SILVER CITY MINERALS LIMITED

ABN 68 130 933 309

Broken Hill Exploration

Sydney Mineral Exploration Discussion Group

February 2014

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SILVER CITY MINERALS LIMITED

Important Disclaimer

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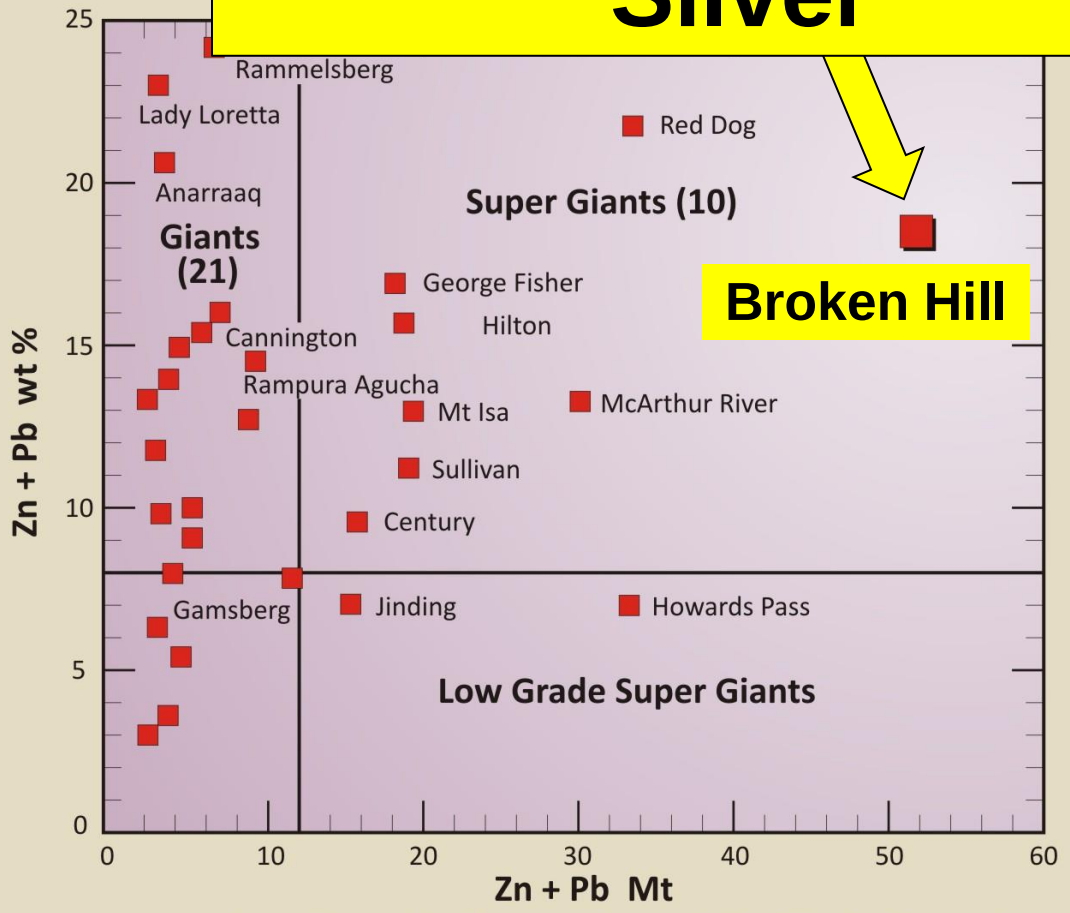
Competent Person

Information in this document that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Christopher Torrey, who is the Managing Director and full-time employee and shareholder of Silver City Minerals Limited, and a Member of the Australian Institute of Geoscientists. Mr Torrey has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Torrey consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Where does one look for …..

+ 1 Billion ounces Silver



ref: Large et al 2002

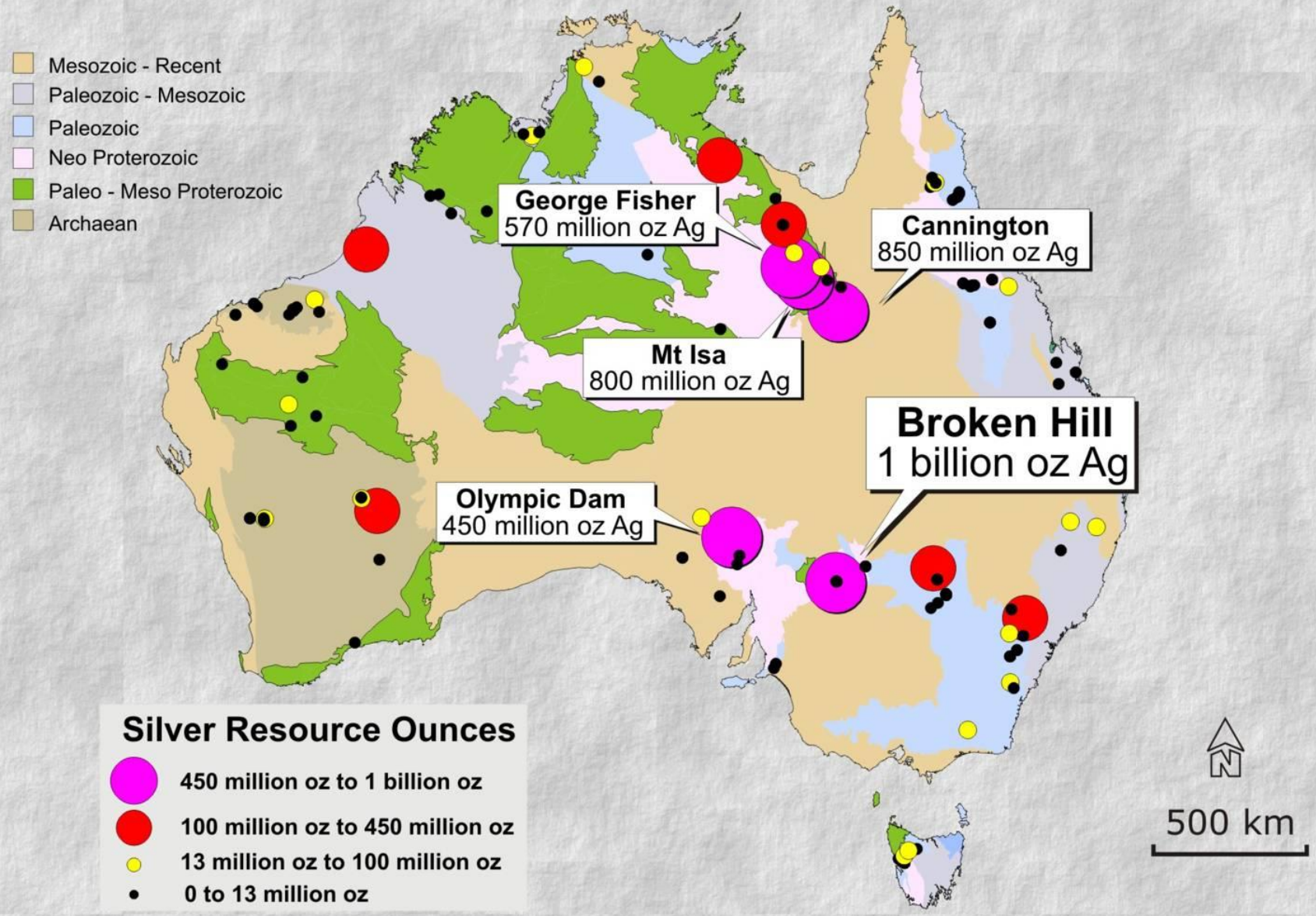
Stratiform Sediment Hosted Zn-Pb-Ag Deposits

…..elephants

Broken Hill Mine

Giant Orebody

- Continuously mined for over 125 years to present day
- Largest and richest lead-zinc-silver deposit of its kind in the world
- 300 million tonnes averaging >15% combined lead and zinc and 100-300g/t silver, over 150MT at +20%.
- Recorded 28Mt of lead, 24Mt of zinc, 1 billion ounces of silver
- Historical importance for Australia
- **GLOBAL COMPANY MAKER**



Silver in Australia

How many people in this room have at some stage in their career worked at Broken Hill?

Is the geology well understood?

How well explored is the district? Has it been done to death?

Is the next Broken Hill-type (BHT) deposit going to be different?

THIS PRESENTATION

- **The under-explored-ness of Broken Hill; how data rich is the district?**
- **Geological setting**
- **Mineral system and likely genetic model for BHTs**
- **Character of the model and identifiable geological parameters that are practical to exploration.**
- **Talks about a subjective ranking methodology**
- **Looks at the datasets available for explorers and what seems to be useful**
- **Talks about high ranking targets for future exploration**

ACKNOWLEDGEMENTS

Barney Stevens, Wolf Leyh, Ian Plimer, Gordon McLean, John Greenfield, Rob Barnes, Gary Burton, Peter Gunn, Rob Gordon, Steve Collins, Mike Raetz, Tony Webster, Iain Groves, Terry Barkley, Bill Laing…….

……..And about 5000 other geologists who have worked at Broken Hill before us.

OTHER STUDIES

Genetic Models

- John Greenfield (2003) Study references over 2100 papers, and 348 university theses.
- CBH (2008-09)

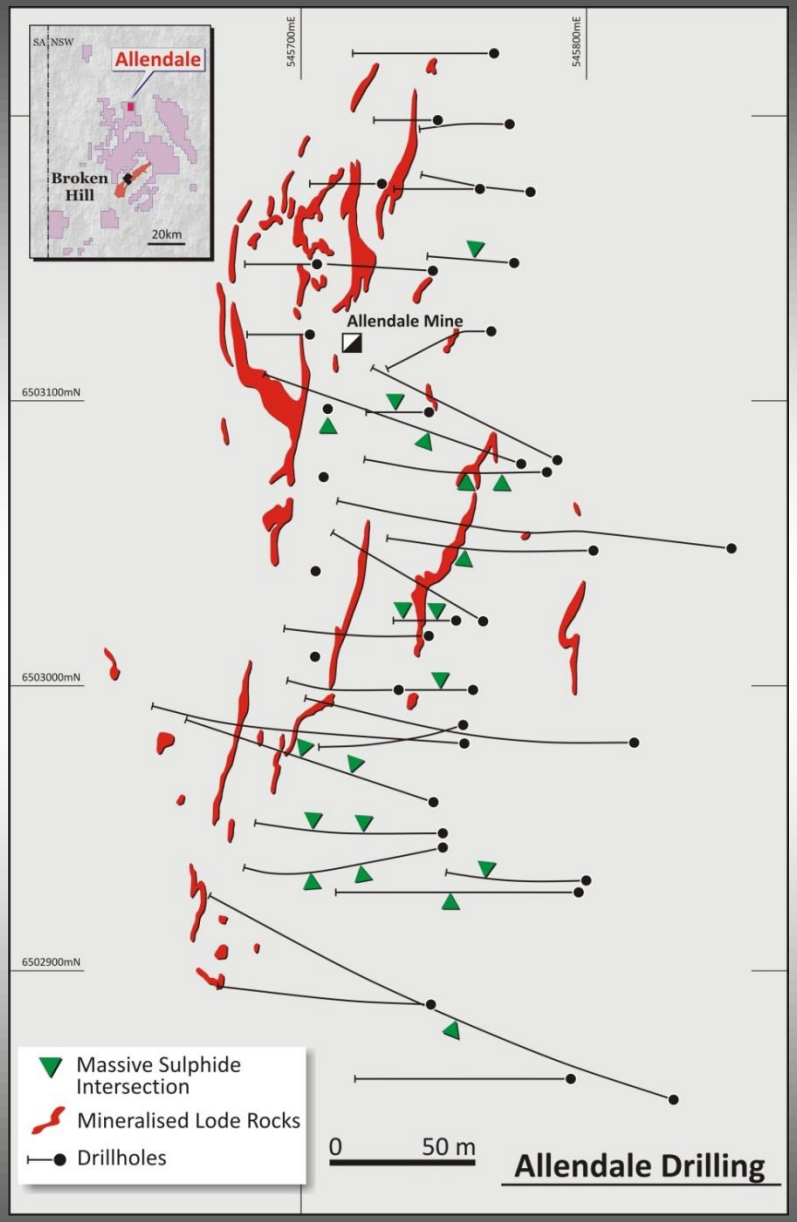
Geology/Stratigraphy

- Stevens (Proterozoic to 2015)….. and unpublished work on magnetic rocks

District Exploration

- Perilya (MEGWA talk). XRF, RAB, Drill hole analysis
- CBH XRF geochemistry

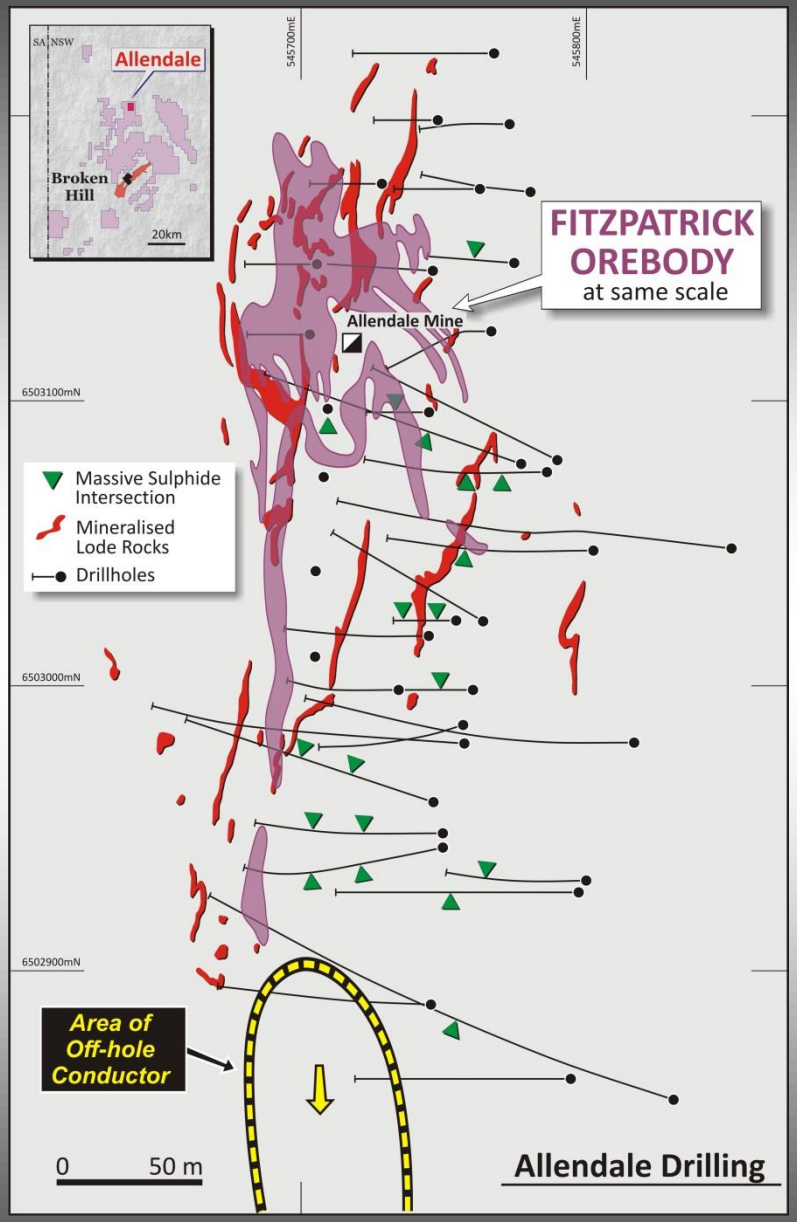
Allendale Mine



Drilling reported to date. Multiple high grade intersections.

- ***10m at 4.1% Pb, 12% Zn, 29g/t Ag***
- ***2m at 8.4% Pb, 11.5% Zn, 39.2g/t Ag***
- ***2m at 5.0% Pb, 6.8% Zn, 44.3g/t Ag***
- ***3m at 4.0% Pb, 9.2% Zn, 31g/t Ag***
- ***7m at 2.5% Pb, 2.3% Zn, 21g/t Ag***
- ***9m at 2.5% Pb 3.1% Zn, 19.7g/t Ag***
- ***5m at 3.5% Pb, 5.8% Zn, 37 g/t Ag***
- ***10m at 3.4% Pb, 6.2% Zn, 26 g/t***

Allendale Mine



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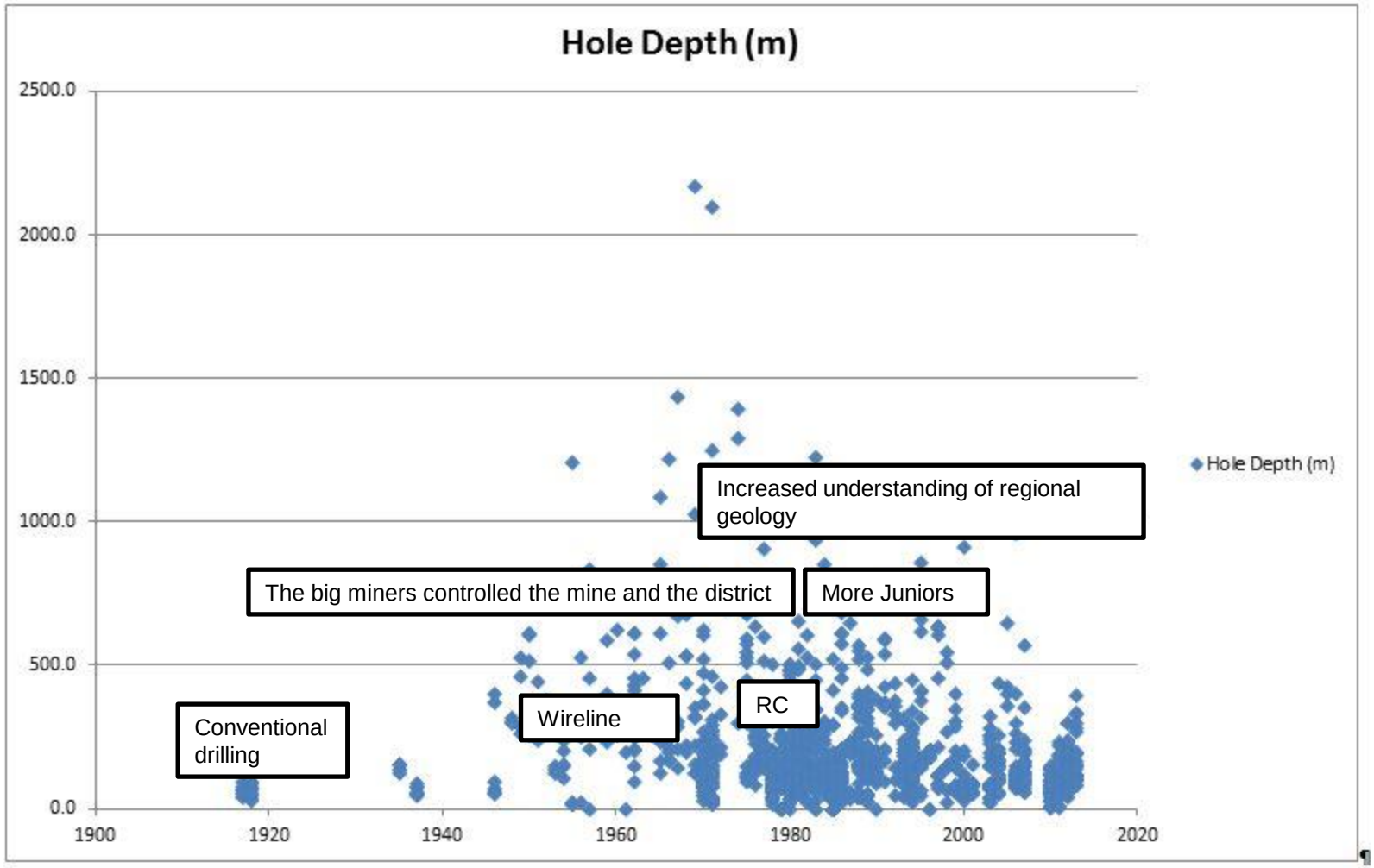
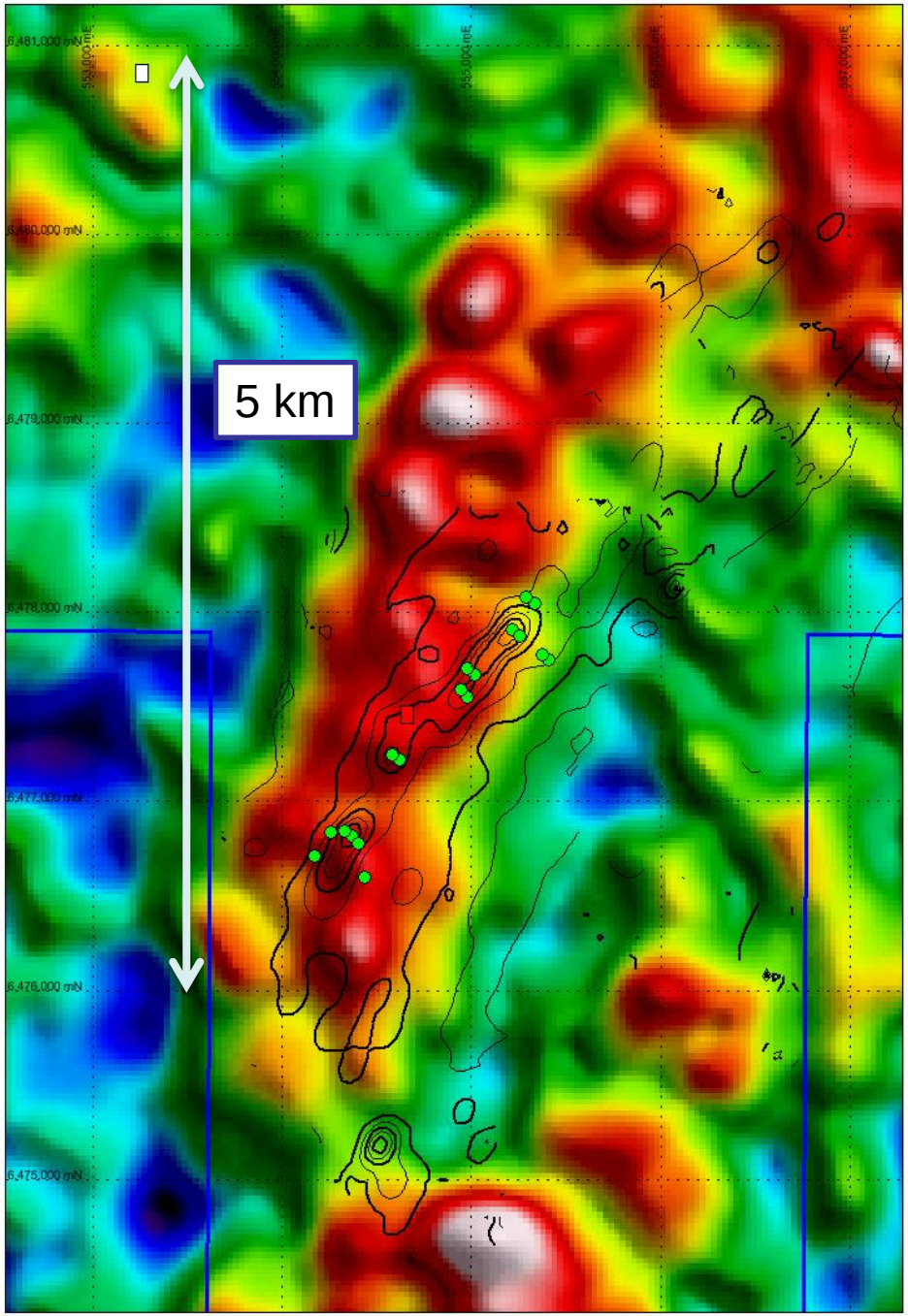
- ***5m at 3.5% Pb, 5.8% Zn, 37 g/t Ag***
- ***10m at 3.4% Pb, 6.2% Zn, 26 g/t***
- ***6m at 10.4% Zn…Off-hole conductor***

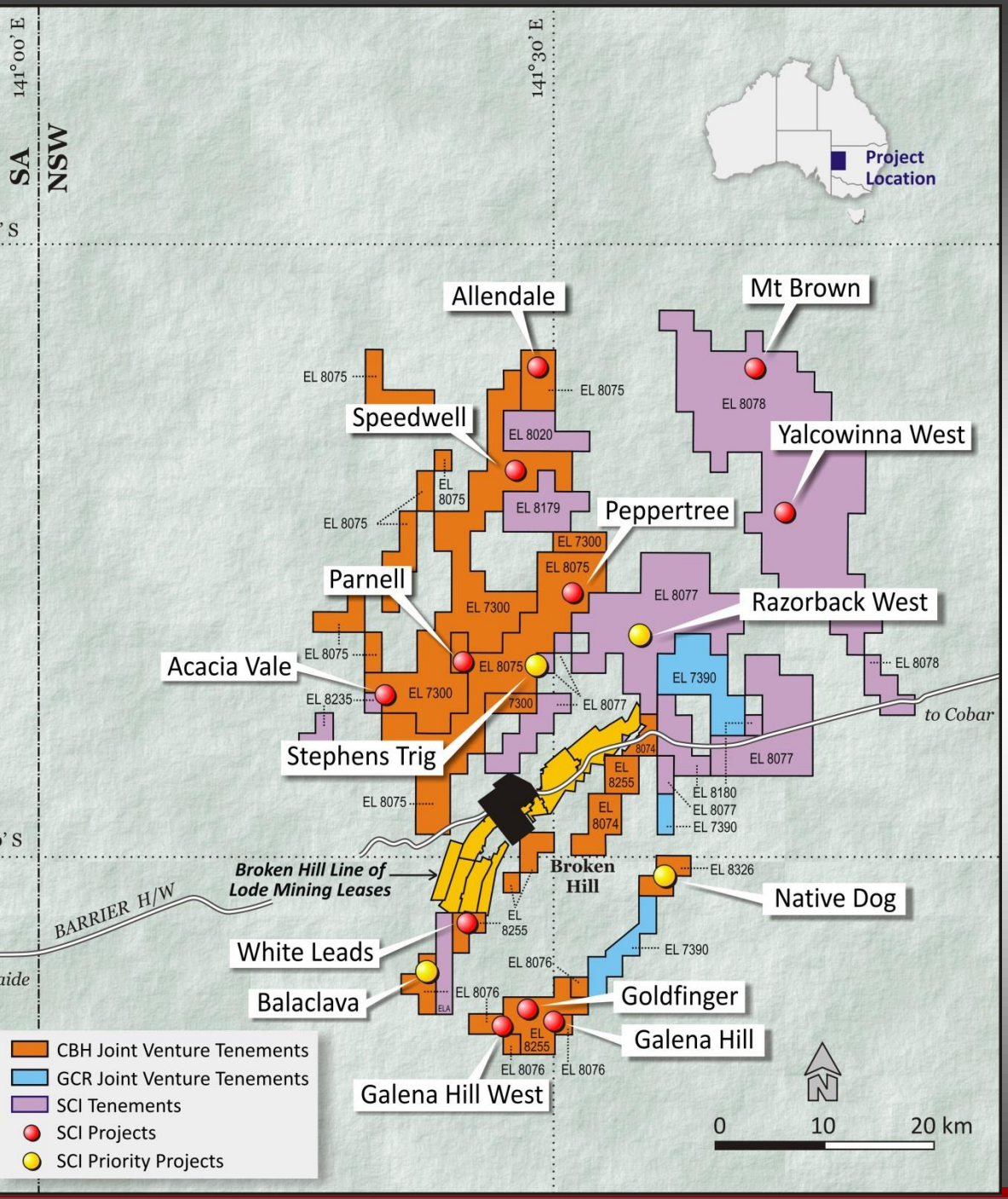
- ***Now looking deeper and along strike: FOUR VTEM LINES FLOWN***


Hole Depth (m)
2500.0
2000.0
1500.0
1000.0
500.0
0.0
1900
1920
1940
1960
1980
2000
2020
Hole Depth (m)
Increased understanding of regional geology
The big miners controlled the mine and the district
More Juniors
RC
Wireline
Conventional drilling



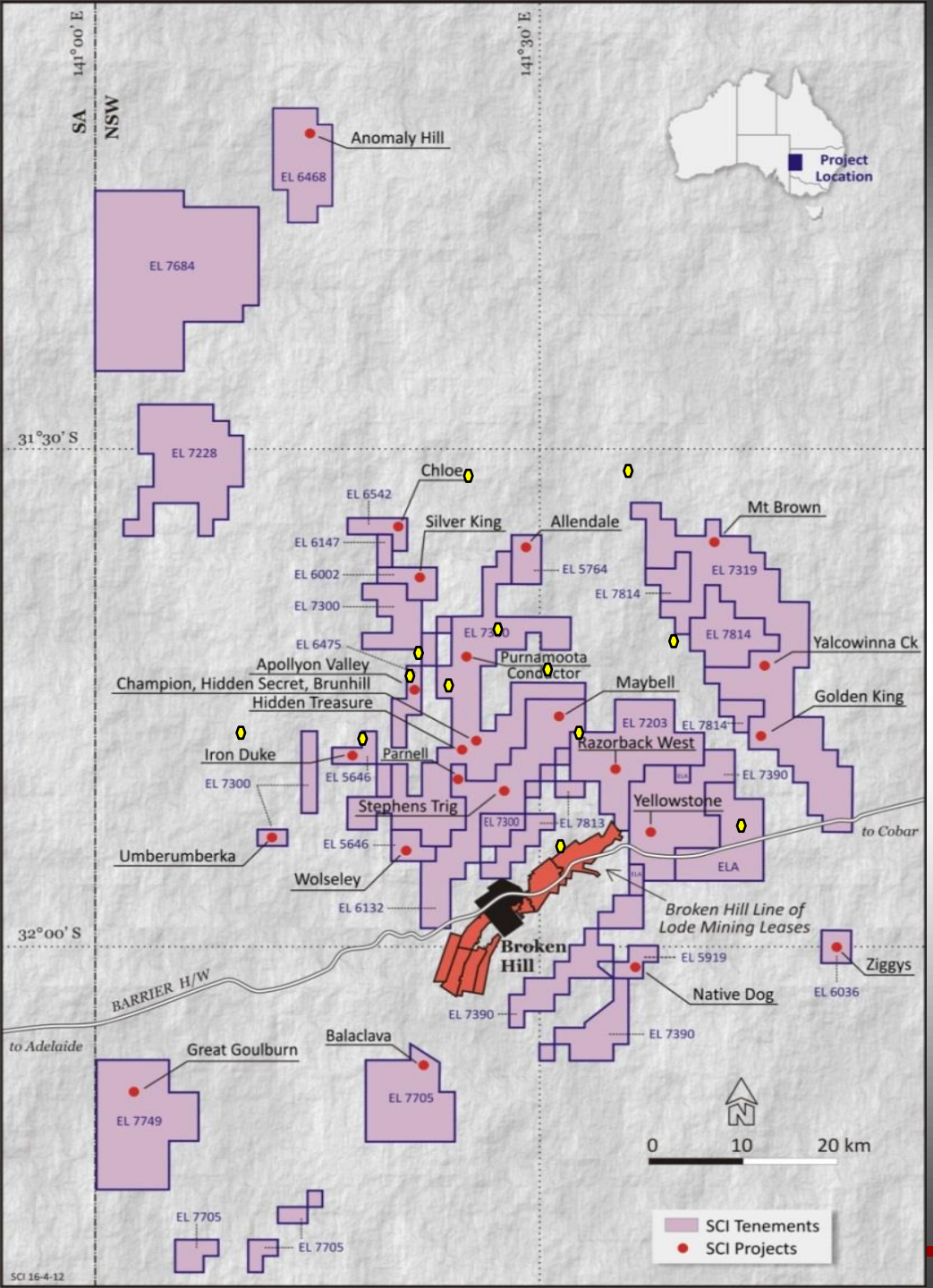
1. Outcropping Geology and magnetics
2. Broken Hill Group Interpreted
3. Gravity and IP
4. Drilling and RAB Anomaly

BROKEN HILL



Why is Silver City interested?

- **Strategic tenure position**
- **Under-explored tenure position**

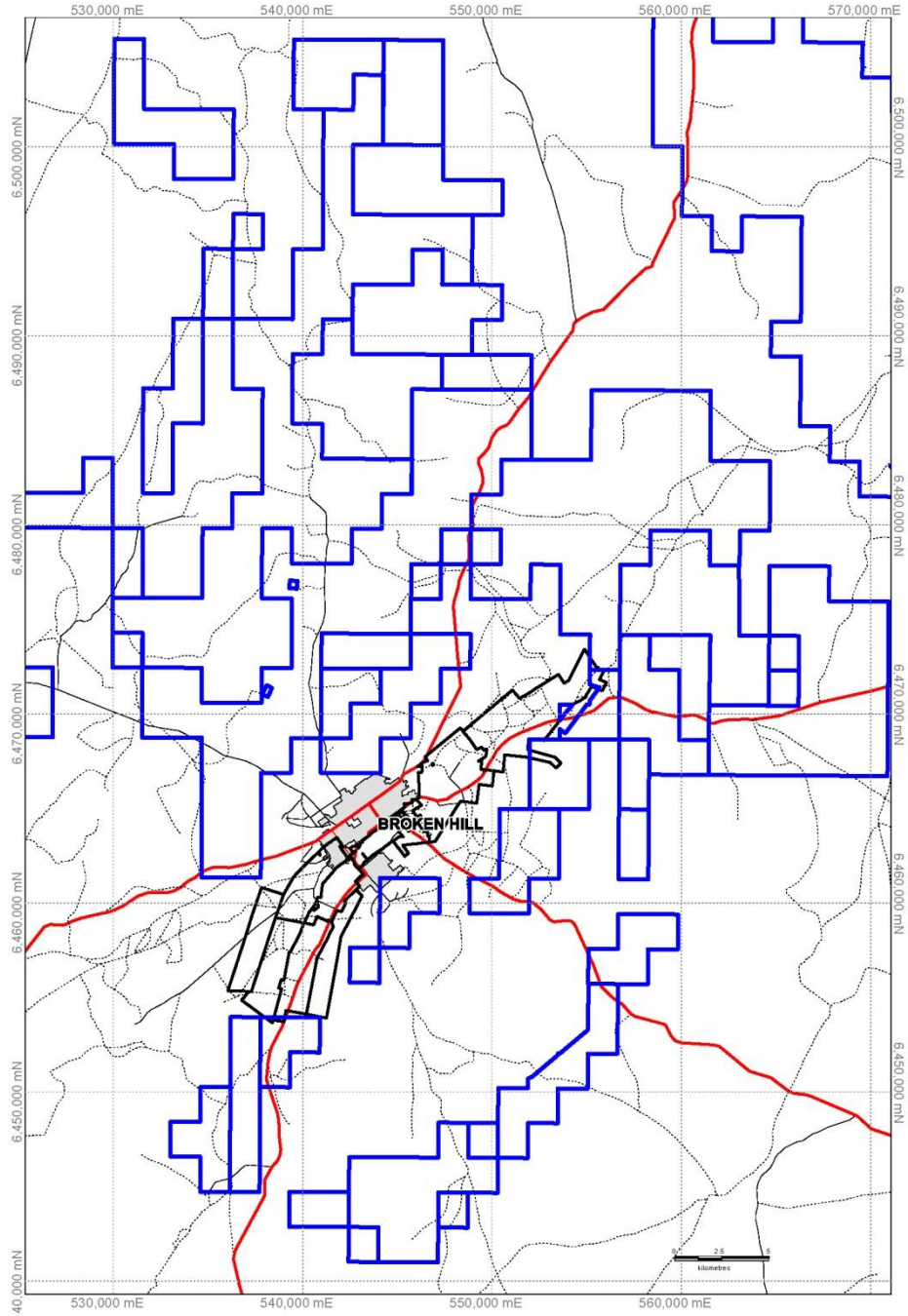


EXPLORATION AT BROKEN HILL

What have we tested?

