



Orion Gold_{NL}

ASX Code: ORN

Connors Arc Project, Queensland

Technical Briefing & Update

- **Intermediate Sulphidation epithermal gold-silver system**
- **Emerging porphyry potential**

March 2015

Disclaimer and Forward-Looking Statements



- Certain statements contained in this presentation, including information as to the future financial or operating performance of Orion Gold NL and its projects, are forward-looking statements. Such forward-looking statements:
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- All information in respect of Exploration Results and other technical information should be read in conjunction with the Competent Person Statements at the end of this presentation.

Orion: Corporate Summary



Capital Structure Summary

Shares on Issue	306M
Options on Issue	89M
Market Capitalisation (at 4cps)	\$12M
Cash on Hand (as at 31 Dec '14)	\$1.1M

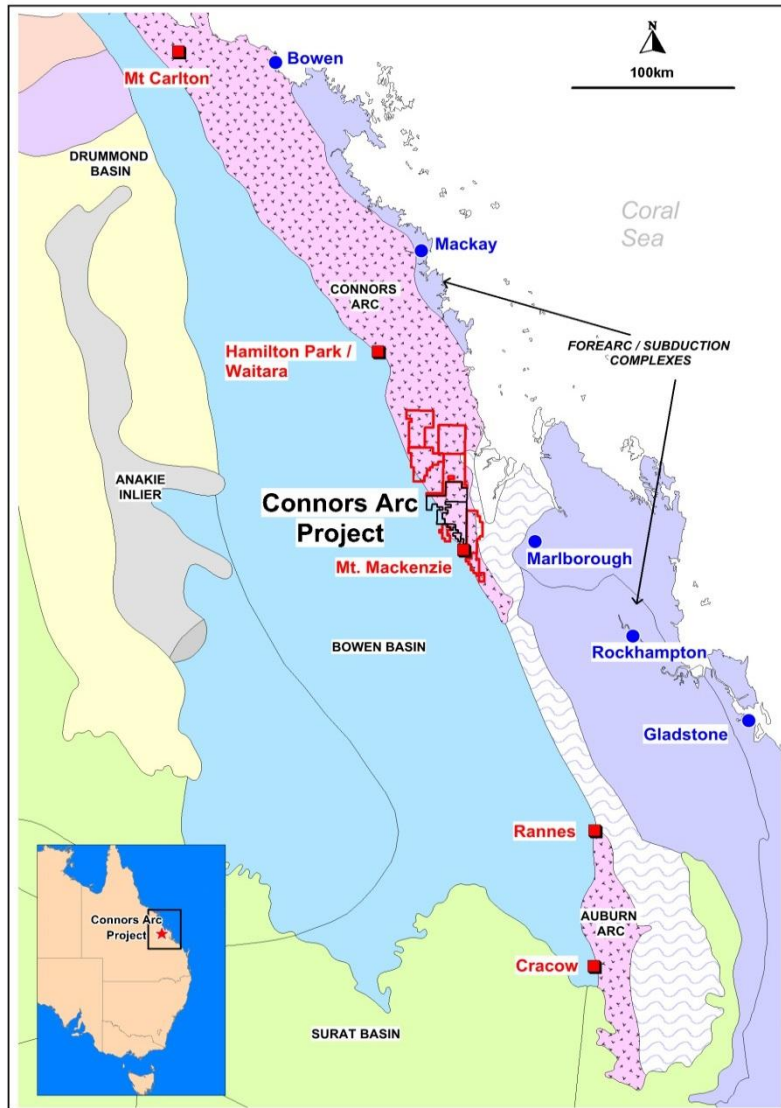
Significant Holder Name	Number	%
Silja Investment Ltd ⁽¹⁾	47,373,245	15.5%
Alexander Haller ⁽¹⁾	11,302,248	3.7%
Tarney Holdings	33,212,771	10.9%
Creasy Group	20,765,447	6.8%
Significant Holder Total	112,653,711	37%

Board & Management

Denis Waddell	Chairman
Errol Smart	CEO, Managing Director
Bill Oliver	Technical Director
Alexander Haller	Non Executive Director
Kim Hogg	Company Secretary
Martin Bouwmeester	Business Development Manager

⁽¹⁾ Mr Alexander Haller is deemed to have a relevant interest in securities held by Silja Investment Ltd.

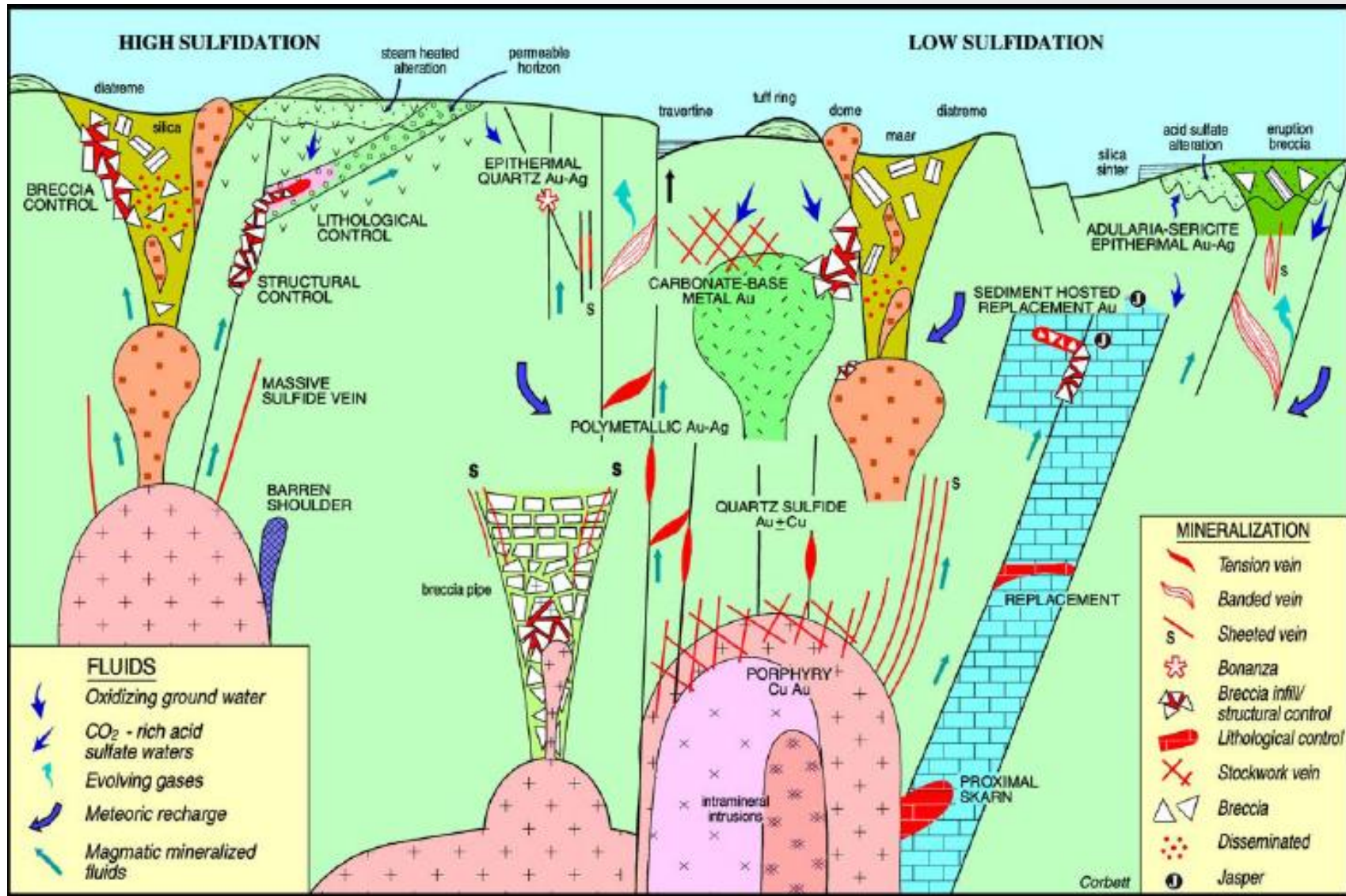
Connors Arc Project

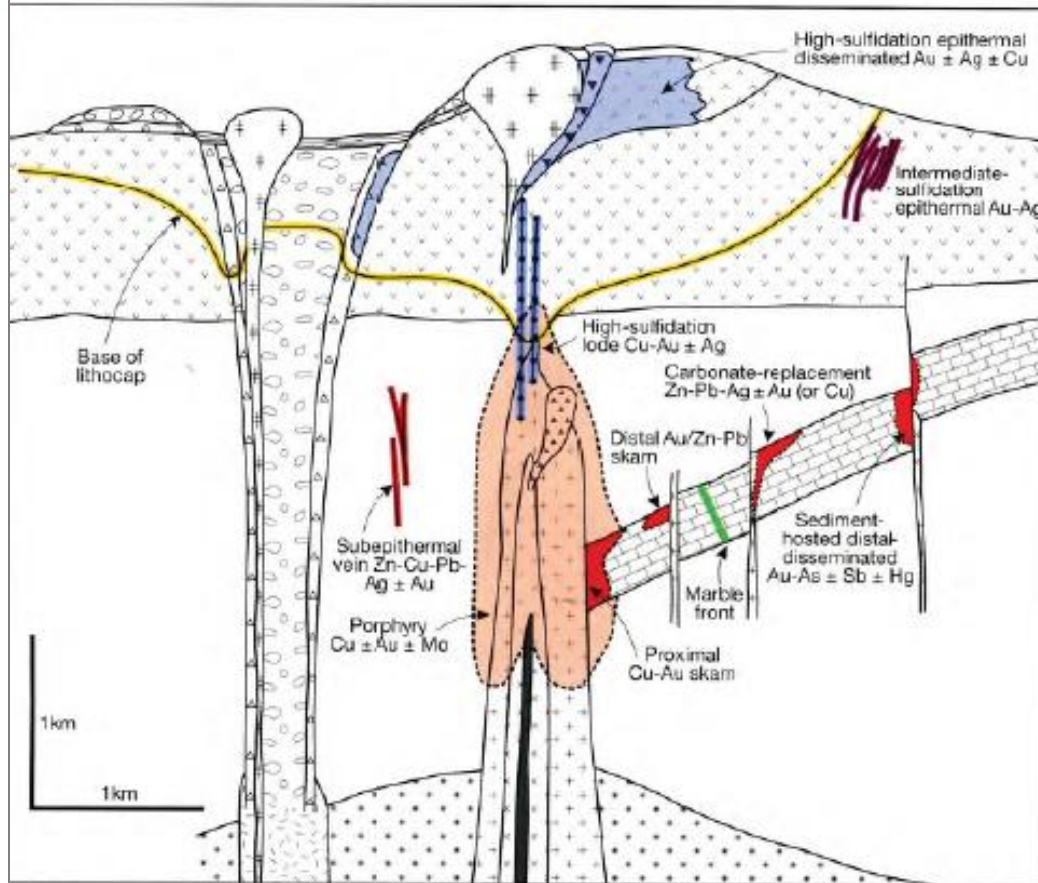


- 2000km² contiguous tenement applications granted and under application
- Allows for district scale targeting of Magmatic Arc Mineralisation
- Extends approximately 100km north from Mt Mackenzie, a well known high sulphidation epithermal deposit.
- Several historic occurrences noted of possible epithermal and intrusive porphyry related mineralisation

- Preliminary ORN work recognised that an extensive, shallow in system, Intermediate Sulphidation (“IS”) epithermal vein system was developed approximately 8km north of the known Mt Mackenzie High Sulphidation Deposit (refer ASX Release 8 September 2014)
- Limited historic exploration on Aurora Flats IS
 - *20 shallow percussion holes < 120m max depth*
 - *Low level gold and silver with characteristic IS trace elements anomalism (Pb, Zn, Te)*
 - *Ag >>> Au grades (refer ASX Release 15 July 2013)*
- Drilling and geophysics on epithermal targets has now indicated potential for porphyry style Au-Cu in addition to Au-Ag epithermal targets

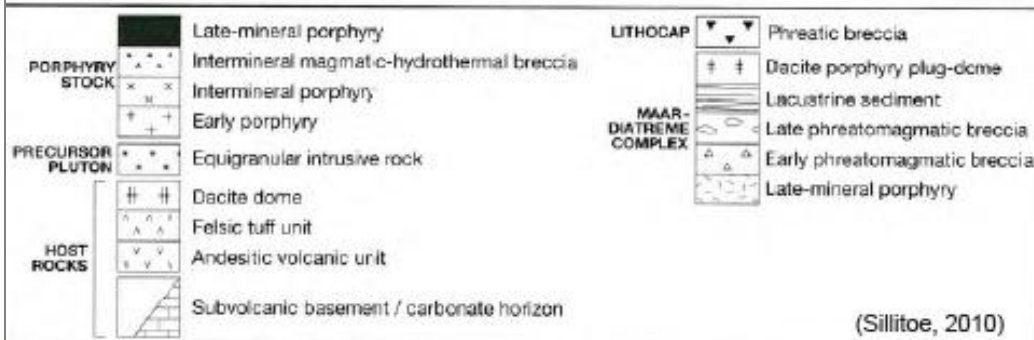
Magmatic Arc Related Deposit Styles





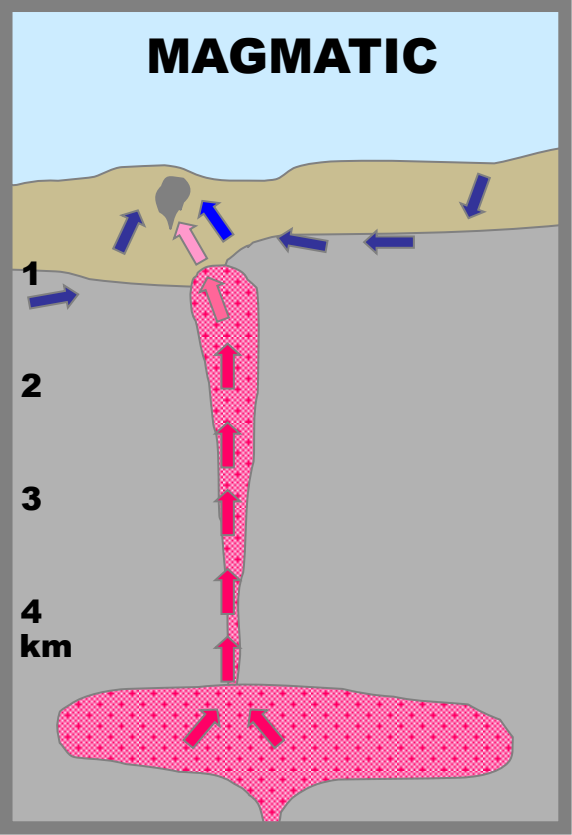
Associated Mineral Deposits

- porphyry (Cu-Mo-Au)
- epithermal (Au-Ag)
- skarn (Cu-Au)
- carbonate replacement (Zn-Pb-Ag)
- sediment-hosted (Au)



