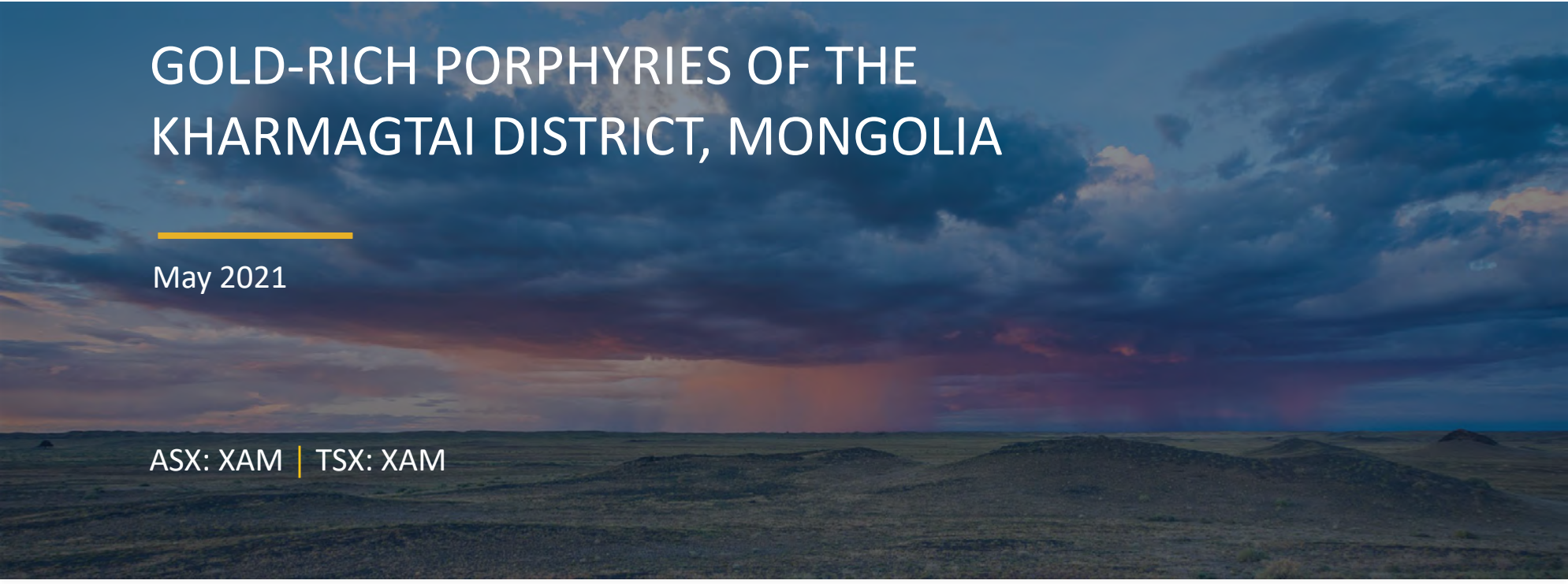
XANADU MINES

SMEDG
SYDNEY MINERAL EXPLORATION DISCUSSION GROUP



GOLD-RICH PORPHYRIES OF THE KHARMAGTAI DISTRICT, MONGOLIA

May 2021

ASX: XAM | TSX: XAM

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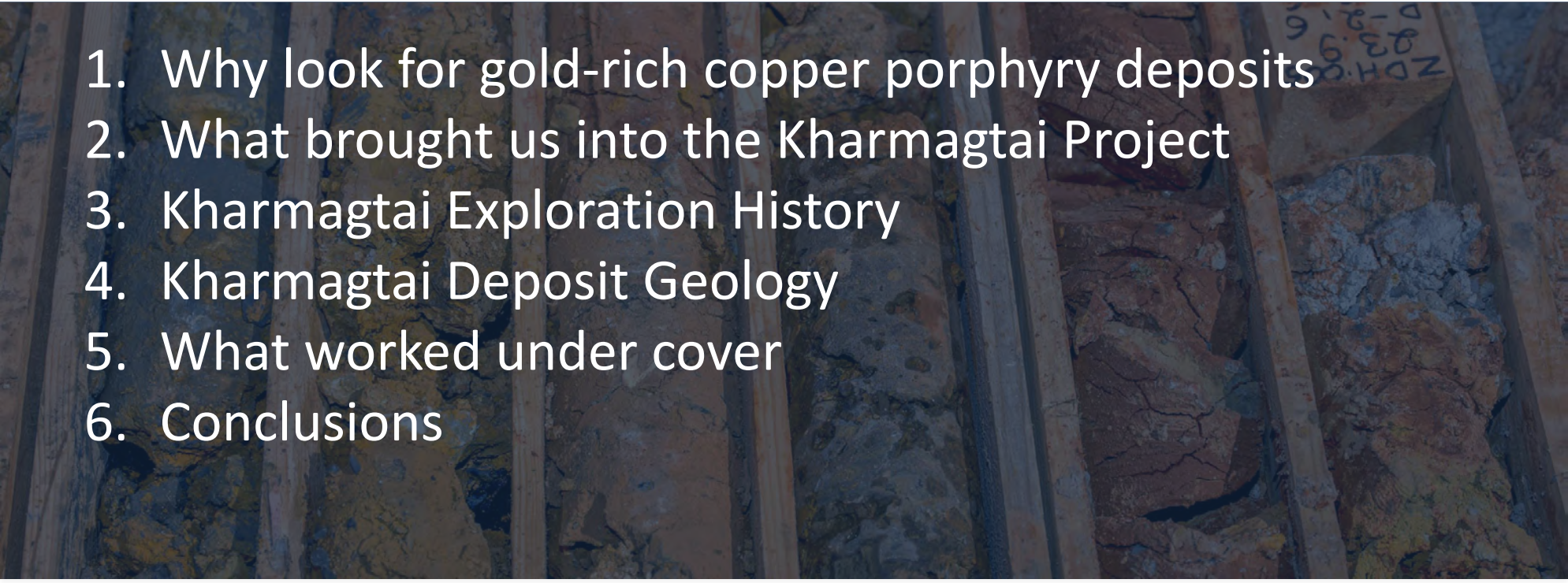
Currency: All currencies in this presentation are in Australian dollars unless otherwise stated.

Presentation Outline



1. Why look for gold-rich copper porphyry deposits
2. What brought us into the Kharmagtai Project
3. Kharmagtai Exploration History
4. Kharmagtai Deposit Geology
5. What worked under cover
6. Conclusions

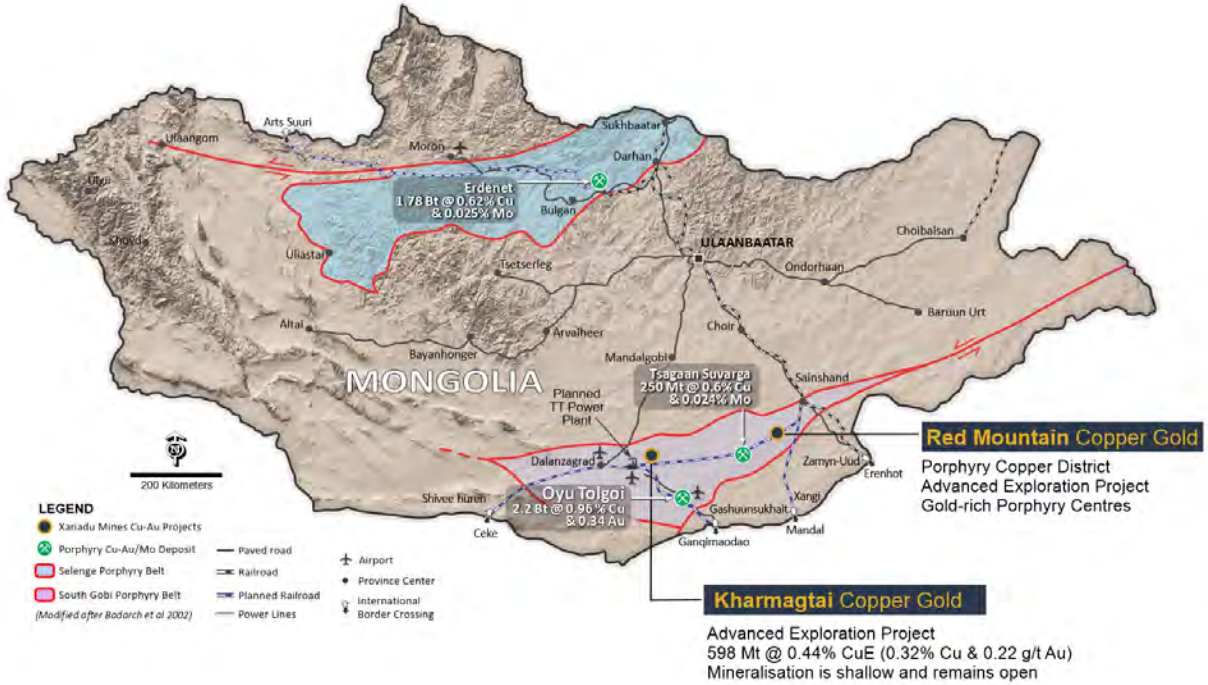
Why Look for Gold-Rich Copper Porphyry Deposits

Cadia - Australia's largest gold deposit

View of Cadia Valley Operations - http://www.cadiavalley.com.au/site/index.cfm?module=PHOTOS&current_category_code=11804

What brought Xanadu to Mongolia

Significant untapped potential



Good hunting - Elephants abound

Paucity of exploration

(Russian/Mongolian and IMMI)

Ease of exploration

Flat, no trees, fences, very few people

Cost effective

High quality service providers and expl costs an order of magnitude less than many other prospective jurisdictions

Ability to develop mines quickly

Oyu Tolgoi discovered 2001
Commercial Production 2013

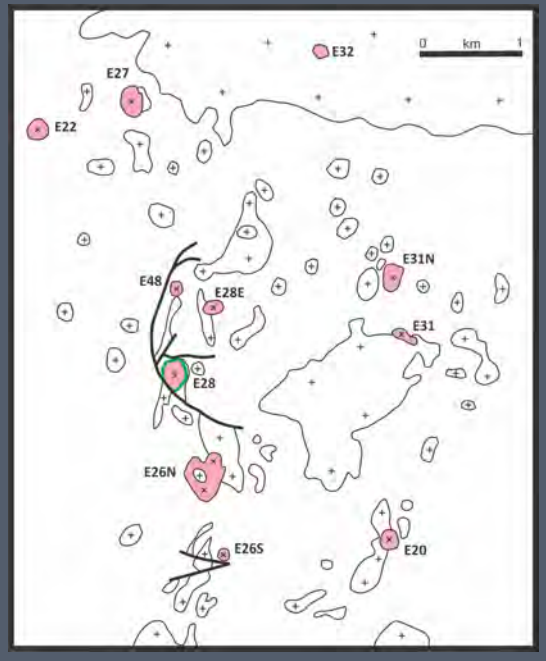
Why did Xanadu Acquire Kharmagtai?

What were the key drivers for acquisition

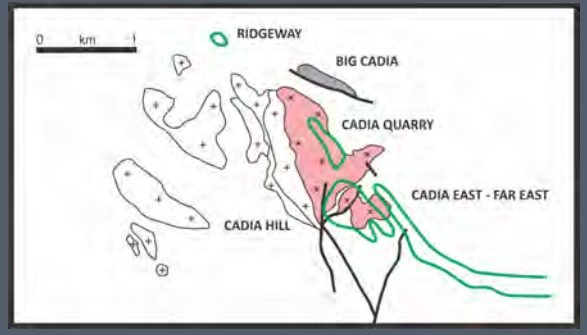
Why did Xanadu Acquire Kharmagtai?

Kharmagtai is a district scale project - porphyries form in clusters

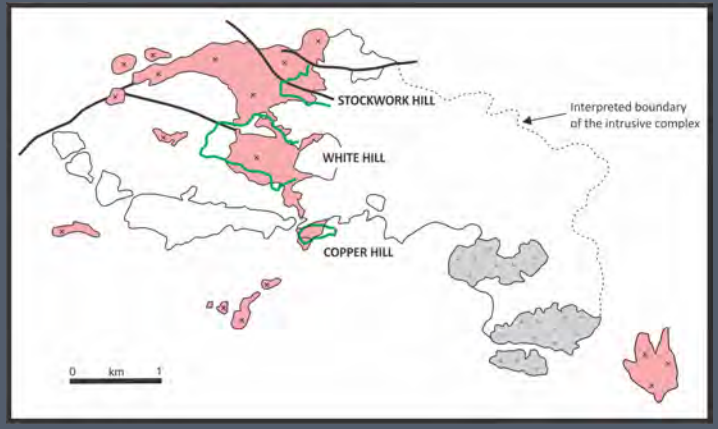
North Parkes, NSW, Australia



Cadia-Ridgeway, NSW, Australia

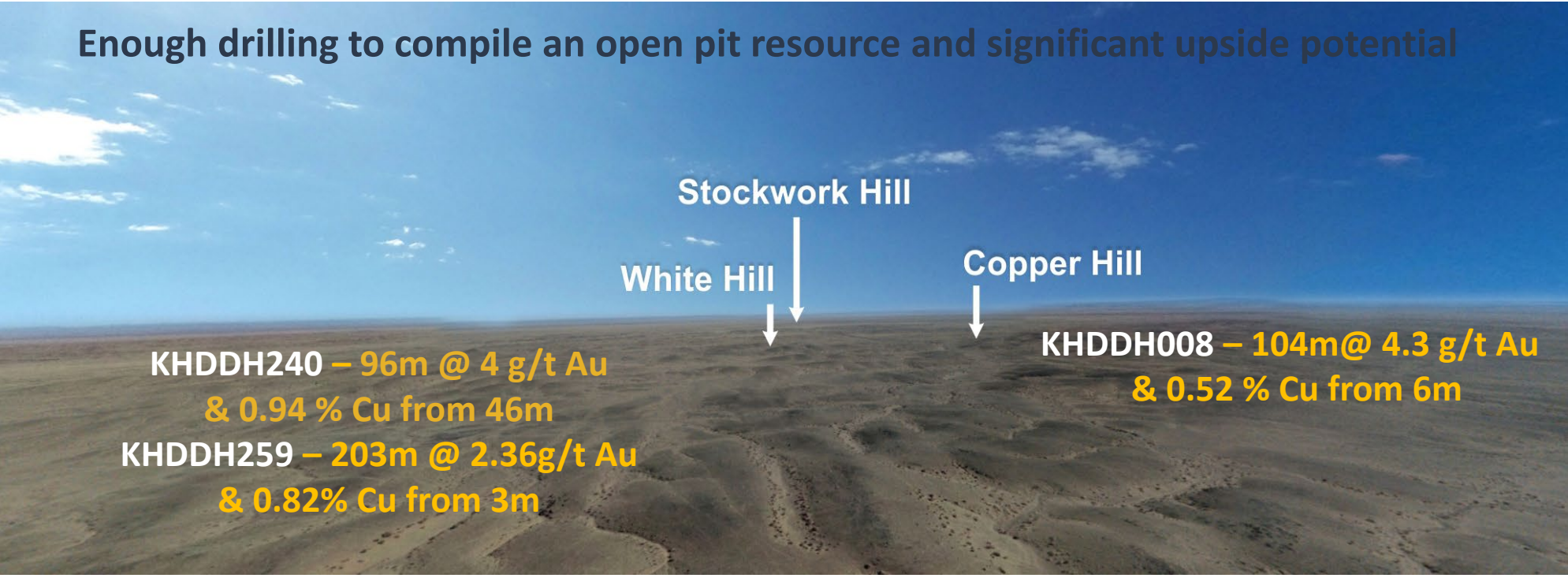


Kharmagtai, South Gobi, Mongolia



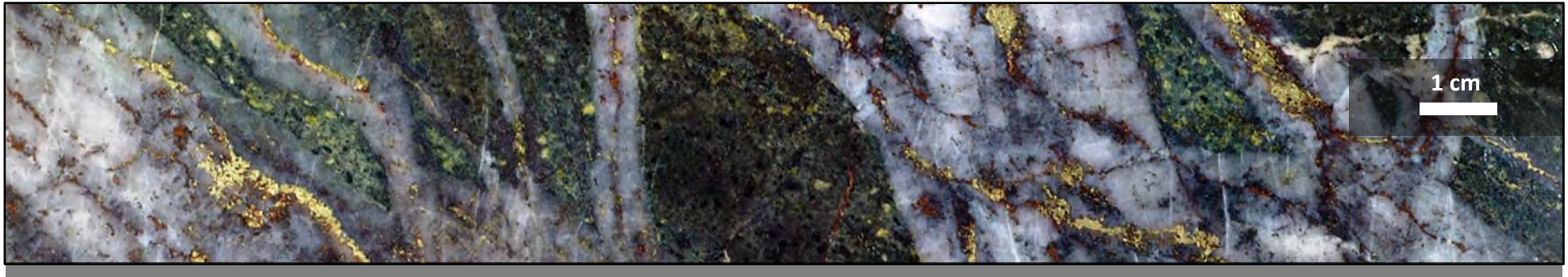
Why did Xanadu Acquire Kharmagtai?

Three outcropping porphyries with large-scale upside potential



Why did Xanadu Acquire Kharmagtai

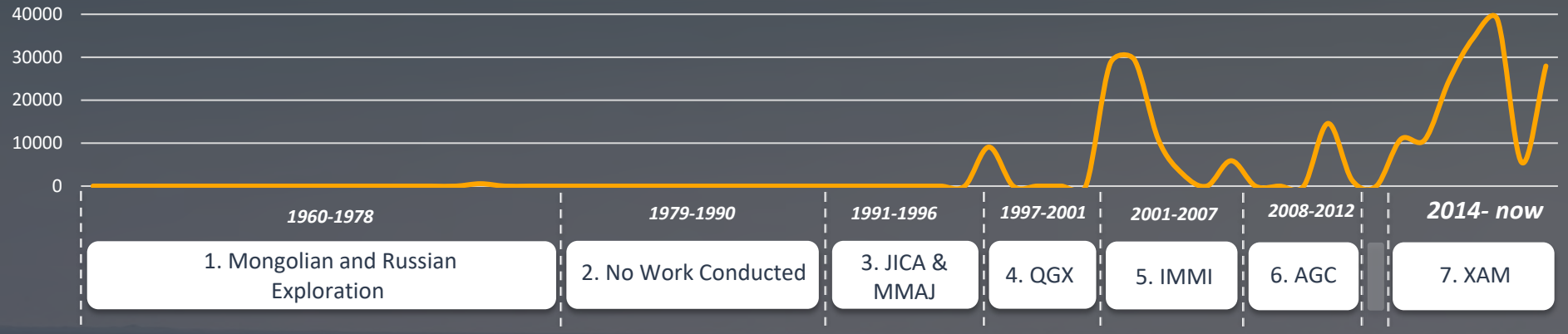
High-grade zones suggest potential



Laminated quartz-bornite-chalcopyrite veins (Stockwork Hill): 2 m @ 13.6 g/t Au & 2.92% Cu

Quartz-bornite-chalcopyrite veins (Stockwork Hill): 2 m @ 12.3 g/t Au & 3.7% Cu

Episodic Exploration History



1. Joint Mongolian and Russian exploration discovered the outcropping Stockwork Hill and White Hill Deposits

2. Japanese groups are invited to explore in the Southern Gobi, Kharmagtai is re-identified as a potential porphyry target

3. Canadian company Quincunx explore for replacement style gold at Kharmagtai and drill several holes into Stockwork Hill

4. Ivanhoe Mines earn into Kharmagtai and undertake resource style drilling at Stockwork Hill and White Hill. Copper Hill is discovered and drilled at close spacings. Oyu Tolgoi is found and Kharmagtai work is downsized while resources are channeled to advance Oyu Tolgoi

5. Kharmagtai is transferred to Asia Gold, a subsidiary of Ivanhoe Mines while Oyu Tolgoi progresses towards development

6. Turquoise Hill acquires Ivanhoe Mines and sells all of Ivanhoe's non-core assets, including Kharmagtai

2013-2014

7. Xanadu Mines purchase Kharmagtai from Turquoise Hill, estimate a JORC compliant resource for the Kharmagtai Deposit and set about expanding these resources and discovering additional porphyries under shallow cover

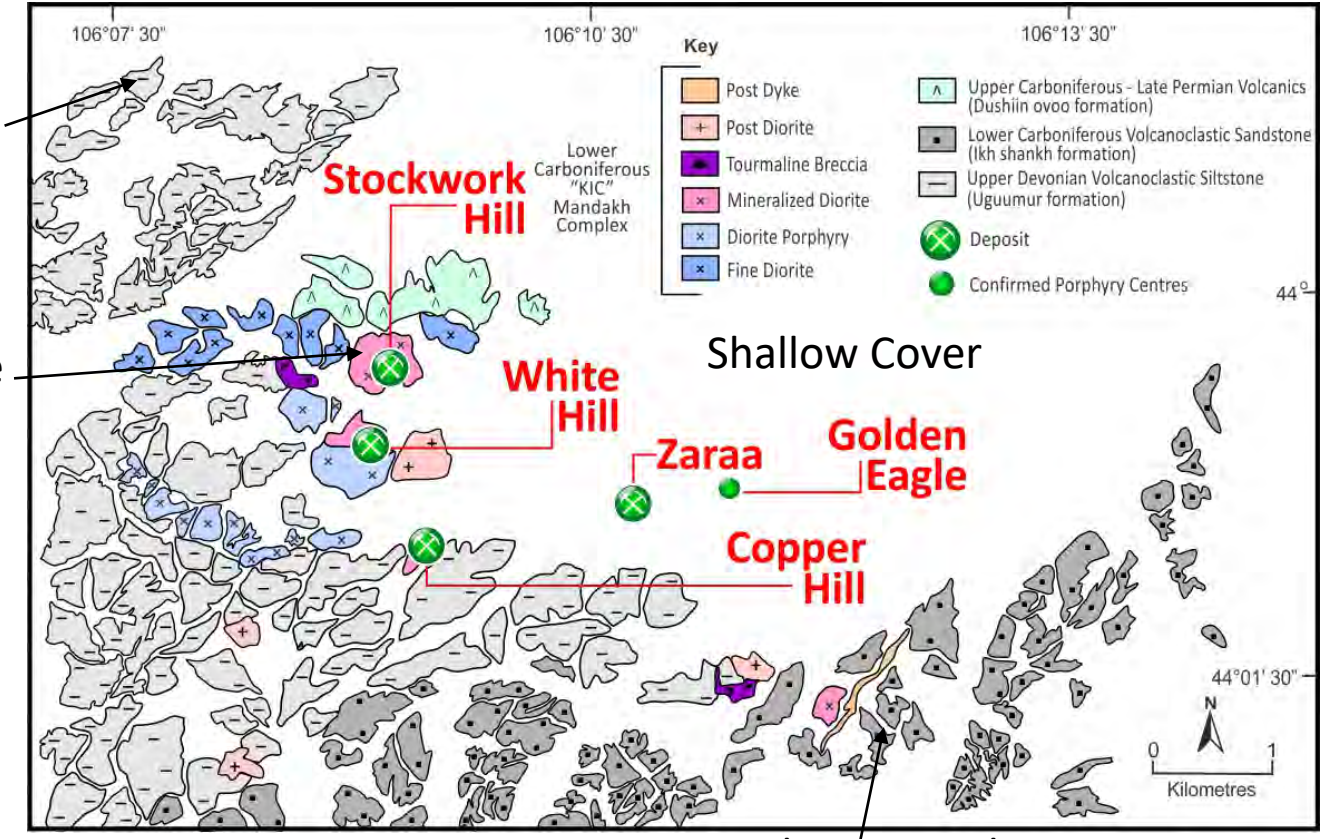
Exploration History

1. Quincunx (QGX) 1997 - 2001
2. Ivanhoe Mines Mongolia (2001- 2007)
3. Asia Gold (2007-2012)
4. Rio-TRQ (2012-2014)
5. Xanadu Mines (2015 to present)

