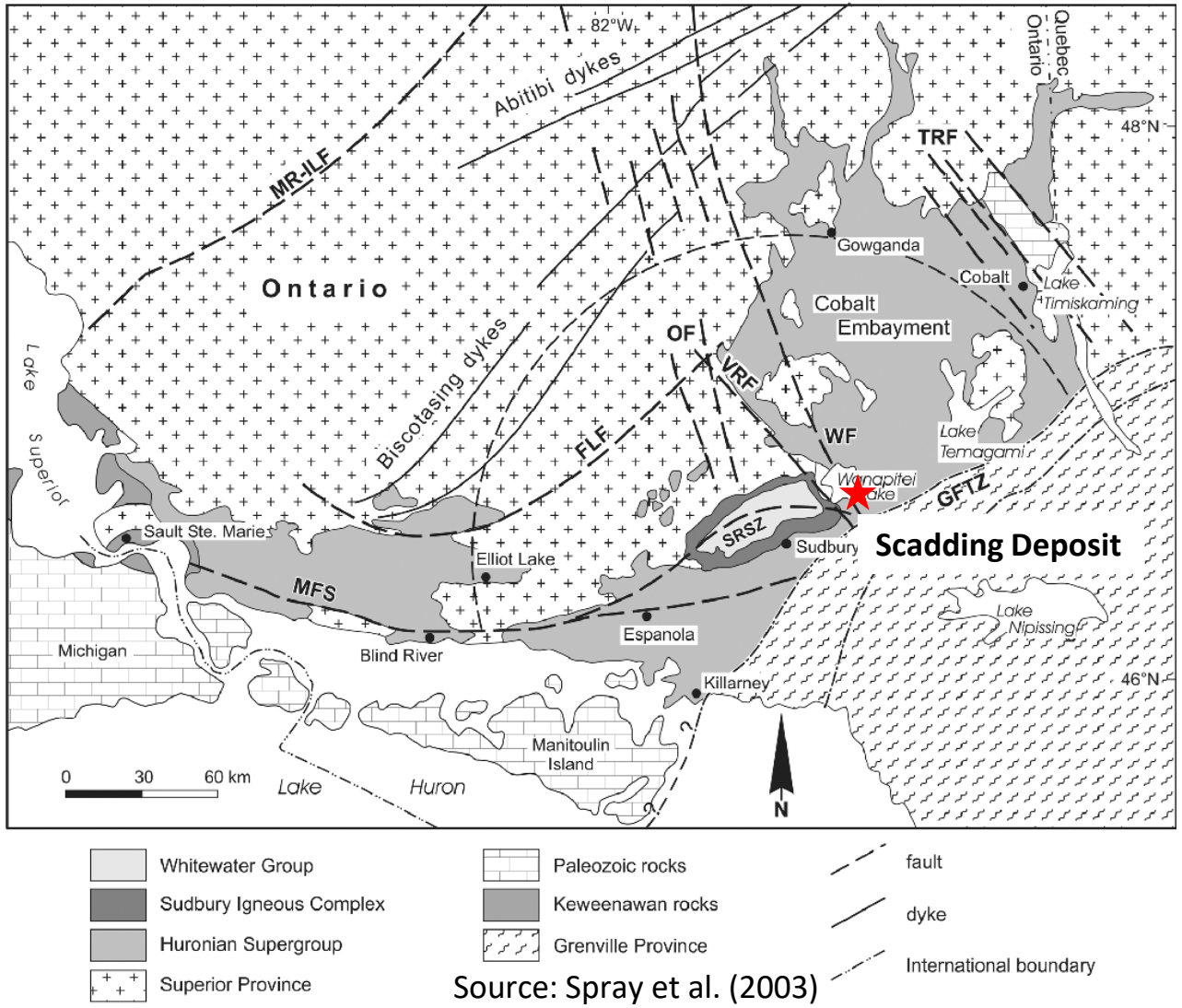


New Arcadia assay results reported from MDI41I10NE00083 in the Ontario Mineral Inventory

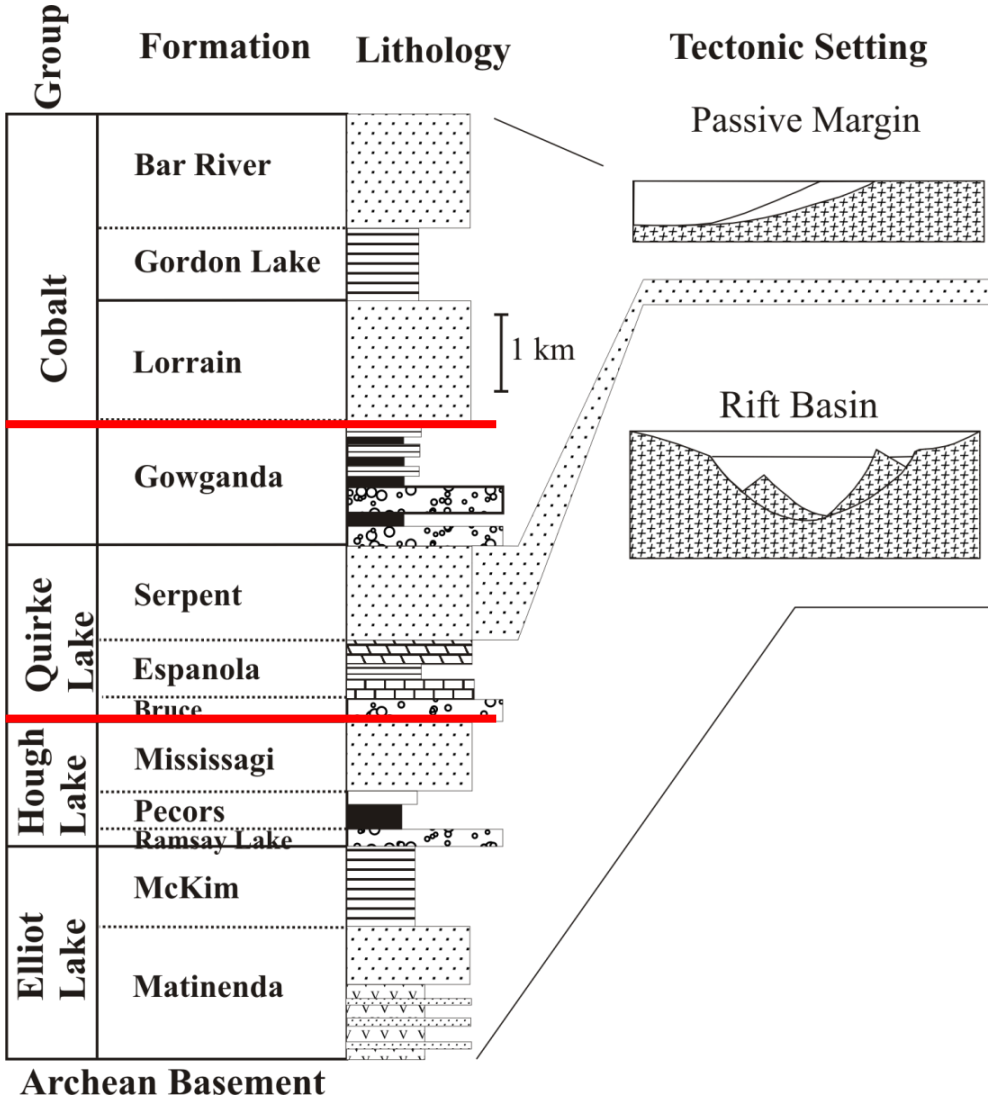
Precious and Critical Metal Showings – Scadding Mine



Geological setting



Source: Spray et al. (2003)



Scadding event – Hydrothermal Mineralization and Alteration – SPJ project

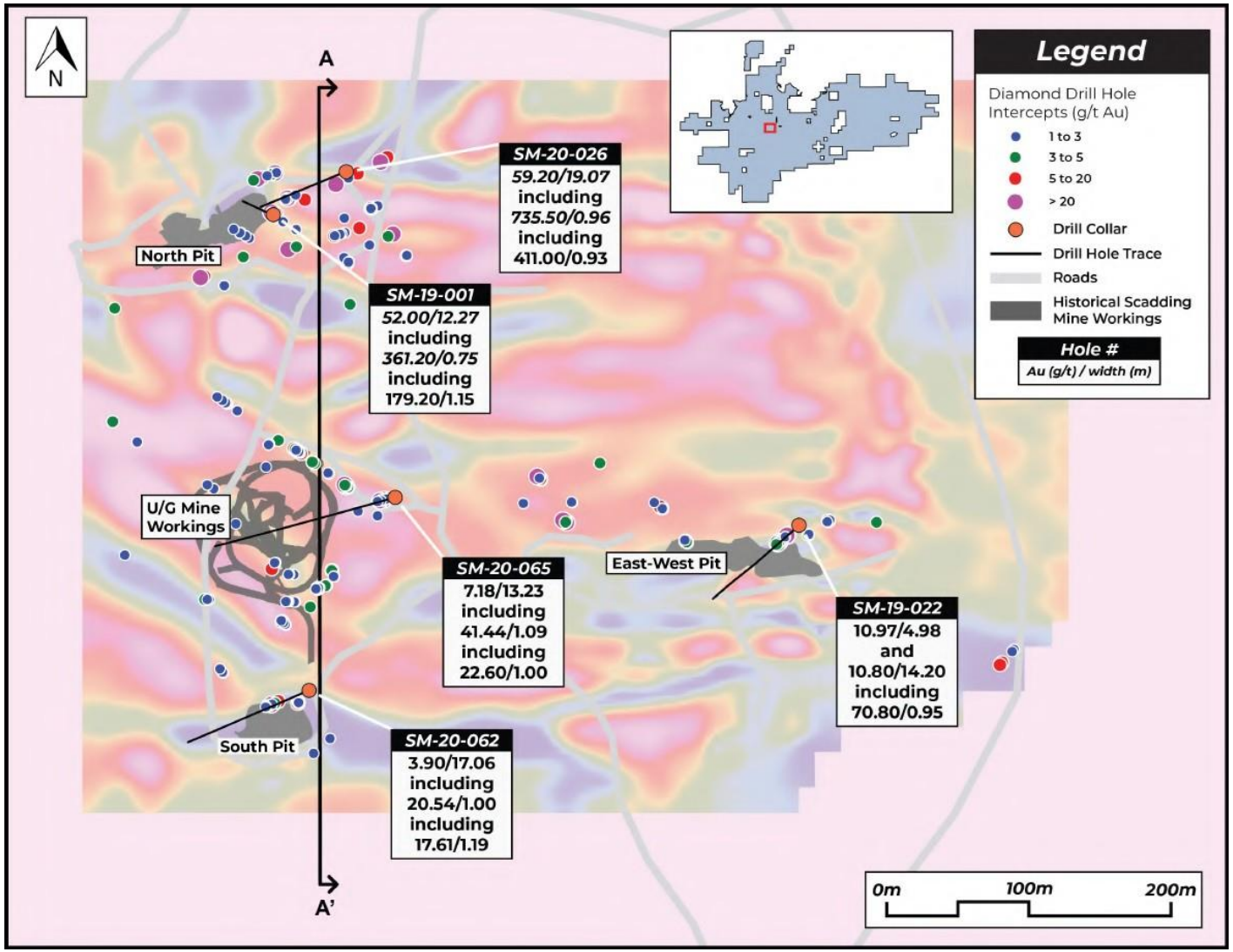
Alteration facies	Gangue Minerals		Mineralization minerals	Possible metal assemblages	Examples
	Main	Accessory			
Na	Ab, Qtz	Mzn, REE-Minerals, Ru			
Ca-Mg-CO_2-Si	Fe-Dol, Cal, Qtz	Ank, REE minerals, Hem	Py, Co-Py, Ccp, As-Py, Apy, Cob	Au (minor Co), Au-Co, Au-Co-Cu, Co, Au-Cu, REE	Bristol Breccia/Powerline (Au minor Co), Palkovics/Crerar/McLeod/Jovan (Au-Co-Cu), Alwyn (Cu-Au), Ashigami (Au-Co), Washagami (Au-Cu)
Fe-Skarn	Cpx, Amp, Ep				
Fe	Mag-(Amp, Ap, Bt)		Py, Po	REE	
	Amp-(Mag, Ap, Bt)		Po, Py, Pen, Ccp	Ni-(Cu-PGM), REE	Limestone Ni
Fe-(Mg-Si)	Fe-(Mg) Chl-Ab Fe-(Mg) Chl Fe-(Mg) Chl, Mag Fe-(Mg) Chl, Po	Qtz, Bt, Mag, Ilm, Stil, Grt, Ap, Ru, Ttn, REE-Minerals	Py, Po, Ccp, Native Gold	Au, Au-(Co)	Scadding (Au)
Si-(Fe-CO_2)	Qtz-Cb	Chl	Py, Ccp	Au, Au-(Co)	Scadding/Glade (Au)

Scadding Gold Deposit – 2019-2020 Exploration Focus

- Discovery in 1973 using a radiometric survey completed for U exploration
- Exploration and resource definition drilling between 1973 and 1984
- Production of 29,386 ounces of gold from 127 kt grading 7.2 g/t from 3 shallow open cuts (20%) and an underground decline (80%) in the mid-1980s
- Renewed exploration programs in 1997-98, 2003-04 and 2009-11
- Many factors hindered the successful development of the site
  - Atypical style of gold mineralization in a Canadian context
  - Structural complexity of mineralized zones
  - High uncertainty on the locations of historic collars
  - Data processing and database mistakes

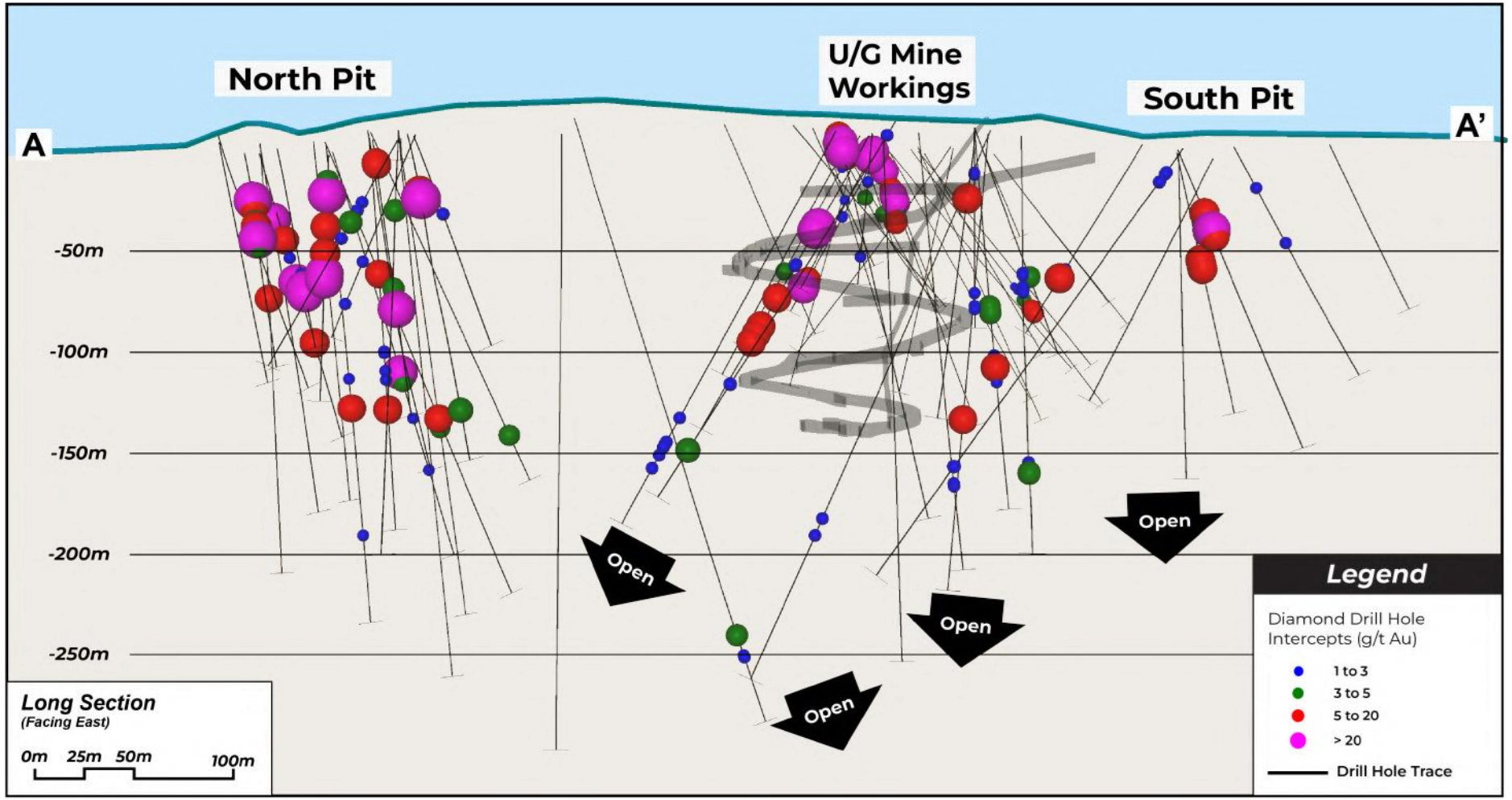
Scadding Gold System – Past Producing Gold Mine

- Produced over 29,000 oz Au from ~140,000 tons of ore at a head grade of 7.2 g/t in the late 1980s.
- Folds control location and geometry of gold-bearing zones.
- BMK drilled 83 holes (~15,500 m) at Scadding in 2019/20.
- Discovered mineralization beyond the historical Scadding Mine footprint.