(Sillitoe, 2010)

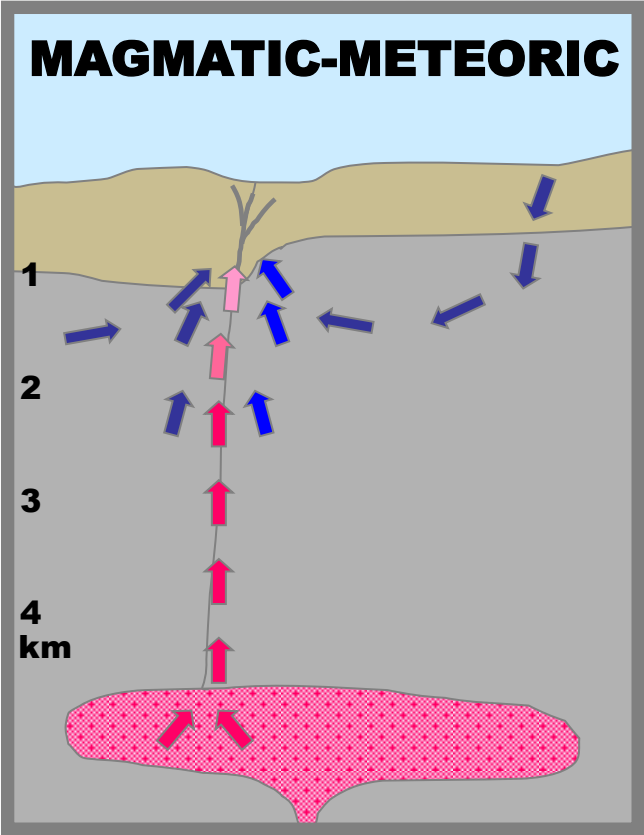
Epithermal Systems – Deposit Models



Veins textures: restricted

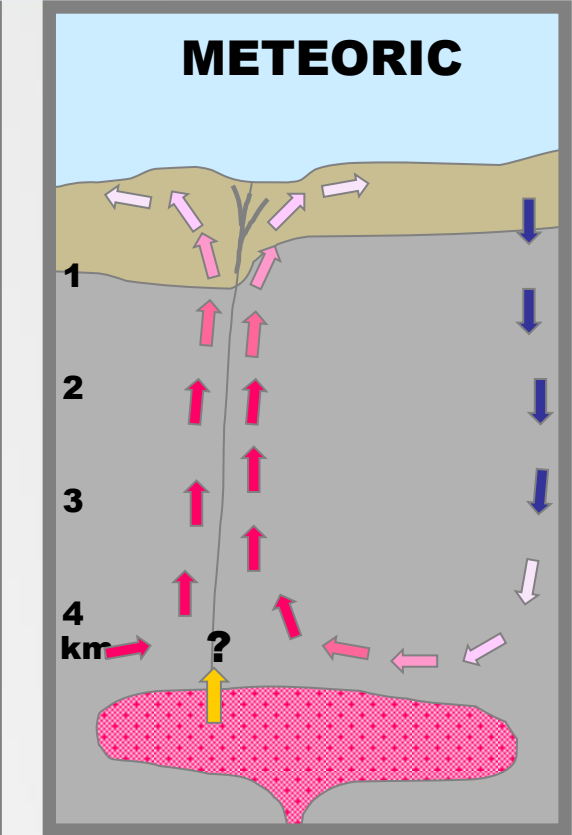
HIGH SULFIDATION

Au-Cu-Ag



diverse, modest

INTERMEDIATE SULFIDATION

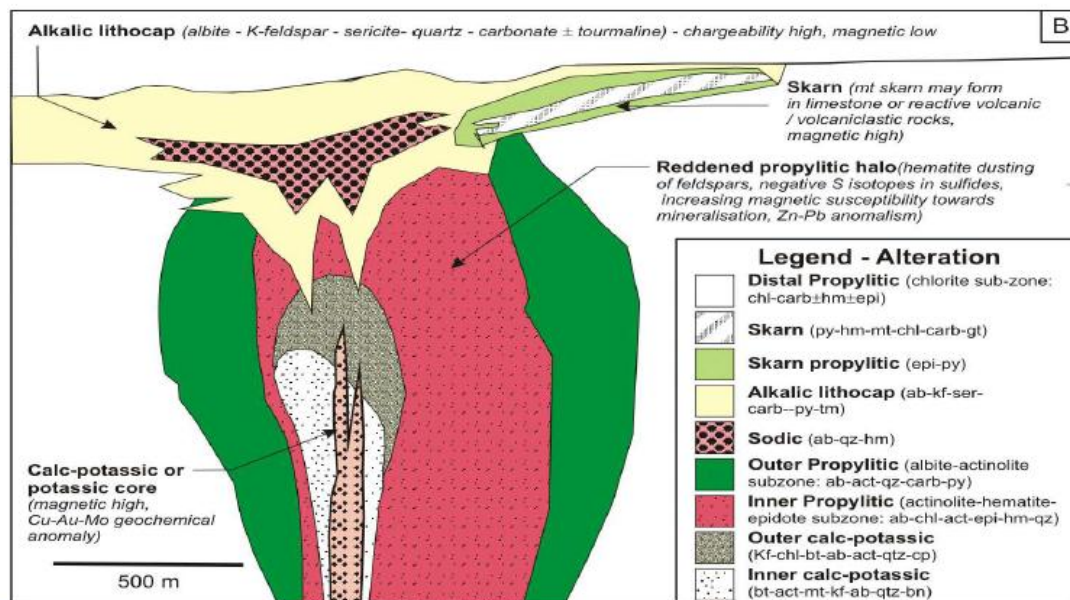
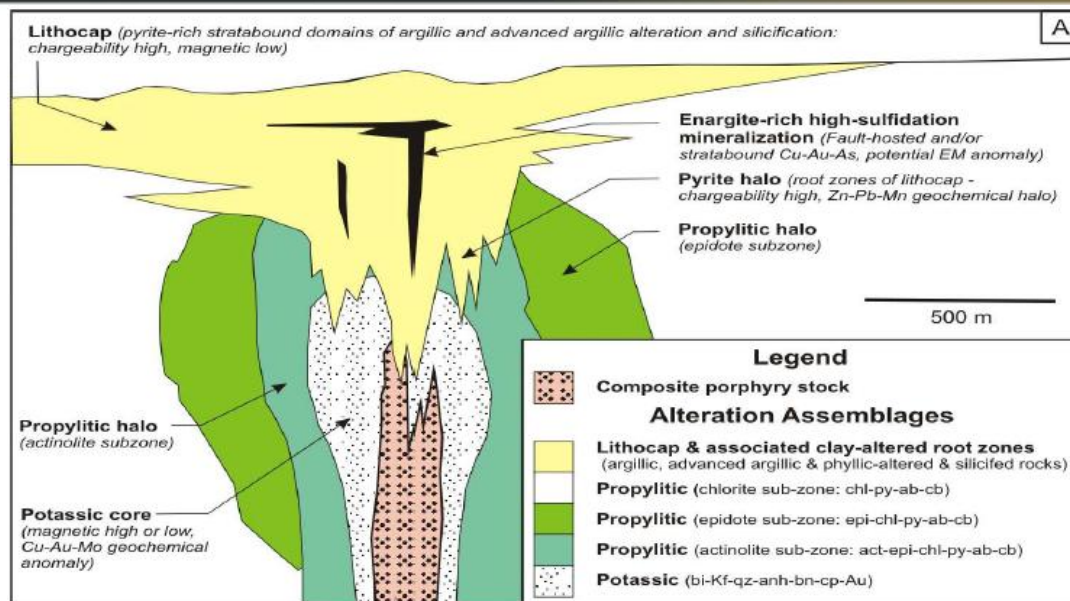


diverse, spectacular

LOW SULFIDATION

Au-Ag

Porphyry Intrusive - Deposit Models & Alteration Zonation



Important Analogues For Guidance

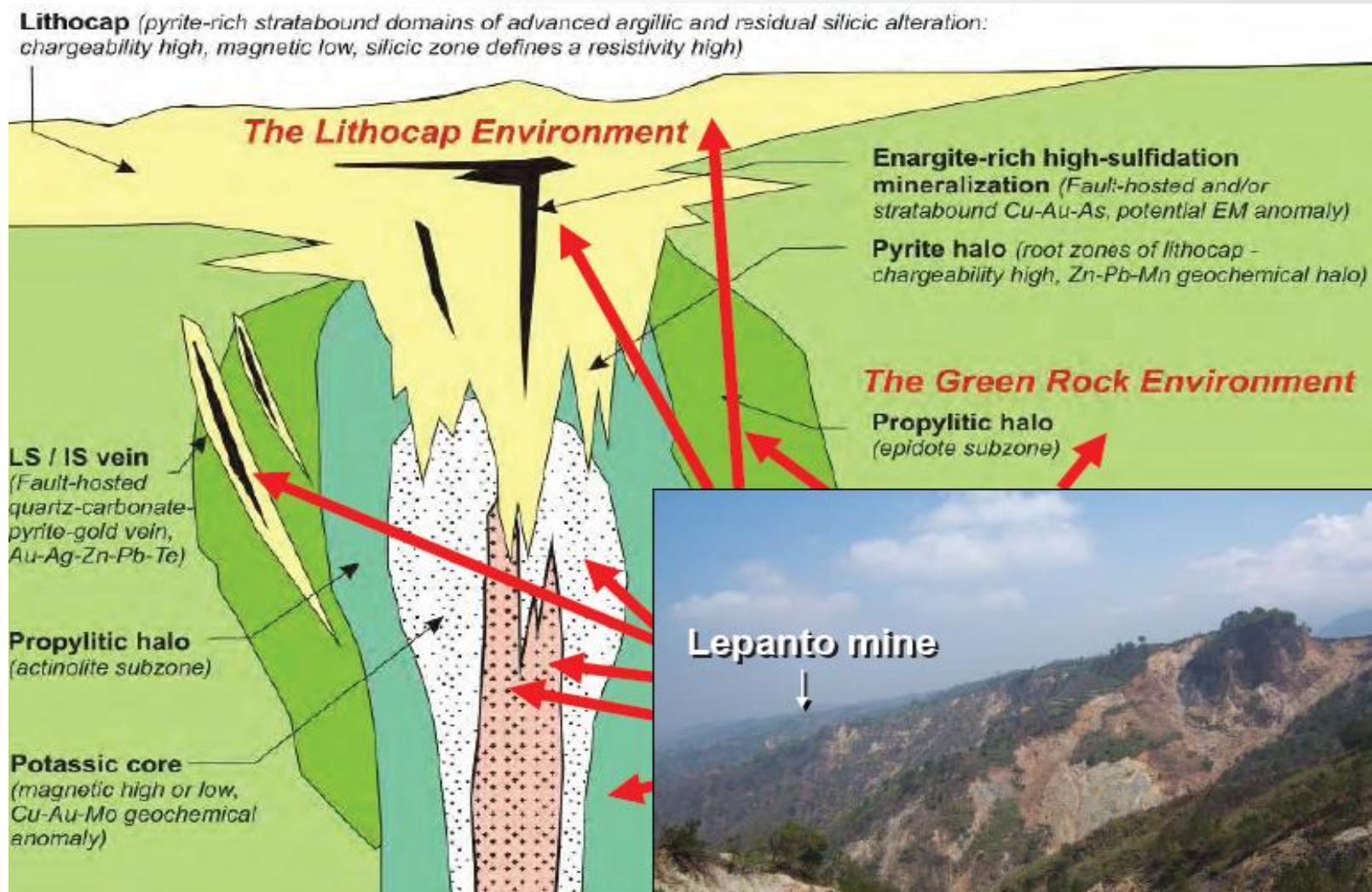


- Lepanto (Philippines)
 - *Porphyry Intrusives + High, Intermediate and Low Sulphidation Epithermal Deposits*
- Pachuca (Mexico)
 - *Intermediate Sulphidation*
- Cracow (Queensland Australia)
 - *Low Sulphidation*
 - *Similar age and setting*
- Pajingo (Queensland Australia)
 - *Low Sulphidation*
 - *Similar Age and Setting*