Lay of the Land – KH Mining Lease (9km by 7km)

Volcanic Siltstones

Diorite to Monzodiorite intrusives



Volcanic Sandstones

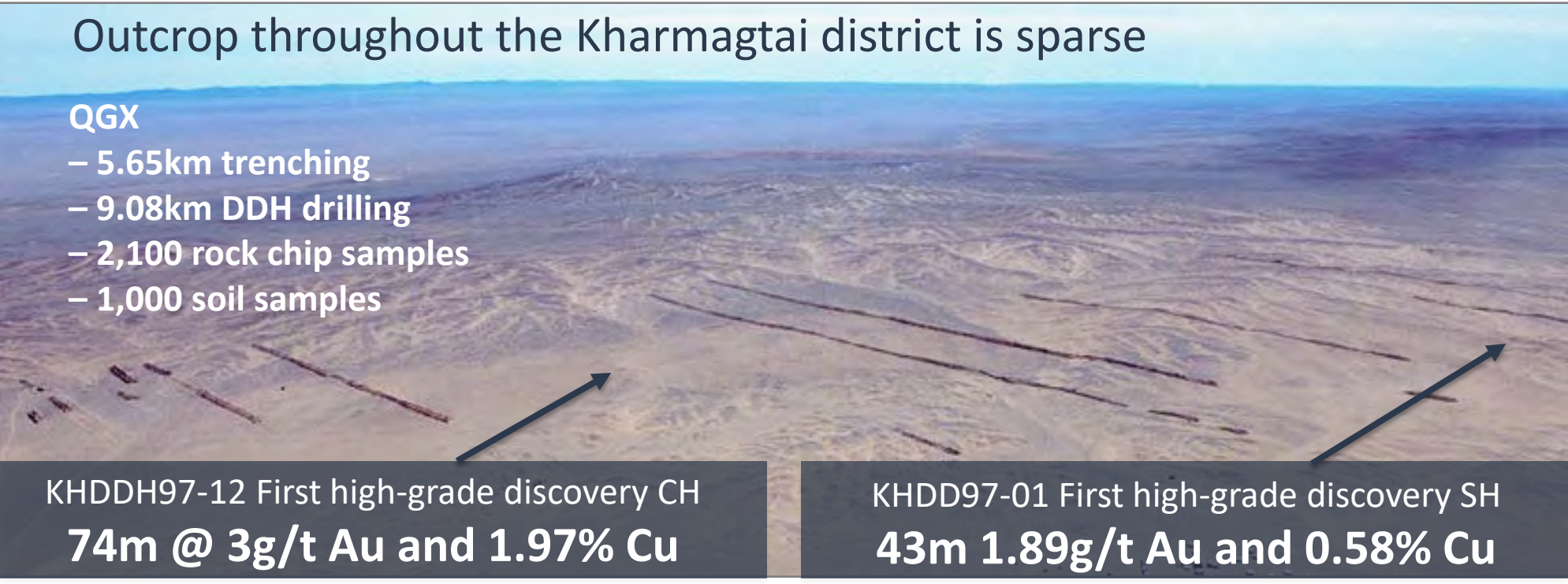
Exploration History – QGX 1997 - 2001

Early district – scale exploration

Outcrop throughout the Kharmagtai district is sparse

QGX

- **5.65km trenching**
- **9.08km DDH drilling**
- **2,100 rock chip samples**
- **1,000 soil samples**



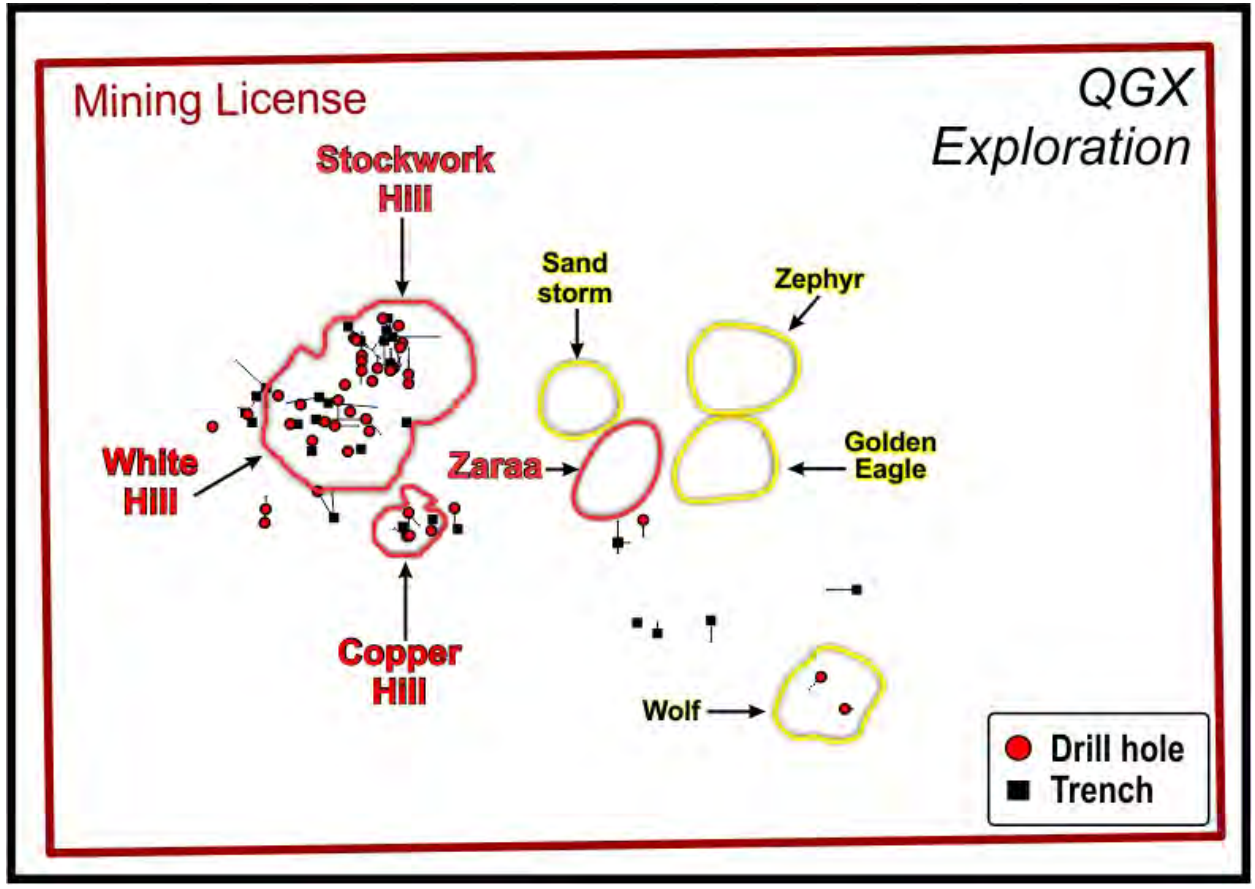
KHDDH97-12 First high-grade discovery CH

74m @ 3g/t Au and 1.97% Cu

KHDD97-01 First high-grade discovery SH

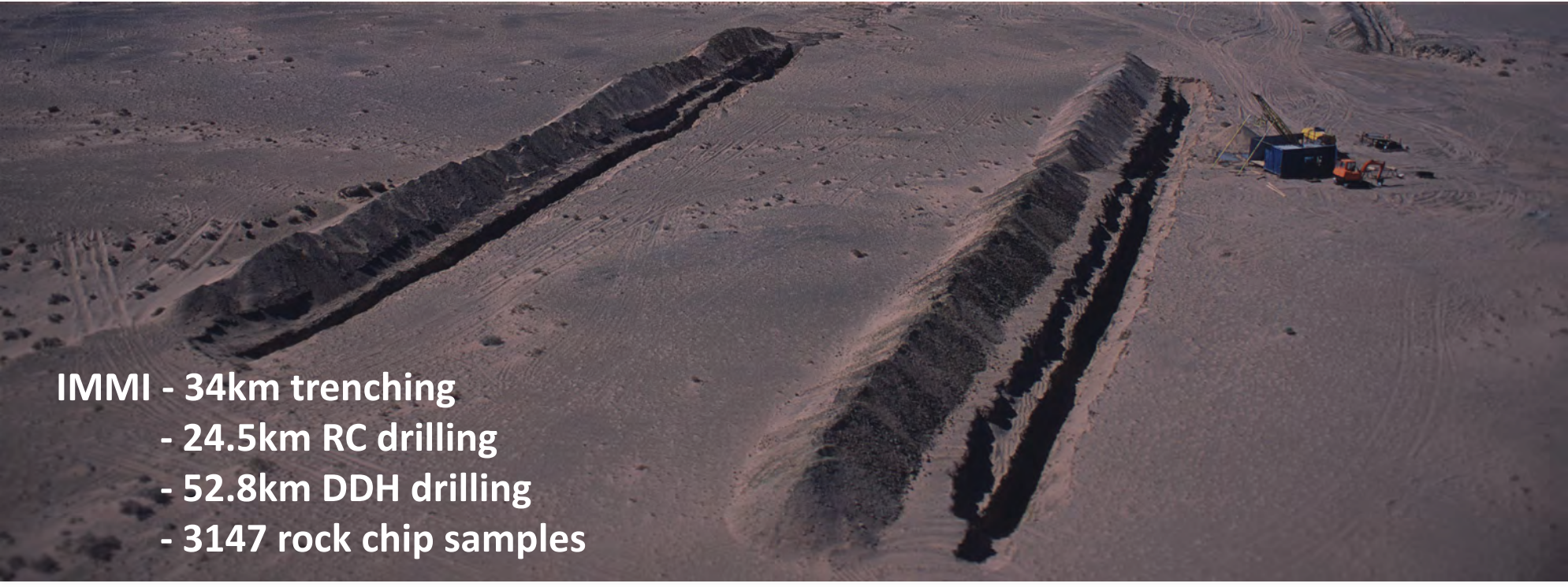
43m 1.89g/t Au and 0.58% Cu

Xanadu Mines – Exploration Summary Quincunx



Exploration History

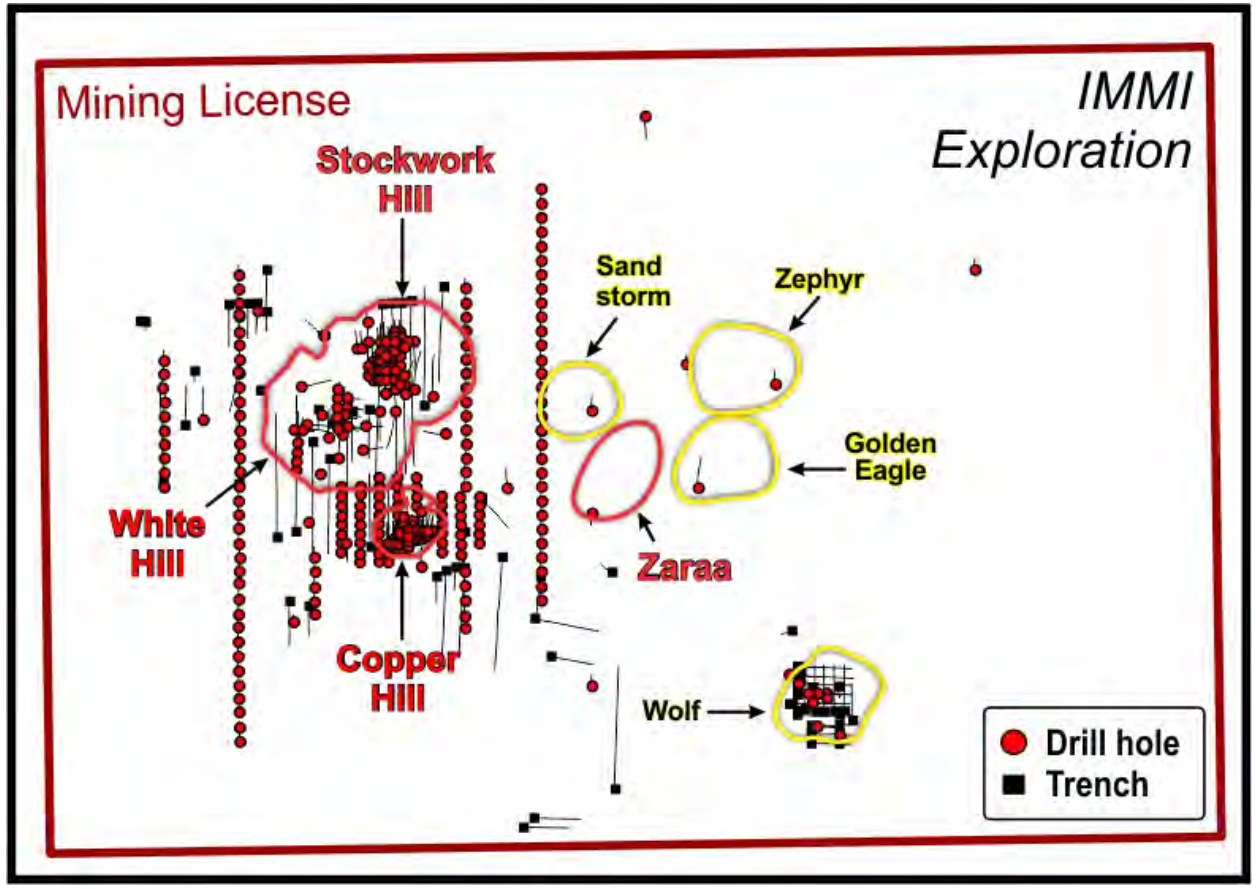
The Ivanhoe Years 2002-2004



Exploration History

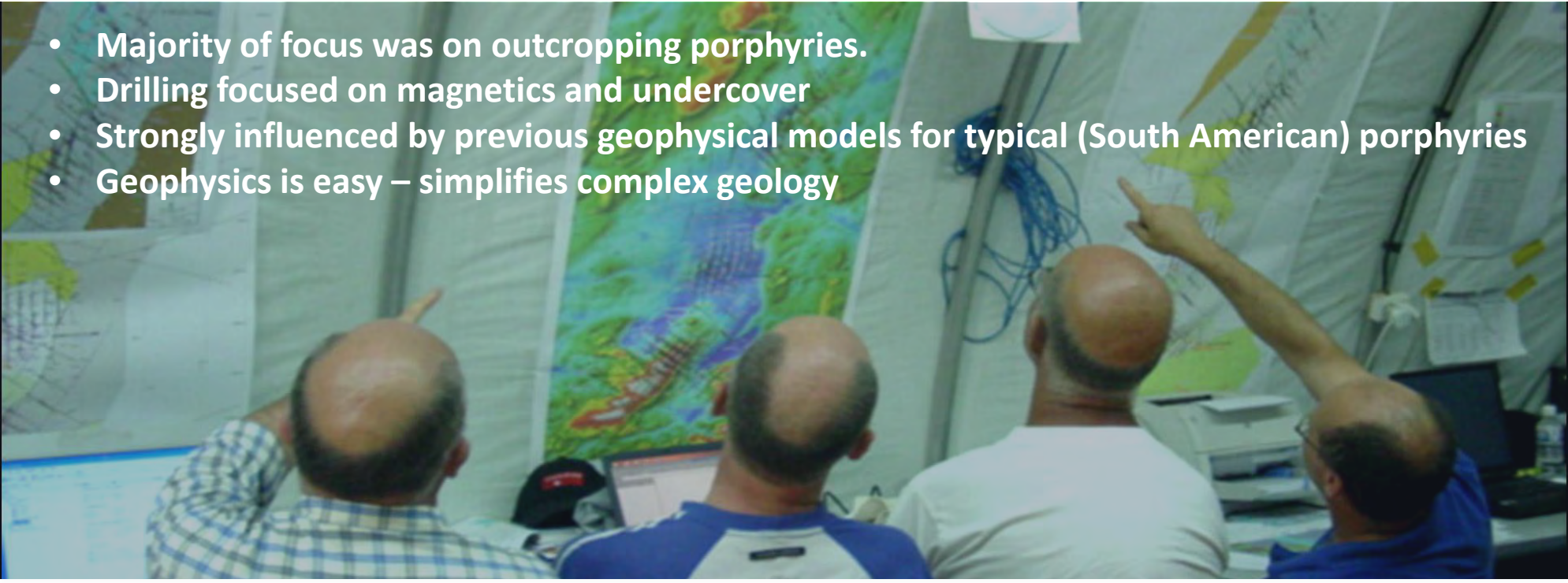
The Ivanhoe Years 2002-2004

Xanadu Mines – Exploration Summary Ivanhoe Mines



Exploration History – The Ivanhoe Years

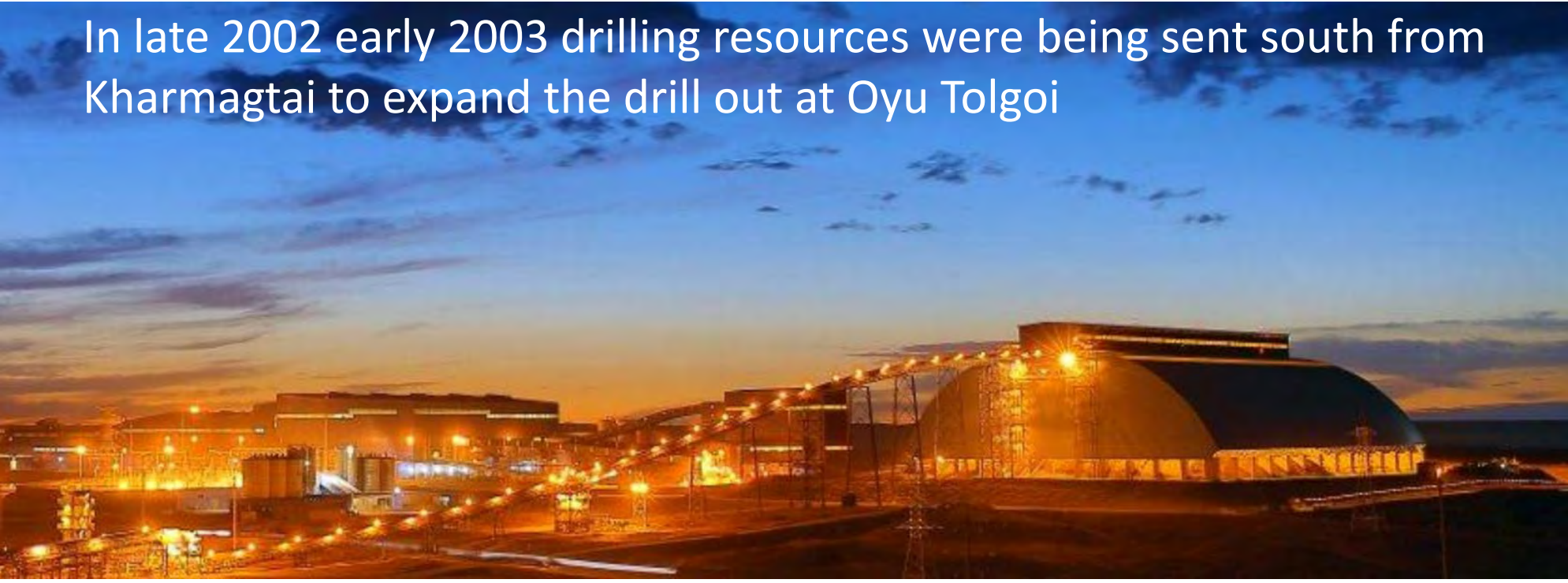
Reliance on Geophysics Undercover



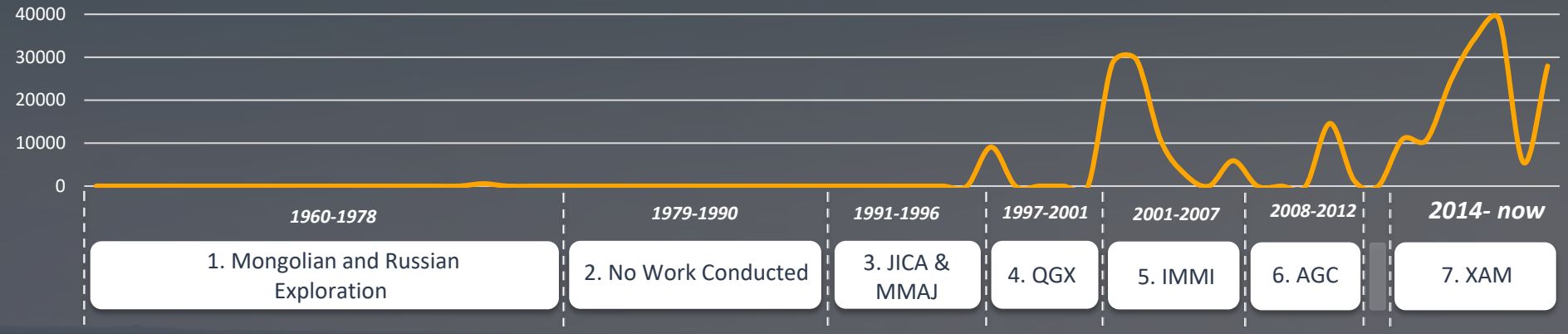
- Majority of focus was on outcropping porphyries.
- Drilling focused on magnetics and undercover
- Strongly influenced by previous geophysical models for typical (South American) porphyries
- Geophysics is easy – simplifies complex geology