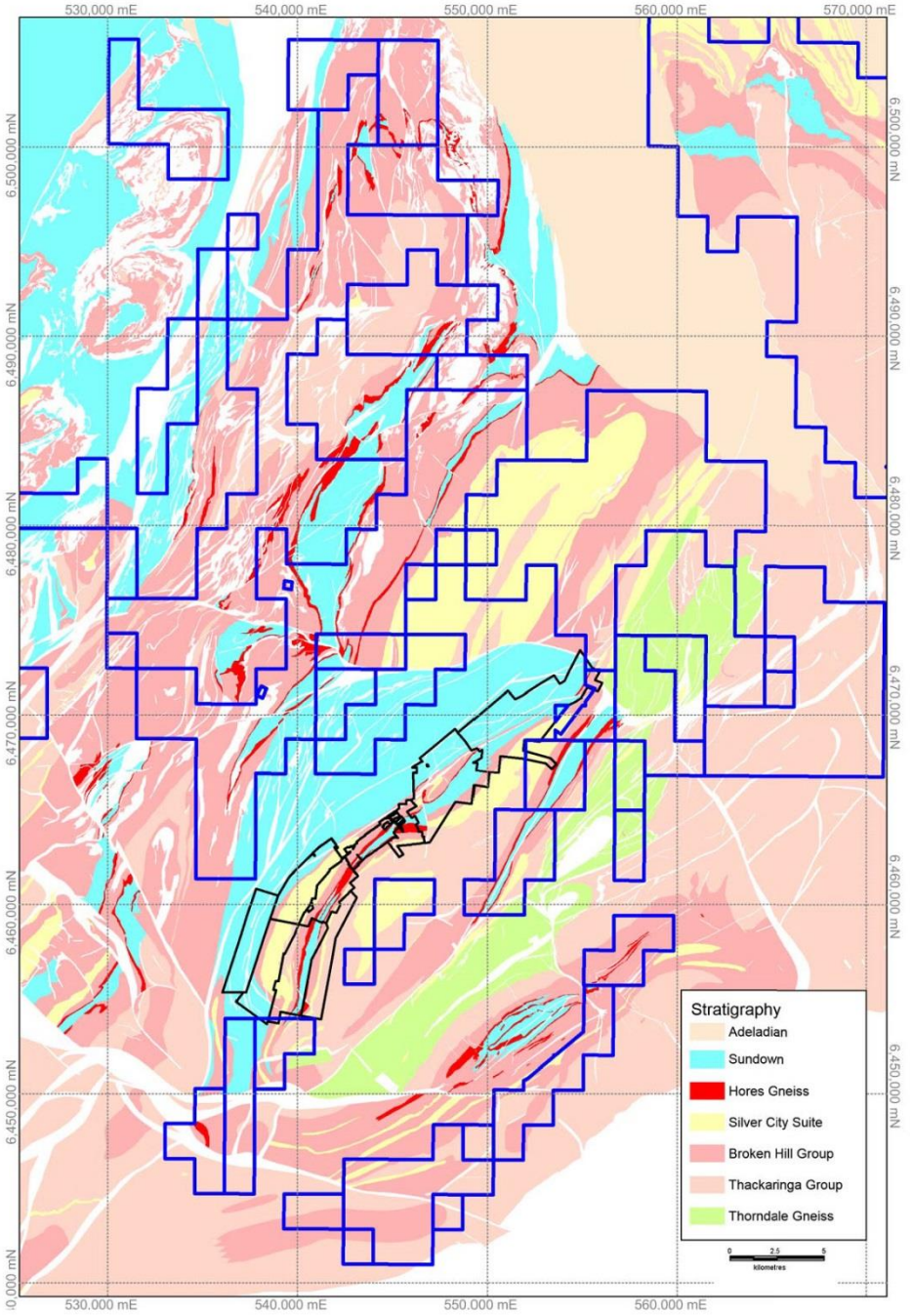
APPROX 130 holes TOTAL at 13 Prospects

- Allendale, 45 drill holes
- Razorback West, 18 drill holes
- Champion, 3 drill holes
- Stephens Trig, 6 drill holes
- Umberumberka (Ag,Pb), 6 drill holes
- Yellowstone (Au), 6 holes
- Golden King (Au), 9 holes
- Wolseley, 6 holes
- Maybell, 12 holes
- Ziggys, 4 drill holes
- Mt Brown, 6 holes
- Native Dog, 4 holes
- Parnell, 4 holes
- Widespread RAB, ground magnetics, IP (Yellowstone, Razorback), VTEM also completed



TENURE

- Approx 1200 square kilometres
- 15 granted Els
- Joint Ventures with CBH, GCR over 60% of tenure
- CBH locally contributing (25%)
- Covers key stratigraphic horizons with remainder held by Perilya
- Well established mining centre
- Two mills operating in town
- Great infrastructure
- Main projects within 25 km of town



GEOLOGY

- Rift sedimentation and volcanism Proterozoic age 1850 to 1670Ma. Narrow Rift.
- Mineralisation 1685-1670Ma

- At least four deformations, two thermal events; rocks reach upper amphibolite-granulite metamorphic grade locally. Need to filter out the effects of the Olarian Orogeny

Key units

1. Thackaringa Group: potential source for metals and saline fluids. Itself a host to ore.
2. Broken Hill Group: host to ore especially in upper parts.
3. Silver City Suite: granitic intrusions. Silver King and Parnell metadolerites introduced as sills or volcanic rocks penecontemporaneous with ore. Important source of sulphur.
4. Sundown Group: a cap rock shows waning evidence of hydrothermal activity.

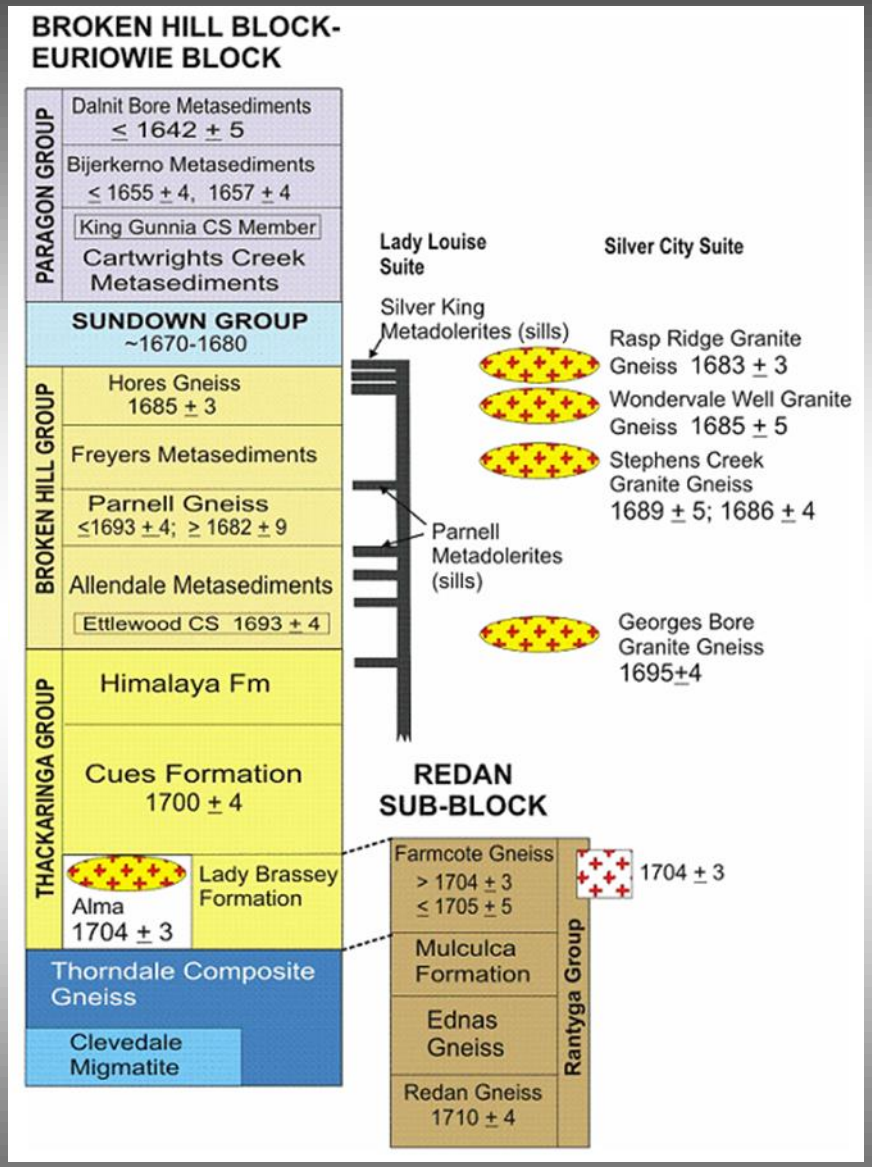
GEOCHRONOLOGY

Silts, black shales: deep marine , turbiditic: cap rocks, deep burial

RAPID SUBSIDENCE

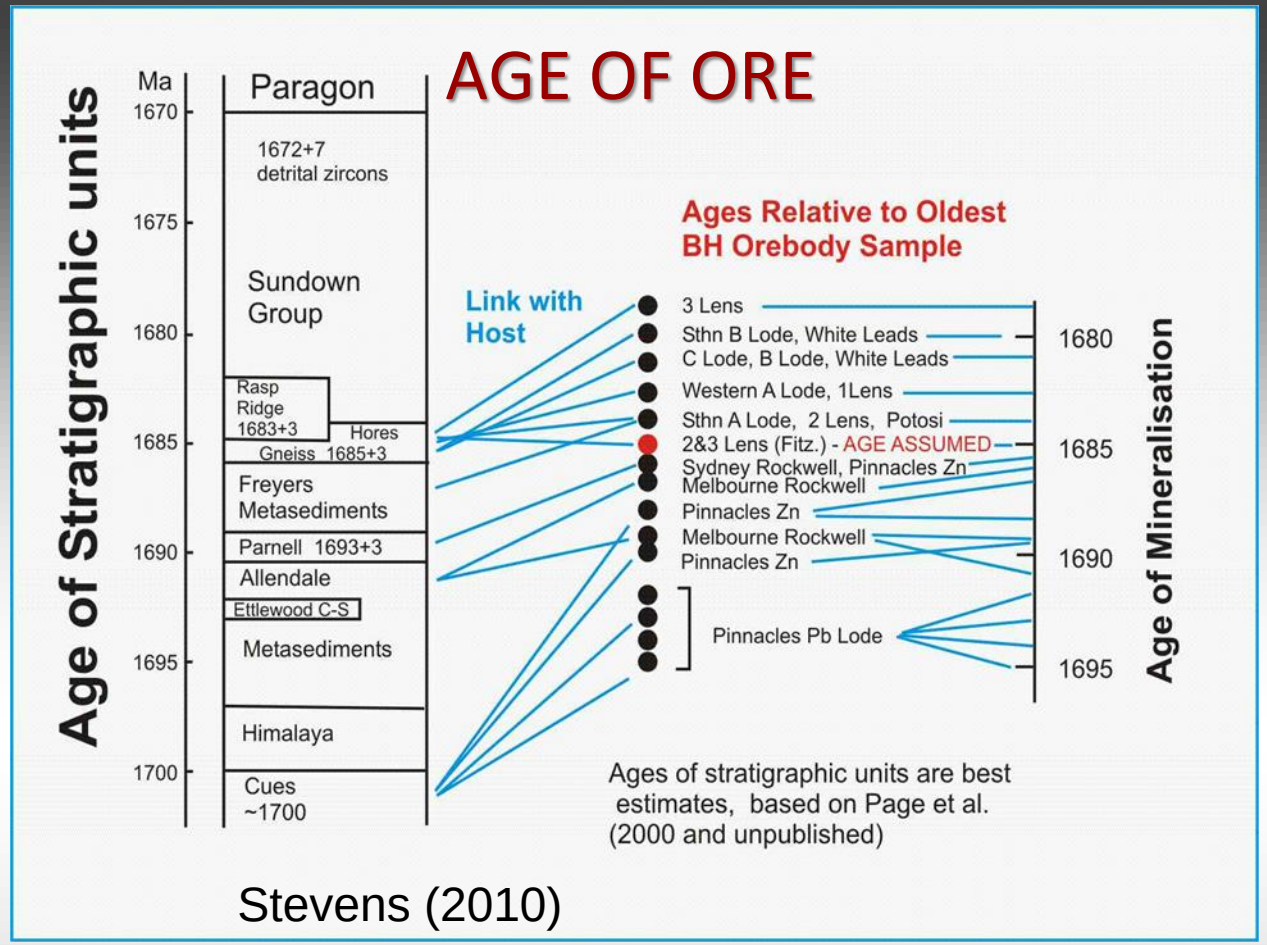
quartzo-feldspathic:shallow marine-shelf (maybe lacustrine)

Albitic,quartzo-feldspathic: fluvial to estuarine



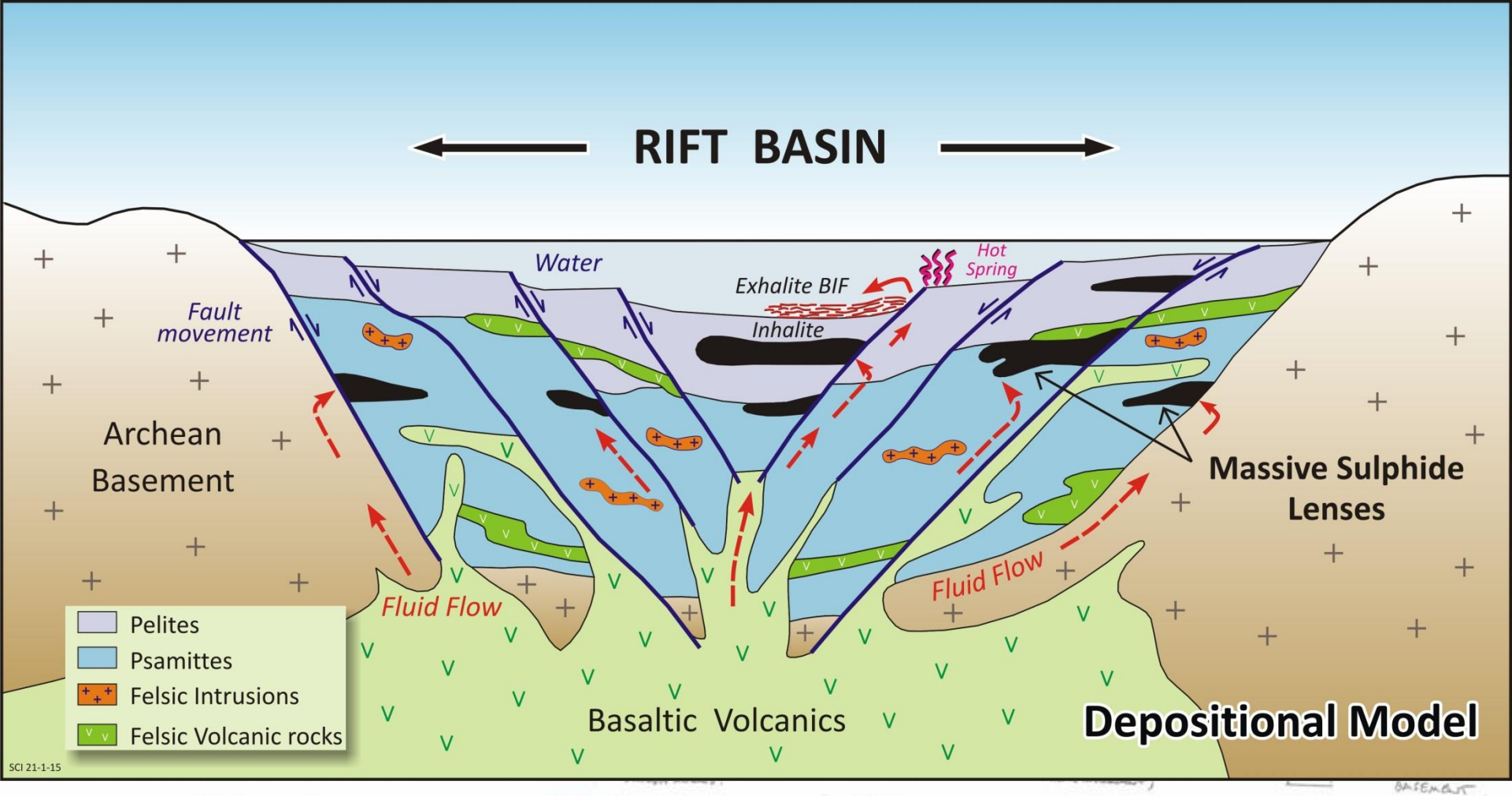
Stevens (2006)

AGE OF ORE



Stevens (2010)

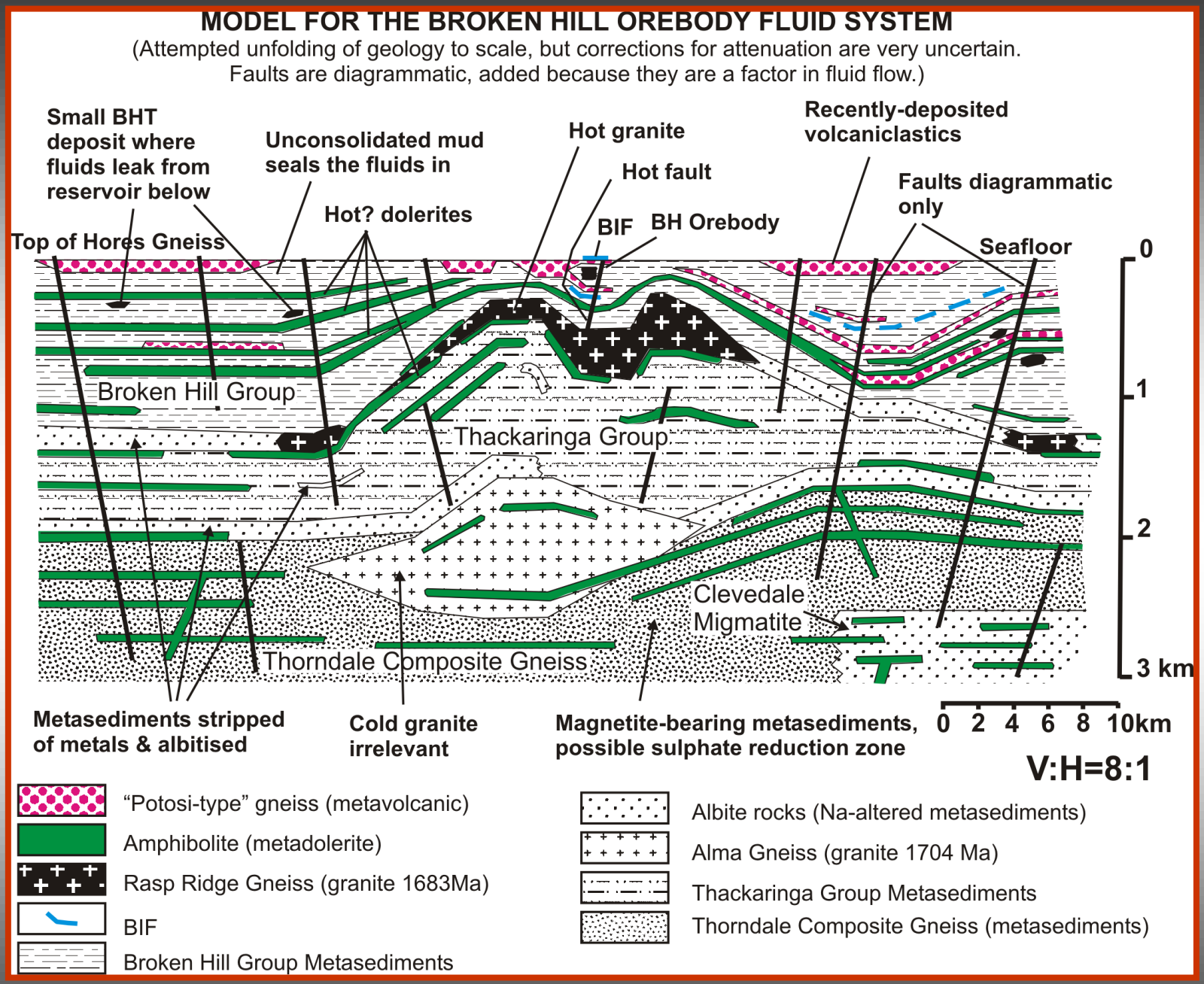
- Broken Hill orebodies emplace over 6 million years and are younger than host rocks
- Pinnacles orebody formed 6 million years after its host rocks and 10 million years before Broken Hill ores



RIFT MODEL DEPOSITION OF MINERALIZATION

WILLYAMA SUPERGROUP ~ BROKEN HILL

EGC PTY LTD 2010



From Stevens B.P.J. (2003)

Broken Hill Schematic 'unfolded' Cross section

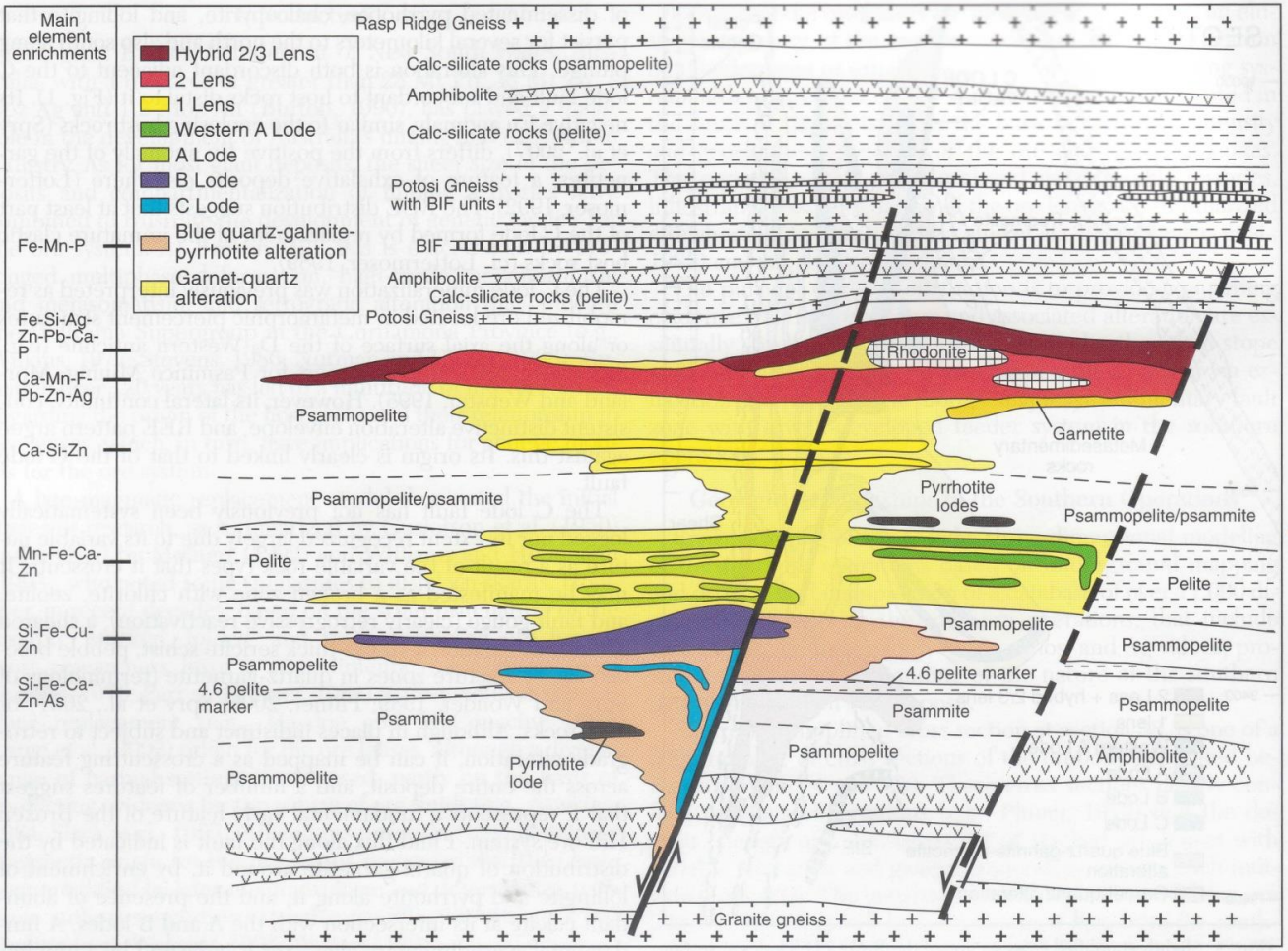
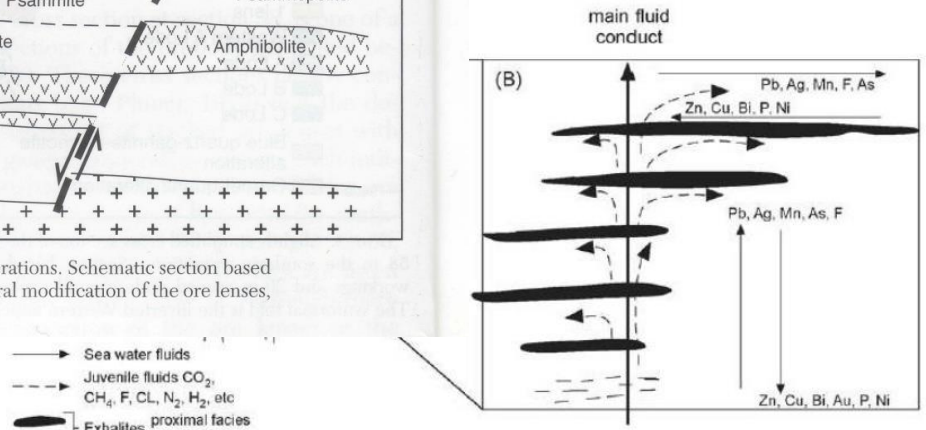


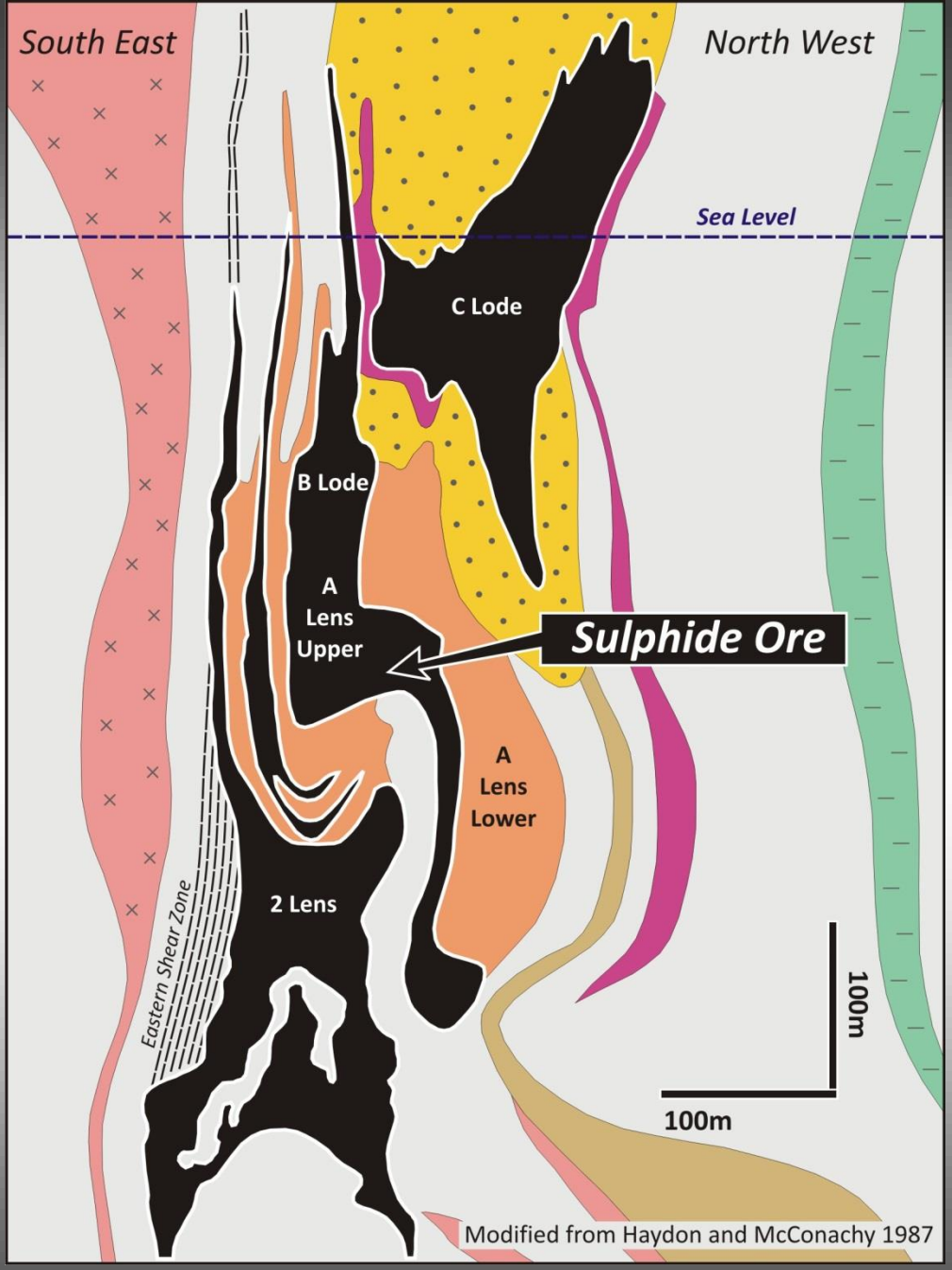
FIG. 2. Schematic reconstructed section across the Broken Hill lodes in the southern operations. Schematic section based on numerous cross sections, such as that of section 58 in Figure 1, with allowance for structural modification of the ore lenses, including inversion of the lithostratigraphic package.

Metals located close to feeder structure over a 6 Ma period (eg C-lode feeder)

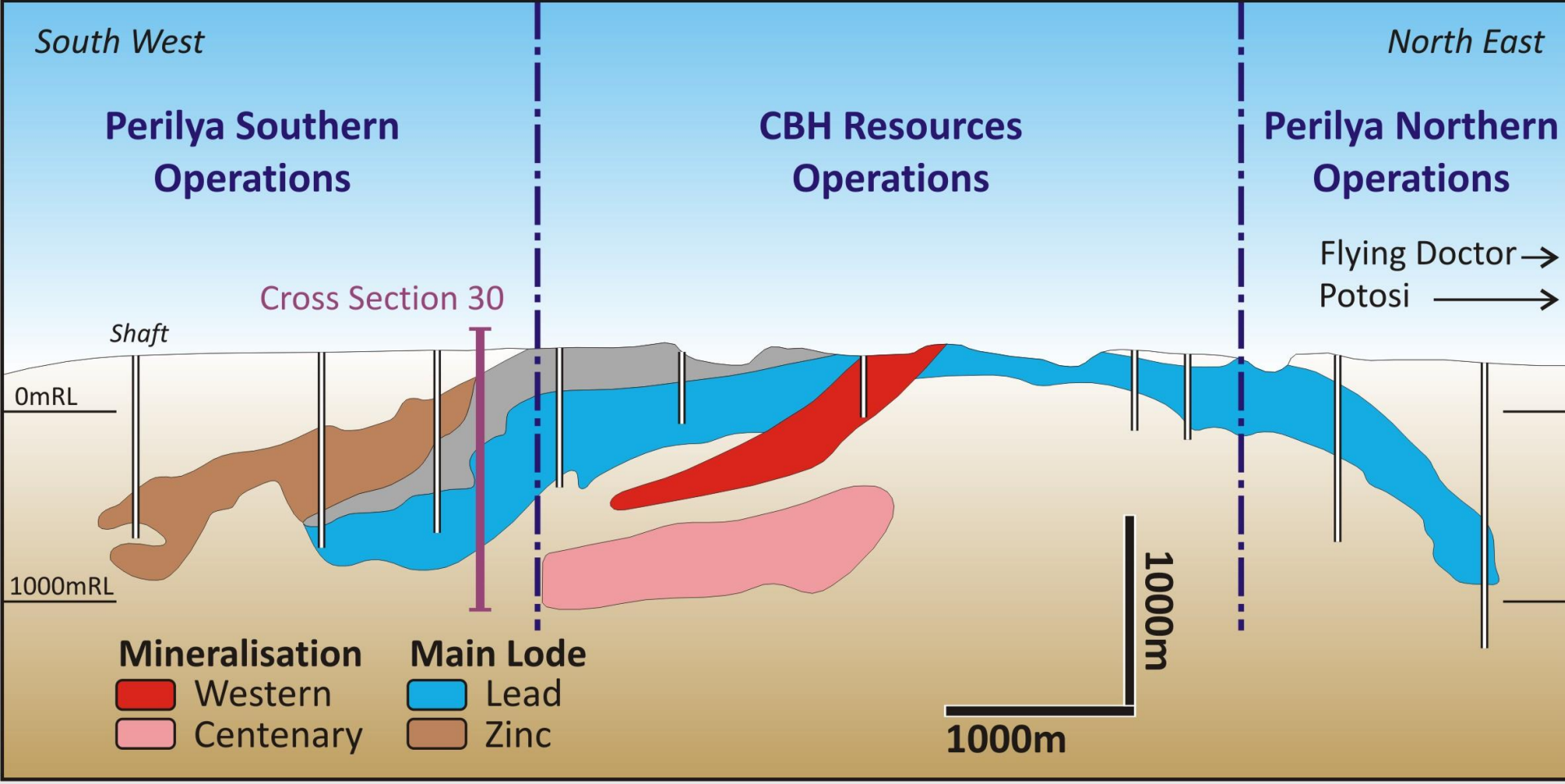
BIF as connected Outflow zones



Groves et. al (2008)



Looks like this now



Long-section

SILVER CITY REVIEW

PURPOSE

"To focus exploration for discovery of high quality BHT lead-zinc-silver ore (+20Mt at plus 20% Pb+Zn, with high grade Ag)."