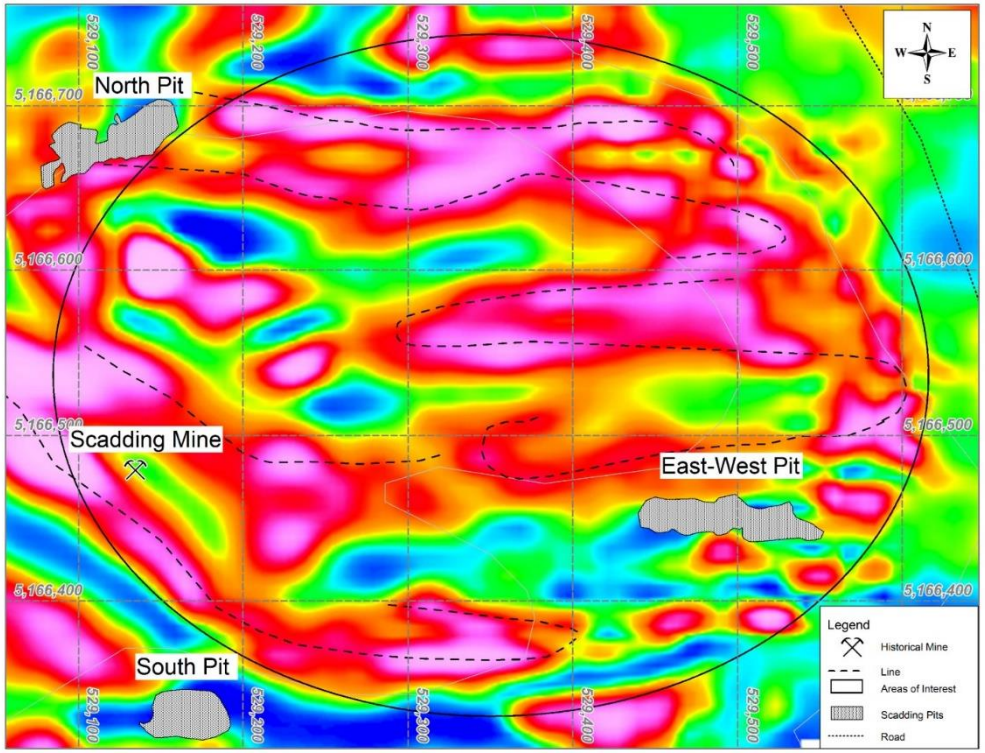
Expanding Scadding

- Drilling to date limited to ~200 m depth.
- Mineralization appears open at depth.



Scadding Deposit – Large Geophysical Footprint

- High-resolution 3D IP survey completed over the Scadding Deposit
- Identified structures **(folds)** that control the emplacement and geometry, to depth, of the gold-bearing iron/chlorite-rich zones
- Fold hinges appear to be sites of **preferential gold mineralization**
- Geophysical survey combined with other data currently used to optimize the 2020 drilling program

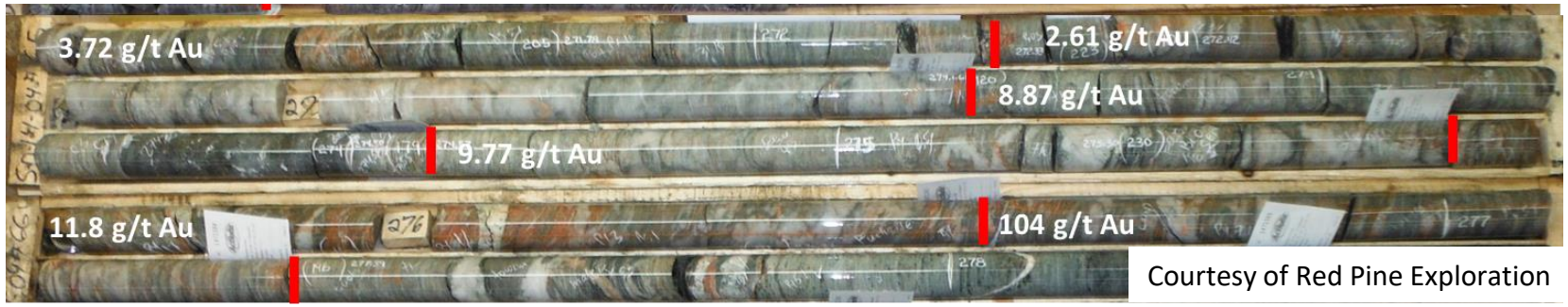


IP survey section- slice at 100 m depth

Scadding Gold - Contrasts with Orogenic Gold

Orogenic gold – Surluga Deposit in the Wawa Gold Camp, Ontario

Gold associated with quartz veins with variable white mica and iron carbonate with pyrite and pyrrhotite (Si-K-CO_2-S alteration)

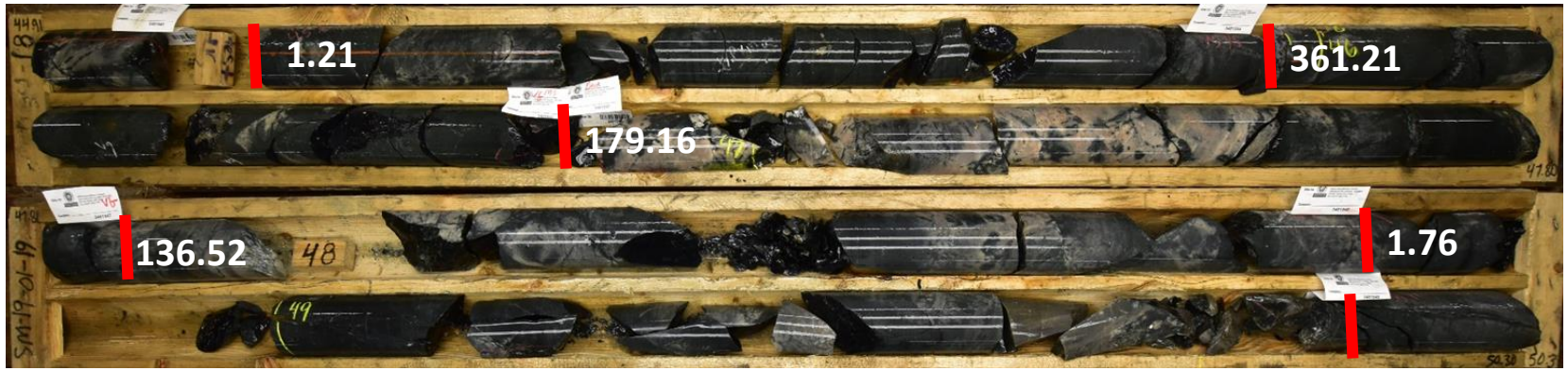


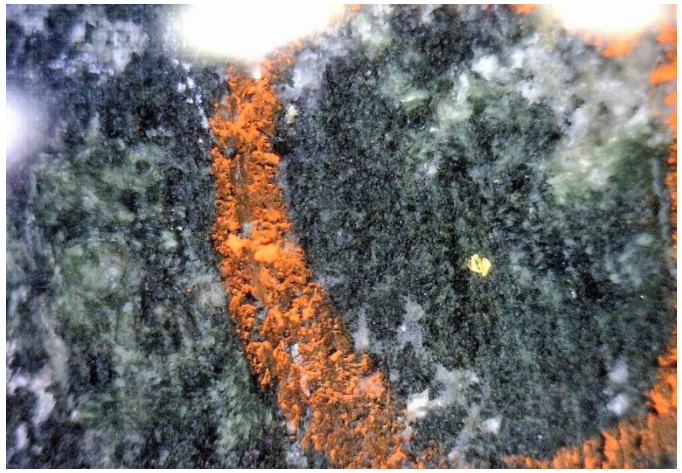
Courtesy of Red Pine Exploration

Courtesy of Red Pine Exploration

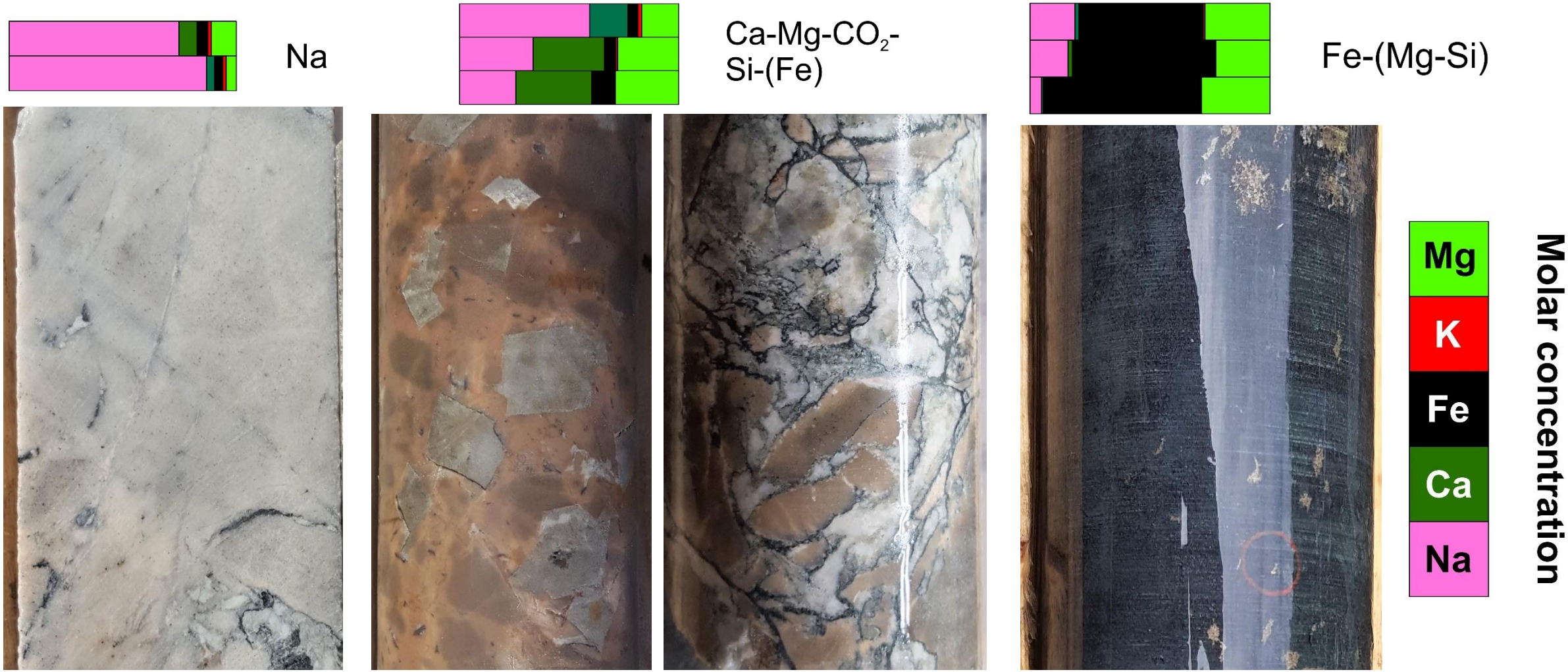
Scadding Deposit in the Sudbury Gold District

Gold associated with Fe-rich chlorite with variable magnetite, pyrite and pyrrhotite and minor to accessory Ccp with (Fe-S alteration)