Exploration History – The Ivanhoe Years

Oyu Tolgoi Discovered



Episodic Exploration History



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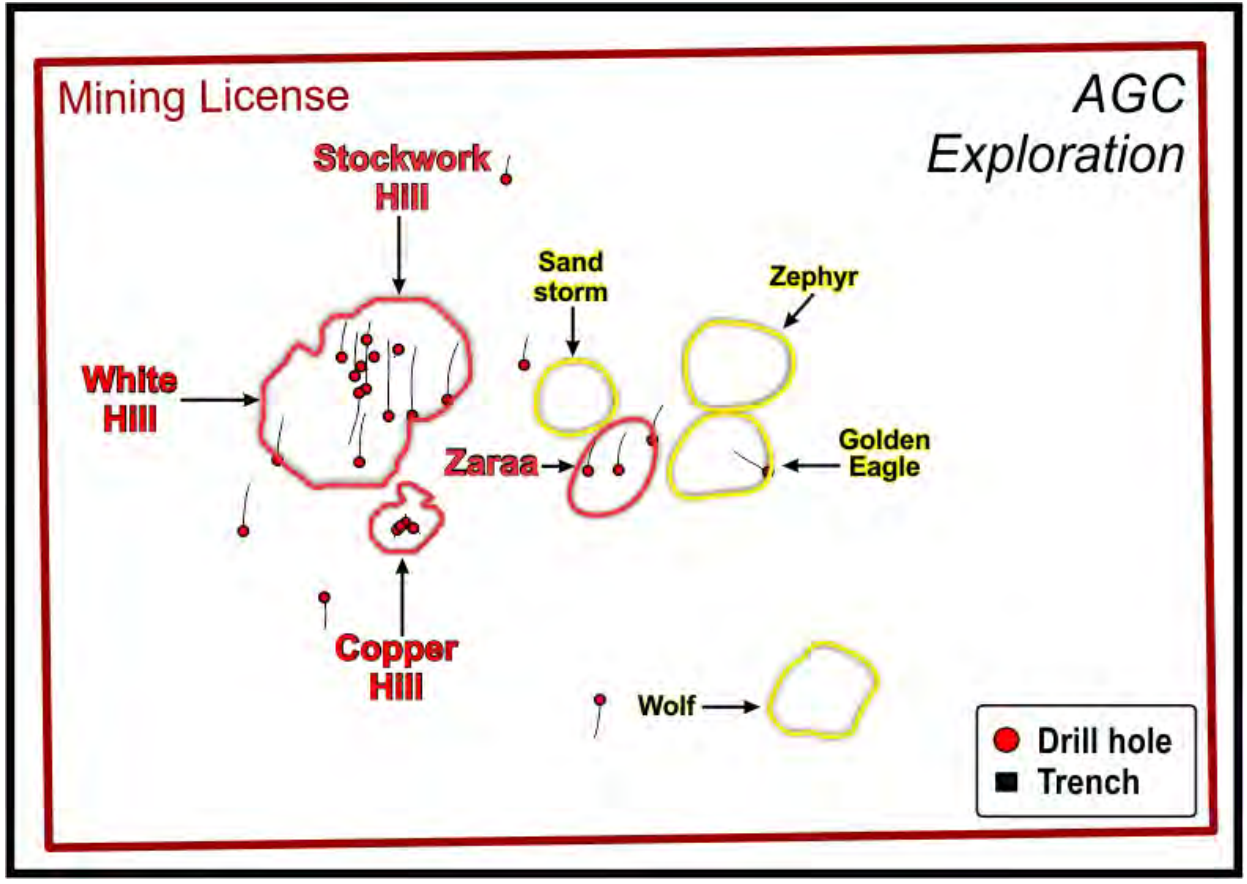
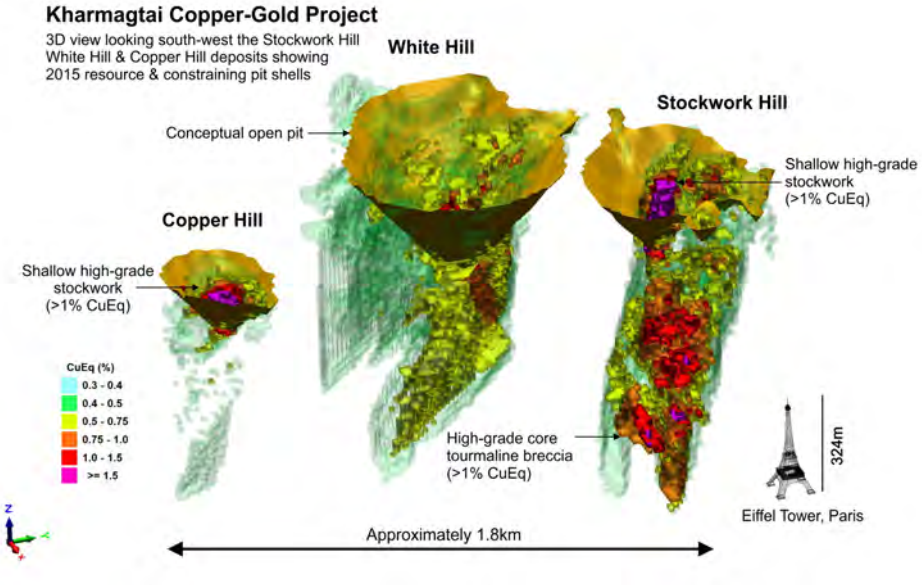
Xanadu Mines – Exploration Summary - Asia Gold



Xanadu Mines – Exploration History XAM 2015

First JORC resource estimate



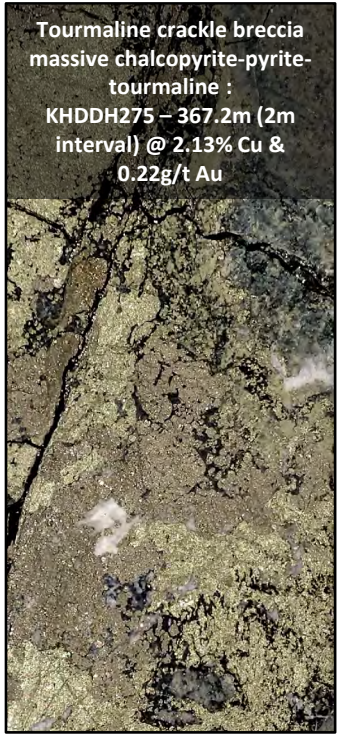
Deposit	Mining Method	Cut-Off CuEq (%)	Resource Category	Material (Mt)	Grade			Metal	
					Cu(%)	Au(g/t)	CuEq(%)	Cu(Mlb)	Au(Koz)
All	OC	0.3	Indicated	23	0.41	0.55	0.76	203	401
			Inferred	107	0.27	0.24	0.42	641	833
	UG	0.5	Indicated	24	0.43	0.47	0.73	225	359
			Inferred	51	0.42	0.36	0.64	463	591
	Combined		**Indicated**	**46**	**0.42**	**0.51**	**0.74**	**428**	**759**
			Inferred	**157**	**0.32**	**0.28**	**0.49**	**1,104**	**1,424**

A JORC 2012 compliant resource was released for the three previously discovered porphyry deposits at Kharmagtai in April 2015

See ASX announcement dated 19 March 2015 “Kharmagtai Maiden JORC Resource” for full details of resource estimation methodology and attributions. Note: All figures may not sum exactly due to rounding.

Period of Rethinking

Clear exploration upside below historical drilling

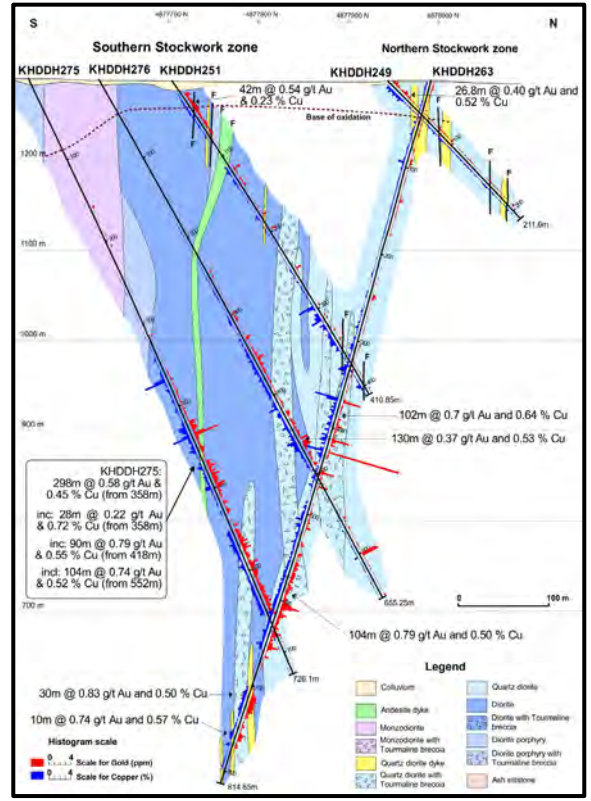


Tourmaline crackle breccia massive chalcopyrite-pyrite-tourmaline : KHDDH275 – 367.2m (2m interval) @ 2.13% Cu & 0.22g/t Au

Tourmaline jigsaw breccia tourmaline-chalcopyrite-pyrite: KHDDH275 – 368.5m (2m interval) @ 4.05% Cu & 0.59g/t Au

Tourmaline crackle breccia tourmaline-pyrite-chalcopyrite: KHDDH275 – 578.5m (2m interval) @ 0.43% Cu & 0.32g/t Au

Tourmaline crackle breccia tourmaline-pyrite-chalcopyrite: KHDDH253 – 409m (2m interval) @ 0.45% Cu & 0.04g/t Au



Xanadu Mines – Exploration History

Where are the next porphyry centres?

Used existing deposit physical properties (drilling assay, density and mag-sus)

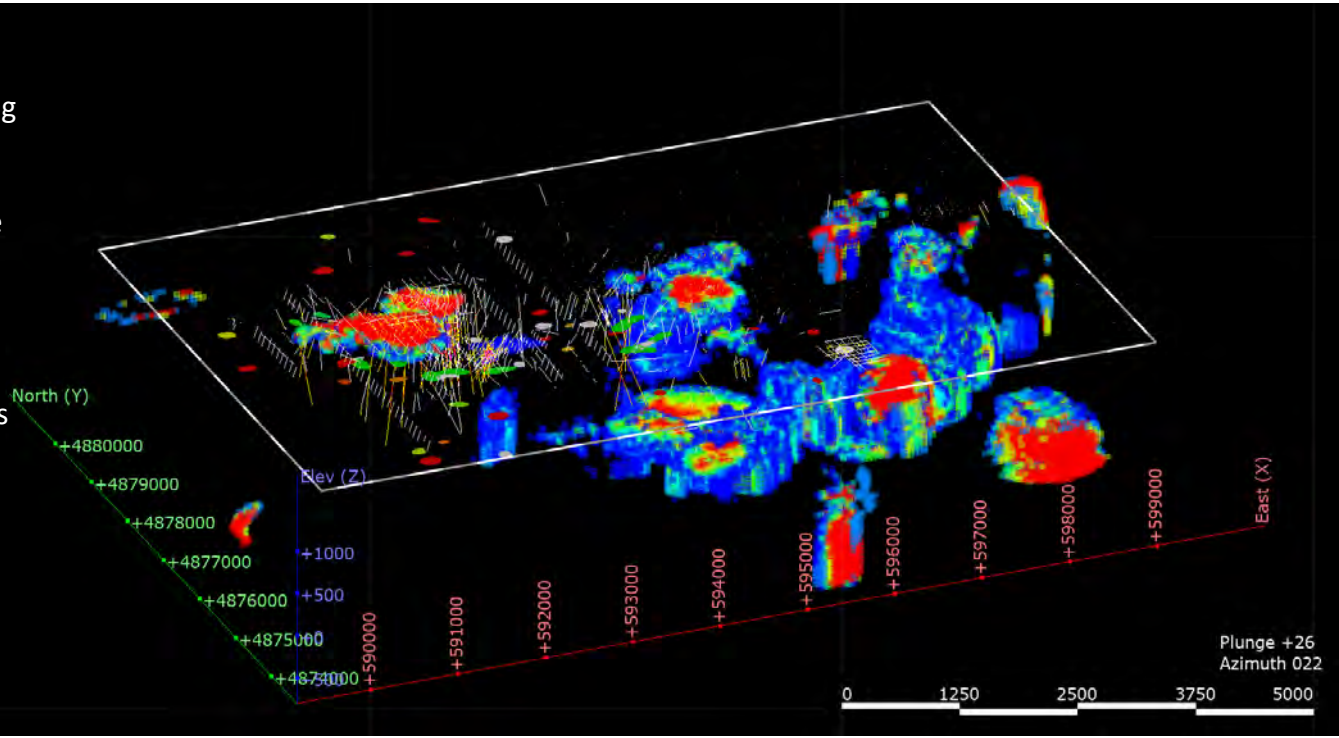
Compared each deposits grade properties to the 3D geophysics and defined the geophysical properties of mineralisation

Queried the rest of 3D geophysical models for areas with the same magnetic and IP parameters as known mineralisation

Defined 63 targets for drilling

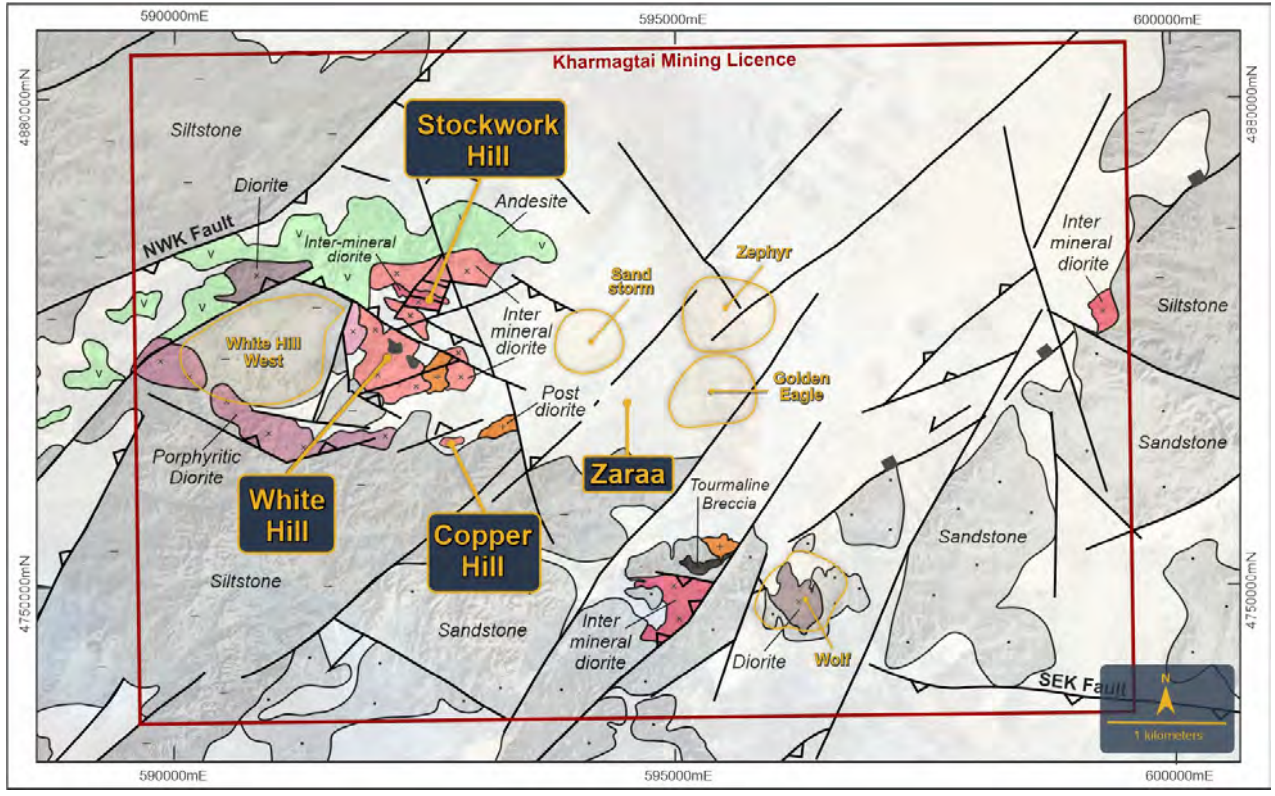
Top 14 targets were drilled

No significant intercepts drilled



Exploration History

Needed geology and geochemistry beneath shallow cover



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Xanadu Mines – Exploration History

Fallen into same trap – missing the link of geology and geochemistry

System was far to complex to be unlocked by geophysics alone

Got us into the ballpark but we needed solid vectors

Change in strategy required

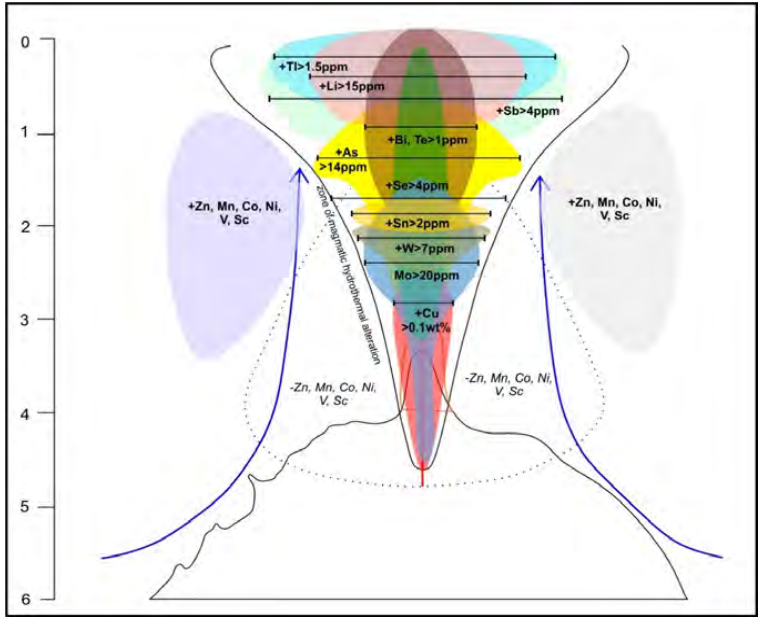
Planned to obtain pattern geology and geochemistry across entire lease

No aircore or RAB in Mongolia, negotiated a very cheap rate for DDH tails on rotary mud

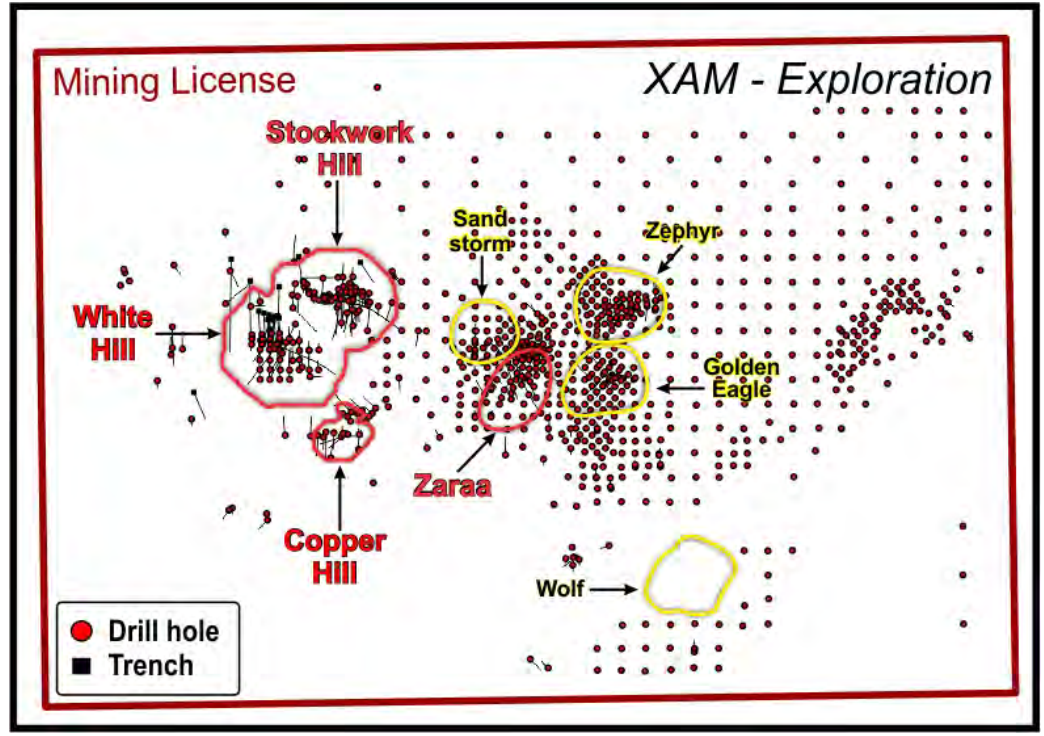
DDH provided vein densities, alteration in context, ALM logging, ASD, SG, Mag-sus etc

Xanadu Mines – Exploration History

Used low detection limit Geochem
Expected to need to use porphyry footprint vectors to define targets at depth