EVALUATION

1. **Mineral System Approach to district. Recognises quantifiable proxies (geological indicators) to best ore setting.**
2. **Systematic data collation, collection and interpretation.**

THREE TARGET TYPES

1. **Known and previously evaluated prospect "hot-spots". Often heavily drilled.**
2. **Hot-spots with data gaps…. Largely untested, sparse drilling.**
3. **Hot-spots defined by new geological interpretation….data poor, no drilling.**

STUDY OUTLINE

Mineral Systems Approach

Process Driven Assessment

Looks at:

- **Fluid and metal source**
- **Transport of ore-bearing fluids**
- **Fluid traps and depositional sites**

Geological Indicators (proxies) reflect past processes and can be defined

- **Mineral system proxies are the essential 'ingredients' of a model**
- **Proxies are independent, quantifiable attributes**
- **Used for target ranking/probability analysis**

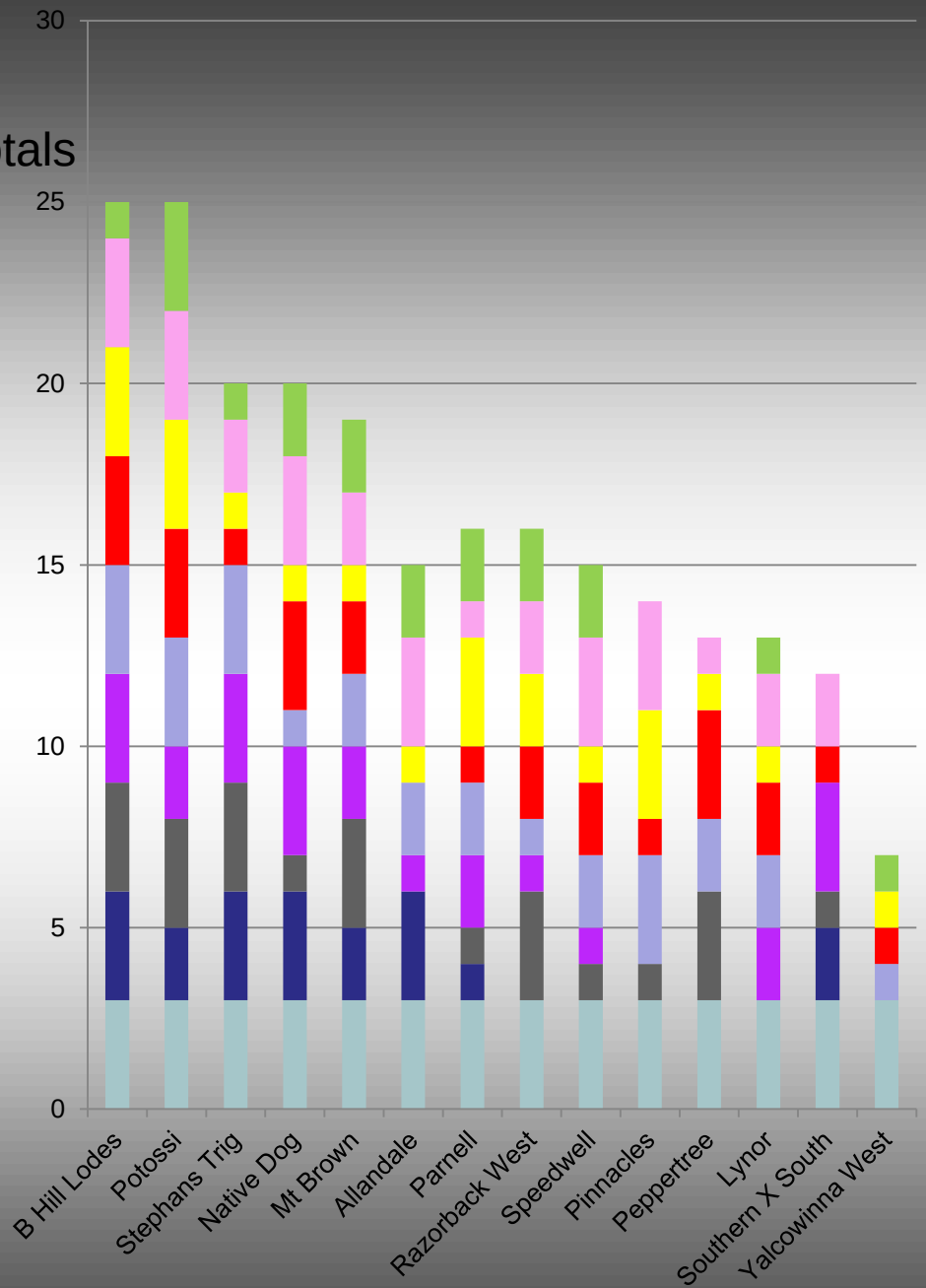
Data Evaluation and Assessment

- **Continued compilation, collation and analysis of historic and modern exploration data**

KEY EXPLORATION CRITERIA BHT's

Mineral System Proxy	System Variable
➢ Within influence of Upper Thackaringa Group	source
➢ bimodal volcanic rocks in the footwall stratigraphy	transport
➢ Strong folding and complexity, structural re-activation	transport
➢ Rapid/complex host facies variations (and lateral 'potosi gneiss')	transport
➢ IP response (sulphide detection)	trap
➢ Zoned or stacked Pb and Zn geochemistry	deposition
➢ Envelope of fine-grained Fe-Mn garnet-quartzite, element enrichment /depletion trends (enriched in K, Fe, Si, Mn, Rb and depleted in Na, Ca, Sr)	deposition
➢ Silver bearing galena-sphalerite dominant with subordinate poddy pyrrhotite and minor pyrite.	deposition
➢ Lateral / overlying stratigraphic marker units - quartz-gahnite and/or overlying BIF units	outflow

Raw data totals By proxy



- Pole-dipole IP may detect some halos (including false positives), ground EM not reliable.
- Zones of strong folding and complex structural reactivation. (early high temperature) high strain zones and drag folds.
- zoned or stacked Pb and Zn geochemistry
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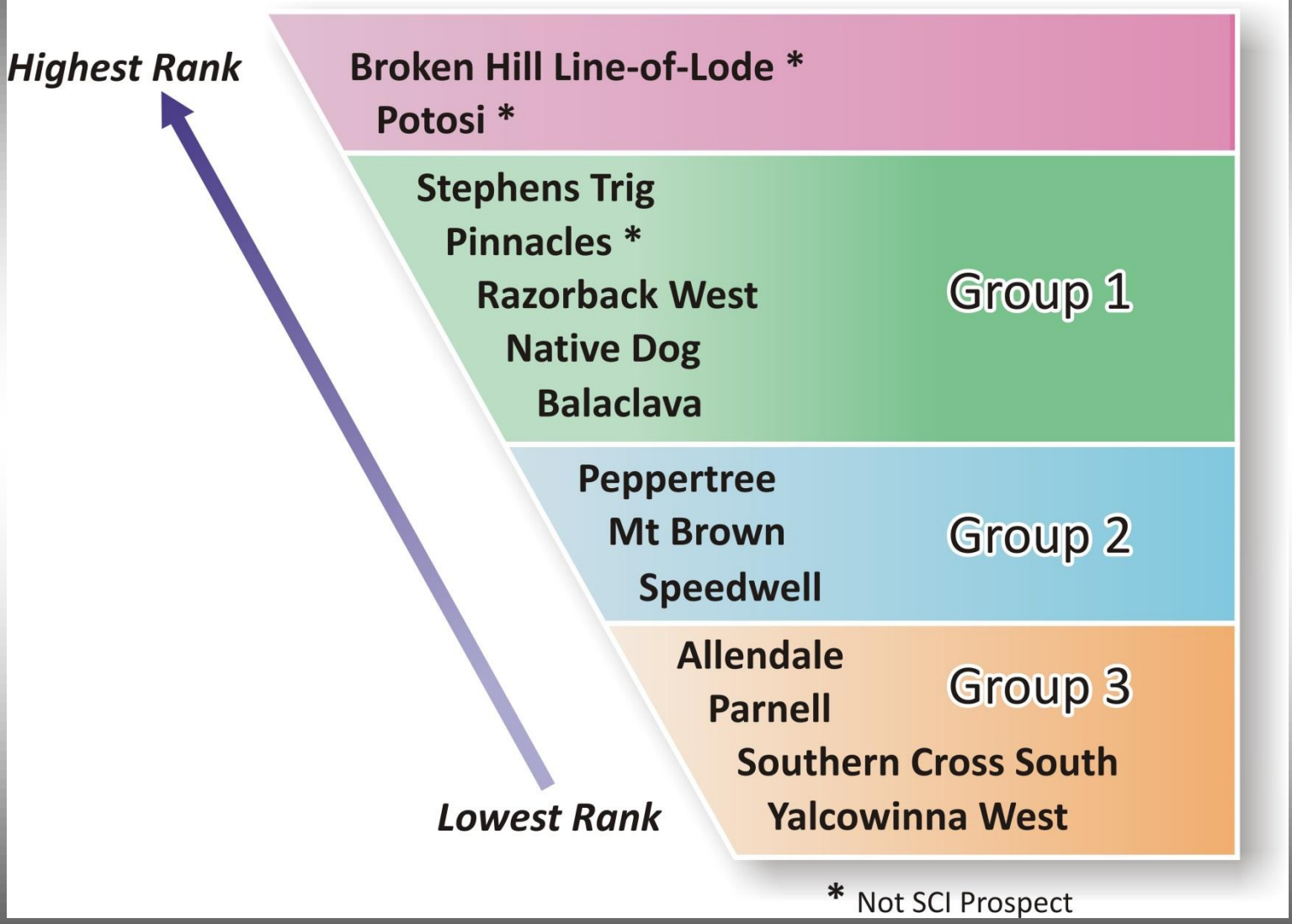
- Silver bearing galena-sphalerite with subordinate poddy po and minor pyrite. .
- Envelope of fine-grained Fe-Mn garnet-quartzite, Si-Fe-K/Rb-eincr.; and Na-Ca/Sr decr., including 'Skarn-like' mineralogy.
- bimodal volcanics in the footwall stratigraphy.
- Rapid/complex host facies variations (and lateral 'potossi gneiss'?)
- Upper Thakaringa Gp or younger and within stratigraphic 2km of Thakaringa Gp

PROSPECTIVITY RANKING



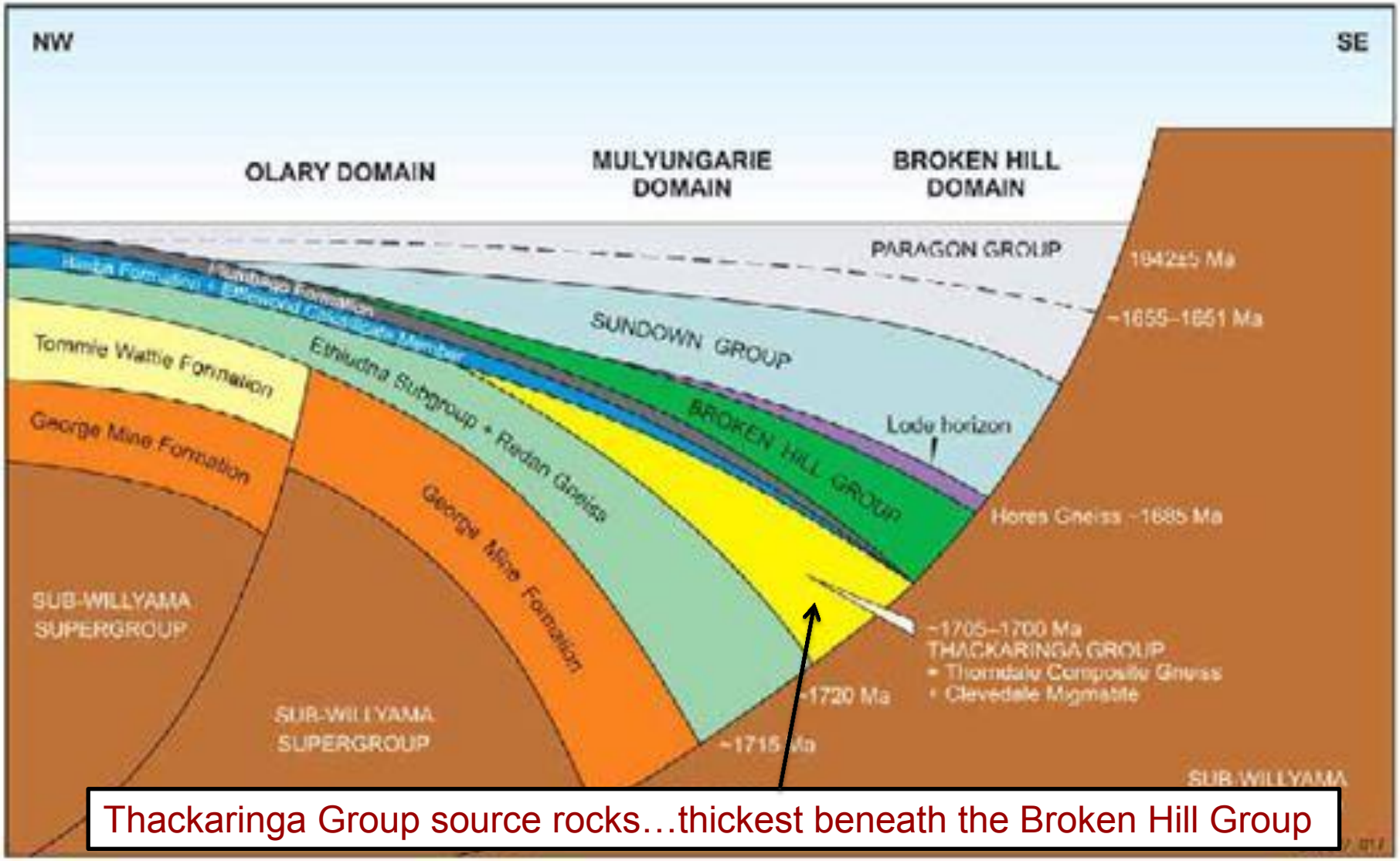
BROKEN HILL TARGET SUMMARY

Tier One Targets (large systems)

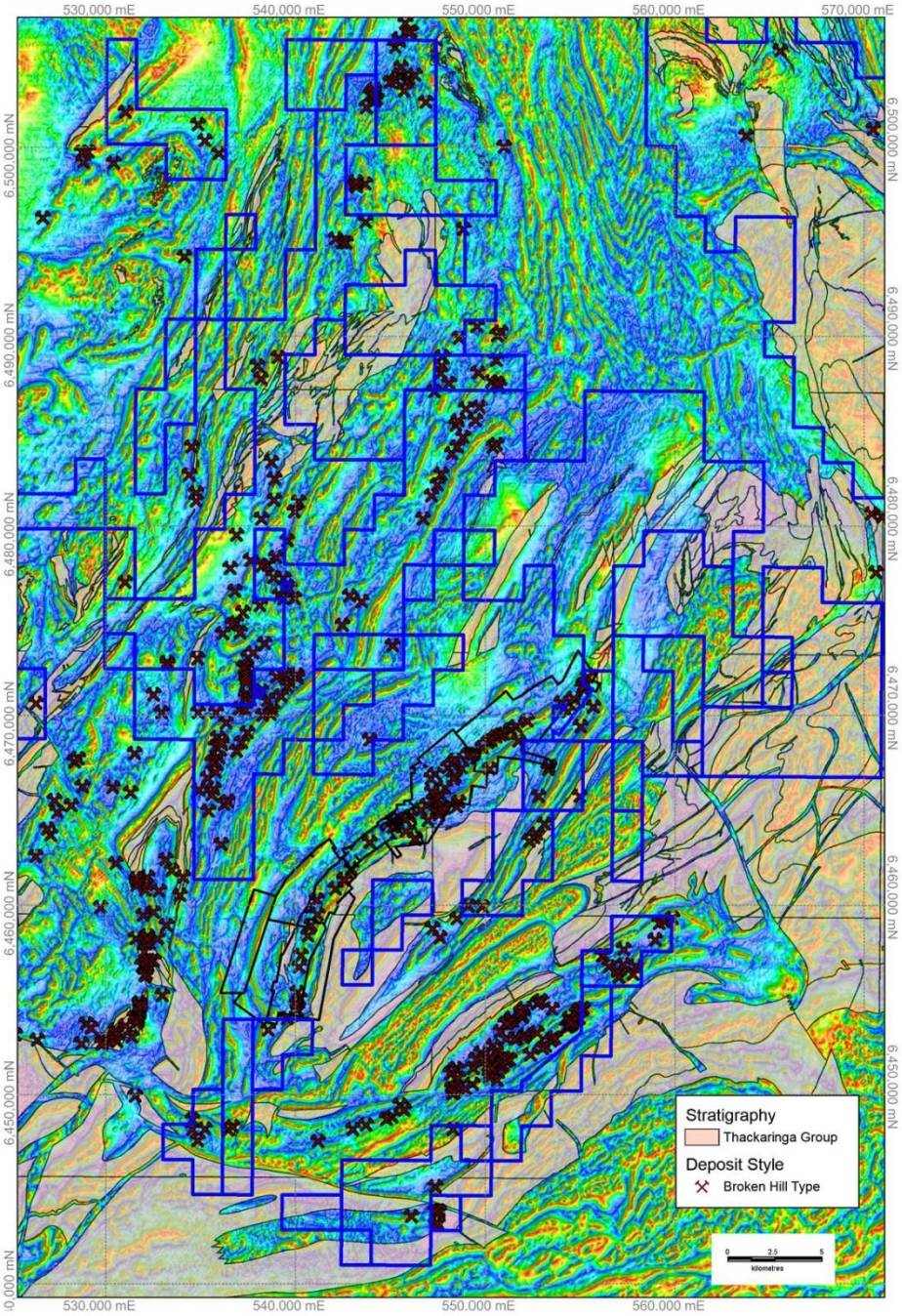
- Razorback West Corridor
- Stephens Trig Corridor
- Balaclava
- Native Dog

Tier Two Targets (constrained or poorly defined systems)

- Speedwell
- Selected VTEM targets
- Southern Cross South
- Further work required(Coombarra, Riddock, Rildar, Yalcowinna, Mt Brown, Parnell)



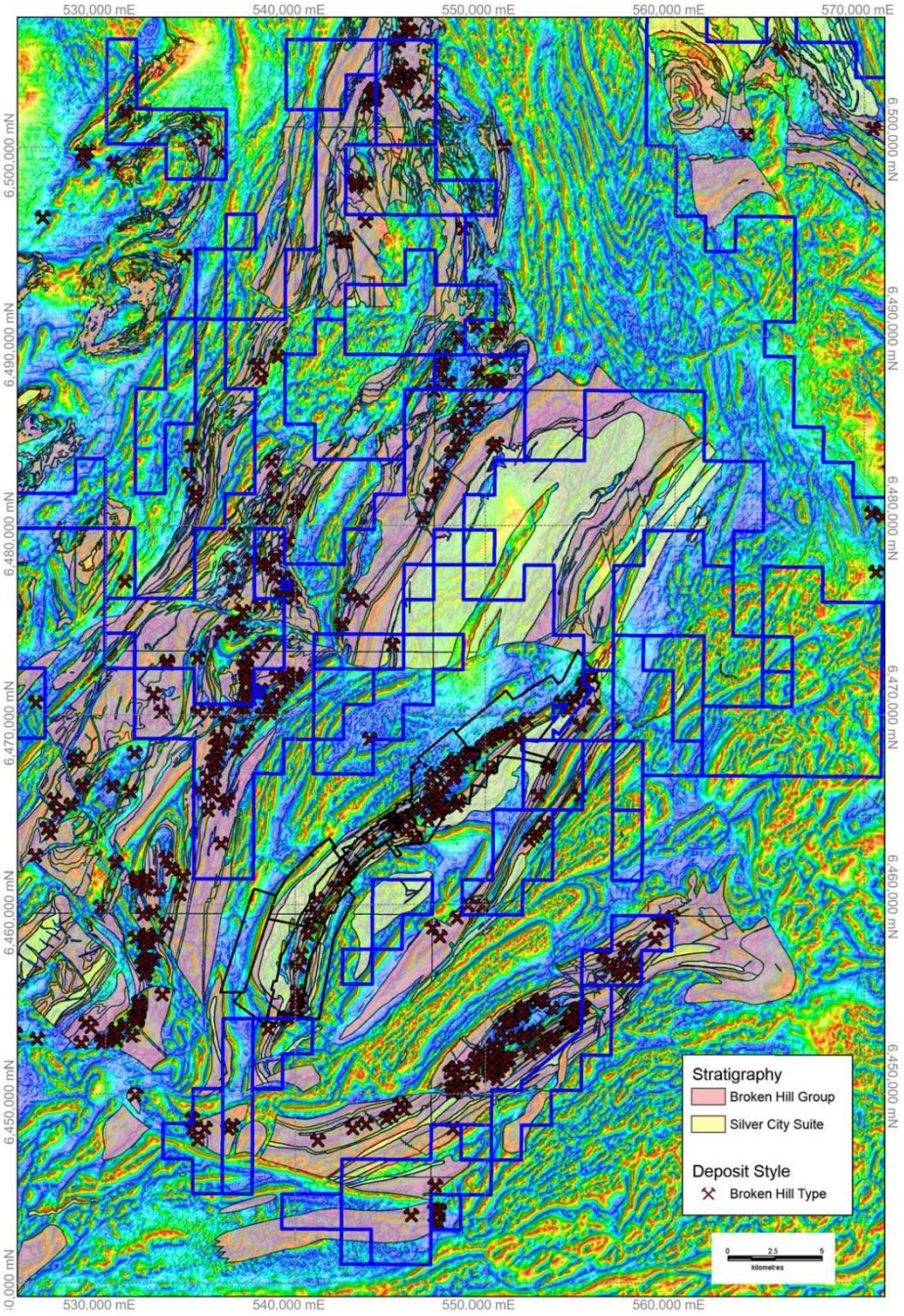
Thackaringa Group source rocks…thickest beneath the Broken Hill Group



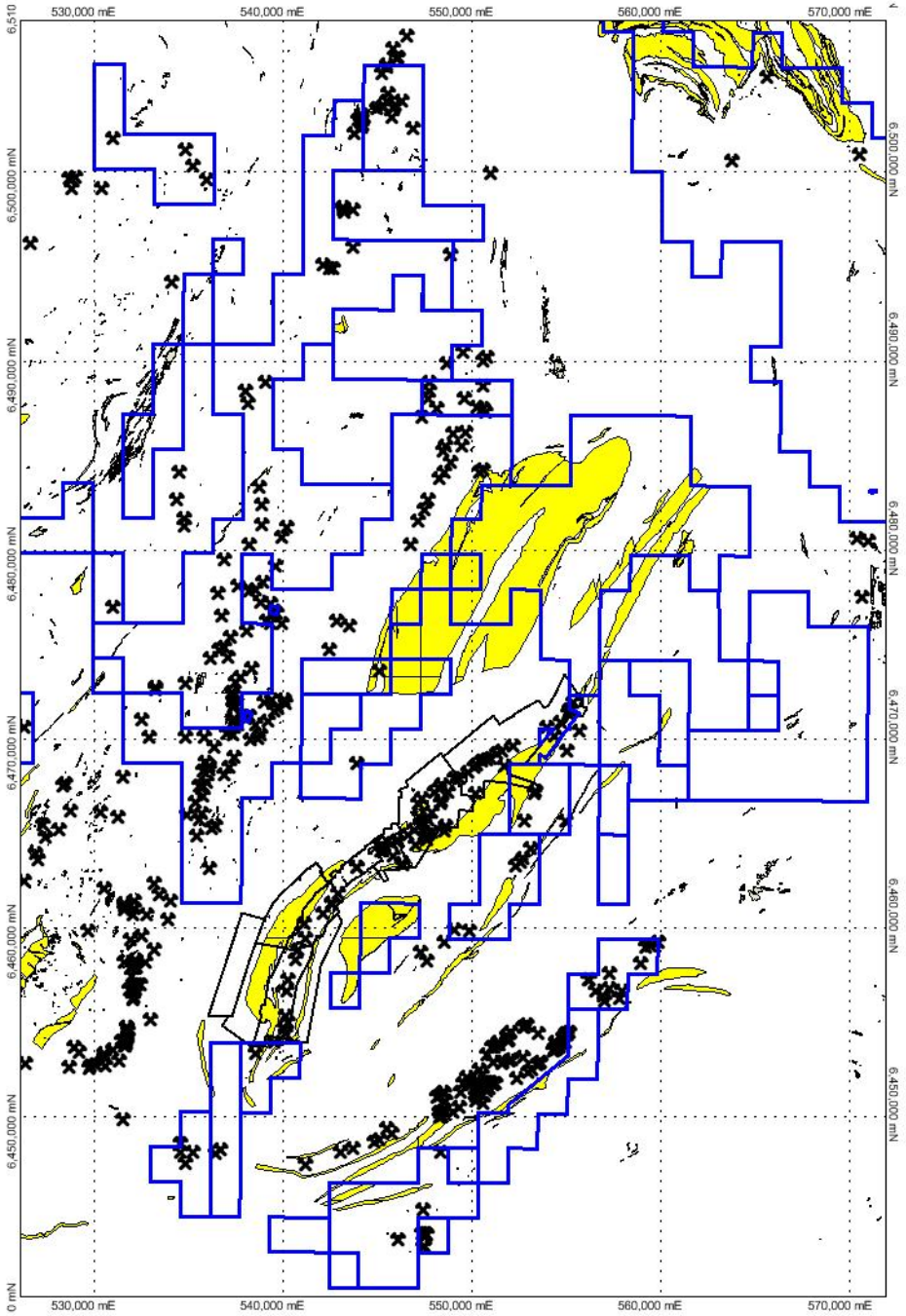
THACKARINGA GROUP

- Albite (Na) rich
- Depleted in metals

BROKEN HILL GROUP AND SILVER CITY SUITE

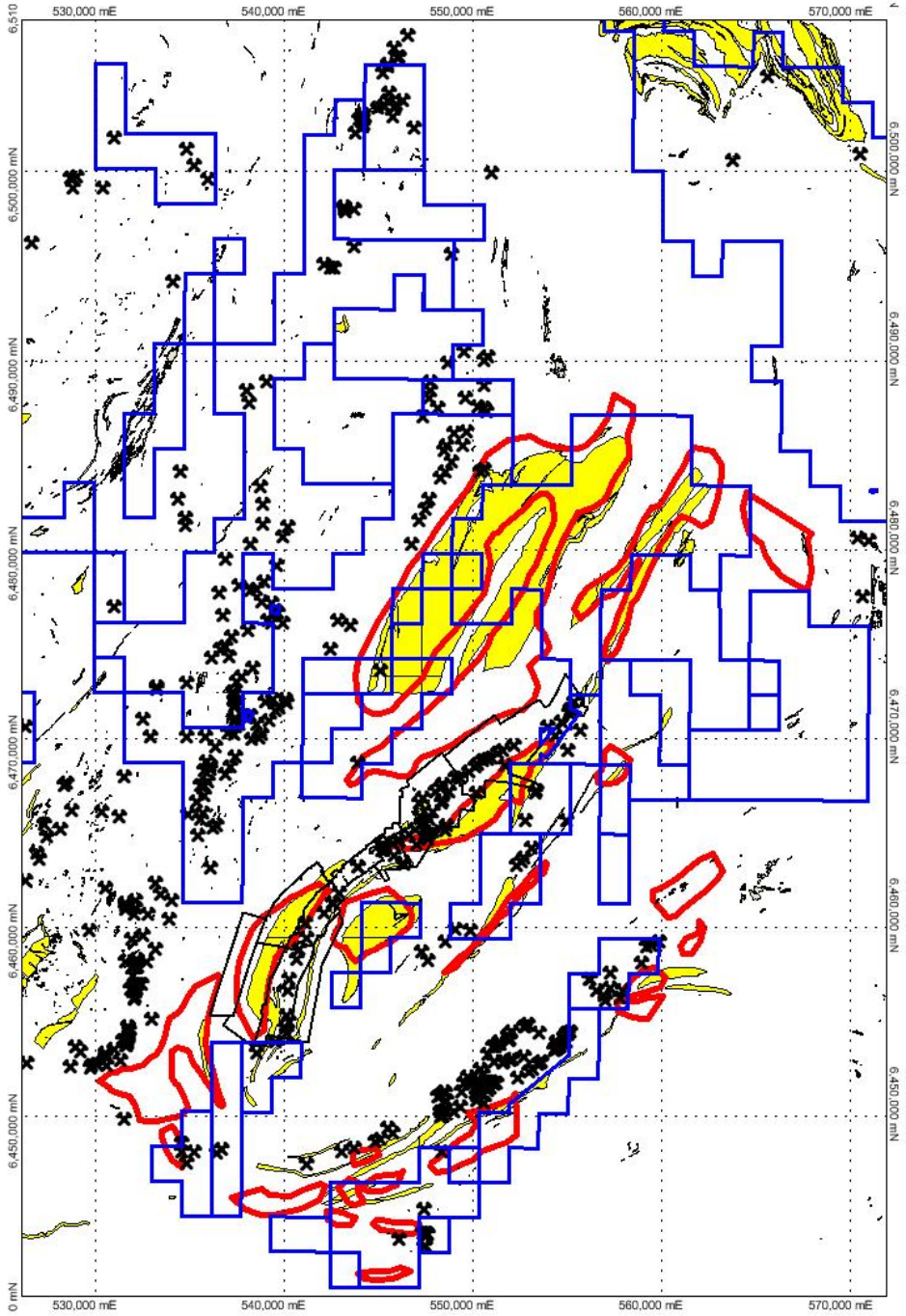


- Broken Hill type (BHt) mineralisation has strong correlation to Broken Hill Group stratigraphy
- BHt's associated with "lode rocks" quartz-gahnite, blue quartz, garnet-quartzites, BIFs
- Important proximity of mineralisation to Silver City Suite Granite Gneisses.



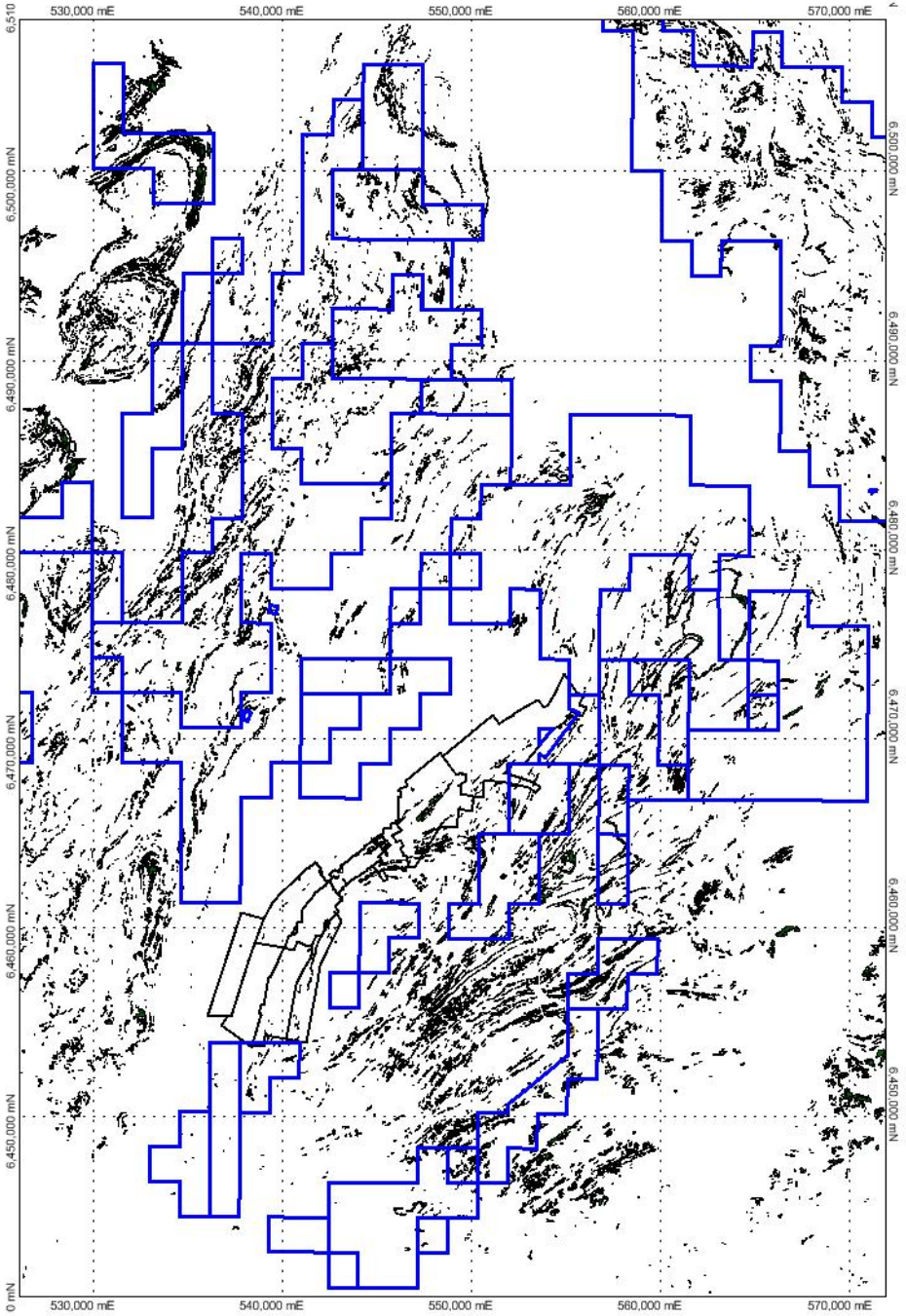
SILVER CITY SUITE

Interpretation based on outcrops



SILVER CITY SUITE

Interpretation based geophysics

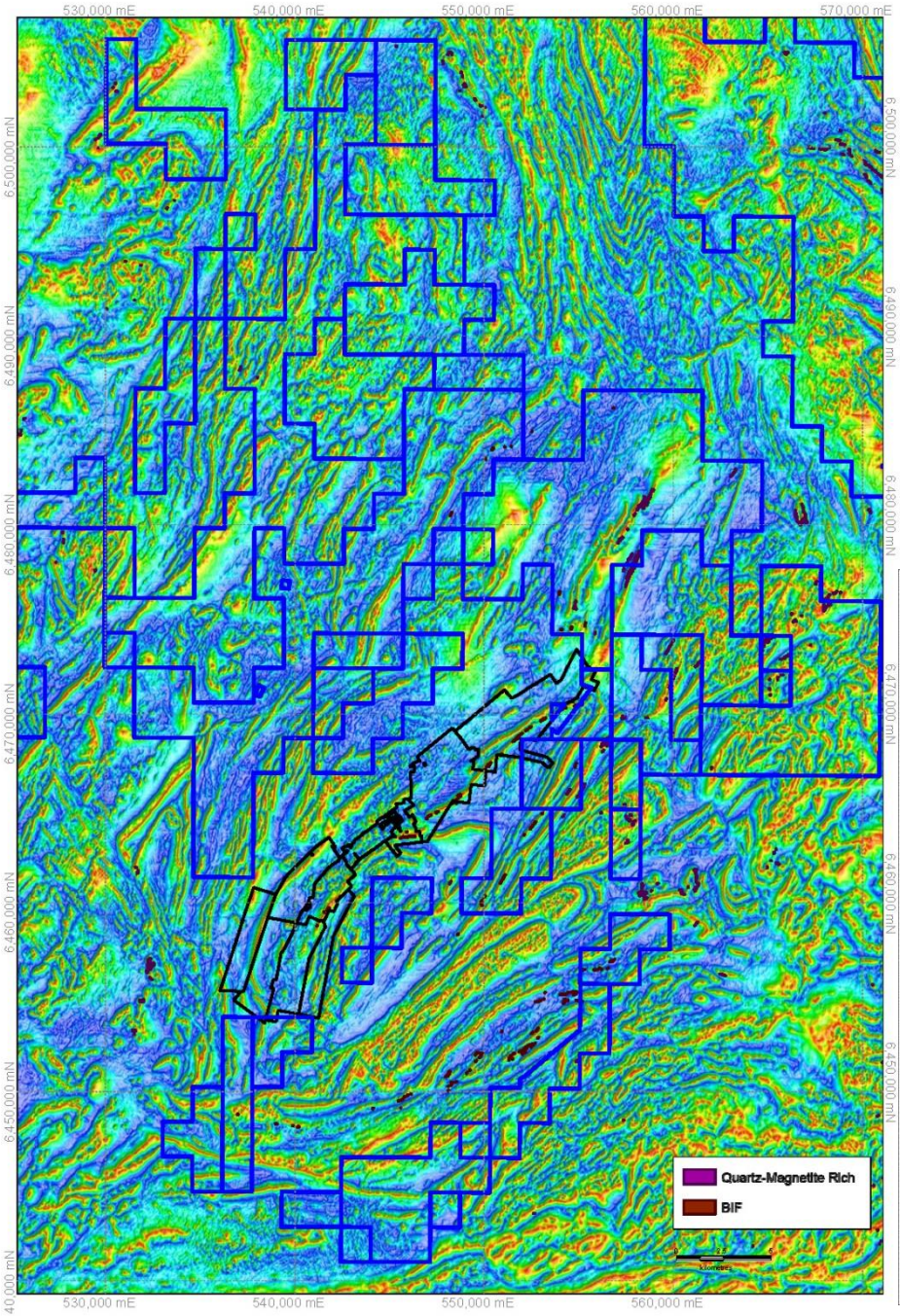


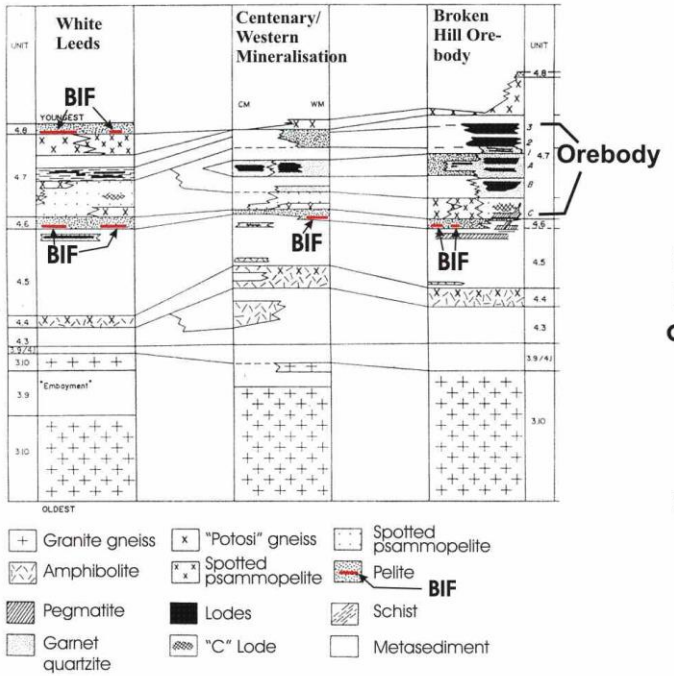
AMPHIBOLITES

- Mafic Volcanic and Intrusive rocks: MORB-like melts:Fe-Ti enriched.
- Restricted magma chamber in rift setting derived from partial melt of asthenosphere

MAGNETICS

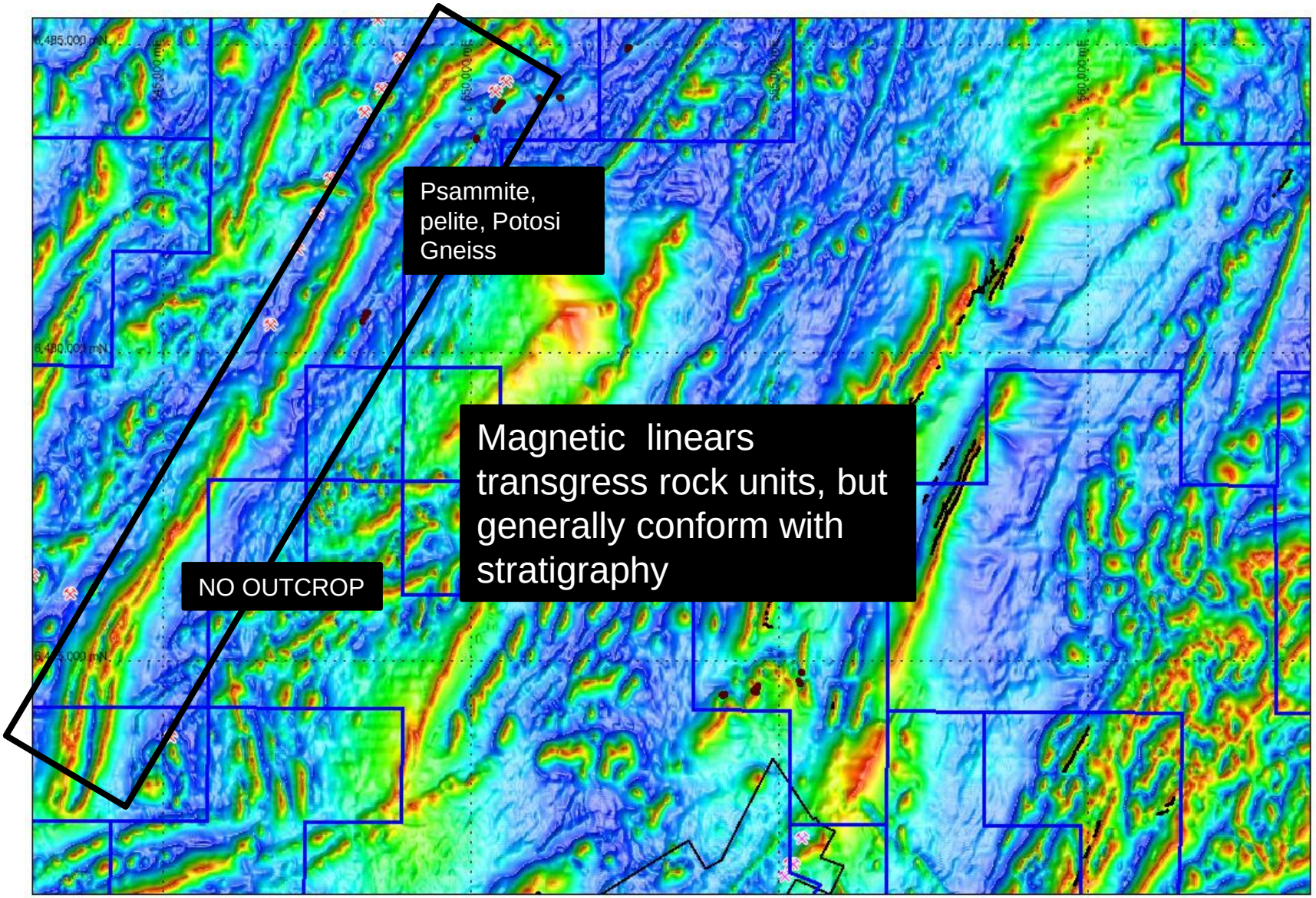
- BIFs in close proximity to ore; exhalative
- Curvilinear magnetic ridges represent disseminated magnetite formed also in exhalative setting.

