Galore Creek: A Modern Synthesis of 60 Years of Knowledge

MDRU Golden Triangle Short Course – AME Roundup 2024

21 January 2024

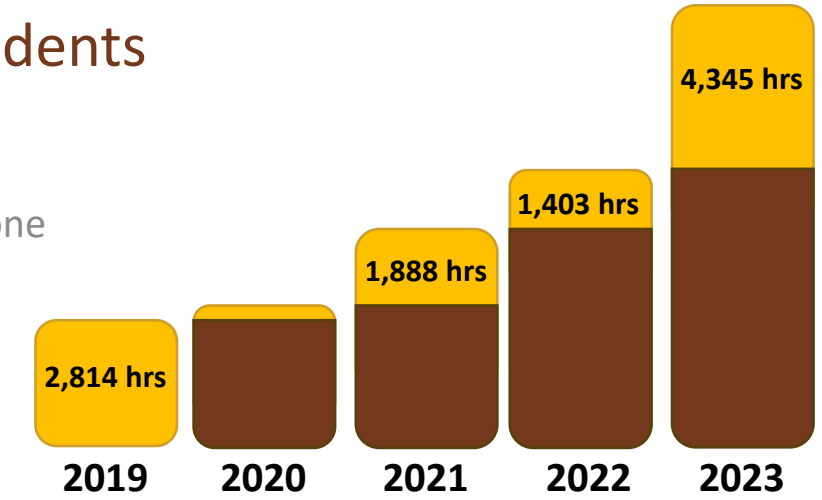
Well-Shen Lee, Nils Peterson, Leif Bailey

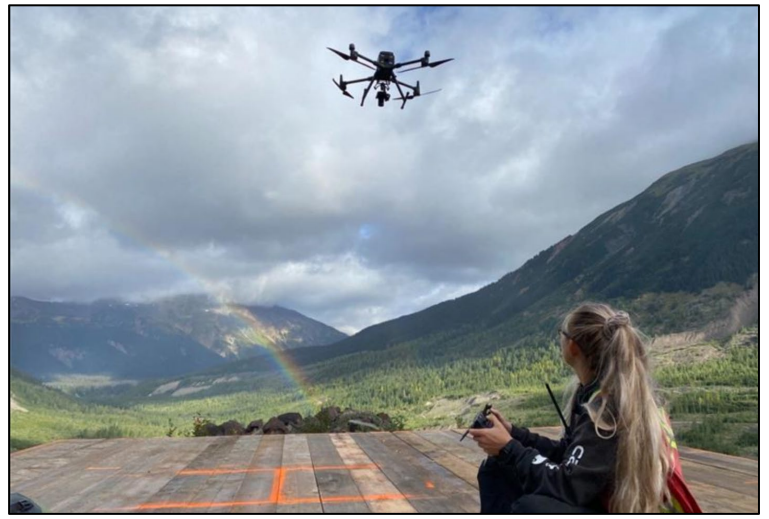
Galore Creek MINING CORPORATION

Value Share: Aviation Safety is a Team Effort

10,695 hours flown over five years with zero reportable incidents

- Project area contains challenging mountainous terrain and weather
- Up to eight aircraft operating simultaneously during 2023: helicopter, fixed wing, drone
- 4,171 passenger flights and 2,162 external load flights
- Rigorous system of controls and procedures, continual improvement
- Positive, proactive safety culture emphasizing ownership and accountability
- Recognized with 2023 AME David Barr Award





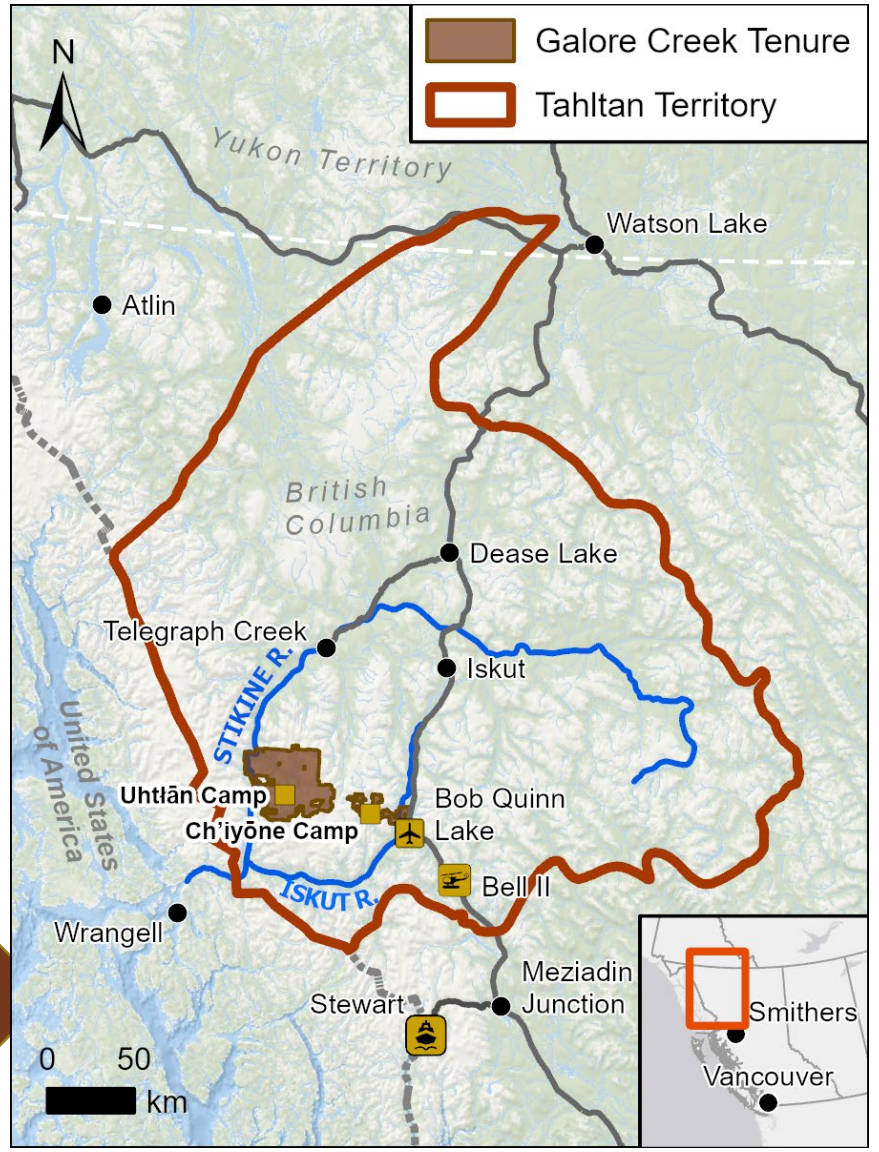
Project Overview

Galore Creek Project

Summary and Overview

- **Joint-Venture Partnership**
  - 50:50 ownership, Teck Resources Limited and Newmont Corporation
- **World-Class Resource**
  - Amongst the highest-grade undeveloped Cu-Au porphyry deposits
- **Exceptional Discovery Potential**
  - 180,000+ hectare tenure encompasses a highly prospective district
- **Established Relationships**
  - Meaningful participation, engagement, and collaboration with Tahltan

2018	2019-2020	2021-2024	2025+
New Team, Joint Venture	**Updated Scoping Study**	**Updated Pre-Feasibility**	**Feasibility (planned)**



Galore Creek MINING CORPORATION

Tahltan Partnership

Meaningful Participation and Engagement

- The Galore Creek Project has a proud history of collaboration with the Tahltan Nation.
- 2006 Participation Agreement was groundbreaking and continues to provide a framework for a strong working relationship.
- Tahltan involved in the project as direct-hire, full-time, and seasonal employees. In 2023, we worked with 21 Tahltan-owned or partnered businesses.
- In November 2023, the Tahltan Nation and British Columbia committed to develop an agreement to position Tahltan in a consent-based role for regulatory approval of the Galore Creek Project. GCMC is among the first projects in BC to adopt this new standard.

Three Generations On-Site: Grandfather, Father, Son

Archaeological Surveys and Training

Camp Naming Ceremony, 2007

Culture and Language Programs for Youth

2022-2023 Field Seasons

Major Activities

- 20,000m drilled in 2023, including sonic drilling; new exploration discoveries
- Improvements to camps, roads, bridges
- Geophysical and remote sensing surveys (mag/radiometric; IP; hyperspectral)
- Site investigations (geological, geotechnical, engineering) and baseline surveys
- Average 145 people on-site throughout 2023; **over 1,000,000 hrs LTI-free since 2018.**


