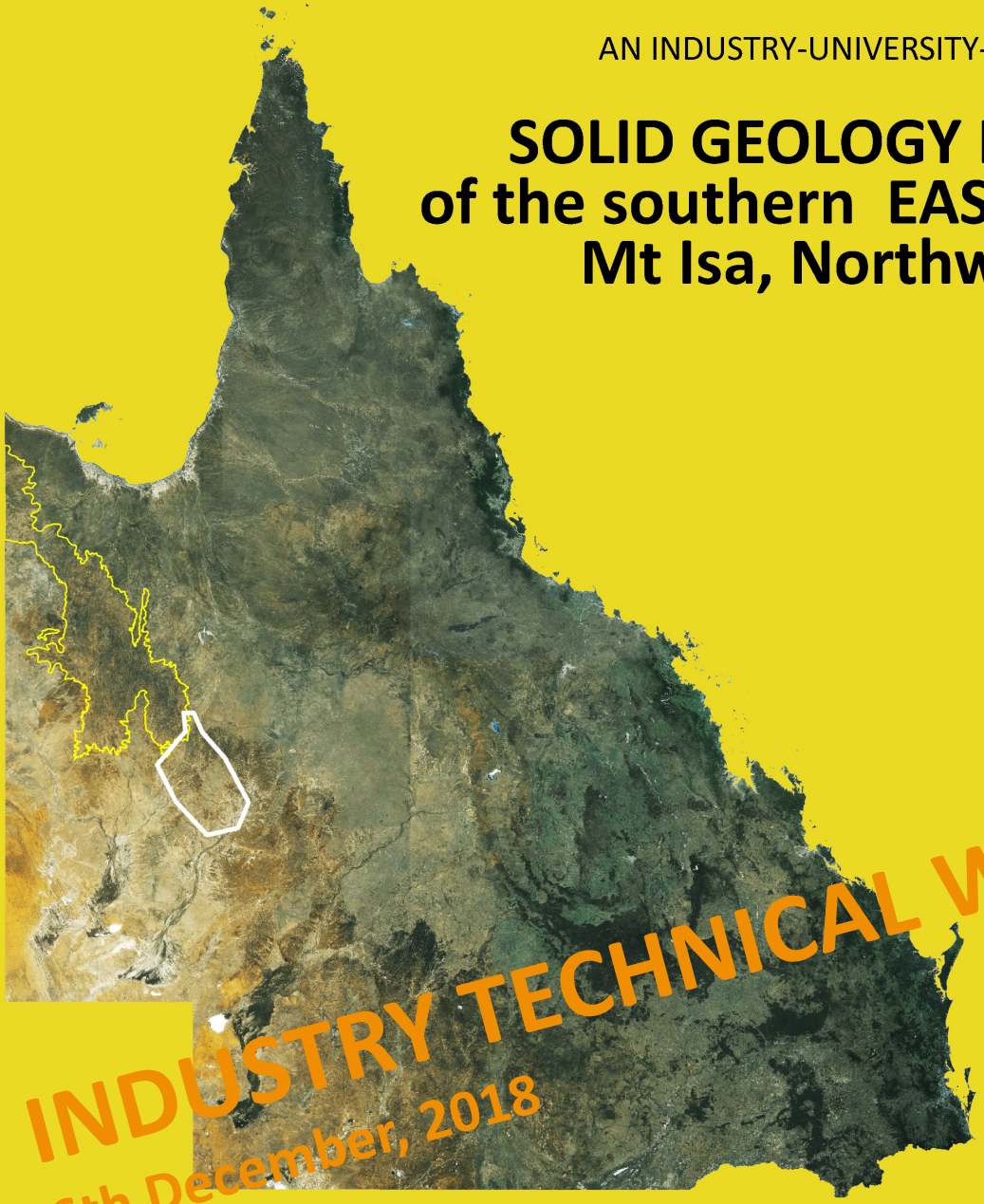
THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

SMI BRC
WH Bryan Mining & Geology Research Centre

AN INDUSTRY-UNIVERSITY-GOVERNMENT COLLABORATION

SOLID GEOLOGY INTERPRETATION of the southern EASTERN FOLD BELT, Mt Isa, Northwest Queensland.