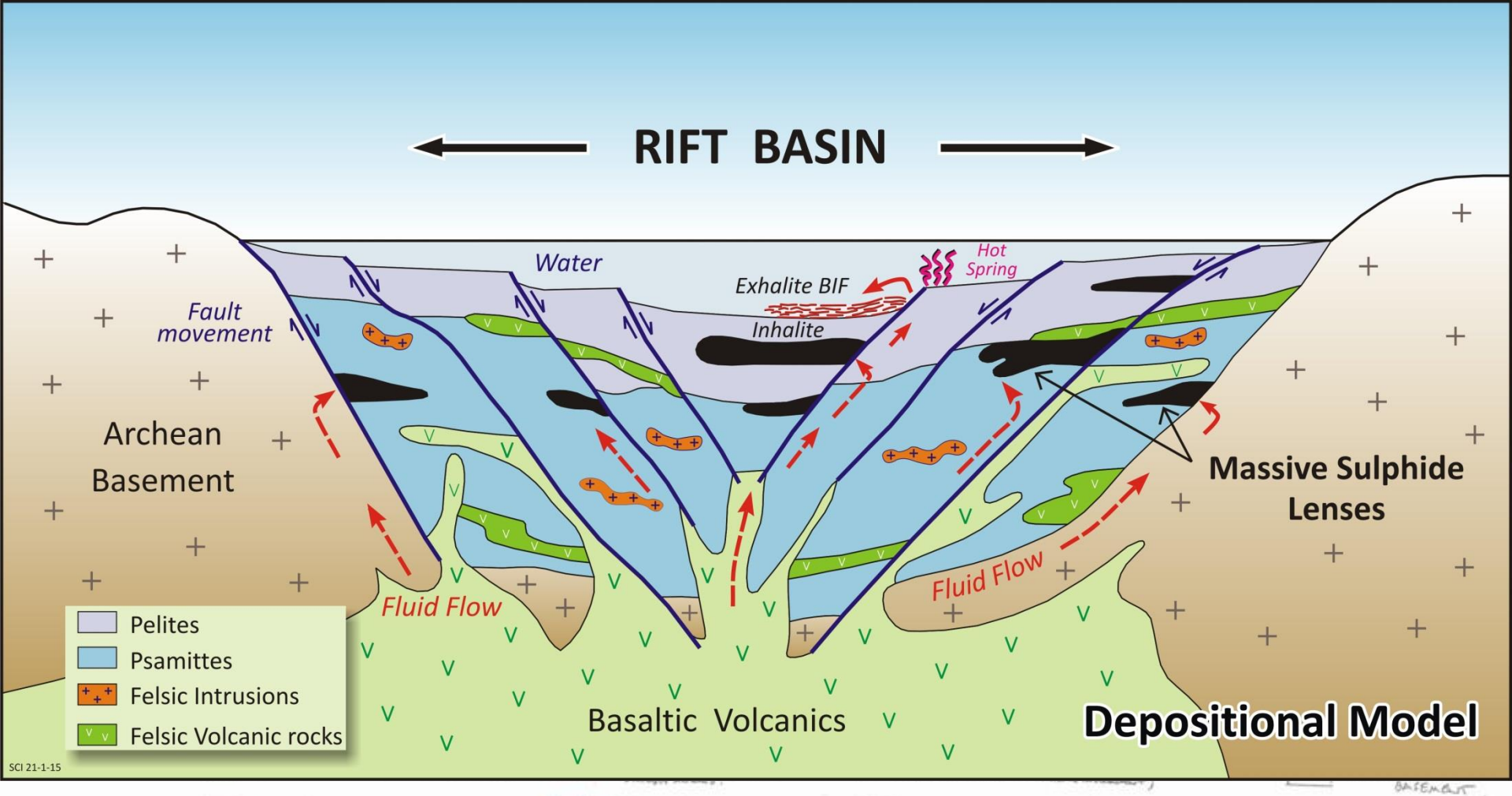




Stratigraphic Relationships of BIF and Ore

Modified after Haydon and McConachy (1987)


Psammite, pelite, Potosi Gneiss
Magnetic linears transgress rock units, but generally conform with stratigraphy
NO OUTCROP



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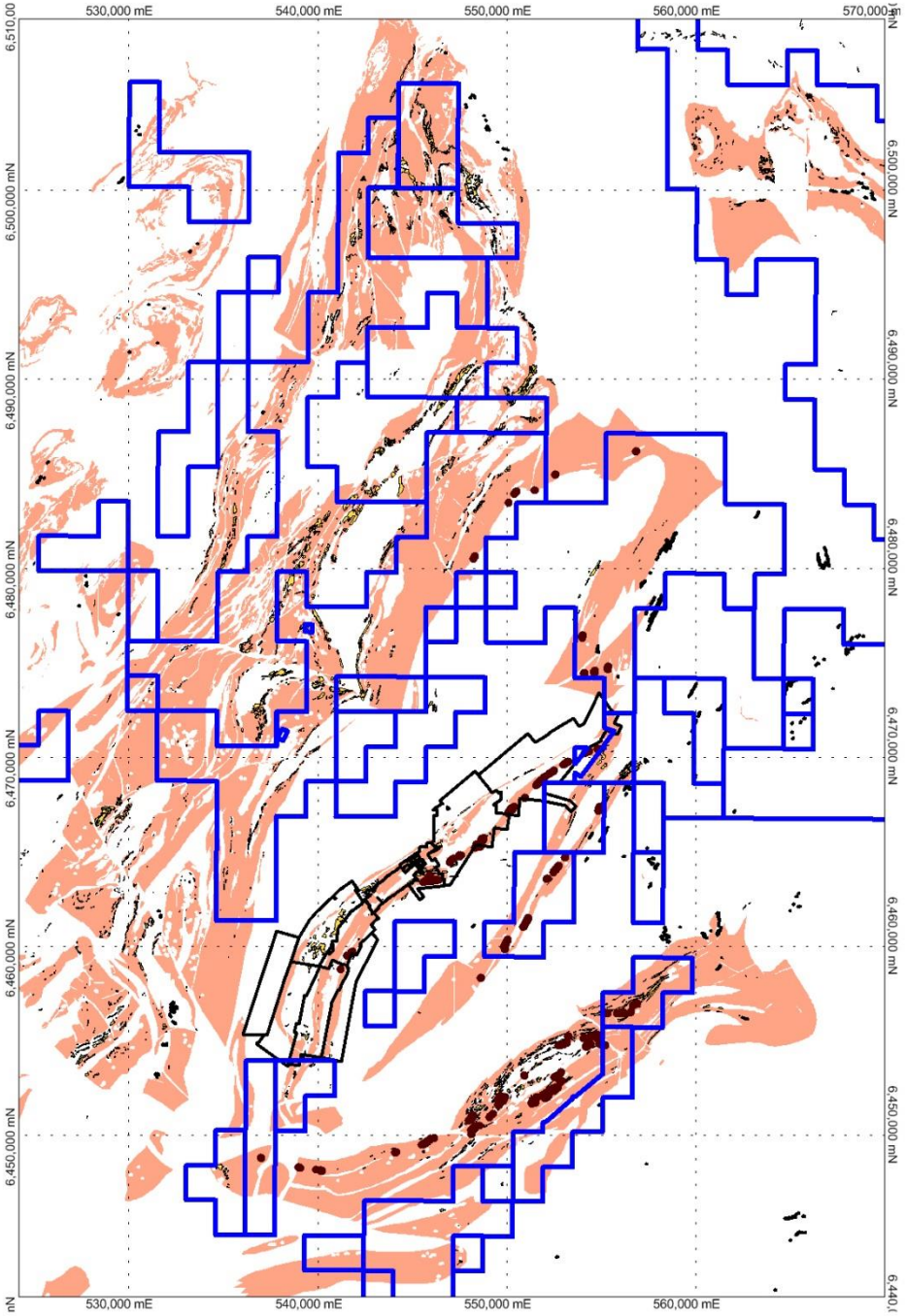
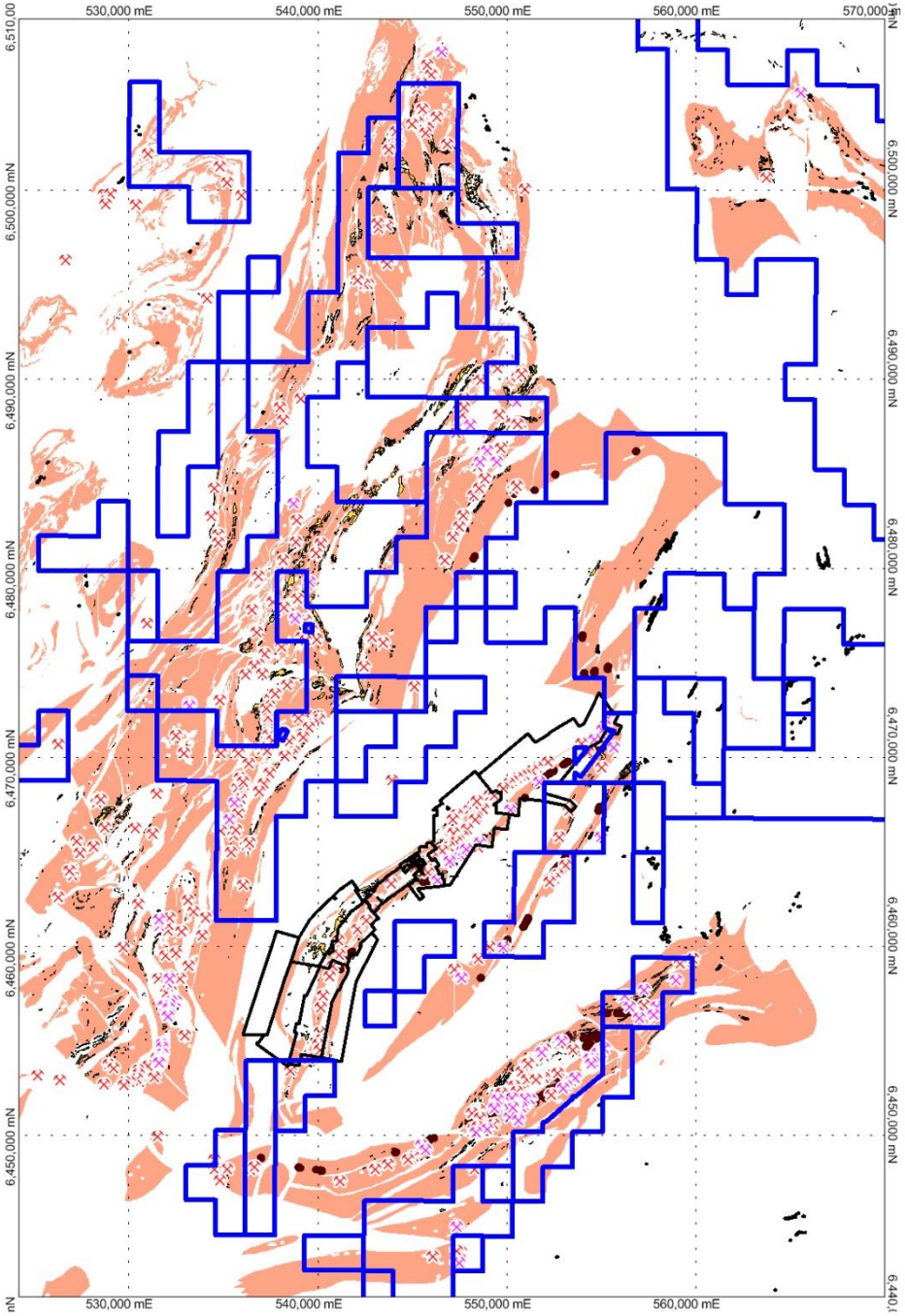


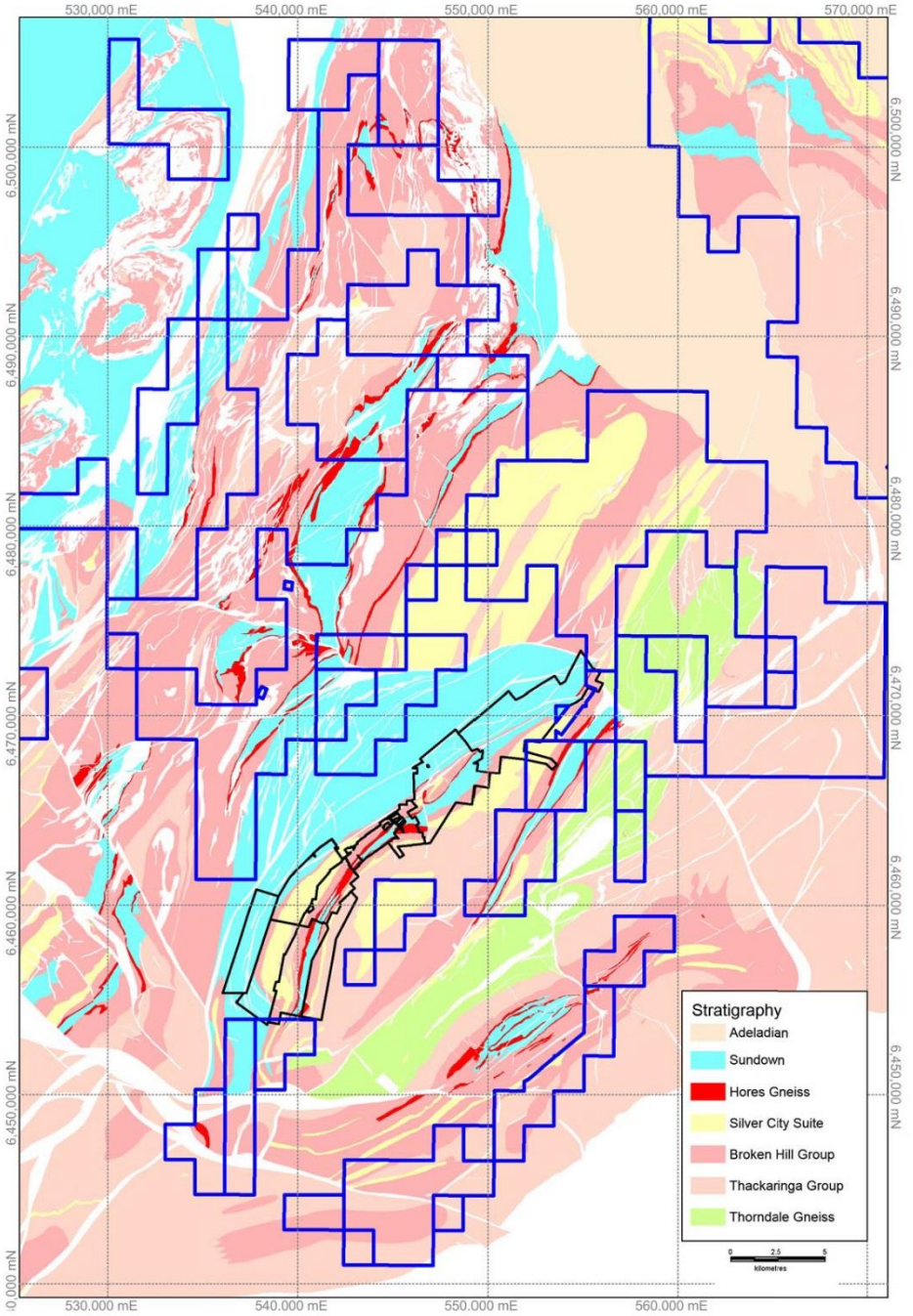
Distribution of gahnite, garnets, BIF and qtz-mt



Distribution of gahnite, garnets, BIF and qtz-mt

And BHts

Garnet quartzite, blue quartz-gahnite-garnet rocks, plumbian orthoclase



GEOLOGY

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- Mineralisation 1685-1670Ma

- At least four deformations, two thermal events; rocks reach upper amphibolite-granulite metamorphic grade locally. Need to filter out the effects of the Olarian Orogeny

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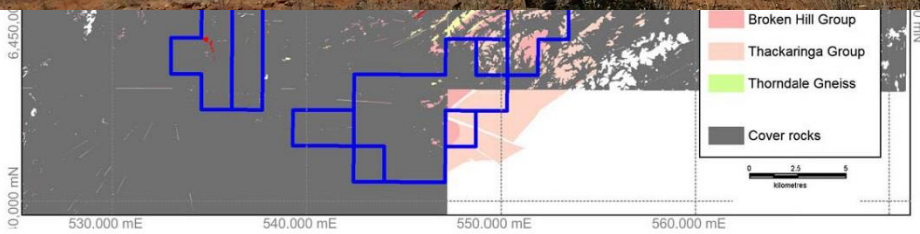
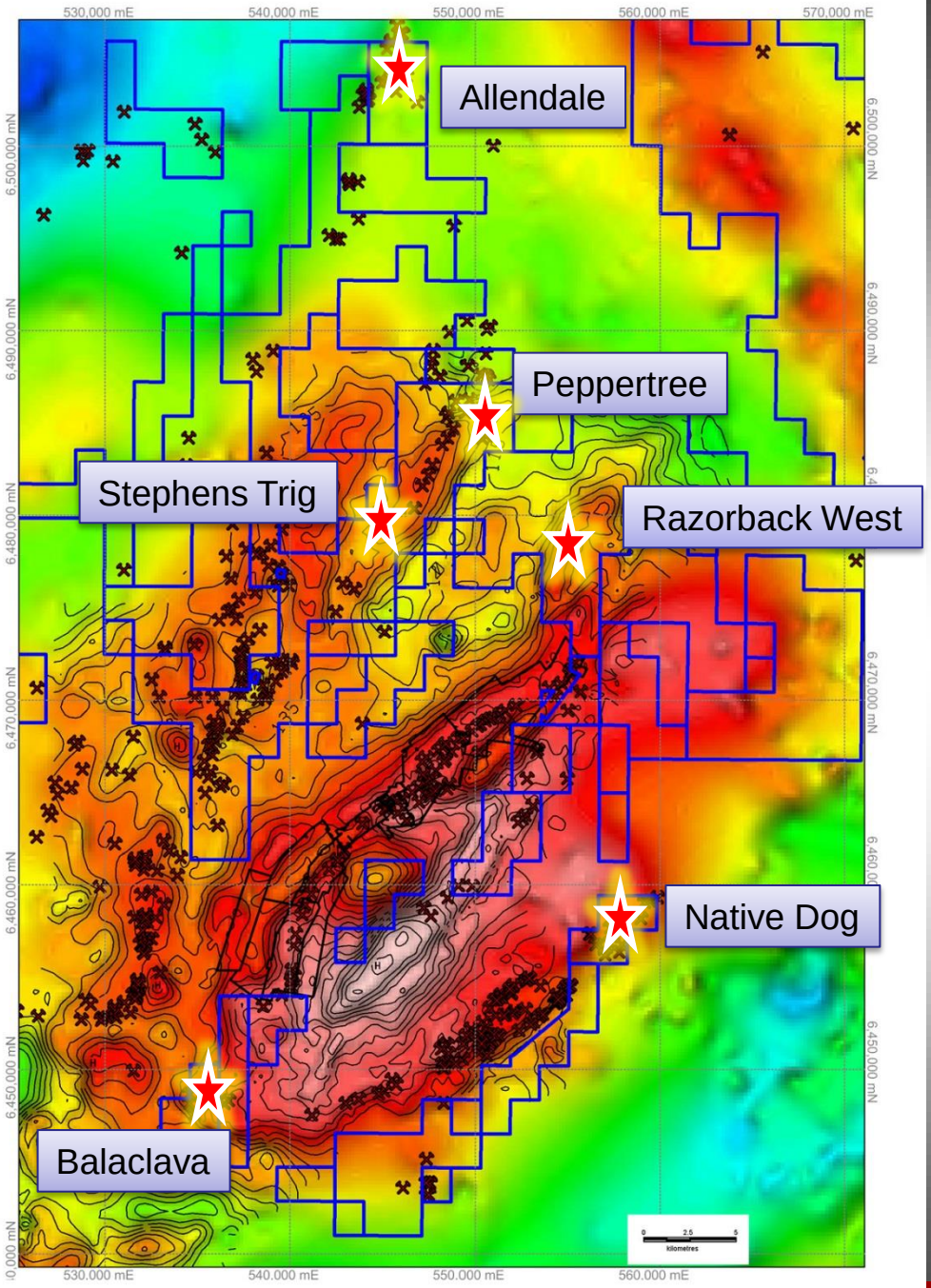
2. Broken Hill Group: host to ore especially in upper parts.
3. Silver City Suite: granitic intrusions. Silver King and Parnell metadolerites introduced as sills or volcanic rocks penecontemporaneous with ore. Important source of sulphur.
4. Sundown Group: a cap rock shows waning evidence of hydrothermal activity.

COVER


530,000 mE
540,000 mE
550,000 mE
560,000 mE
570,000 mE


Broken Hill Group
Thackaringa Group
Thorndale Gneiss
Cover rocks
0
2.5
5
kilometres
530.000 mE
540.000 mE
550.000 mE
560.000 mE

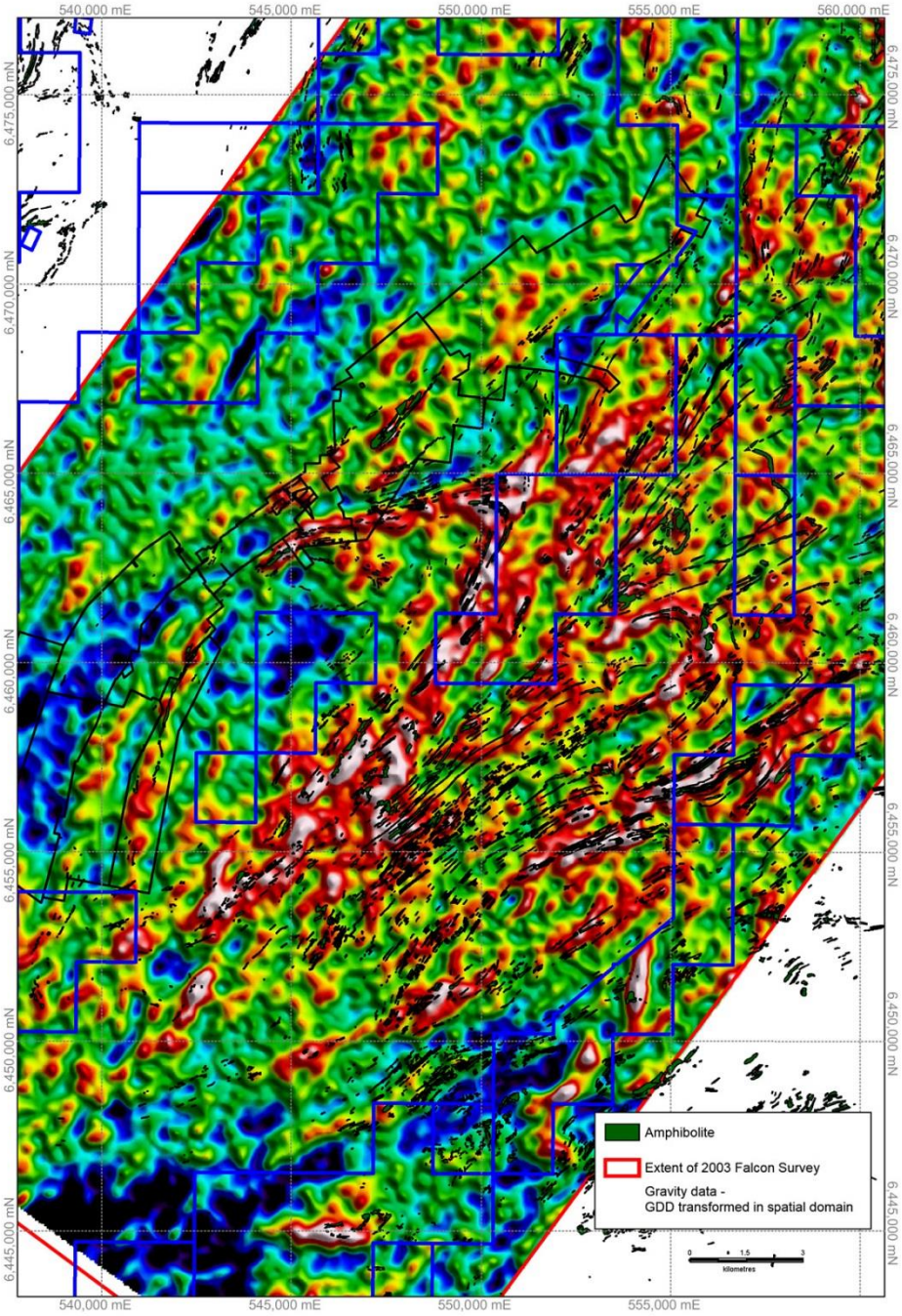


GRAVITY

- Spatial relationship between BHts and gravity ridges
- To date no clear relationship between ore and gravity.
- Ribbon-like plunging nature of ore difficult to resolve with gravity.
- "*Theoretical studies of Falcon gravity gradiometry acknowledge that the survey would have seen a positive anomaly over the intact Broken Hill orebody but that it would have been indistinguishable from other anomalies cause by other geological features*"
- Amphibolites

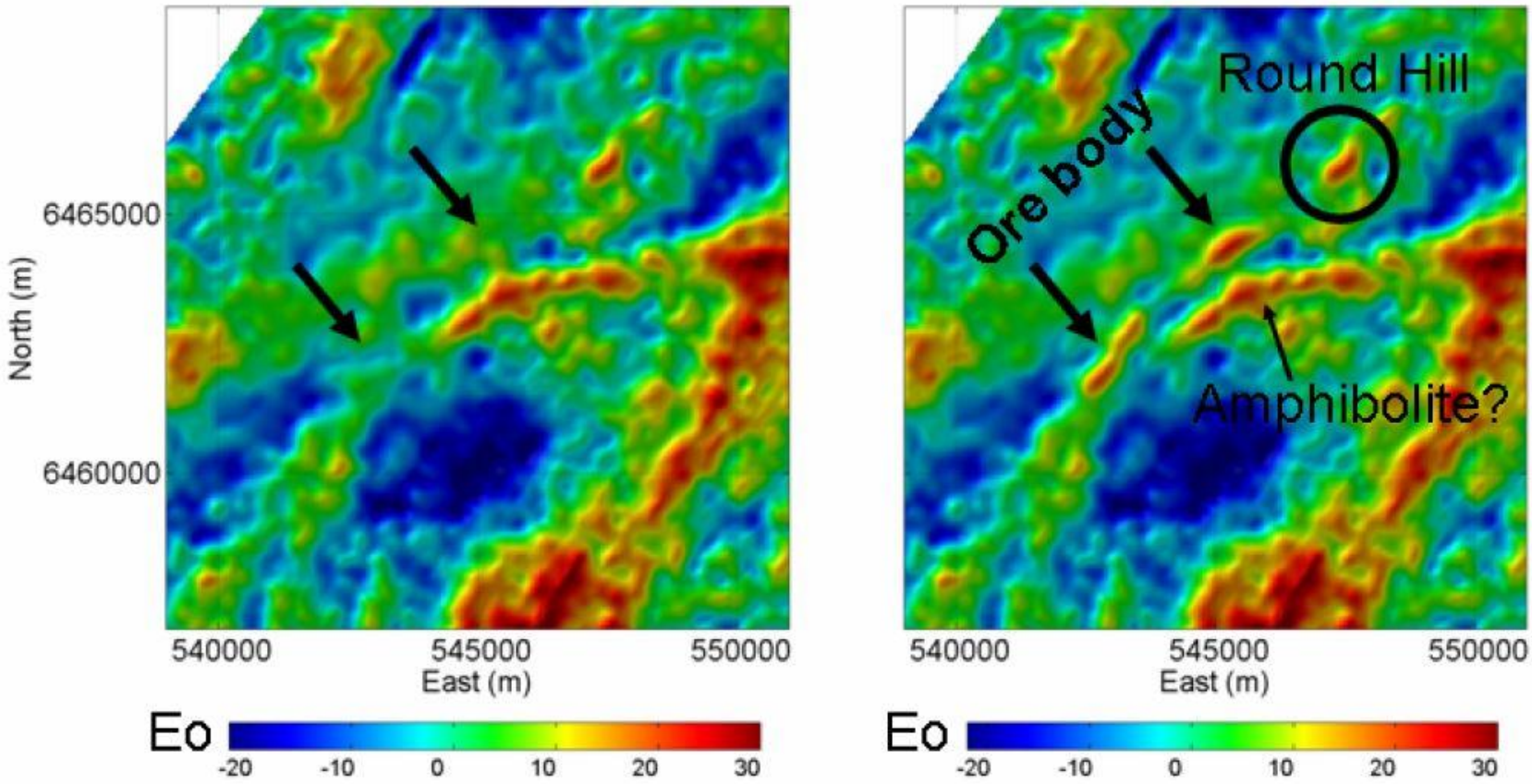
FALCON GRAVITY GRADIOMETRY

- Relationship between gravity gradiometry and amphibolites



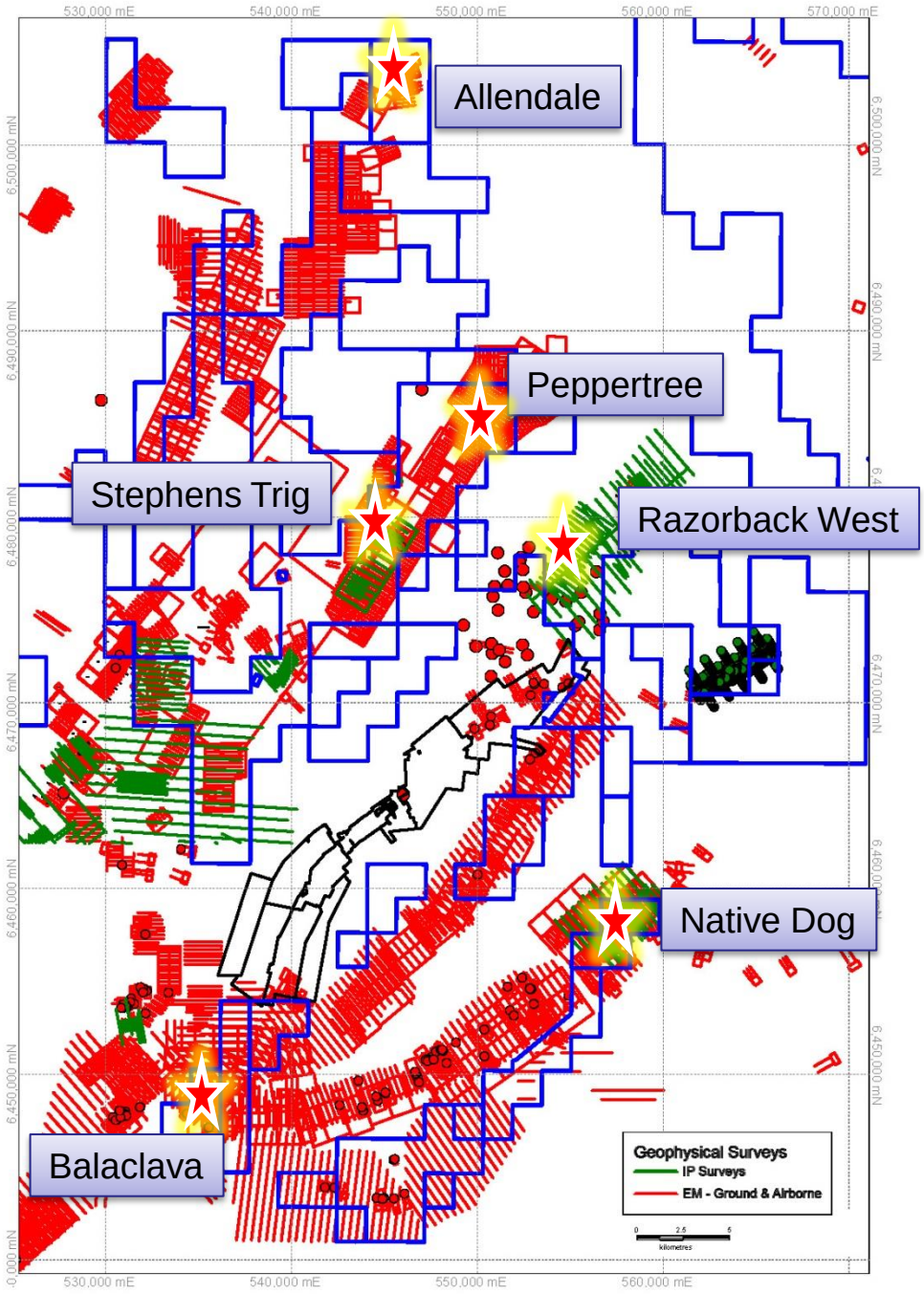
Observed Gdd

Restored to pre-mining state



Equivalent source Gdd, 2.75 g/cc terrain density, ~600m minimum wavelength

Lane 2003



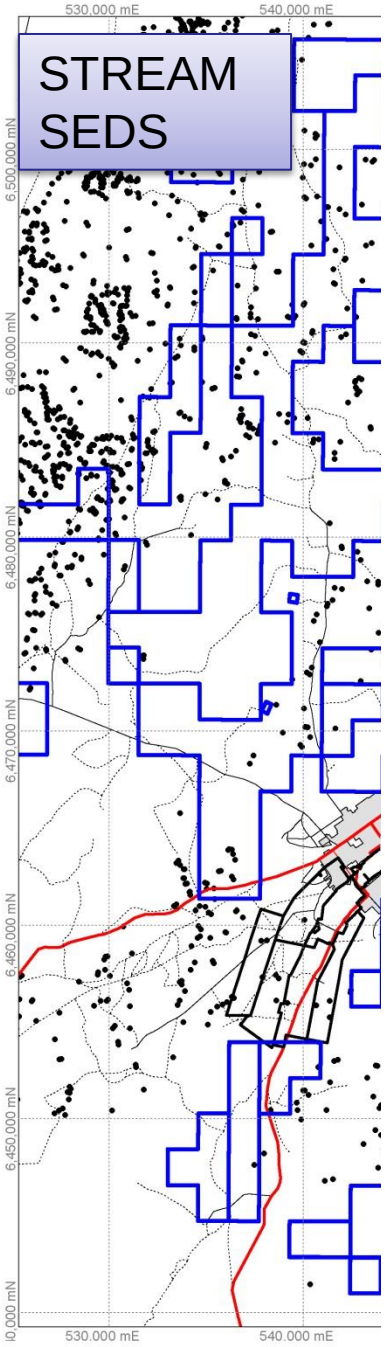
ELECTRICAL GEOPHYSICS

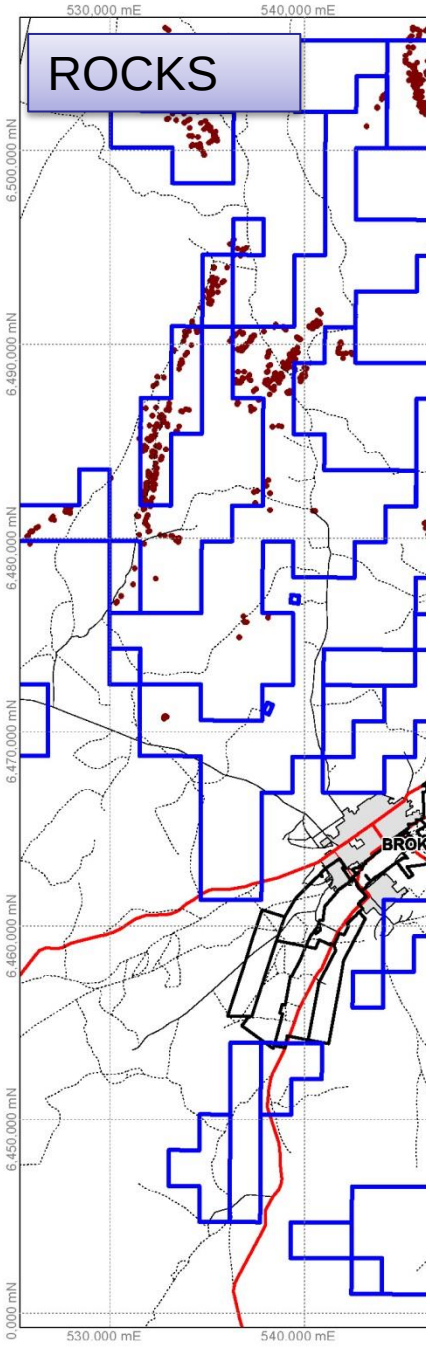
- Review suggests IP is a good technique for mapping out prospective packages, but not a targeting tool. (Allendale, Native Dog, Razorback West)

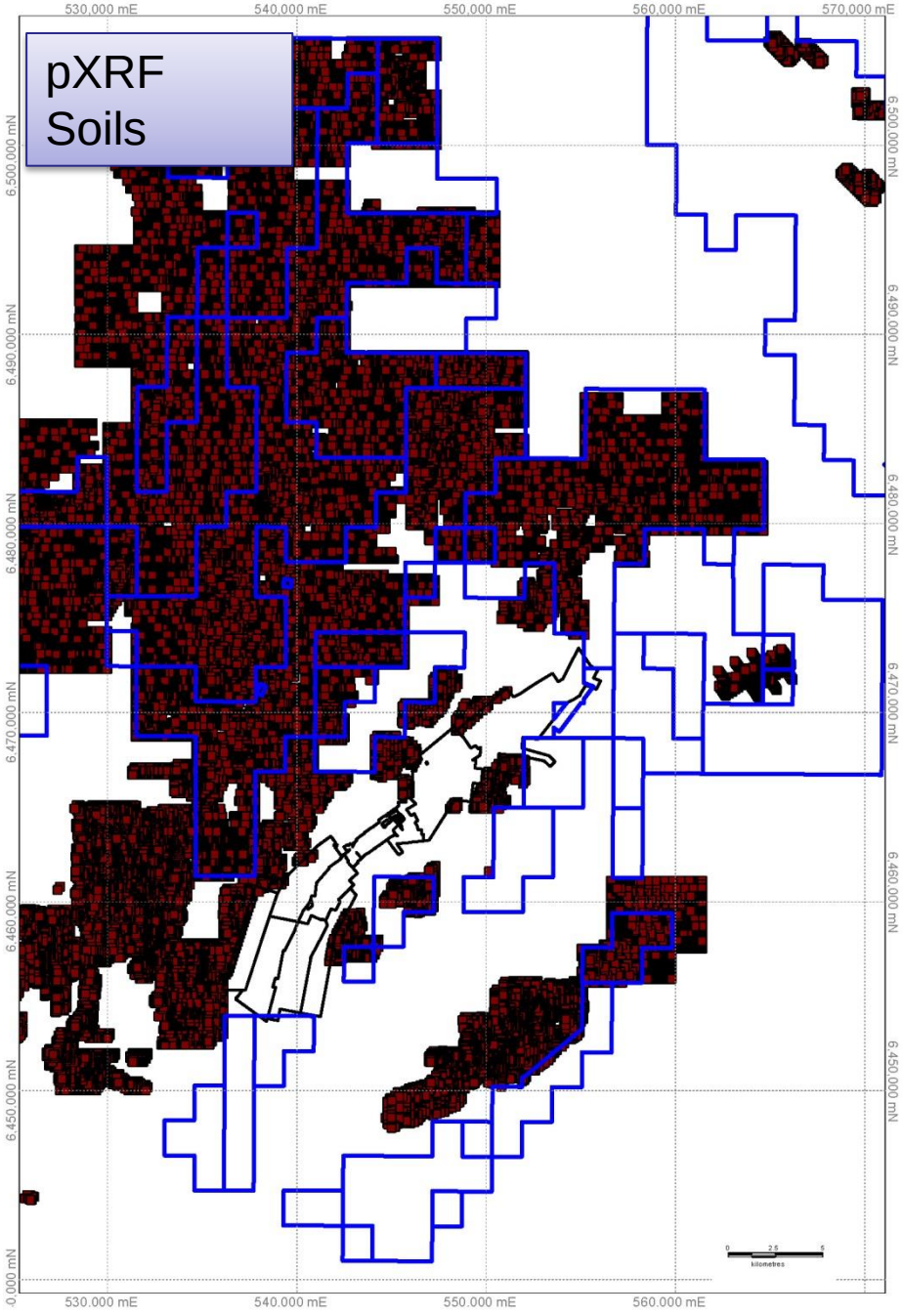
- EM largely thought to be ineffective:
  1. Occurrences of stratabound py-po.
  2. Graphitic and pyritic shears
  3. Saline water in streambeds and shear zones
  4. Local supergene pyrite
  5. Non conductive sphalerite-rich ores
  6. Ribbon-shaped, pencil-like orebodies
  7. Old EM technology and inadequate line spacings.