Diamond Drilling


Prospecting in Galore Valley

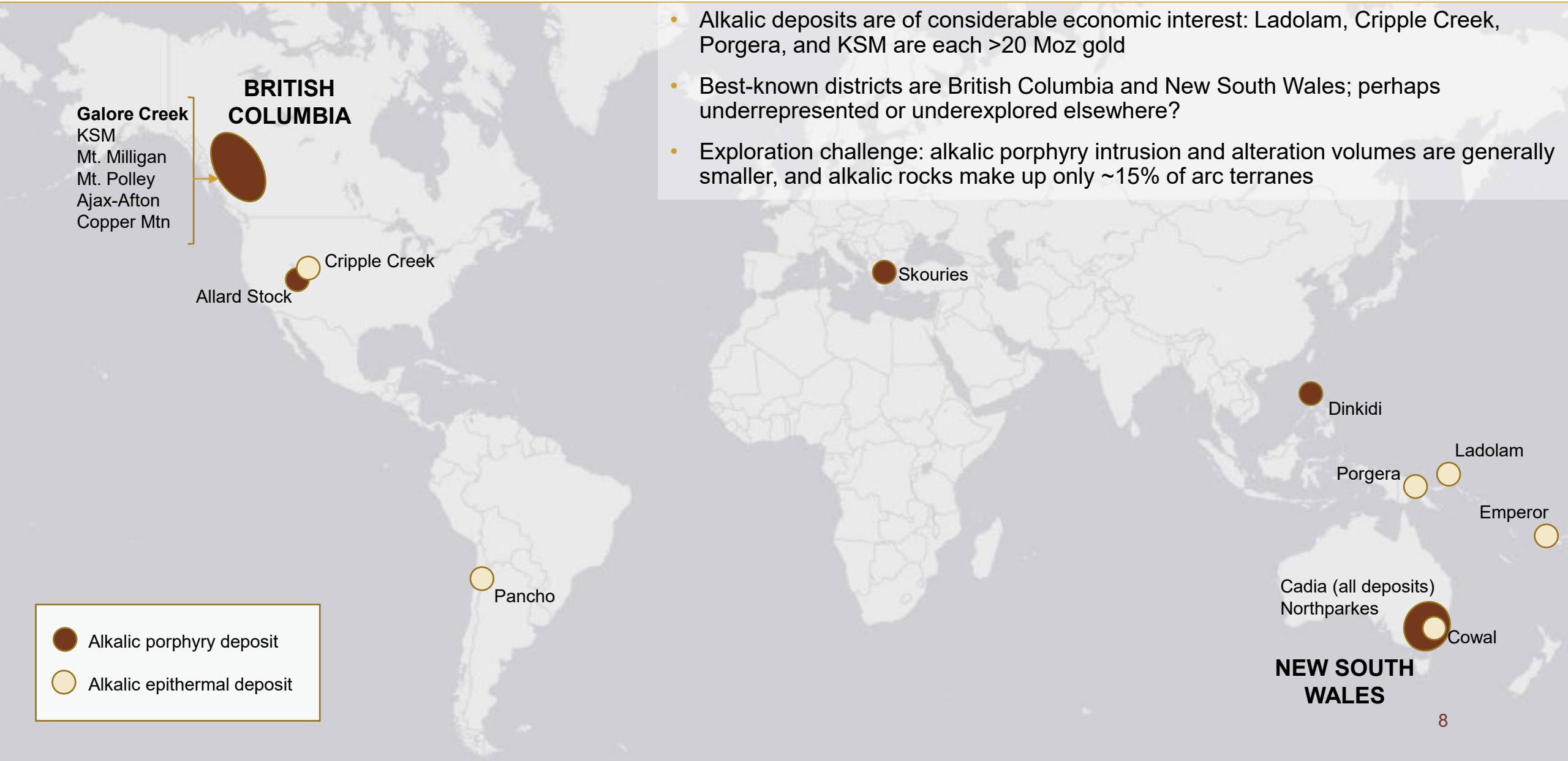

Airborne Magnetic Survey


Access Road Improvements

Alkalic Porphyry Deposits

Alkalic Porphyry Deposits – Global Context

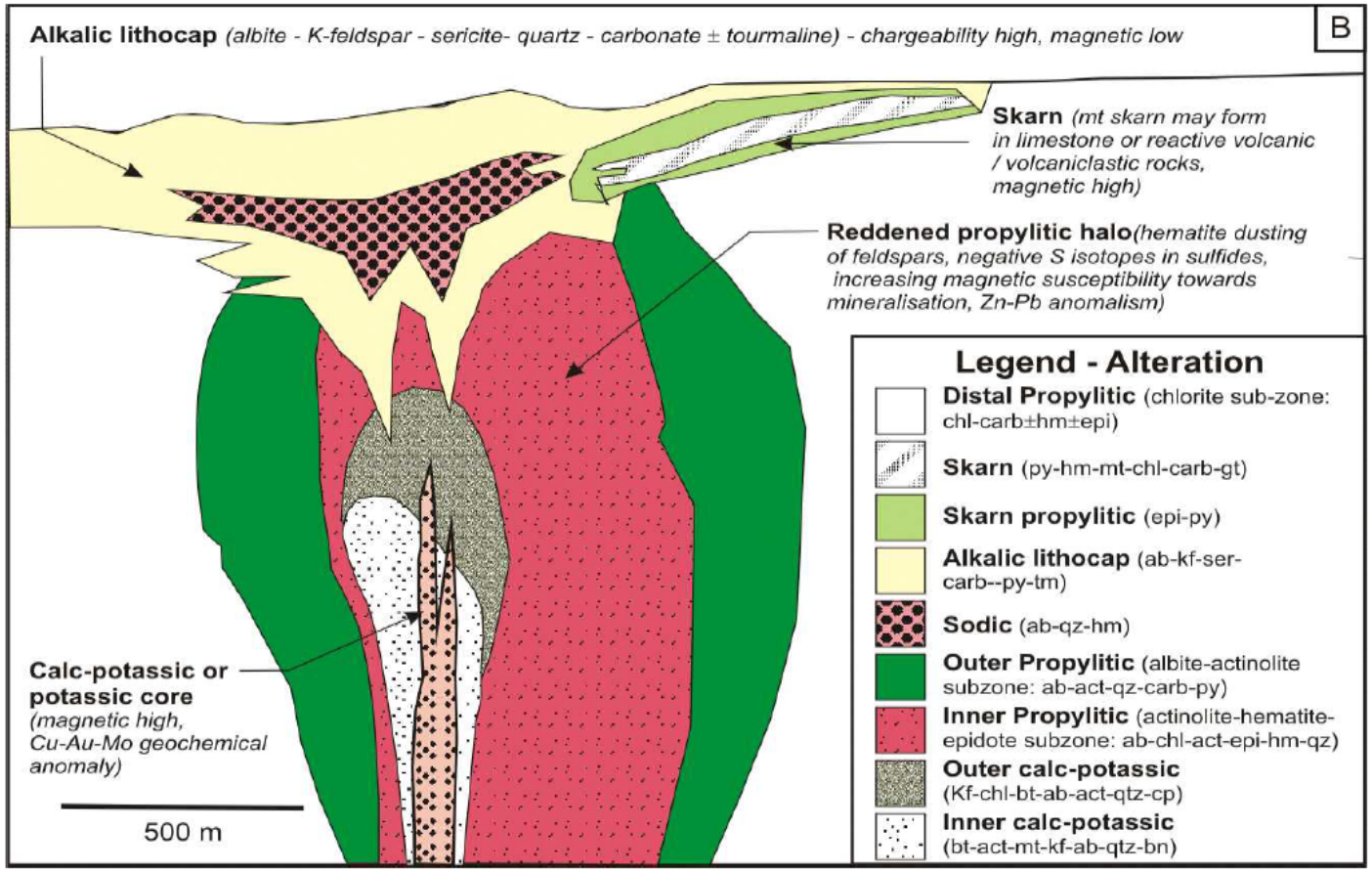
- Alkalic deposits are of considerable economic interest: Ladolam, Cripple Creek, Porgera, and KSM are each >20 Moz gold
- Best-known districts are British Columbia and New South Wales; perhaps underrepresented or underexplored elsewhere?
- Exploration challenge: alkalic porphyry intrusion and alteration volumes are generally smaller, and alkalic rocks make up only ~15% of arc terranes



Alkalic Porphyry Systems

Typical Characteristics versus Galore Creek Characteristics

- Classification first applied at the Northparkes deposit in New South Wales, Australia in the 1970s.
- ✓ Cu-Au primary (± Ag, Mo, PGE).
- ✓ Quartz-poor host rocks: monzodiorite, monzonite, syenite.
- ✓ Highly oxidized magmas (magnetite, hematite, anhydrite).
- ✓ Strong structural control; leads to clustering, overlapping centres.
- ✓ Proximal alteration assemblages: potassic, calc-potassic, sodic (± skarn assemblages).
- Distal alteration: propylitic, sericitic; may have lithocap.
- ✓ Sulphide minerals: bornite, chalcopyrite, pyrite; lesser covellite, sphalerite, molybdenite.
- Reddening (oxidation of trace Fe in feldspars).
  not a consistent feature in BC deposits.
- ✓ Alteration envelopes smaller than calc-alkaline, phyllic and advanced argillic alteration absent or poorly developed.
- ✓ Breccias are common, important.



Holiday and Cooke, 2007. Ore Deposits and Exploration Technology. Paper 53. p. 791-809.

Geological Summary: What is Galore Creek?

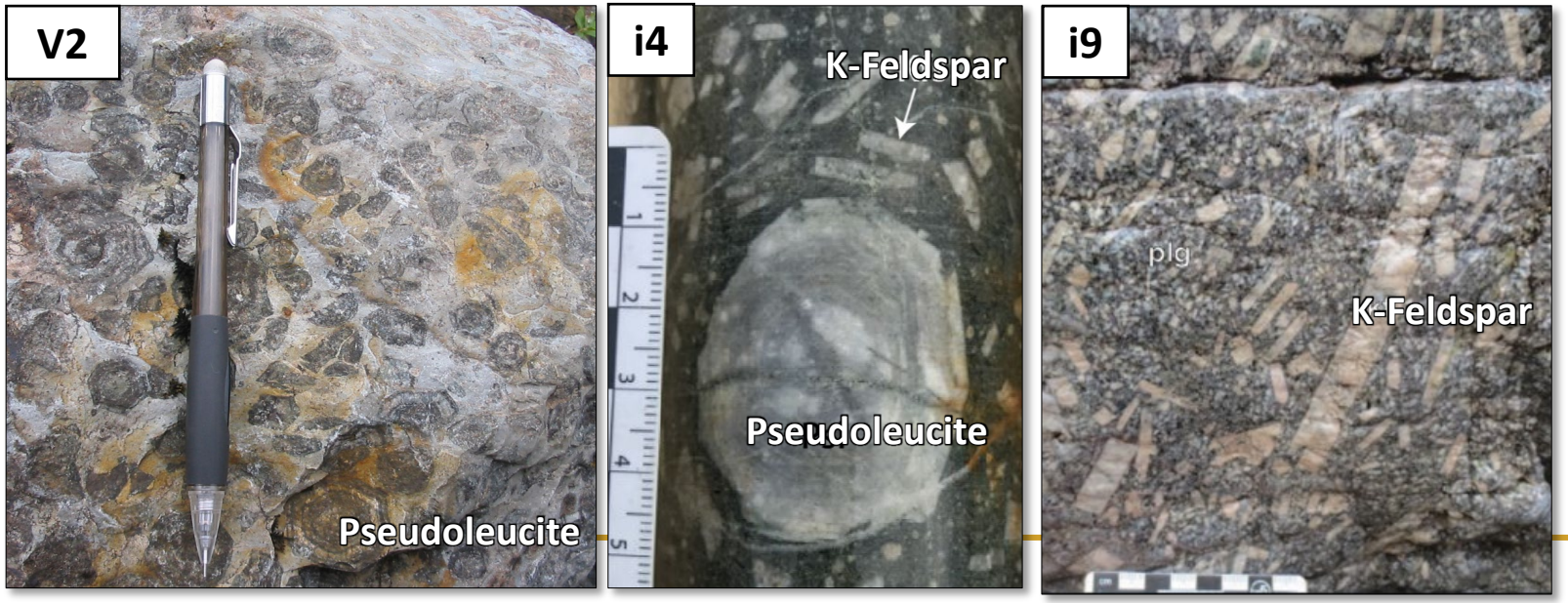
Compositions from CIM Special Volume 57. Porphyry Deposits of the Northwestern Cordillera.

Galore Creek

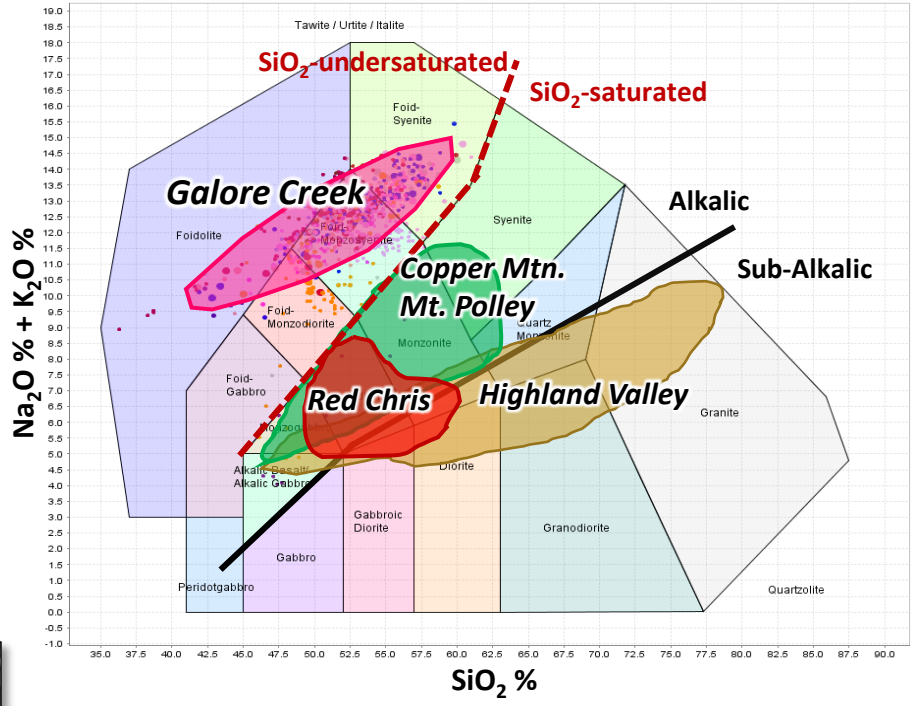
A Unique Alkalic Porphyry

- Silica-undersaturated alkalic Cu-Au-Ag deposit (with Pd enrichment).
- Feldspathoid-normative chemistry; leucite (altered to pseudoleucite) as a primary igneous mineral.
- No modal quartz, no feldspar reddening.
- Difficult to find analogues.

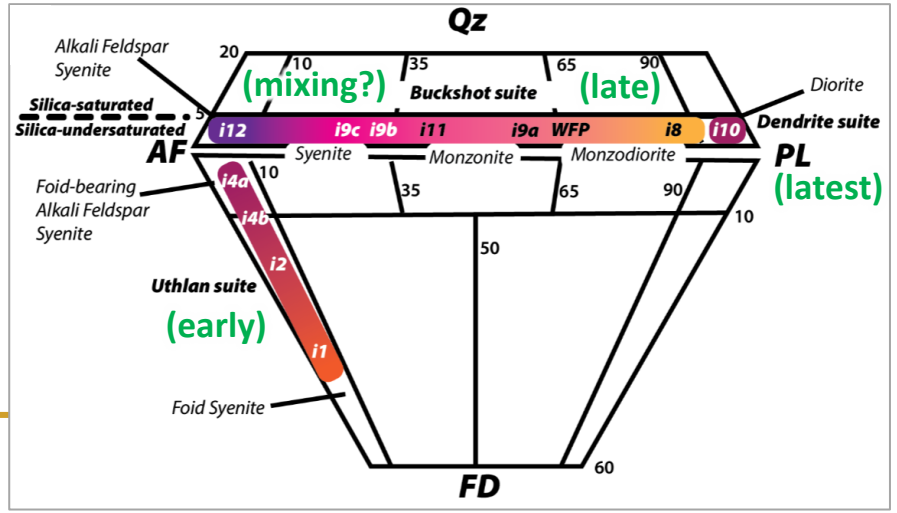
Pre-Mineral Volcanics | Syn-Mineral Intrusion | Late-Mineral Intrusion



TAS Diagram (geochemical characterization)

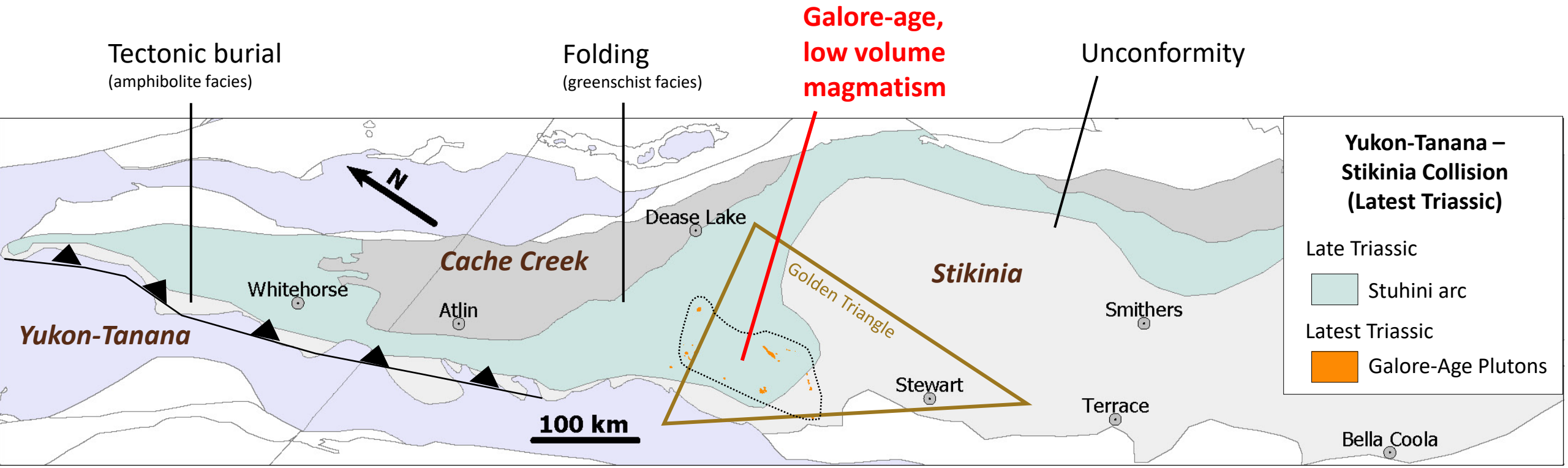


QAPF Diagram (petrographic characterization)