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& **Matt PORTER**
June, 2018

INDUSTRY TECHNICAL WORKSHOP
6th December, 2018

SOUTH32
MINOTAUR EXPLORATION
SANDFIRE RESOURCES NL

Queensland Government

Cannington South Solid Geology interpretation

Workshop Exercise Options

Using recently-released, '1370' Cloncurry detailed Magnetics …

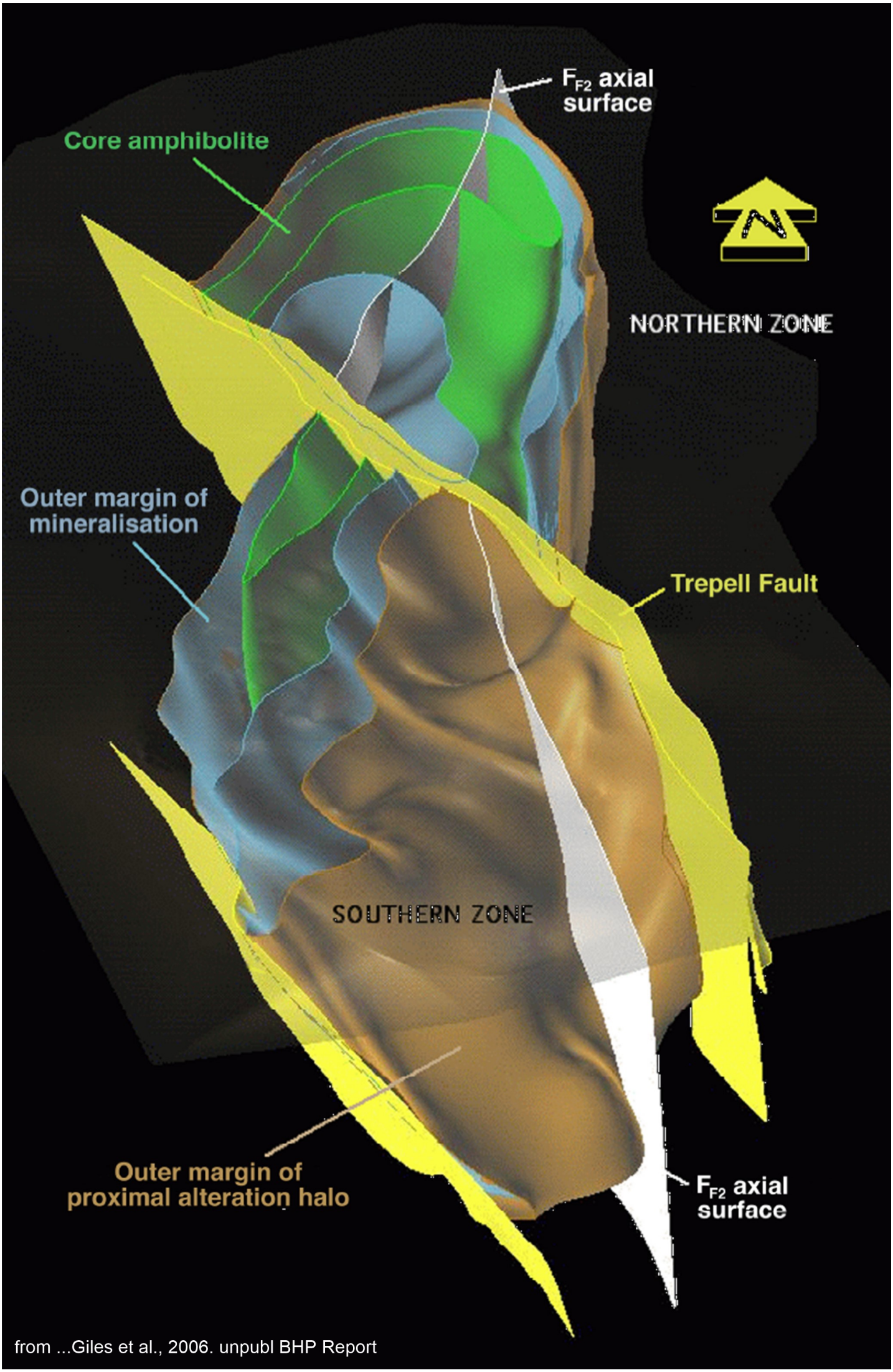
(1) TRACK Mount Norna Quartzite-Toole Creek Volcanics (MNQ -TCV) contact south from OUTCROP to UNDERCOVER