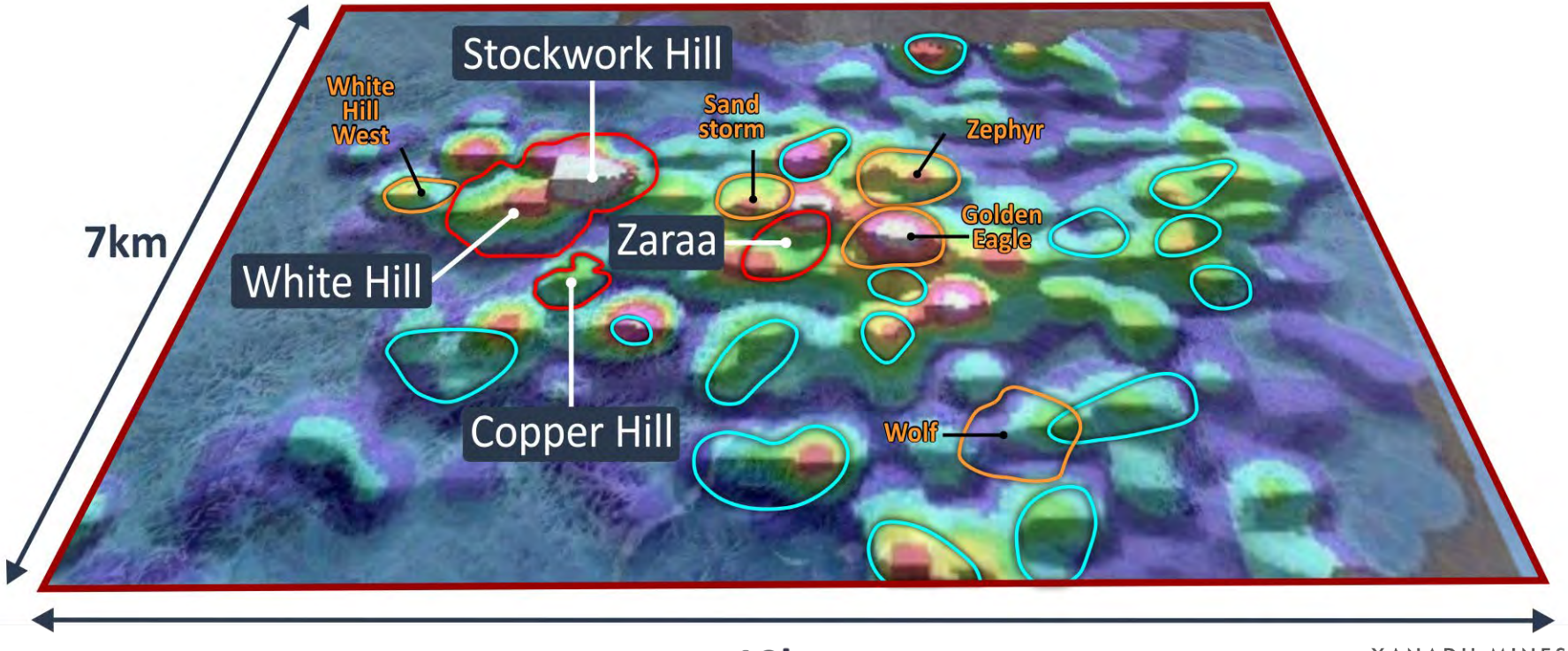


664 PCD holes 26,136.6 metres



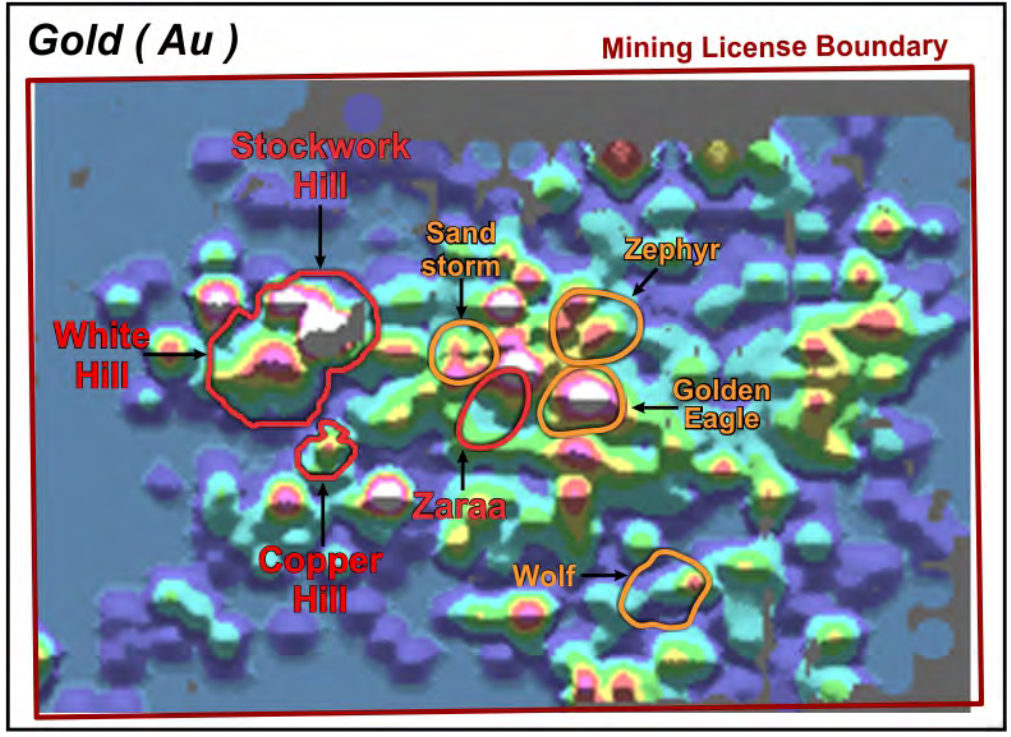
Xanadu Mines – Exploration History

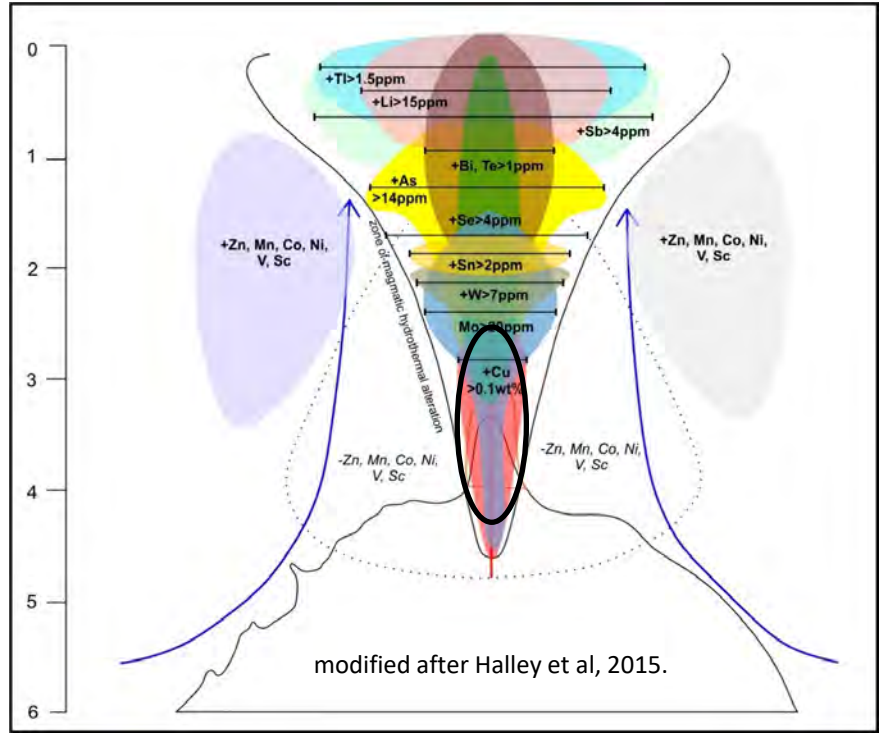
Porphyries outcropping at basement surface



Xanadu Mines – Exploration History

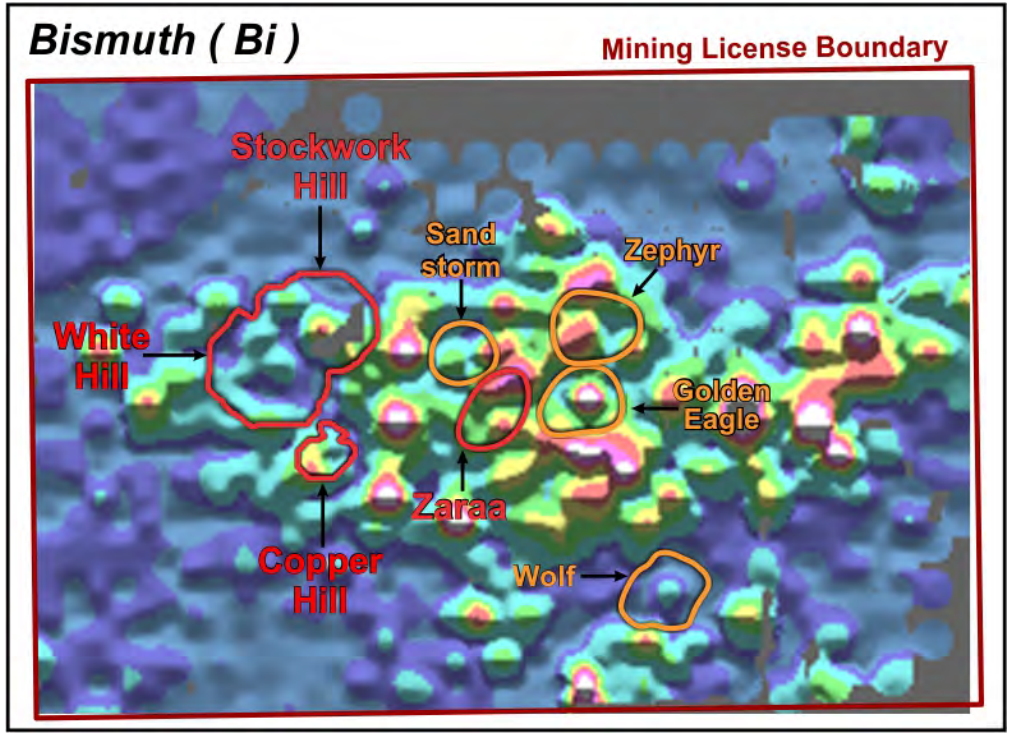
Mineralisation continued undercover

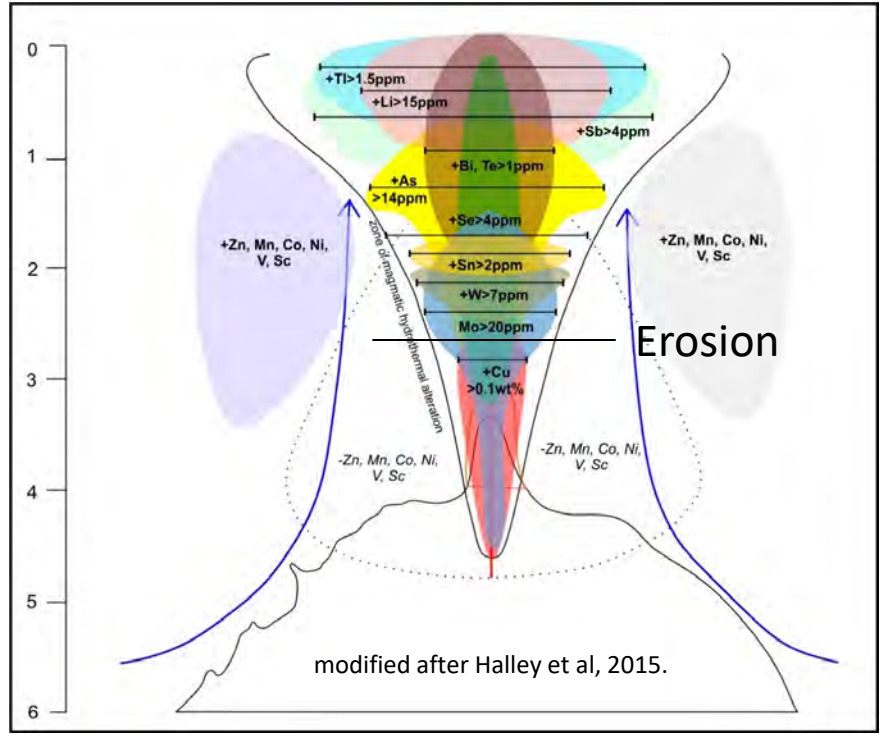




Xanadu Mines – Exploration History

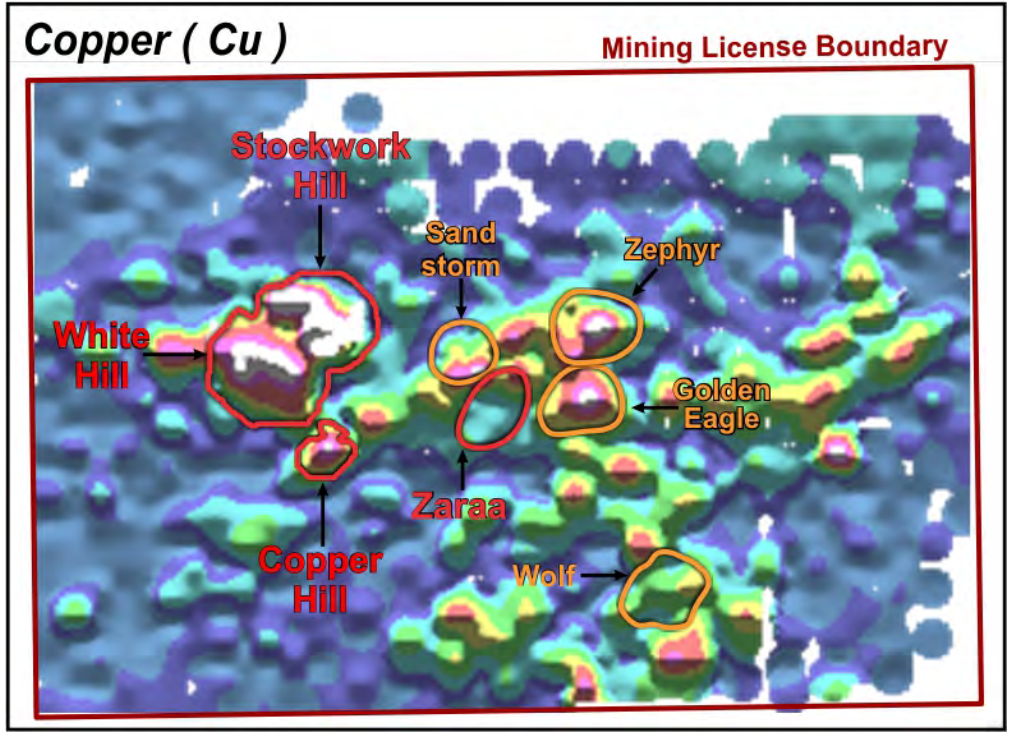
Level of Erosion was ideal

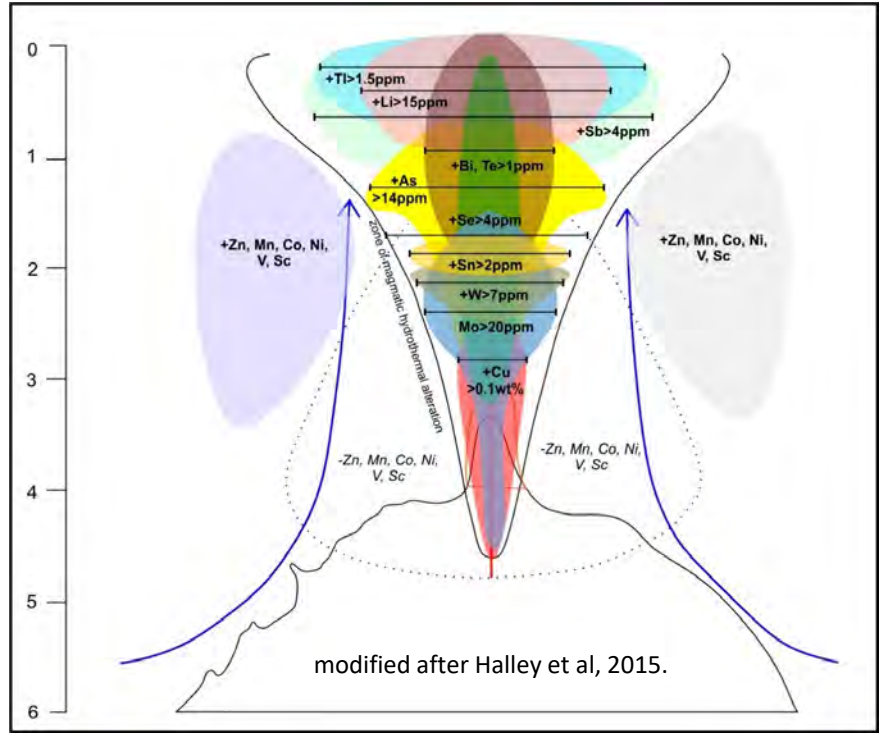




Xanadu Mines – Exploration History

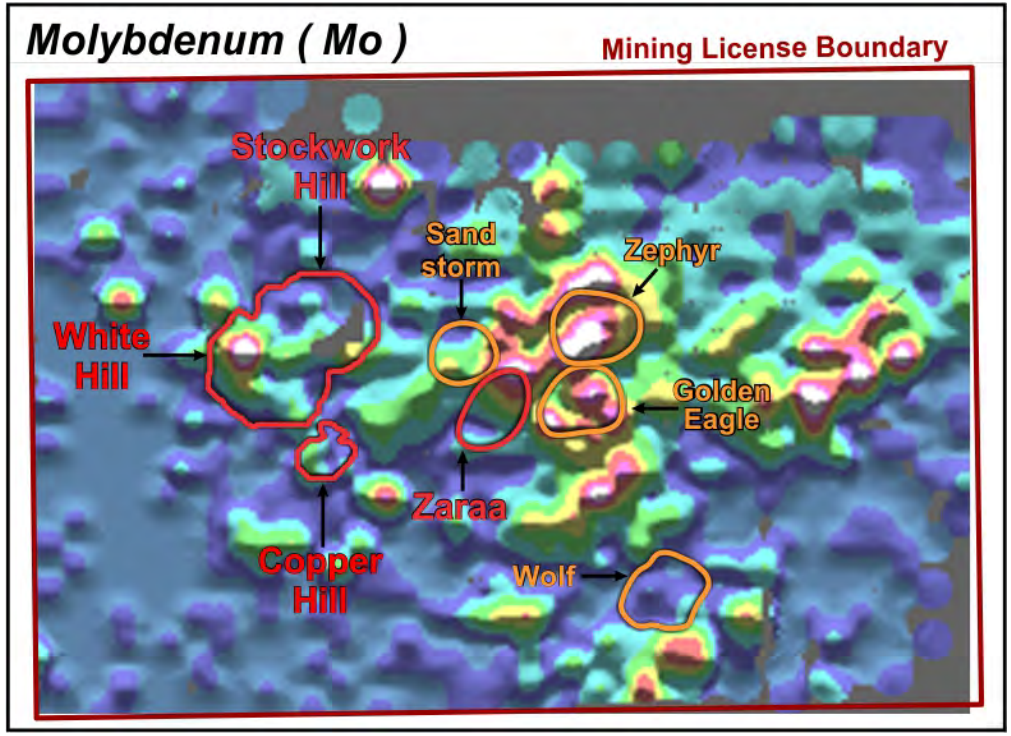
Geochem holes drilling directly into new porphyries

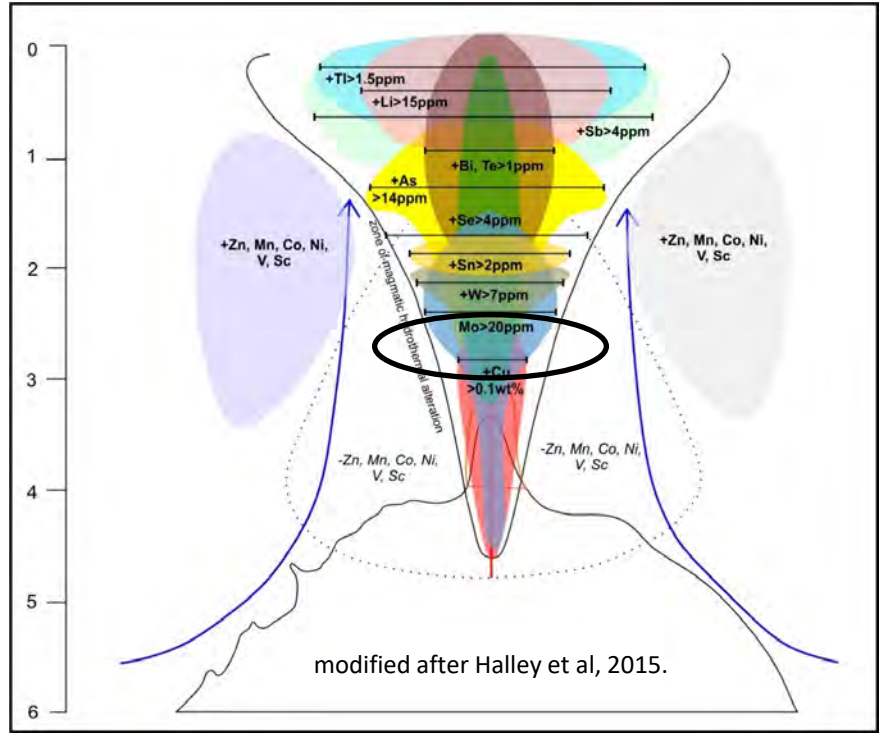




Xanadu Mines – Exploration History

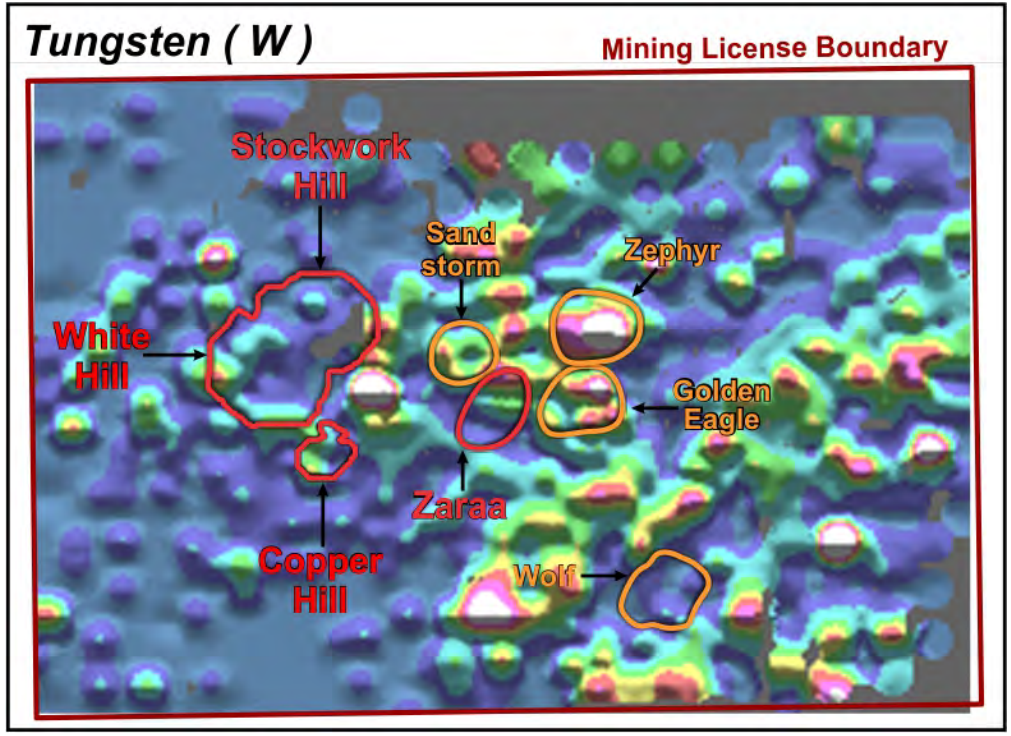
Geochemistry telling us whole systems preserved