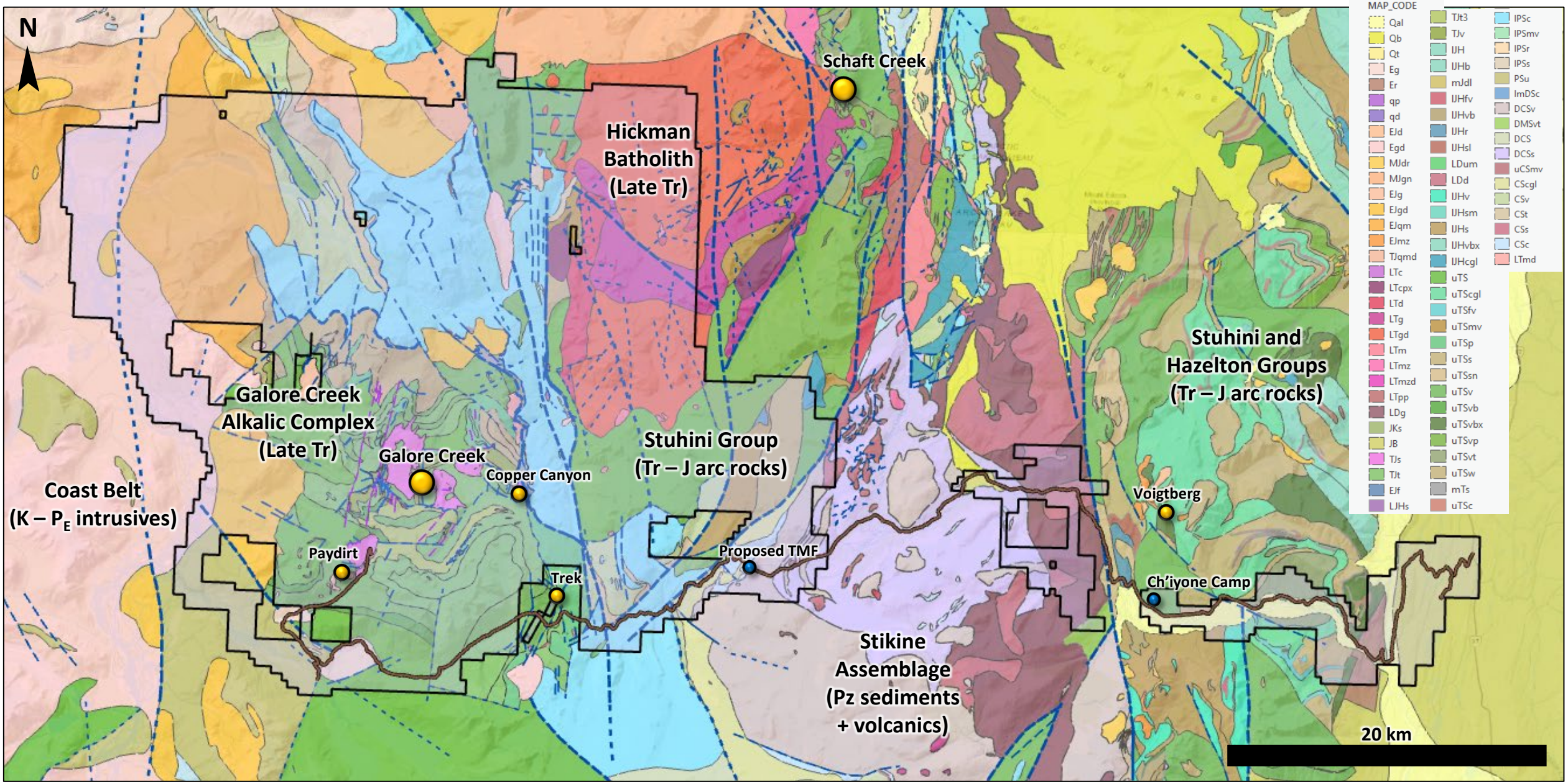
Tectonic Setting

- Galore Creek formed in the latest Triassic; older than many other porphyry systems in Golden Triangle.
- Low volume, regionally rare alkalic magmatism occurred during collision of Yukon-Tanana with Stikinia (210-208 Ma).
- Small (>155km) belt perpendicular to Stuhini arc; low-degree remelting of enriched mantle after subduction disrupted.

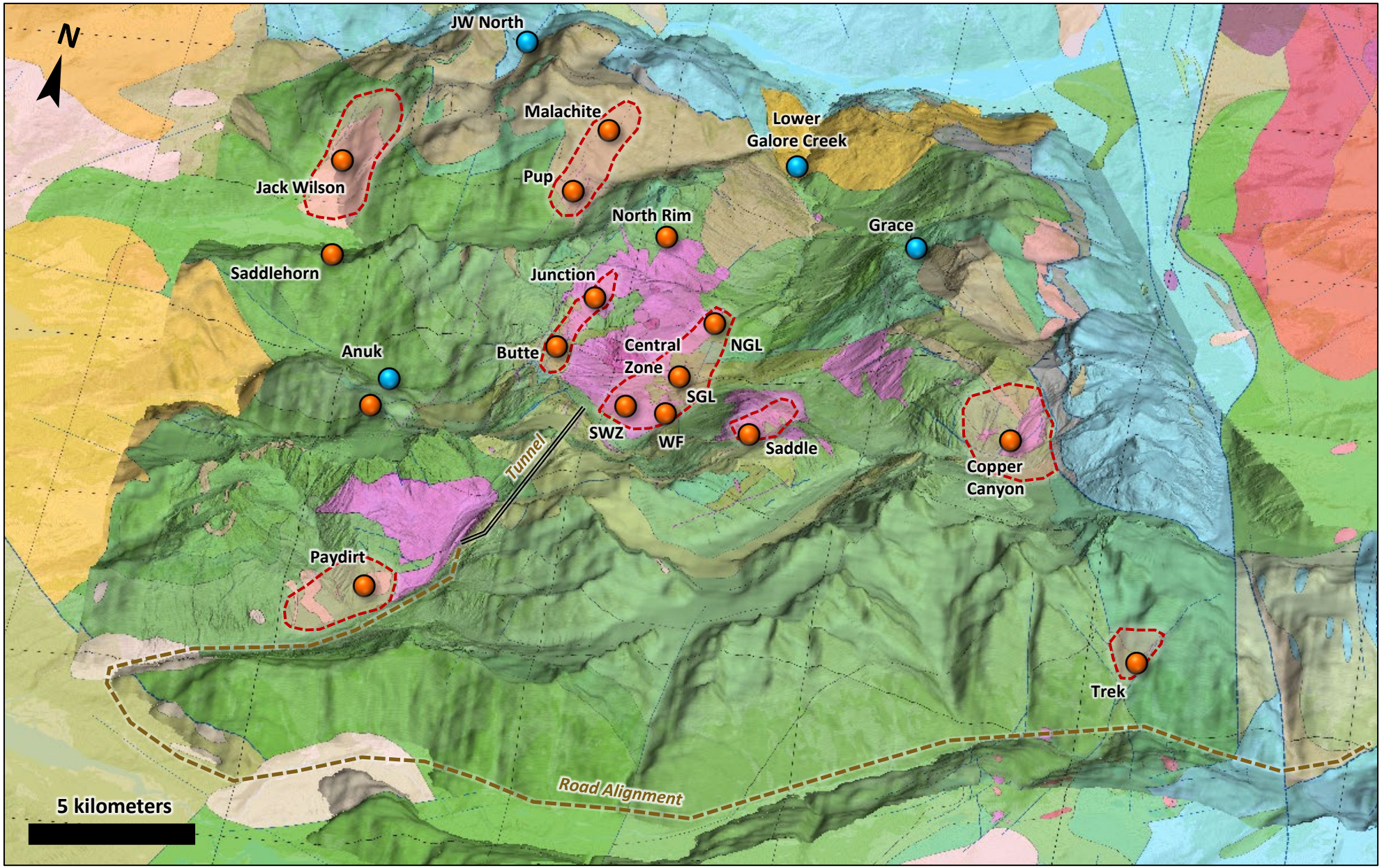


van Straaten et al (2023), *Henderson et al. (1992), Rhys (1993), Brown et al. (1996), Greig (2014), Rees et al. (2015), Clark (2017), Nelson et al. (2018), van Straaten & Wearmouth (2019), Dyer (2020), Kovacs et al. (2020), Miller et al. (2020), Febbo et al. (2021), Greig et al. (2021)*

Property Geology Map



Known Mineralized Localities



- Multiple mineralized zones within 20 x 20 km district.
- Many mineral occurrences are early-stage targets with very little previous work.
- Terrain and access is challenging.

Mapped Alteration Zones
Cu-Au Mineralized Centers
Anomalous Cu-Au in stream sediment sampling

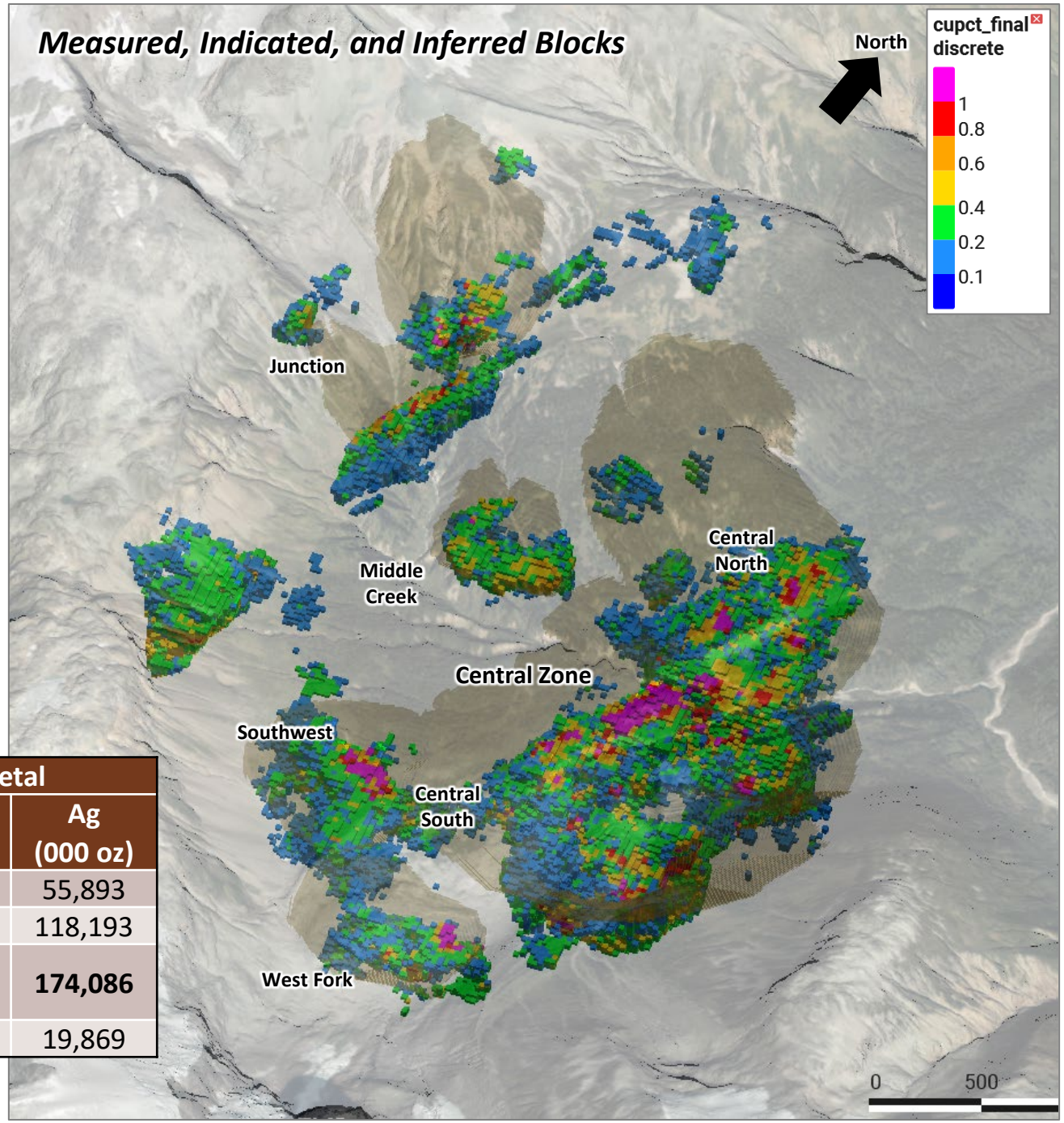
Resource Estimate

Cu, Au, Ag; Completed in 2022

- Includes approximately 346,000m of drilling.
- Geological model built from ground up; collars, downhole surveys, assays corrected and recompiled from original sources.
- By value, approximately 75% Cu, 20% Au, 5% Ag.
- Central deposit comprises ~85% of contained metal; amalgamation of multiple hydrothermal centers.
- Anomalous enrichment of Pd. Never previously assayed; being investigated as value-add opportunity.