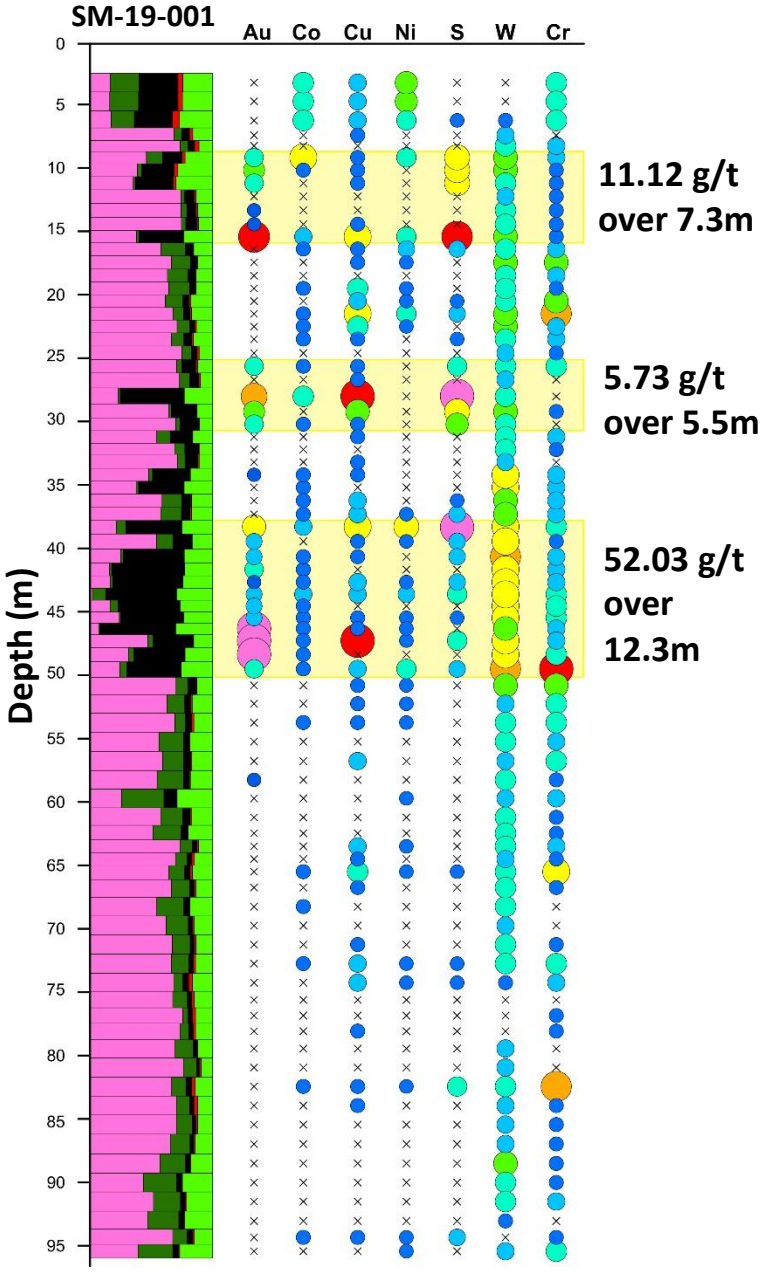


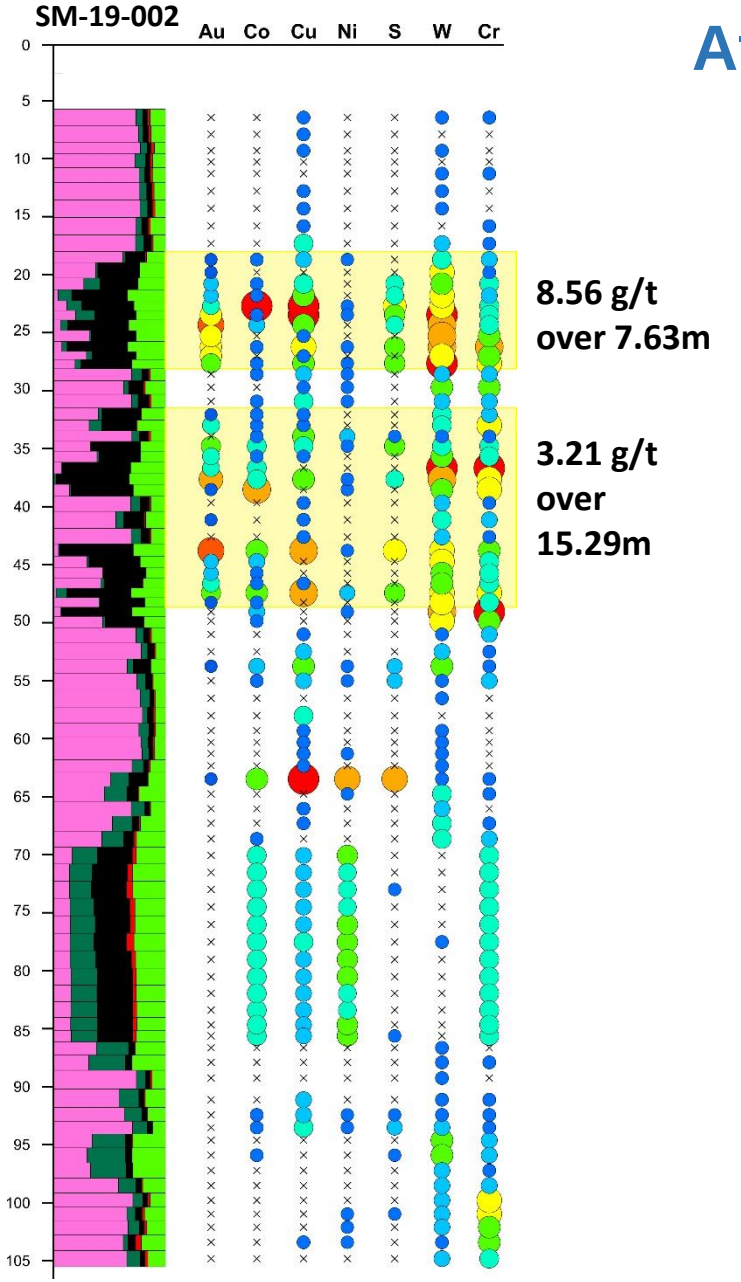


Attributes the Scadding Deposit – Geochemical trends

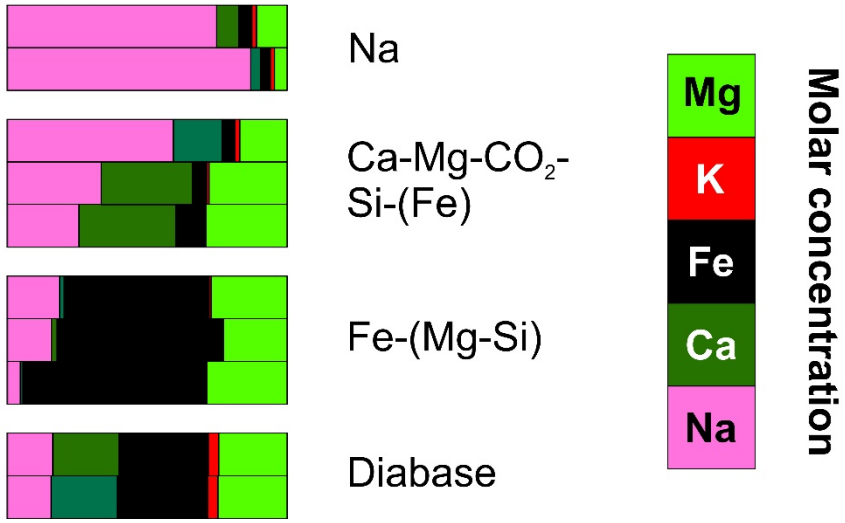


Attributes the Scadding Deposit
– Geochemical trends

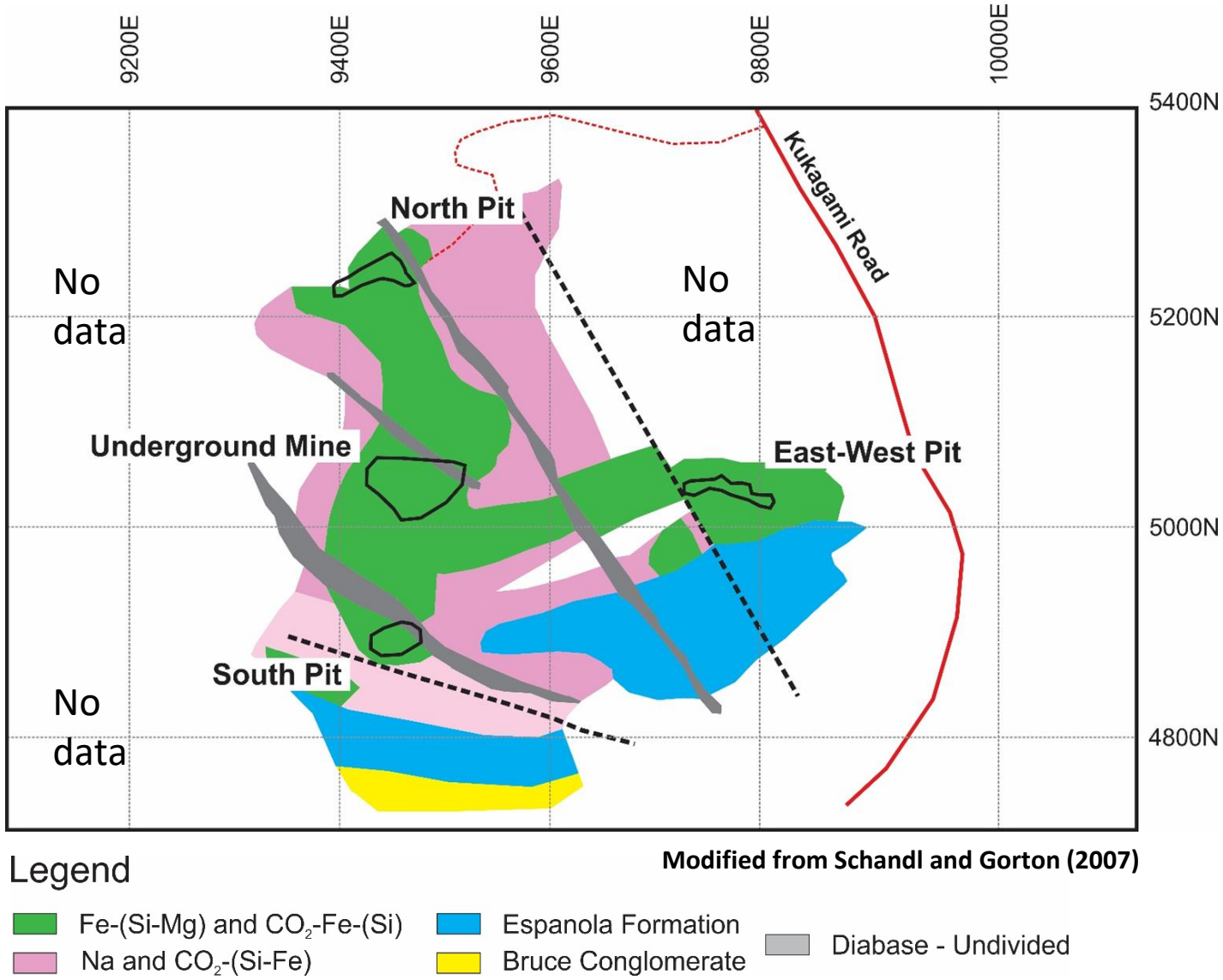




	Au (g/t)	Co (ppm)	Cu (ppm)	Ni (ppm)	S (wt. %)	W (ppm)	Cr (ppm)
×	0 - 0.1	0 - 10	0 - 10	0 - 20	0 - 0.05	0 - 0.2	0 - 20
●	0.1 - 0.5	10 - 25	10 - 25	20 - 40	0.05 - 0.1	0.2 - 0.5	20 - 30
●	0.5 - 1.5	25 - 50	25 - 50	40 - 60	0.1 - 0.25	0.5 - 0.8	30 - 40
●	1.5 - 3	50 - 75	50 - 75	60 - 80	0.25 - 0.5	0.8 - 1.5	40 - 50
●	3 - 5	75 - 100	75 - 100	80 - 100	0.5 - 0.75	1.5 - 2.5	50 - 60
●	5 - 10	100 - 150	100 - 150	100 - 150	0.75 - 1.5	2.5 - 5	60 - 70
●	10 - 20	150 - 200	150 - 200	150 - 200	1.5 - 3	5 - 8	70 - 80
●	20 - 100	200 - 250	200 - 300	200 - 250	3 - 5	8 - 15	80 - 150
●	100 - 362			250 - 400	5 - 7.5		

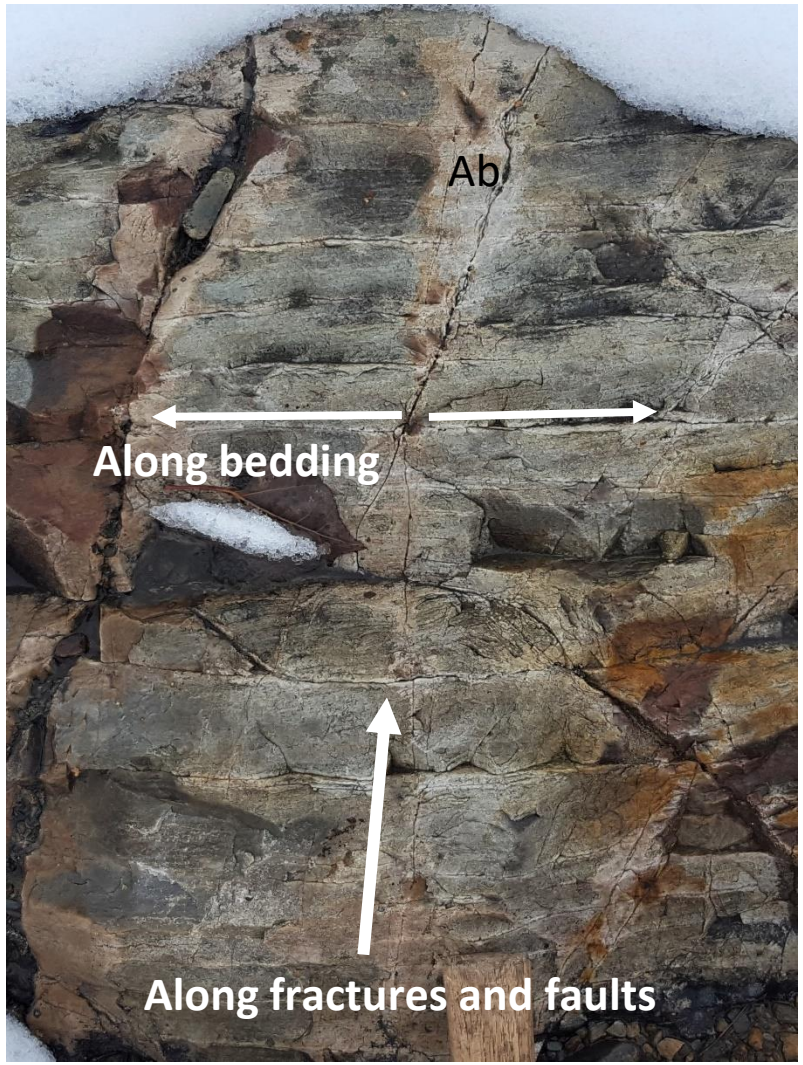


Scadding Deposit – Schematic Alteration Map (2007)

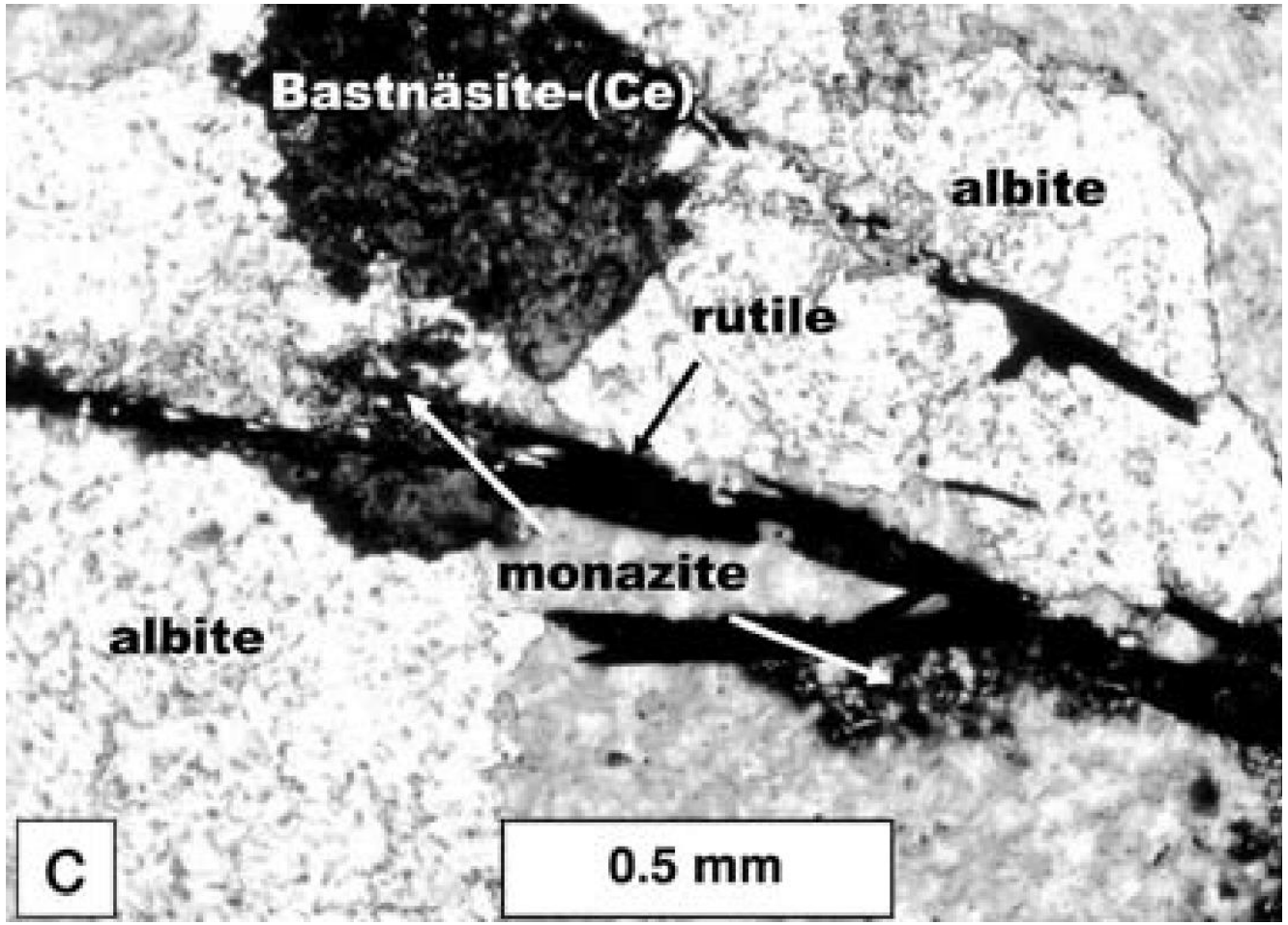


Modified from Schandl and Gorton (2007)

Attributes the Scadding Deposit – Na to Ca-Mg-CO2-Si-(Fe) alteration

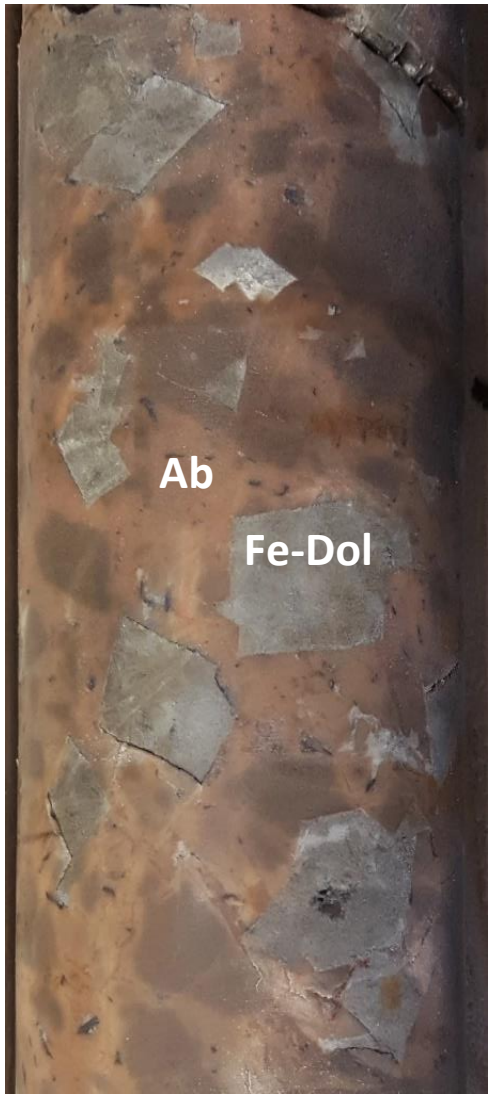


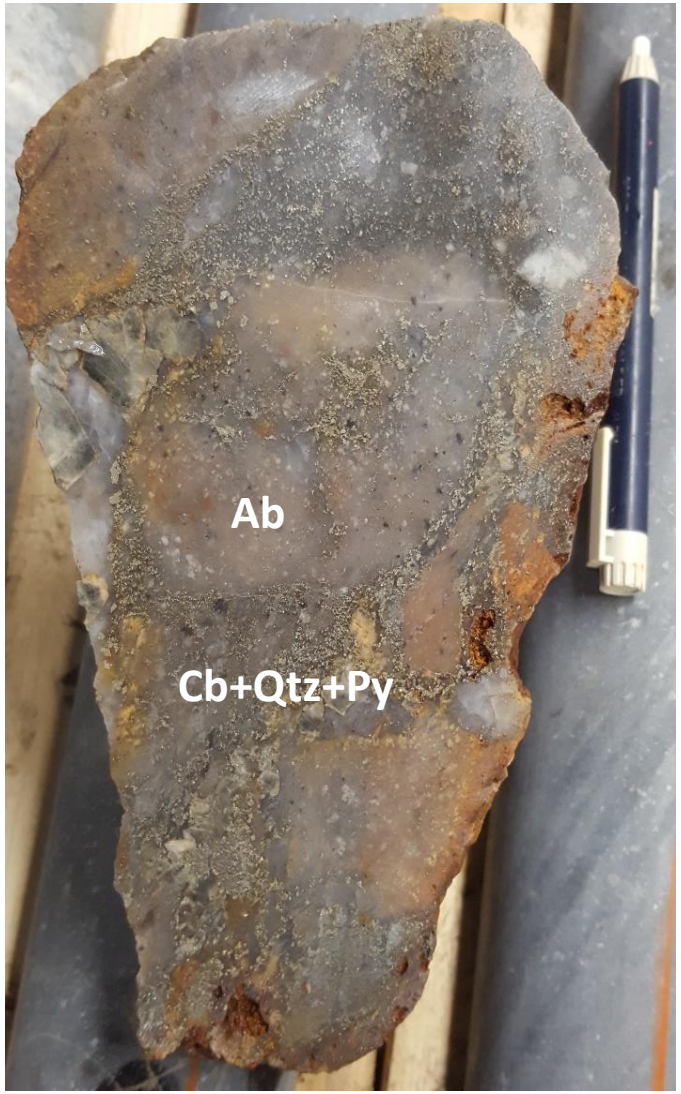
Attributes the Scadding Deposit – Na alteration