Lepanto – District Scale Analogy



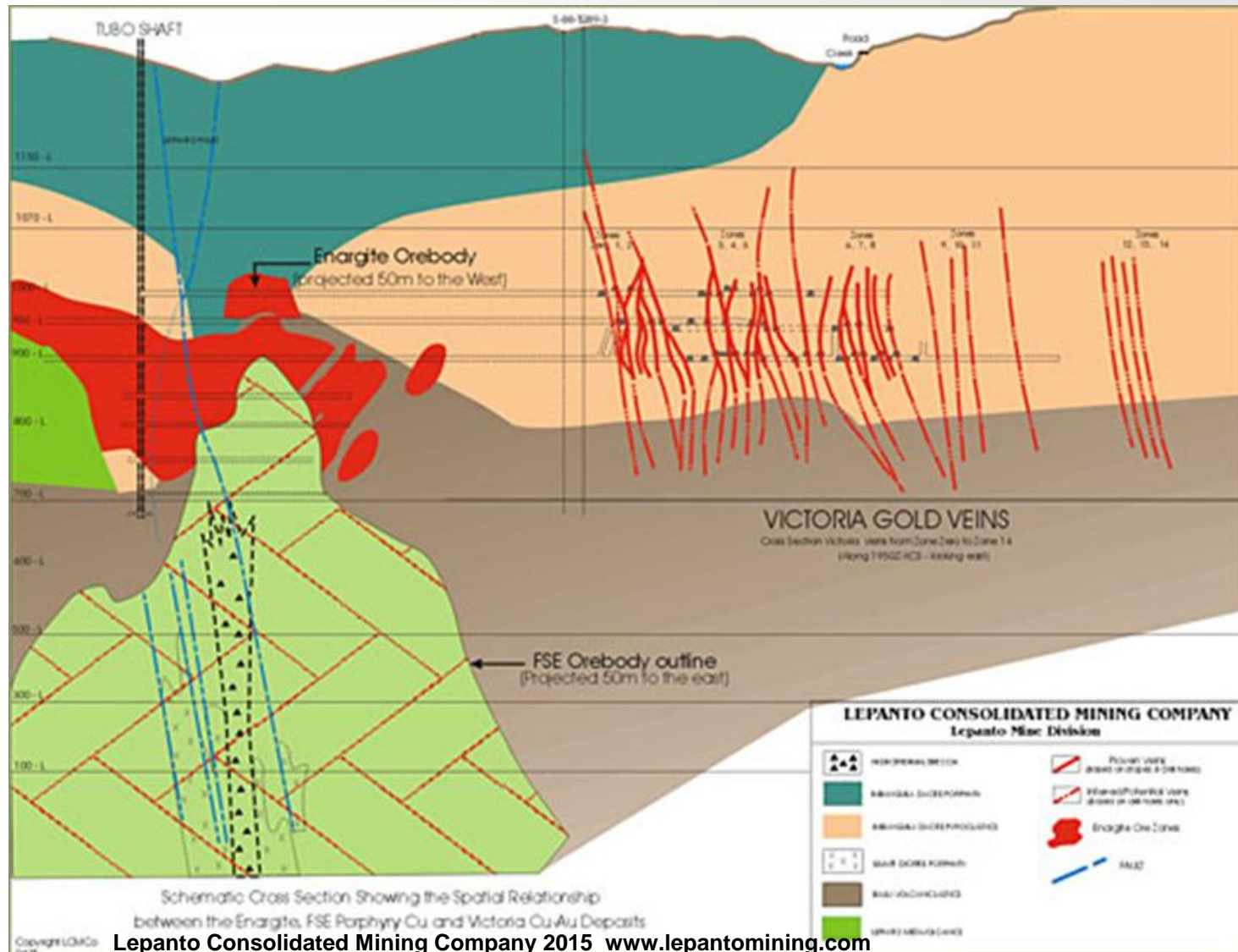
3.8Mtons Cu + >550tons Au



VEIPS Cooke & Gemmel 2010

Mankayan lithocap, Philippines

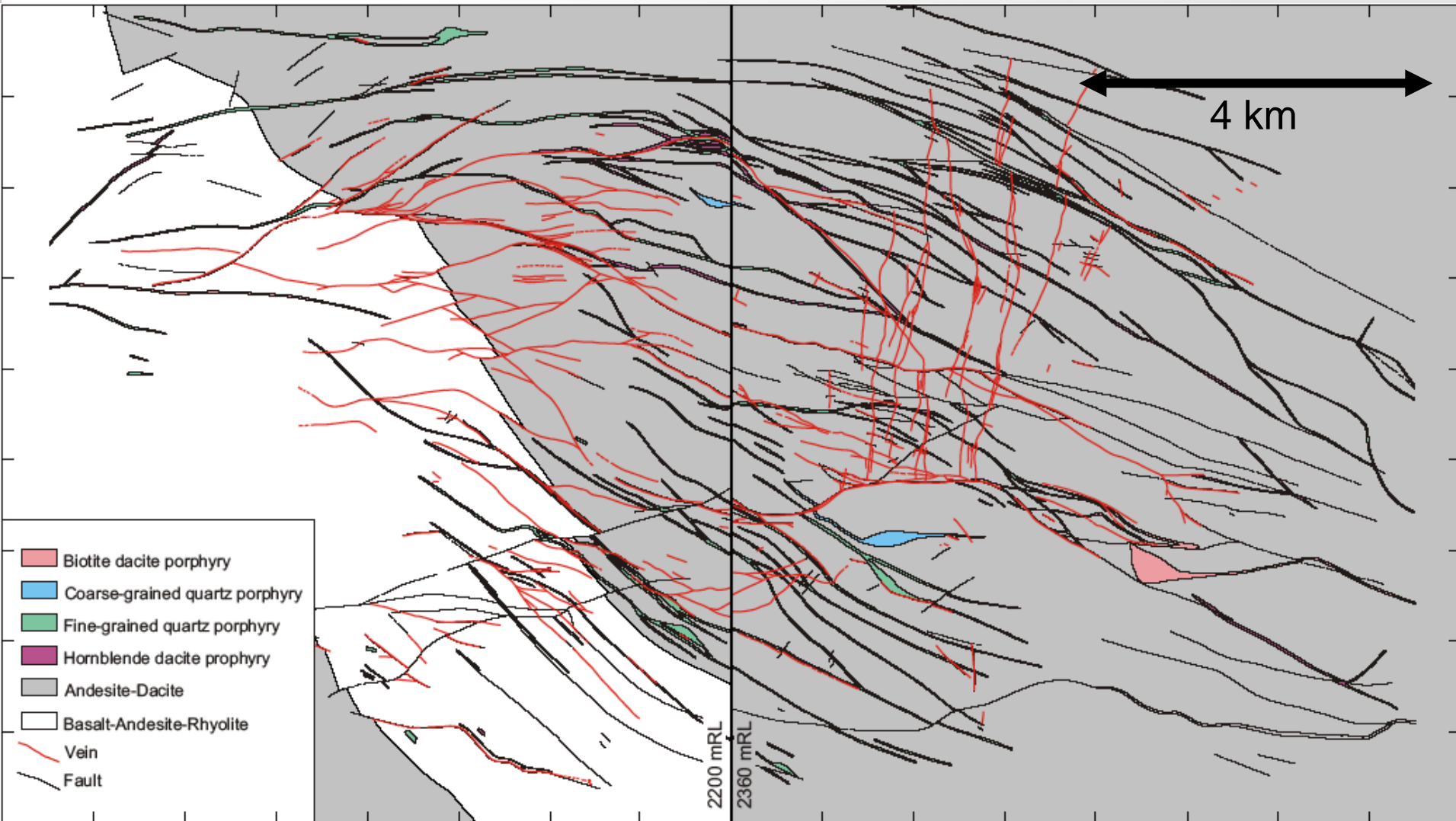
IS + LS Veins and Porphyry Orebodies



Initial Focus On IS + LS Epithermal Deposits on Connors Arc

- **They can be GIANT Au ± Ag deposits**
- **Predominantly vein hosted**
 - *Mineralised veins commonly 1- 25m wide*
 - *Can have spectacular Au + Ag values*
 - *Can have high Au together with Ag >>> Au values*
 - *Precious metal deposition sensitive to pressure and temperature, significant precious metals only deposited >250m below depositional land surface*
 - *They form on flanks of active volcanos with rapidly and dramatically rising (and sometimes falling) land surfaces.*
 - *Similar deposit style / morphology to Low Sulphidation “LS” deposits which are more common*
 - *Ore shoots can be quite amorphous and form pods along strike of quartz vein trends*
 - *Some spatial correlation between vein width & metal content, but not direct correlation – **payshoots usually close to, but not confined within wide quartz vein blows***

IS vein and fault pattern 45,000 t Ag, 220 t Au

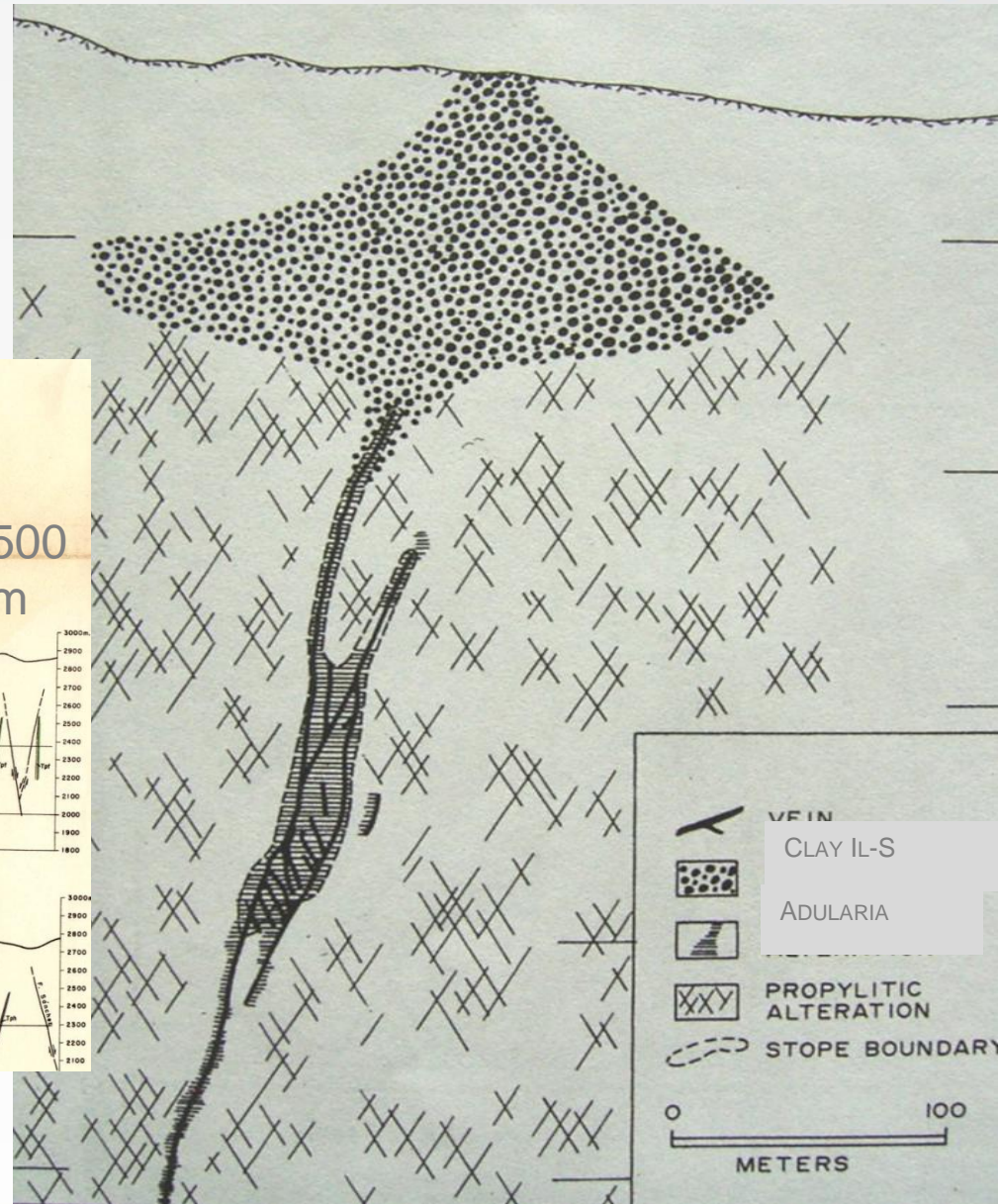
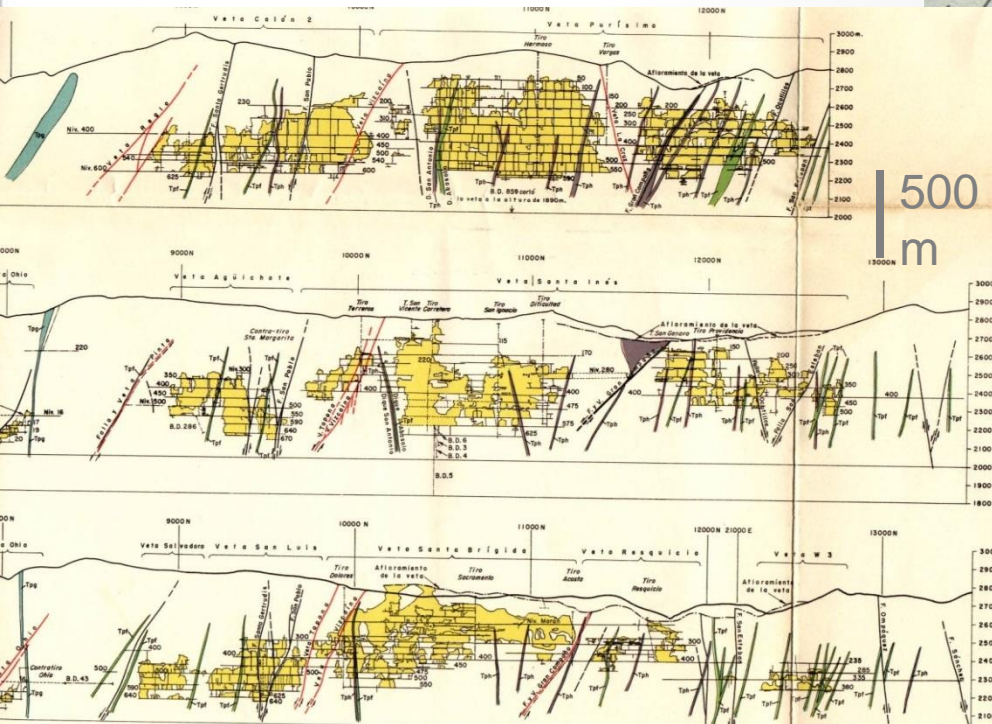


Pachuca, Mexico



Cross & Long Sections

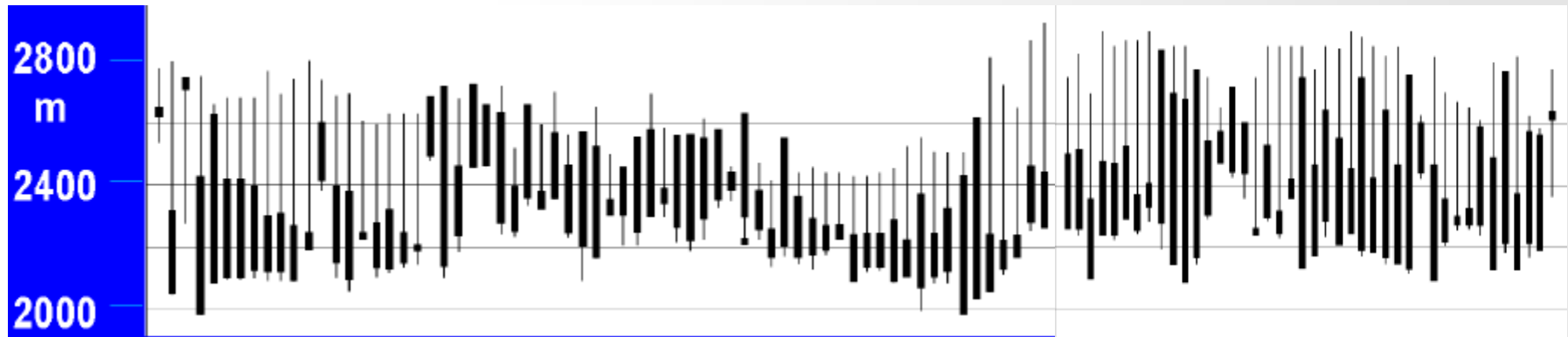
Drier, 1982
Geyne et al., 1963



Pachuca, Mexico



- Over 450 veins discovered
- Very few veins have grade at surface
- Dramatically varying depths to top of ore
 - *this related to rapid deposition and erosion of volcanic land surface during and post deposition*