Category	Tonnes (Mt)	Grades			Contained Metal		
		Cu (%)	Au (g/t)	Ag (g/t)	Cu (M lbs)	Au (000 oz)	Ag (000 oz)
Measured	425.7	0.44	0.29	4.1	4,119	4,028	55,893
Indicated	771.2	0.47	0.22	4.8	8,040	5,410	118,193
Measured + Indicated	**1,196.8**	**0.46**	**0.25**	**4.5**	**12,159**	**9,438**	**174,086**
Inferred	237.8	0.26	0.19	2.6	1,386	1,430	19,869

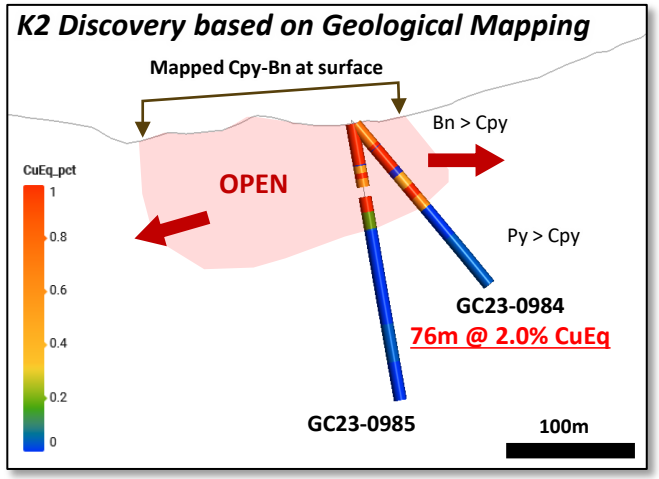
See www.gcmc.ca/galore-creek-project/#resource for full resource statement and notes

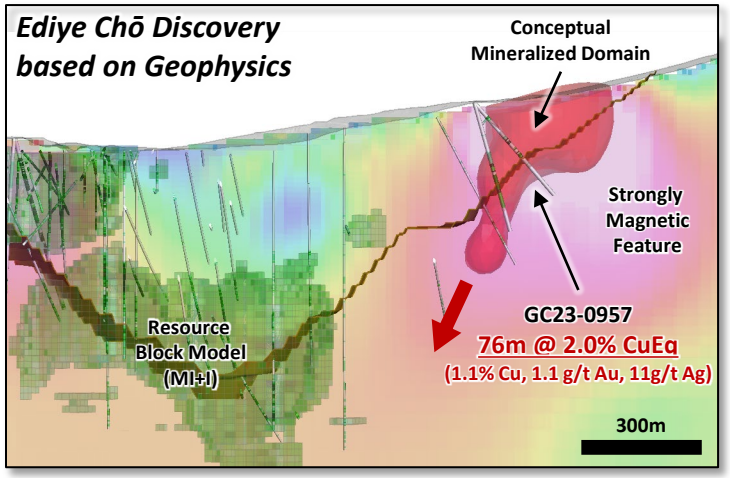


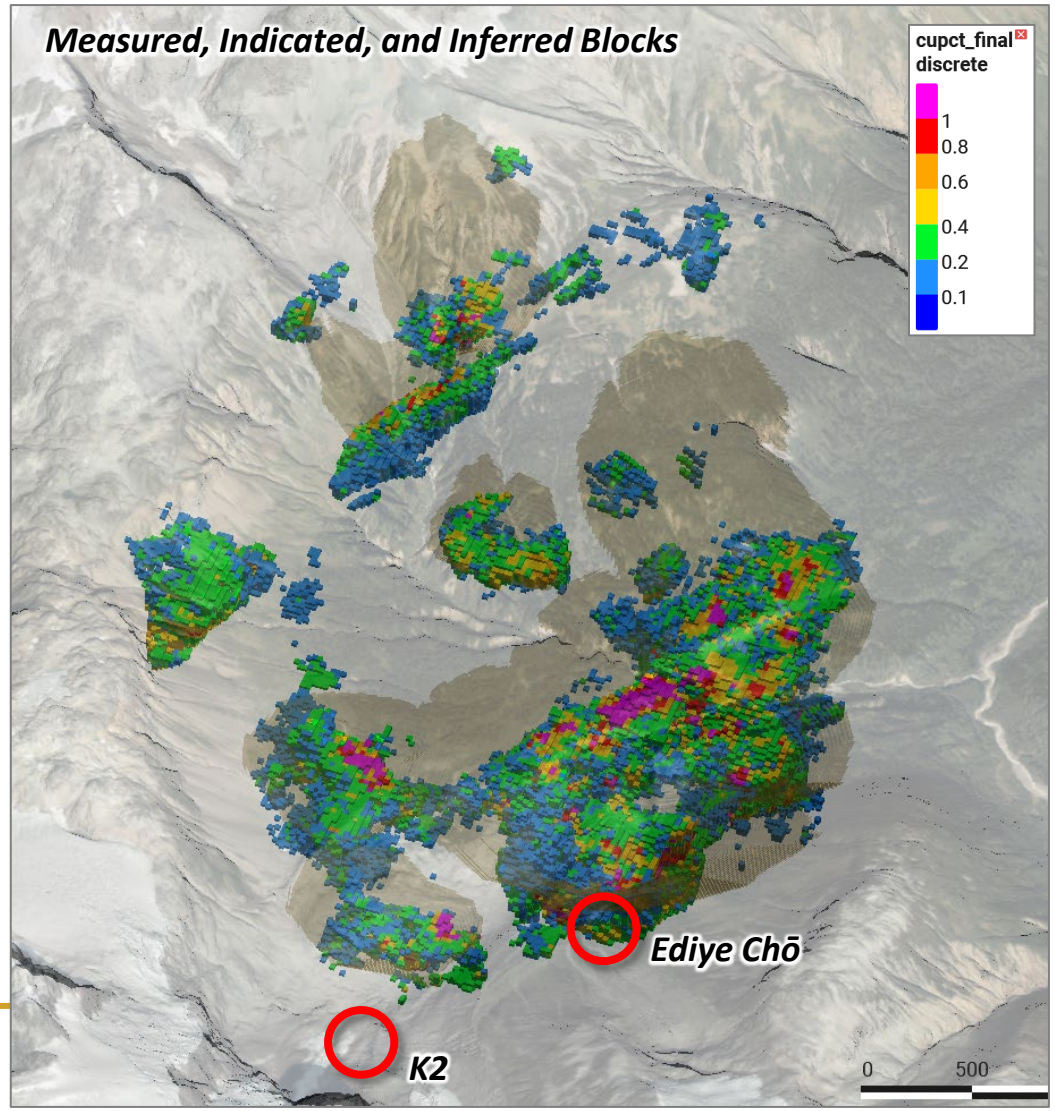
Significant New Discoveries in 2023

Continuing to delineate high-grade, near-surface mineralization after 60 years of exploration

- **Ediye Chō:**
  - Airborne magnetic survey in 2022 identified extremely magnetic anomaly under 30m of glacial till, in the margin of the Central pit.
  - First drill hole: **76m @ 2.0% CuEq (1.10% Cu, 1.11g/t Au, 11.2g/t Ag)**
- **K2:**
  - Geological mapping in 2023 followed mineralized trend into creek exposure under till: found high-grade outcrop 500m from planned pit.
  - First drill hole: **73m @ 2.4% CuEq (1.24% Cu, 1.71g/t Au, 6.9g/t Ag)**