(2) EXPLORE architecture around Cannington Mine. DISCOVER next domain of MNQ-TCV

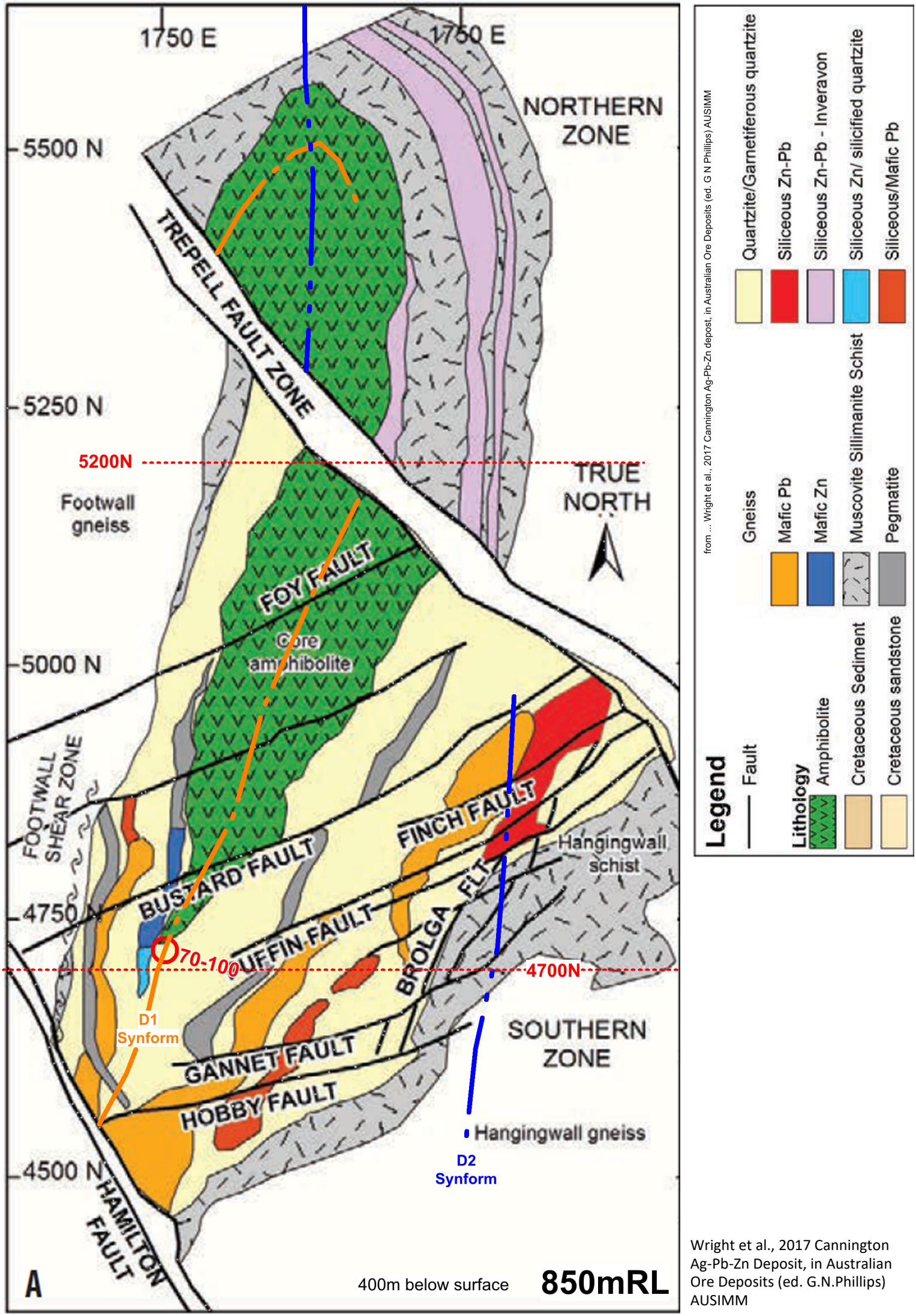
(3) IS THERE ANY syn-mineral ARCHITECTURE around Cannington to AID TARGETING?

(4) WHERE is the IMMEDIATE BROWNFIELDS potential at Cannington?