Simmons et al 2005 after Geynes et al 1963

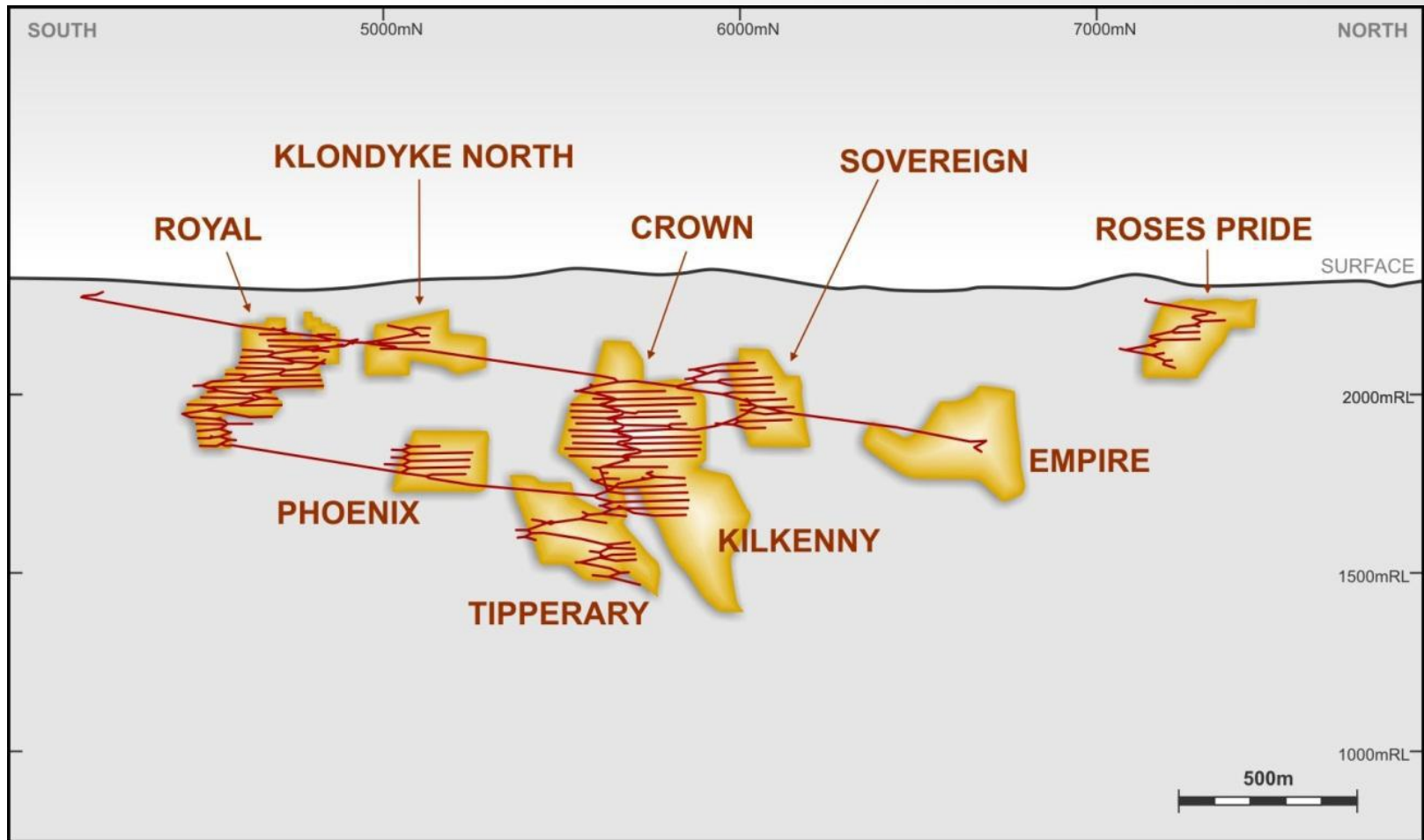


Surface

Ore Interval

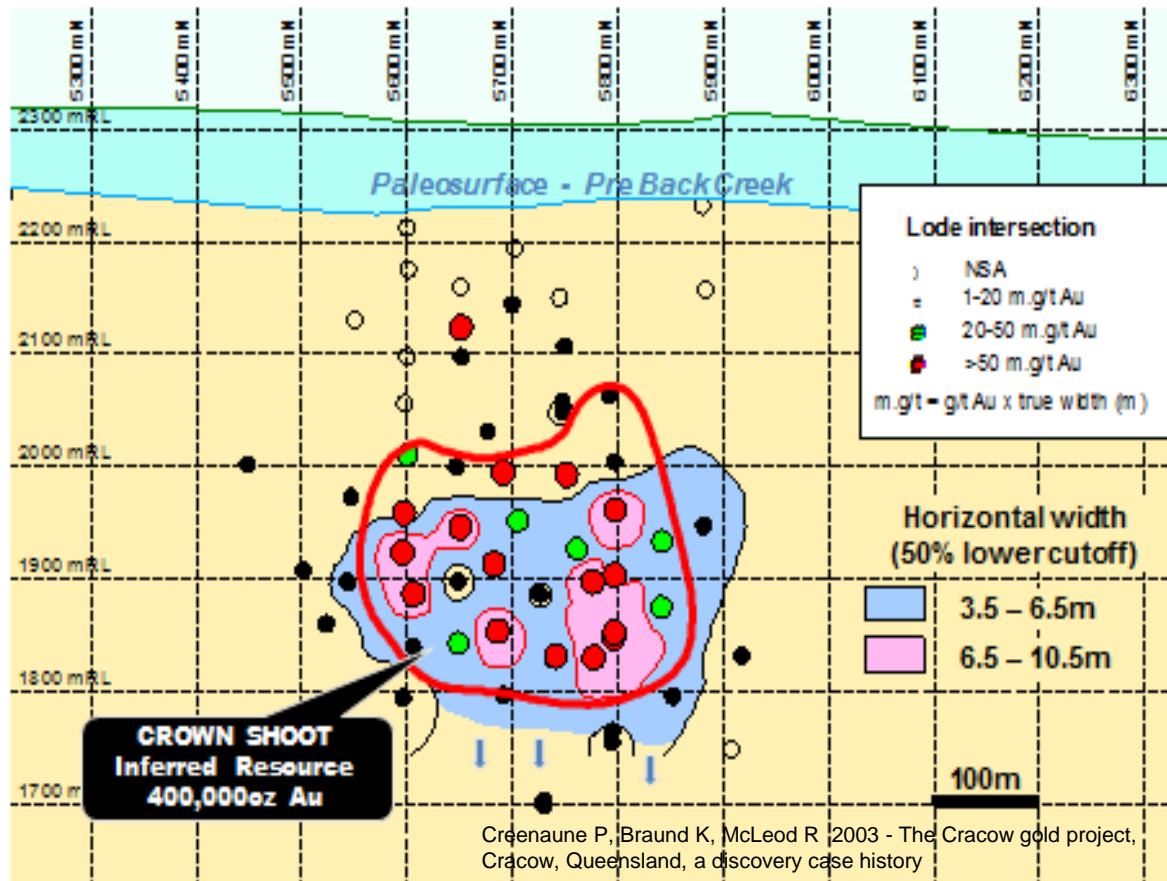
Base of workings

LS Au - Ag

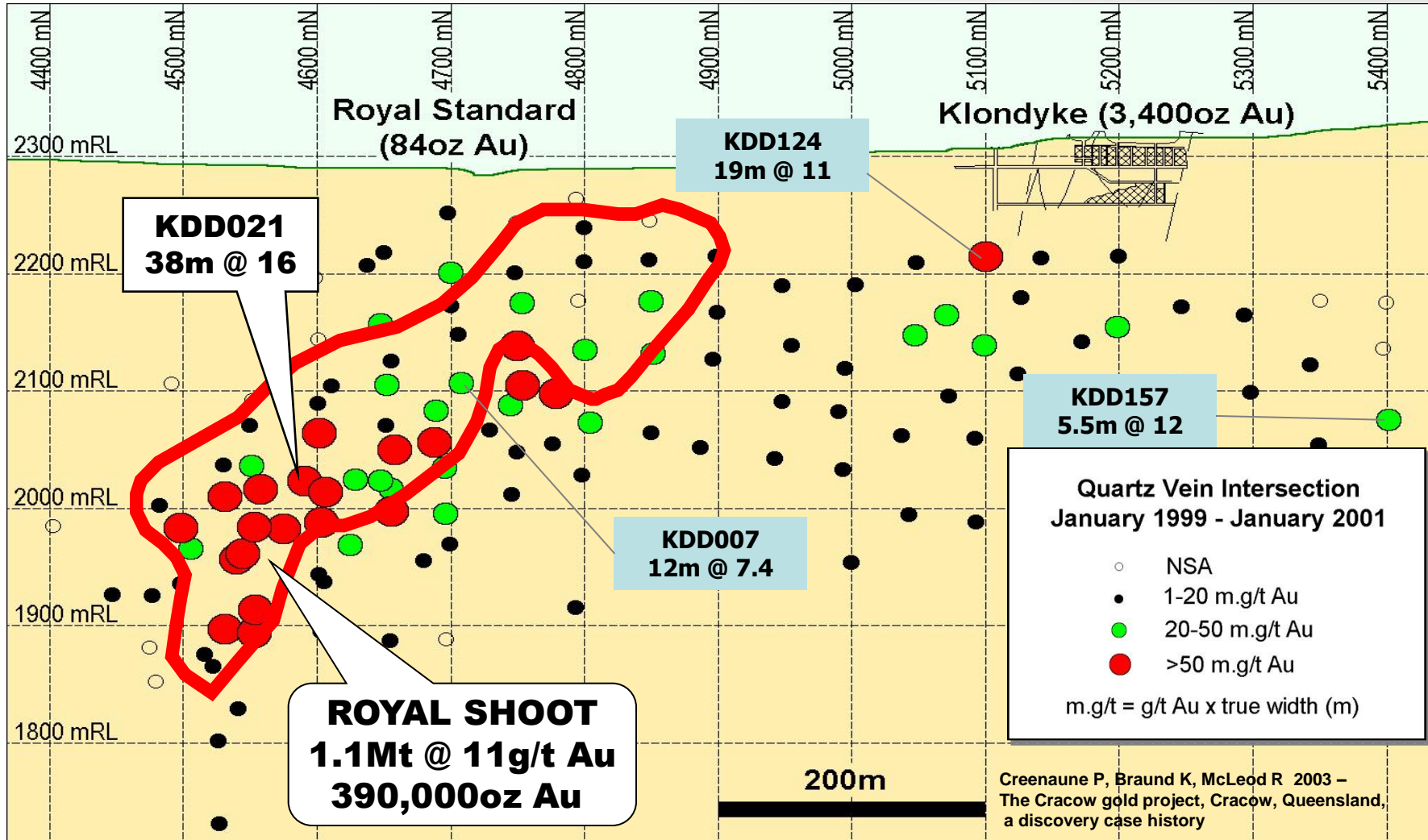


Evolution Mining 2013

Cracow Grade Distribution - Important Observations



- Rapid and dramatic grade variation
- Highest grades often, but not always in widest vein

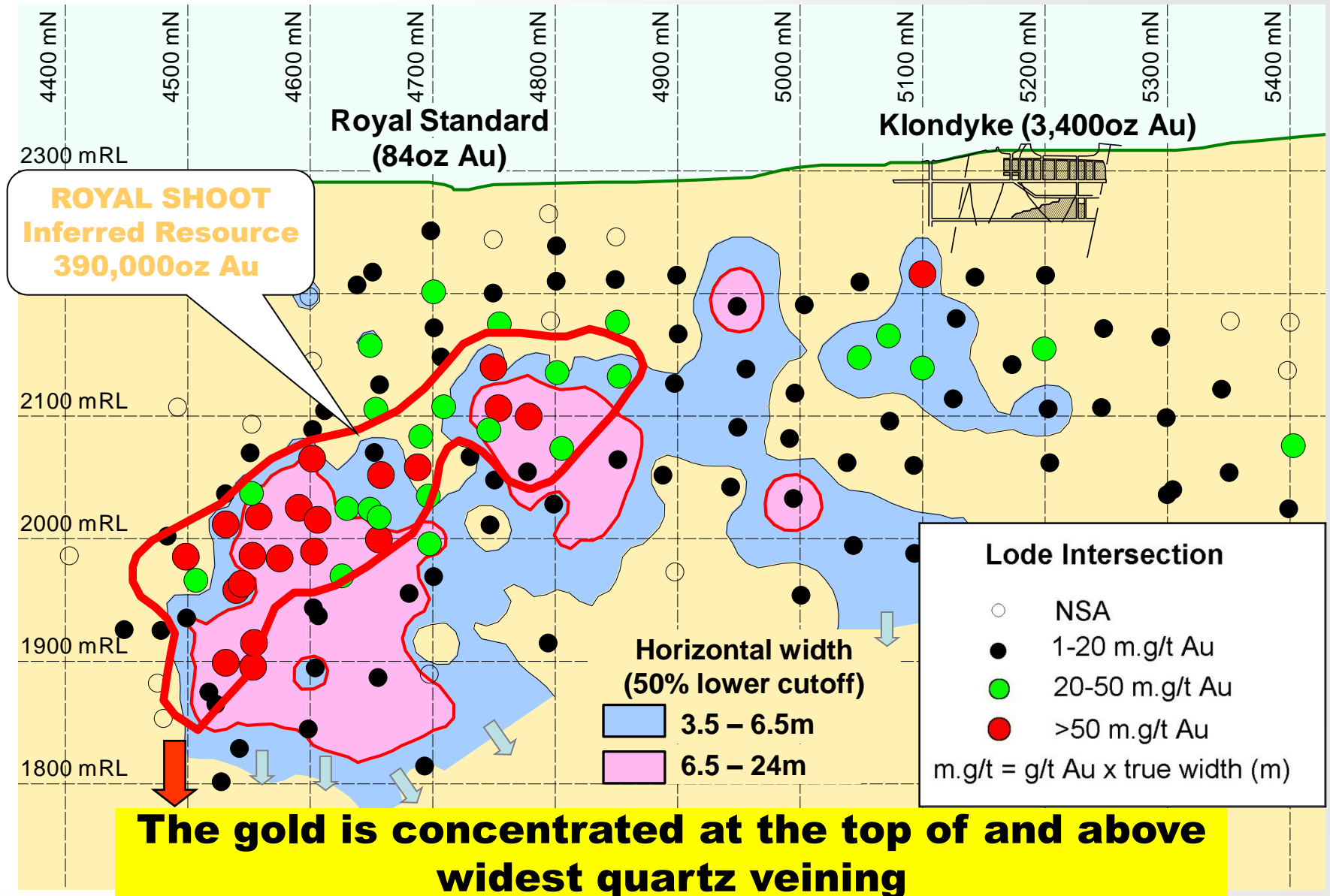


CRACOW - KLONDYKE LONGSECTION (2002)