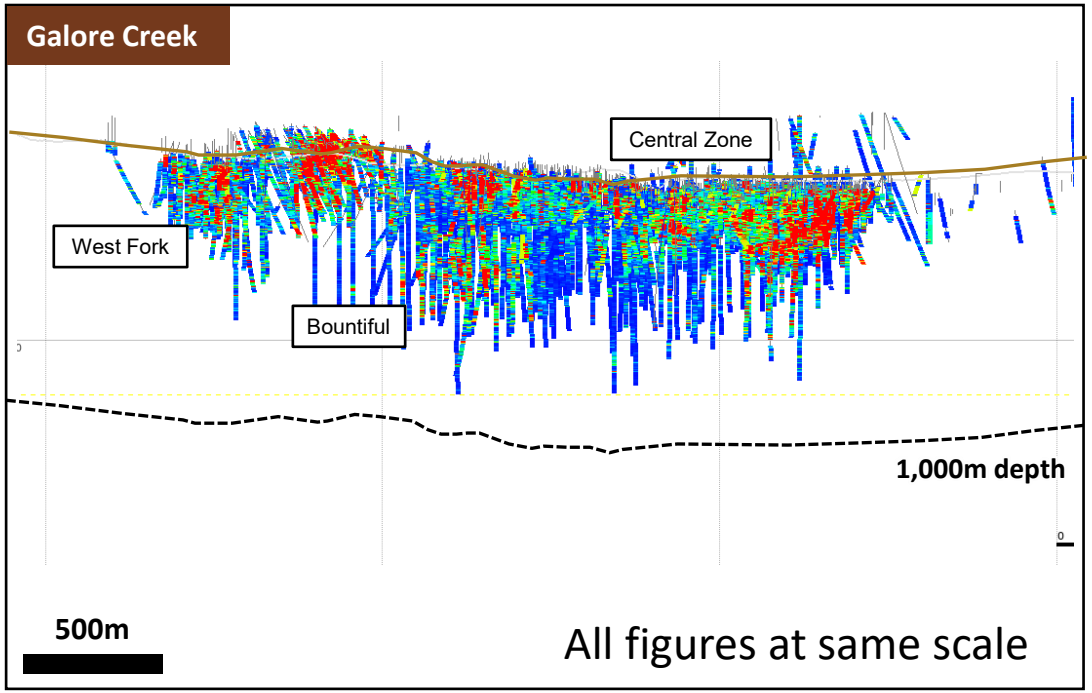


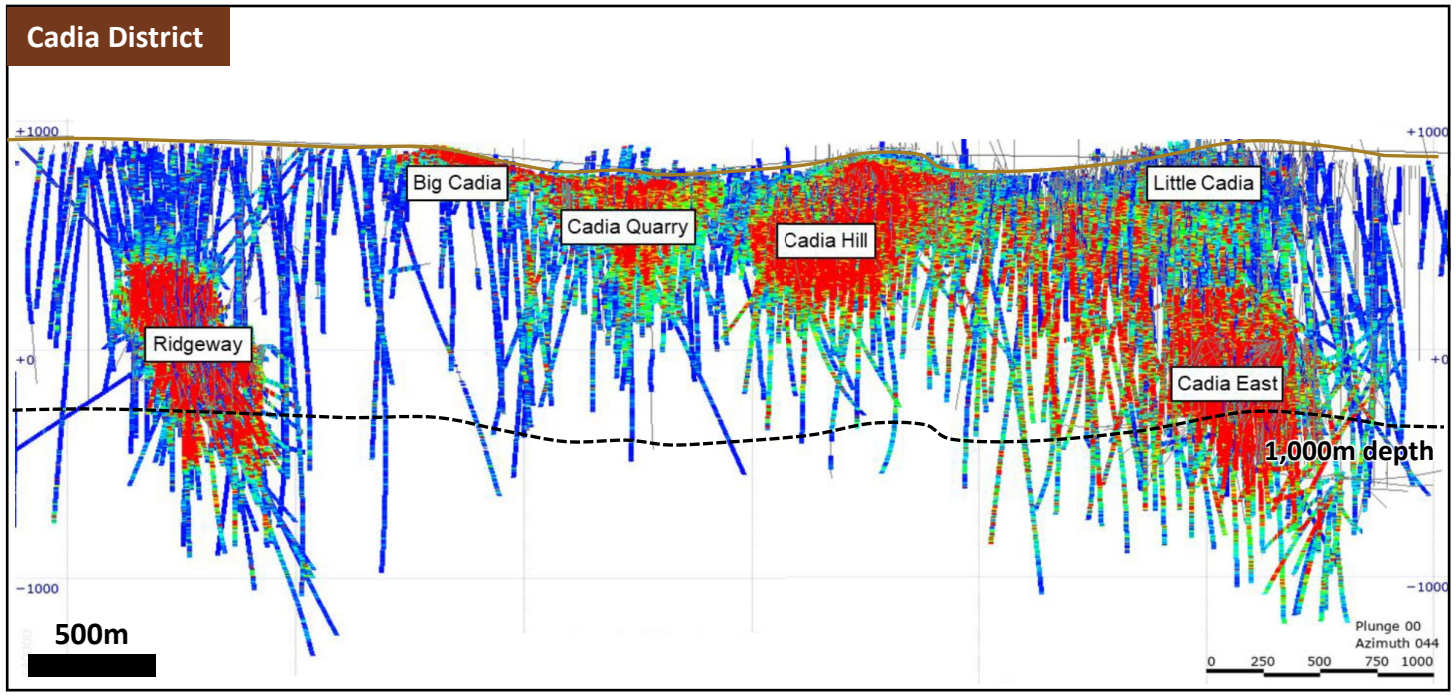


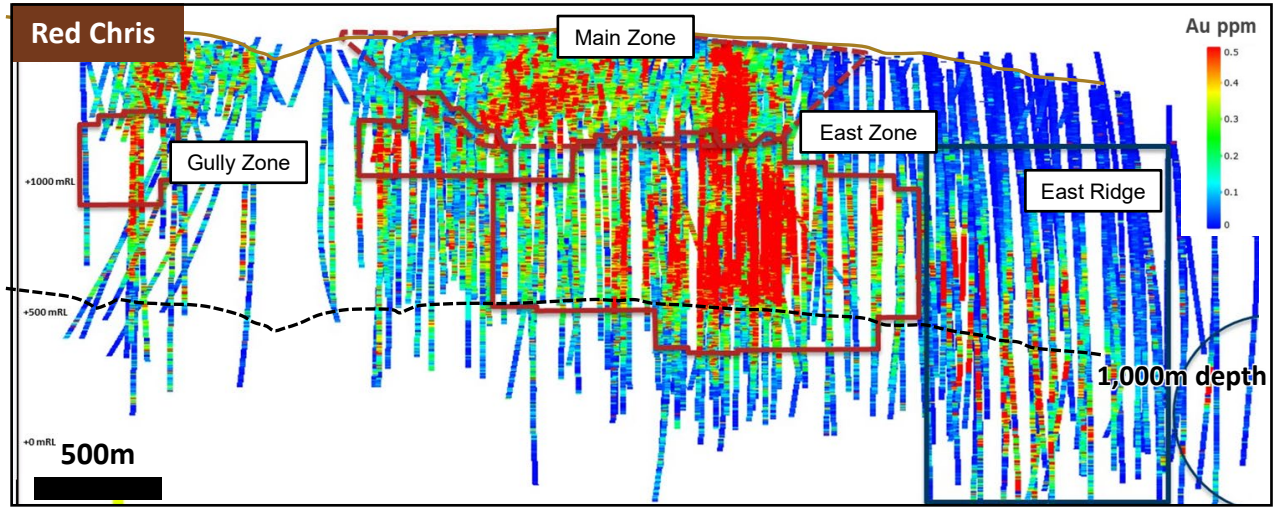
Galore Creek MINING CORPORATION

Geological Features

Commonalities amongst Alkalic Porphyry Deposits

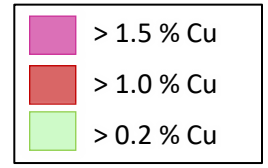


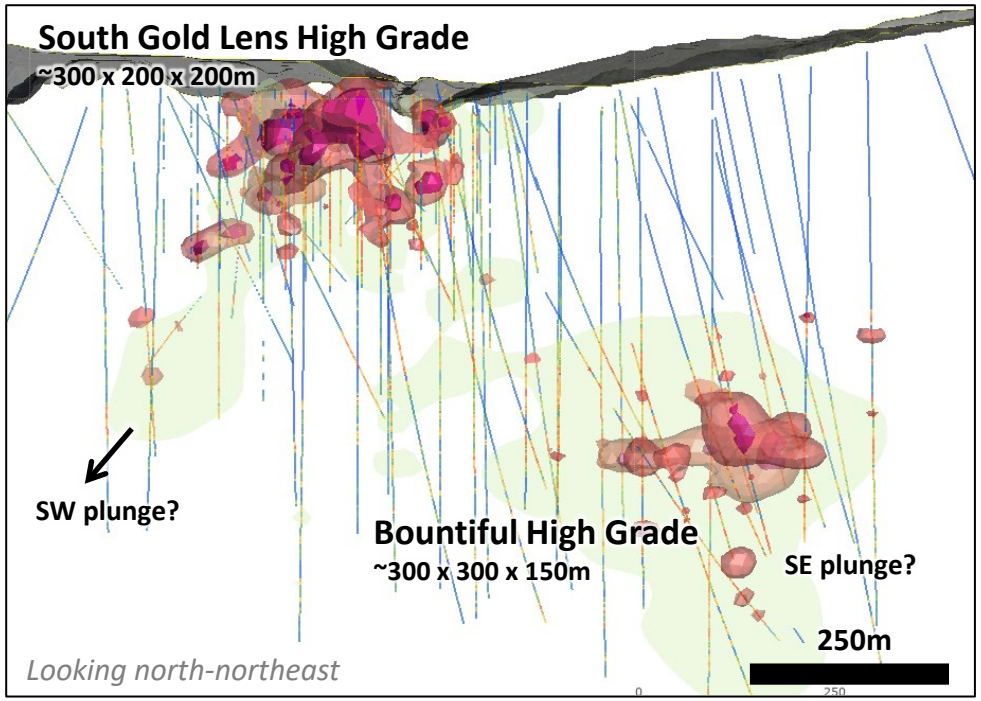


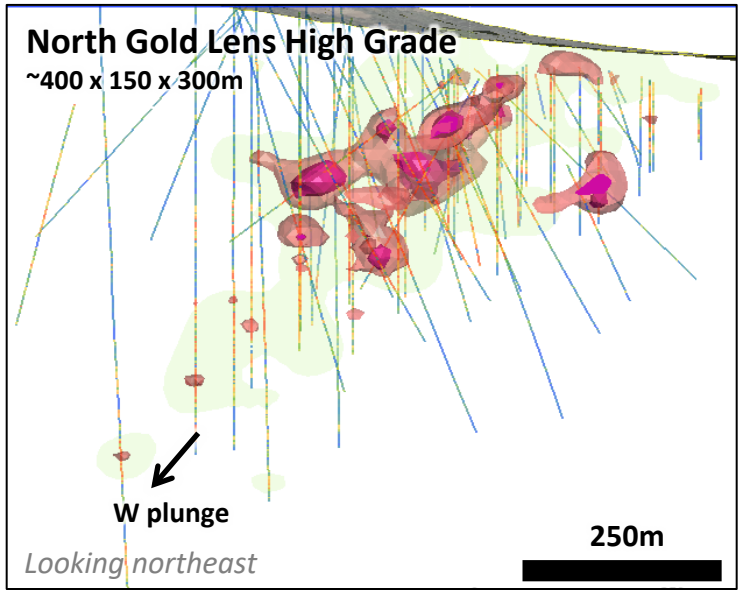


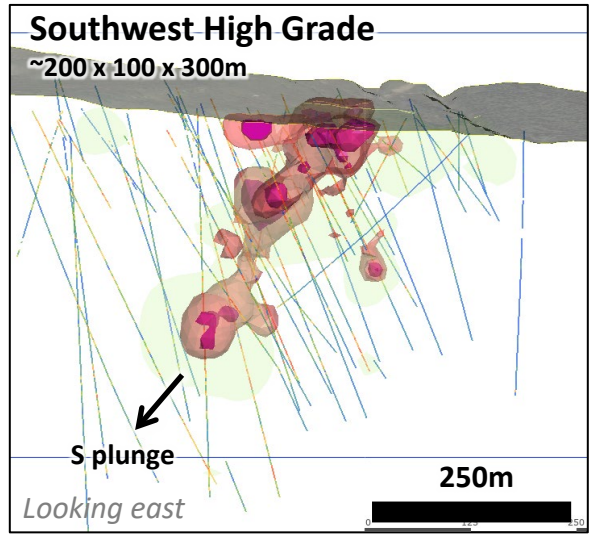
- Similarities in geometry between Galore Creek and other ~alkalic deposits such as Cadia and Red Chris
- Multiple mineralized centres, clustered, some blind, strong structural control, geochemical and mineralogical vectoring
- Overlapping in terms of timing, alteration, metal content
- Exploration space at Galore Creek: lateral, vertical, no immediate limits to prospective host rocks

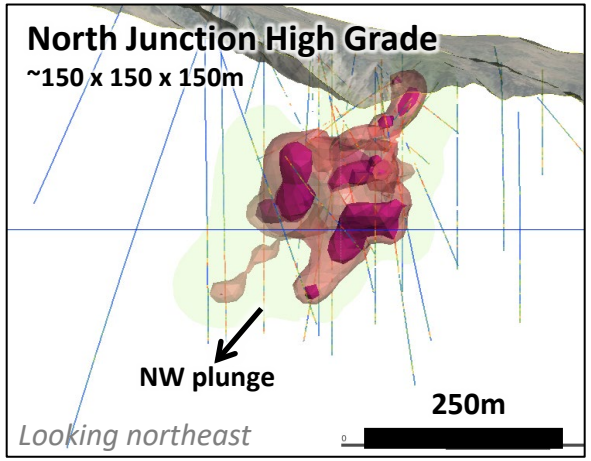
Geometry of Mineralized Zones at Galore

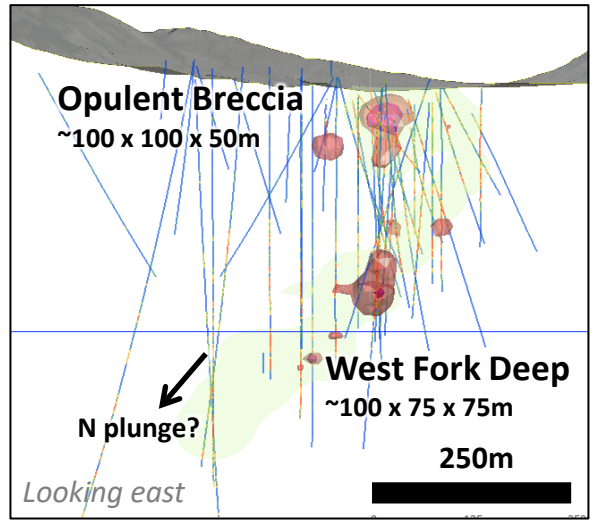












- Multiple high-grade centers (>1.5% Cu) with similar volume; typically, elongate shape, variable trend and plunge.
- Geometry is a combination of structural control and favorable lithology or lithological contact

Simplified Deposit Geology

- Volcanosedimentary strata of Lower Stuhini Group overlain by alkalic volcanogenic rocks.
- Alkalic intrusions and breccias emplaced along intersection of several key structures.
- Significant N-S and NW-SE structural controls on emplacement of mineralization, breccias, and intrusions.

Glacier

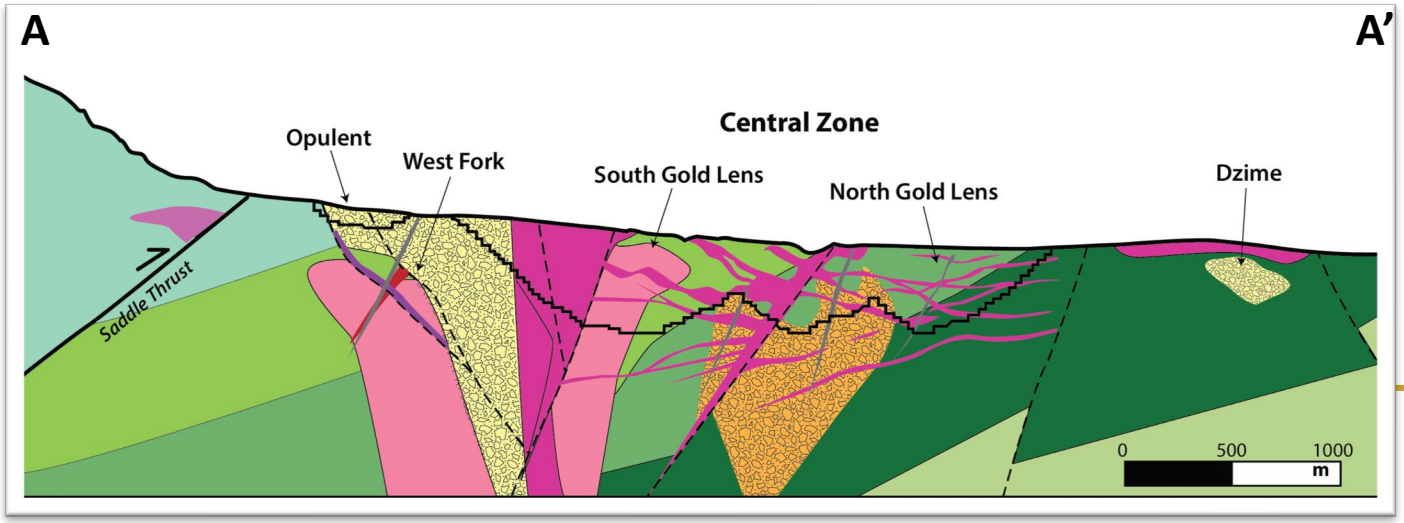
Breccias
Undifferentiated matrix-and-cemented breccia

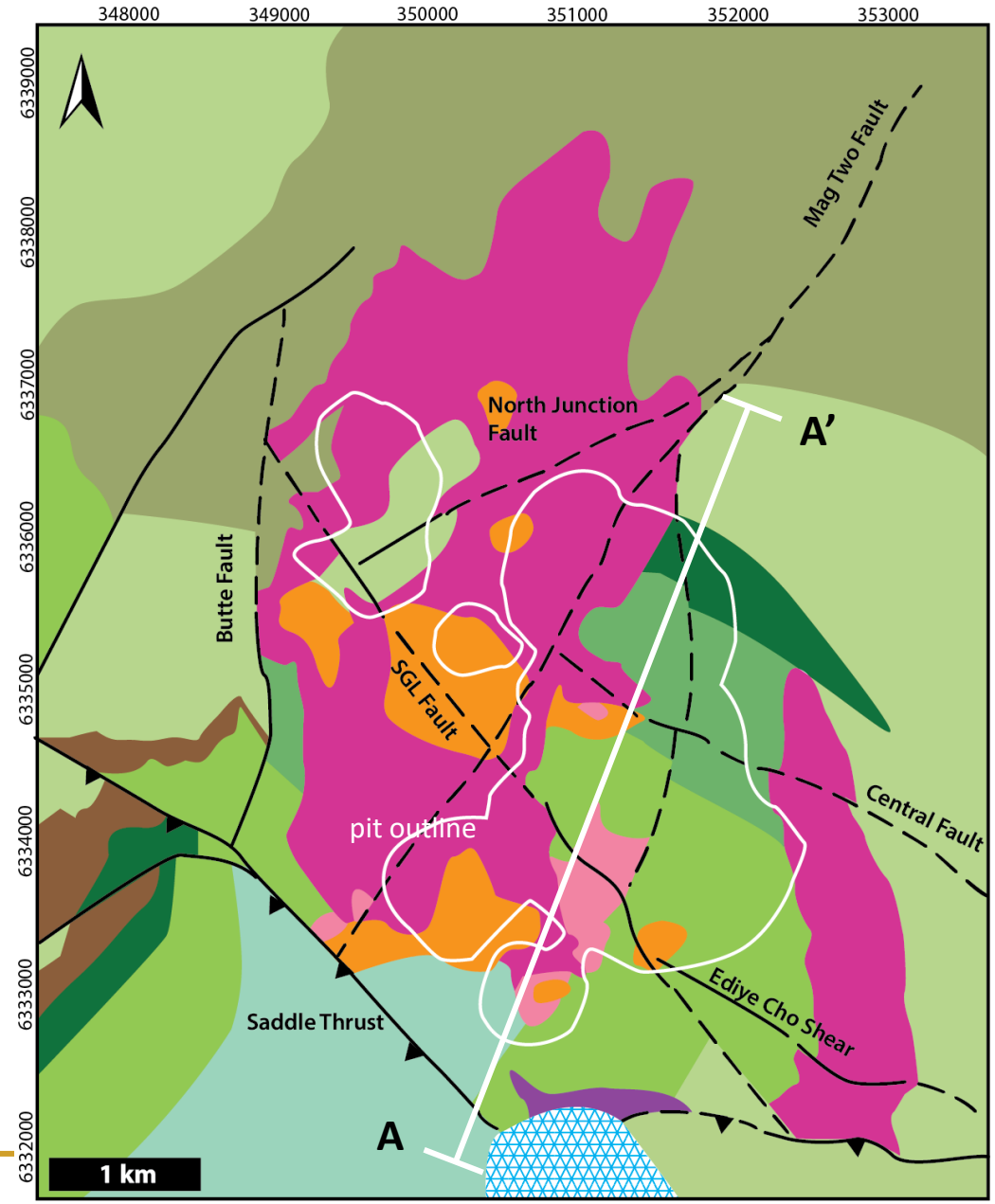
Buckshot suite
Trachytic biotite monzonite porphyry (i11)
Undifferentiated Buckshot suite