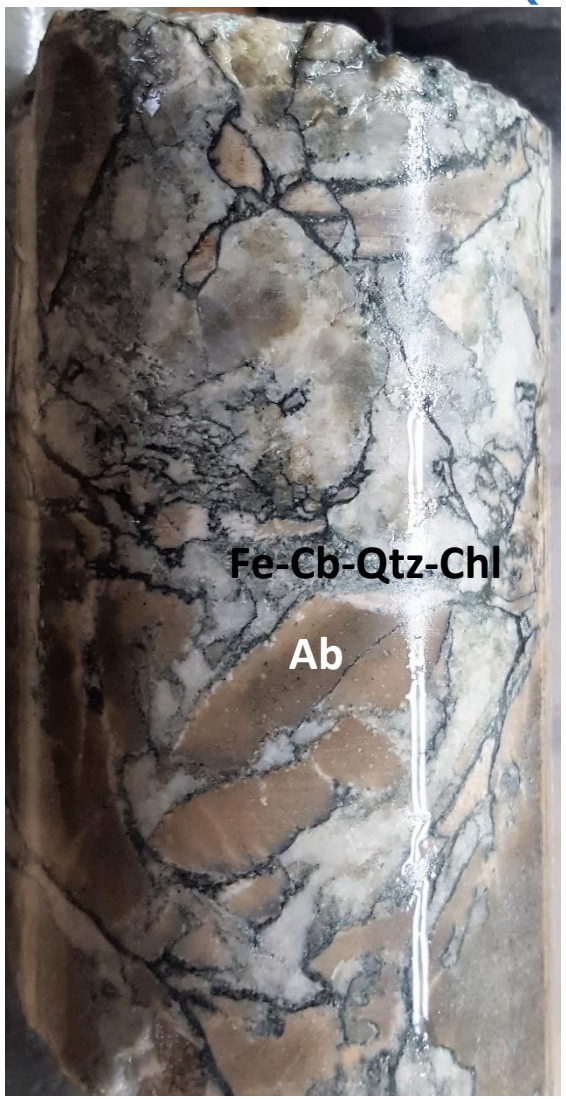


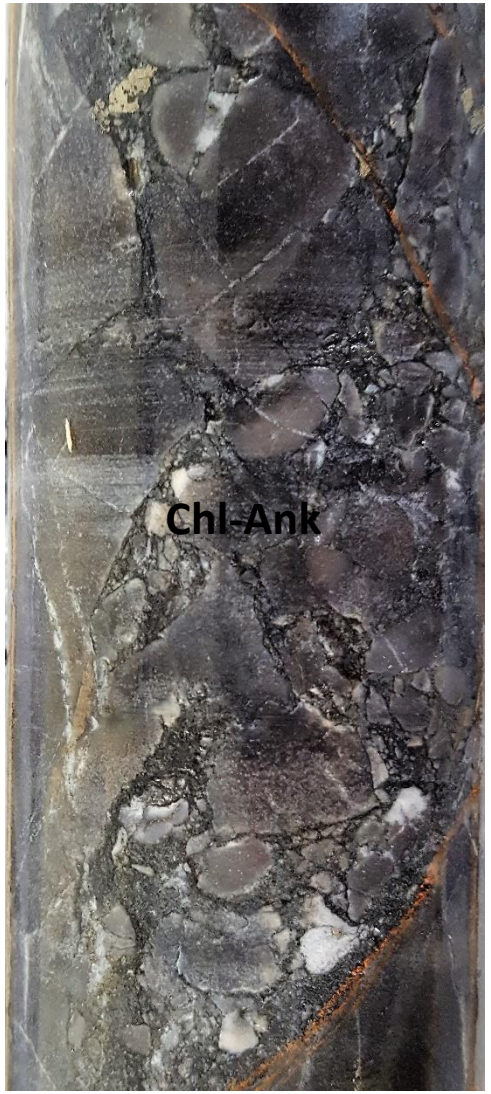
From: Schandl and Gorton (2007)

Attributes the Scadding Deposit – Ca-Mg-CO2-Si-(Fe) to Fe-(Si-Mg)

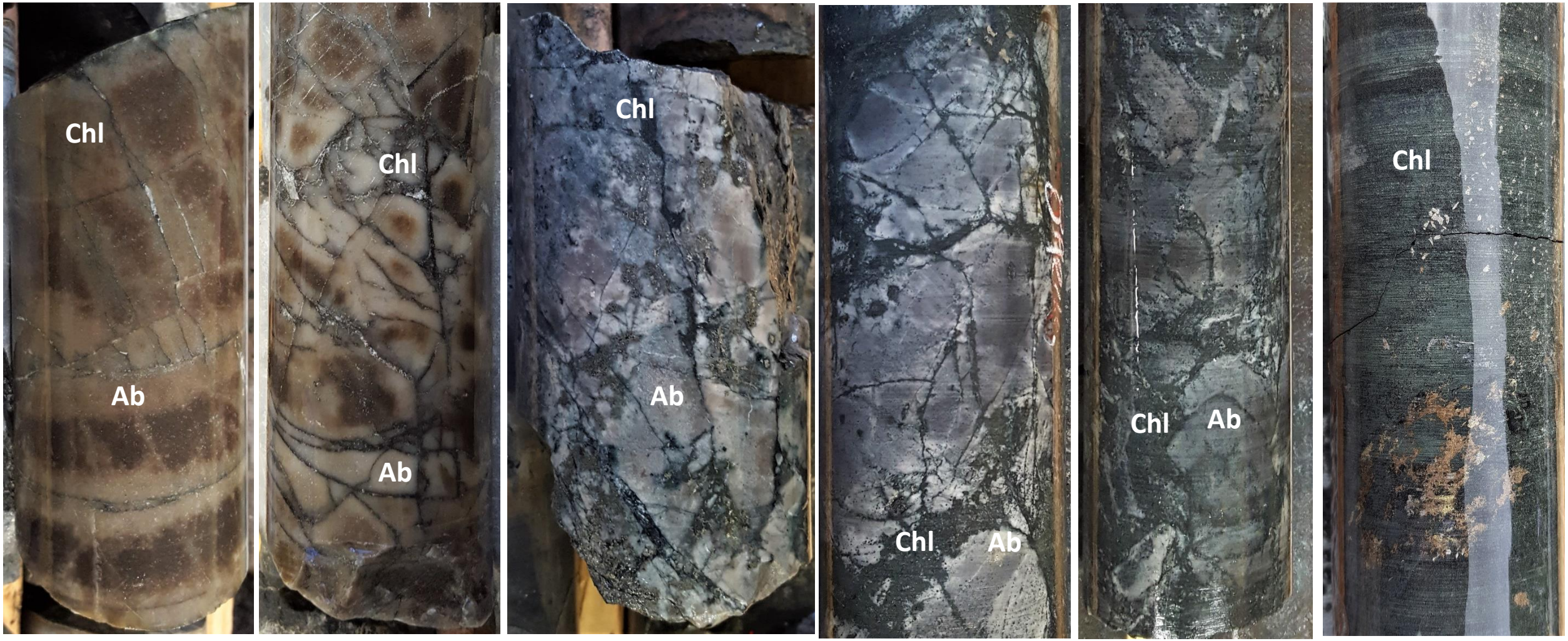




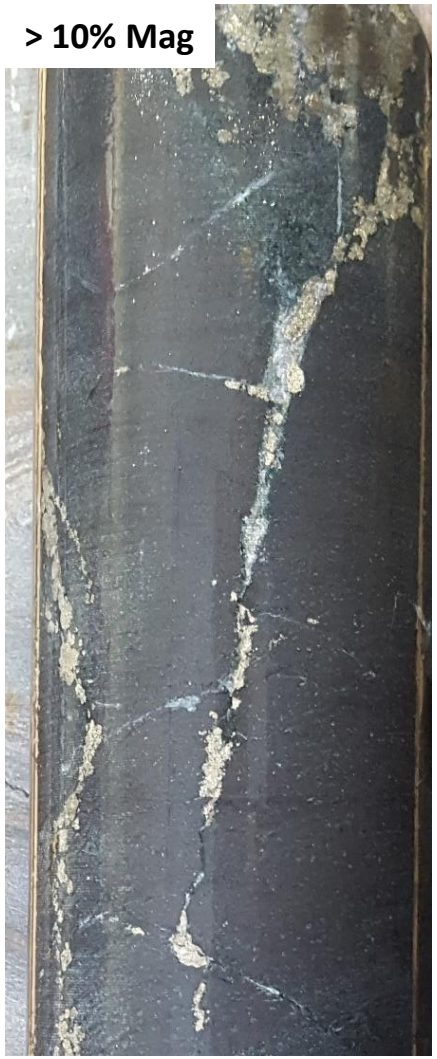




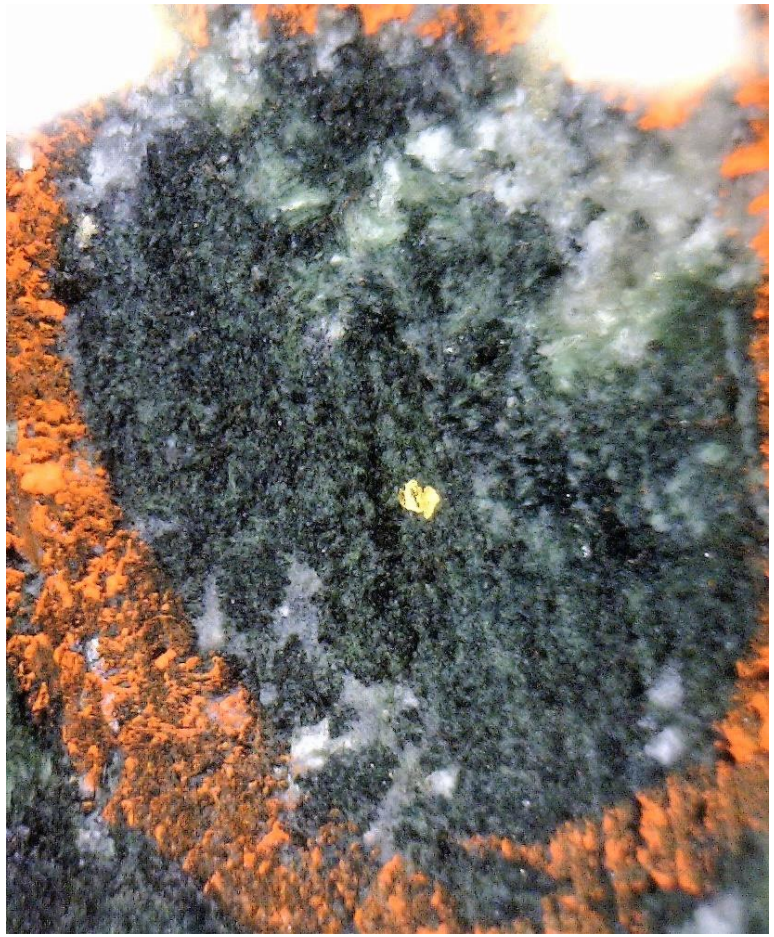
Attributes the Scadding Deposit – Fe-(Si-Mg) and Gold Mineralization

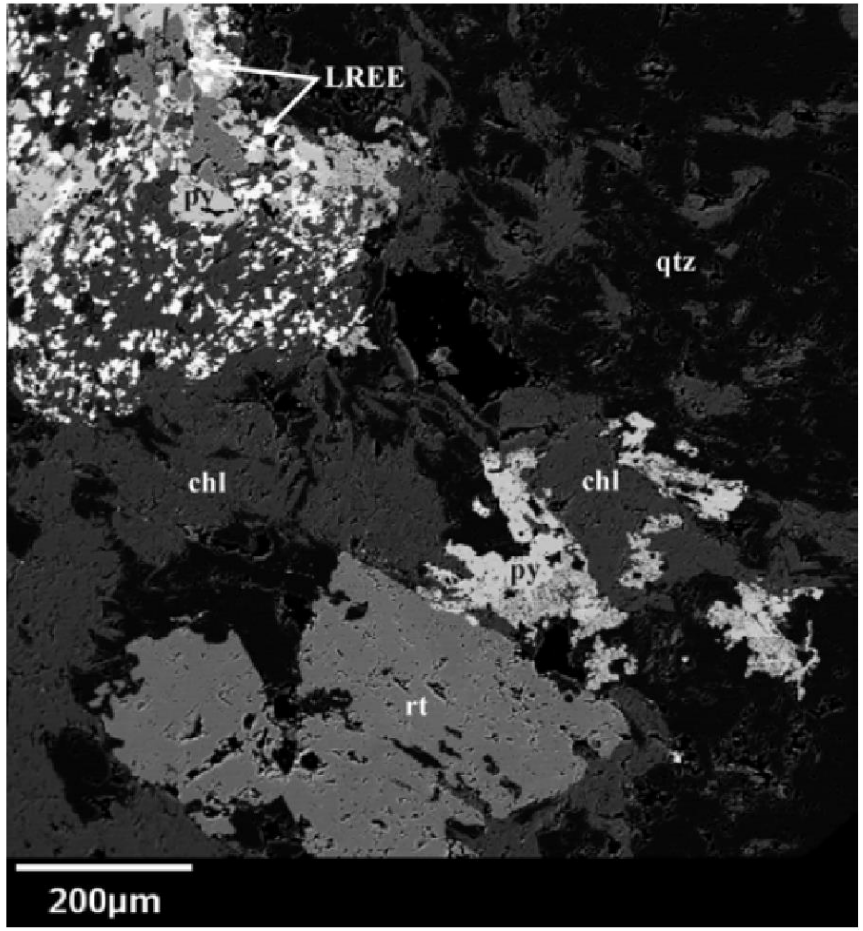


Attributes the Scadding Deposit – Fe-(Mg-Si) Alteration



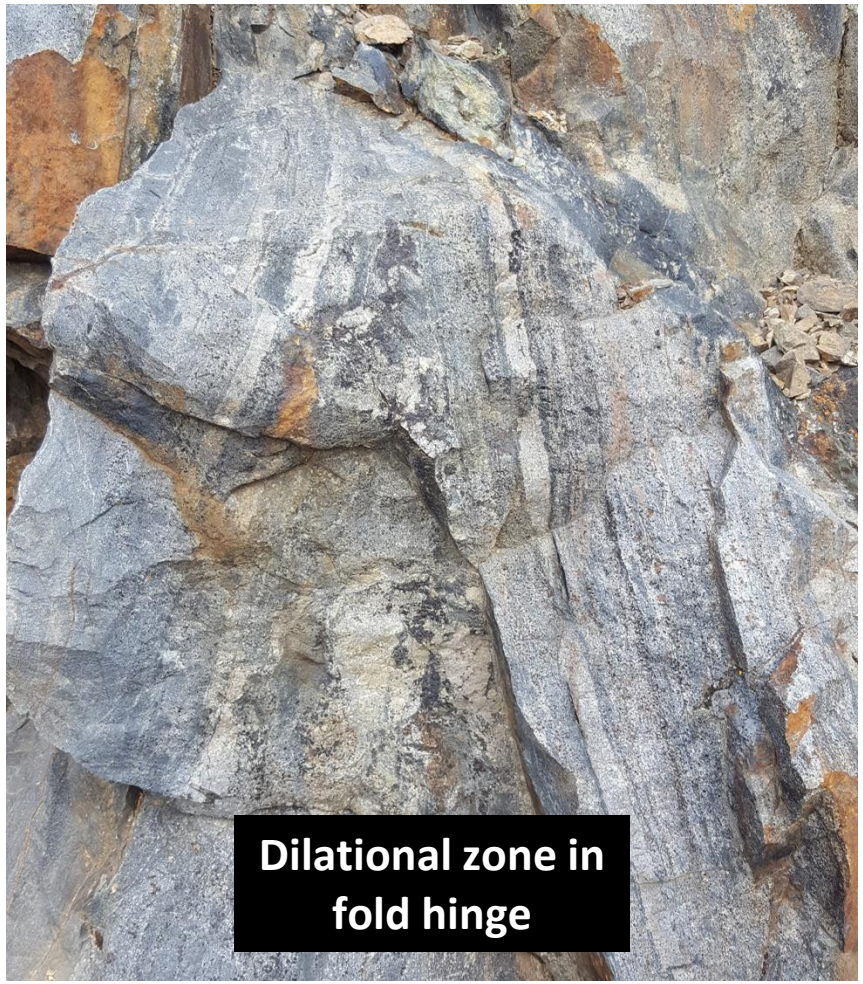
Attributes the Scadding Deposit – Gold Mineralization