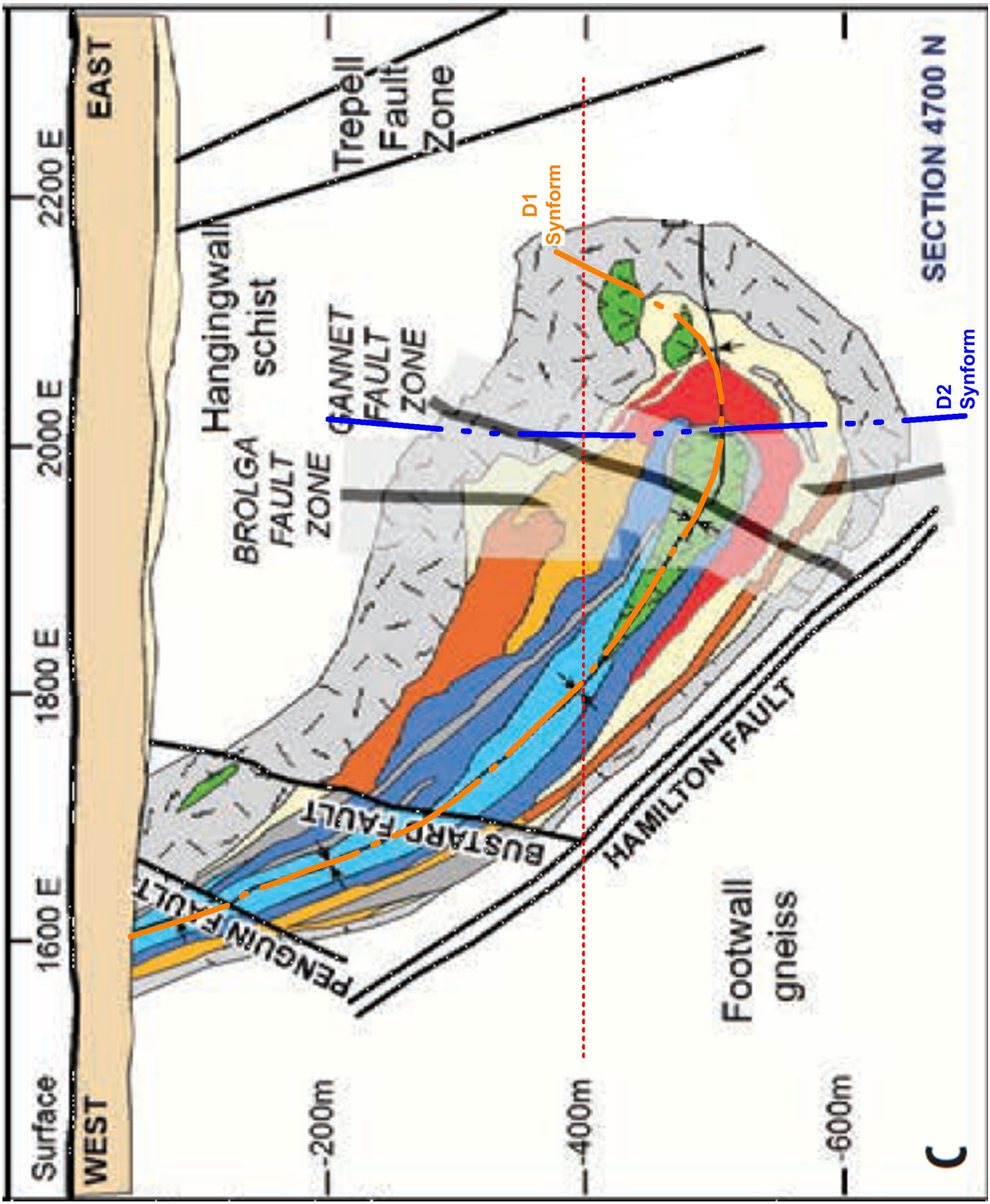
Materials/Data Provided:
MapInfo GIS Workspace
ESRI ArcMap mxd Project
Recently-released, '1370' Cloncurry detailed Magnetics (& clips)
Selwyn & Mount Angelay 100K Geology Rasters (& Legend)
Cannington Geology figures
Schematic Stratigraphies: East and West of Cloncurry Fault



from ...Giles et al., 2006. unpubl BHP Report



Wright et al., 2017 Cannington Ag-Pb-Zn Deposit, in Australian Ore Deposits (ed. G.N.Phillips) AUSIMM



from ... Wright et al., 2017 Cannington Ag-Pb-Zn depost, in Australian Ore Deposits (ed. G N Phillips) AUSIMM