Uthlan suite
Undifferentiated Uhtlan suite

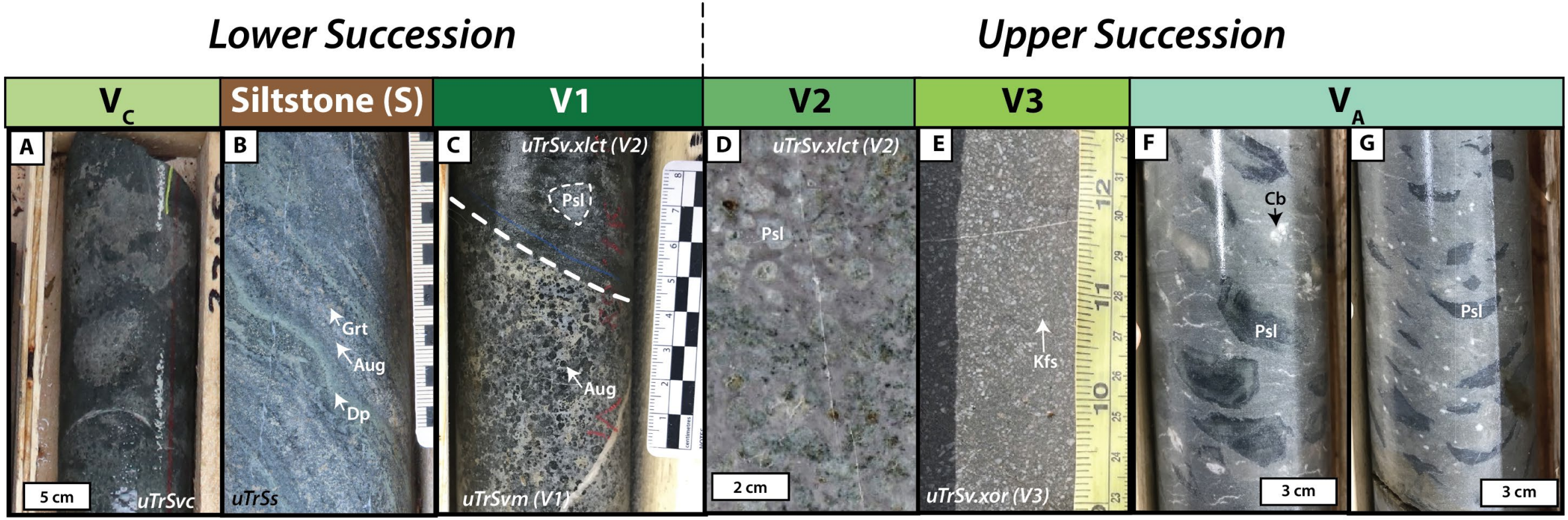
Upper Stuhini Group
Analcime-bearing Phonolite (V_A)
Orthoclase-bearing Phonolite (V3)
Pseudoleucite-bearing Phonolite (V2)

Lower Stuhini Group
Augite-bearing shoshonite (V1)
Siltstones (S).
Hornblende-plagioclase-bearing basaltic andesite and conglomerates (V_C).
Volcanic-derrived sediments (V_S).





Galore Valley Volcanosedimentary Rocks



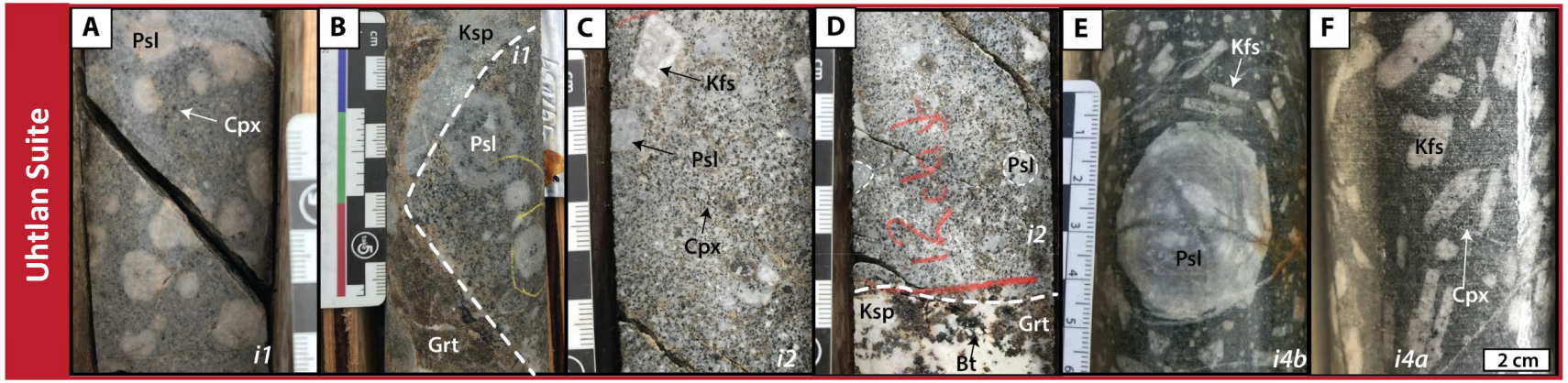
- **Lower Succession:**
  - V1: augite-bearing alkalic basalts
  - Siltstones
  - V_C: intermediate volcanics and volcaniclastics
- **Upper Succession**:
  - V_A: analcime-bearing phonolite
  - V3: orthoclase-bearing phonolite
  - V2: pseudoleucite-bearing phonolite

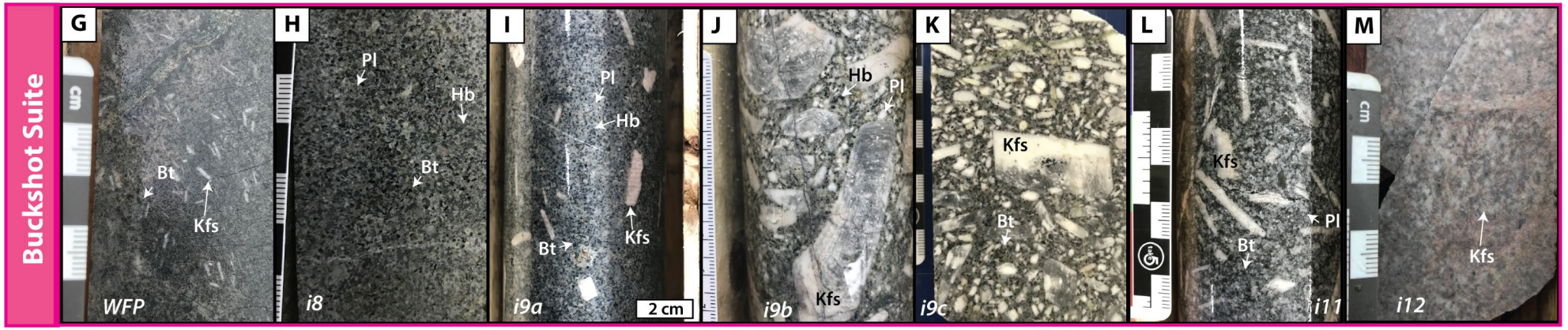
Galore Valley Intrusive Rocks

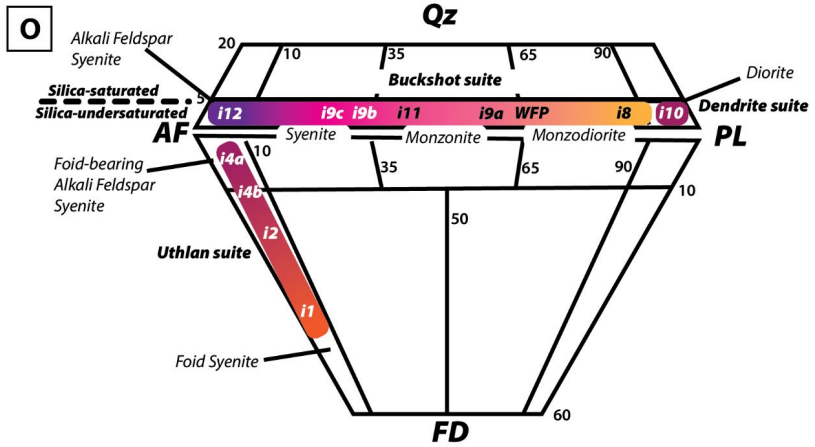
Pseudoleucite + Clinopyroxene

Hornblende+ Biotite

Plagioclase dominant

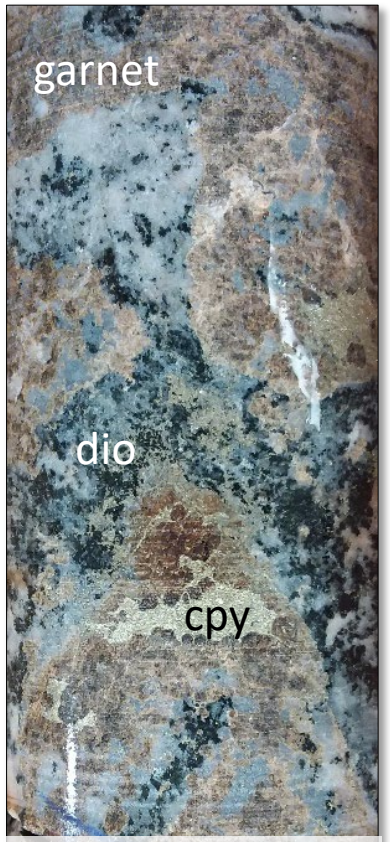






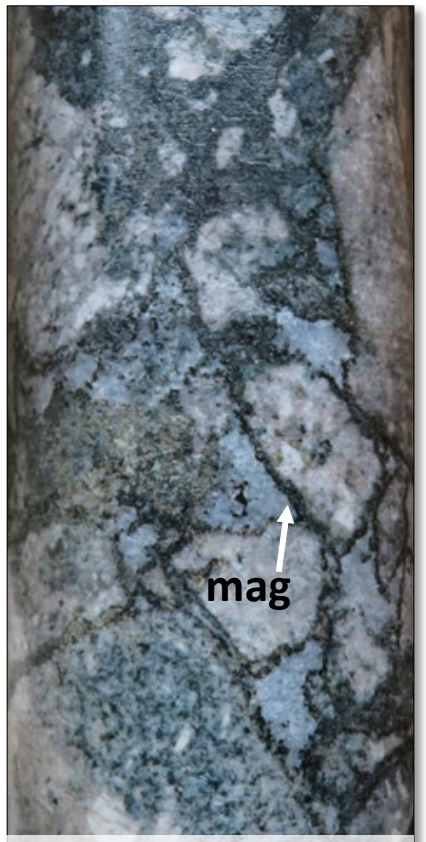
Breccias Galore

Multiple breccia varieties, throughout deposit history



Central CBX: Dio-Mag-Anh-Cpy

Bountiful CBX: Dio-Bio-Mag-Anh-Bn-Cpy



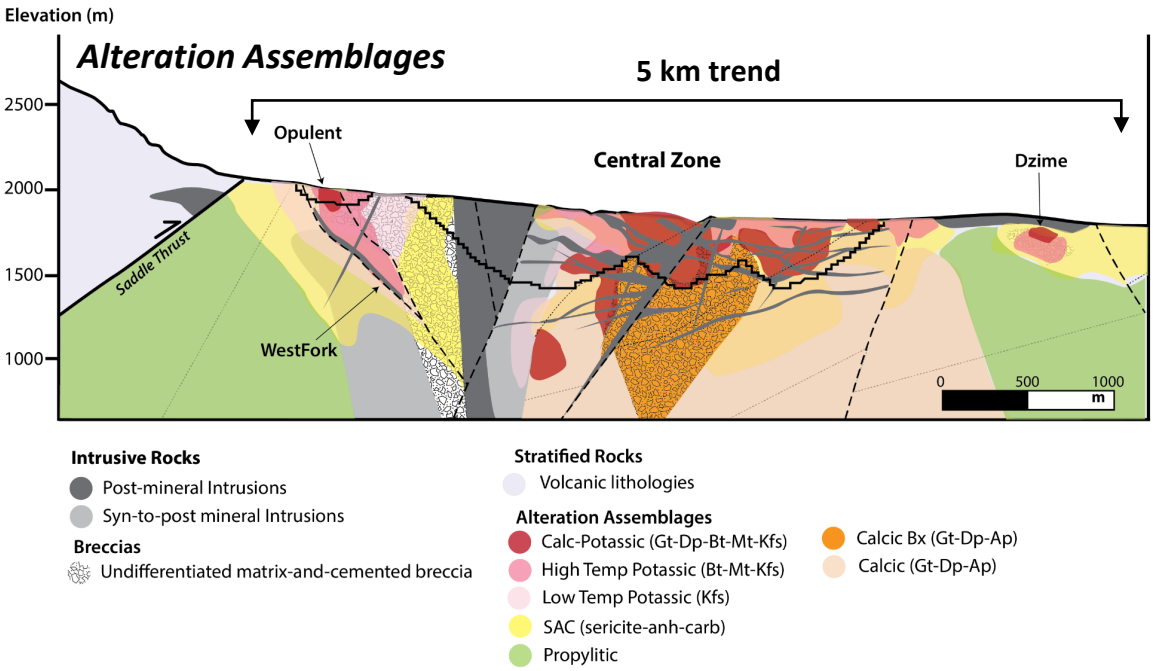
Bountiful CBX: Anh-Mag-Bio-Py

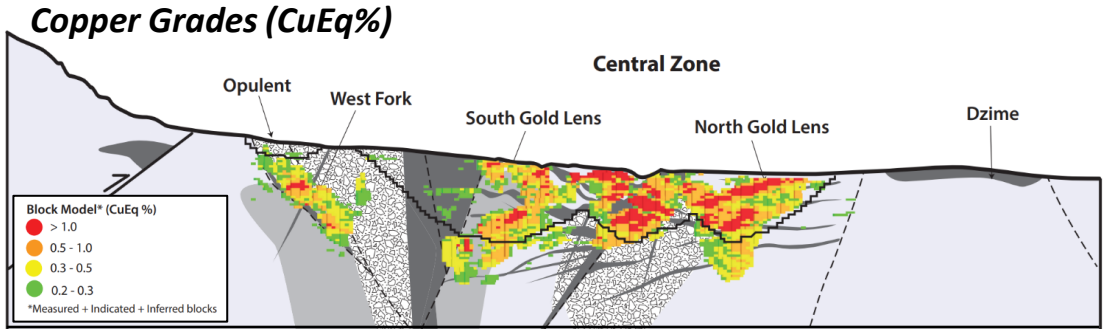
Southwest: Matrix BX

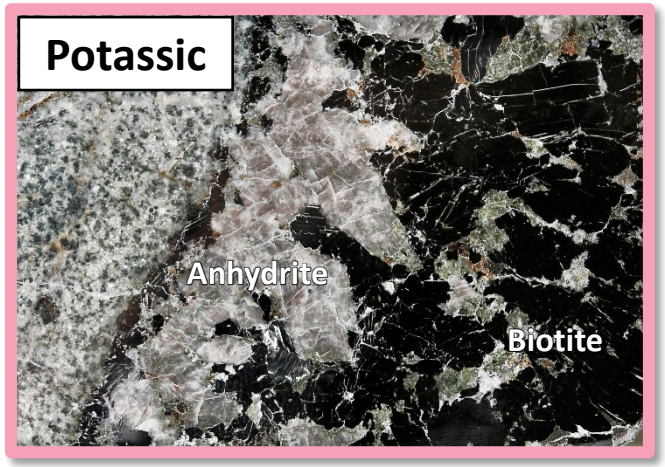
Junction: Clast > Matrix BX

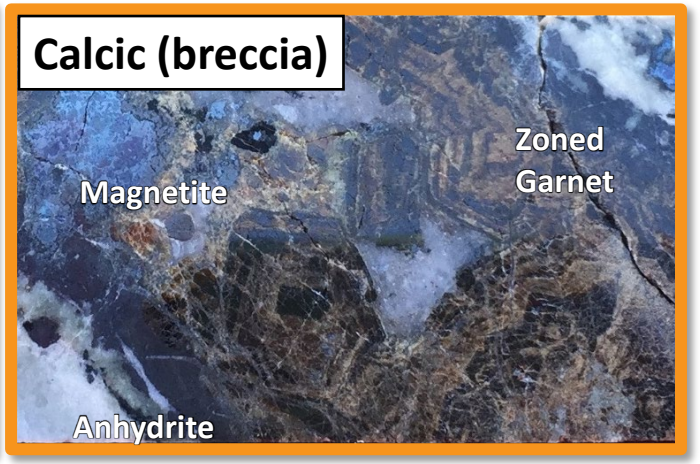
Pre-Mineral ← Syn-Mineral → Late Mineral →