From: Potter (2009)

Attributes the Scadding Deposit – Structures



East plunging parasitic antiformal fold in the E-W Pit

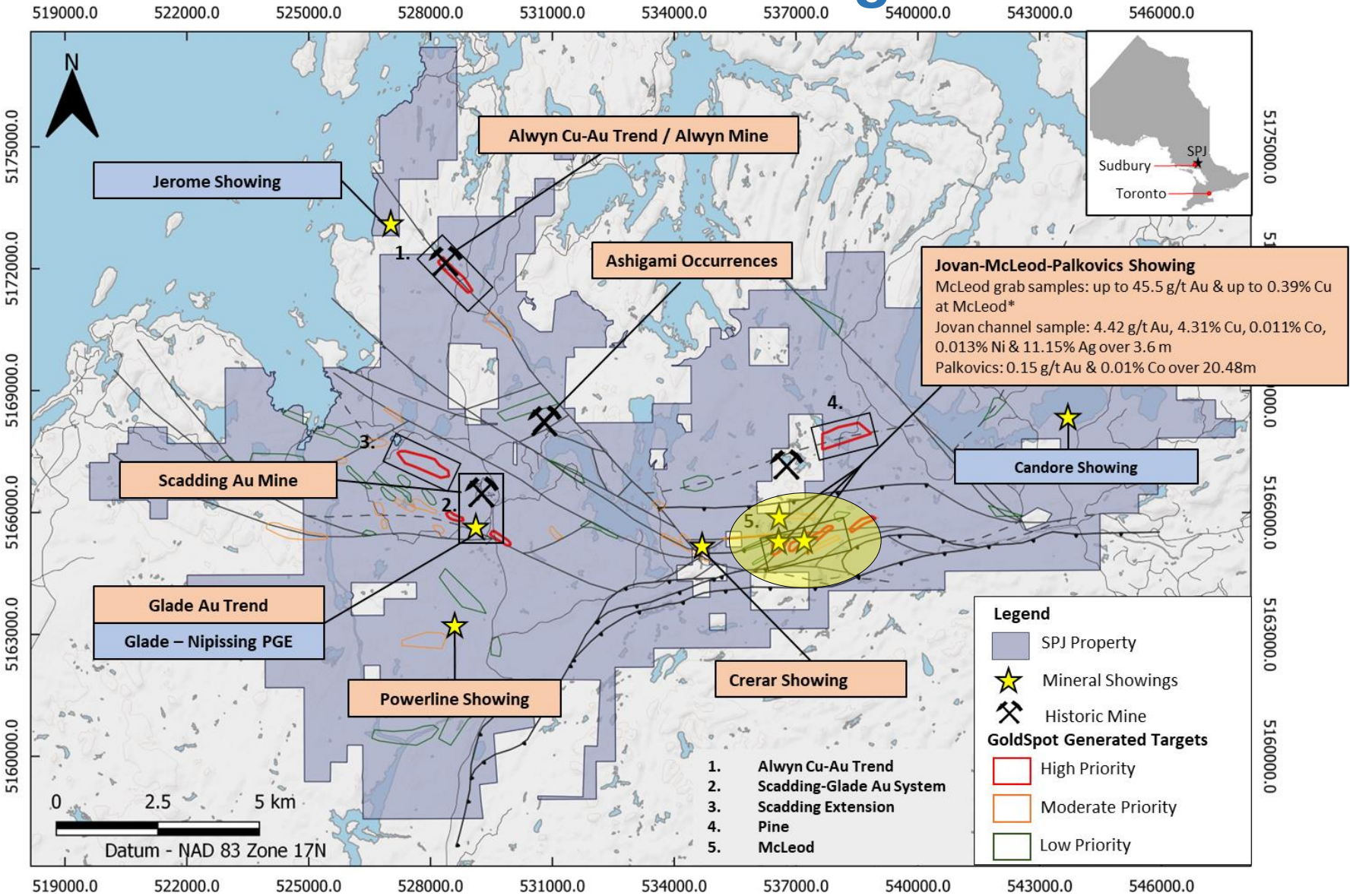
Brecciated hinge zone of the parasitic fold

Attributes the Scadding Deposit – Structures

Folding in E-W Pit

East plunging chlorite-infilled brecciation in fold hinge

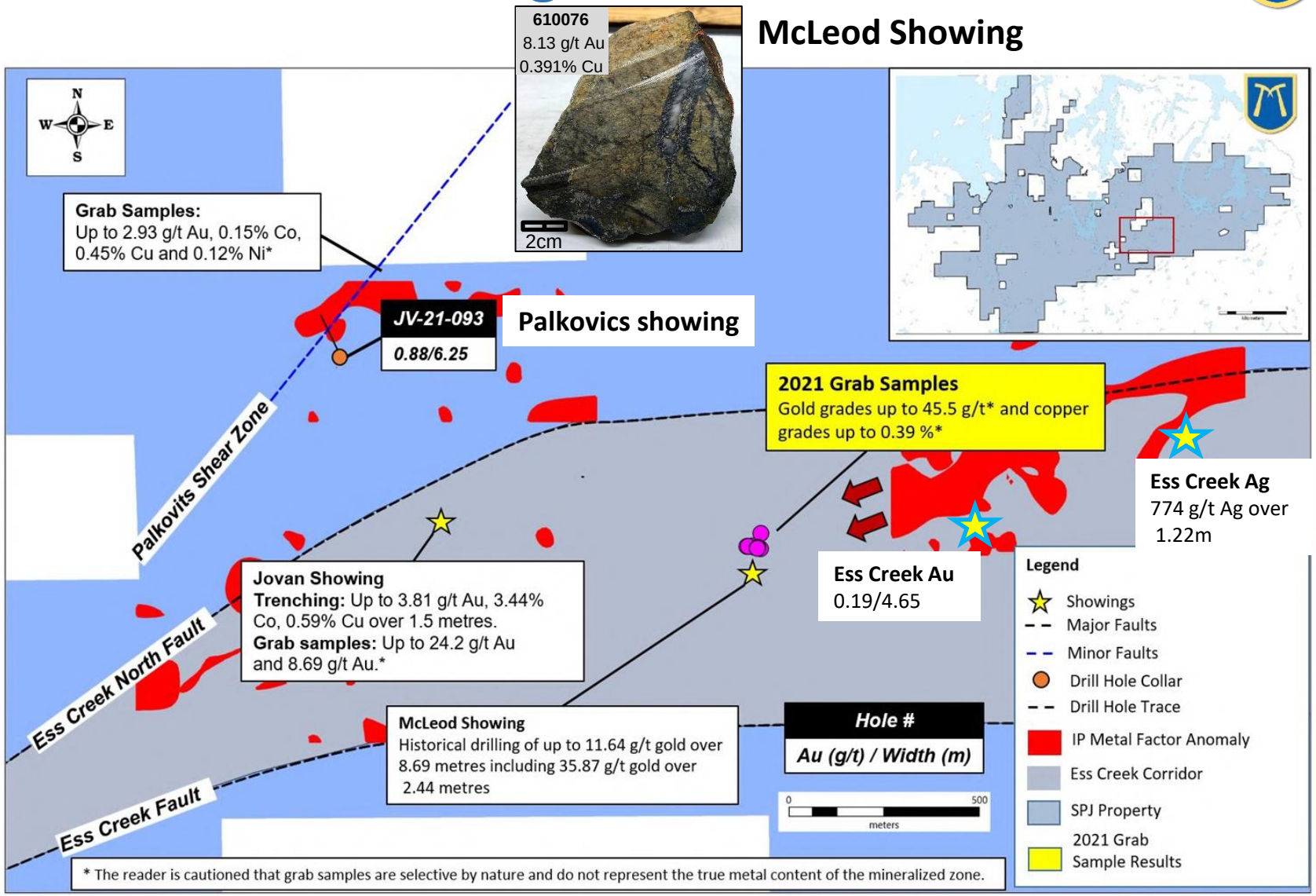
Precious and Critical Metal Showings – Jovan Area



The reader is cautioned that grab samples are selective by nature and do not represent the true metal content of the mineralized zone.

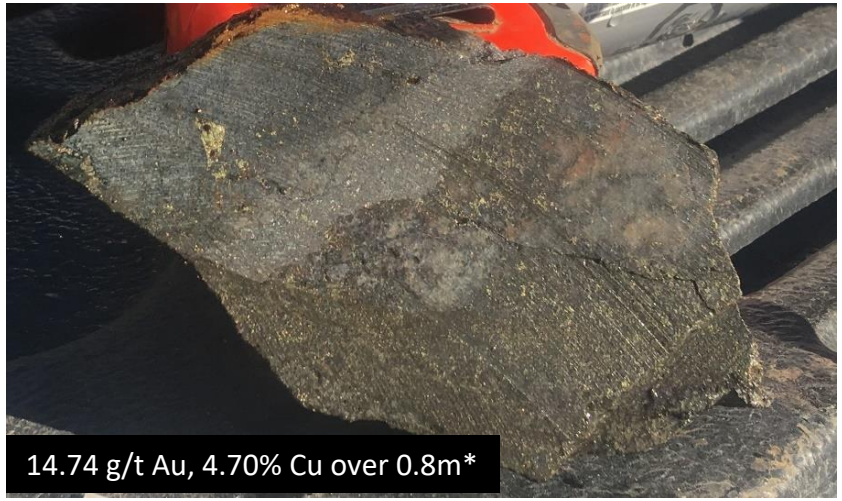
Precious and Critical Metal Showings – Jovan Area

- Polymetallic showings distributed in two corridors of mineralization and deformation
  - Palkovics
  - Ess Creek
- Different centers of mineralization
  - **Ess Creek Corridor**
    - McLeod Au-Cu
    - Jovan Au-Co-Cu
    - Ess Creek Ag and Au
    - Ess Creek Ni-(PGEs)
  - **Palkovics Corridor**
    - Palkovics Au-Co
    - Crerar Au-Co-Cu



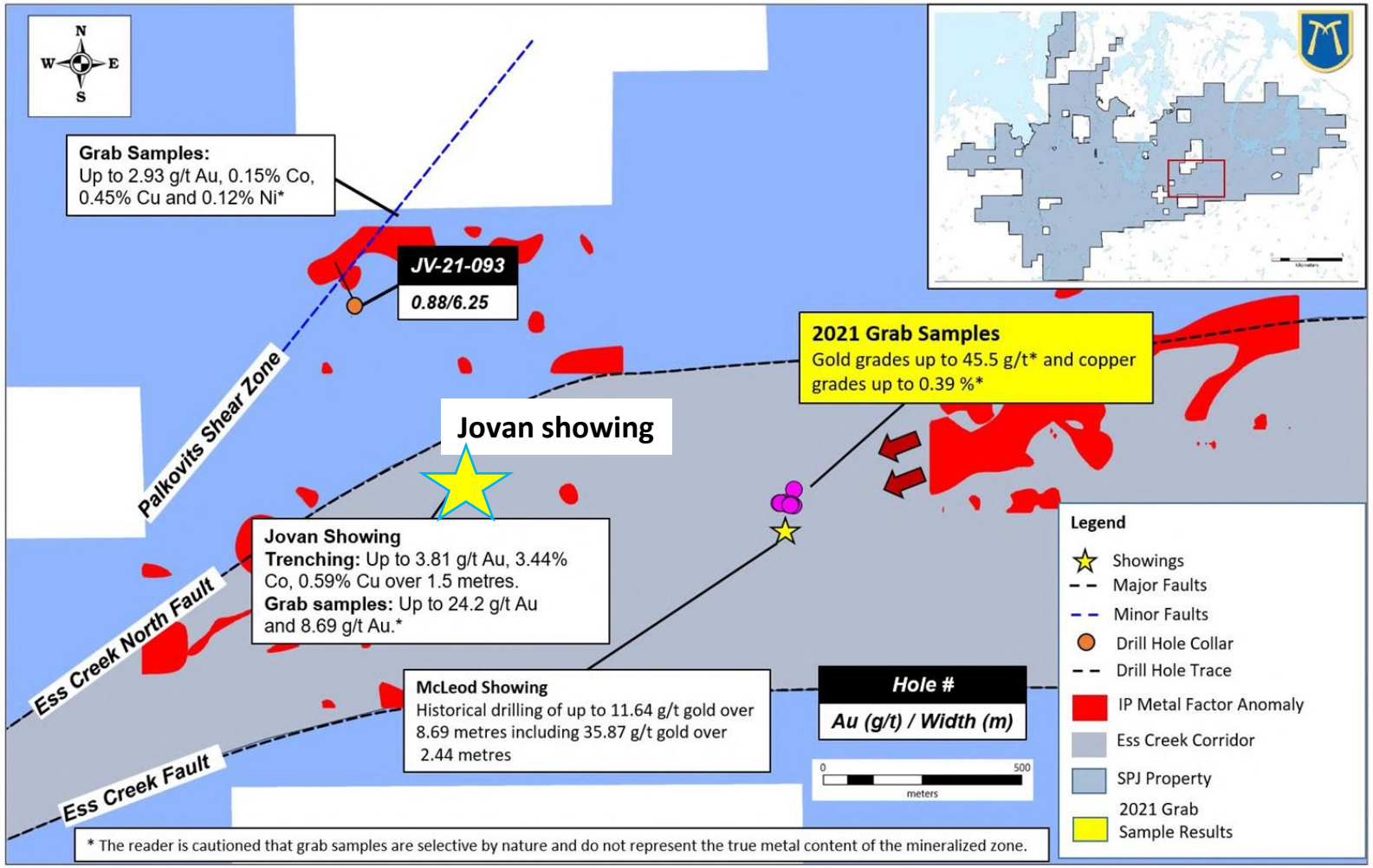
Ess Creek Deformation Corridor – Jovan Showing