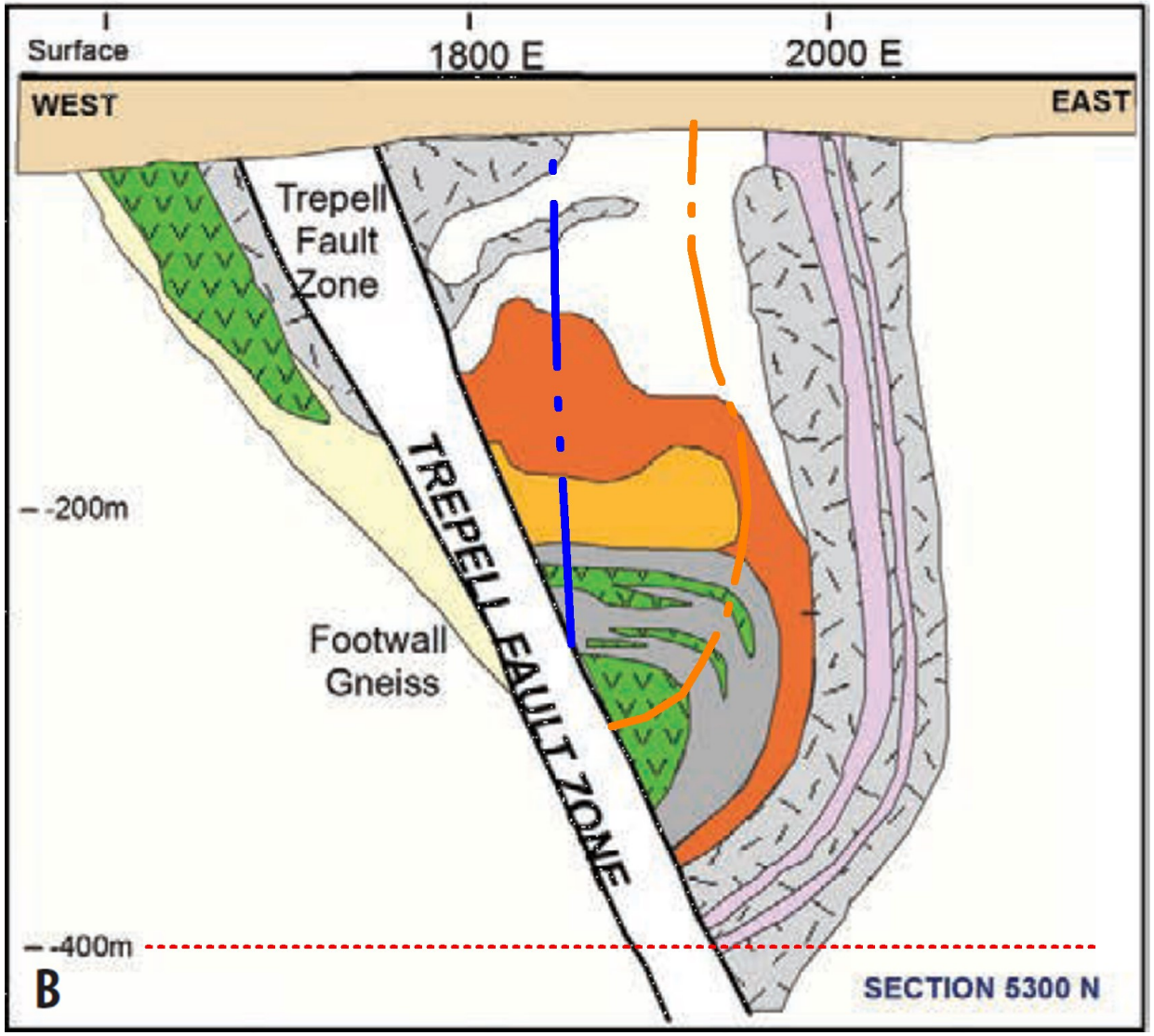
Legend

- Fault

Lithology

- Amphibolite
- Cretaceous Sediment
- Cretaceous sandstone
- Gneiss
- Mafic Pb
- Mafic Zn
- Muscovite Sillimanite Schist
- Pegmatite
- Quartzite/Garnetiferous quartzite
- Siliceous Zn-Pb
- Siliceous Zn-Pb - Inveravon
- Siliceous Zn/ silicified quartzite
- Siliceous/Mafic Pb