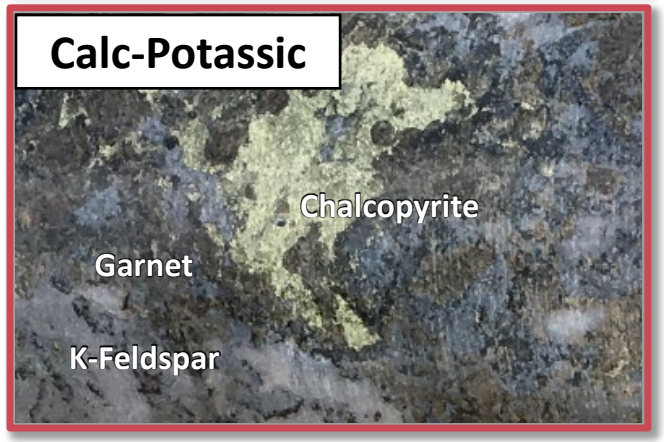
Alteration Domains

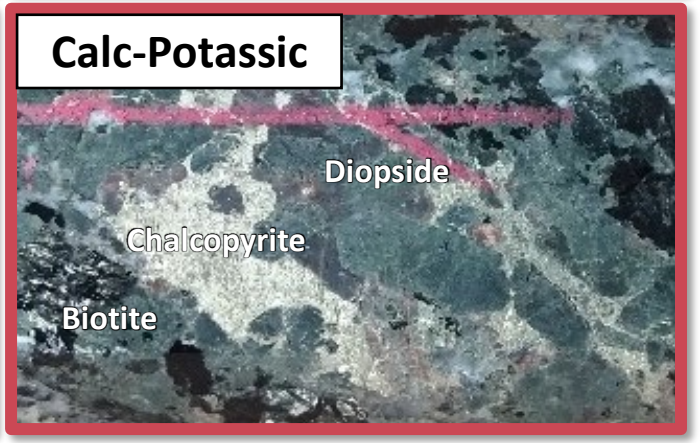


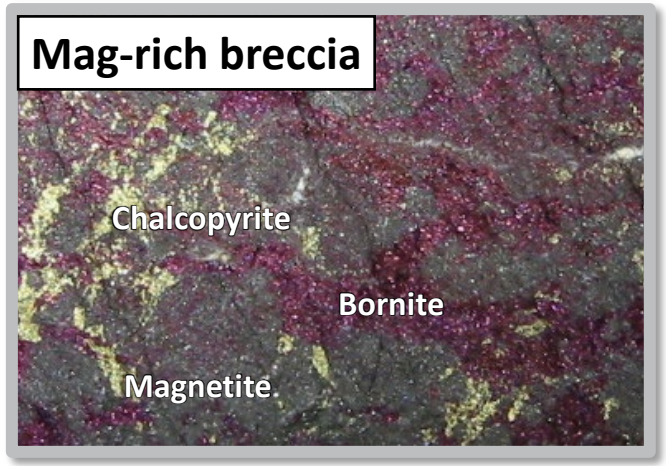


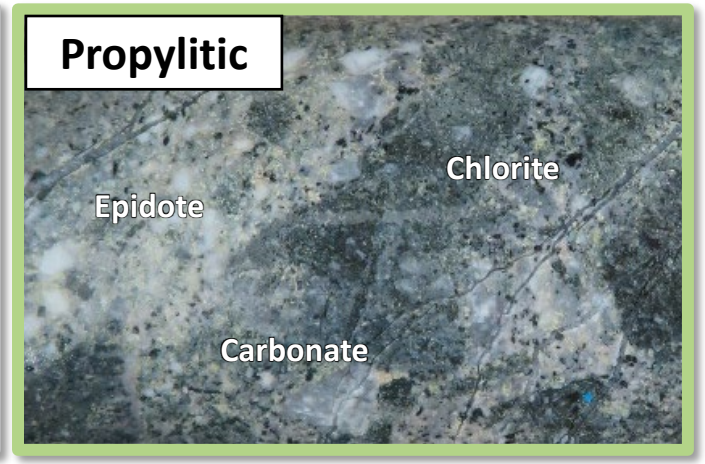






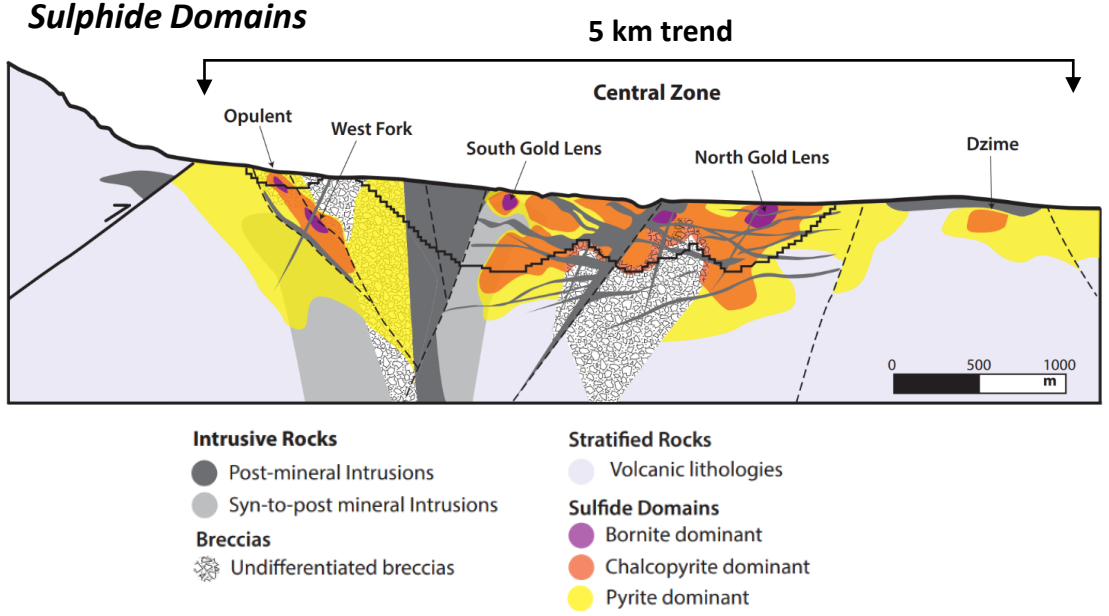




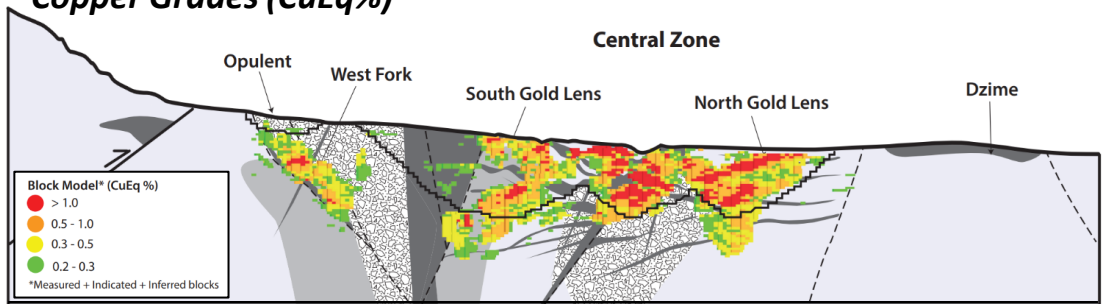


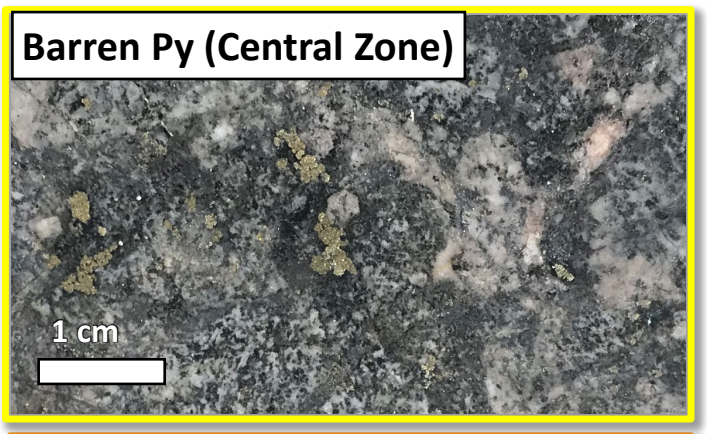
Mineralization Domains

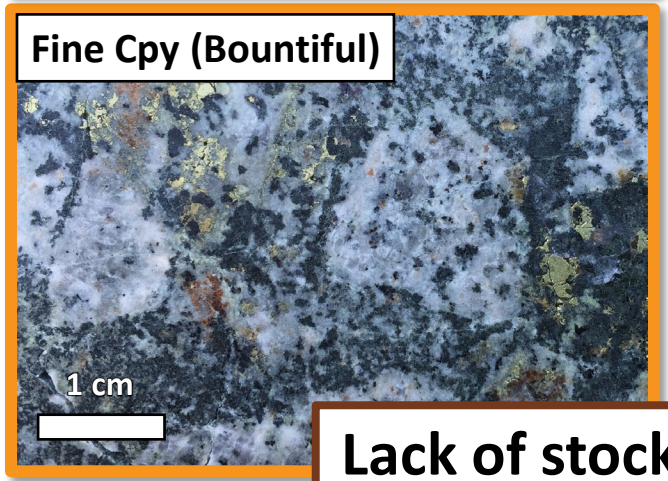
Sulphide Domains

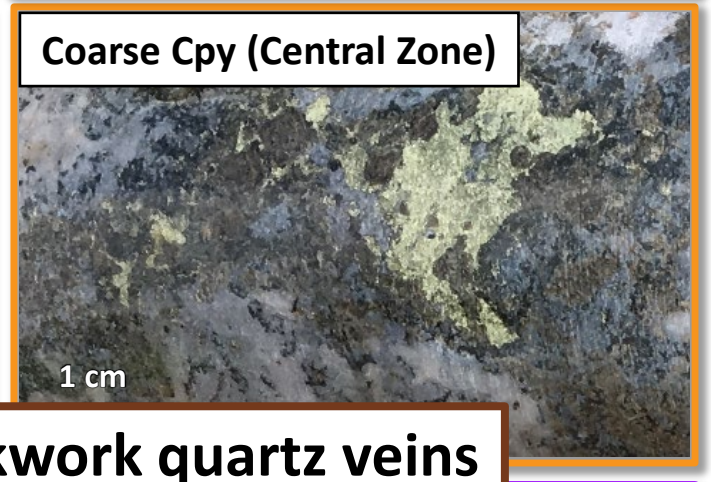


Copper Grades (CuEq%)

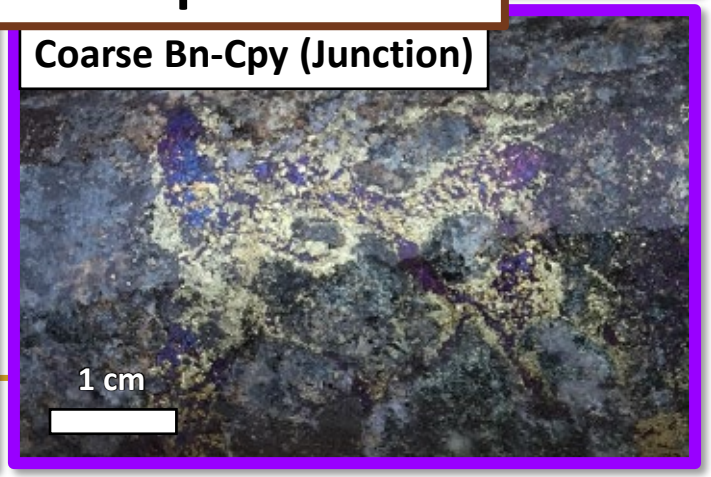








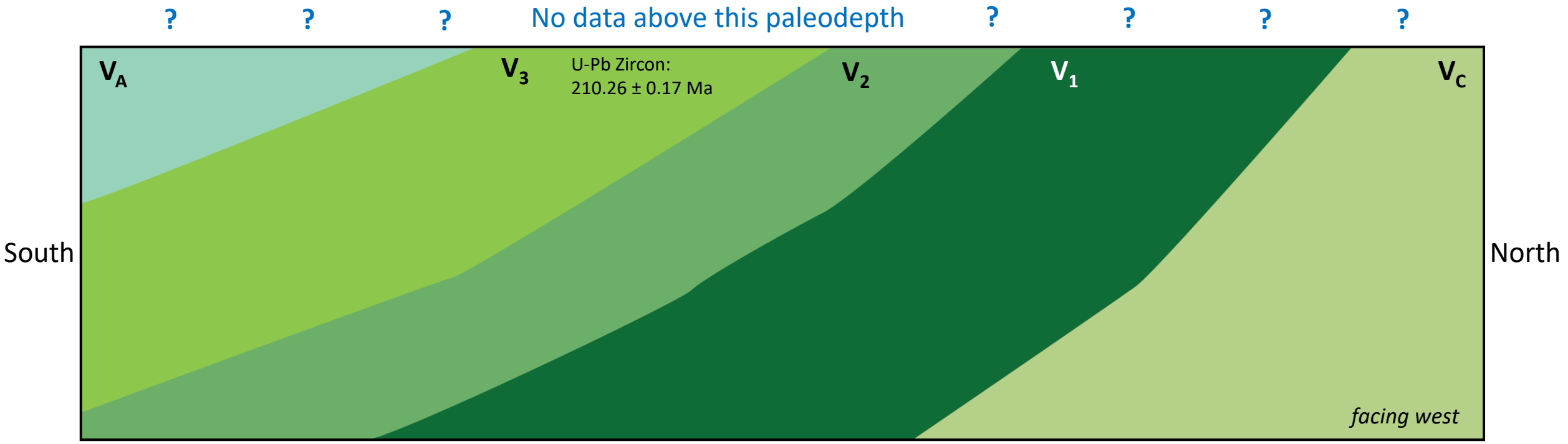
Lack of stockwork quartz veins



Deposit Paragenesis

Host Rock Deposition

- The volcanosedimentary arc rocks in the Galore valley were deposited in the Late Triassic (ca. 210 Ma) as a late, low volume silica-undersaturated sequence overlying “conventional” Stuhini Group rocks.
- This alkalic upper succession (V_2, V_3, and V_A) are units localized to the Galore valley.