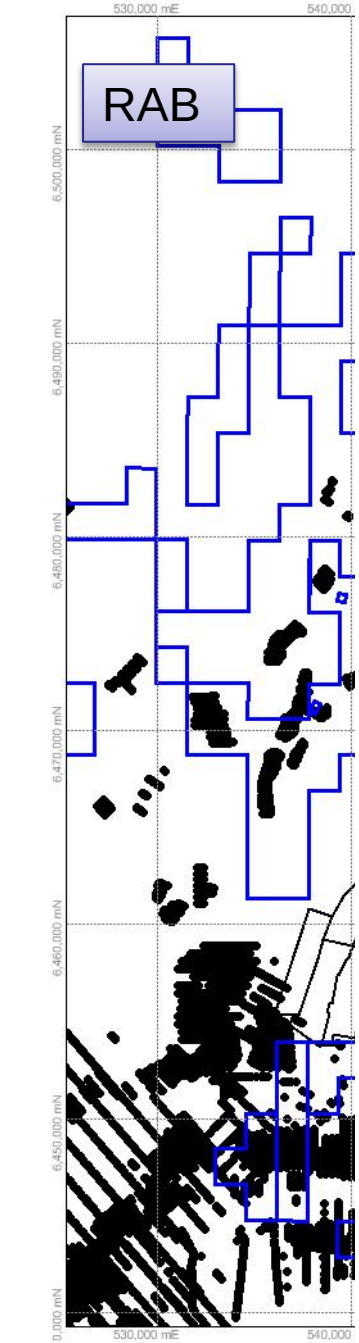
- However:
  1. Flying Doctor BHt highly conductive
  2. Potosi applied potential techniques effective, Mise-a-la-masse
  3. DHMMR a possibility
  4. Perilya VTEM targets hit sulphides

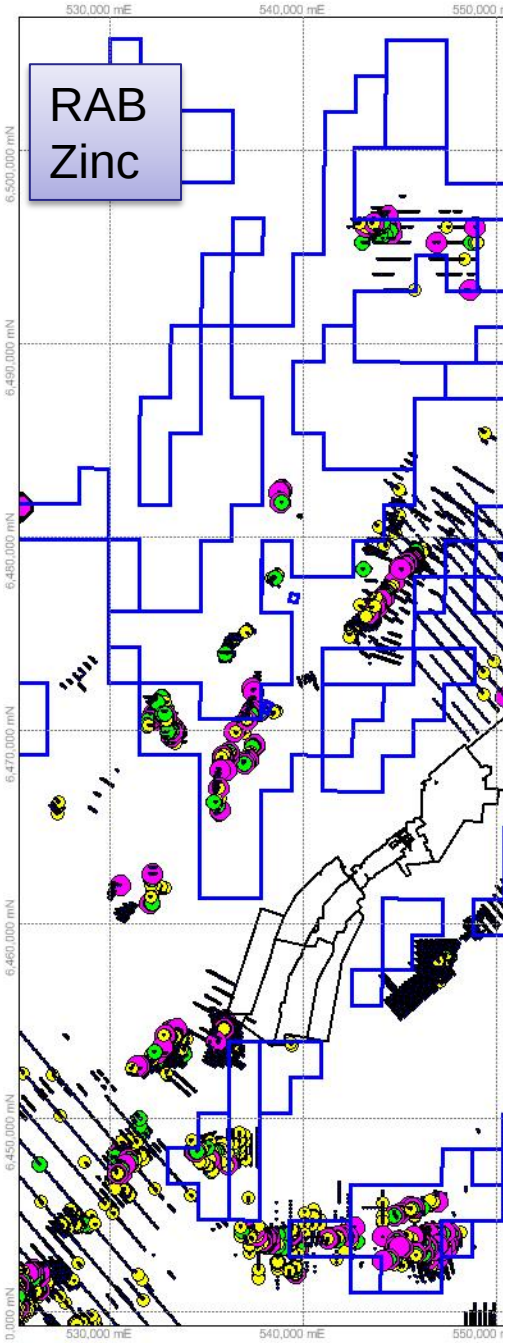
- **So we have not written-off EM as a tool; currently reviewing historic interpretations**

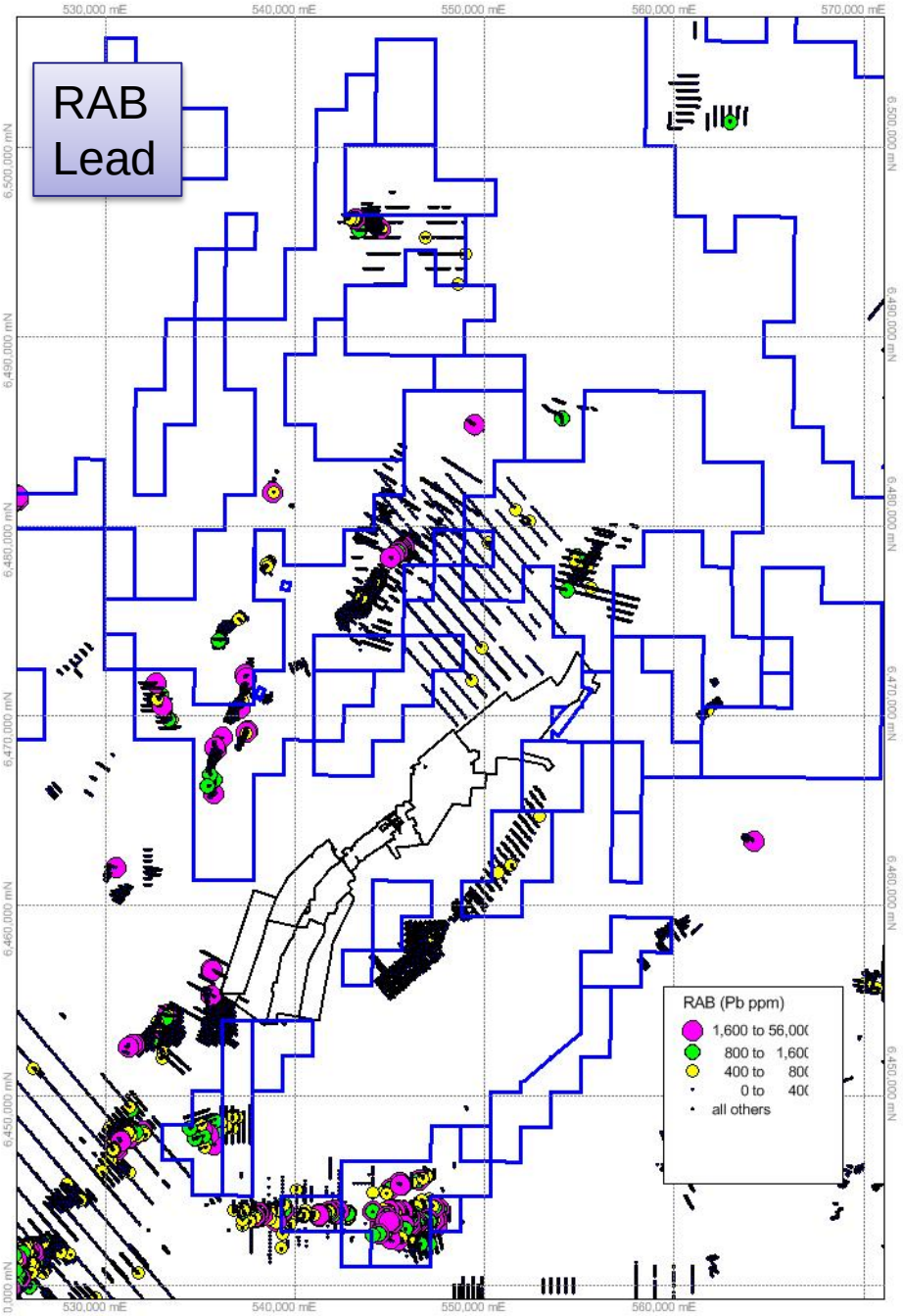

STREAM
SEDS
530,000 mE
540,000 mE
530.000 mE
540.000 mE

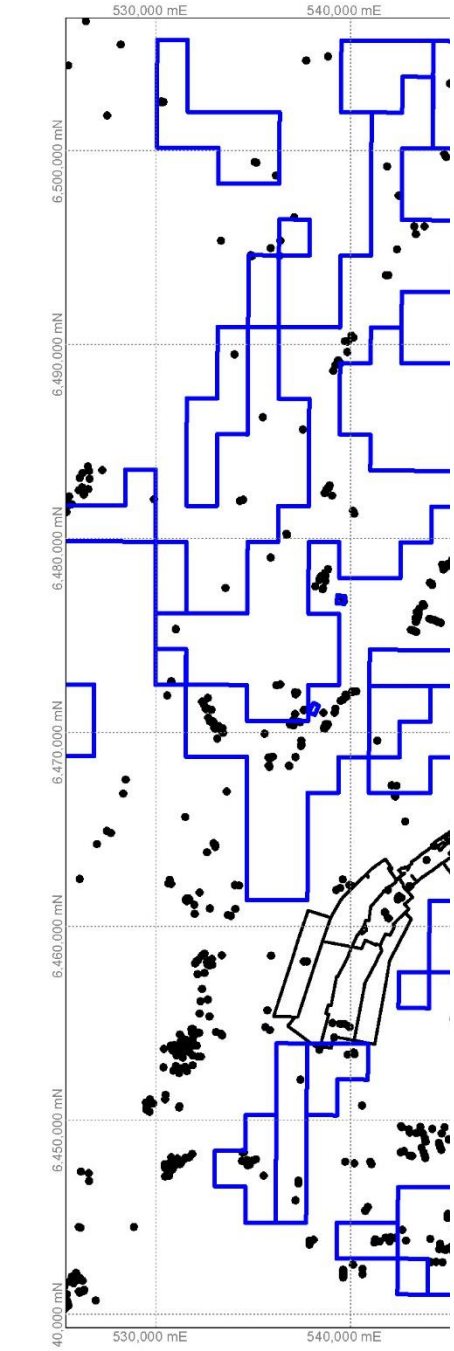

ROCKS
530,000 mE
540,000 mE
530.000 mE
540.000 mE

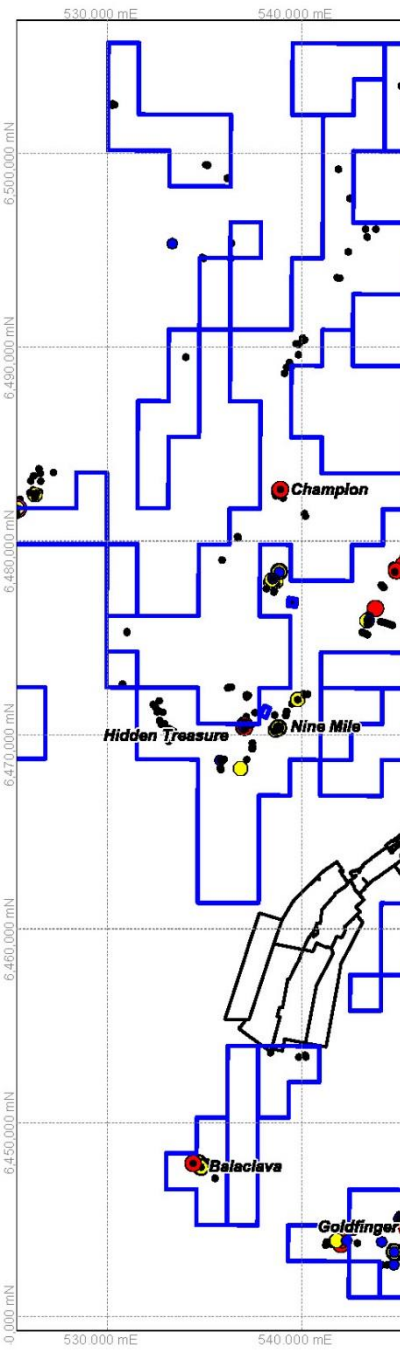

pXRF
Soils
530,000 mE
540,000 mE
550,000 mE
560,000 mE
570,000 mE
530.000 mE
540.000 mE
550.000 mE
560.000 mE

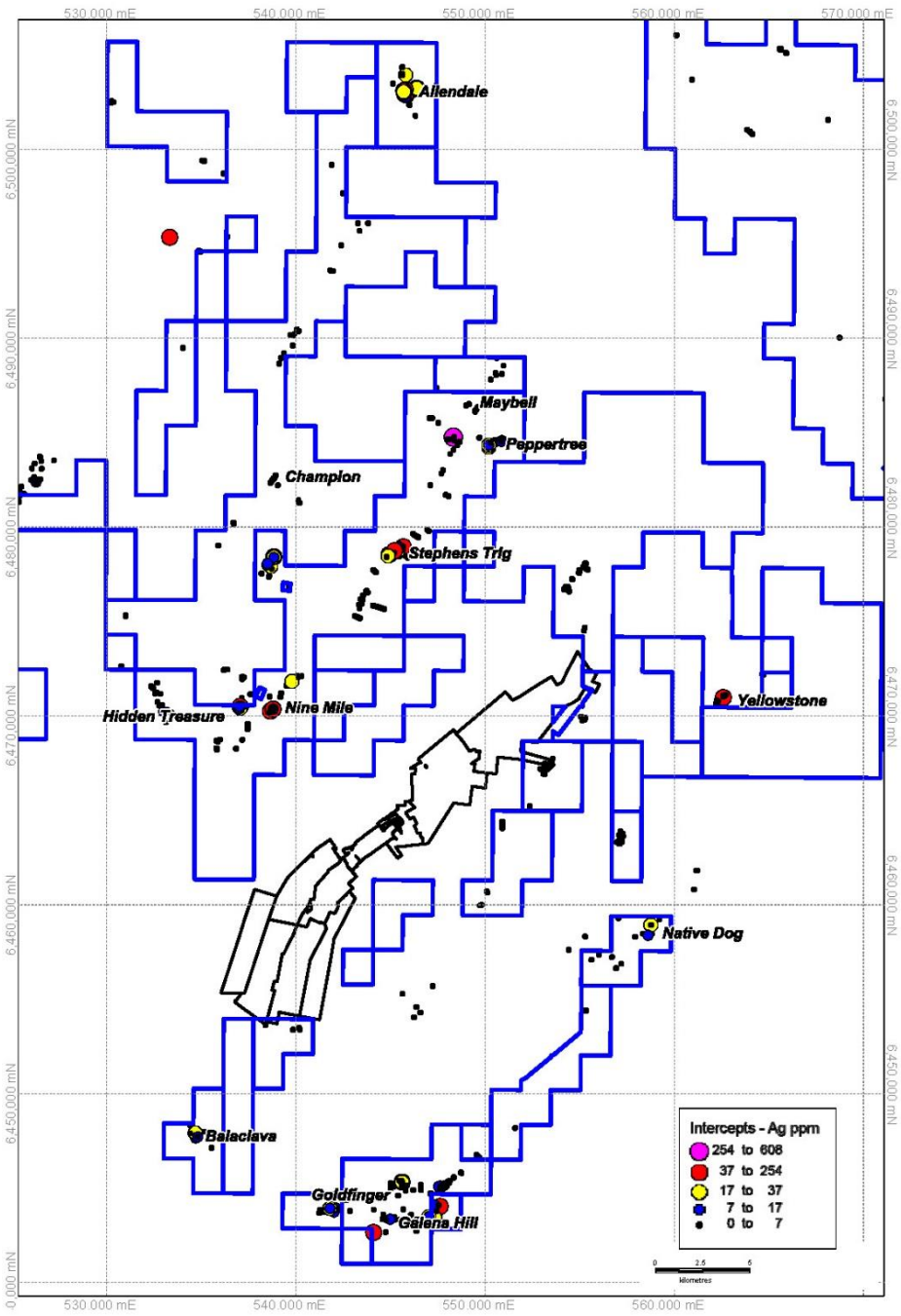

RAB
530,000 mE
540,000
6,500,000 mN
6,490,000 mN
6,480,000 mN
6,470,000 mN
6,460,000 mN
6,450,000 mN
0,000 mN

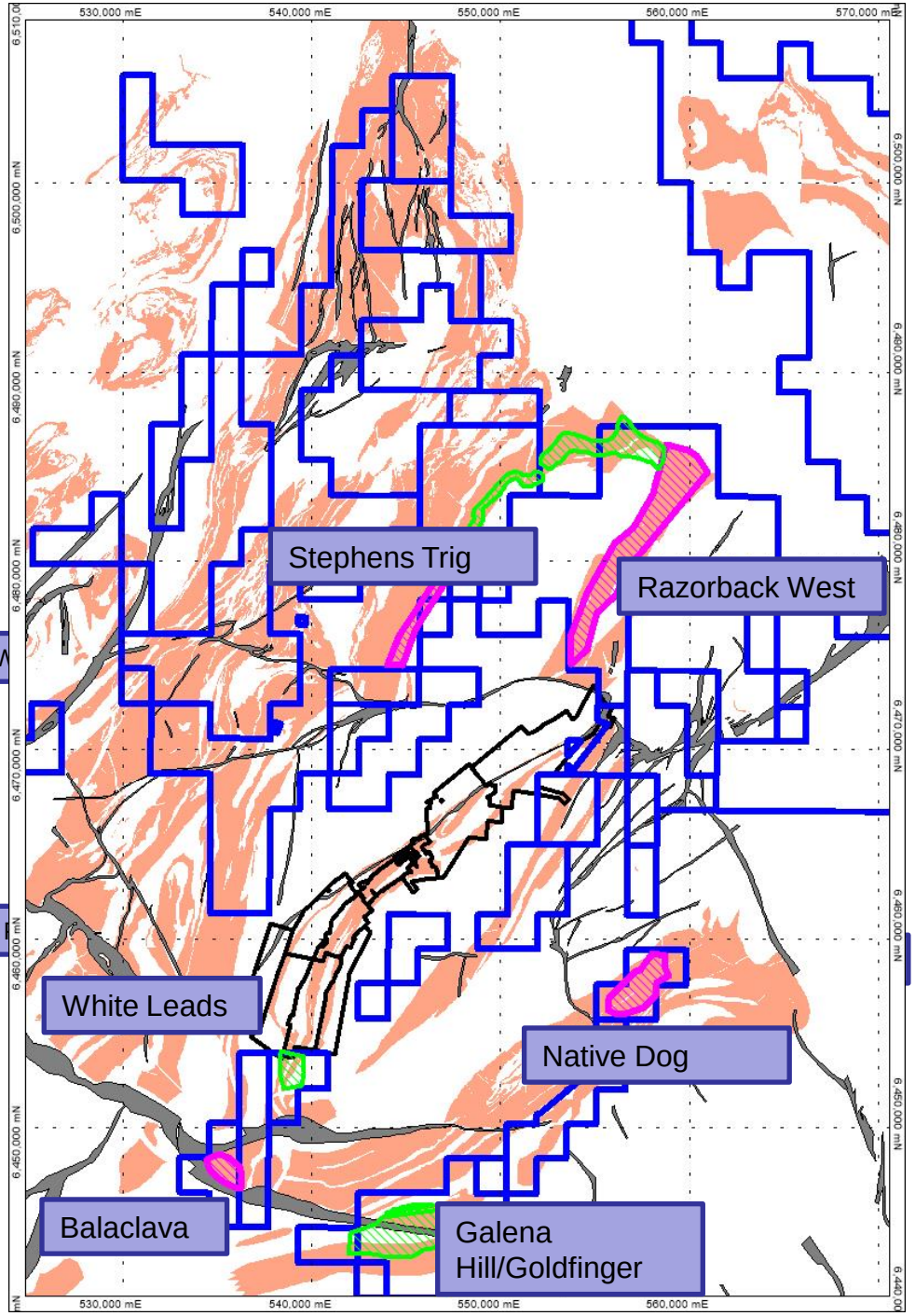

RAB
Zinc
530,000 mE
540,000 mE
550,000
6,500,000 mN
6,490,000 mN
6,480,000 mN
6,470,000 mN
6,460,000 mN
6,450,000 mN
0,000 mN


RAB
Lead
530,000 mE
540,000 mE
550,000 mE
560,000 mE
570,000 mE
6,500,000 mN
6,490,000 mN
6,480,000 mN
6,470,000 mN
6,460,000 mN
6,450,000 mN
0,000 mN
RAB (Pb ppm)
1,600 to 56,00(
800 to 1,60(
400 to 80(
0 to 40(
all others


530,000 mE
540,000 mE
6,500,000 mN
6,490,000 mN
6,480,000 mN
6,470,000 mN
6,460,000 mN
6,450,000 mN
6,440,000 mN


530,000 mE
540,000 mE
6,500,000 mN
6,490,000 mN
6,480,000 mN
6,470,000 mN
6,460,000 mN
6,450,000 mN
6,440,000 mN
Champion
Hidden Treasure
Nine Mile
Balaclava
Goldfinger


530,000 mE
540,000 mE
550,000 mE
560,000 mE
570,000 mE
6,500,000 mN
6,490,000 mN
6,480,000 mN
6,470,000 mN
6,460,000 mN
6,450,000 mN
6,440,000 mN
Allendale
Maybell
Peppertree
Champion
Stephens Trig
Hidden Treasure
Nine Mile
Yellowstone
Native Dog
Balaclava
Goldfinger
Galena Hill
Intercepts - Ag ppm
254 to 608
37 to 254
17 to 37
7 to 17
0 to 7
0
2.5
5
kilometres



- Combination of geology and geochemistry; RAB, soil, drilling
- Focus on specific zones
- And specific prospects

PROSPECTIVITY RANKING

Highest Rank

Broken Hill Line-of-Lode *
Potosi *

Stephens Trig
Pinnacles *
Razorback West
Native Dog
Balaclava
Group 1

Peppertree
Mt Brown
Speedwell
Group 2

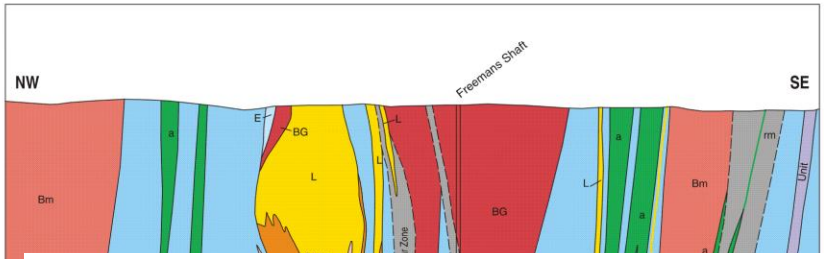
Allendale
Parnell
Southern Cross South
Yalcowinna West
Group 3

Lowest Rank

* Not SCI Prospect

“BUT THE DEVIL IS IN THE DETAIL”

Broken Hill Cross section



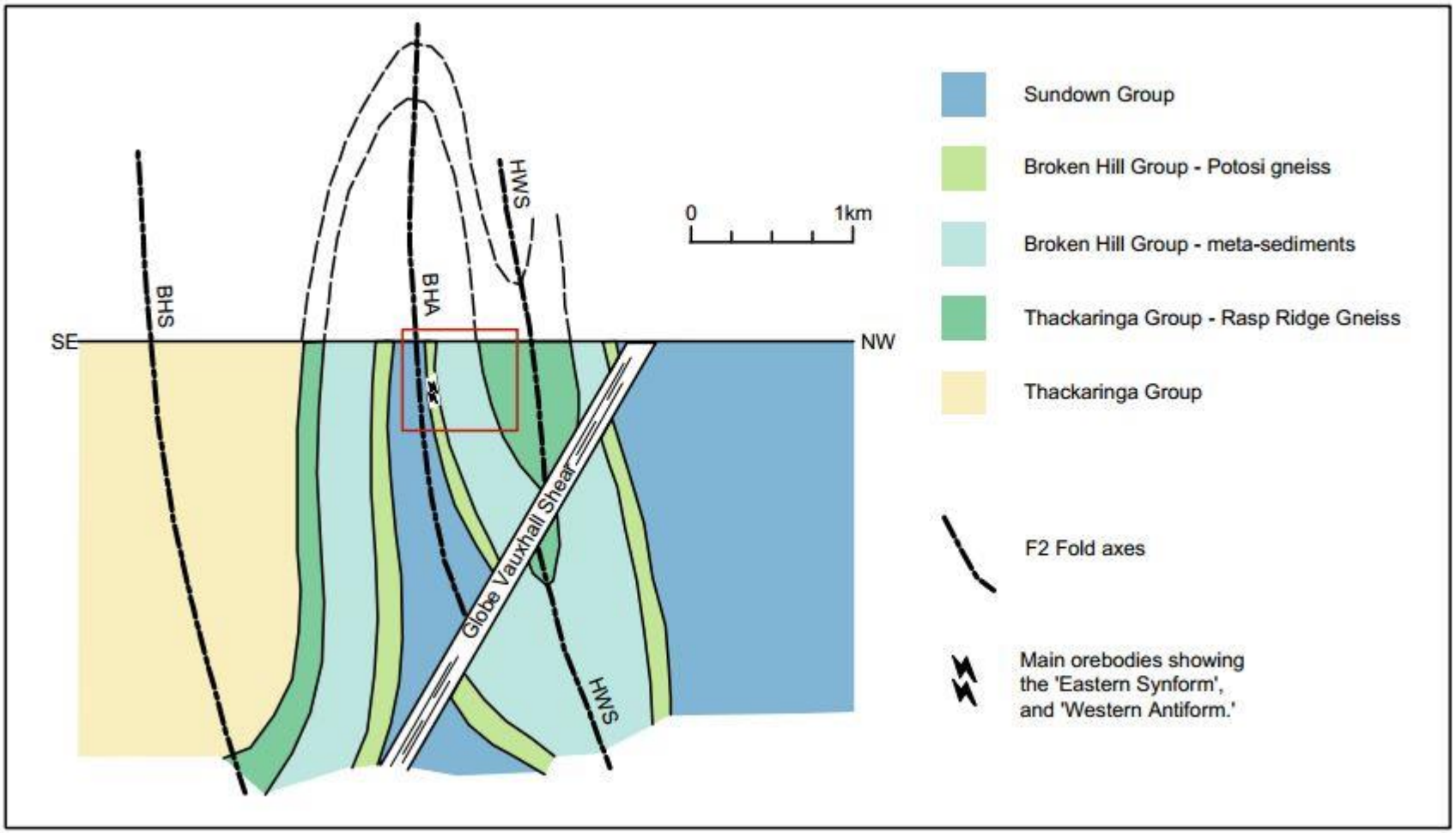
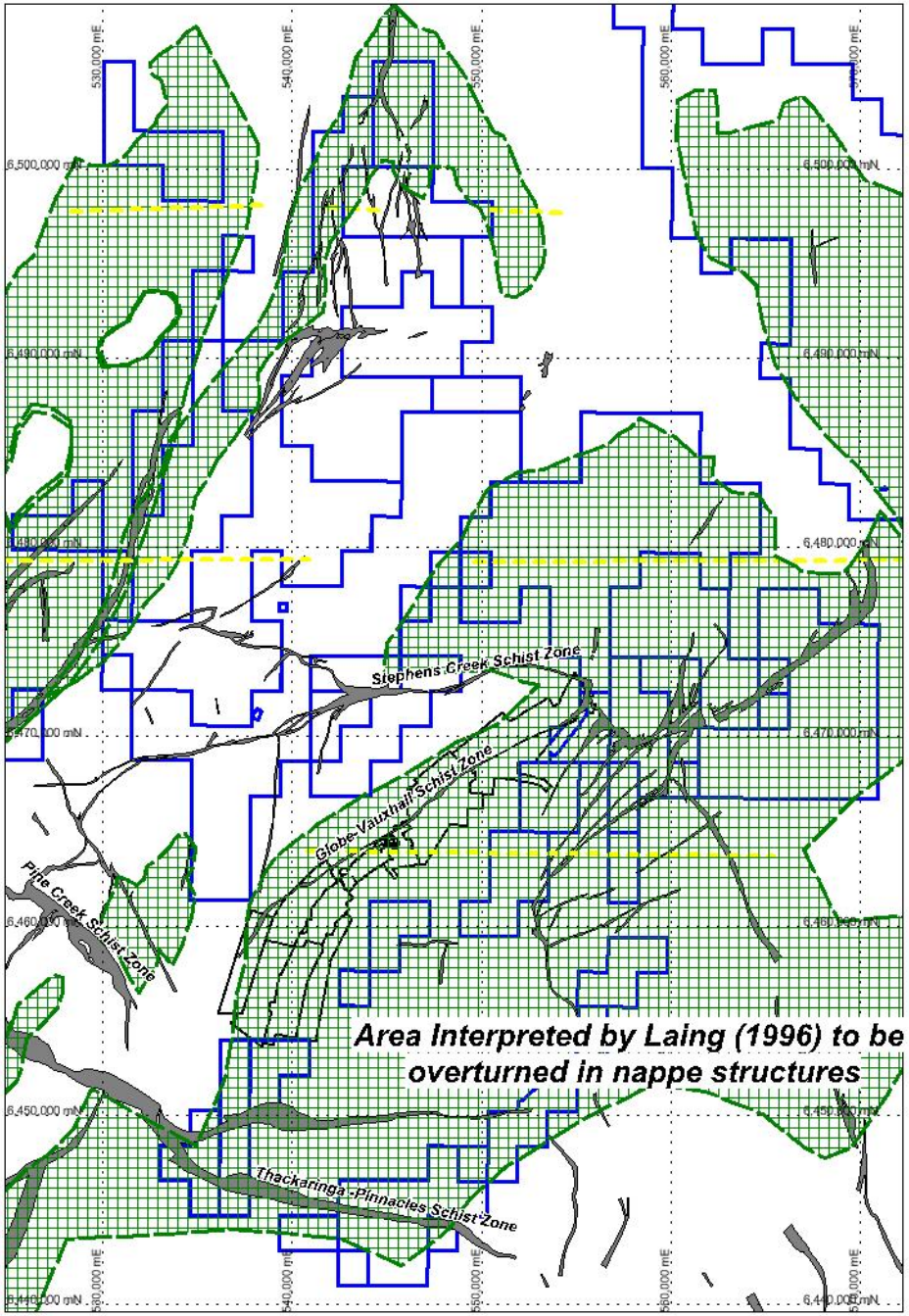
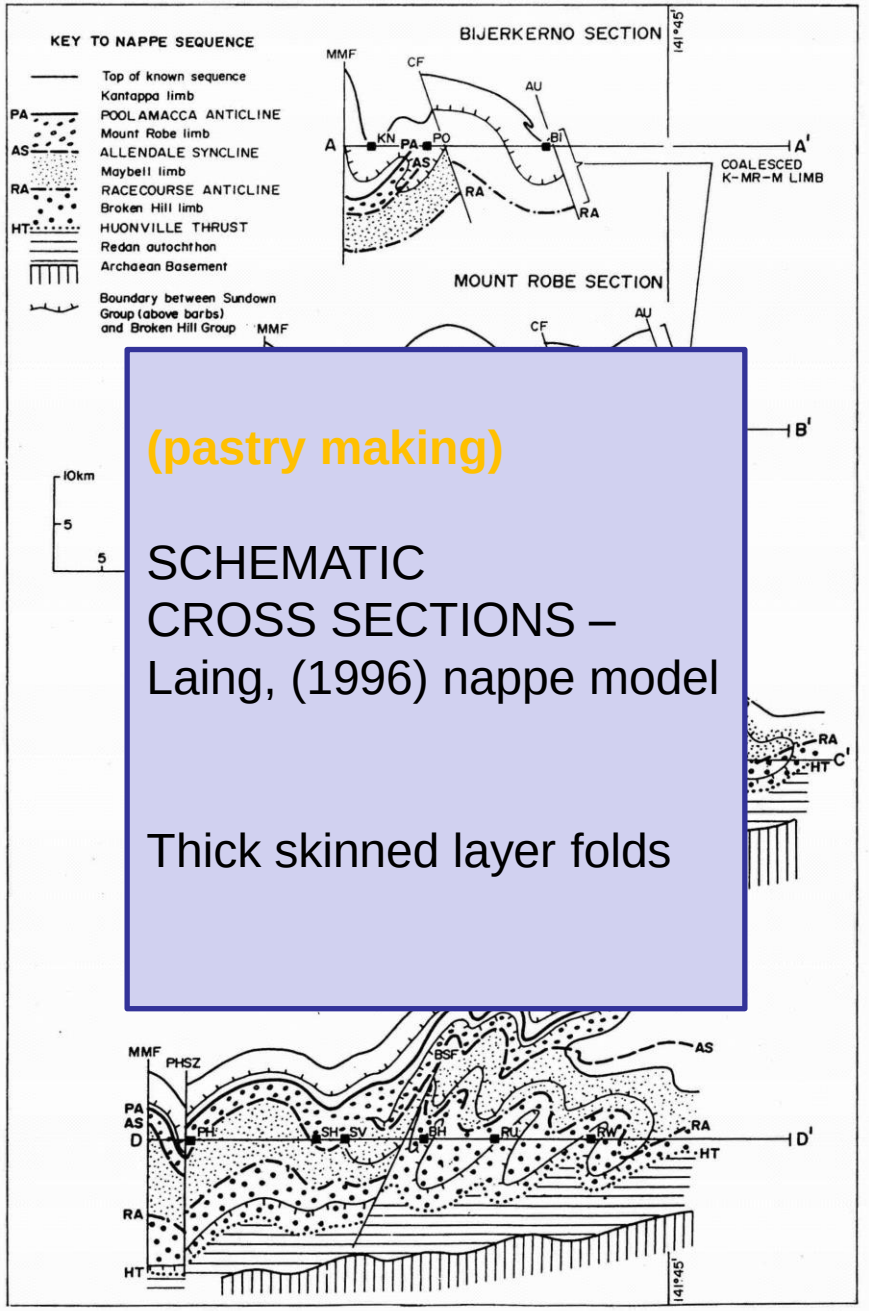


Figure 1: Cross-section of the southwestern part of the Broken Hill orebody, through the Zinc Corporation main shaft. Based on interpretations by Haydon & McConachy (1987), W.R. Leyh (unpublished diagram), and G. Reed (unpublished data).