Wright et al., 2017 Cannington Ag-Pb-Zn Deposit, in Australian Ore Deposits (ed. G.N.Phillips) AUSIMM



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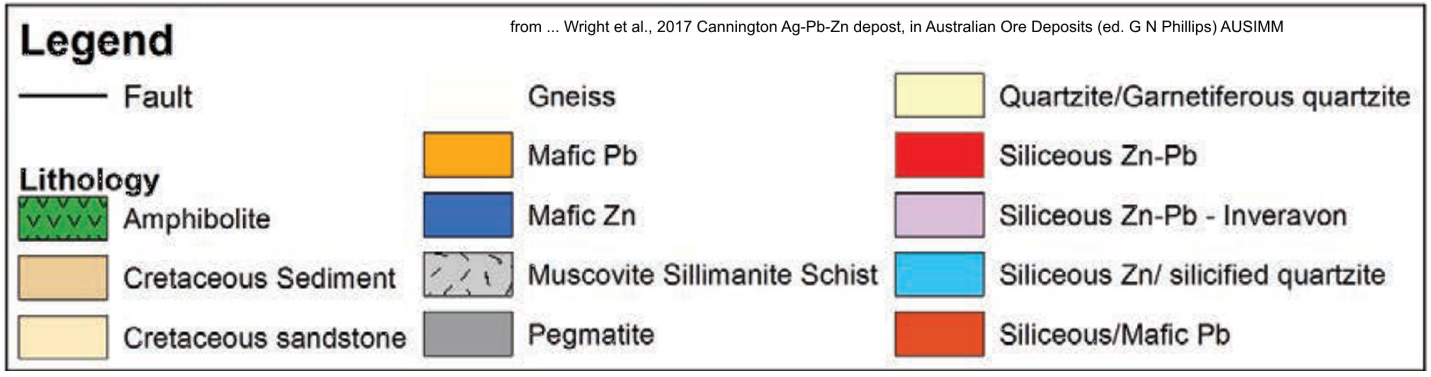
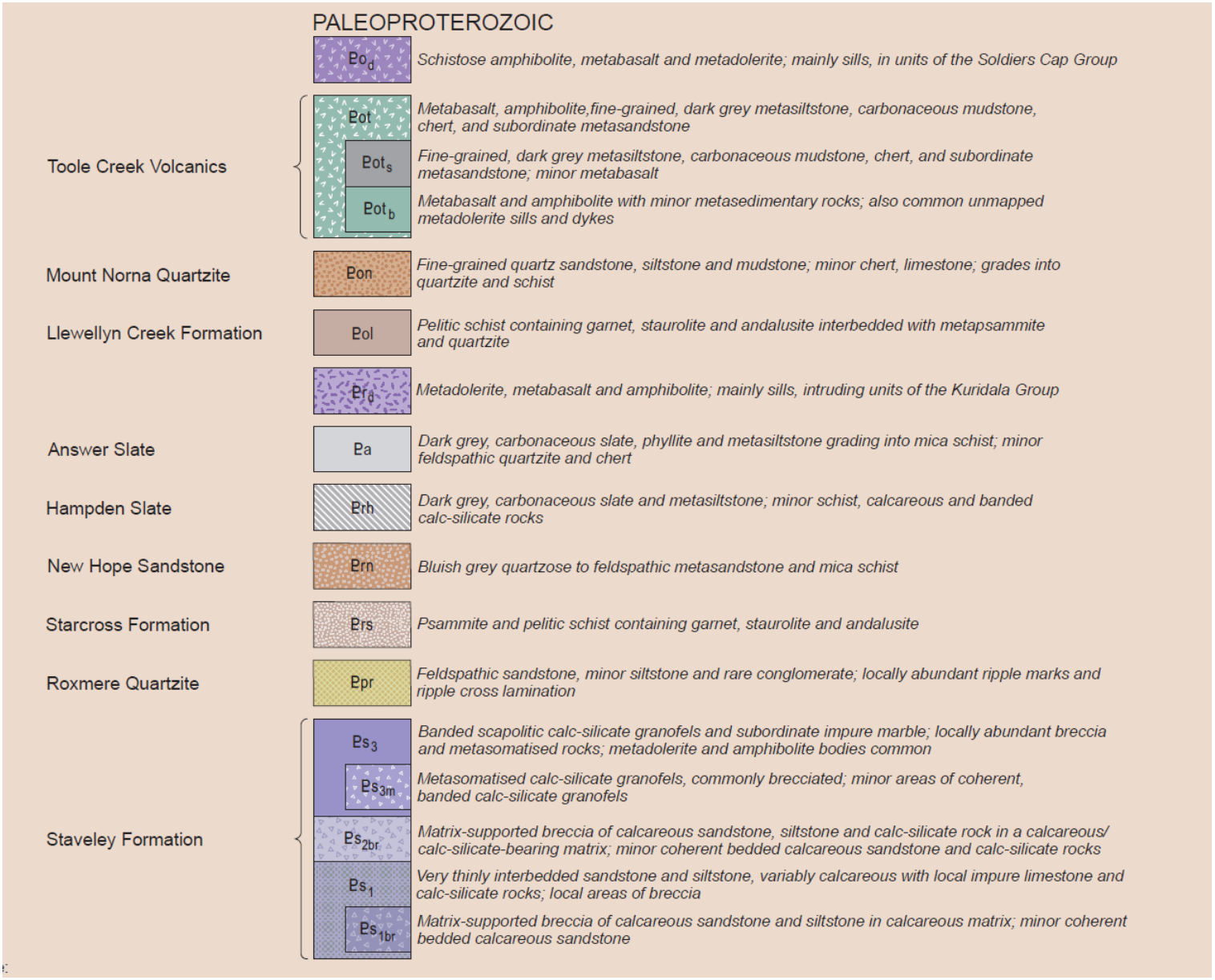