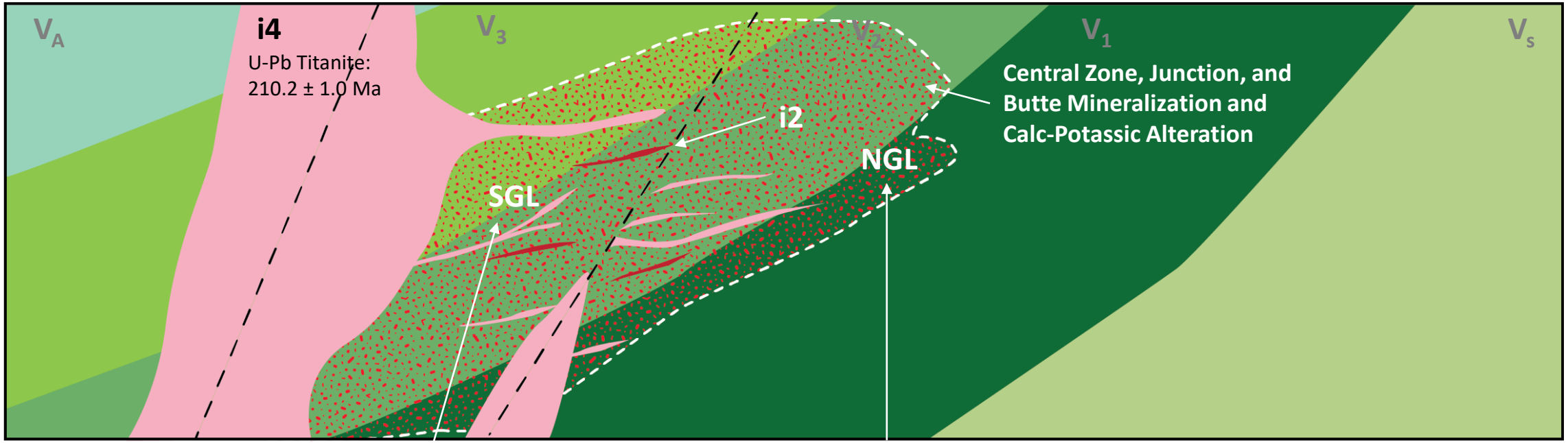


Galore Creek MINING CORPORATION

Geochronology and stratigraphic information extracted and modified from van Straaten et al., 2023 and Johnston et al., 2023 (BCGS Geological Fieldwork)

Uhtlan Suite Emplacement and Central Zone Mineralization

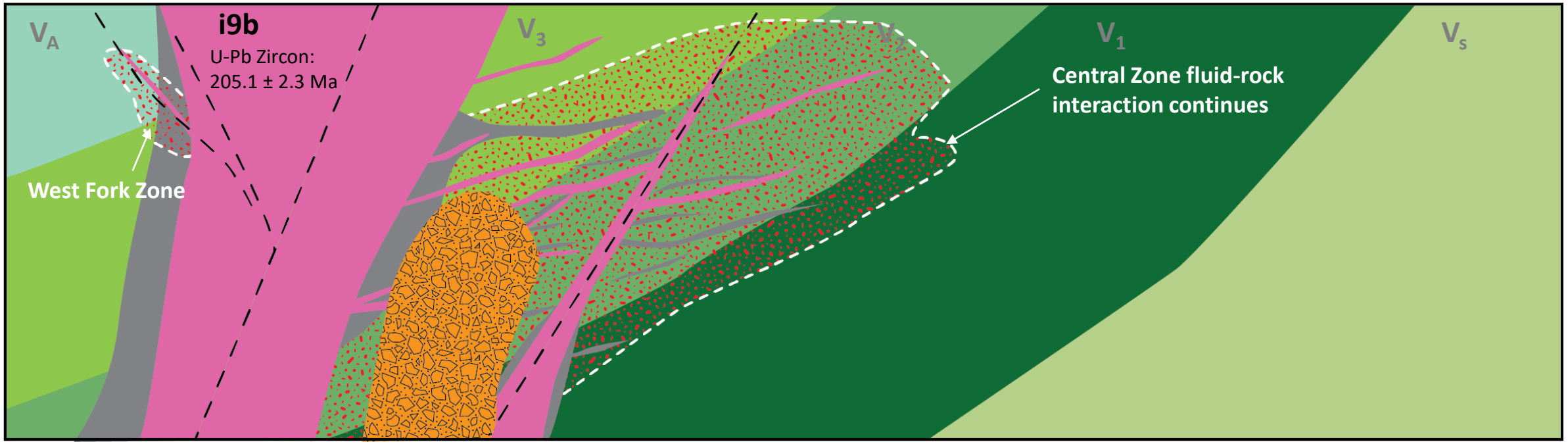
- Intrusive rocks of the Uhtlan suite (pseudoleucite-bearing) were emplaced along subvertical feeder structures.
- The trans-tensional(?) environment resulted in sill bodies extending from the primary plutons and feeder zones.
- The Central zone Cu-Au-Ag mineralization was deposited in volcanic stratigraphy adjacent to the Uhtlan intrusions; however, the voluminous intrusions (i4) remain relatively barren.
- Early small volume units (e.g., i2) have been proposed as causative intrusions (yet to be confirmed).



Galore Creek MINING CORPORATION

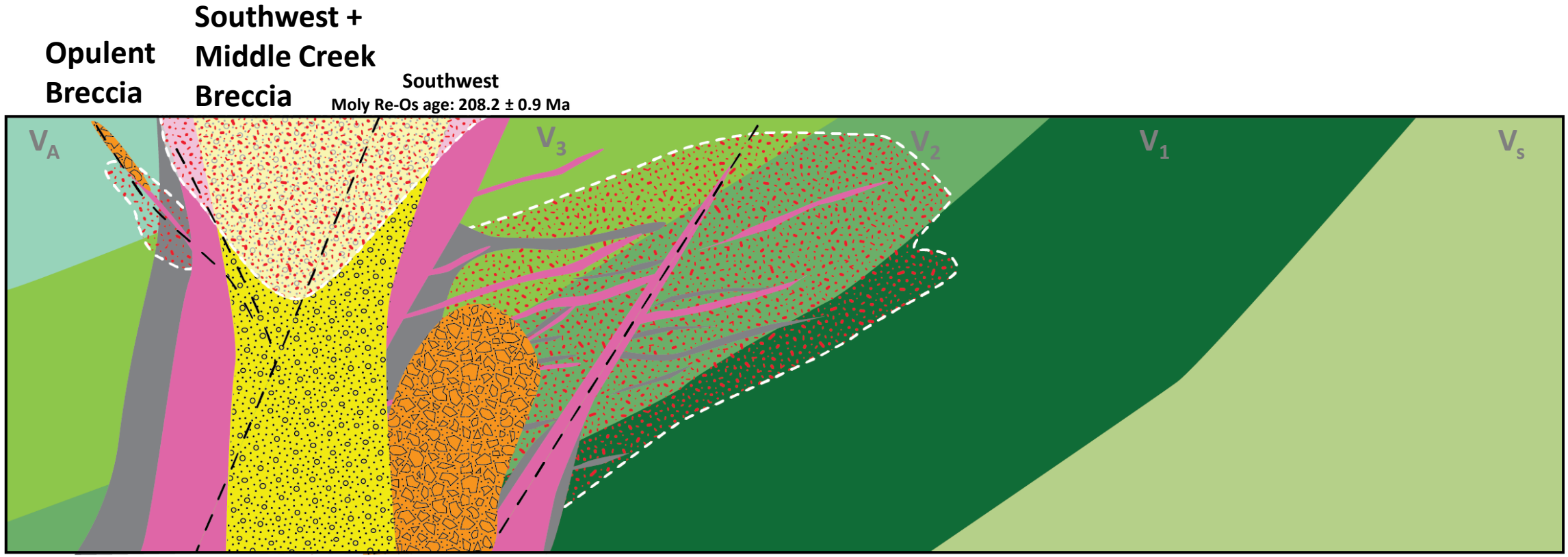
Buckshot Emplacement and Mineralization

- Voluminous intrusions of the Buckshot Suite are emplaced along with hydrothermal jigsaw breccias in the Central Zone.
- Fluid flow in the Central zone continues with thermal cells centered in the SGL breccia.
- Disseminated Cu-Au-Ag mineralization is deposited in the West Fork zone.



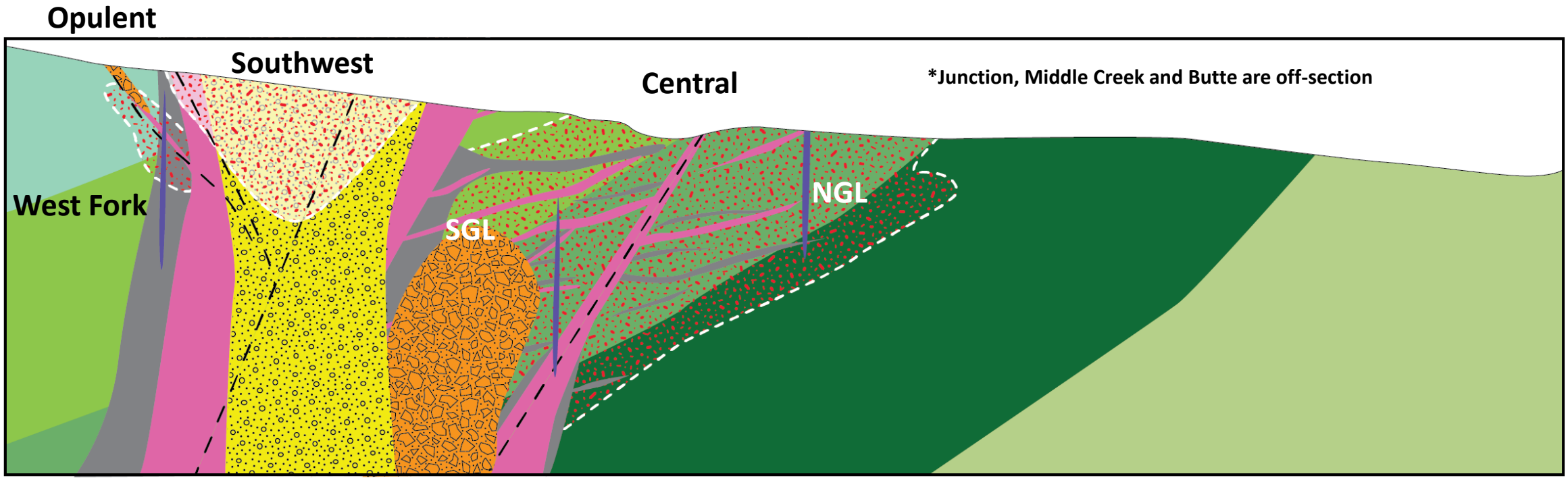
Late-Stage Breccia Emplacement and Mineralization

- Explosive brecciation occurred with the emplacement of the youngest phases of Buckshot suite.
- The youngest deposits in the Galore system are dominantly milled-breccia-hosted.
- Younger mineralization at Southwest Zone is more Au-rich than other parts of the deposit.



Late Dikes and Erosion

- Erosional effects have removed any high-level expressions (epithermal, lithocap, etc.) of the Galore system and exposed the high temperature, high-grade core of the system at the present-day surface.



Galore Creek: Summary

- While challenging for access and infrastructure, the Golden Triangle is an excellent jurisdiction with fascinating geology and abundant metal endowment.
- Alkalic porphyries are an attractive target: large volume, high grade, copper plus gold, conventional processing, relatively low pyrite in waste rock.
- Galore Creek is a silica-undersaturated end member of alkalic porphyry systems, unique for its size and composition; nonetheless, many of its features are shared with other alkalic porphyry deposits.
- The Galore deposit cluster sits within a 400 km^2 district that is highly prospective for the discovery of additional porphyry deposits.
- Without close geological analogues, the GCMC geoscience team is constantly evolving understanding of this ore system, enriched by the knowledge of interdisciplinary contributors over many years in the project's history.

Well-Shen.Lee@gcmc.ca
Leif.Bailey@gcmc.ca
Nils.Peterson@gcmc.ca