Royal Shoot – Au Grade vs Vein Width



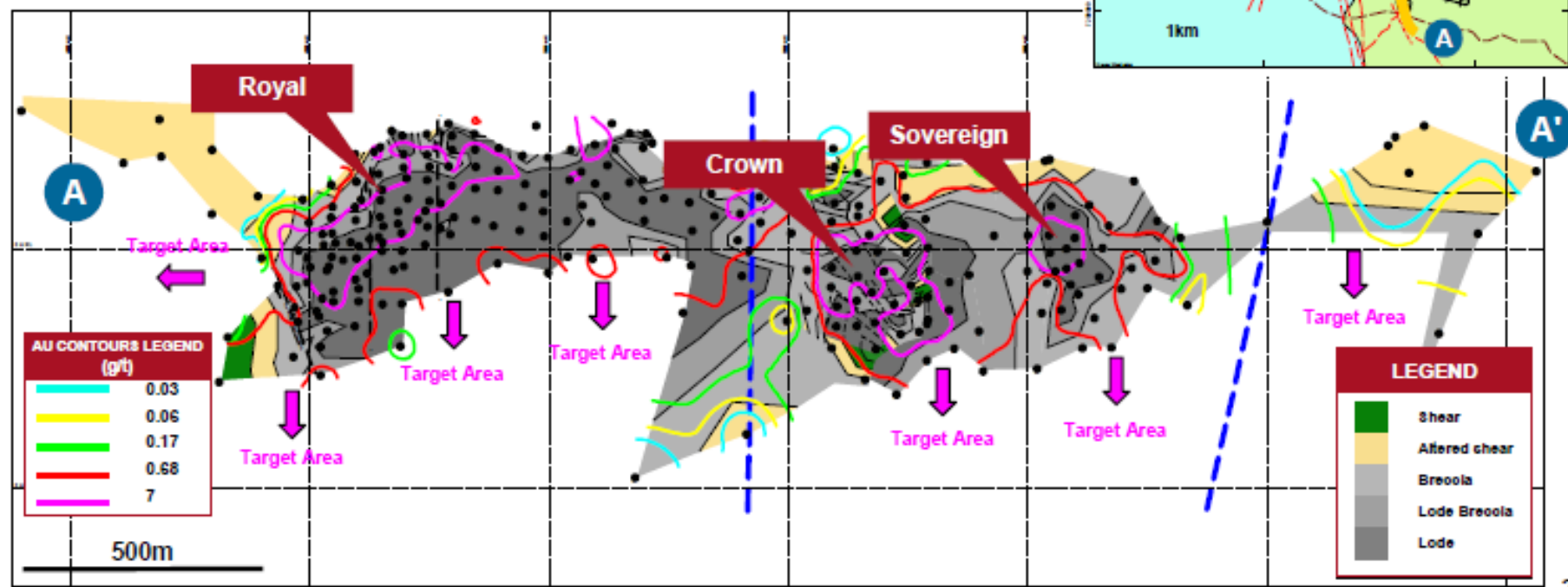
Creenaune P, Braund K, McLeod R 2003 – The Cracow gold project, Cracow, Queensland



Klondyke, Cracow

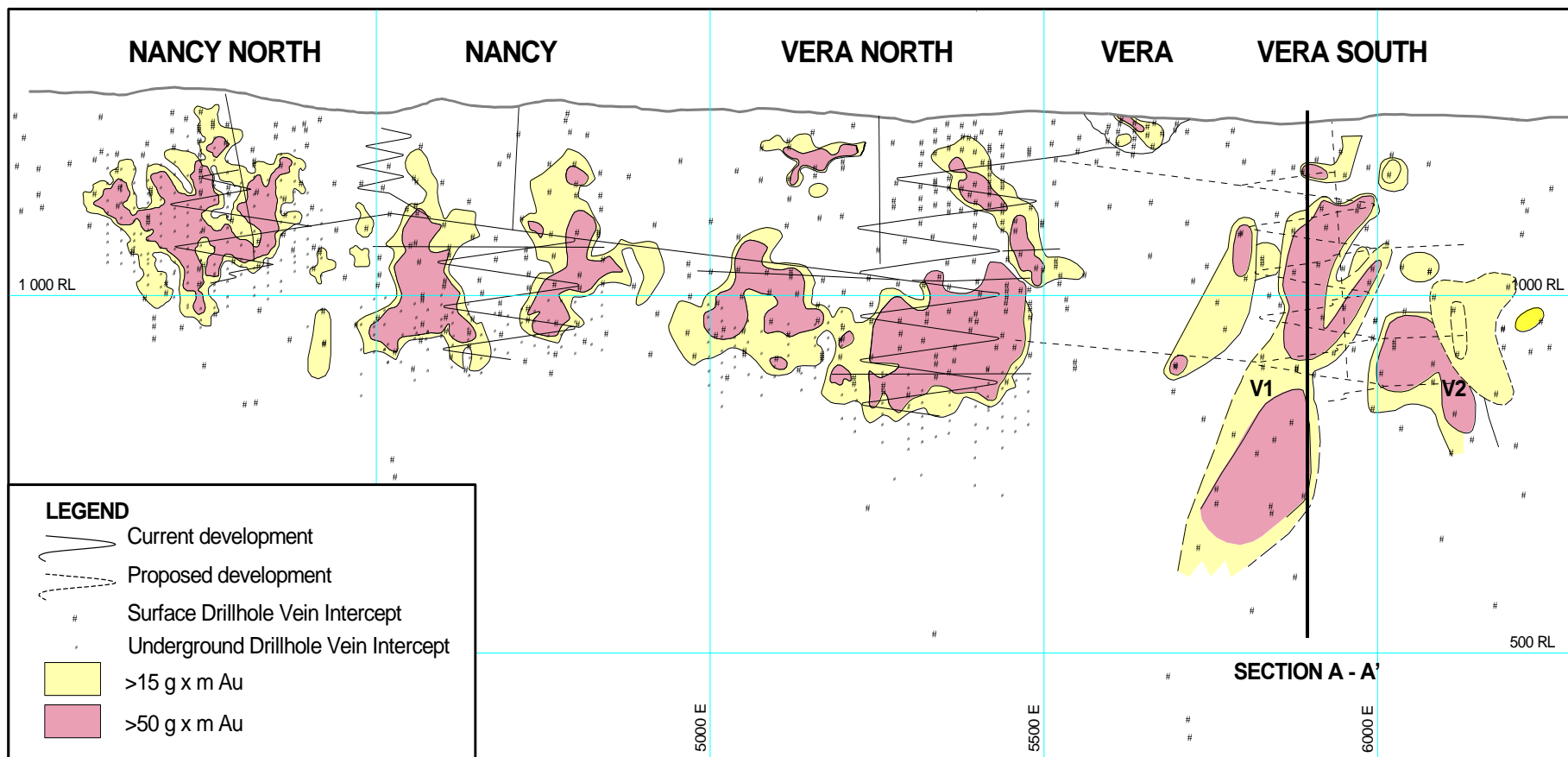
Klondyke Structure Longsection

Dramatic transition from trace to bonanza values
Grade in Vein and Vein Breccias



Cracow -Beadell Resources 2008

Amorphous Shoots – Within a Restricted Vertical Interval



Longitudinal projection (looking NE) of the Nancy North, Nancy, Vera North and Vera

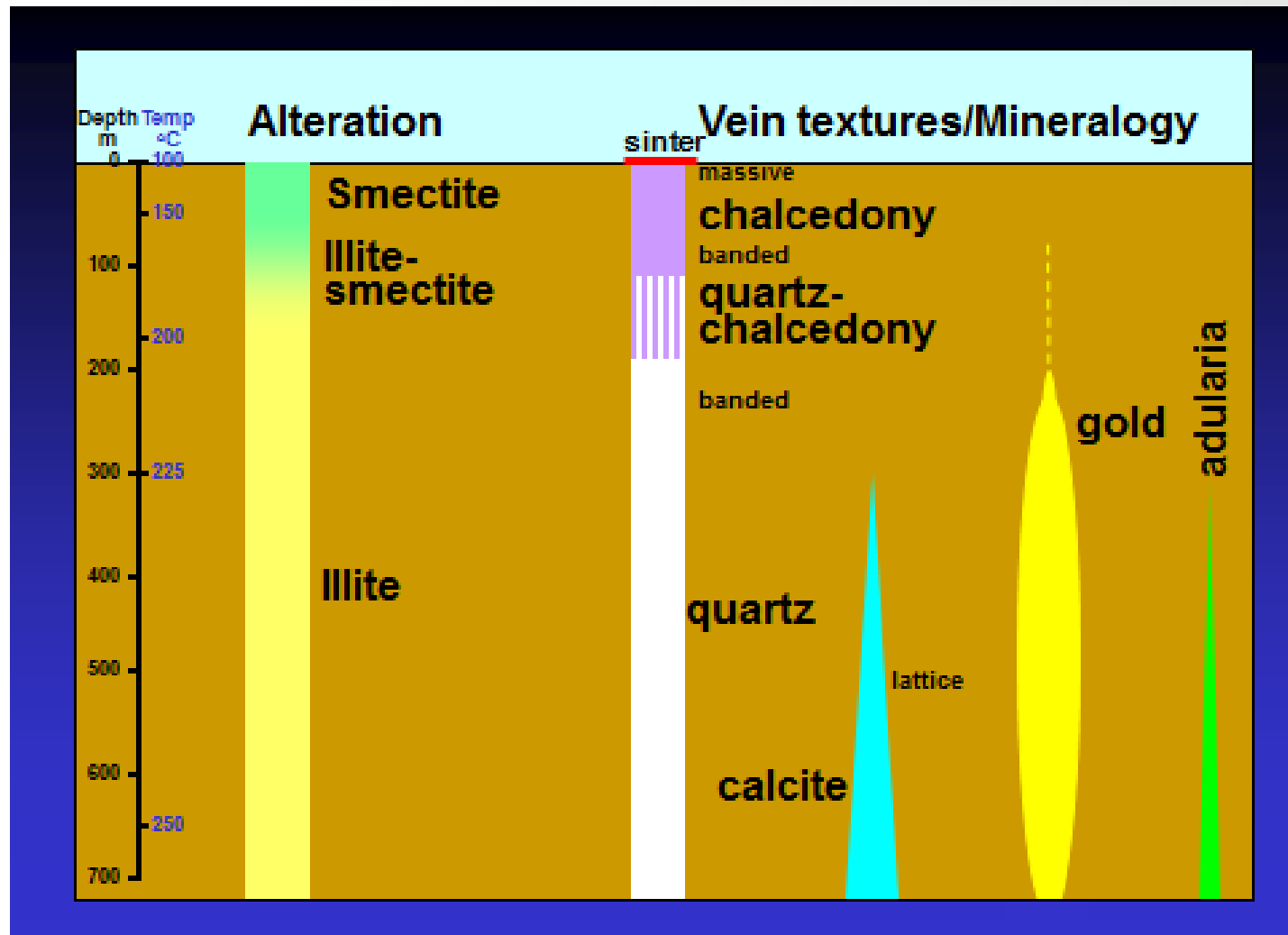
(Vera South: Discovery History; Buttler, Murphy, Parks; 1999).

Important Lessons from analogues

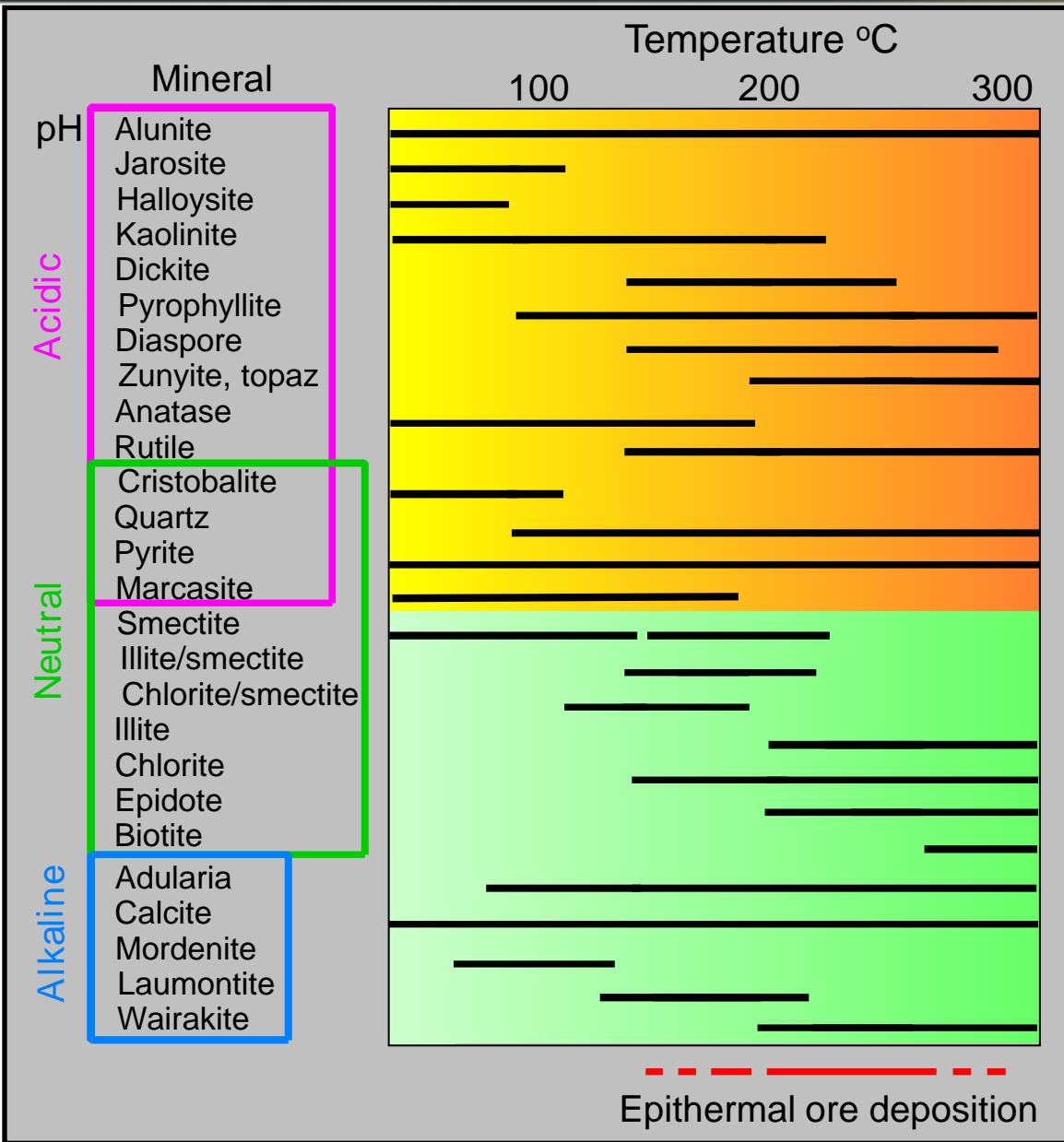


- The surface exposure only provides a clue as to what lies below
- Veining on surface is a useful guide & traces the trend line to follow
- Ore shoots are likely “blind to surface”
- Ore shoots at depth may not be directly below best zones on surface
- Grade transitions are sudden and dramatic – not gradational
- When a “blow” in vein is drilled into, you may be *near* a payshoot BUT you may not be *in* it yet
- You have to drill into a “critical elevation zone” at the correct position along strike to intersect grade