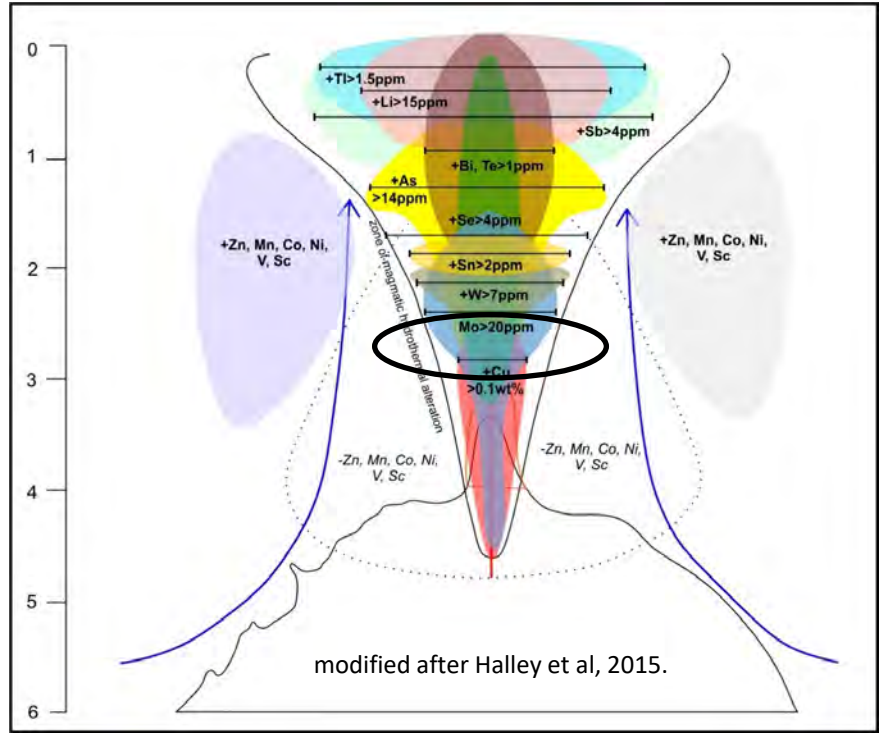




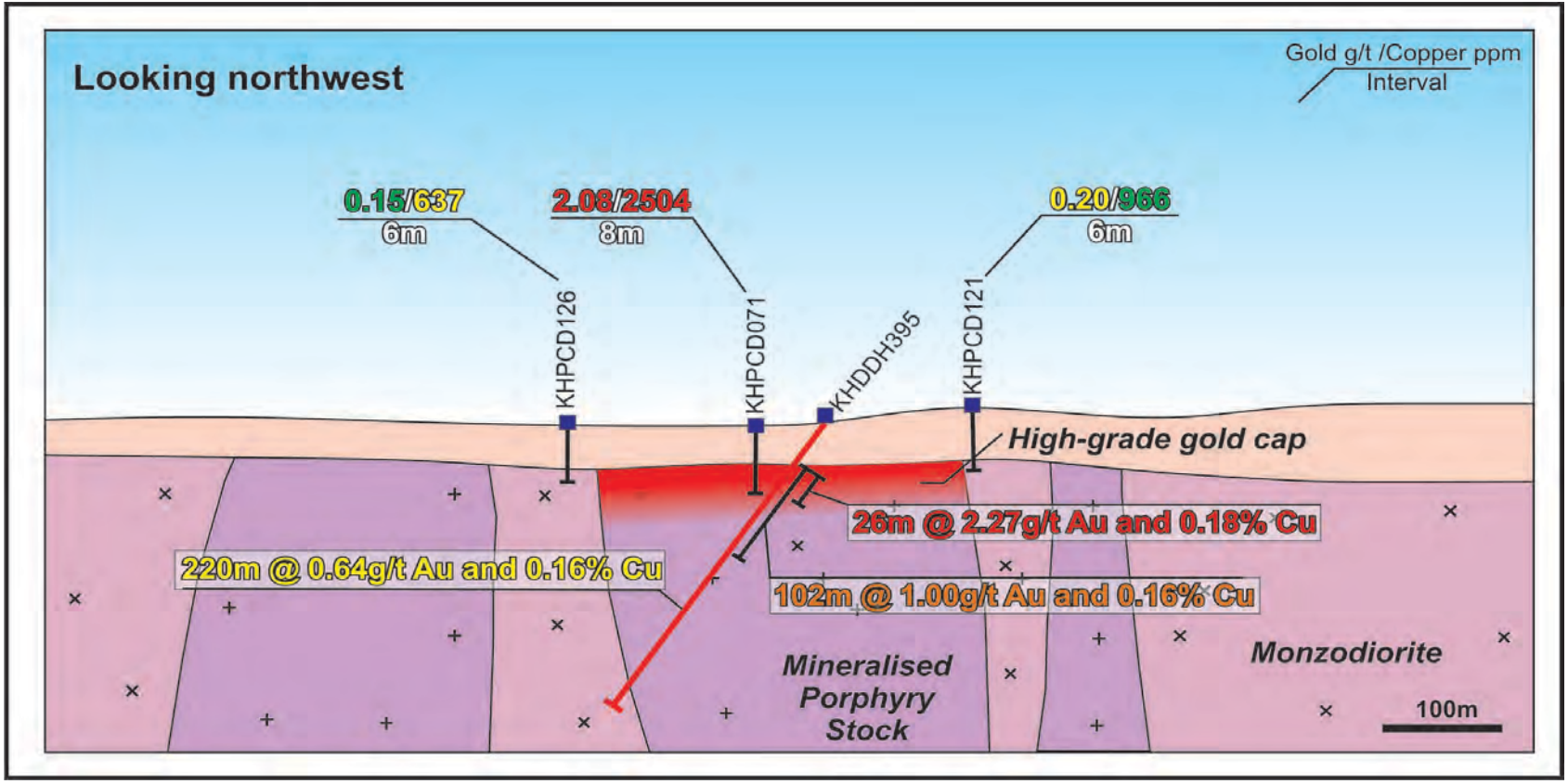
Xanadu Mines – Exploration History

Potentially a very large system at depth



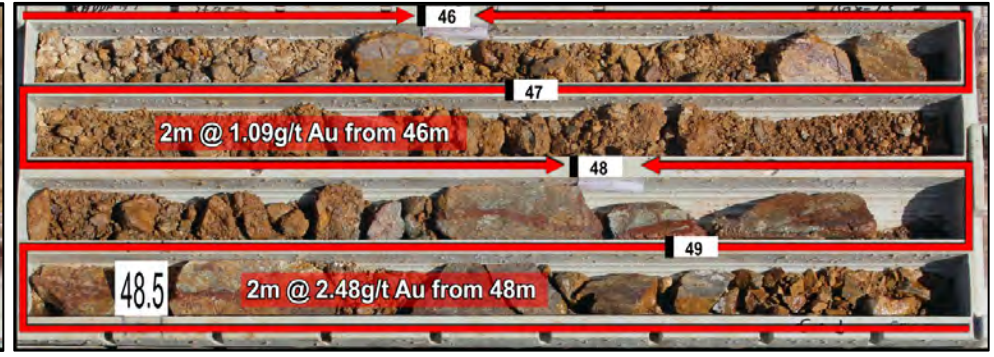


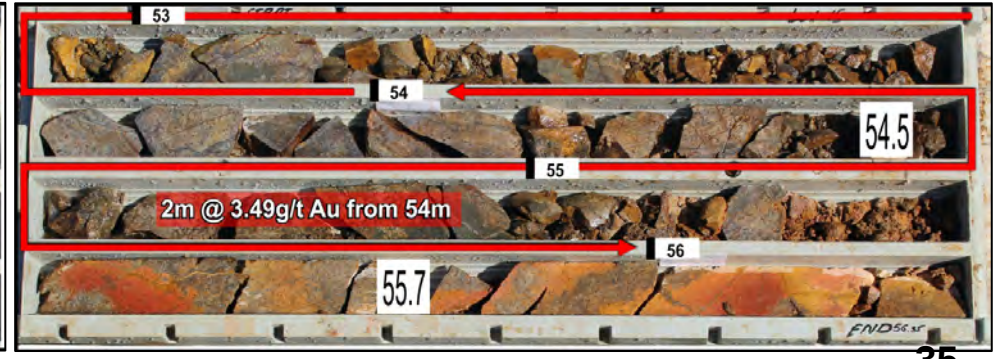
Golden Eagle Discovery – first target hit



Xanadu Mines – Exploration History

Golden Eagle discovery





Xanadu Mines – Exploration History

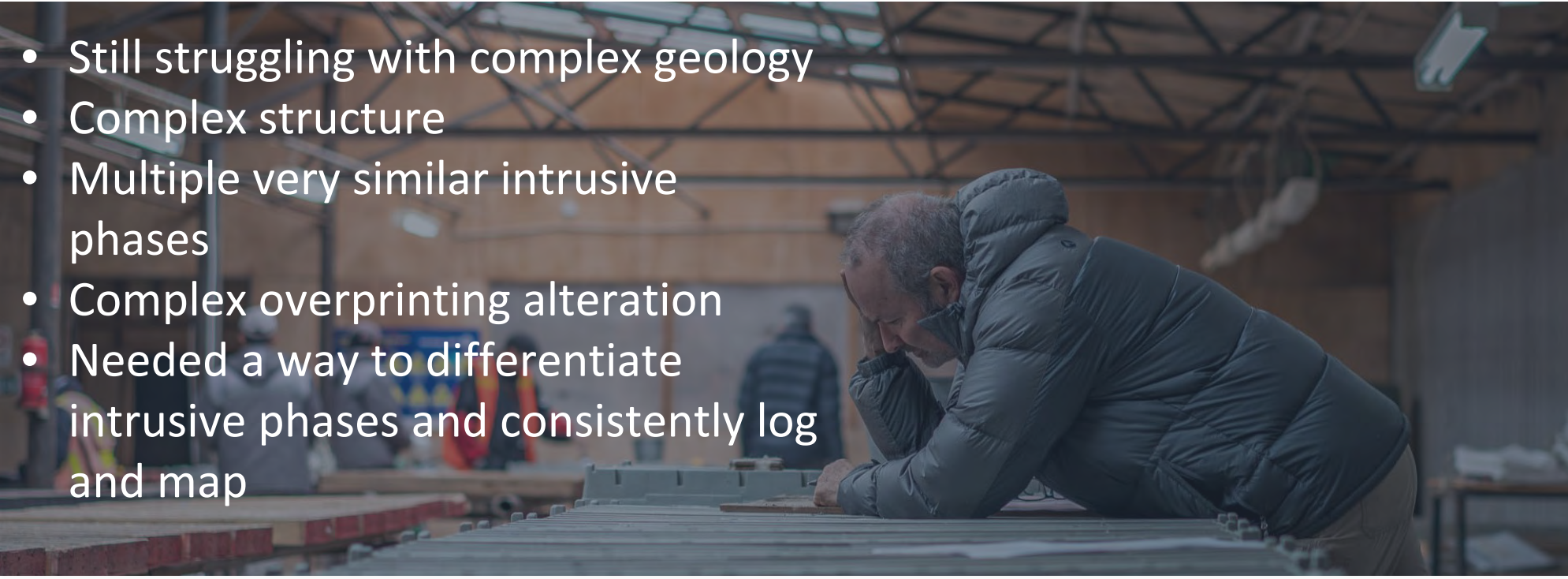
UST's define the tops of system at Golden Eagle

FOV 2.5cm KHDDH401 @ 71.2m.

FOV 11.3cm KHDDH398 @ 71.8m.

FOV 13.5cm KHDDH401 @ 72m.

Xanadu Mines – Exploration History



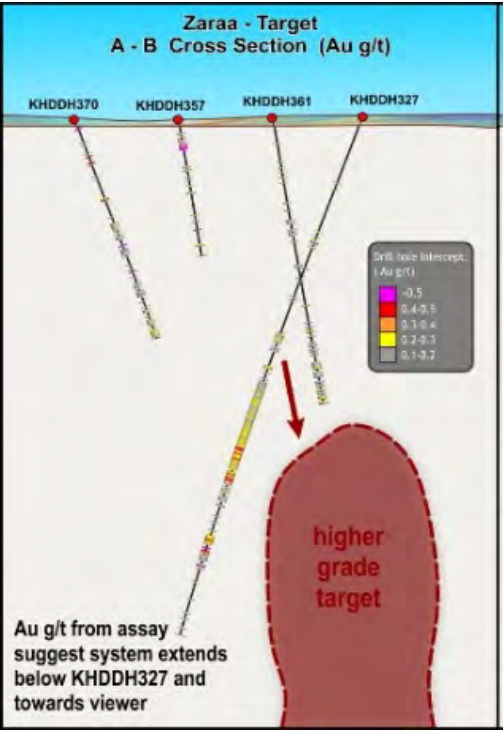
- Still struggling with complex geology
- Complex structure
- Multiple very similar intrusive phases
- Complex overprinting alteration
- Needed a way to differentiate intrusive phases and consistently log and map

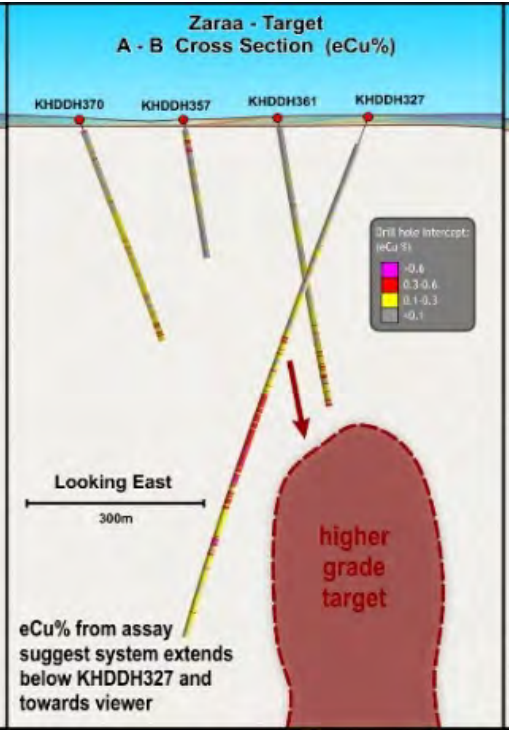
Xanadu Mines – Exploration History

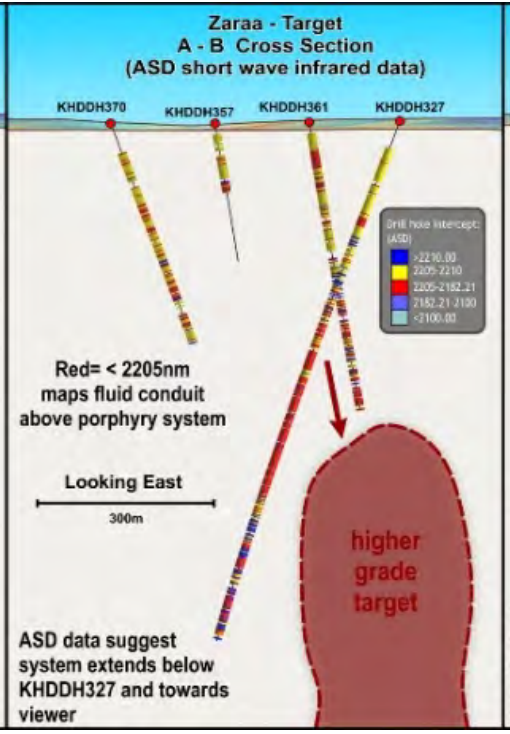
- Consistent geology defined across lease between drilling and mapping
- Intrusive paragenesis finally (mostly) understood
- Relationships between structure, intrusives and mineralisation
- It’s a wall rock deposit
- Highest grades are late
- These observations led to new discoveries

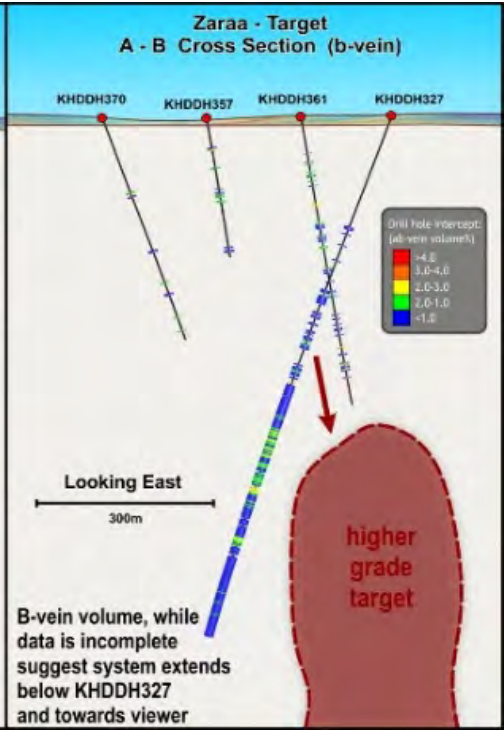
Xanadu Mines - Exploration History – New Discoveries

Zaraa discovery – ALM relog giving solid vectors from previous drilling; ASD Data clearly highlights direction to core of mineralisation; First hole into Zaraa drills almost 1km of mineralisation and ends still inside the mineral system





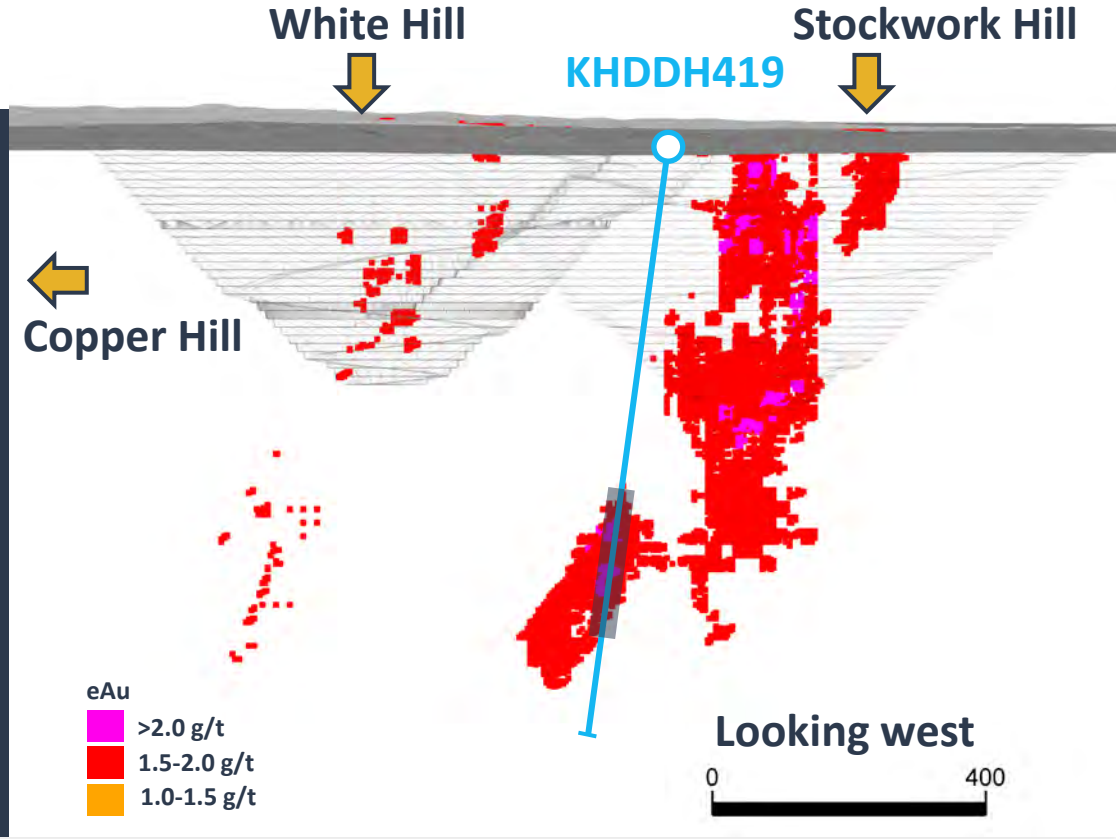




Xanadu Mines – Exploration History – New Discoveries

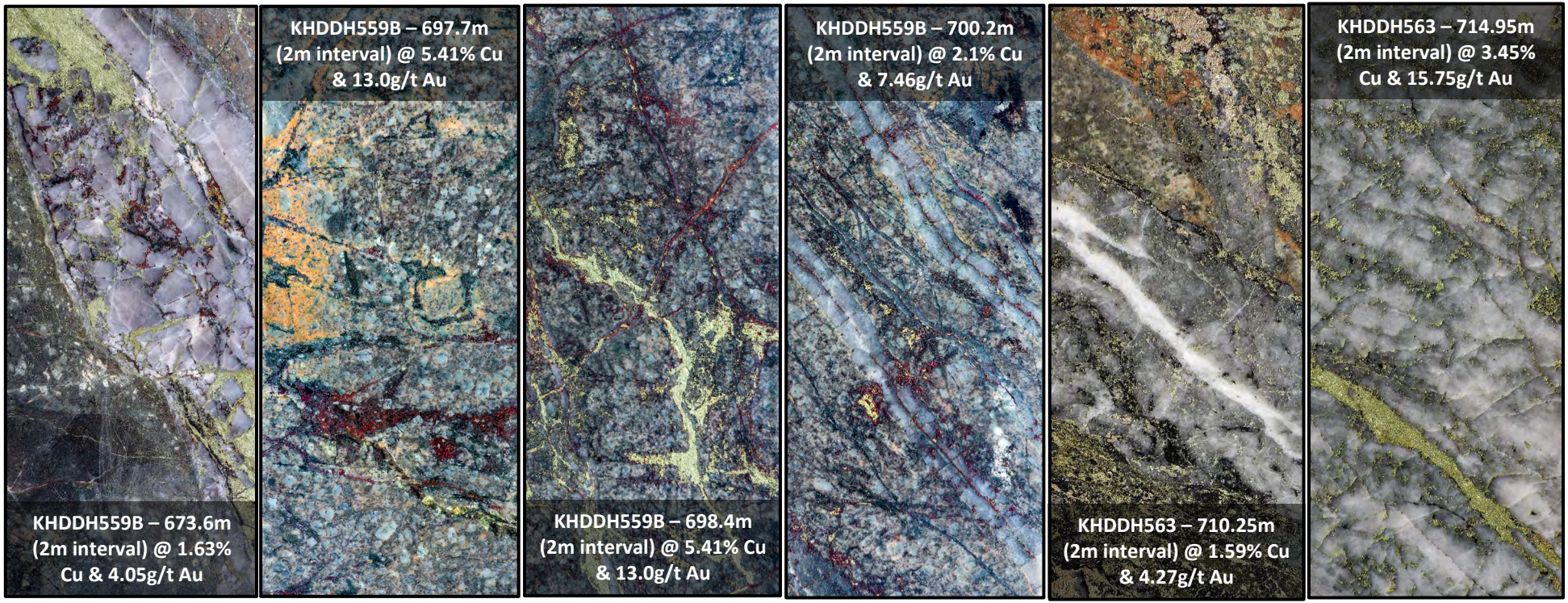
- High-gold bornite mineralisation
- Understanding of structure
- Recognition of slip vectors and markers
- Estimate movement sense on key faults
- Predict offset zones of mineralisation

First hole - KHDDH419
224m @ 1.08g/t Au & 0.47% Cu
Including – 86m @ 1.98g/t Au & 0.78% Cu