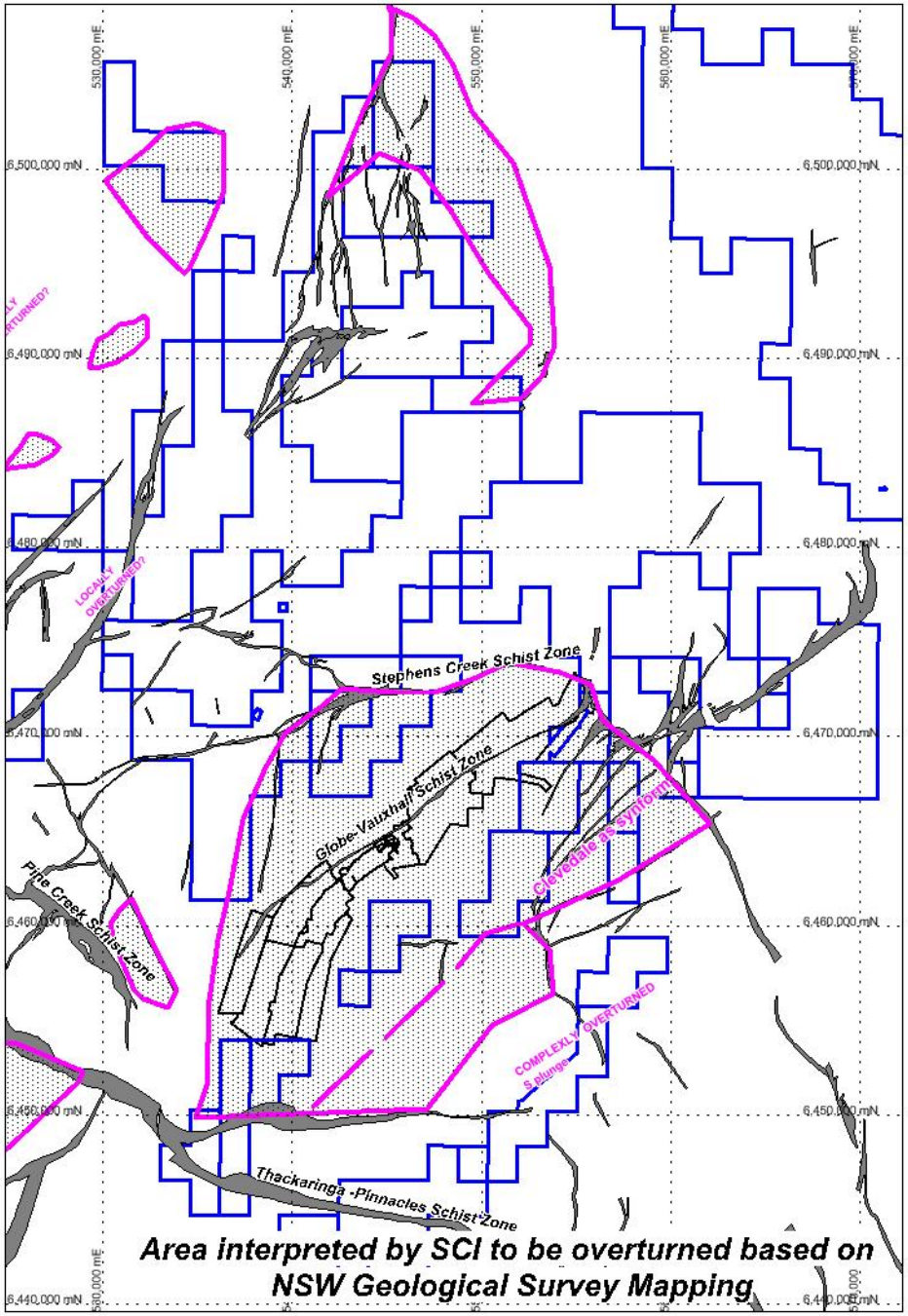




(pastry making)

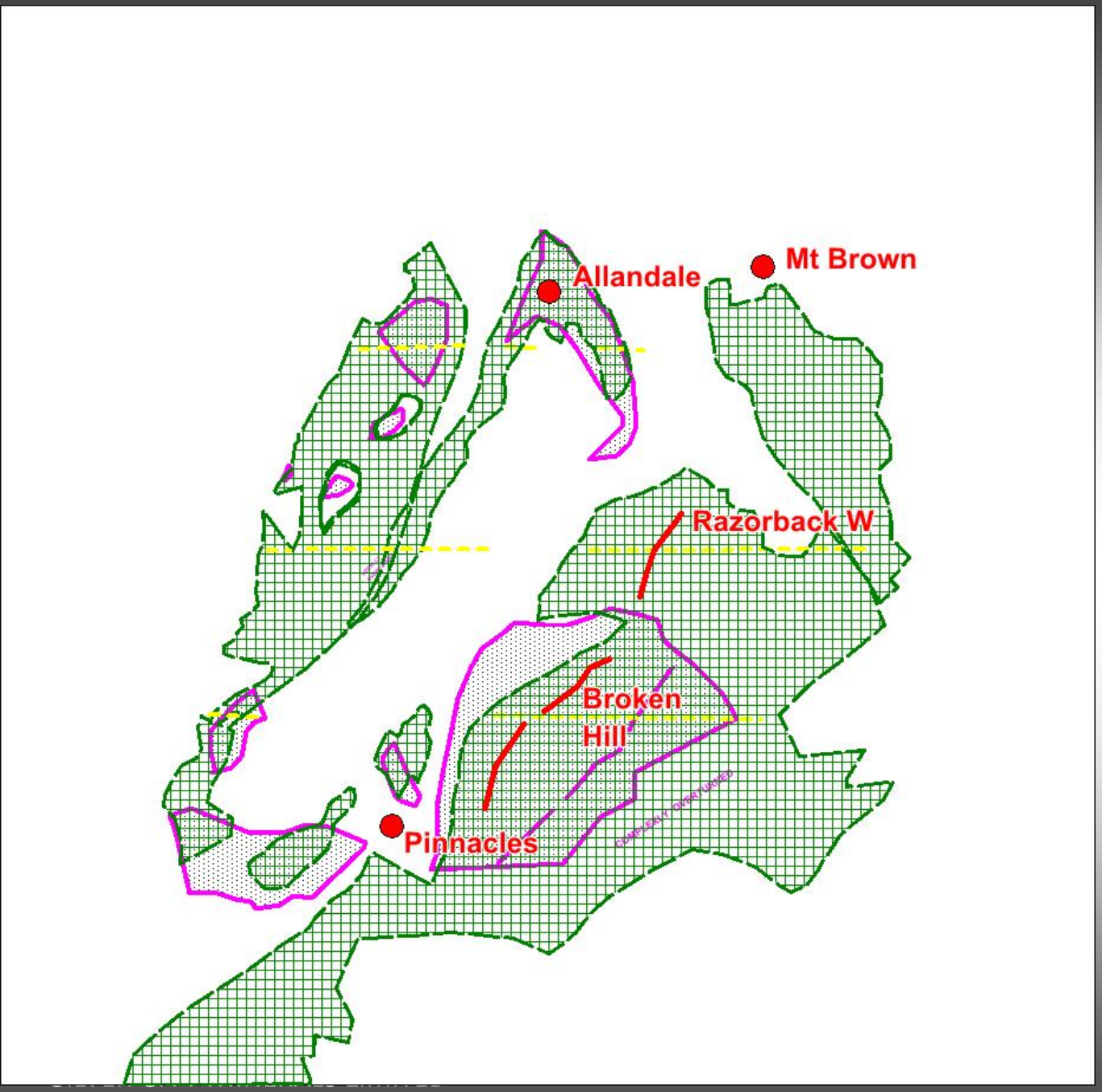
SCHEMATIC CROSS SECTIONS – Laing, (1996) nappe model

Thick skinned layer folds



What do we actually know?

1. Laing: Ore body and large areas of district overturned.
2. Webster : strong arguments to contrary
3. SCI Interp on basis if Geological Survey mapping suggests some is and some isn't



Domains that show overturned fold structures vs Laing overturned nappes

Less extensive,
But detected only if refolded

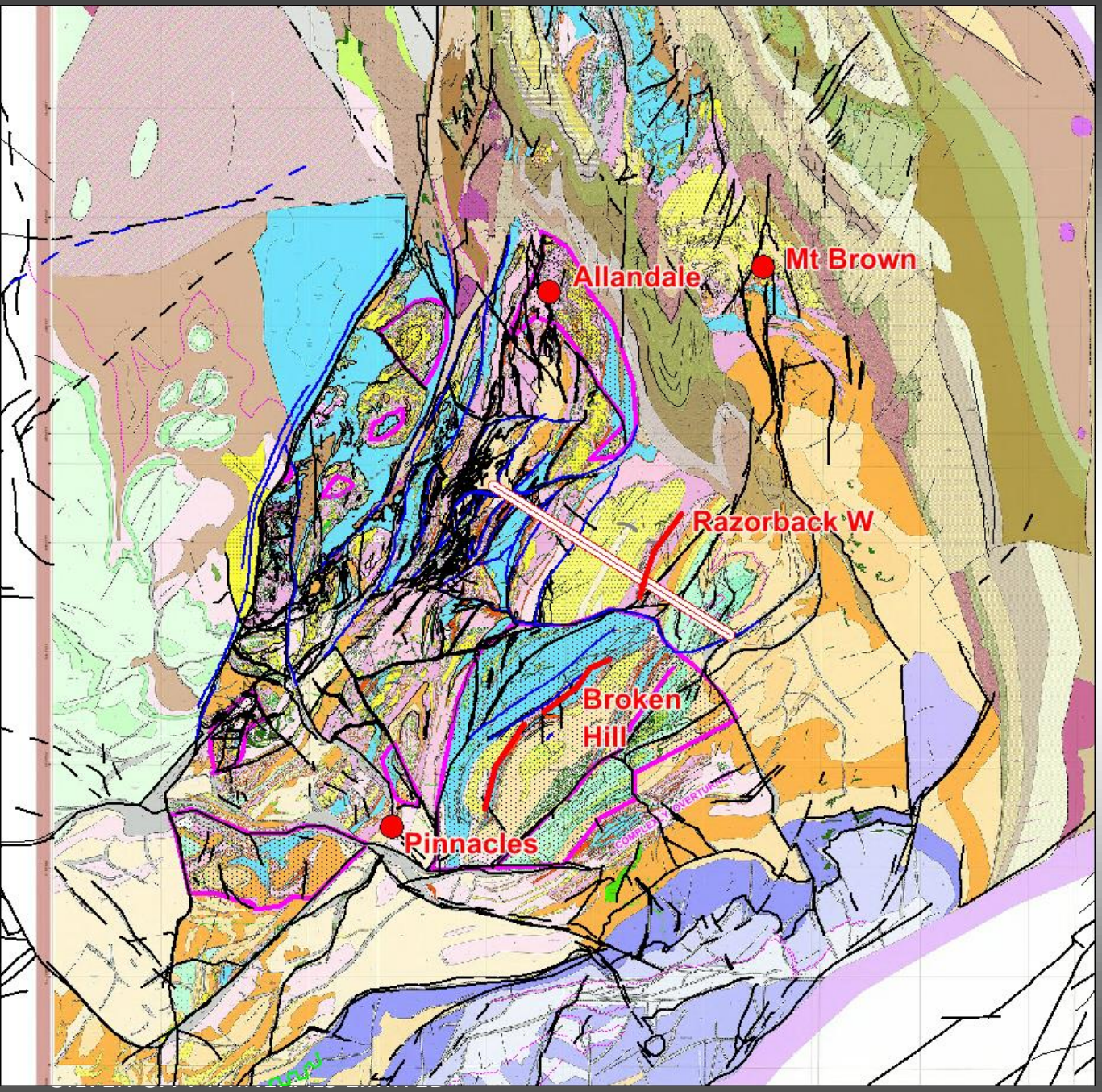
Razorback area seems UPRIGHT

SIGNIFICANCE OF FACING DOMAINS FOR EXPLORATION?

- High strain zones and complex folding near the transition from downward to upward facing sequences may be inherited from growth faults that originally controlled mineralisation and as such should be the focus of exploration.

- Problematic because many of these boundaries are now younger focussed Delamerian shears.

•What do these boundaries look like? - 2 cross sections



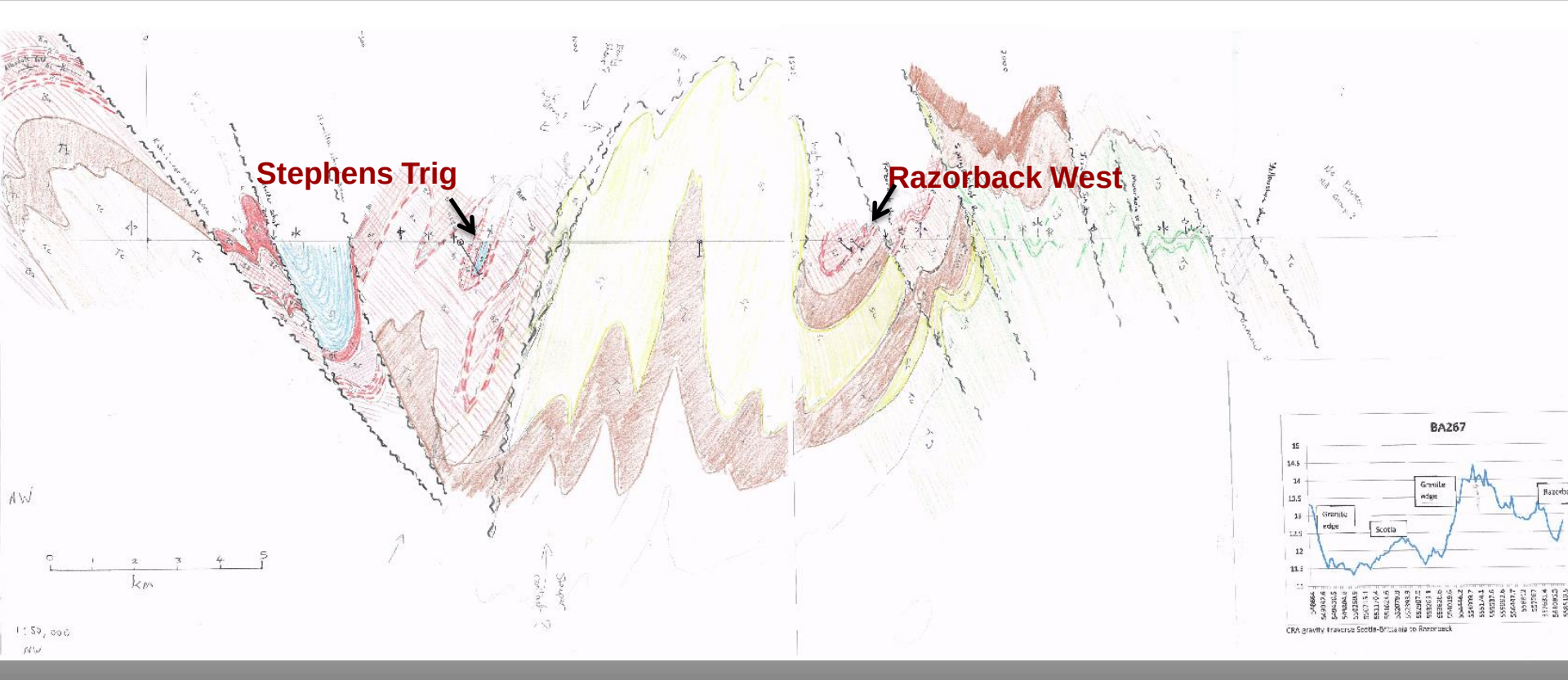
Razorback cross Section
Line shown

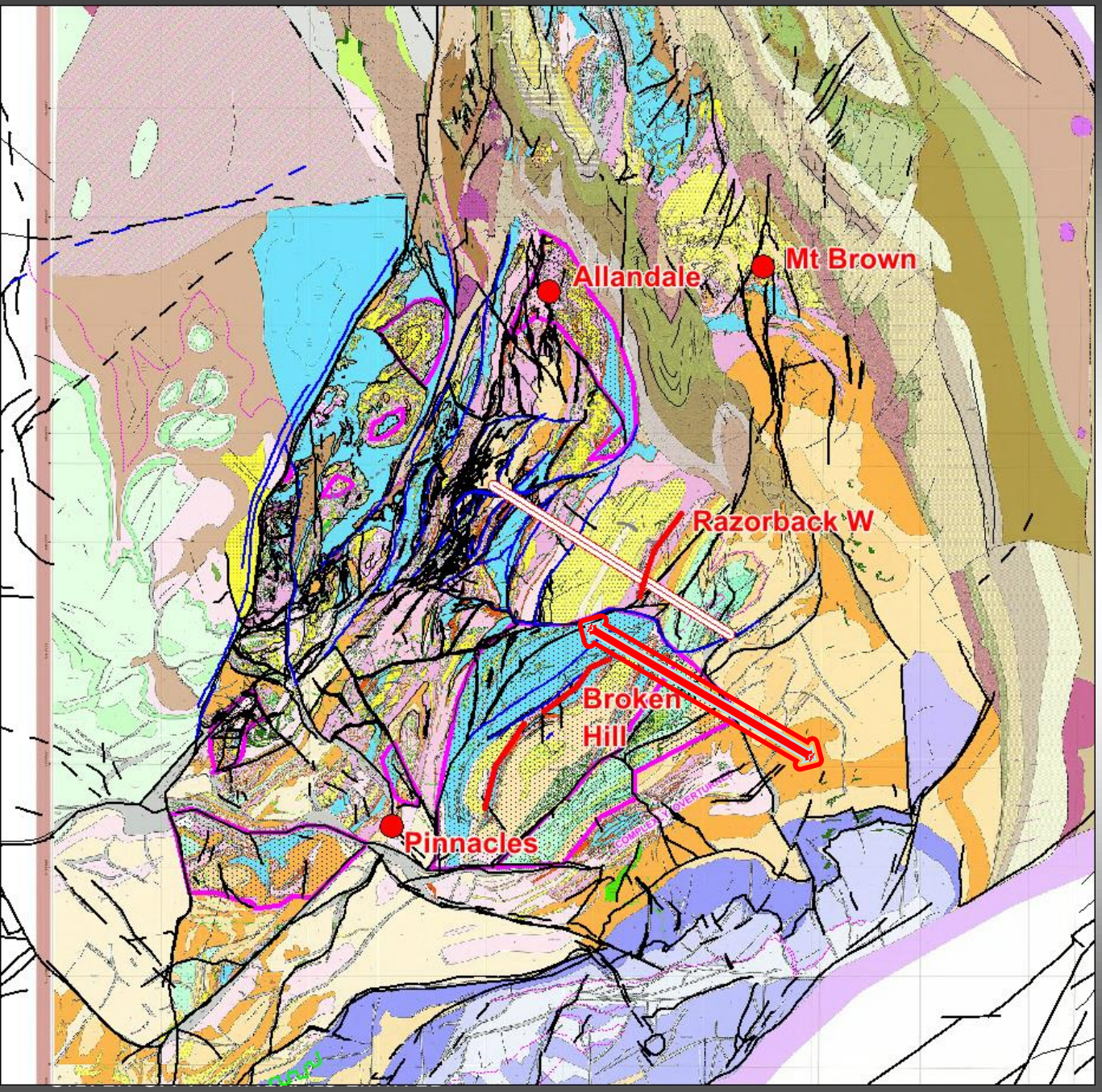
‘upright domain’

Interpretive cross section Maybelle-Yellowstone Shear

Assumes NSWGS structure (upright)

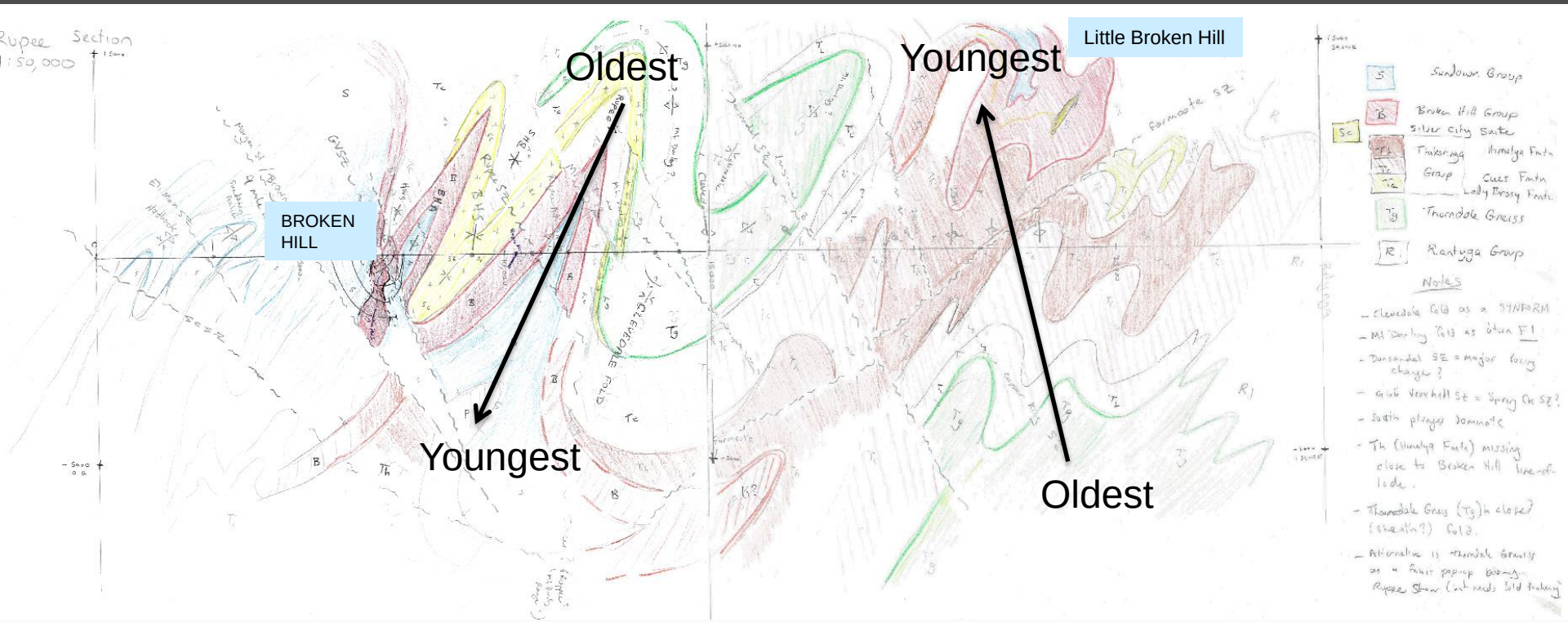
(buckled up carpet)





Rupee cross Section Line shown

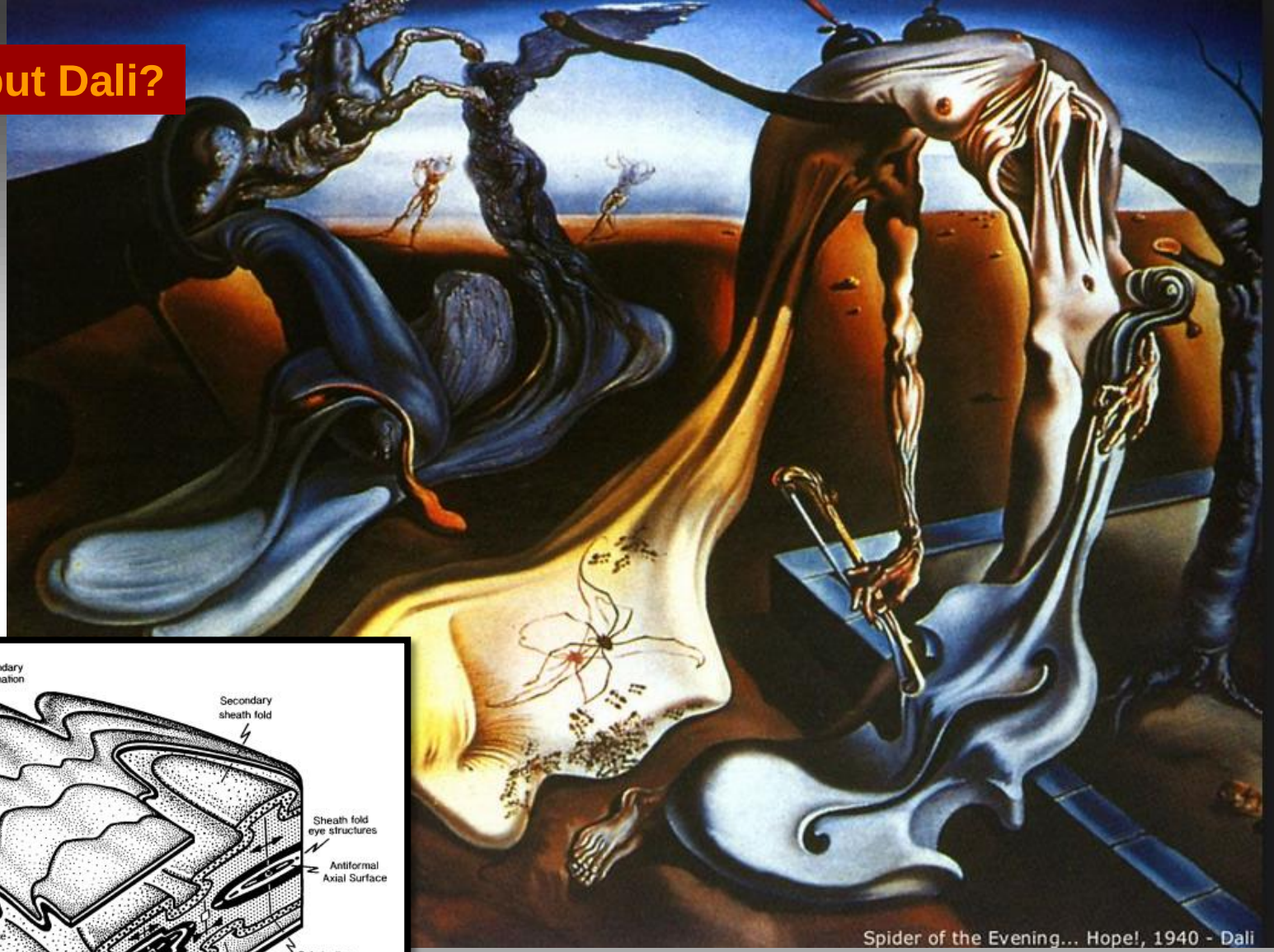
‘overturned domain’



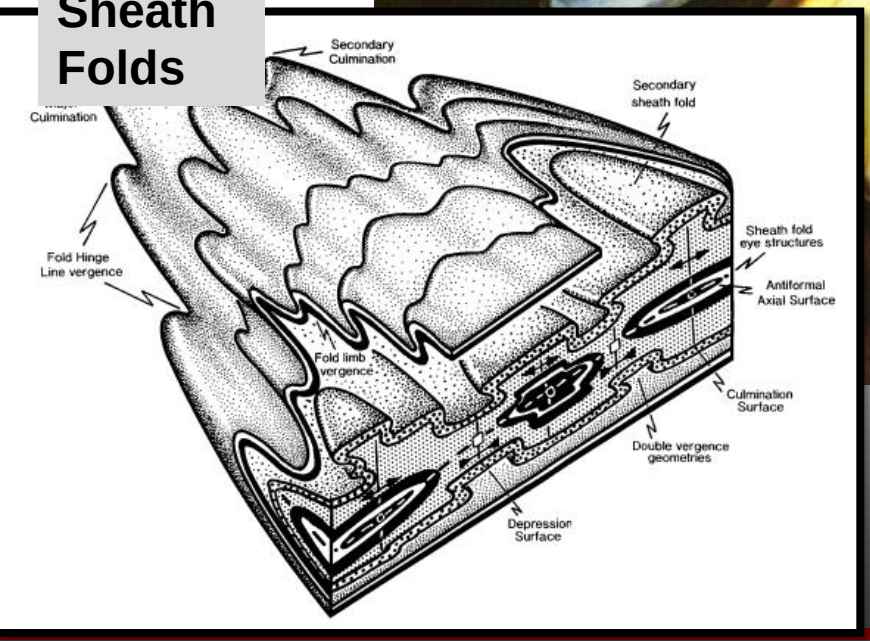
Interpretive Cross section - Rupee

Clevedale fold as synform?
Mt Darling fold as F1?
Himalaya Ftm not recognised near B Hill
Thorndale Gneiss closed fold (sheath?)
(can't do this to carpet!)

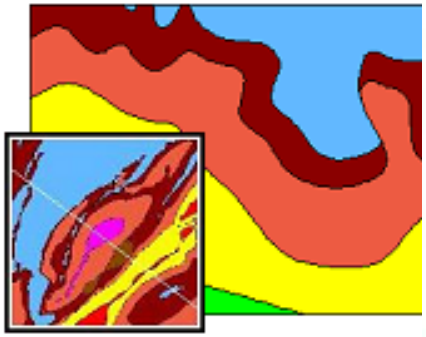
Not Pastry but Dali?



Sheath Folds



16km long Interpretive Broken Hill Cross sections



3D-WEG Model (N7) (Mcl

B. Hill Oreb

lill Fold

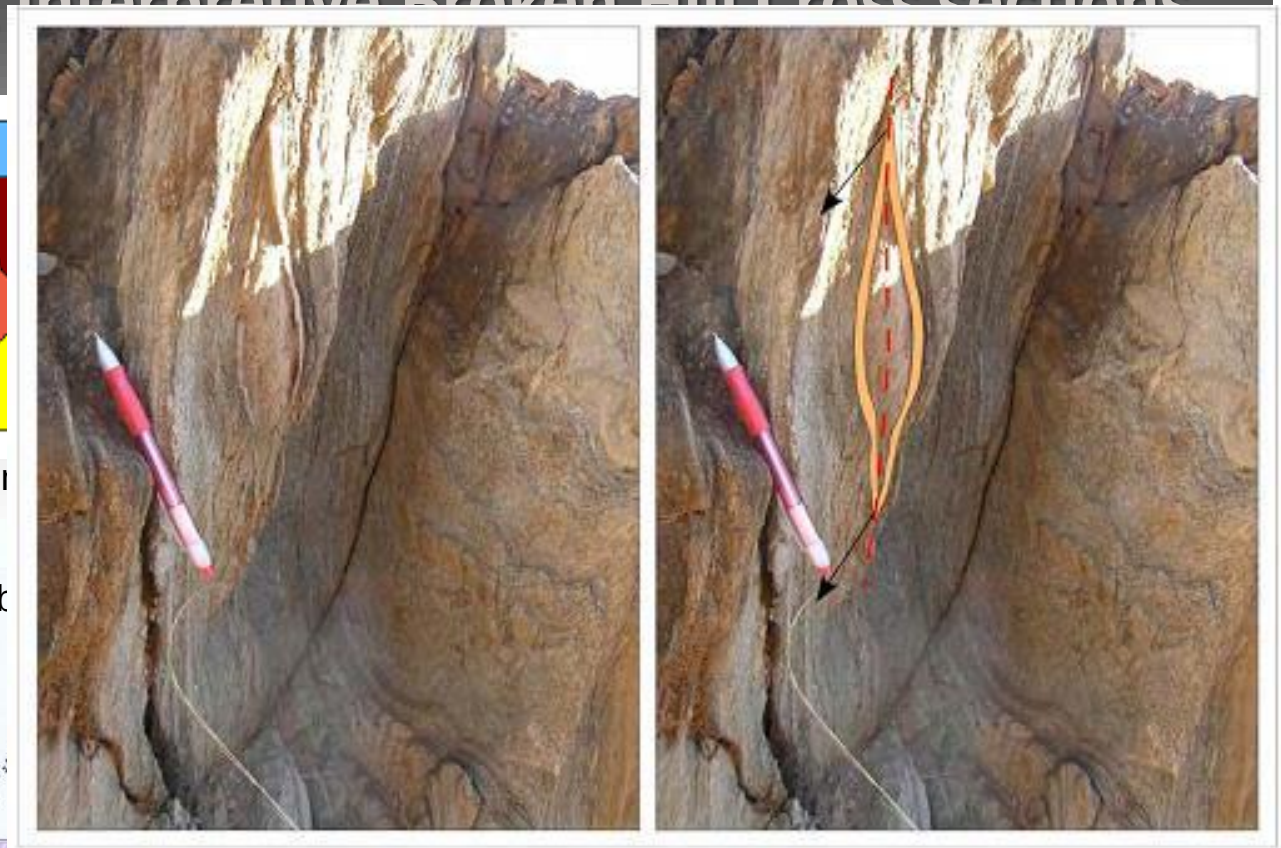


Figure 2: a) Photo of a F2 sheath fold plunging shallowly to moderately (out of the page) in a thin psammitic gneiss unit. Photo looking north. This fold structure is interpreted to be representative of the overall structure of the Maybell East Fold.