Jovan Showing channel sampling
6.85% Co, 7.36 g/t Au, 1.05 % Cu over 0.75m*



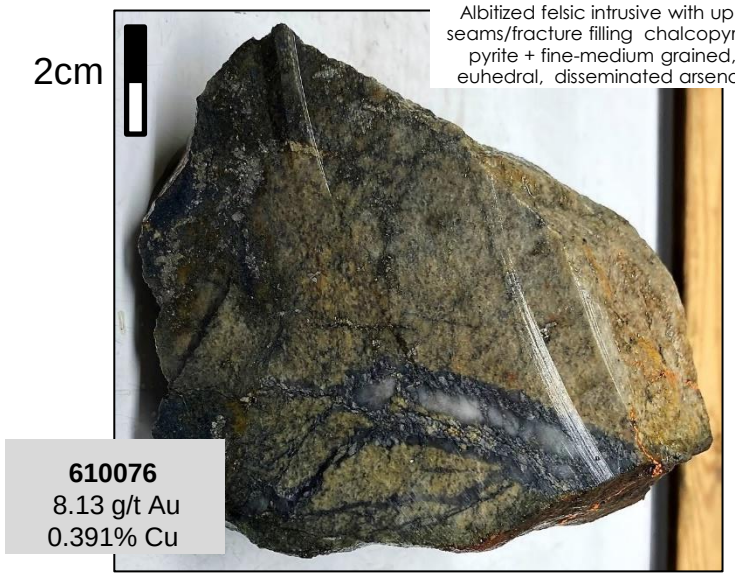
14.74 g/t Au, 4.70% Cu over 0.8m*

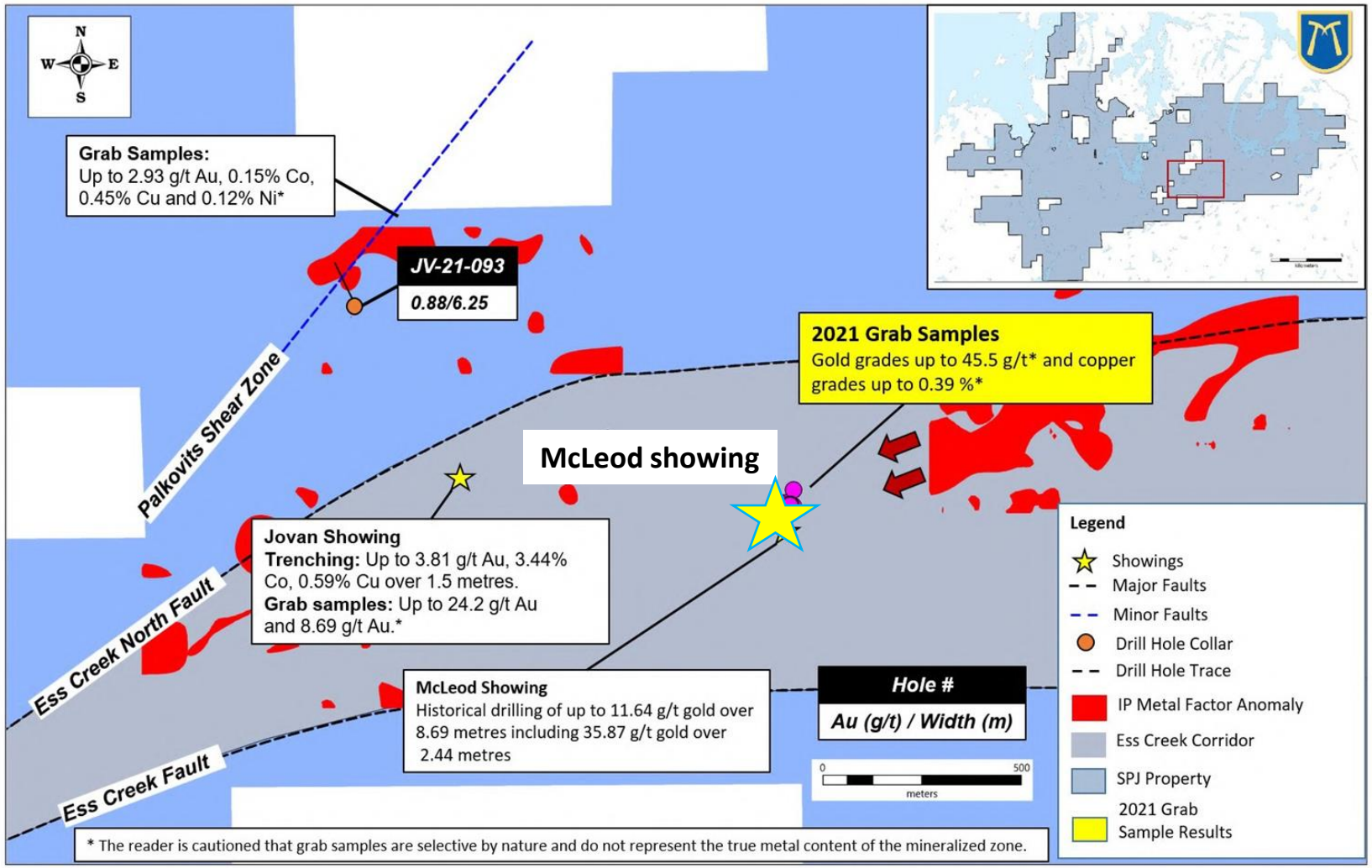
*Assay results are presented along core and channel sample length



Ess Creek Deformation Corridor – McLeod Showing

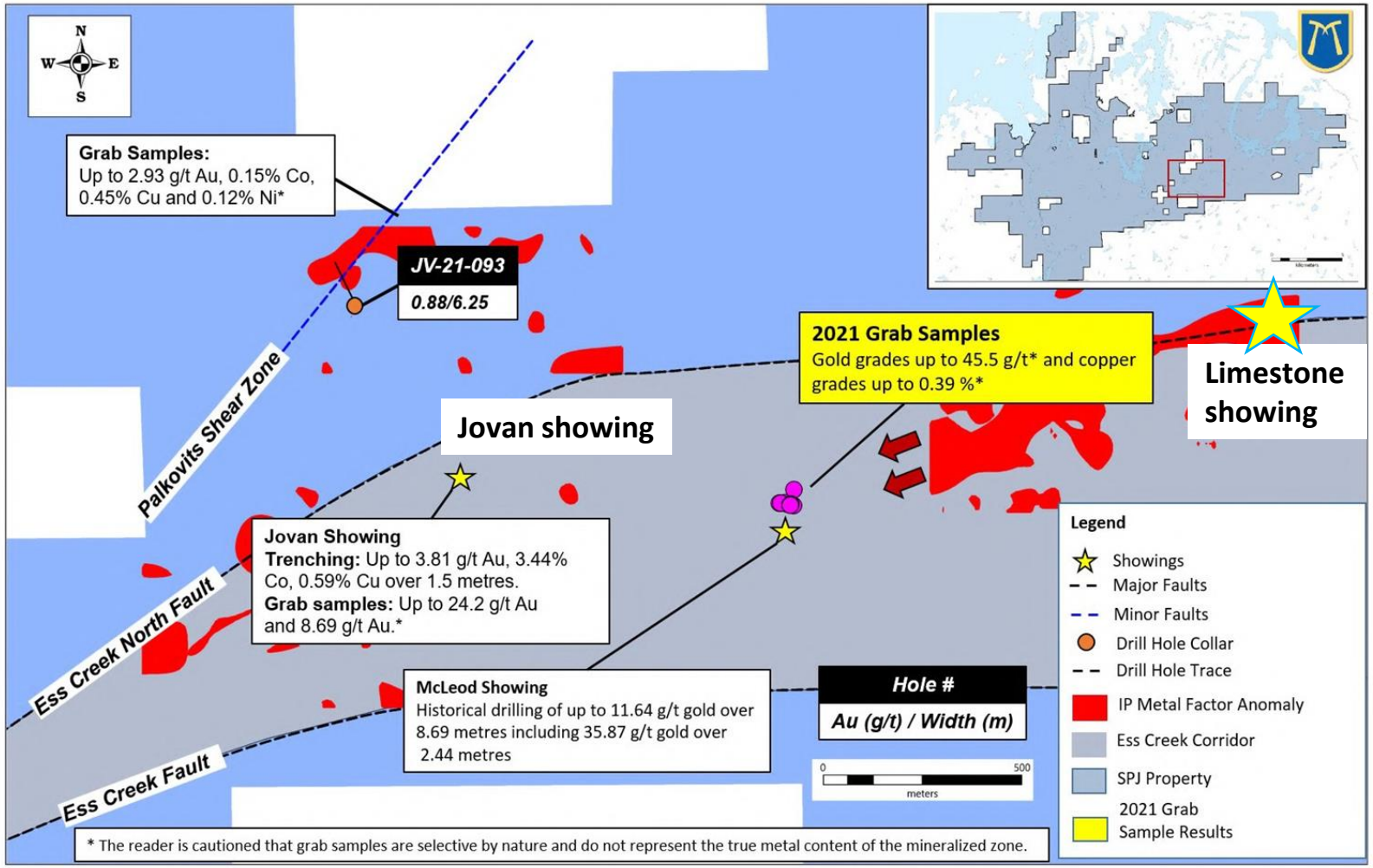
- Gold grades between 0.01 and 45.5 g/t and copper grades between 0.023 and 0.39% in grab samples collected during 2021 field program
- Significant drilling results from the 1970s
  - 11.64 g/t Au over 8.69 metres
- Au-Cu mineralization in semi-massive, fracture filling arsenopyrite-chalcopyrite-pyrite within albitized felsic intrusive unit and sediments
- Primarily fracture/joint controlled with possible mineralized lenses concentrated in shallowly plunging fold hinges





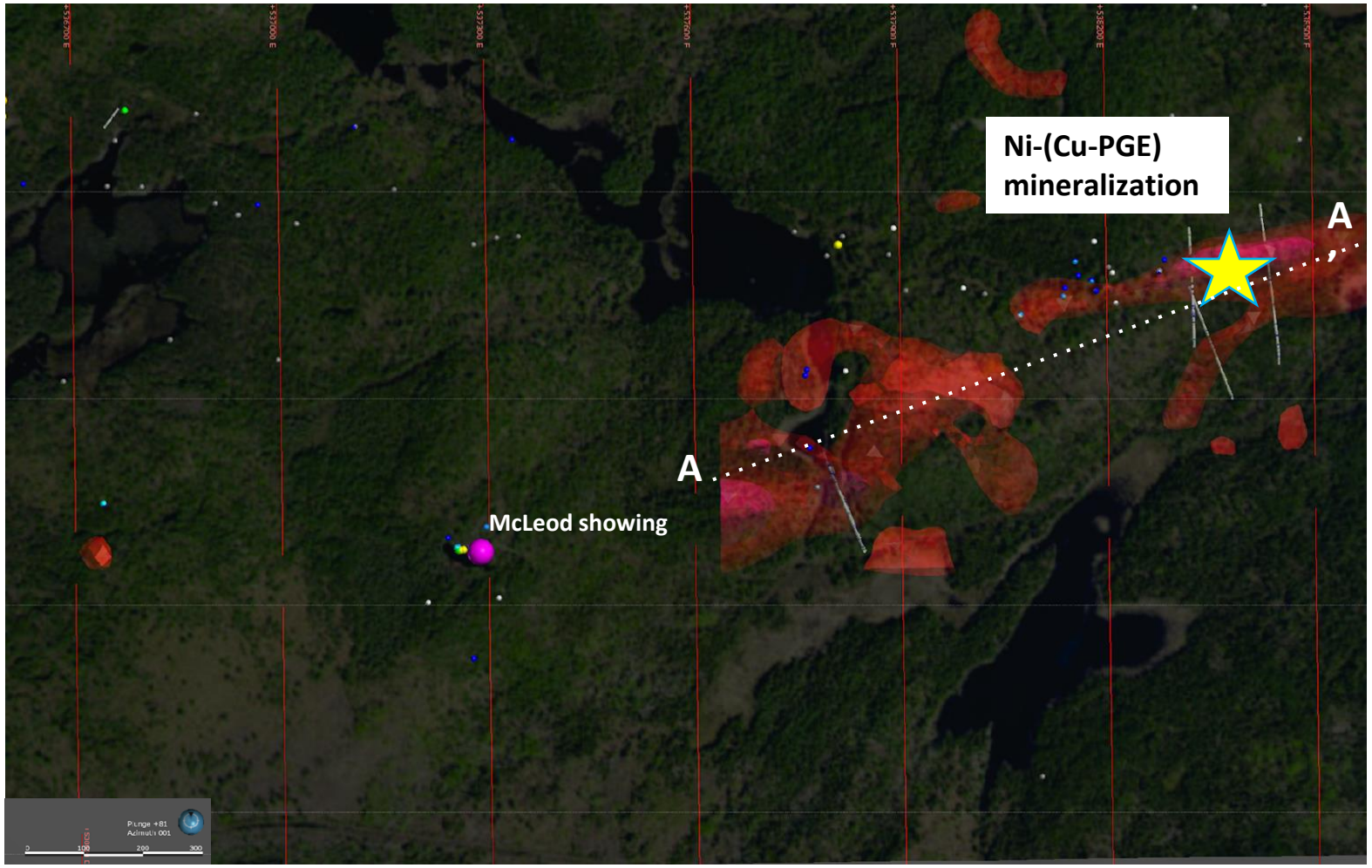
Ess Creek Deformation Corridor – Limestone Trenches Ni Mineralization

- Zone of strong Mag-(Amp) and Amp-Po-Py alteration
- High-temperature alteration facies
- Amp-(Ap)-Po-Py alteration and mineralization associated with incipient Ni-(PGE-Cu) mineralization
- Associated with significant and large anomalies (low resistivity, high metal factor) detected by MacDonald's 2021 IP survey



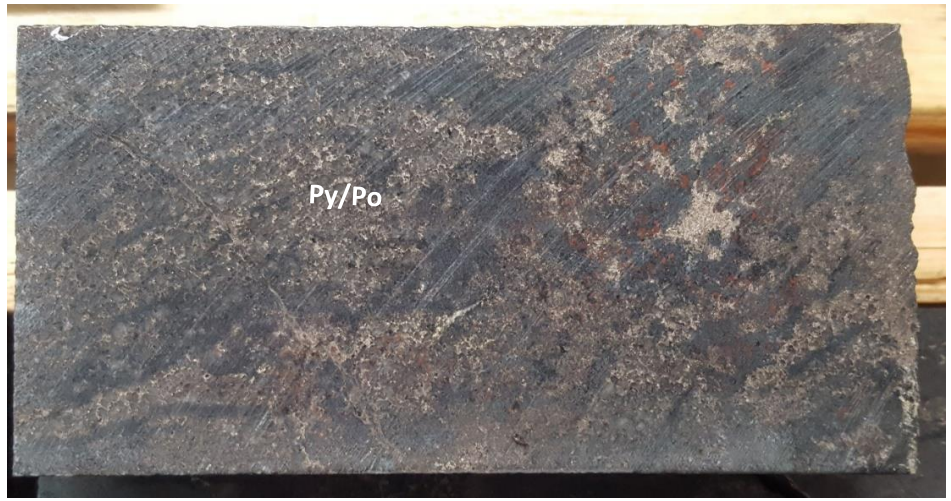
Ess Creek Deformation Corridor – Ni-Cu-PGE's

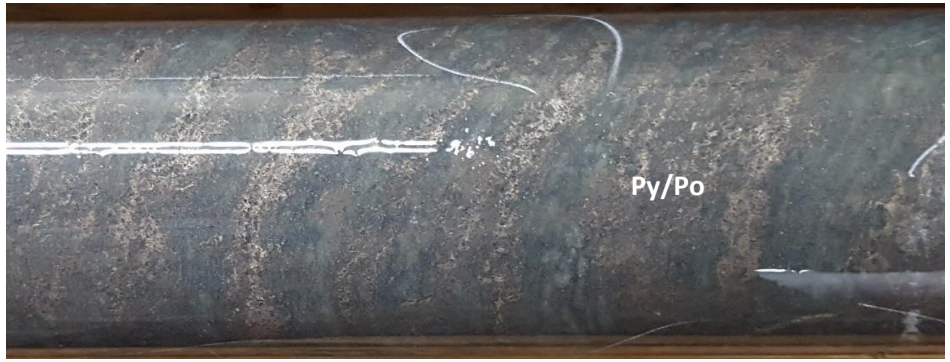
- Amp-(Ap)-Po-Py alteration and mineralization associated with Ni-(PGE-Cu) mineralization
- Drilling demonstrated the association between Ni-Cu-PGE mineralization and the geophysical anomalies (low resistivity, high metal factor)
- Geophysical survey is not covering the McLeod showing and the geophysical anomaly is open east at the limit of the survey
  - BMK did not own the rights to the McLeod showing when the survey was done
  - McLeod Au-Cu showing located in the geophysical trend
  - Geophysical anomalies much larger than anticipated prior to planning the survey