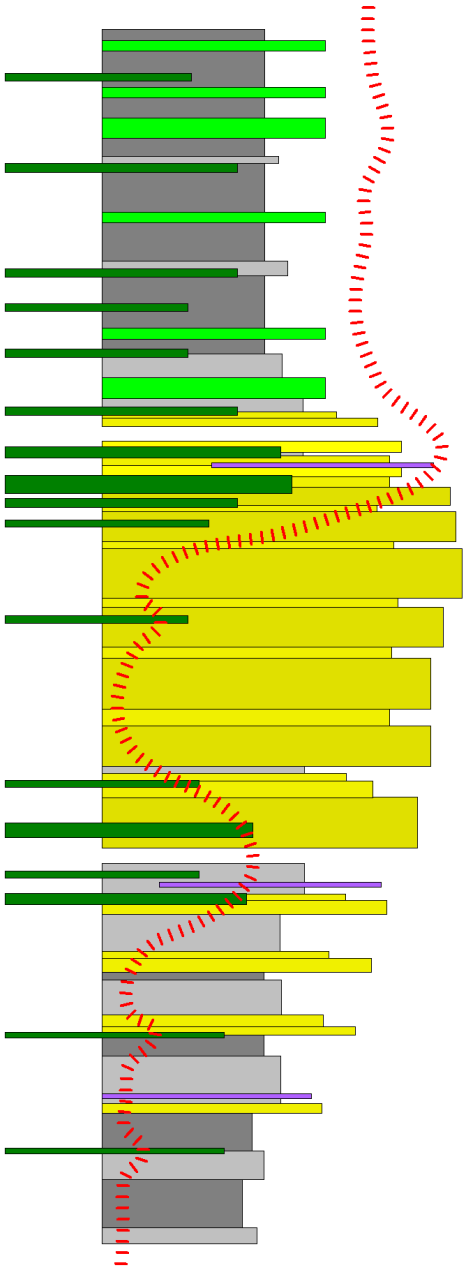
100K Stratigraphy LEGEND

Ps-Pol-Pon-Pot

TOOLE CREEK - ANSWER

MOUNT NORNA QUARTZITE

KURIDALA - Starcross-Llewelyn



Cannington

slate, phyllite, metasiltstone, mica schist,
graphitic schist, minor feldspathic quartzite, carbonaceous mudstone,
metabasalt, metadolerite, amphibolite, chert