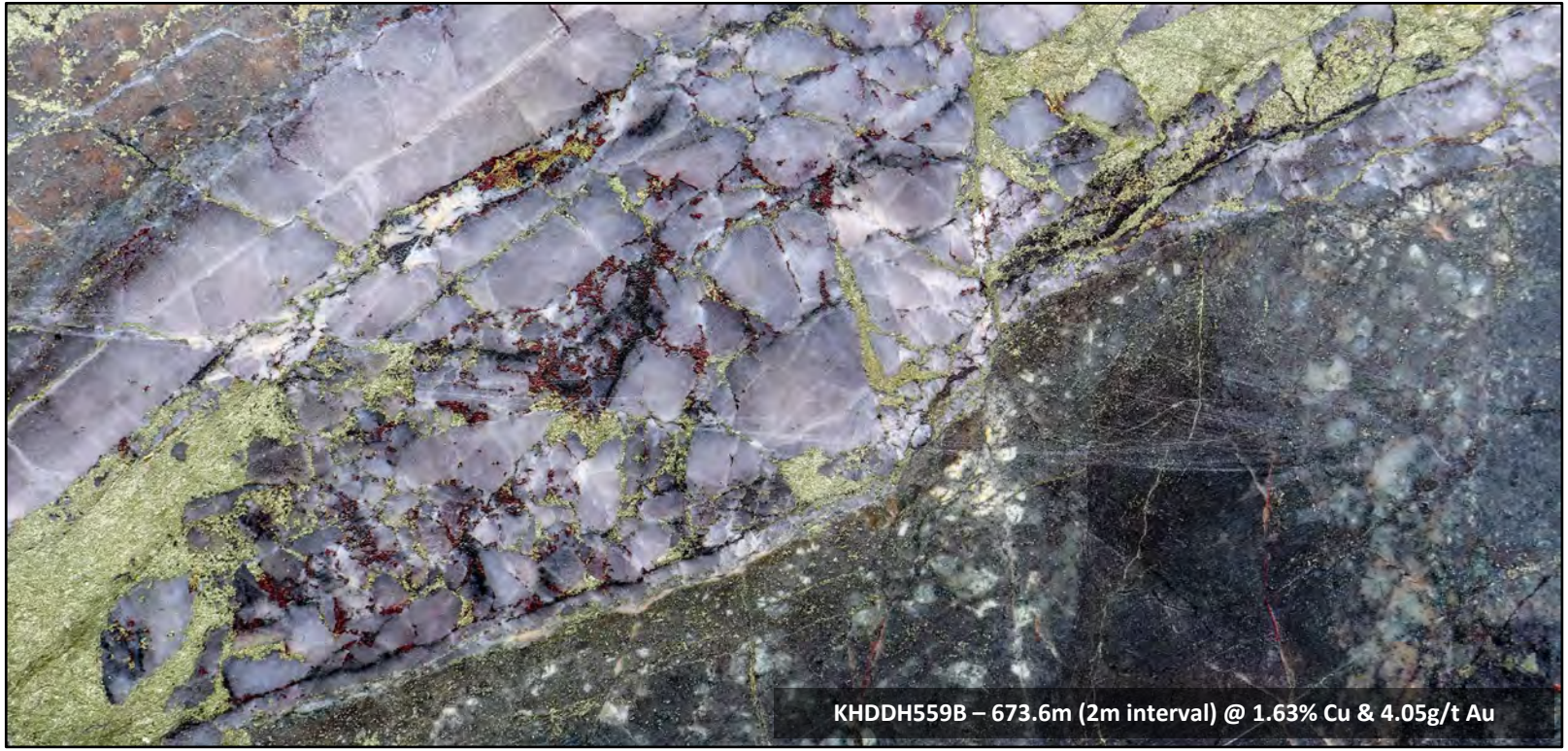
Kharmagtai Porphyry Cu – Au District

Bornite gold-rich porphyry mineralisation



Kharmagtai Porphyry Cu – Au District

Bornite gold-rich porphyry mineralisation



Kharmagtai Porphyry Cu – Au District

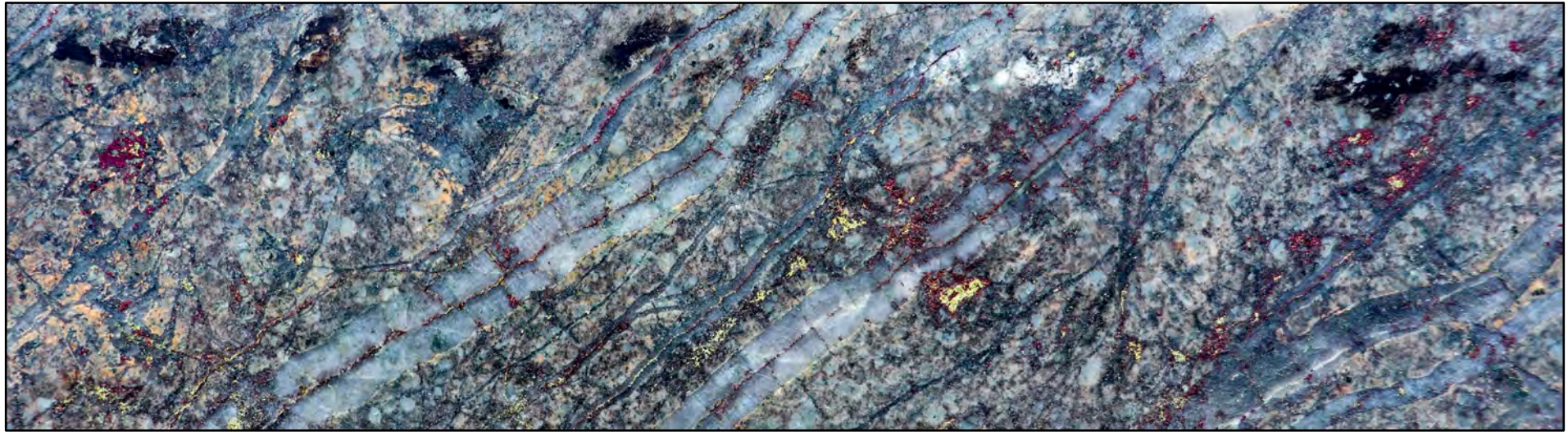
Bornite gold-rich porphyry mineralisation

KHDDH559B – 697.7m (2m interval) @ 5.41% Cu & 13.0g/t Au

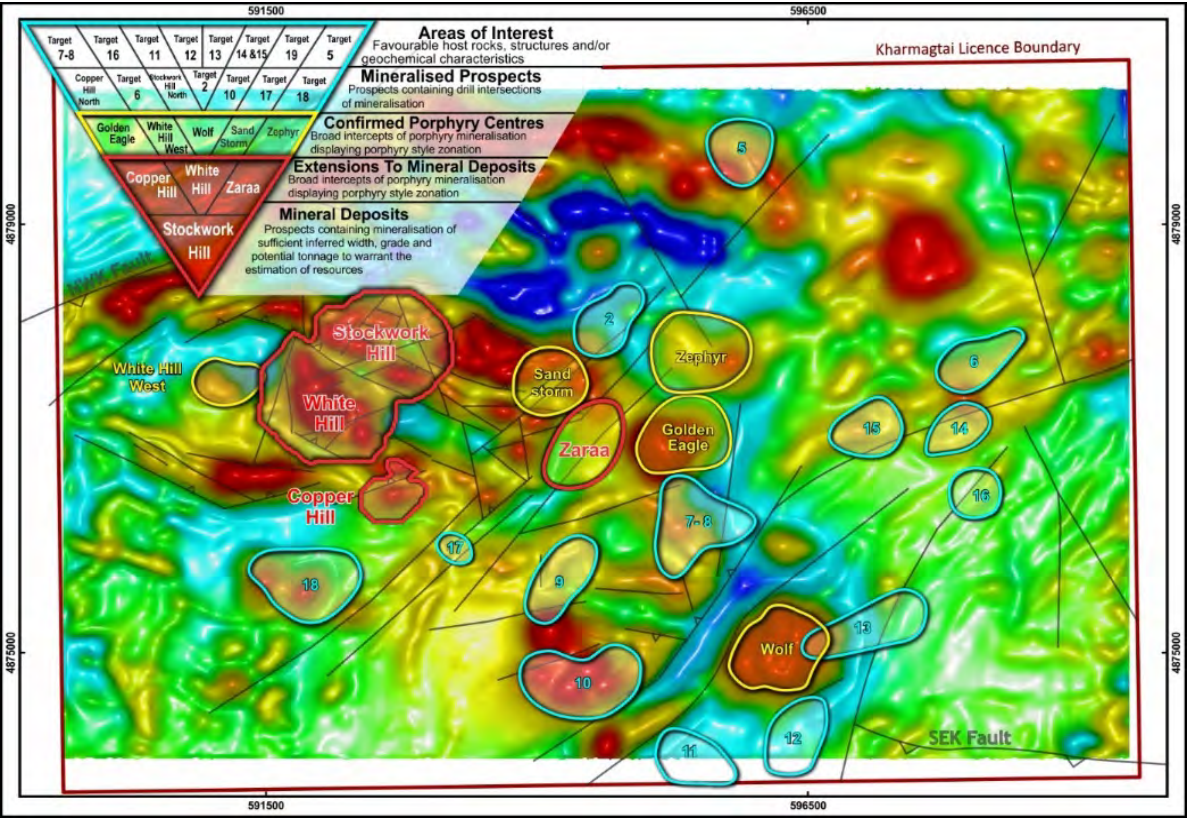
Kharmagtai Porphyry Cu – Au District

Bornite gold-rich porphyry mineralisation

KHDDH559B – 700.2m (2m interval) @ 2.1% Cu & 7.46g/t Au



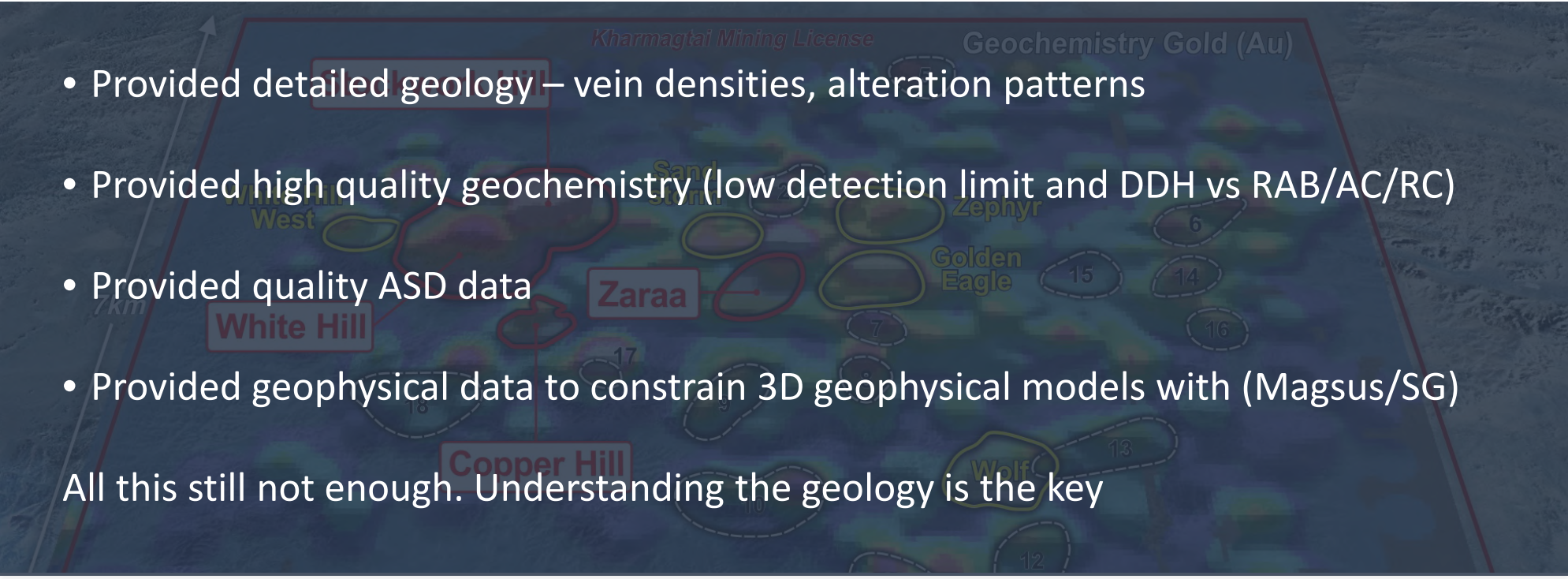
Xanadu Mines – Exploration Summary



- Doubled resource from 2015 to 2018
- 249% increase in contained gold and 400% increase in contained Cu
- Likely to double again by EOY 2021
- Added one new large scale deposit - Zaraa
- Four new porphyry centres
- High-grade extensions to Stockwork Hill
- Potential repeat of this as well
- Numerous additional shallow targets to be tested

Factors in Exploration Success

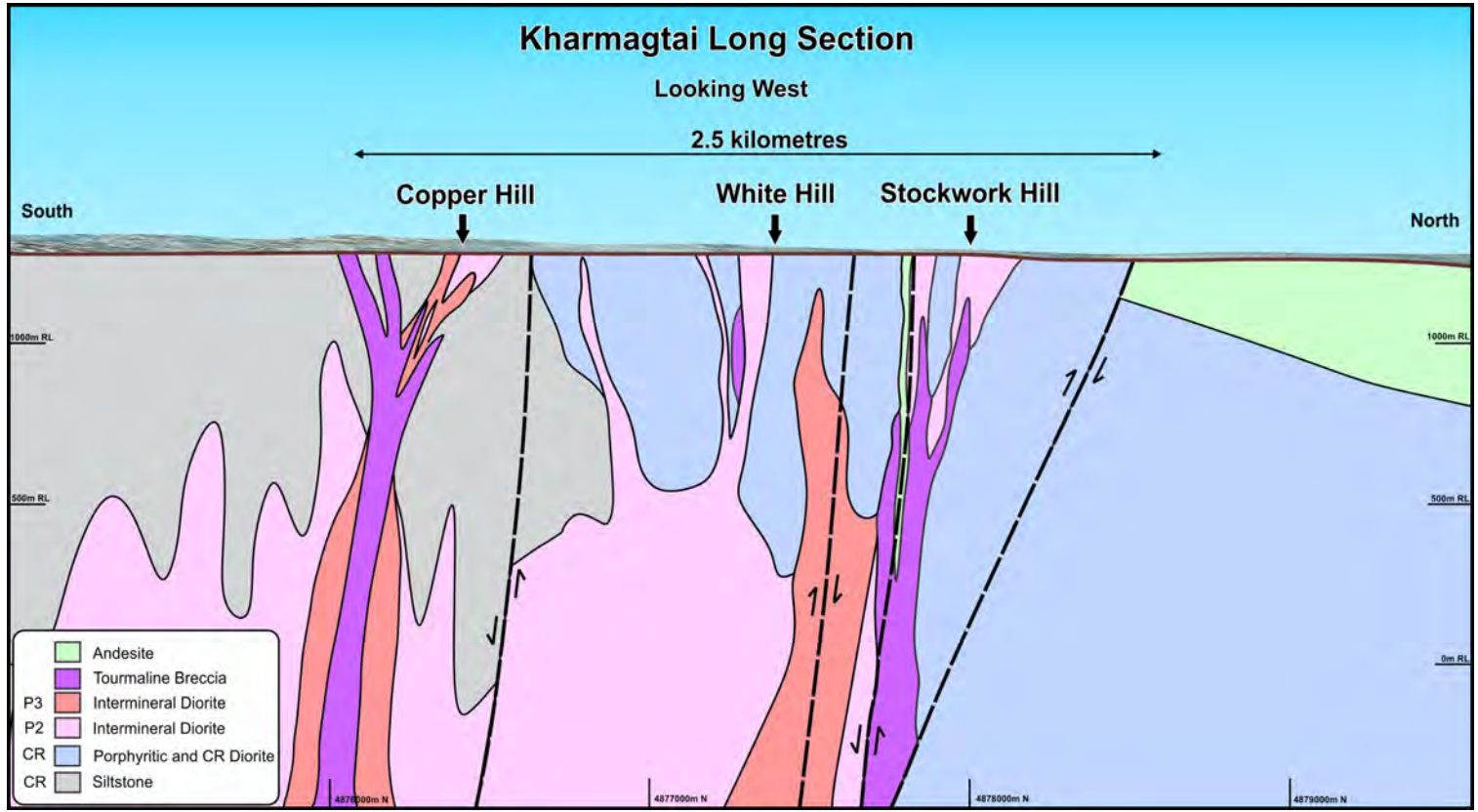
Pattern geochemistry and geology



- Provided detailed geology – vein densities, alteration patterns
- Provided high quality geochemistry (low detection limit and DDH vs RAB/AC/RC)
- Provided quality ASD data
- Provided geophysical data to constrain 3D geophysical models with (Magsus/SG)

All this still not enough. Understanding the geology is the key

Deposit Scale Geology



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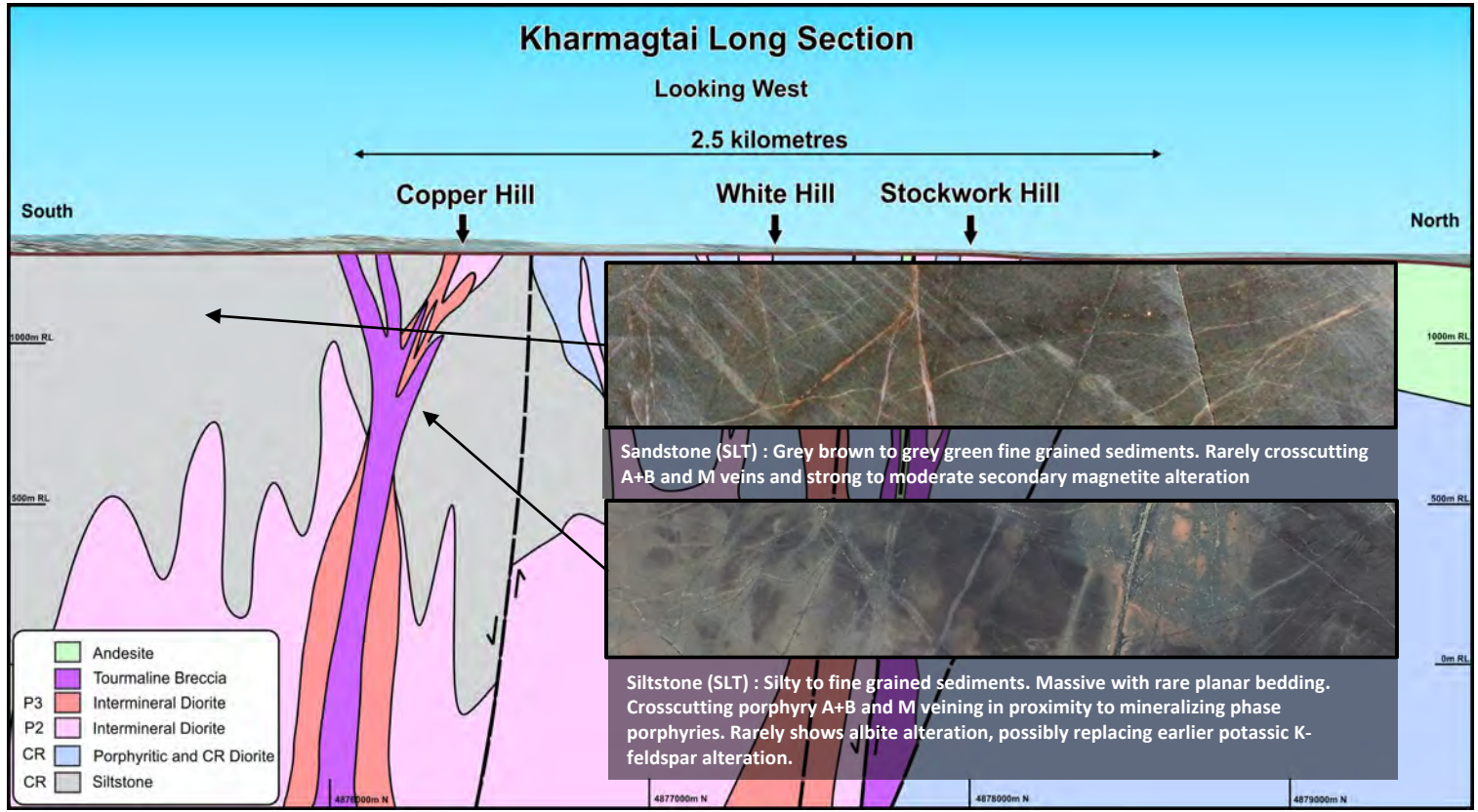
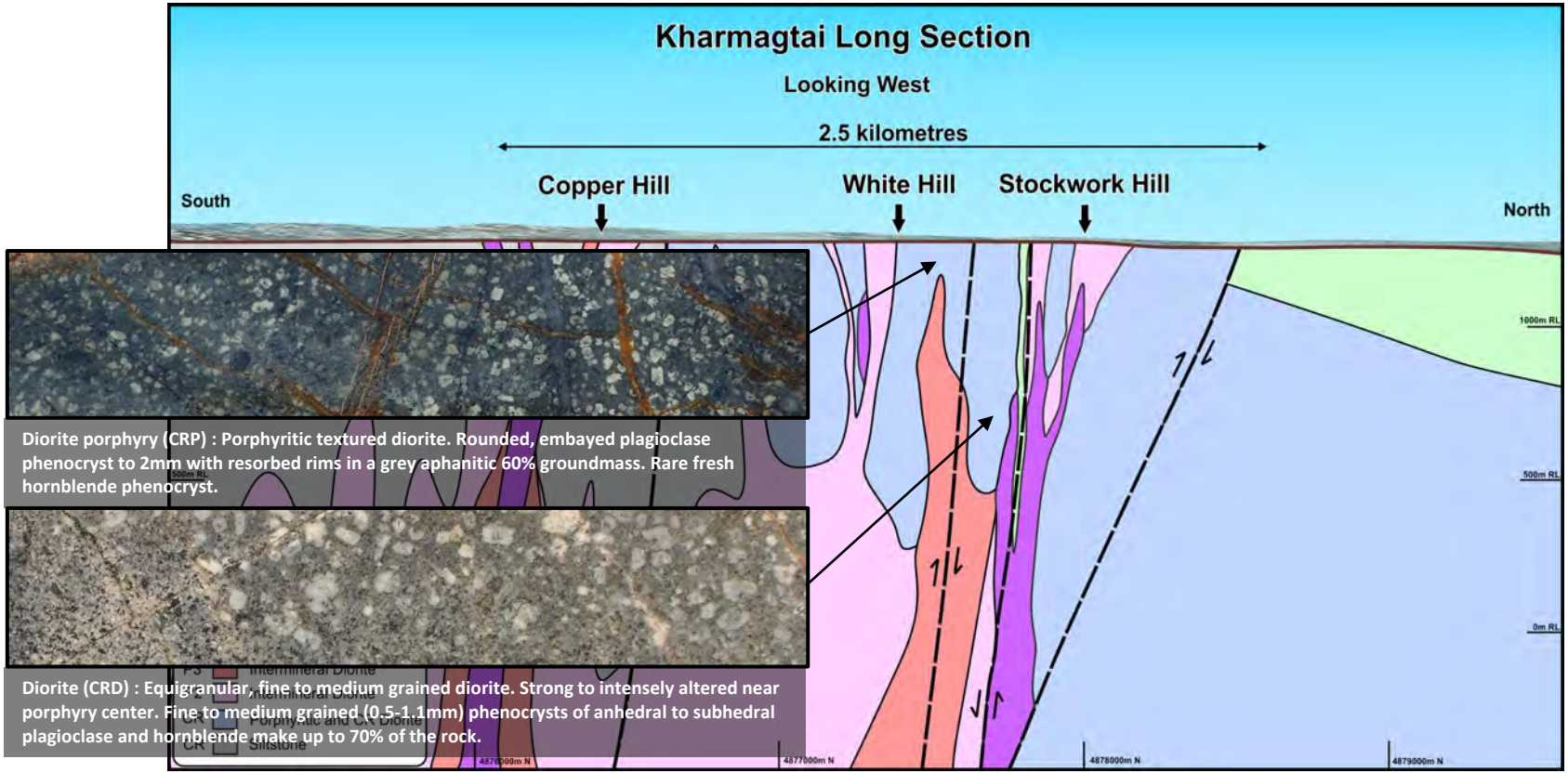
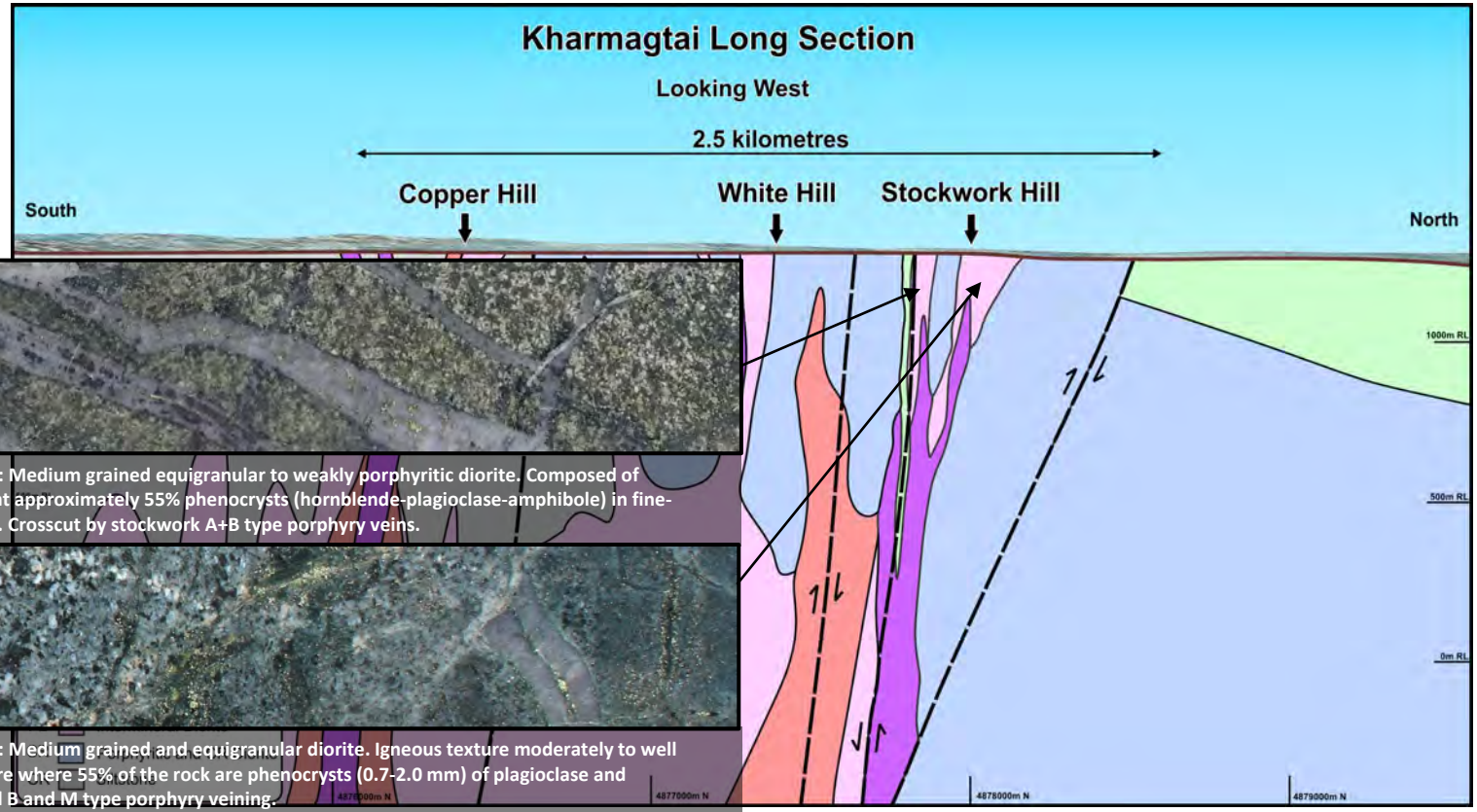
Deposit Scale Geology – Host Volcanics