Alteration, Vein Textures & Vein Mineralogy

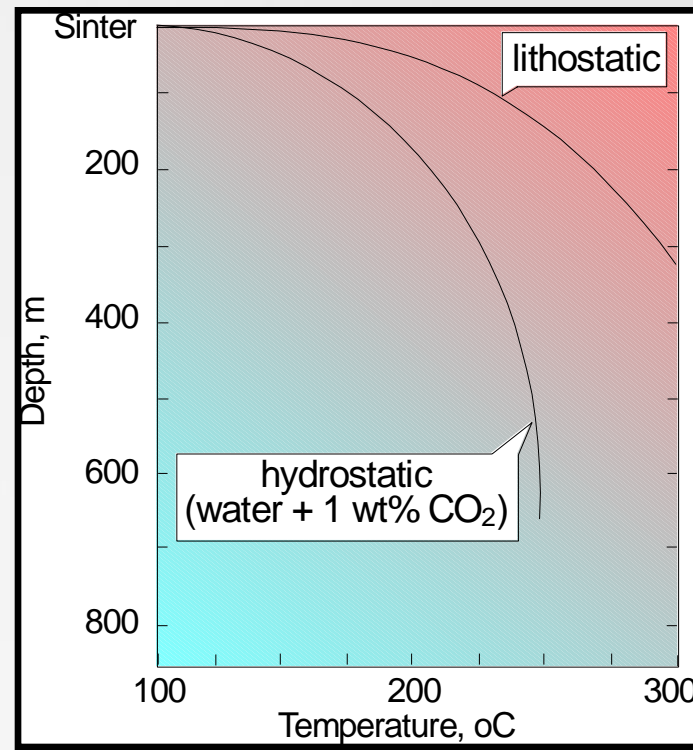


Mineral Stability



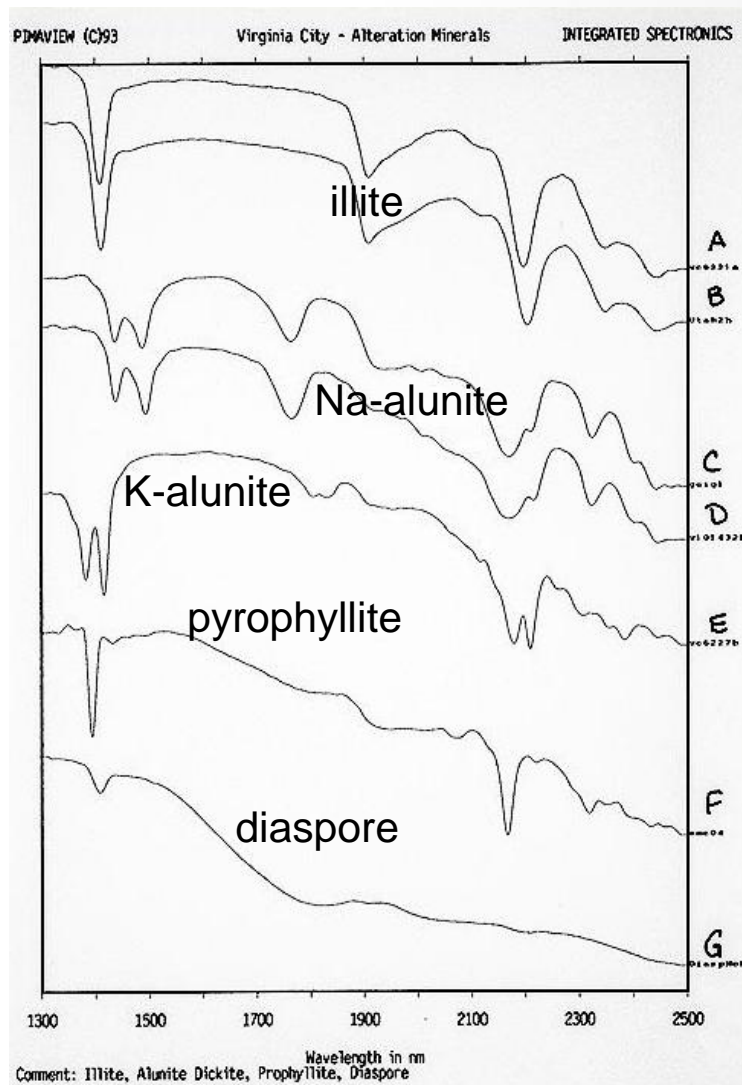
Mineral Stability

Mineral assemblages allow us to estimate temperature and acidity



Hedenquist et al., 1998

How we accurately identify the mineralogy



Short Wave Infrared Radiation “SWIR” spectra can be used to

- identify alteration minerals
- determine their crystallinity
- estimate chemical variations

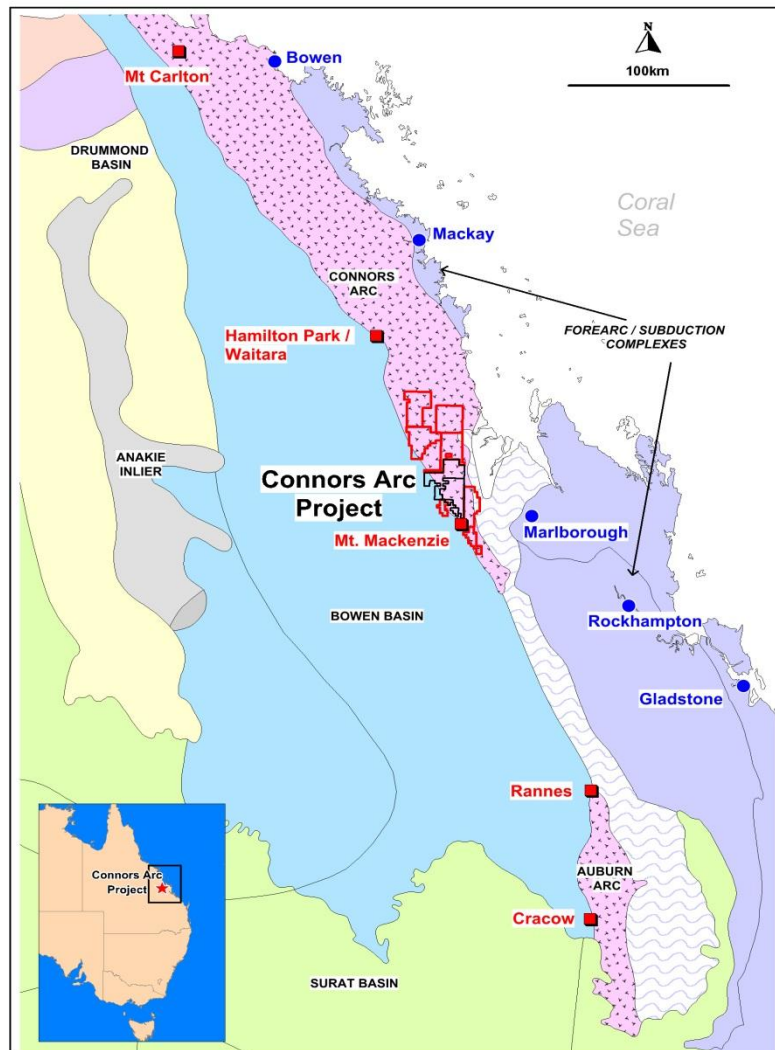
Measurements are fast and cheap
Suitable for large surveys

Not all veins in a system will be mineralised



- *strongly textured veins tend to be more productive*
- *look for finely banded, coloform, crustiform, concentric banding*
- *veins are often complex and brecciated*

Connors Arc Project

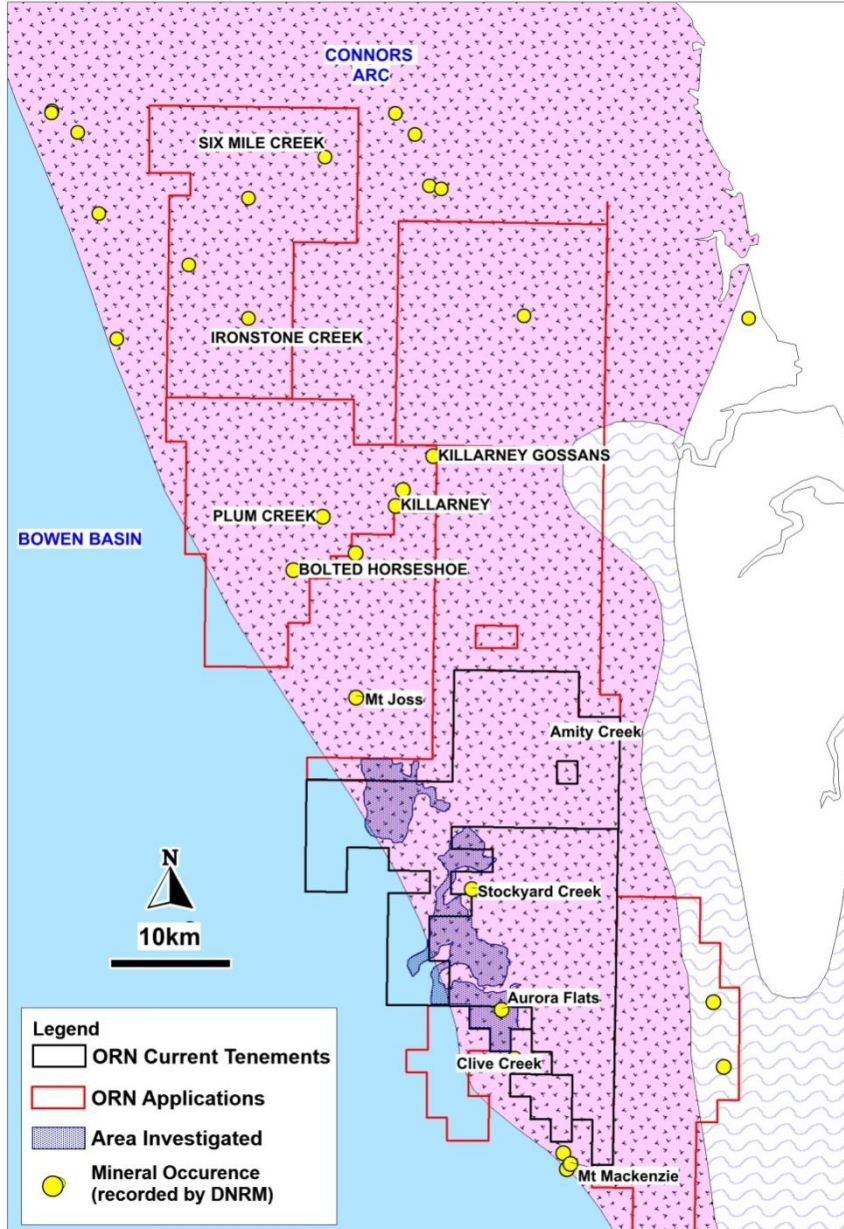


- Orion Gold has assembled a large 100% owned tenement position
- The tenements are situated on the ca 300Ma Connors Magmatic Arc
- A number of historic vein showings occur on the ORN tenements

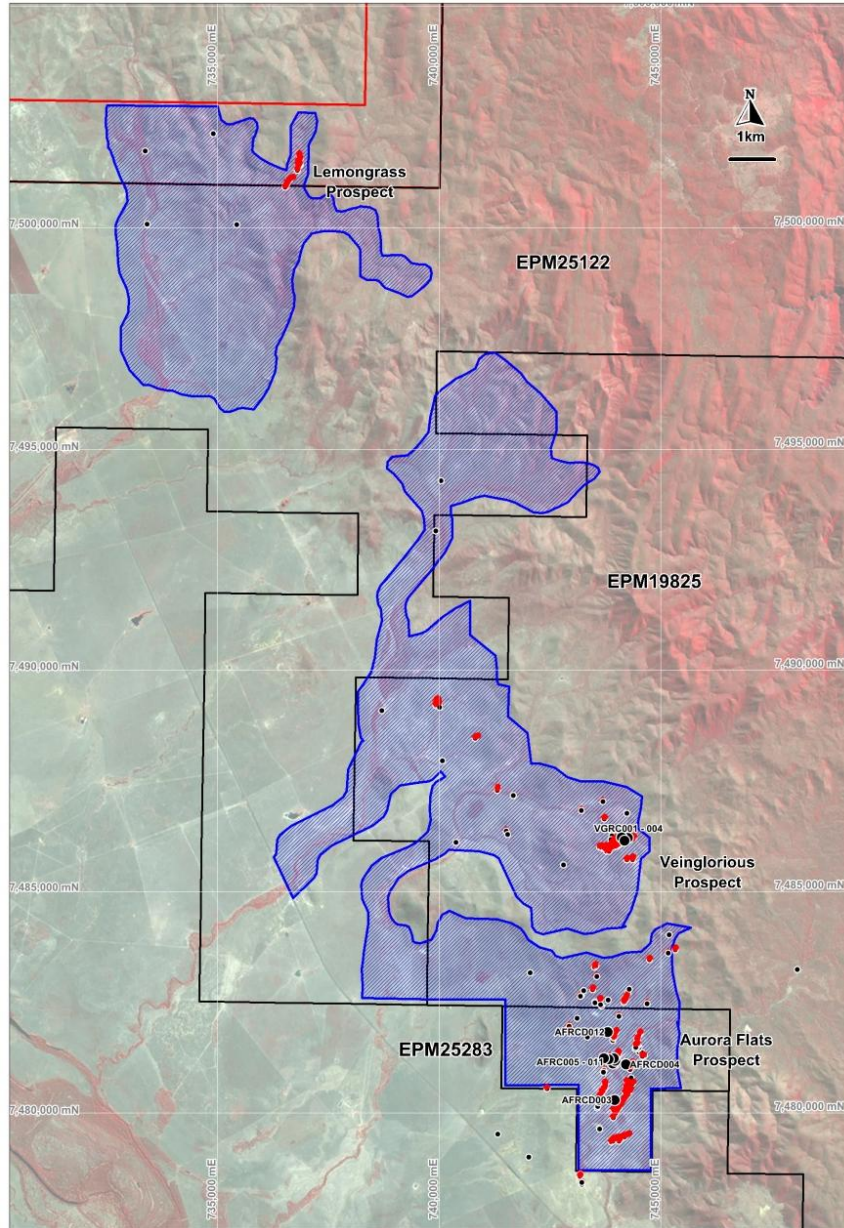
Early Successes

- Extensive Intermediate Sulphidation Au-Ag vein system confirmed
 - Strong Indicators for Porphyry Intrusive's identified
- Dec 2013 ~ first tenement granted subject to surface access agreements
 - July 2014 ~ Native Title agreement
 - Aug 2014 ~ Mapping Commences
 - Nov 2014 ~ Landowner Agreement signed
 - Nov - Dec 2014 ~ IP Survey
 - Dec 2014 ~ NT heritage survey completed
 - Dec 2014 – Jan 2015 ~ Phase 1 drilling
 - March 2015 ~ Phase 2 drilling commences