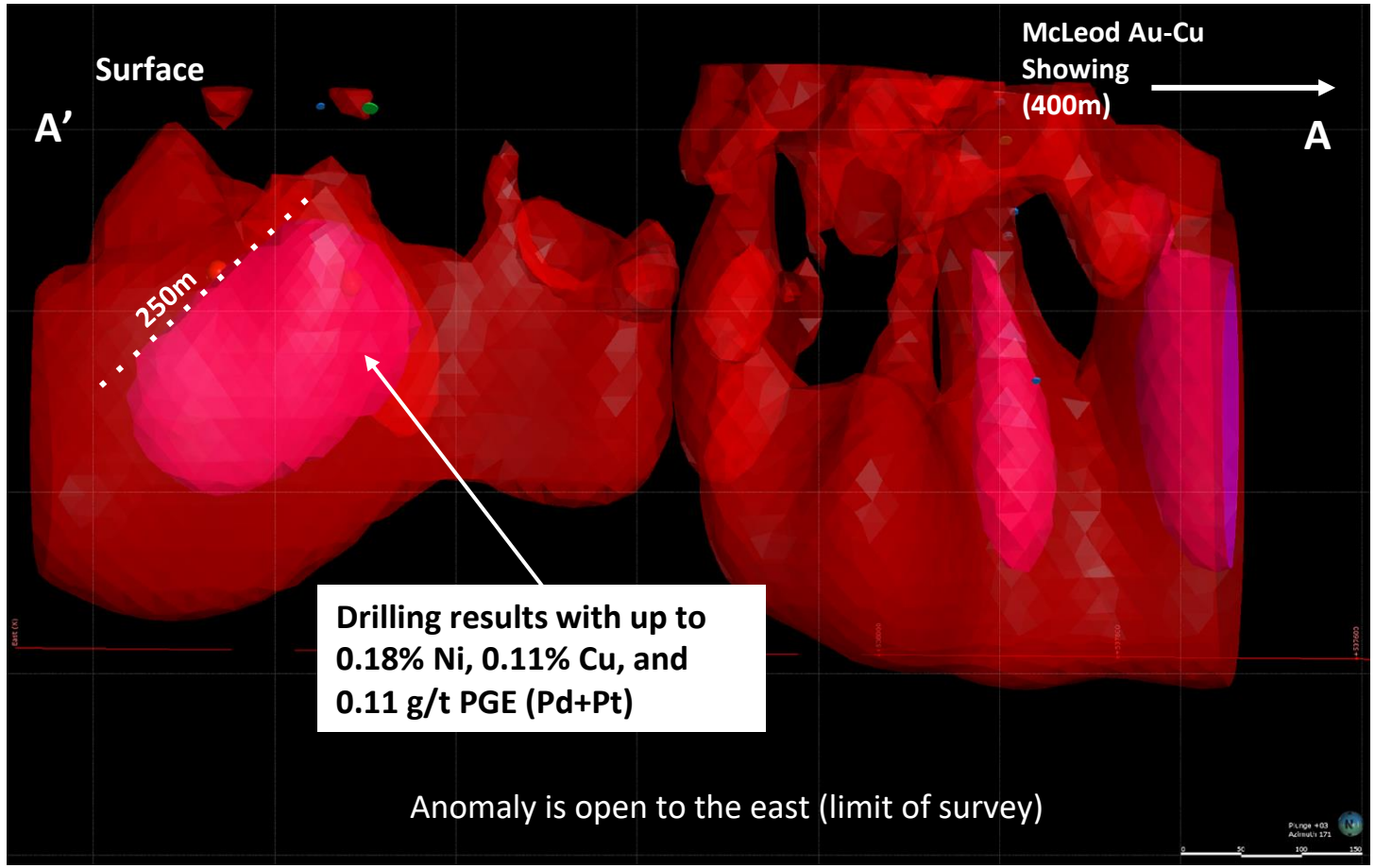
Ess Creek Deformation Corridor – Ni-Cu-PGE's

Po-Py alteration and mineralization associated with Ni-(PGE-Cu) mineralization





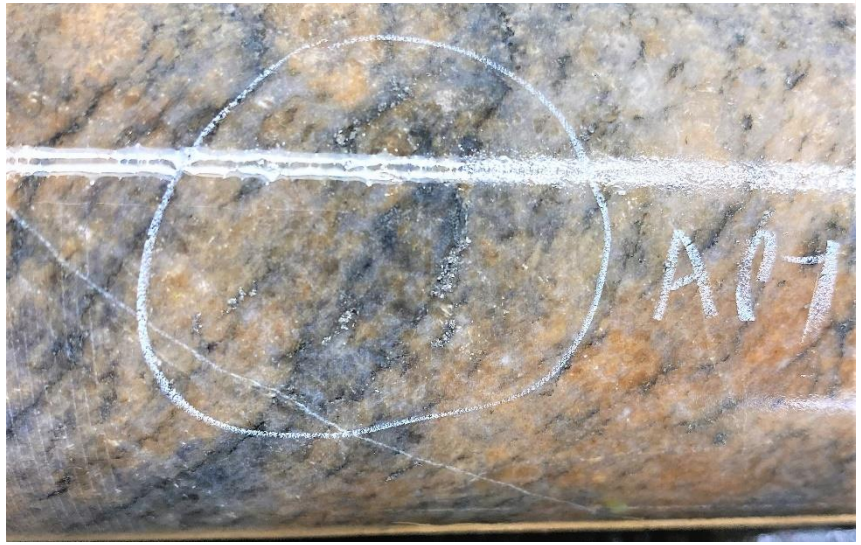
Two holes have gone through the anomaly and confirmed the association between the geophysical response and mineralization

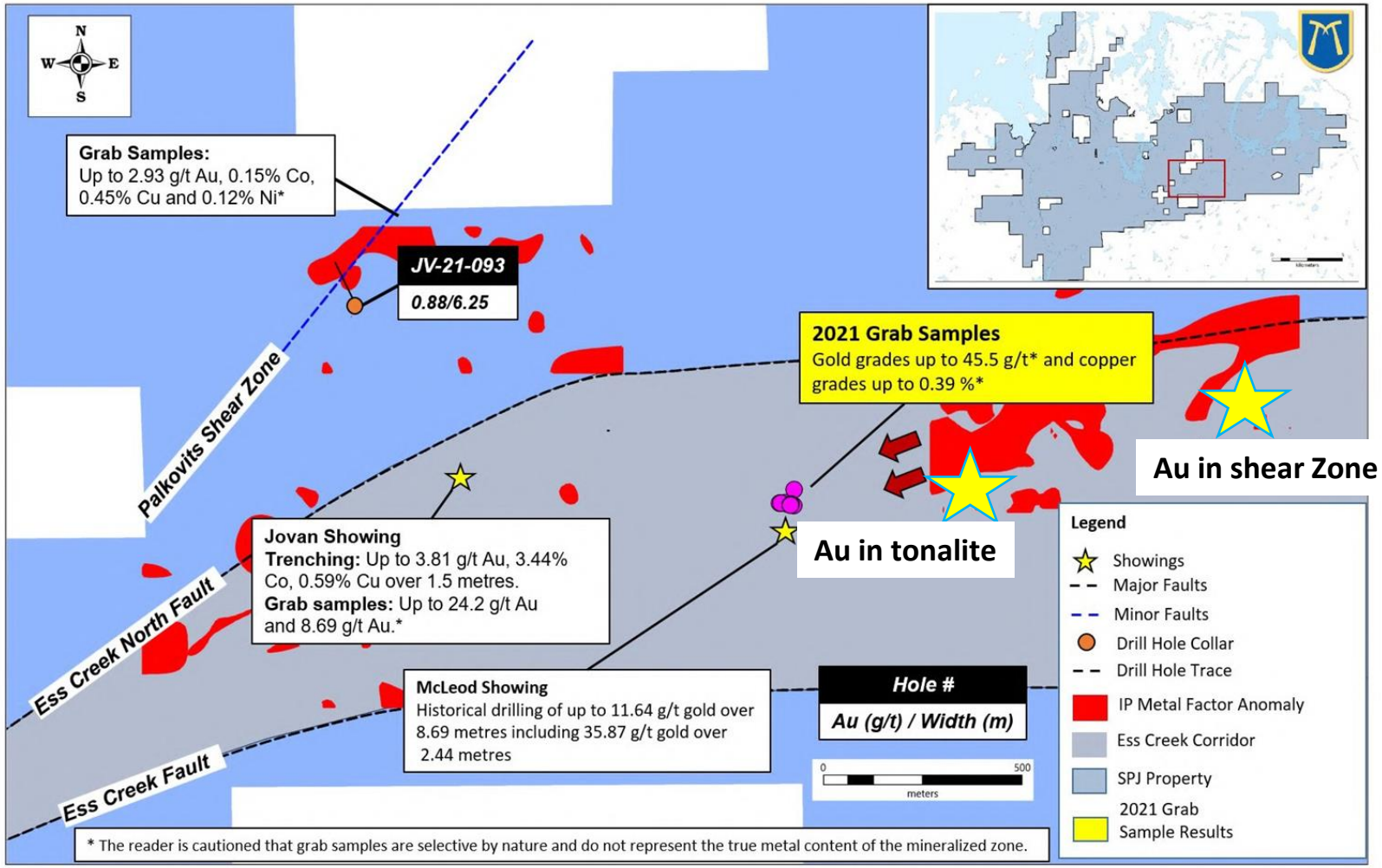


Ess Creek Deformation Corridor – Au Mineralization

- Anomalous gold mineralization observed in associated with Apy disseminations in albitized tonalite
  - 0.5 g/t Au over 1.26m (JV-21-086)
  - 0.19 g/t Au over 4.65m (JV-21-087)
- Gold mineralization observed in the Ess Creek Deformation Zone
  - 0.85 g/t Au over 1.31m (JV-21-084)

Anomalous Au mineralization associated with disseminated Apy in an albitized intrusion





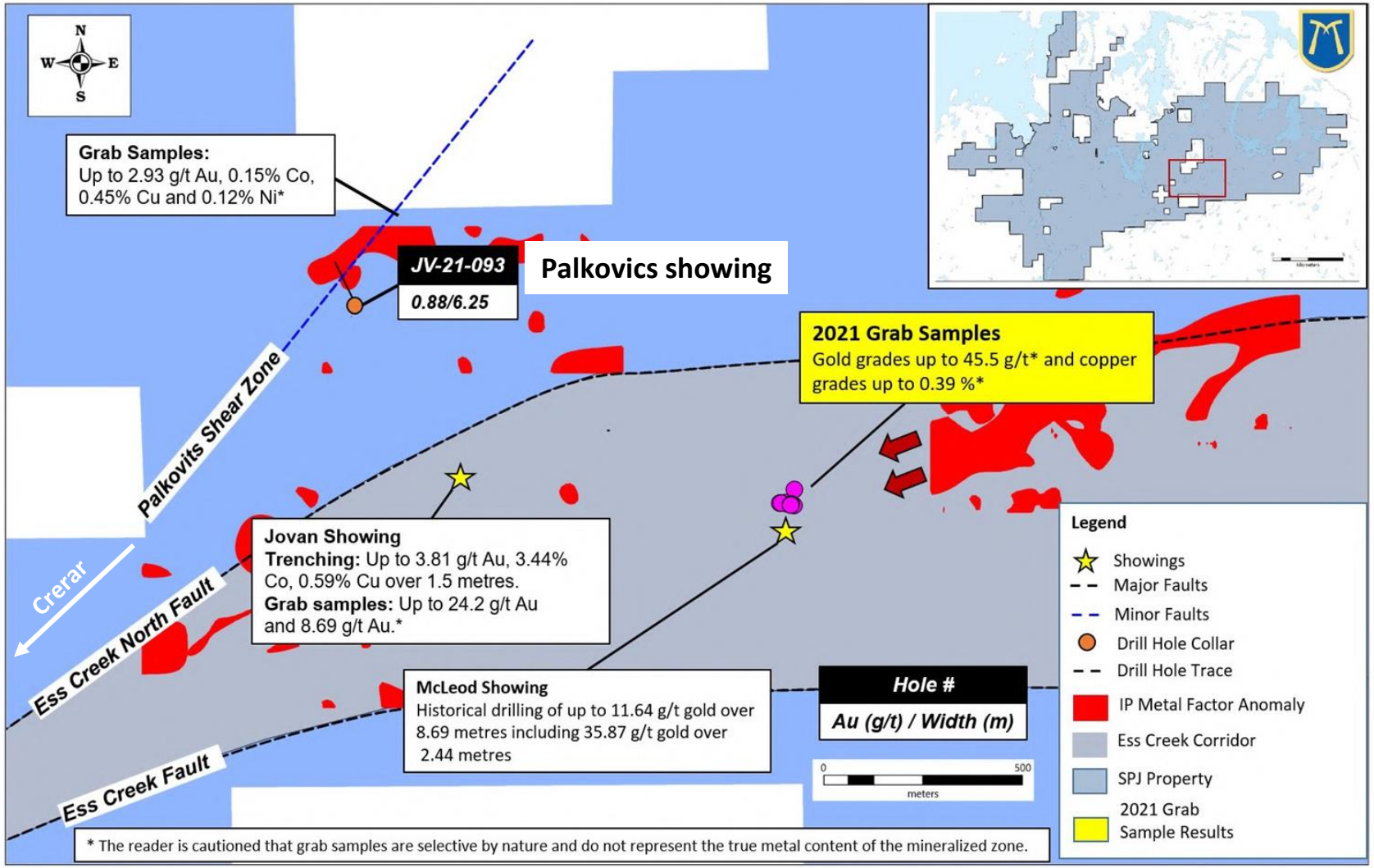
Ess Creek Deformation Corridor – Au Mineralization

- Anomalous gold mineralization observed in association with Apy disseminations in albitized tonalite
  - 0.5 g/t Au over 1.26m (JV-21-086)
  - 0.19 g/t Au over 4.65m (JV-21-087)
- Gold mineralization observed in the Ess Creek Deformation Zone
  - 0.85 g/t Au over 1.31m (JV-21-084)

Gold mineralization in the Ess Creek Deformation Zone

Ess Creek Deformation Corridor – Palkovics/Crerar Au-Co-Cu Showings

- Au and Co mineralization overprinting Na alteration
- Mineralization associated with Cb alteration and Py mineralization
- As-Py associated with gold
- Co-Py associated with Co
- Trends to the Crerar showing where grab samples contained up to 8.87 g/t Au and 2.96% Cu



Ess Creek Deformation Corridor – Palkovics Au

- Gold associated with Cb alteration and Py mineralization overprinting albitized sedimentary rocks
- Yellow color of the rock associated with Cb overprints of sodic alteration
- Na alteration varies from moderate-strong to strong

Au mineralization in the Palkovics Deformation Corridor

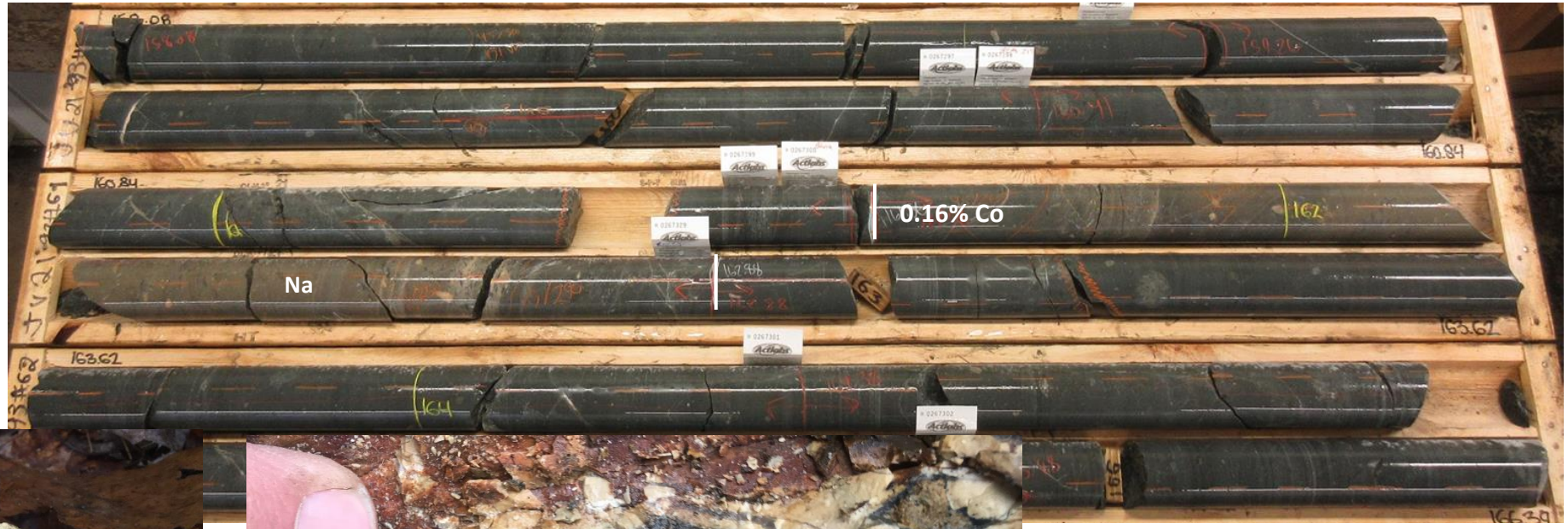
JV-21-093 – 0.88 g/t Au over 6.25m – In sodic-altered sedimentary rocks (Na average 5.43 %)

Ess Creek Deformation Corridor – Palkovics Co

- Sodic alteration zone in conglomerate spatially associated with Co mineralization
- Co mineralization relates to the emplacement of Co-Py overprinting Na alteration
- Mineralization likely associated with Cb alteration