Deposit Scale Geology – Early Intrusive



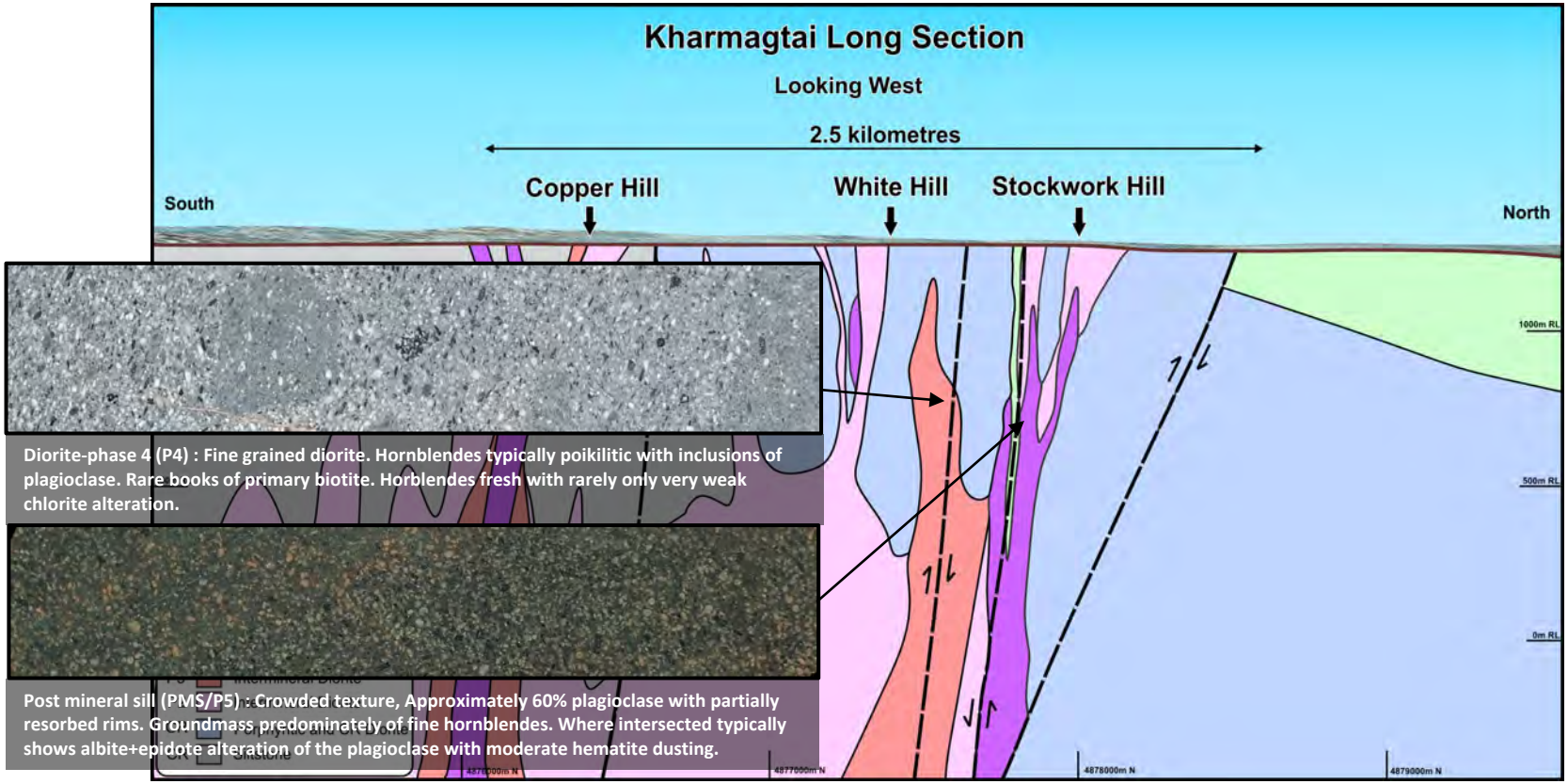
Deposit Scale Geology – Inter mineral Intrusive



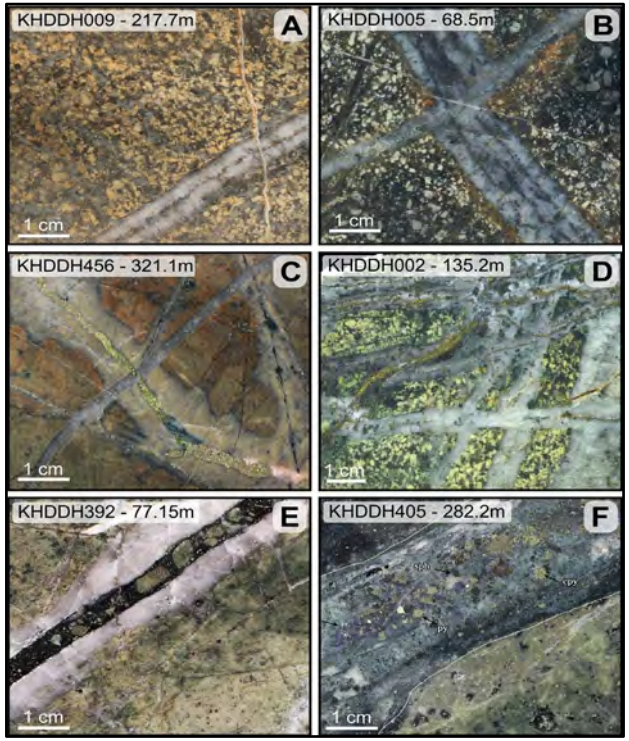
Diorite-phase 1 (P1) : Medium grained equigranular to weakly porphyritic diorite. Composed of moderately abundant approximately 55% phenocrysts (hornblende-plagioclase-amphibole) in fine-grained groundmass. Crosscut by stockwork A+B type porphyry veins.

Diorite-phase 2 (P2) : Medium grained and equigranular diorite. Igneous texture moderately to well preserved and texture where 55% of the rock are phenocrysts (0.7-2.0 mm) of plagioclase and hornblende. Sheeted B and M type porphyry veining.

Deposit Scale Geology – Late Intrusives

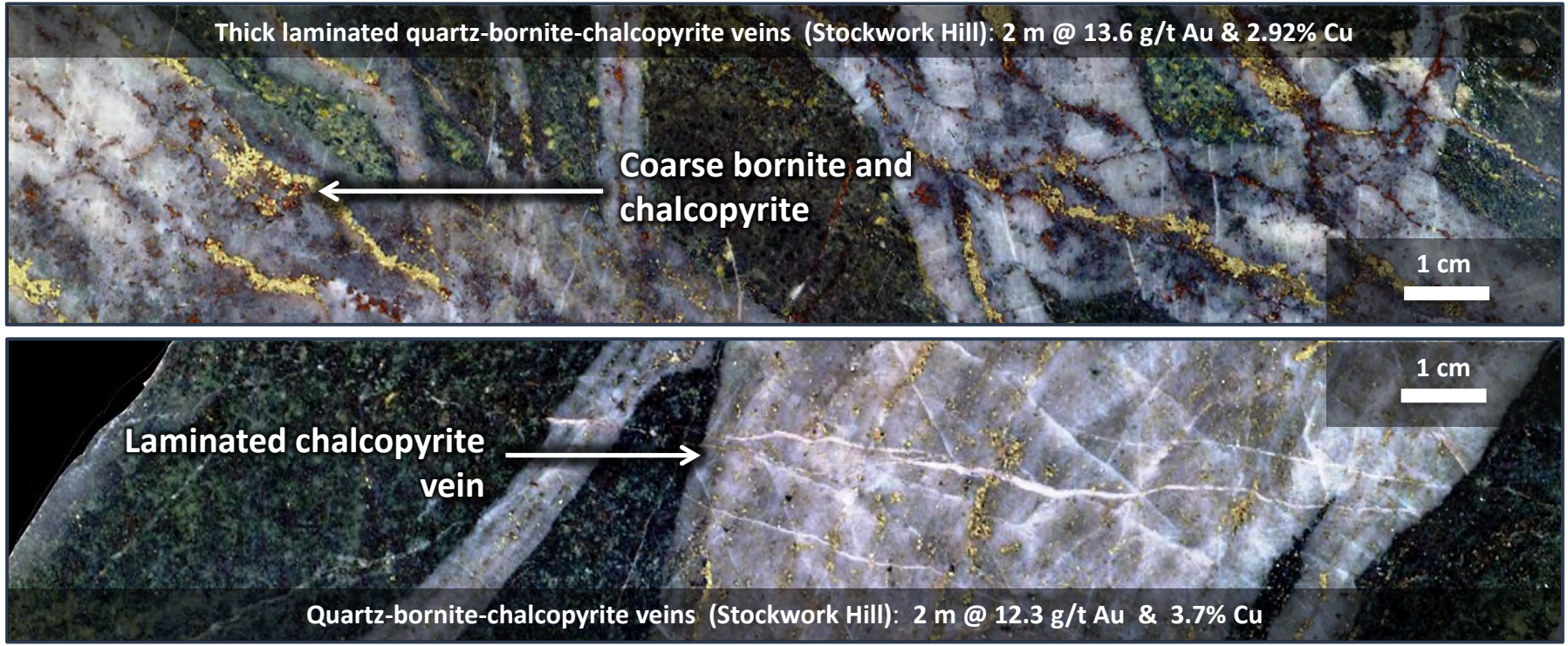


Deposit Scale Geology

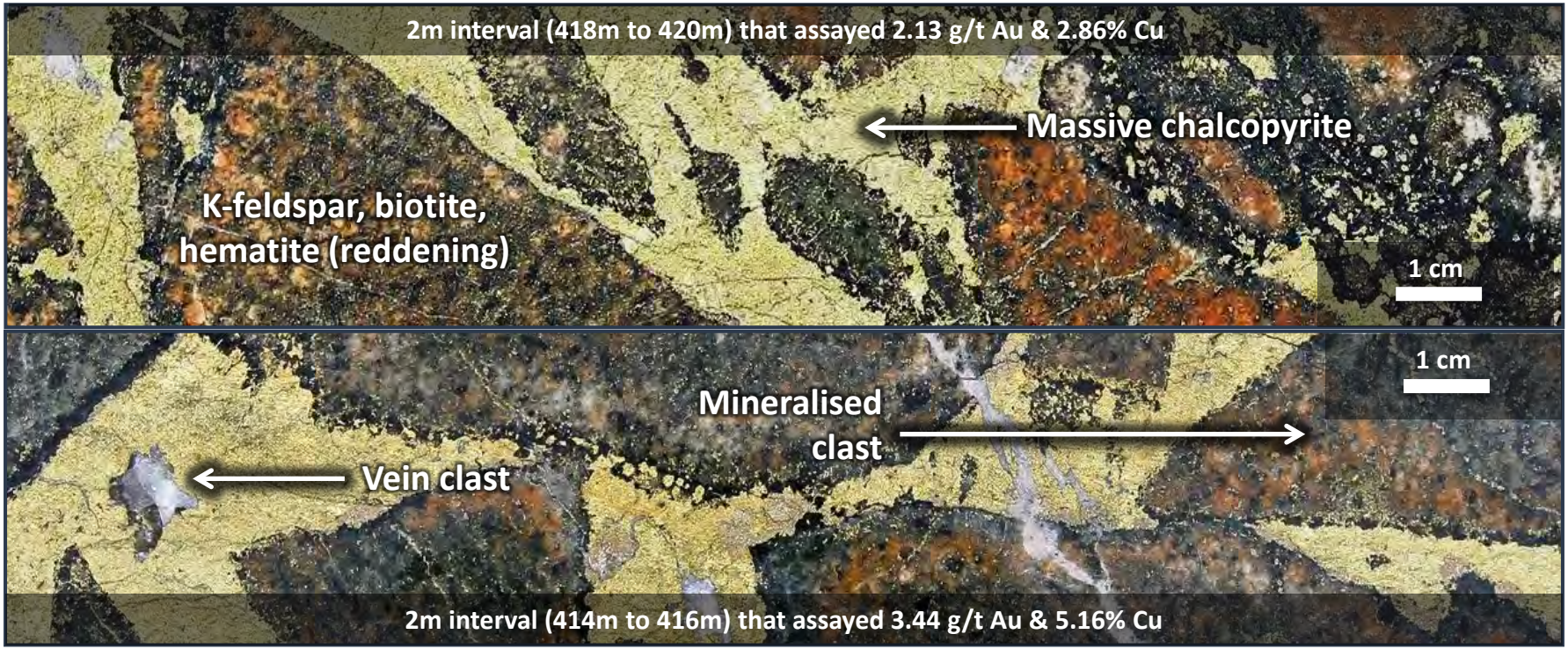


Mostly standard porphyry vein sequence
Difference is majority of Au and Cu is late C vein event rather than B vein event

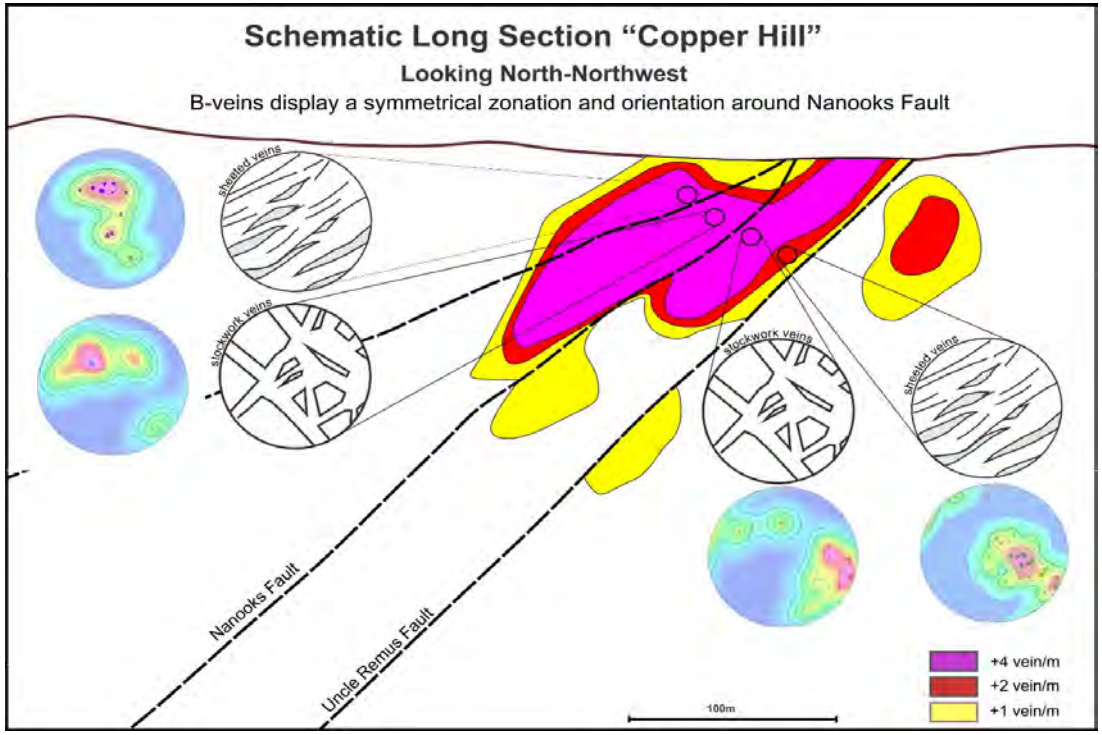
Mineralisation is Late & Associated with C veins