Connors Arc – Getting Started



- Areas marked in purple denote initial work area
- We have only covered / mapped a **very small** part of our landholding



- Initial work focussed on prospecting drainage basins (blue areas) to locate epithermal quartz veining (red)
- Extensive quartz veining has been discovered and mapped
- This appears to be a **BIG** epithermal system



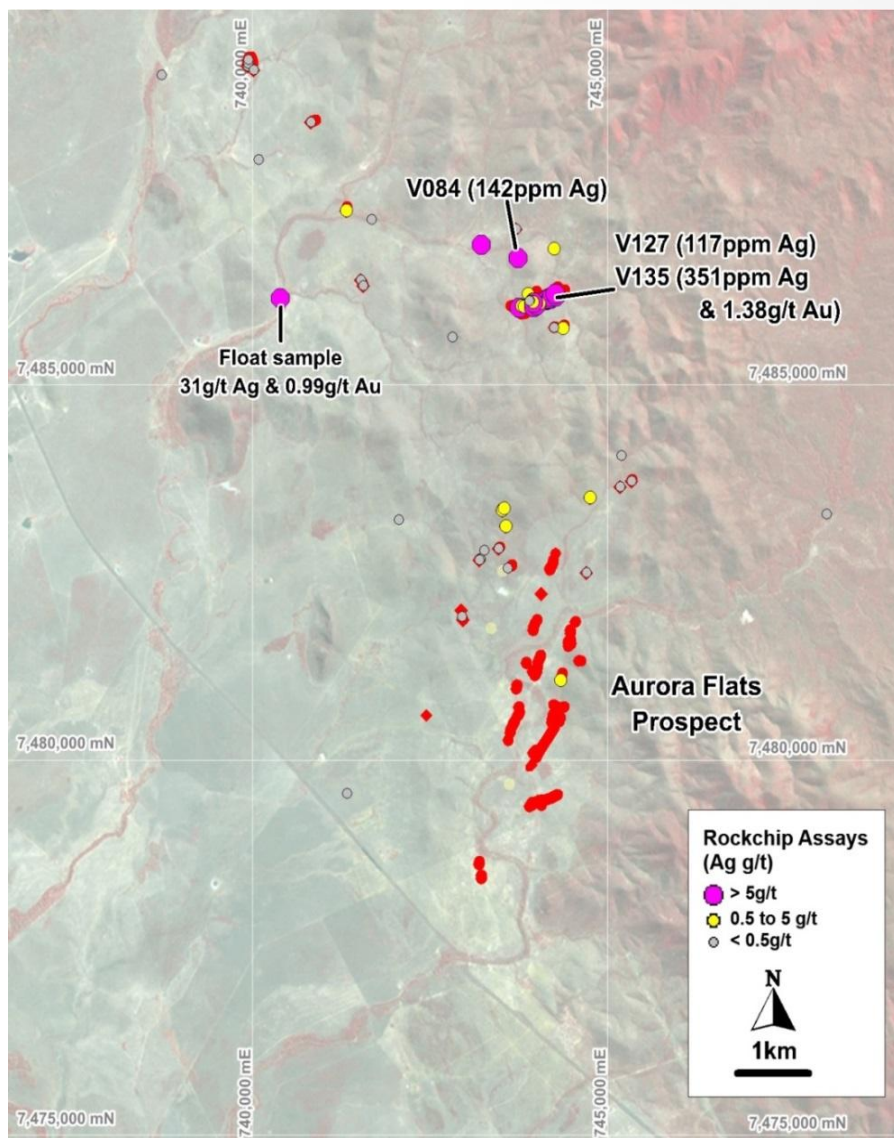
Mapping → Geophysics / Remote sensing → Scout Drilling

- *Tracing epithermal veins from creeks up into hills*
- *Veins are discovered, mapped and chip sampled*

- *IP Survey*
 - *High Resistivity could assist in locating quartz vein/breccia blows*
 - *Chargeability could locate sulphides*
- *Magnetics*
 - *Epithermal veining demagnetises host rocks*
- *Aster Imagery*
 - *Analysis of satellite spectral images to map alteration*

- *Establish baseline data*
 - *Host stratigraphy - certain rock types present more favourable hosts than others*
 - *Alteration profile*
 - *Distribution, orientation and morphology of veining*
- *Geochemistry*
 - *Presence of and distribution of precious metals*
 - *Trace element geochemistry to assist with vectoring.*

Aurora Flats (AF) – Veinglorious (VG) Prospects



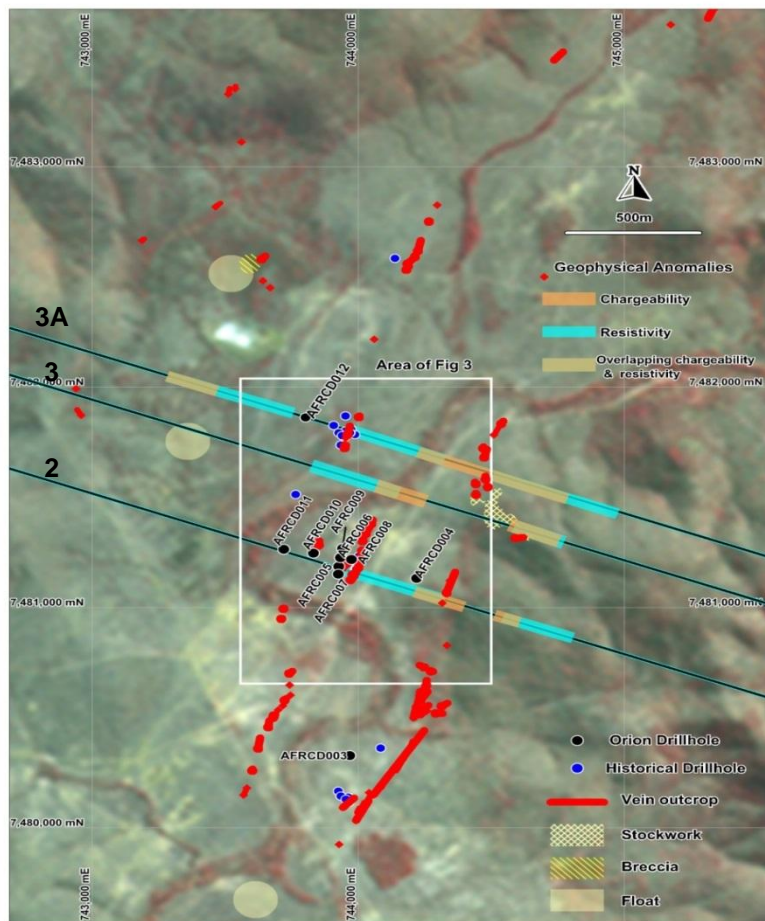
- Started at known veins on Aurora Flats and traced along trend for about 11km
- Veinglorious is a virgin discovery
- Rare to find such prominent veining and high precious metal grades on surface that was not previously recorded and has had no apparent prospecting by old timers

(refer ASX Release 6 November 2014)

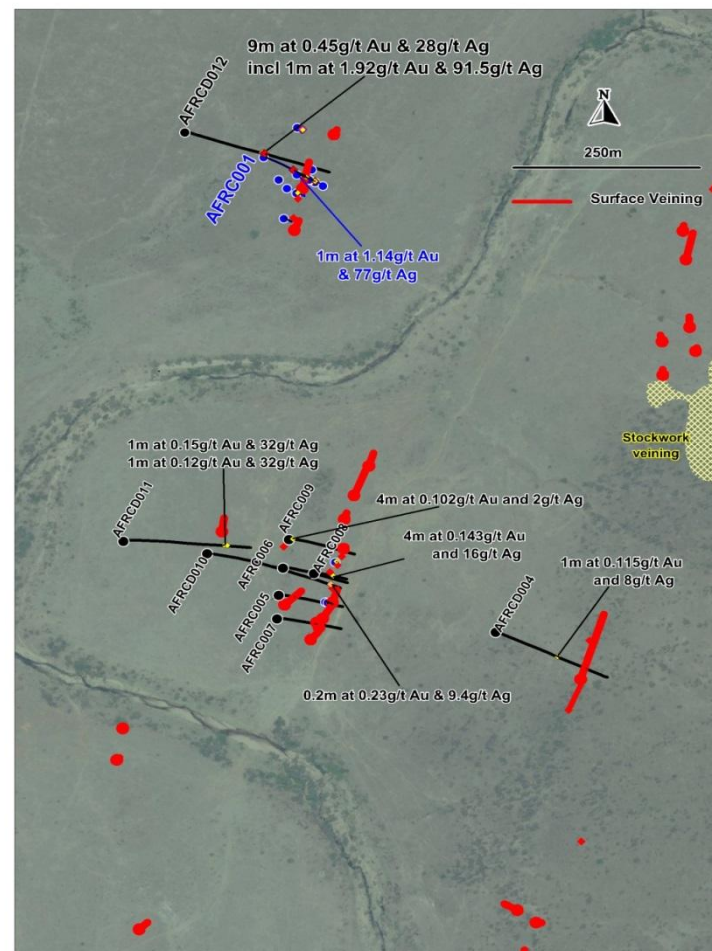
Initial Aurora Flats Geophysics and Drilling



Mapped veins, IP lines and drill collars



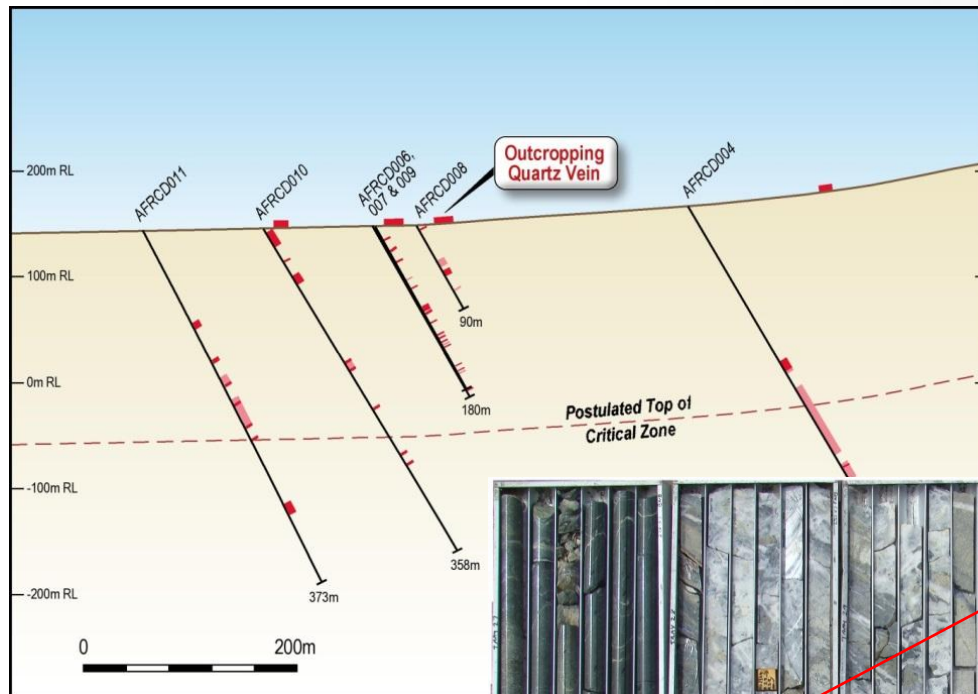
Mapped veins drill hole traces



Initial Aurora Flats Epithermal Target Drilling

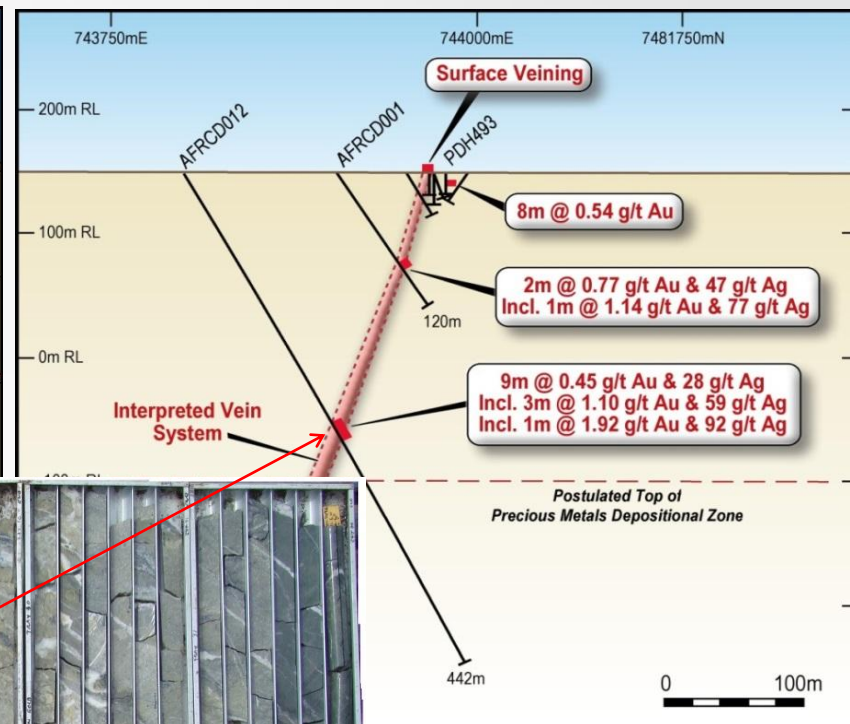
Roughly Midway along Aurora Flats IS Epithermal Vein Trend

- Wide corridor of epithermal veining intersected in drill fence line (refer ASX Release 4 February 2015)



Down dip below historic drilling

- Elevated precious metal values
- Mineralised interval improving with depth (refer ASX Release 17 February 2015)