SUNDOWN
BROKEN HILL
BROKEN HILL amphibolite rich
ALMA
THACKARINGA
THORNDALE
CLEVEDALE
RIFT package

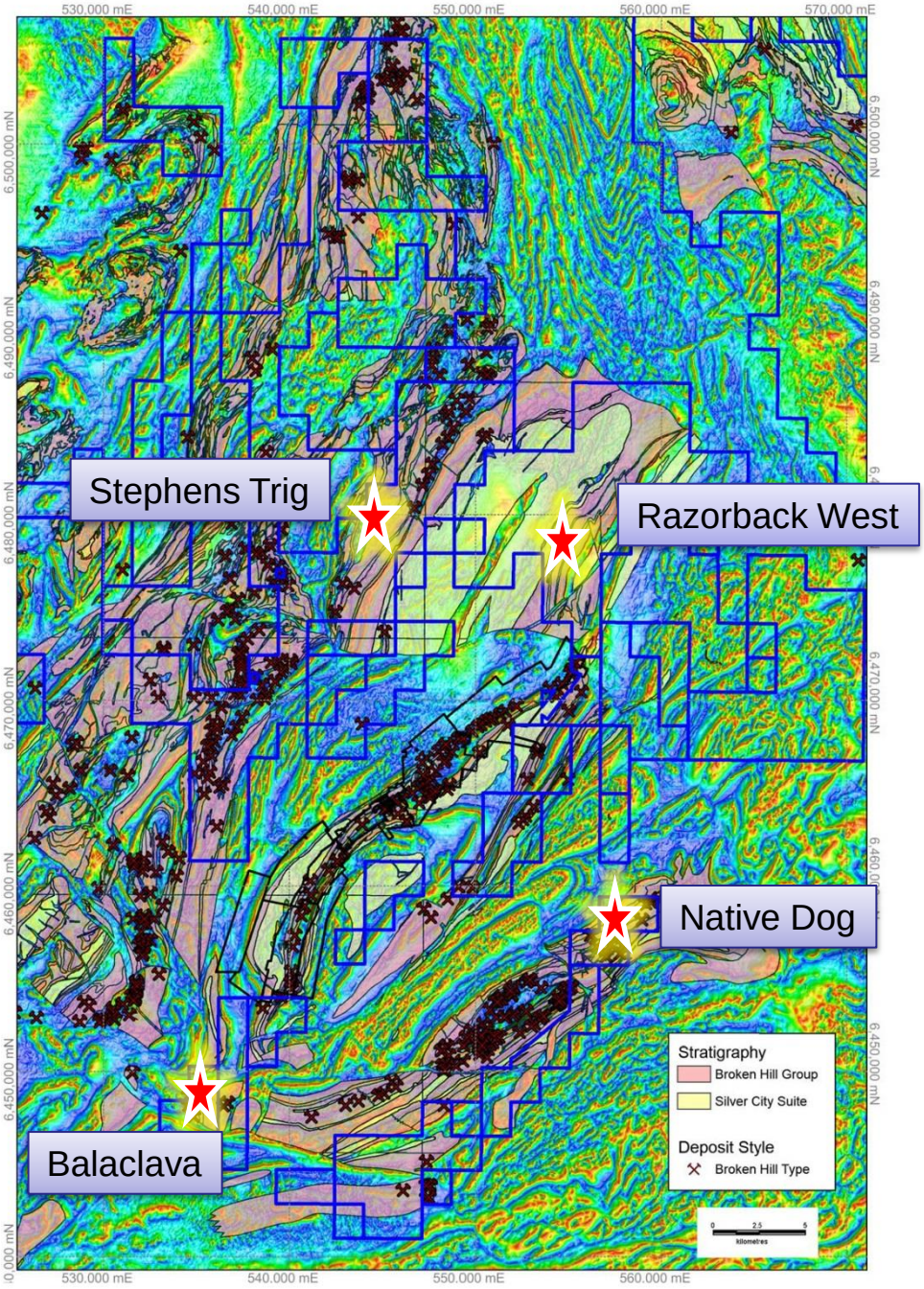
Two Important Targets

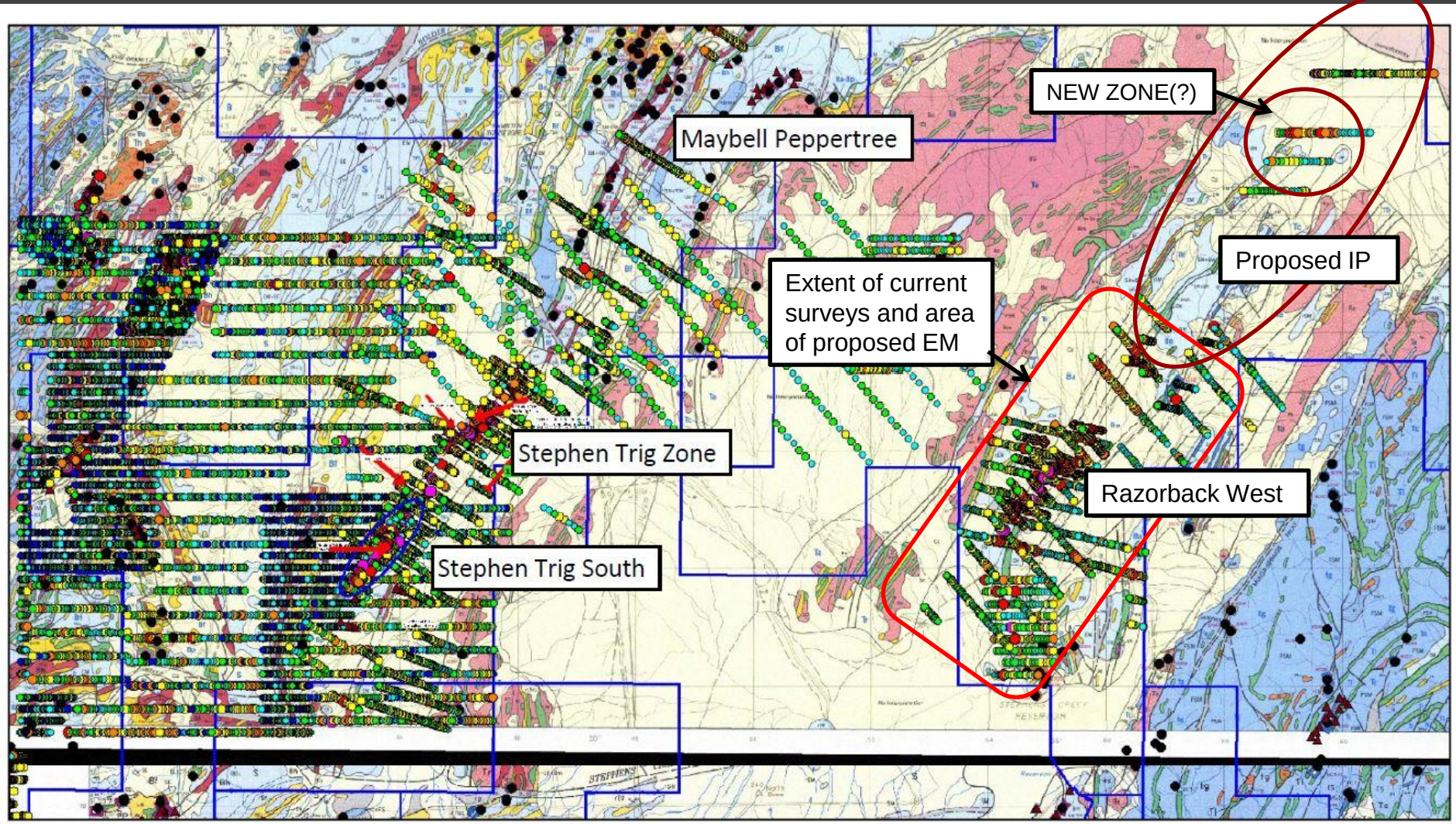
Razorback West and Stephens Trig Prospects

Two large (related?) systems of:

- Proven geochemical anomalism
- High mineral system ranking
- Uncertain architecture (structure)

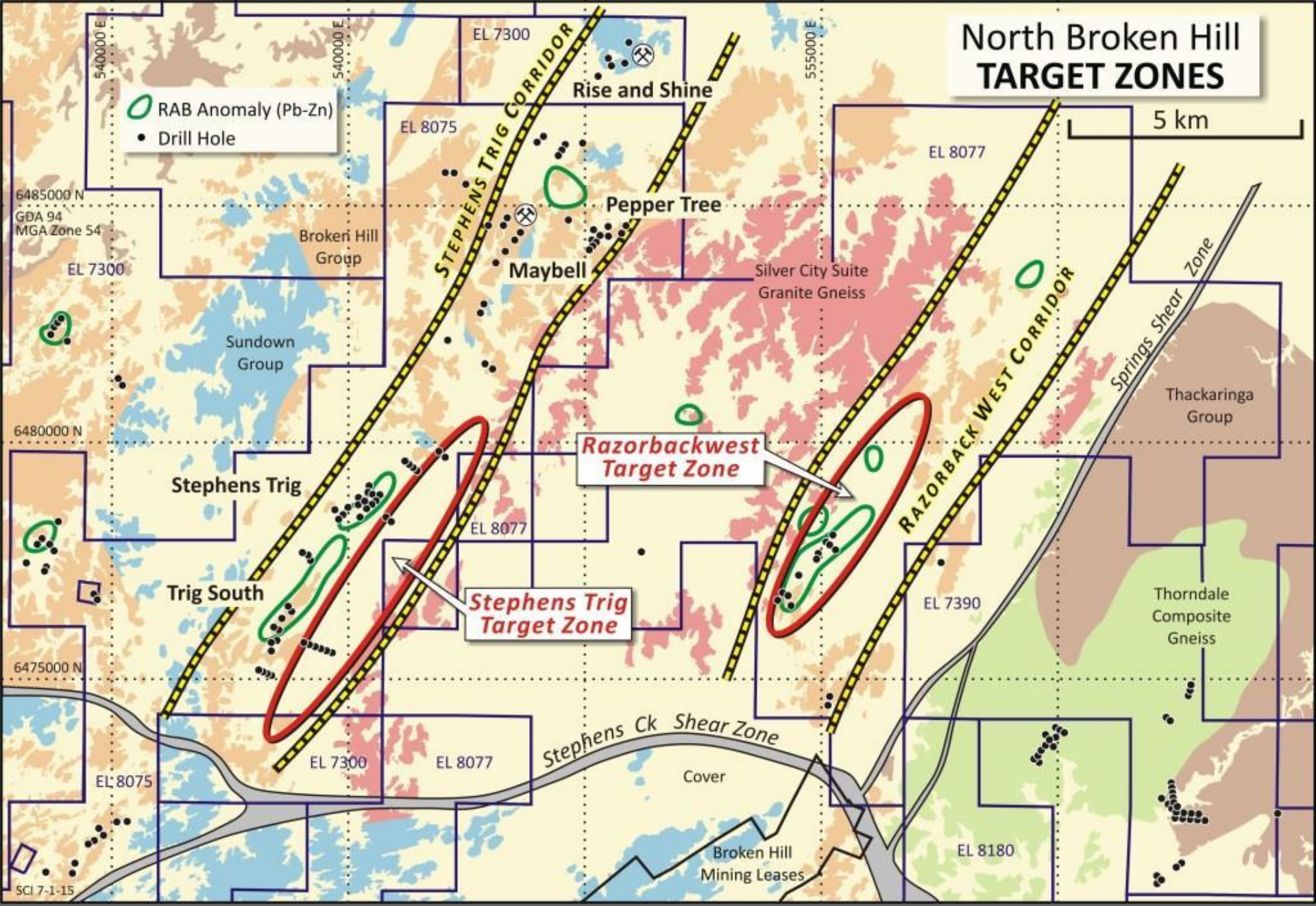
STEPHENS TRIG/RAZORBACK WEST



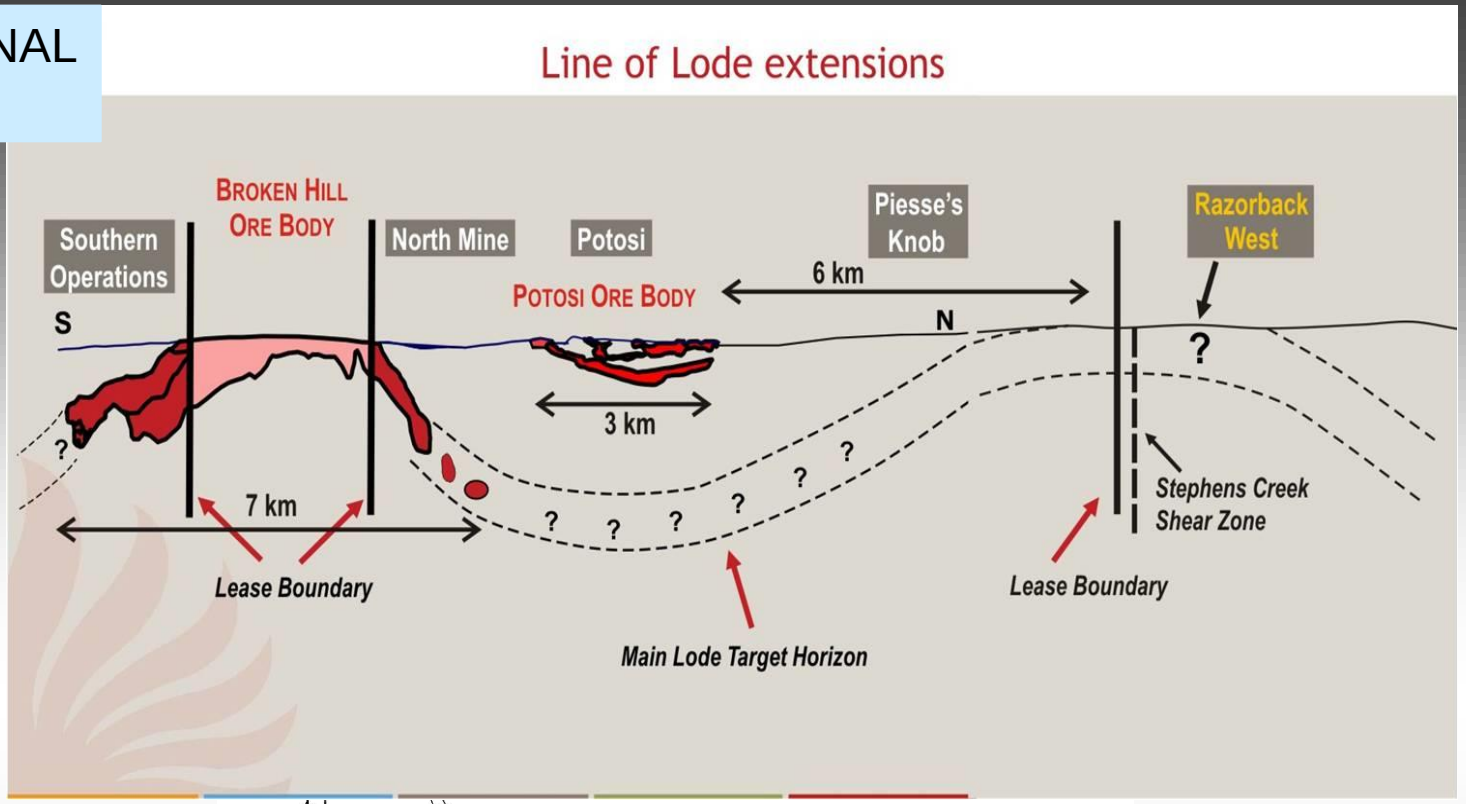


North Broken Hill Targets

RAB geochemistry (zinc) shows strong anomalism in the Stephens Trig trend and at Razorback West, including a new area to NE of current Razorback survey area


North Broken Hill
TARGET ZONES
5 km
RAB Anomaly (Pb-Zn)
Drill Hole
540000 E
555000 E
6485000 N
6480000 N
6475000 N
GDA 94
MGA Zone 54
EL 7300
EL 8075
EL 8077
EL 7390
EL 8180
Rise and Shine
Pepper Tree
Maybell
Stephens Trig
Trig South
Stephens Trig Corridor
Razorback West Corridor
Springs Shear Zone
Stephens Ck Shear Zone
Razorbackwest Target Zone
Stephens Trig Target Zone
Broken Hill Group
Sundown Group
Silver City Suite Granite Gneiss
Thackaringa Group
Thorndale Composite Gneiss
Cover
Broken Hill Mining Leases
SCI 7-1-15

LONGITUDINAL SECTION



Line-of-lode
Plunge reversals

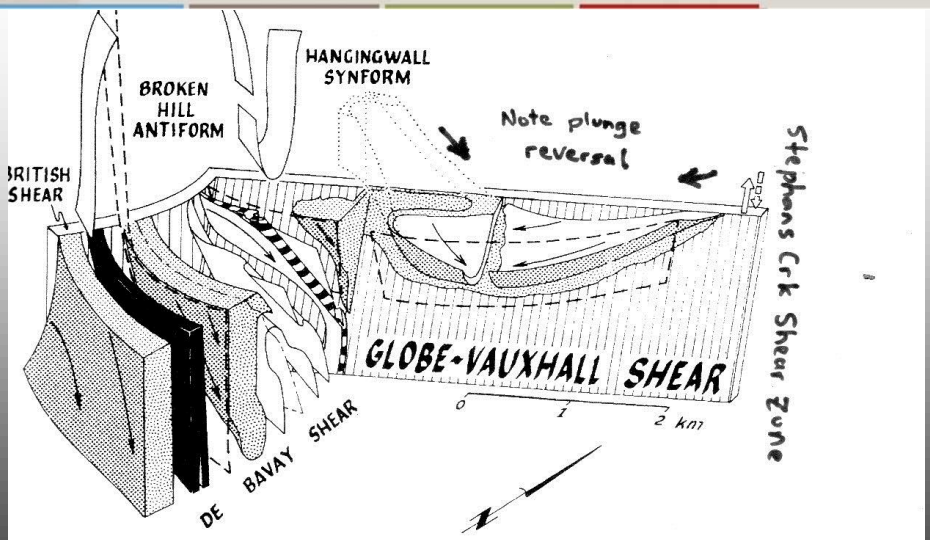
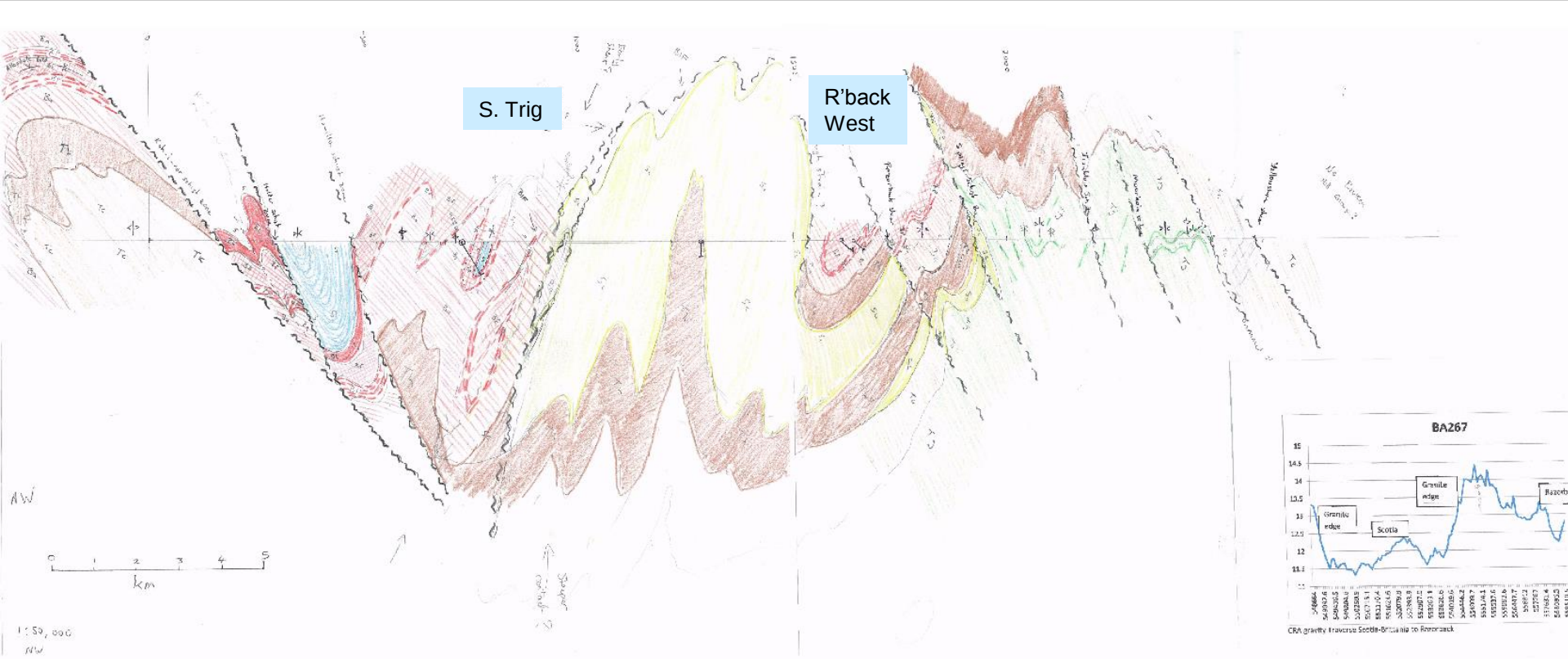


Fig. 11. B. Block diagram of the North mine area, showing interpreted relationships between the main marker units and the main structures. For simplicity the pelitic sillimanite gneiss in the core of the Broken Hill antiform and the Broken Hill synform are omitted.

Interpretive cross section Maybelle-Yellowstone Shear

The Razorback West link to Stephens Trig Prospect



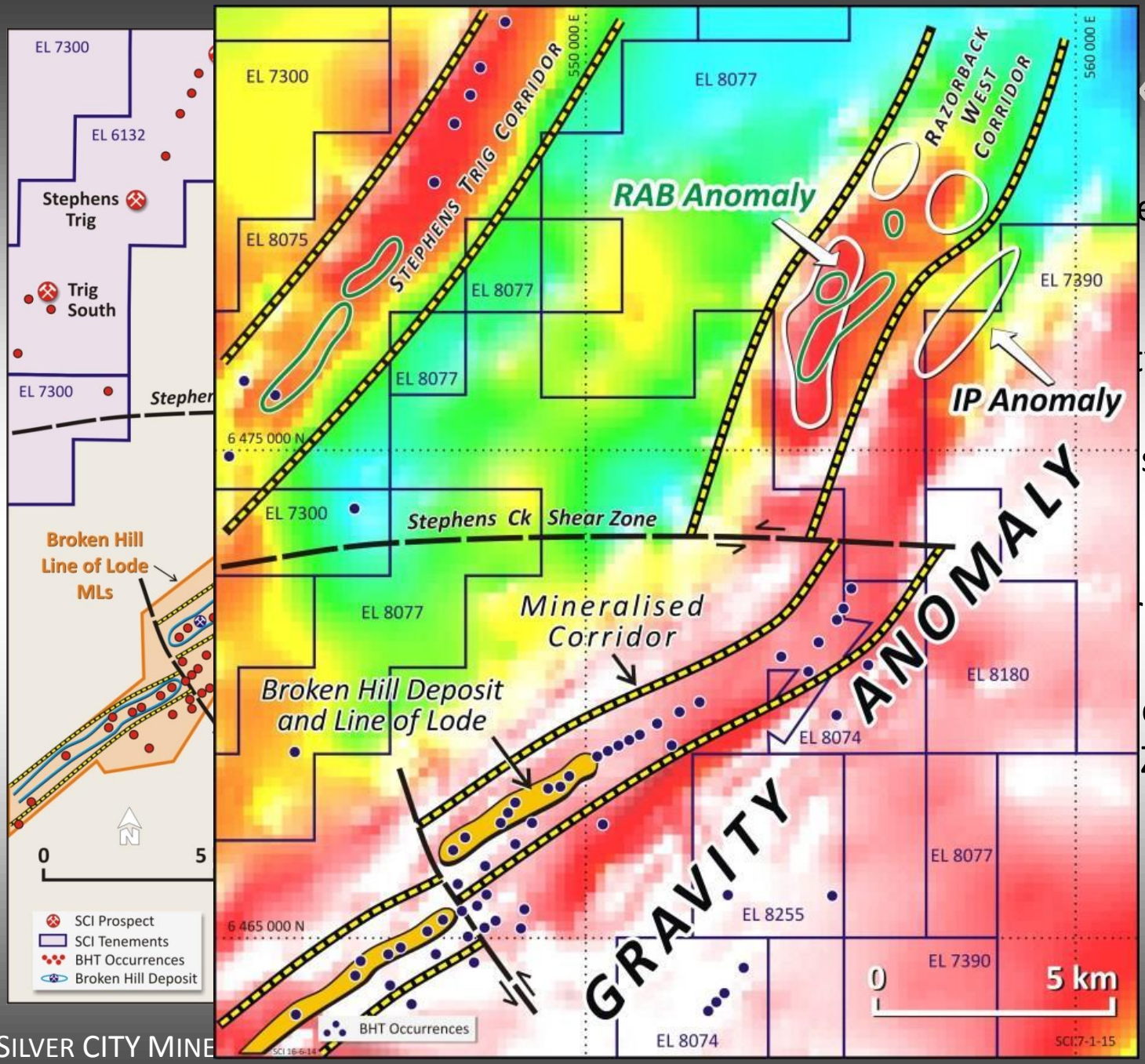
K WEST

ension of Broken

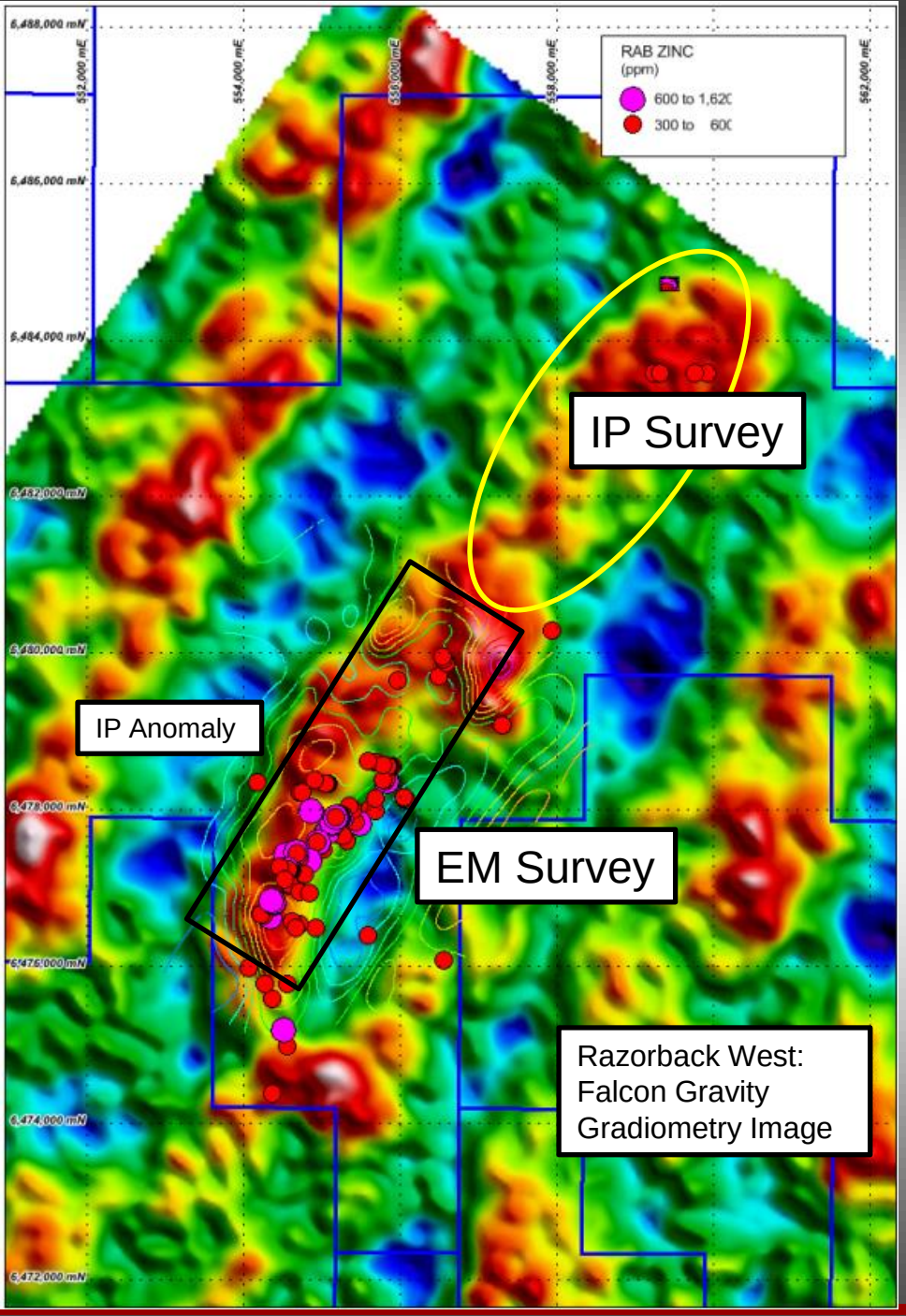
y, induced
RAB
s 5 kilometres

thin cover

cts across
Zone

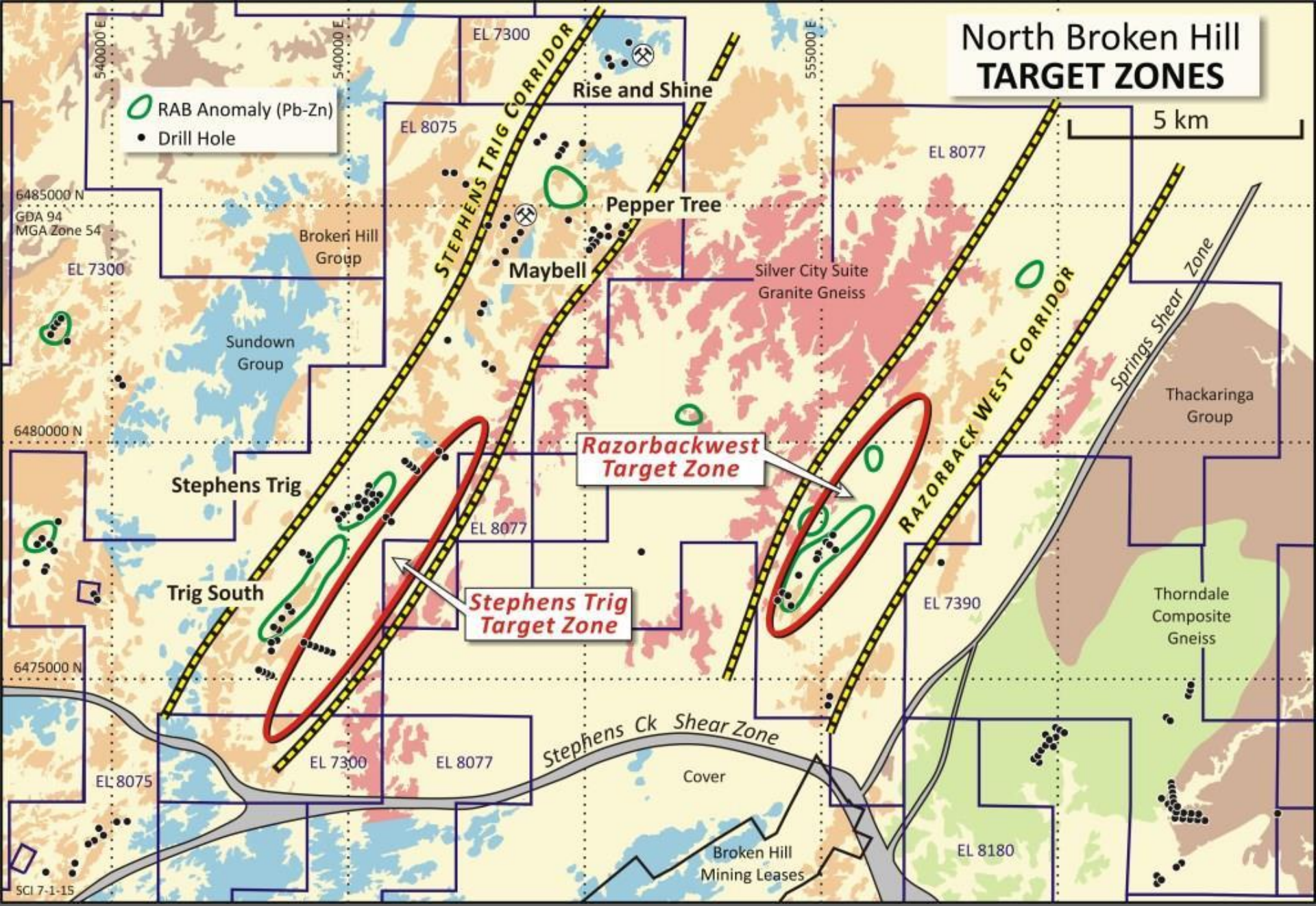


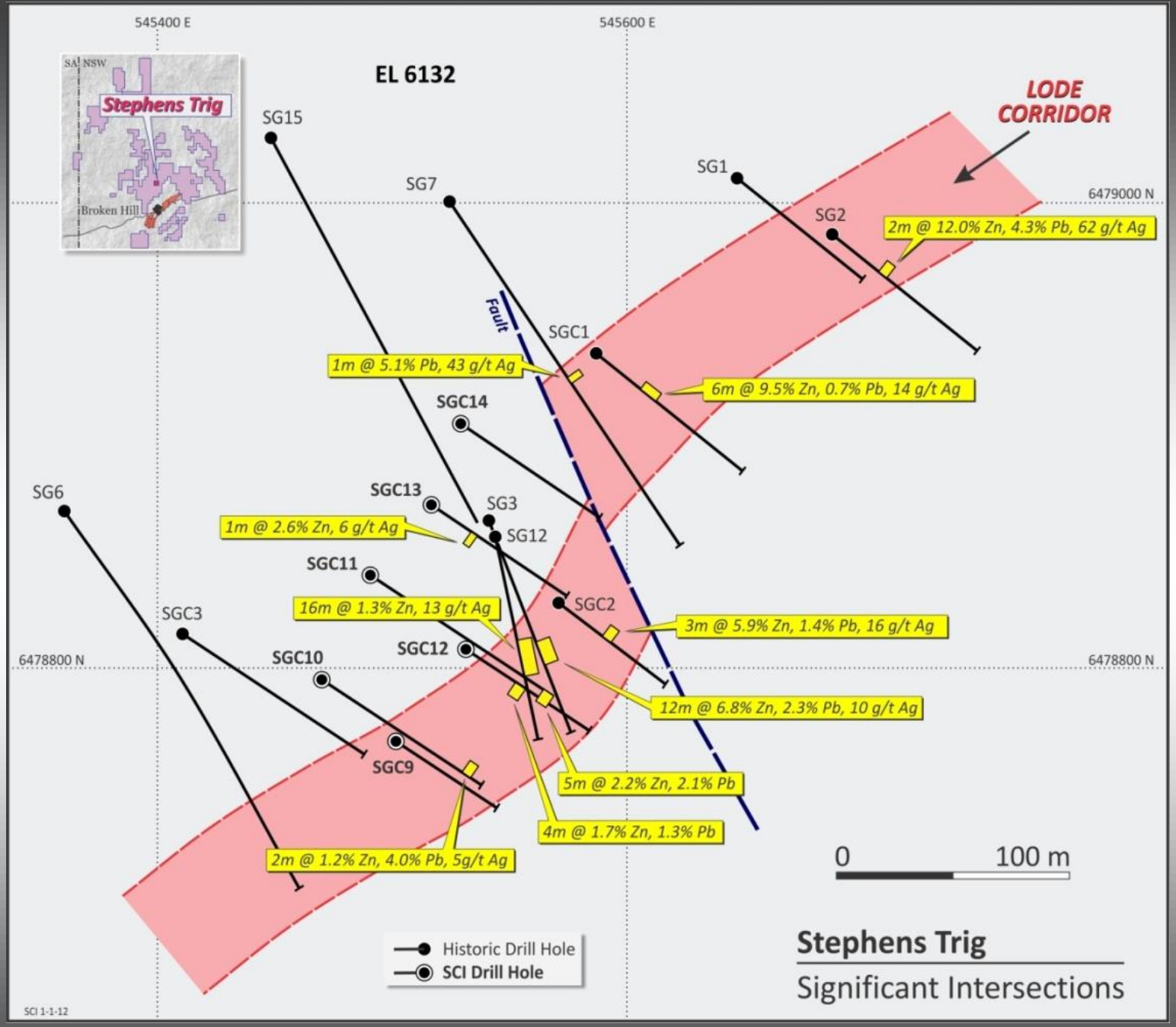
RAZORBACK WEST



Work Program

- Target massive sulphides under cover
- Ground electro-magnetic surveys
- Gravity profiles
- Extend IP to northeast
- Follow-up drilling.