Co mineralization in the Palkovics Deformation Corridor

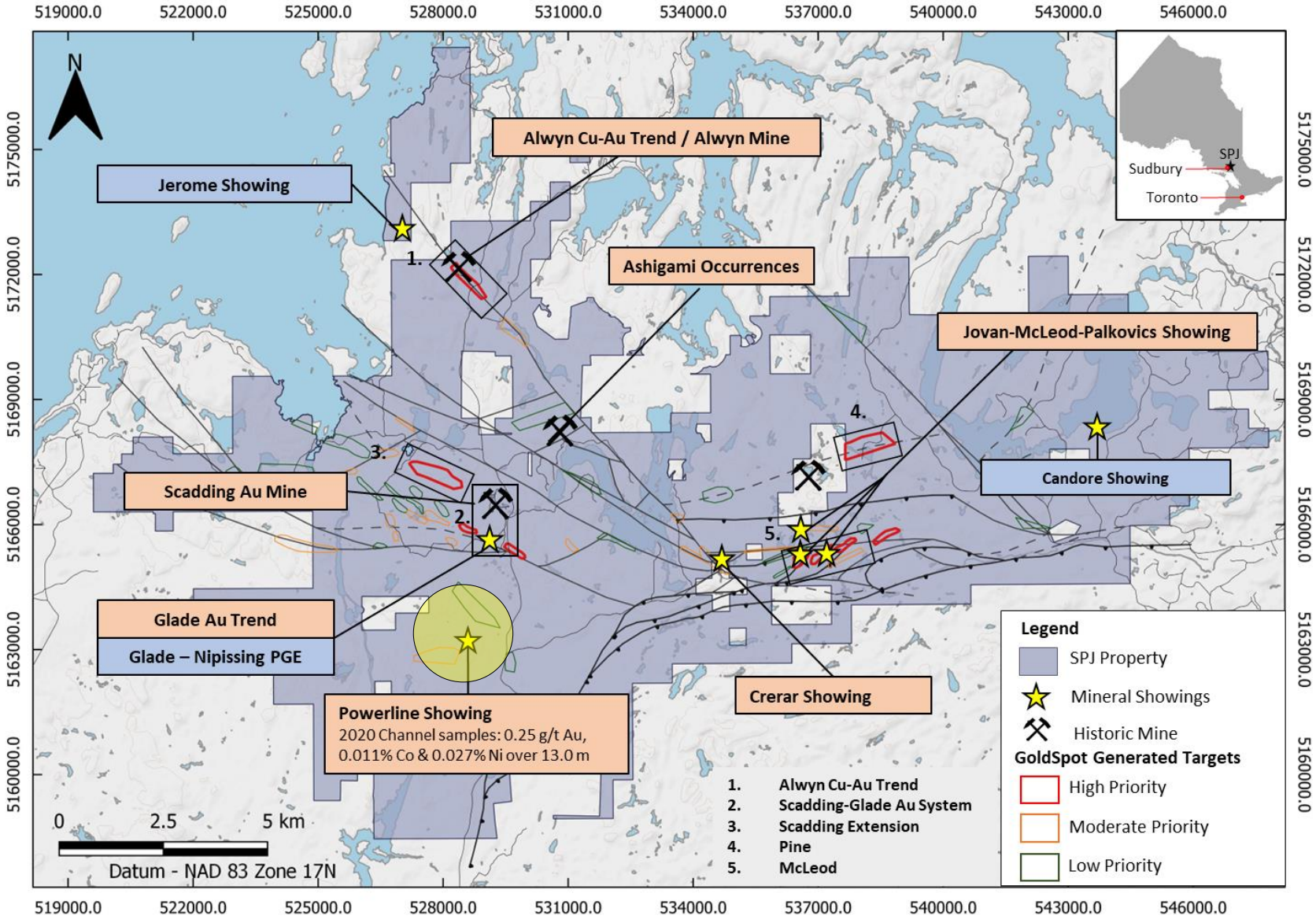
JV-21-093 – 0.16% Co over 1.32m – In sodic-altered conglomerate (Na = 5.18 %)



Co bloom at the Palkovics showing

Co bloom at the Palkovics showing in albitite

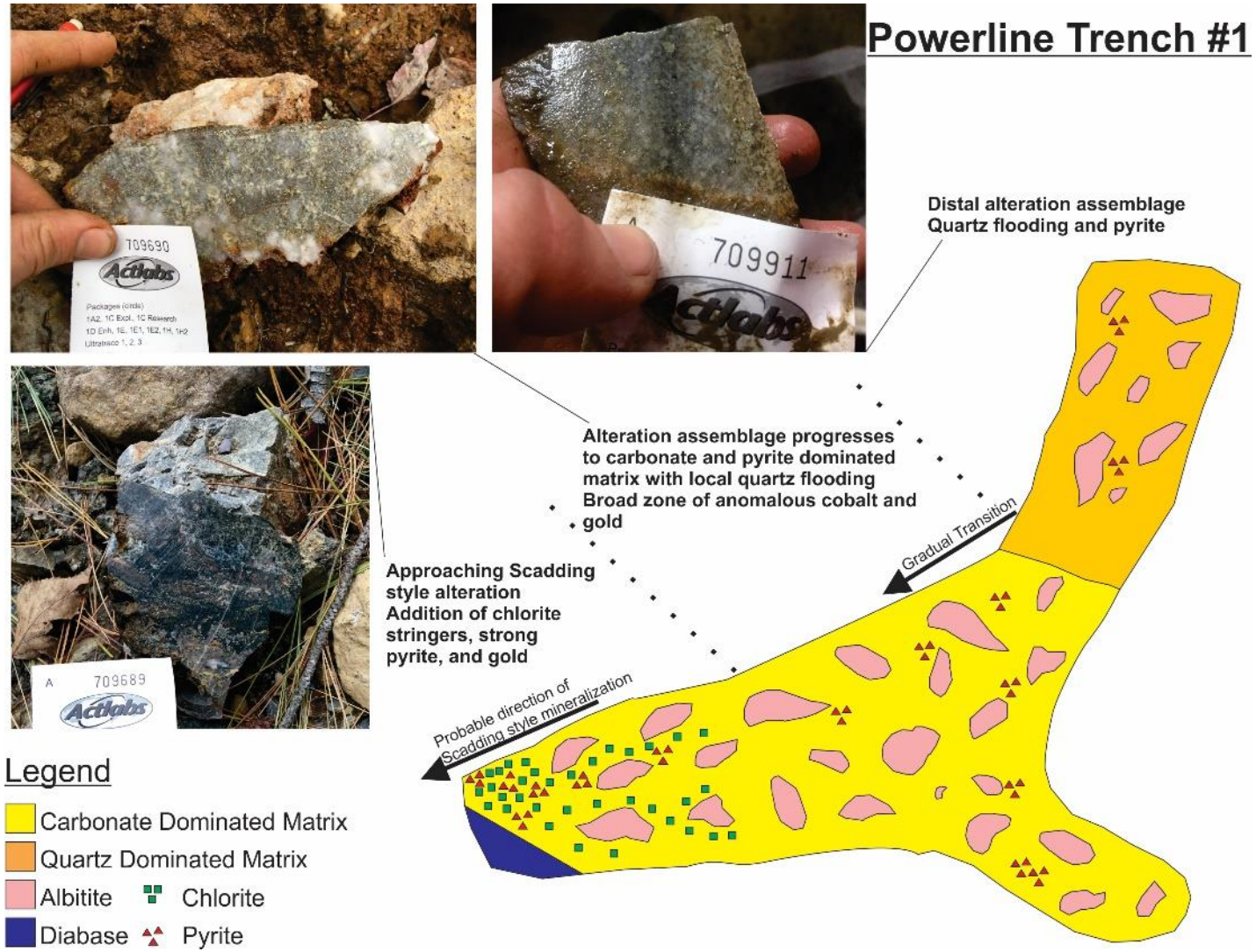
Precious and Critical Metal Showings – Powerline Showing



The reader is cautioned that grab samples are selective by nature and do not represent the true metal content of the mineralized zone.

Powerline Area – Long Trench Au-(Co) Mineralization

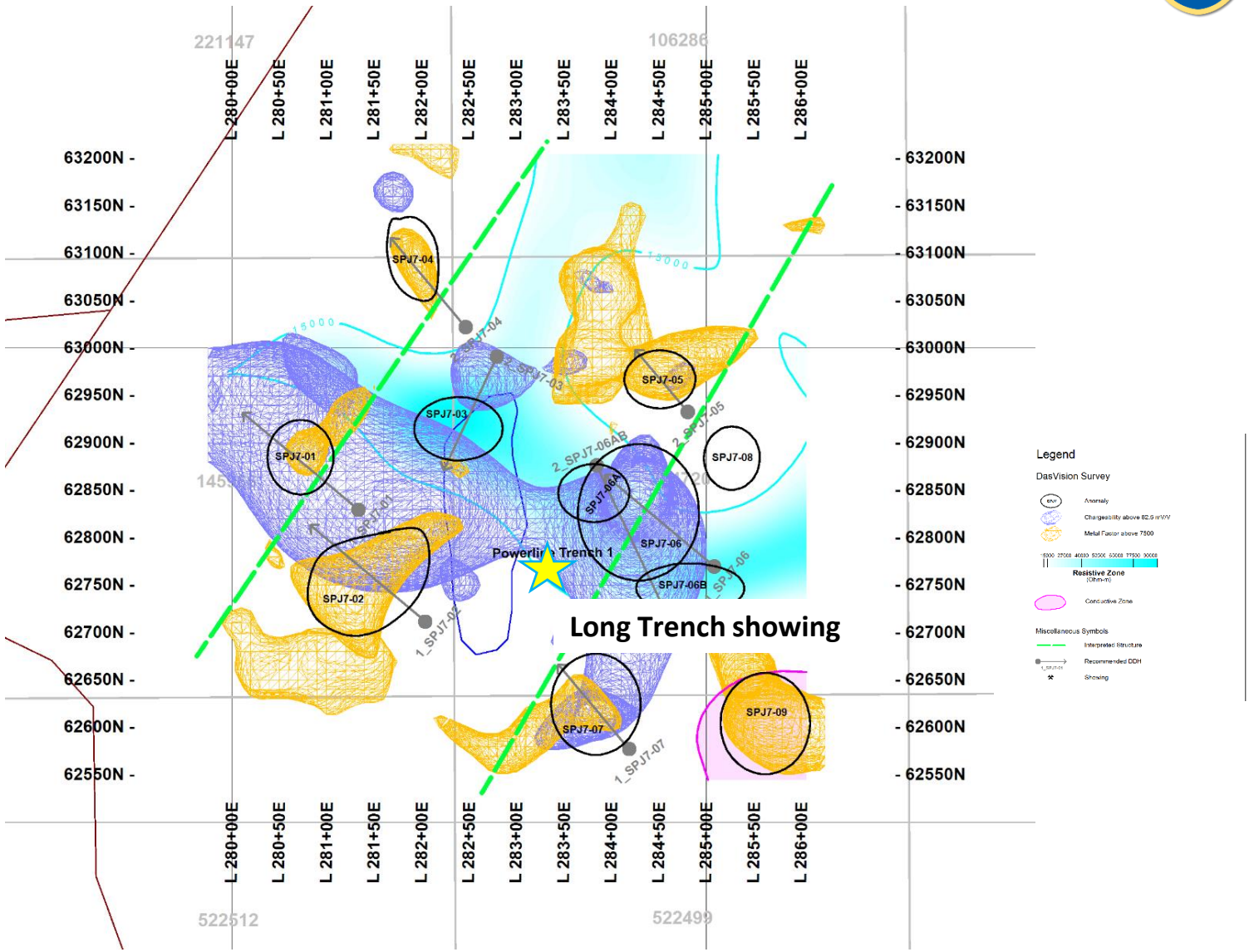
- Albitite brecciated by Si-Cb alteration associated with pervasive Py mineralization possibly transitioning to Scadding-like Chl alteration
- Channel sampling at surface indicates Au-Co mineralization associated with that alteration
- MacDonald's 2021 IP survey detected significant chargeability and metal factor anomalies that remain untested
- Some geophysical anomalies are spatially coincident with known mineralization at surface
  - Channel sampling results from the Long Trench showing include:
    - 0.25 g/t gold, 0.011% cobalt and 0.027% nickel over 13 metres
    - 0.23 g/t gold, 0.008% cobalt and 0.019% nickel over 18 metres



Channel sample results presented as sample length. True width estimation are not yet available for the mineralized zones. Additional surface work and possibly diamond drilling will be necessary to define the true width of the mineralized zones.

Powerline Area – Long Trench Au-(Co) Mineralization

Albitite brecciated by Si-Cb alteration associated with pervasive Py mineralization typical of Au-(Co) mineralization of the Long Trench showing in the Powerline area



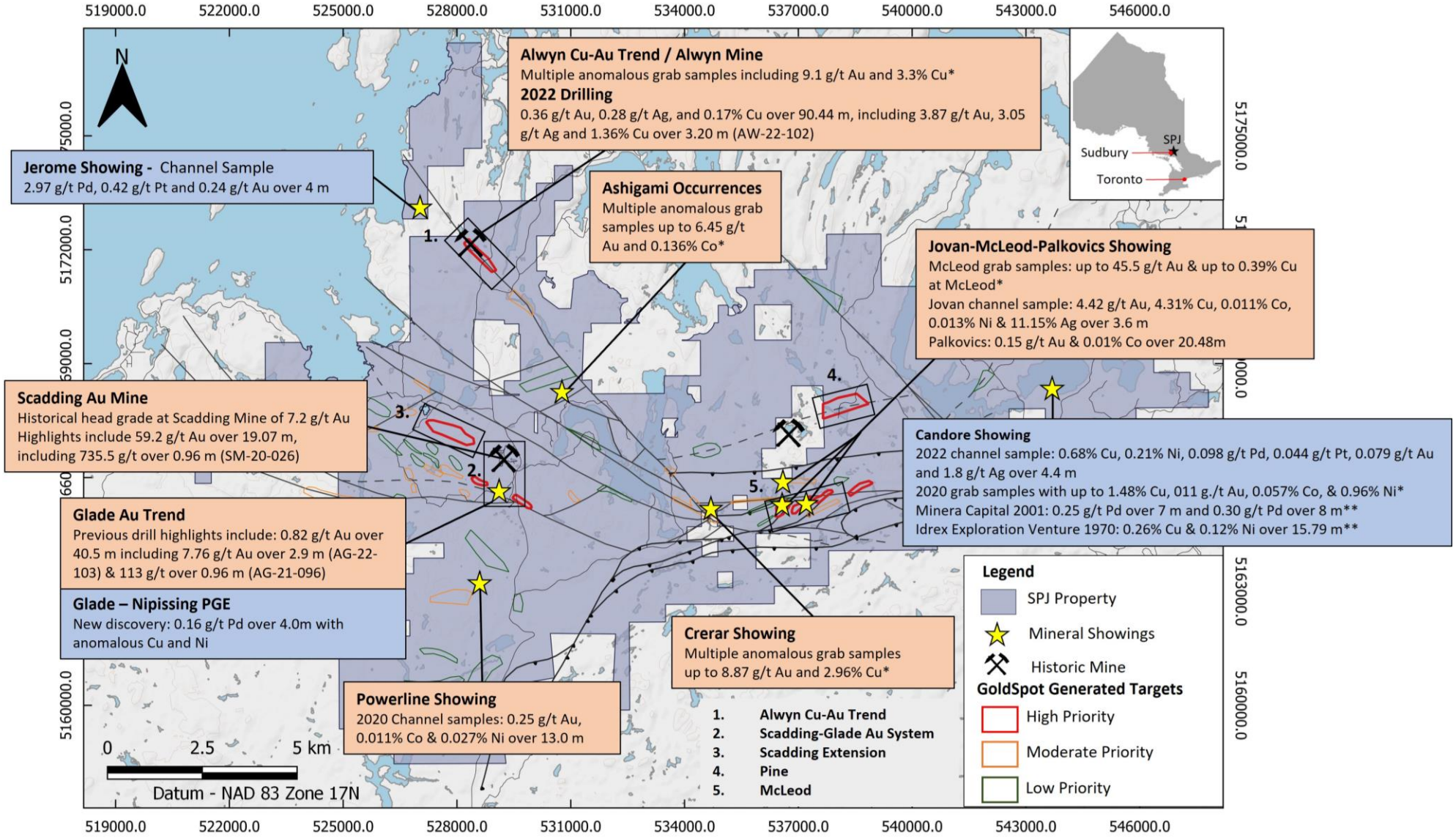
Channel sample results presented as sample length. True width estimation are not yet available for the mineralized zones. Additional surface work and possibly diamond drilling will be necessary to define the true width of the mineralized zones.

Powerline Area – Long Trench Au-(Co) Mineralization

- Albitite brecciated by Si-Cb alteration associated with pervasive Py mineralization typical of Au-(Co) mineralization of the Long Trench showing in the Powerline area

Strong brecciation at the Long Trench showing

Precious & Critical Metal Showings – SPJ Project



The reader is cautioned that grab samples are selective by nature and do not represent the true metal content of the mineralized zone.
***The reader is cautioned that the qualified person has not done enough work to verify the historical results.*

SPJ Project 2023 Exploration Plans

1. 1000 – 2000 m drill program to validate continuity of mineralized zone directly around Alwyn mine, and test the new positive gravity target for MIAC mineralization

2. Up to 500 m drilling program at Glade to validate continuity of mineralization

3. Expand gravity survey south of Alwyn mine to determine the full size of the positive gravity anomaly and validate if the deeply rooted anomaly extends further south-southwest

4. Summer mapping and sampling program – defining critical and precious metal mineralization along the MLFZ between the historic Alwyn mine and Ashigami Cu-Au occurrences

*Company's current funds will allow for 500 meters at Alwyn.
Balance of the Exploration Plans is subject in obtaining additional funding.