Positive Indicators From Aurora Flats Drilling



Superb fine concentric and colloform banding textures

The Right Mineralogy

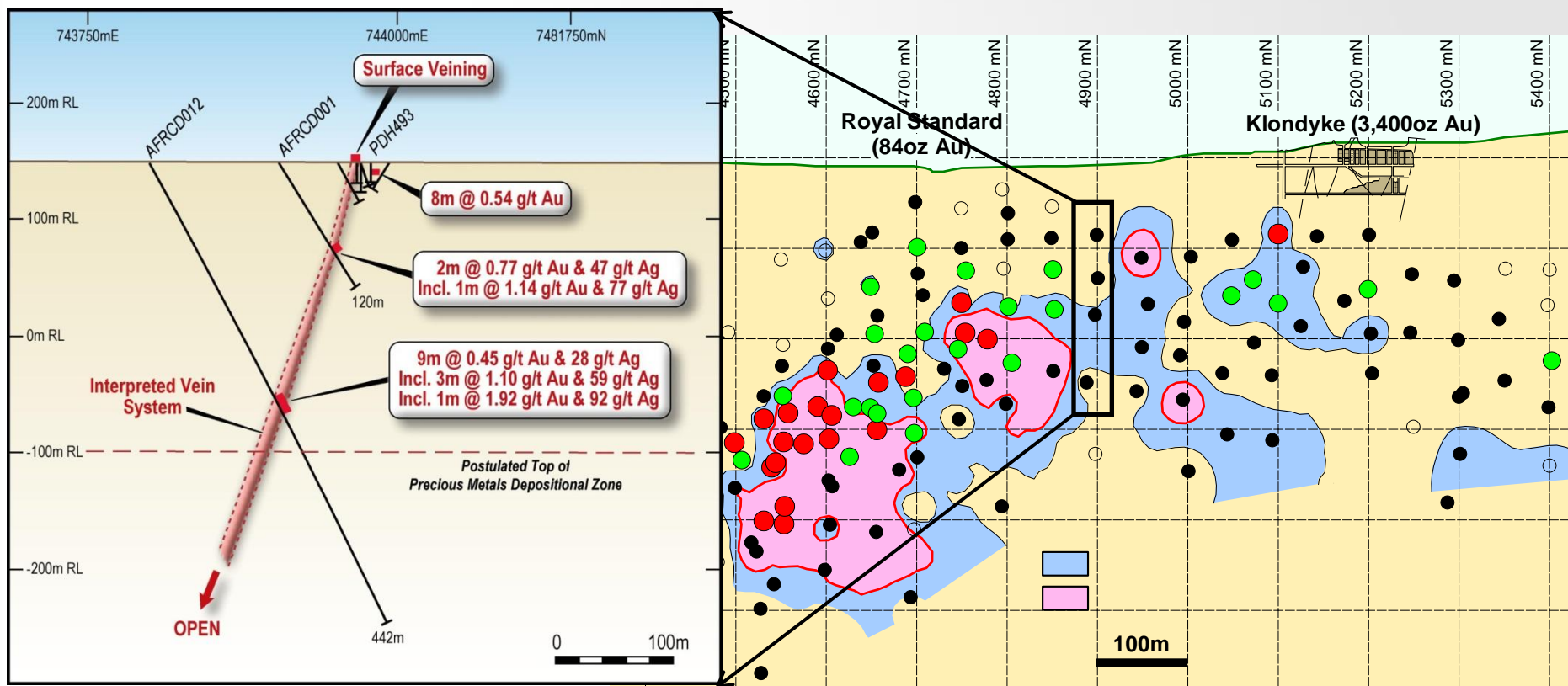
- Quartz, Adularia, Illite, pyrite



Interpreting Initial Aurora Flats Drilling

Postulated similarity to upper plunge extent of Cracow Royal Shoot

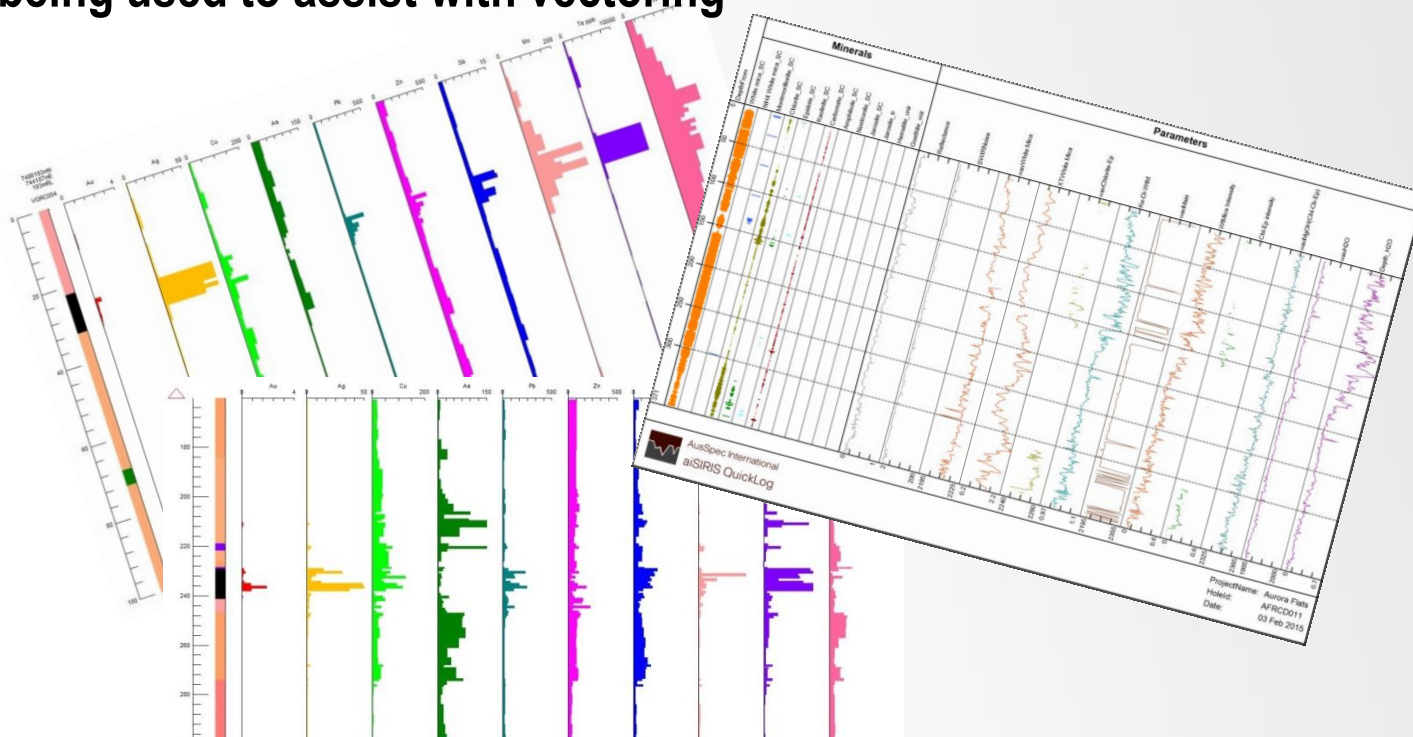
- *Widening vein with low metal values*



Geochemistry and SWIR being used for vectoring

Te, W, Mo, Pb, Zn are important indicator elements in fertile veins and are being used to assist with vectoring

Short Wave Infra Red Scans (SWIR) are being used to give accurate depth indication based in mineral composition



- All drilling data currently being processed and analysed, to allow vectoring in to high grade shoots in the vein system
- Overprinting between porphyry and epithermal systems needs to be considered

Alert For Porphyry Potential

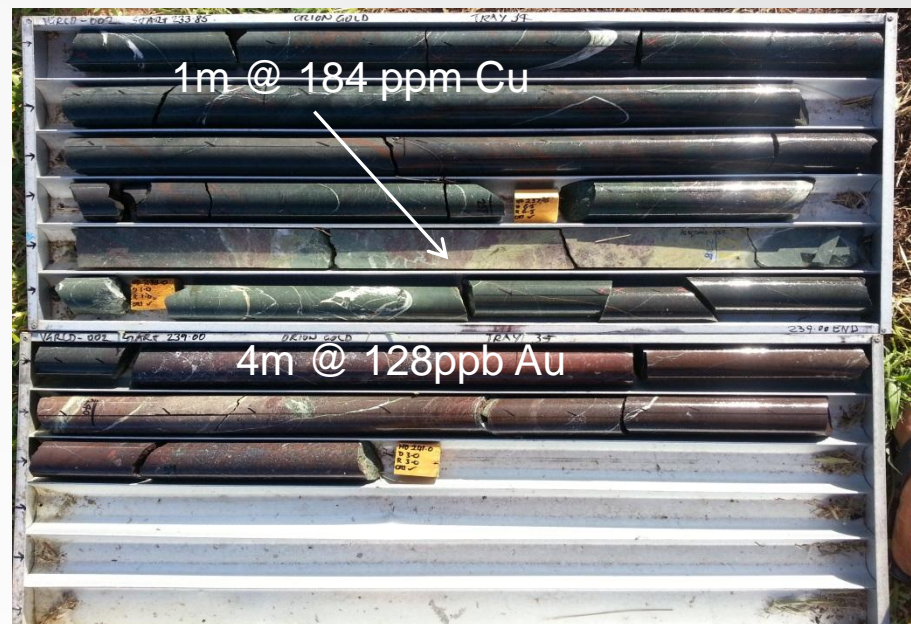
Drilling has intersected widespread alteration consistent with Porphyry Intrusives

- *Wide zones of pyritic, epidote, albite, propylitic alteration*
- *Zones of haematite, epidote alteration indicative of fertile, alkalic Au-Cu system*
- *Anomalous Au + Cu within haematite altered zone with minor veining intersected at depth at VG*

(refer ASX Release 24 February 2015)



Sulphidic porphyry with sulphide veins AFRCD012



Haematitic Alteration Zone VGRCD002

Alteration and quartz, sulphide veining intersected in drilling

Thursday Gossan Porphyry
(Stavely Minerals)

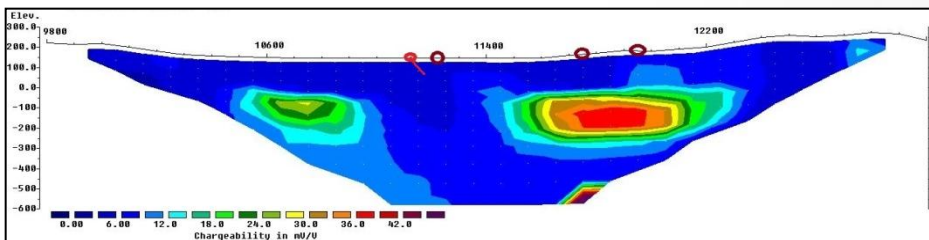
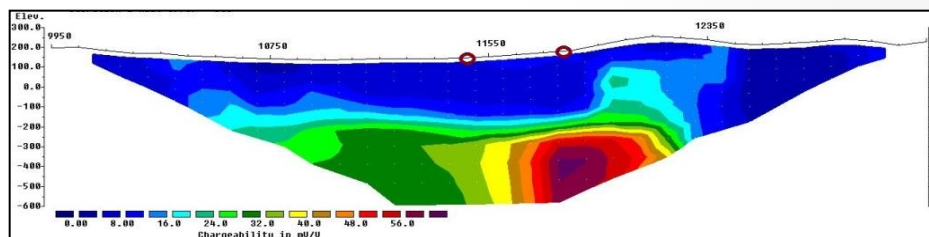


Aurora Flats
(Orion Gold)



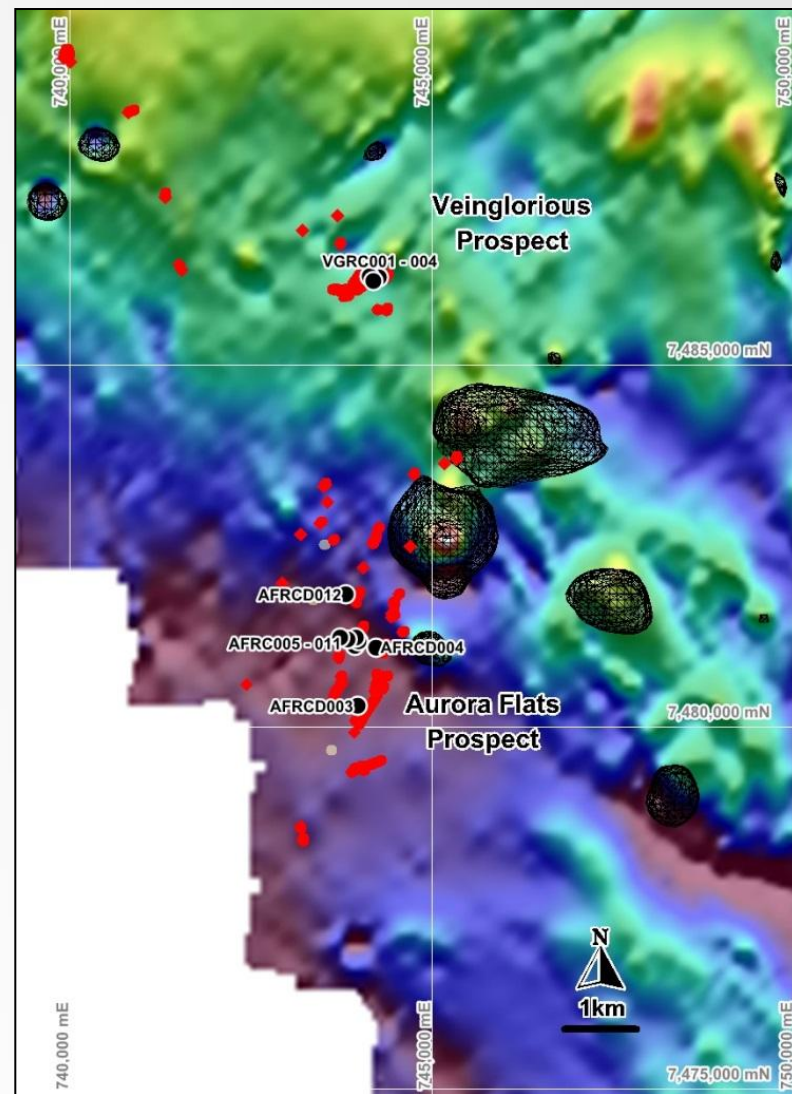
Alert For Intrusive Porphyry Related Mineralisation

IP shows large, blind chargeability anomalies



IP Chargeability anomalies line 2 (top) and 3A (below)
Location shown on slide 34
(refer ASX Release 21 November 2014)

Magnetic inversion features modelled





Epithermal Targets

- Systematic vectoring in using geochemistry and alteration mineralogy
- Drilling stepping in to high grade zones
- Additional geophysics to be trialled (ZTEM, high resolution IP)
- Expand regional reconnaissance mapping and target generation

Porphyry Targets

- Map out alteration zonation
- S isotope geochemistry to confirm magmatic sulphides
- Geo-stratigraphic drill testing of some magnetic anomalies to gather baseline data
- Apply additional geophysics such as ZTEM, ground EM and gravity surveys



Competent Persons Statement

Information in this report that relates to Exploration Results and other technical information about the Connors Arc Project complies with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ("JORC Code") and is based on information compiled and assessed under the supervision of Mr Bruce Wilson, a Competent Person who is a Member of the Australian Institute of Geoscientists. Mr Wilson is the principal of Mineral Man Pty Ltd, a consultant to Orion Gold NL, and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the JORC Code. Mr Wilson consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