North Broken Hill
TARGET ZONES
5 km
RAB Anomaly (Pb-Zn)
Drill Hole
540000 E
555000 E
6485000 N
6480000 N
6475000 N
GDA 94
MGA Zone 54
EL 7300
EL 8075
EL 8077
EL 7390
EL 8180
Rise and Shine
Pepper Tree
Maybell
Stephens Trig
Trig South
Stephens Trig Corridor
Razorback West Corridor
Springs Shear Zone
Stephens Ck Shear Zone
Razorbackwest Target Zone
Stephens Trig Target Zone
Broken Hill Group
Sundown Group
Silver City Suite Granite Gneiss
Thackaringa Group
Thorndale Composite Gneiss
Cover
Broken Hill Mining Leases
SCI 7-1-15

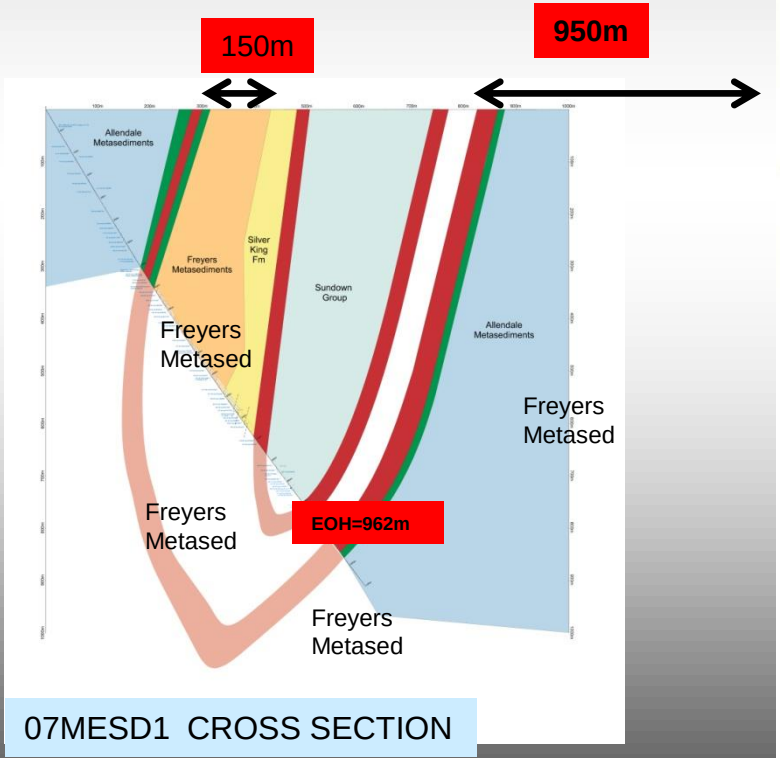

545400 E
545600 E
EL 6132
SA NSW
Stephens Trig
Broken Hill
LODE CORRIDOR
SG15
SG7
SG1
SG2
6479000 N
2m @ 12.0% Zn, 4.3% Pb, 62 g/t Ag
Fault
SGC1
1m @ 5.1% Pb, 43 g/t Ag
6m @ 9.5% Zn, 0.7% Pb, 14 g/t Ag
SGC14
SG6
SGC13
SG3
1m @ 2.6% Zn, 6 g/t Ag
SG12
SGC11
16m @ 1.3% Zn, 13 g/t Ag
SGC2
3m @ 5.9% Zn, 1.4% Pb, 16 g/t Ag
SGC3
6478800 N
SGC12
SGC10
12m @ 6.8% Zn, 2.3% Pb, 10 g/t Ag
SGC9
5m @ 2.2% Zn, 2.1% Pb
4m @ 1.7% Zn, 1.3% Pb
2m @ 1.2% Zn, 4.0% Pb, 5g/t Ag
0
100 m
Historic Drill Hole
SCI Drill Hole
Stephens Trig
Significant Intersections
SCI 1-1-12

SEARCHING FOR COMPLEXITY

Stephens Trig –Peppertree Corridor

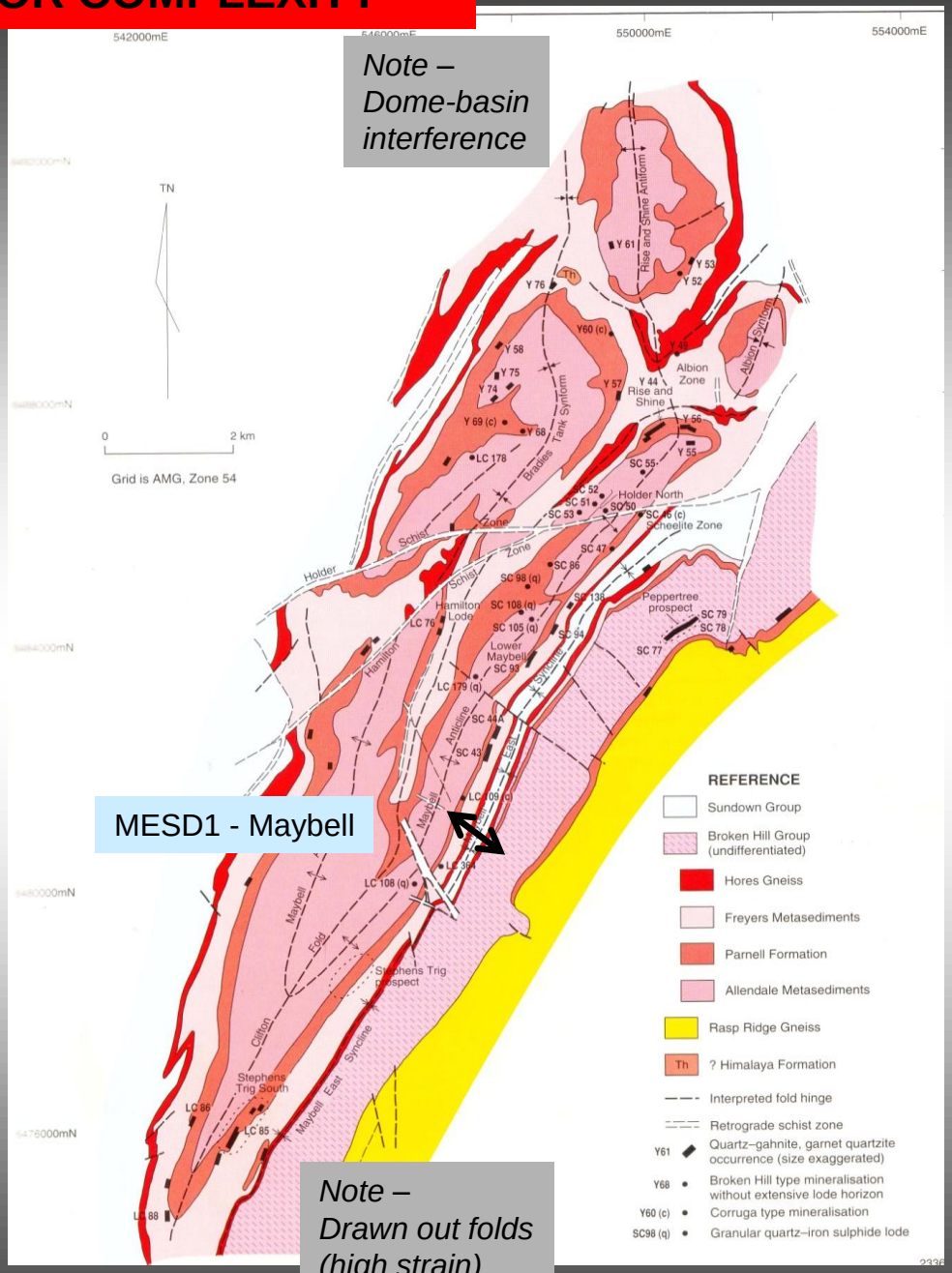
Maybell East Fold suggests-

extra folds or rapid sequence thickening Required to explain geology



07MESD1 CROSS SECTION

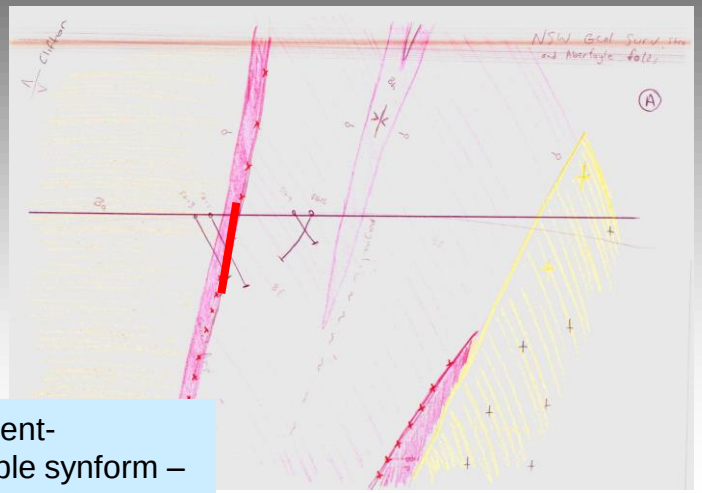
Note – Dome-basin interference



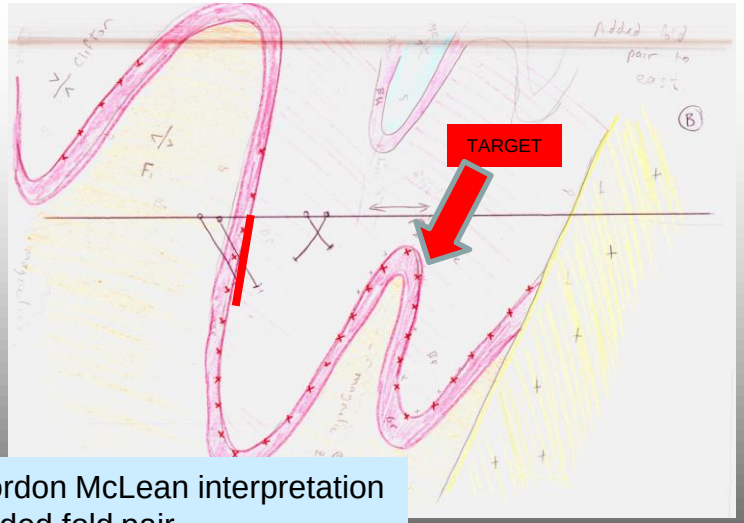
MESD1 - Maybell

Note – Drawn out folds (high strain)

Alternative Stephens Trig geological interpretations



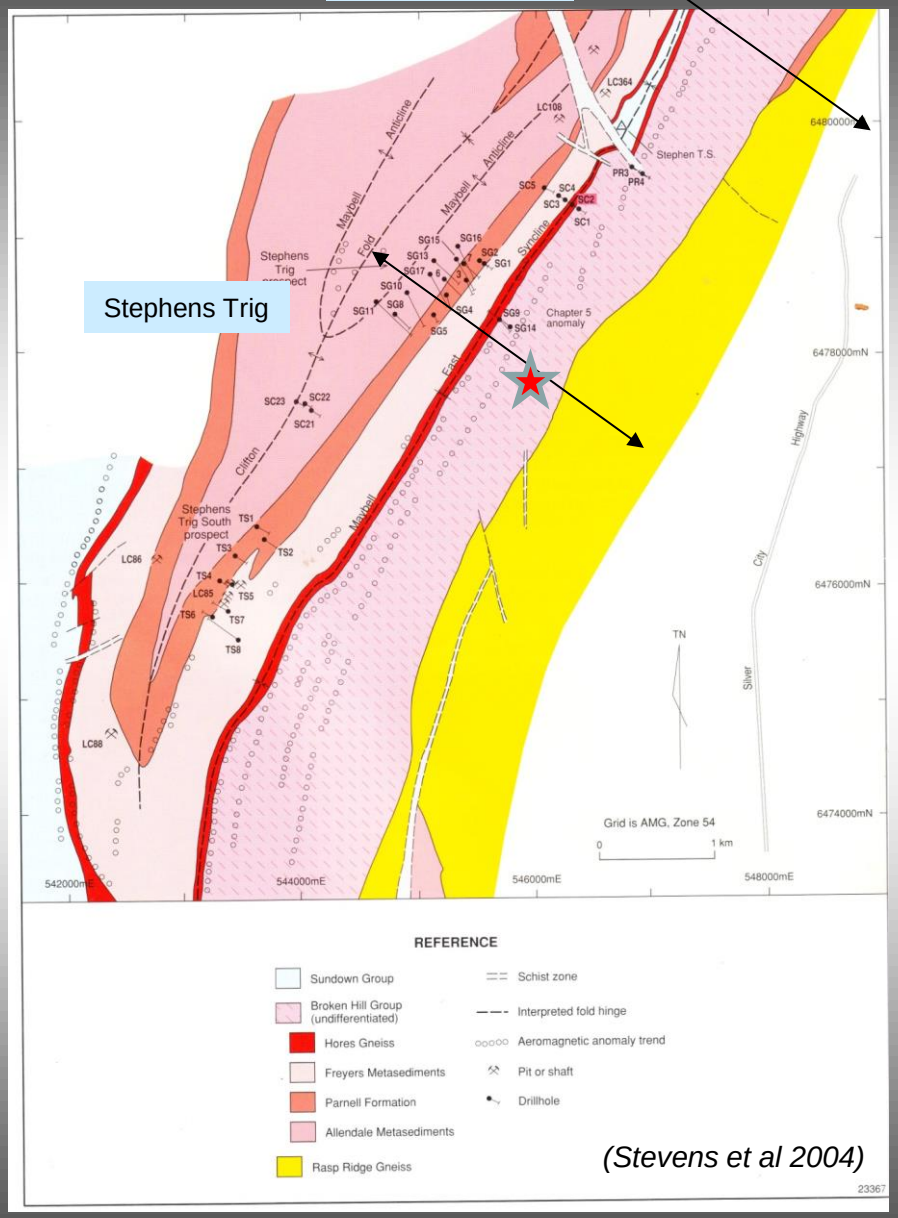
Current-
Simple synform – thickening limbs



Gordon McLean interpretation
Added fold pair-
equal limbs

MESD1 - Maybell

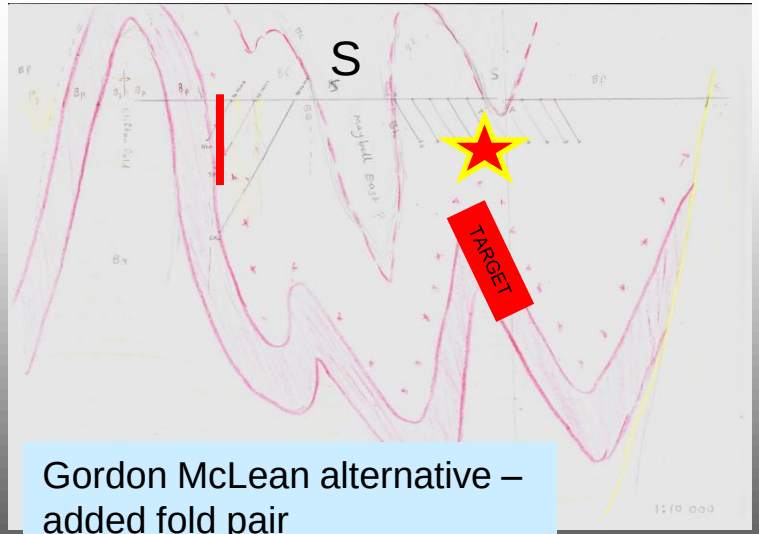
Stephens Trig



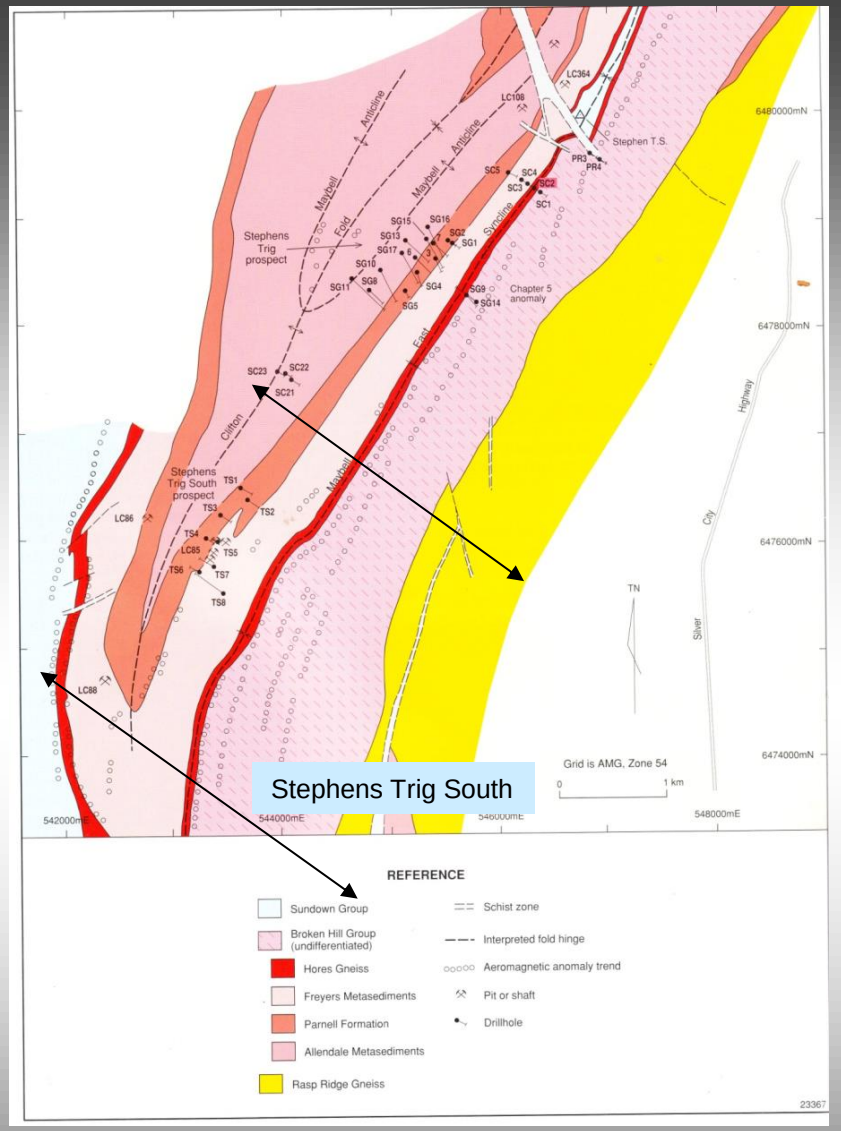
(Stevens et al 2004)

Stephens Trig South alternatives

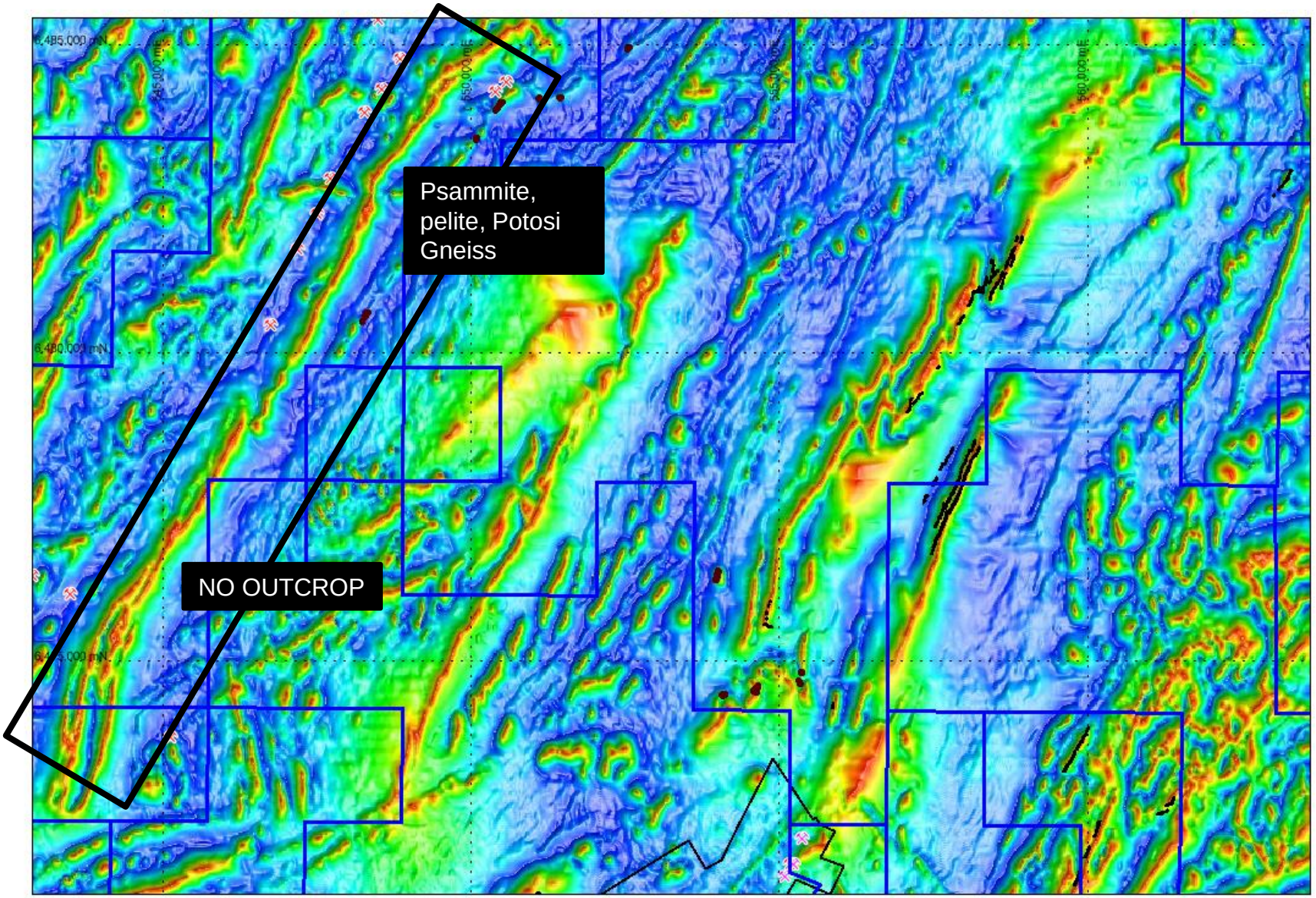
Published (implied)

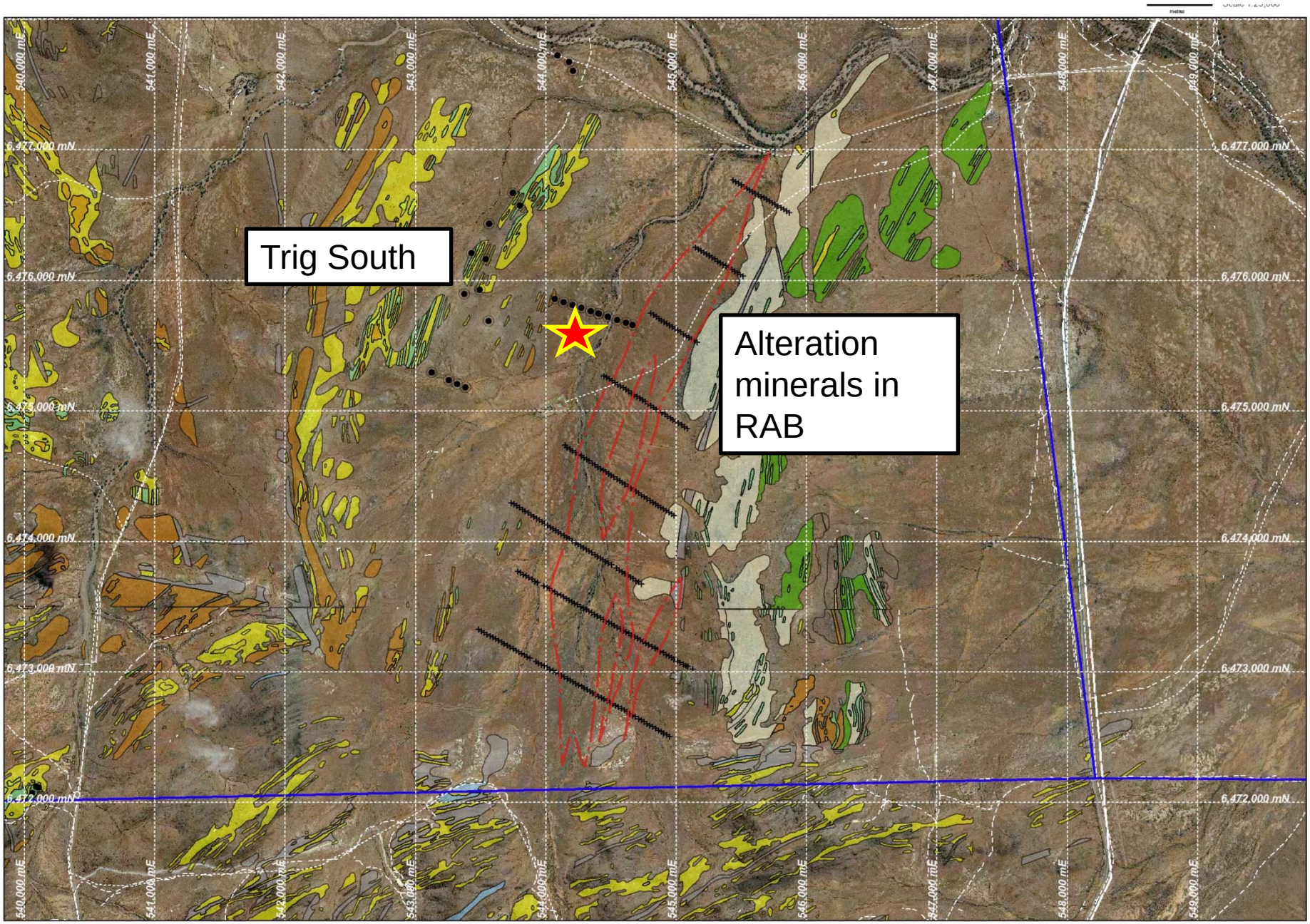


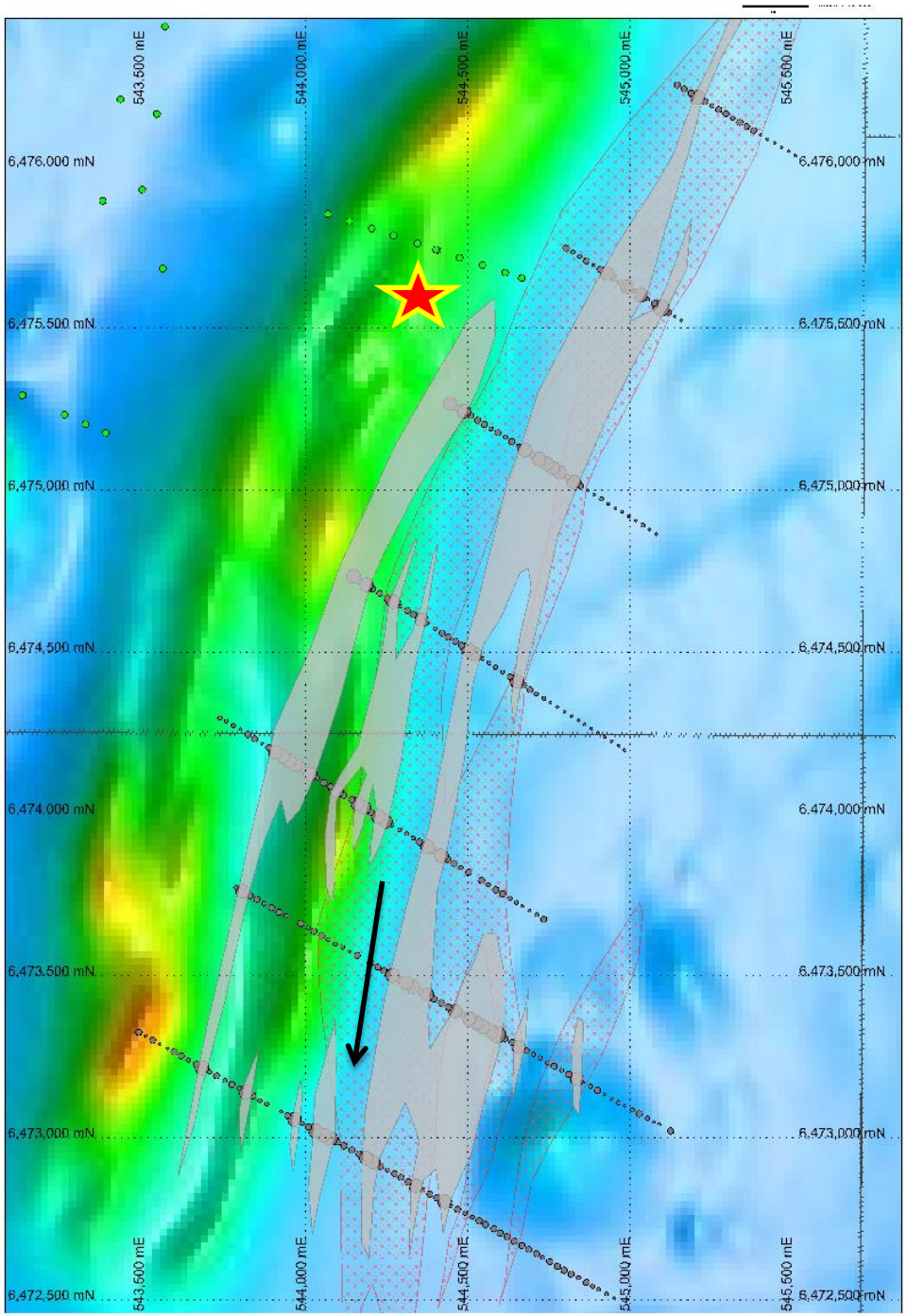
Gordon McLean alternative – added fold pair



Stephens Trig South

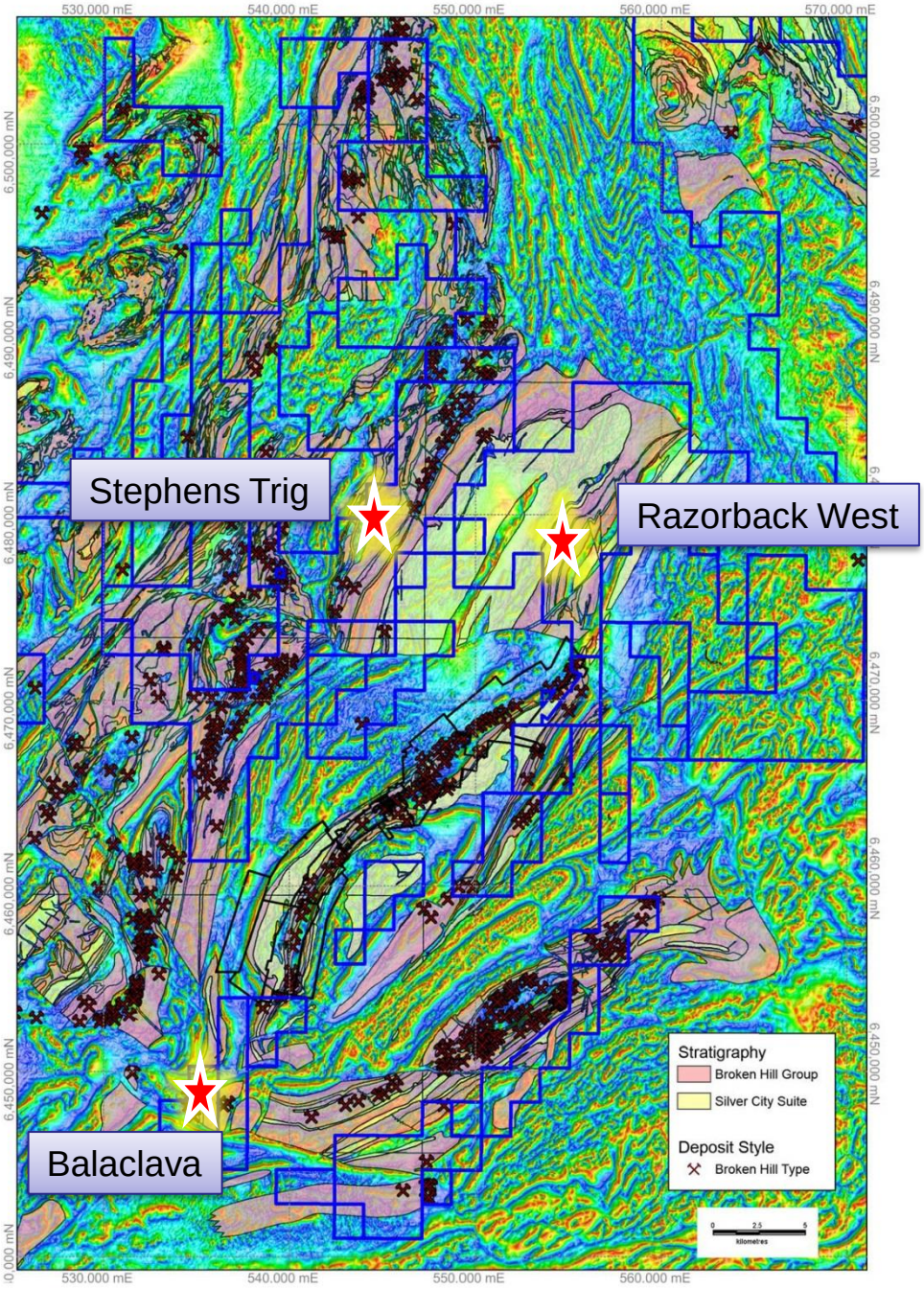

Psammite, pelite, Potosi Gneiss
NO OUTCROP


Trig South
Alteration minerals in RAB
540,000 mE
541,000 mE
542,000 mE
543,000 mE
544,000 mE
545,000 mE
546,000 mE
547,000 mE
548,000 mE
549,000 mE
6,477,000 mN
6,476,000 mN
6,475,000 mN
6,474,000 mN
6,473,000 mN
6,472,000 mN



New target zone “Trig East”

- Alteration and geochemical signature in high strain zone
- South plunge 40 degrees



NEXT TARGETS FOR SILVER CITY

- Upper parts of BH Group
- High strain zones
- Right geochem
- Right alteration
- Close relationship to coeval volcanic rock and intrusions (heat engines)
- Gravity Ridges

……but largely under cover with geology poorly understood.

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Author	No. Analyses	Rock types	Approaching ore:	
			Enriched in	Depleted in
Walker (1964)	4000 (trace elements)	Potosi, pelite, psammite, tholeiite	Pb. Zn, Ag, Cu, Cd	Sr
Ransom (1972)	21 (modal)	tholeiite to Potosi transition	K, Si, Na	Fe, Mg, Ca
Hodgson (1975)	thin sections	Wall rocks to ore	Ca, Mn, Fe	Na, K, Al, Si
Klingner & McConachy (1975)	1723 (XRF)	Potosi	K, Ca, Al	Na, Si
Plimer (1976) Elliot (1976)	112 (XRF)	Potosi, pelite	Rb, K, (sericite), Fe3+	Sr, Ca, Na, Mg
		thoeliite	Rb, K, Al, H_2O	Ca, Sr, Na, Ti
Elliot (1979)	347 (XRF)	Potosi, pelite, psammite, tholeiite	Mn, Fe3+, Pb, Zn	Na, Ca, Sr, Mg
Plimer (1979)	260 (XRF)	Potosi, pelite, psammite, tholeiite	K, Fe, Si, Mn, Pb, Rb, S, Ti	Na, Ca, Sr, Mg
Main et al. (1983)	4054 (XRF)	Mainly Potosi	Mn, (K, Fe, Ca, Mg, Rb, Ti, Al)	Na, Sr, (P, Ba)
Haydon et al. (1993), Wright et al. (1993)	1093 (XRF)	Potosi, pelite, psammite	K, Fe, Mn, Pb, Zn, Cu, As	Na, P
Stanley (1997)	1300 (XRF) 1400 (probe)	Pelite, psammite	K, Fe, Si, Mn, Pb, Zn	Na, Ca
Prendergast et al. (1998)	Fluid inclusions	Potosi, pelite, psammite	Fe, Mn, Mg	Na, K, Ca
Williams et al. (1998)	Fluid inclusions	Qtz-rich veins	K, Fe, Ca, Si, Mn, Pb, Zn, P, F, Na	
Stevens & Capnerhurst (1998)	2300 (XRF)	Mainly Potosi and thoeliite	Potosi: K	Potosi: Na
			Thoeliite: Si, P	Thoeliite: Fe3+, Mg, Ti
BHEI2000 GIS (Skirrow & Ashley, 2000) Olary Domain	352 (XRF), K/Th gamma	All rock types	Fe, Na/K, K	K
Kent et al. (2000) Olary Domain	20 (XRF), fluid inclusions	calc-silicate	Mn, Fe^{3+}, Ca, Cu	Na, Fe^{2+}, Mg, Rb
Walters (2000)	10000 (XRF)	Pelite, psammite	K, Fe, Si, Mn, Pb, Rb, Zn	Na, Ca, Sr, Mg
Leyh (2000)	petrographic	Pelite, psammite	K, Si, Fe, Mn, Mg	
			K, Fe, Si, Mg	
Evans (2002)	20 (XRF)	Pelite, psammite	Fe, Mn, Zn, Ca	K, Si, Rb

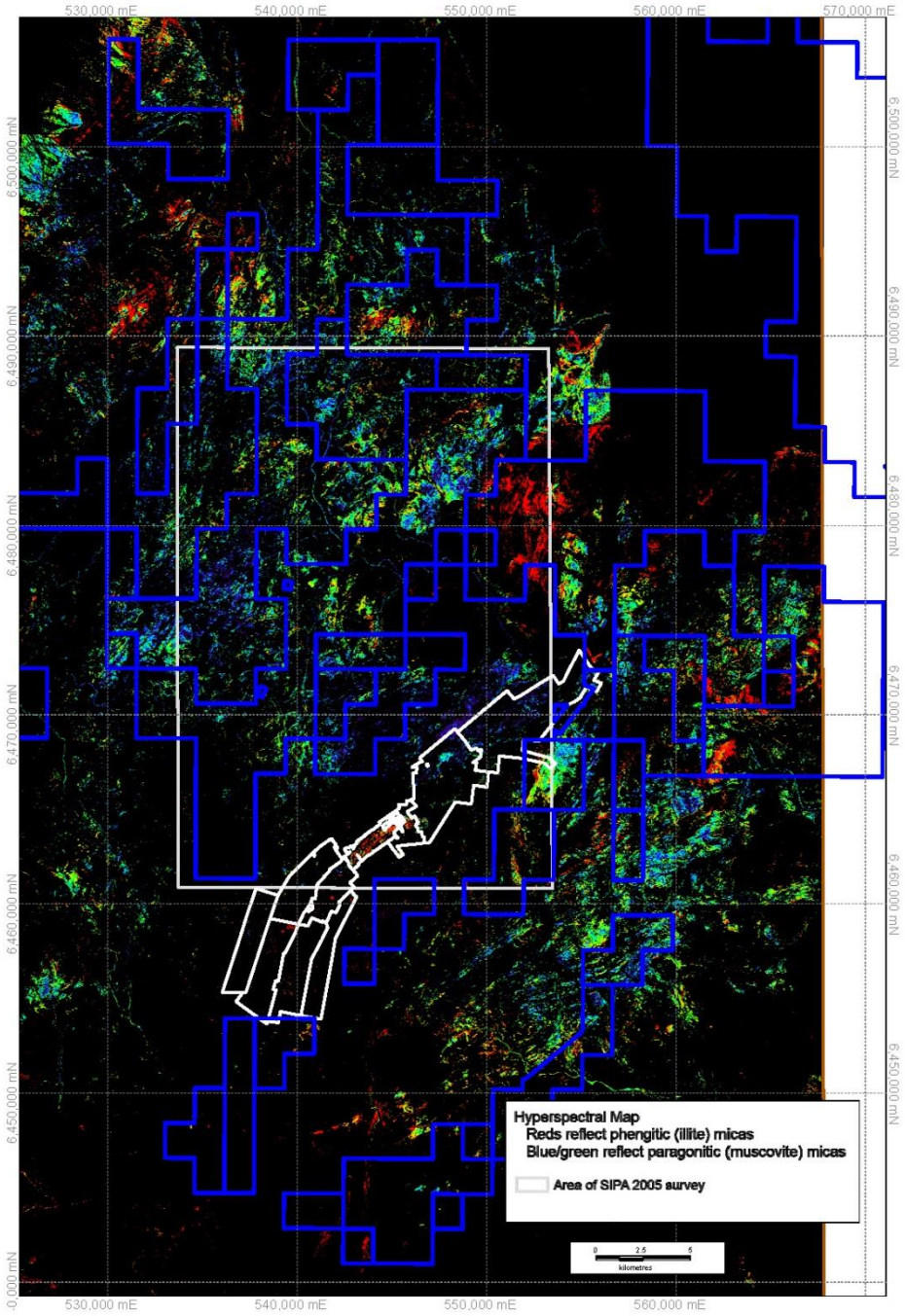
SILVER CITY MINERALS alteration studies

Diverse alteration studies on BHt have an overall consistent conclusion:

On approaching the ore position the alteration halo displays-

- **enrichment in K, Fe, Si, Mn, Rb**
- **depletion in Na, Ca, and Sr**
- **Metasomatic complications**

(CSIRO Gaps Analysis, 2003 and Greenfield, 2003).



HYMAP IMAGERY

"*Hyperspectral imagery can be successfully employed to recognise minerals and lithologies …..*"

AND

"The spectrally-derived maps are dependent on scene statistics generated for whole image swaths. Should an explorer wish to generate lithology and mineral abundance maps for a small exploration target, the scene statistics can be optimised for that target, and a better resolution of small outcrops can be achieved than has been illustrated here".
Geoff Taylor 2005