Tourmaline Breccia Timing Similar to C-vein Event



Deposit Scale Geology



Both B and C vein events are controlled by low angle faults

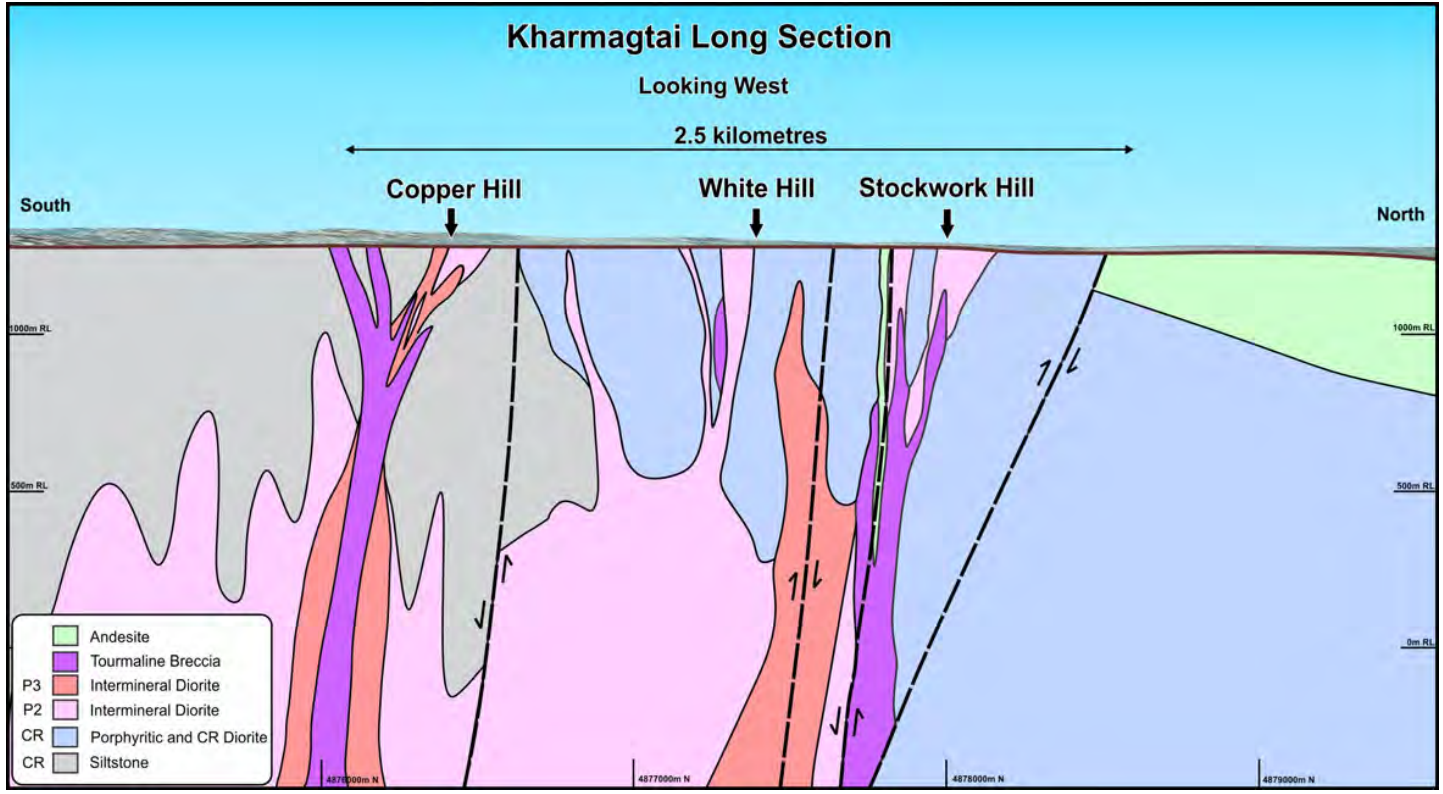
Multiple reactivations

Faults control high grade mineralisation

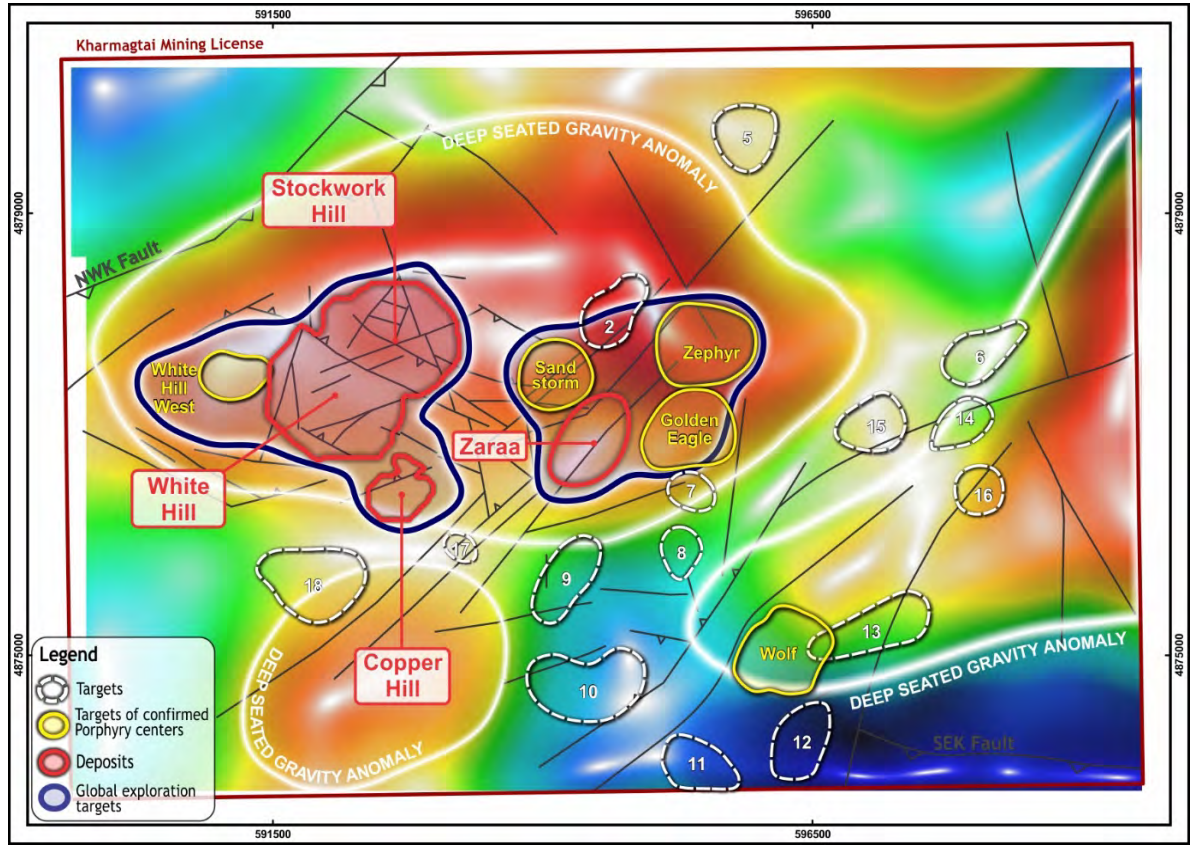
Veining is zoned around these faults

Wall rock deposit rather than traditional porphyry

So where is the OT Sized System? Deposit Linked at Depth



Deep Seated Gravity Points to Larger Chamber at Depth



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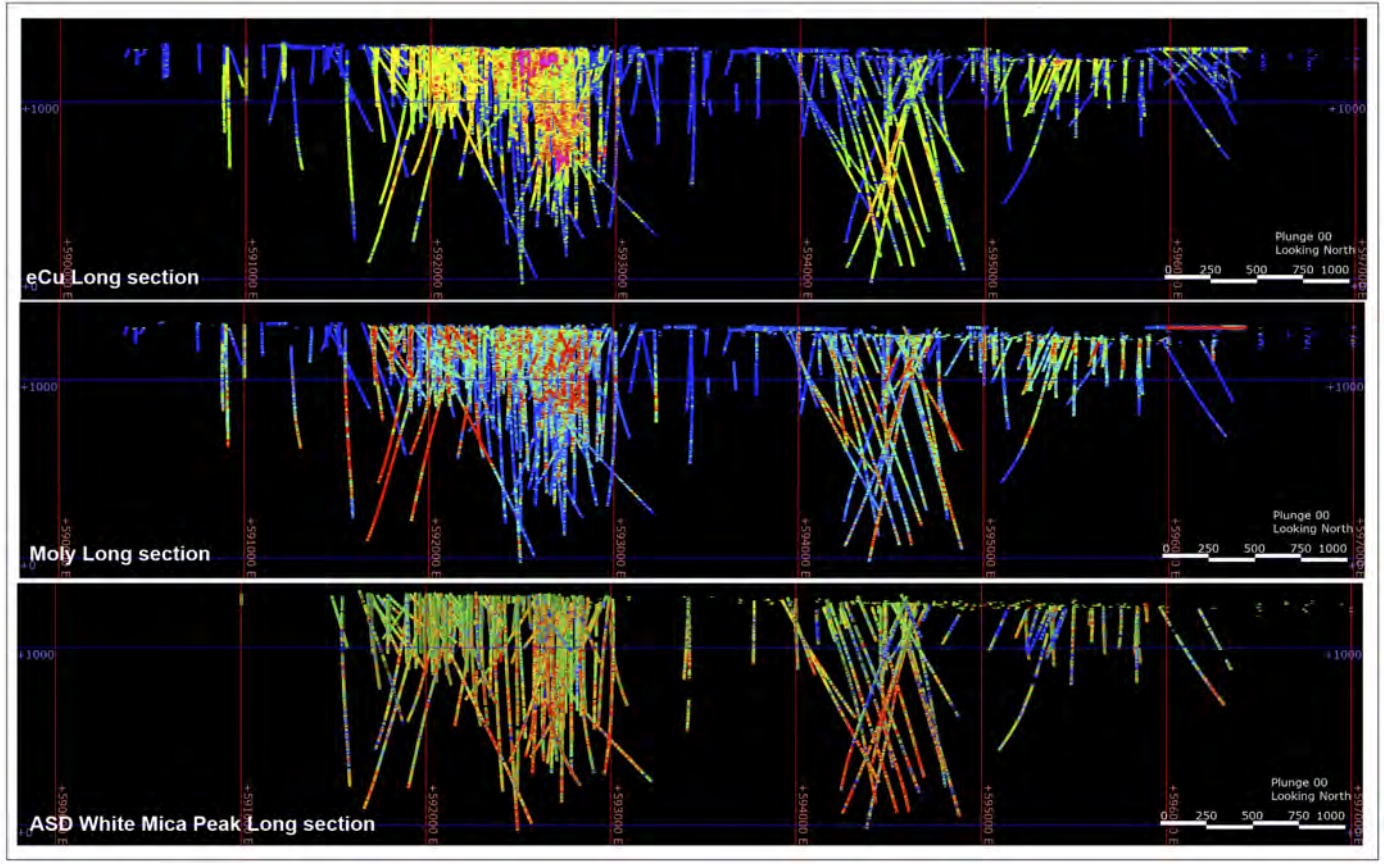
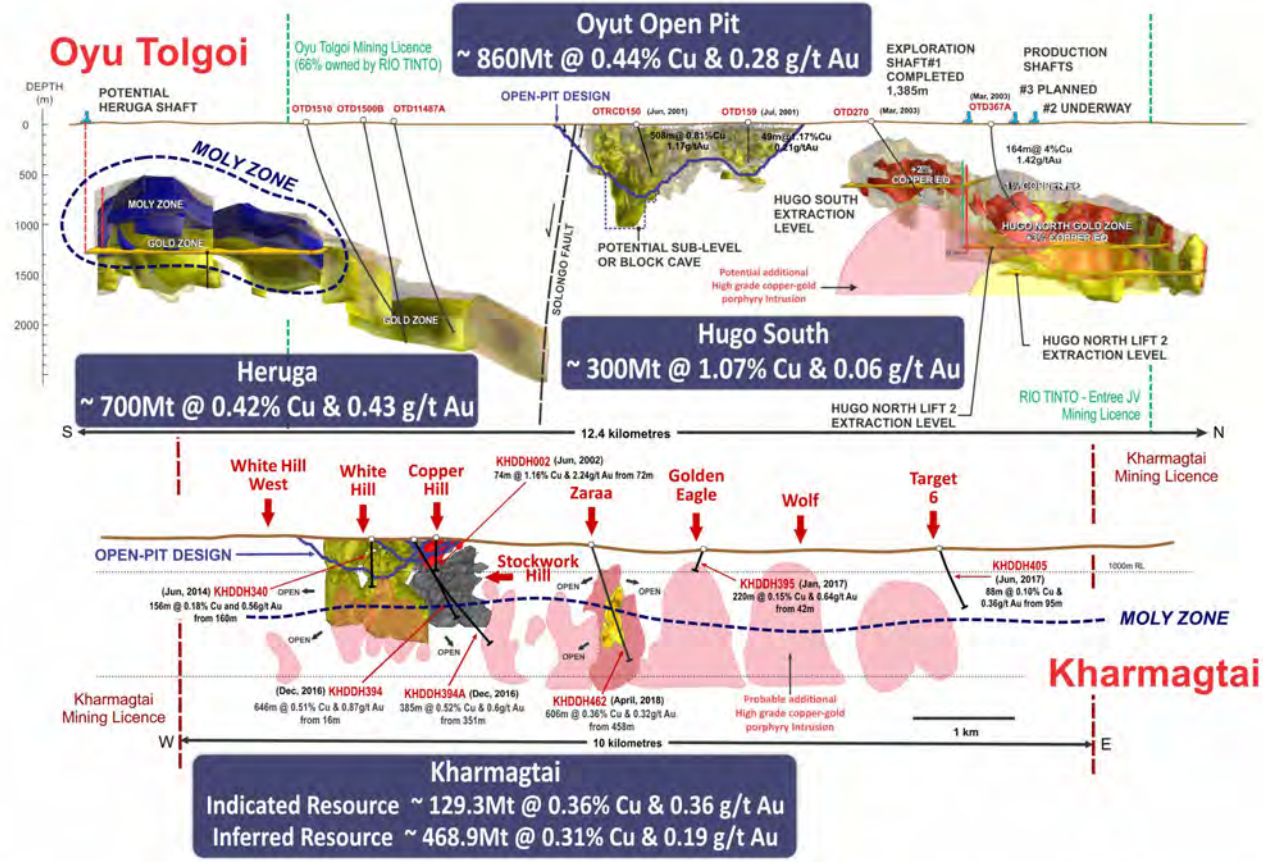
Geochemistry Points to Larger System at Depth

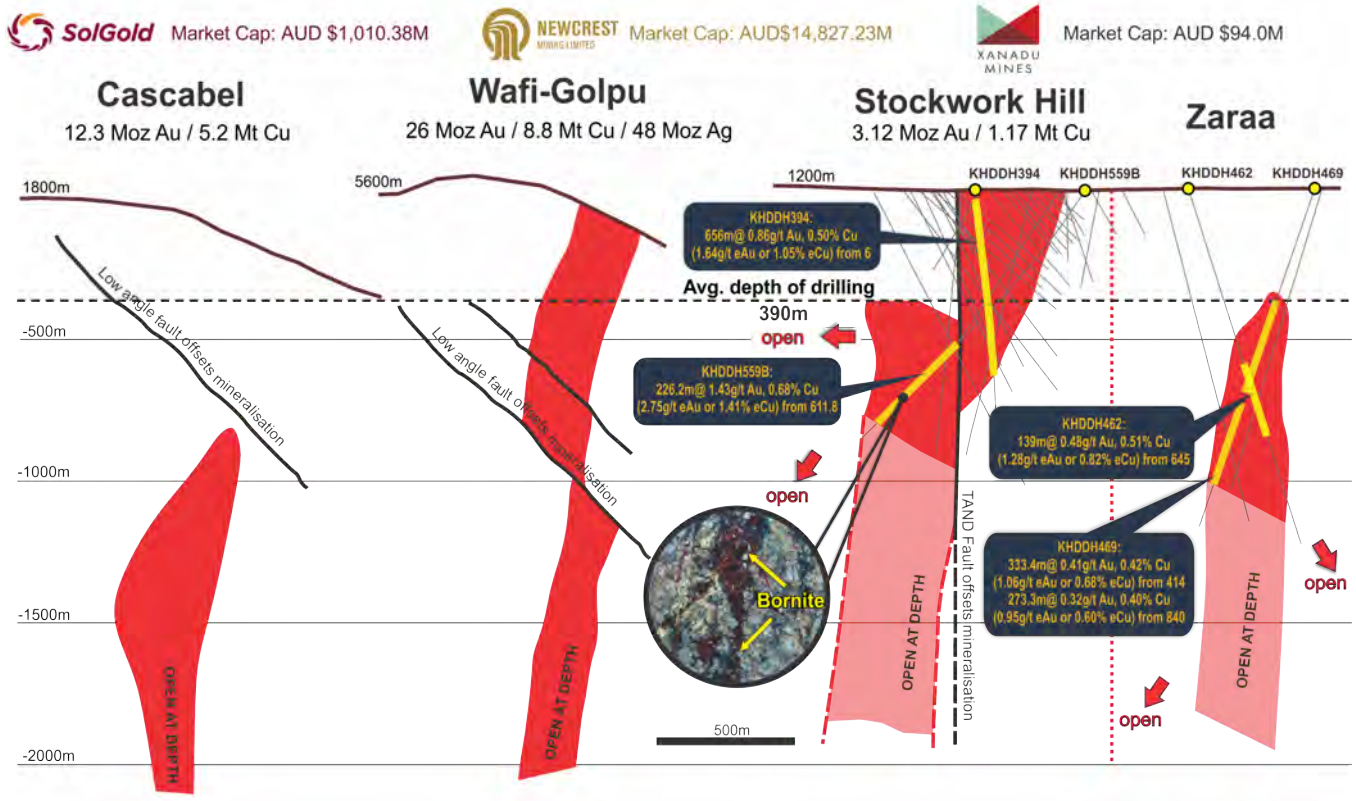


Architecture of South Gobi Porphyry Systems

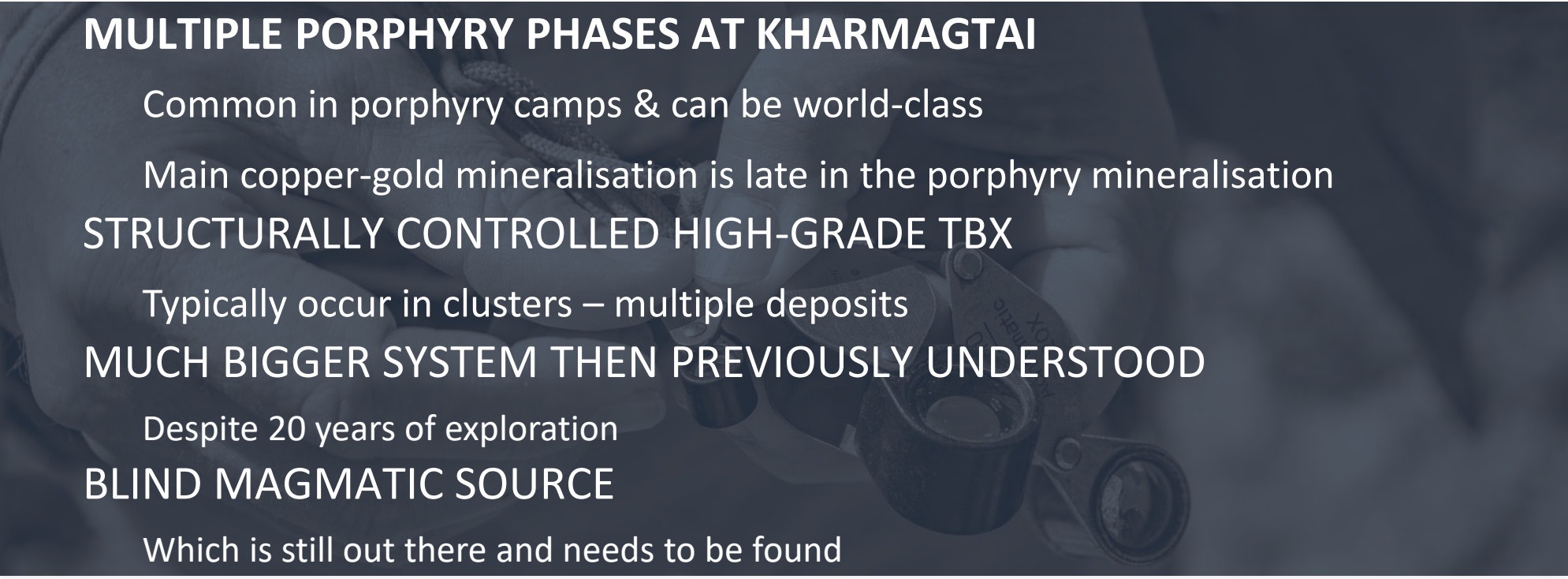


A Lot Further to go at Kharmagtai

High-grade porphyries continue at depth



A Lot Further to go at Kharmagtai



MULTIPLE PORPHYRY PHASES AT KHARMAGTAI

- Common in porphyry camps & can be world-class
- Main copper-gold mineralisation is late in the porphyry mineralisation

STRUCTURALLY CONTROLLED HIGH-GRADE TBX

- Typically occur in clusters – multiple deposits

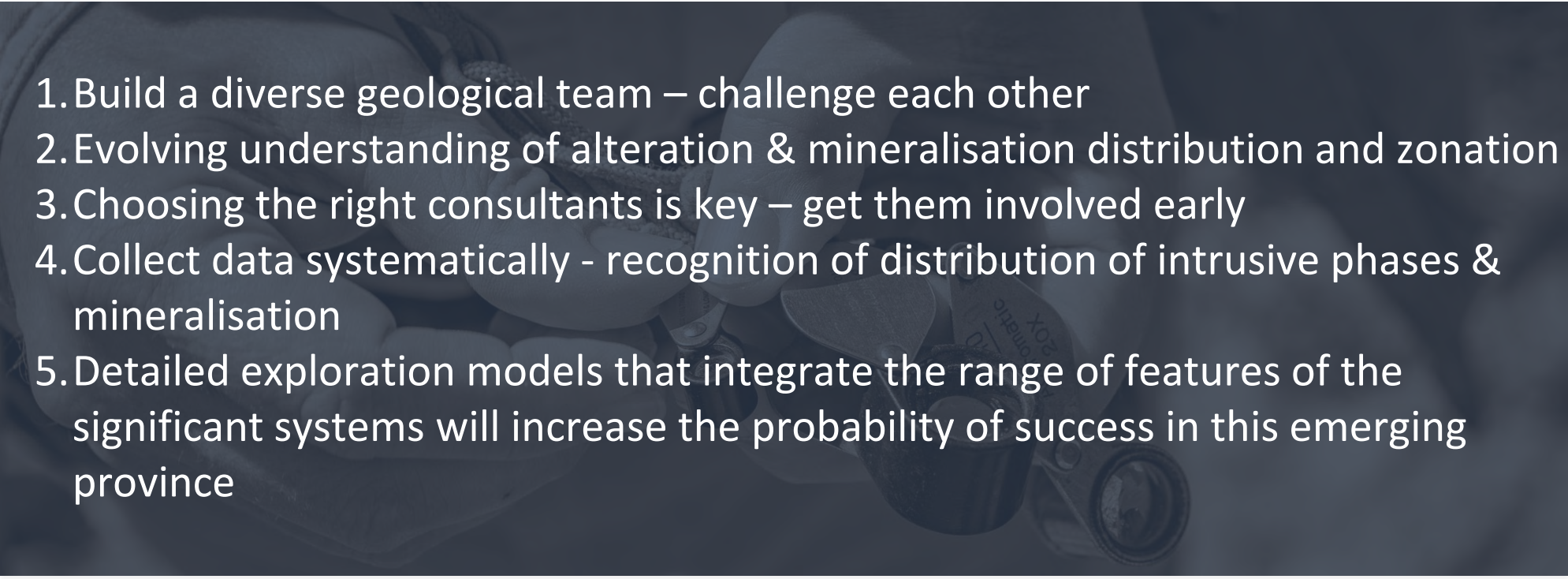
MUCH BIGGER SYSTEM THEN PREVIOUSLY UNDERSTOOD

- Despite 20 years of exploration

BLIND MAGMATIC SOURCE

- Which is still out there and needs to be found

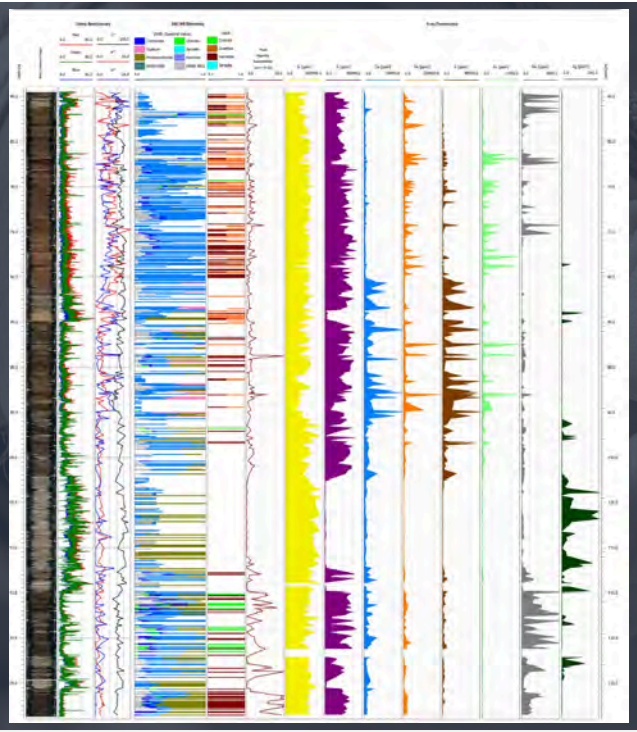
Factors in Exploration Success



1. Build a diverse geological team – challenge each other
2. Evolving understanding of alteration & mineralisation distribution and zonation
3. Choosing the right consultants is key – get them involved early
4. Collect data systematically - recognition of distribution of intrusive phases & mineralisation
5. Detailed exploration models that integrate the range of features of the significant systems will increase the probability of success in this emerging province

The next tool in the exploration tool kit

The next tool in the tool kit - Boxscan



SYSTEMATIC LOGGING OF KEY FEATURES

Build Machine Learning Logging

Alteration, rock-type, vein densities, sulphide species and distribution

Build RQD-GeoMet models to de-risk and save $

Know where you are in a mineral system in real time