Fine-grained, carbonaceous siltstone-shale, deep water, turbidites
RIFT DROWNING; significant volcanic & sub-volcanic thermal input

Significant basin deepening-drowning; organic preservation

quartzose-feldspathic, fine-medium grained,
meta sandstones-siltstones, minor mudstone;
schistose to gneissic & migmatitic;
metadolerite, amphibolite silling

Medium-grained, sandstone-dominated, ongoing turbiditic deposition
RIFT re-ACTIVATION; Locally significant thermal input

Fining Upwards packages that coarsen upwards
to clastic cleaning & starvation

psammo-pelitic schists, phyllite,
metagreywacke, carbonaceous siltstones,
graphitic slate, minor quartzite; metadolerite, amphibolite

Deep basin, fine sediment-dominated, turbiditic deposition

Fining Upwards packages that weakly coarsen upwards

NOTE: Schematic Stratigraphies ONLY.
No bed thickness relationships implied,
however, relative lithological proportions INDICATIVE.

East of CLONCURRY FAULT

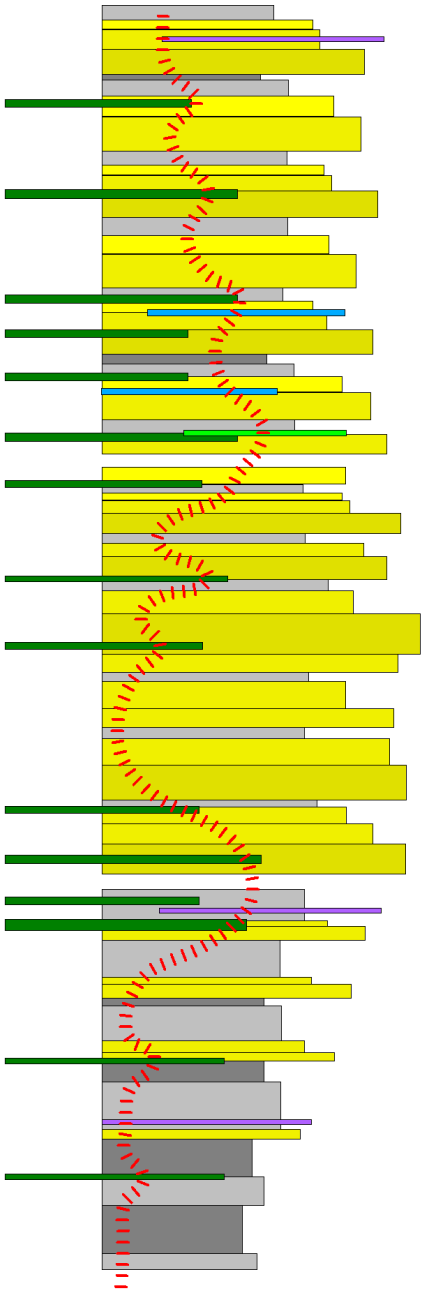
Depositional LITHOLOGY

- doleritic sills
- basalt
- carbonates
- iron formation
- carbonaceous siltstone-shale
- siltstone-shale
- fine grained arenite
- fine-medium-grained arenite
- medium(-coarse)-grained arenite

NEW HOPE SANDSTONE -2

NEW HOPE SANDSTONE - 1

KURIDALA - Starcross-Llewelyn



quartzose-feldspathic, fine-medium grained psammites, psammo-pelites;
increased phyllite, mica schist component; minor graphitic schist; minor calc-silicate;
moderate metadolerite, amphibolite siling; very minor metabasalt

Medium-grained, sandstone, siltstone & mudstone turbidites
Ongoing clastic deposition with increased fine component;
minor carbonate deposition; Moderate sub-volcanic thermal input

No significant basin re-configuration; Moderately increased thermal input

quartzose-feldspathic, fine-medium grained psammites,
psammo-pelites, pelites; minor mudstone;
meta sandstones-siltstones; lesser schistose to gneissic varients;
minor metadolerite, amphibolite silling

Medium-grained, sandstone-dominated, ongoing turbiditic deposition
Clastic re-activation; Relatively weak thermal input

Fining Upwards clastic packages without discernable trends

Pegmont

psammo-pelitic schists, phyllite,
metagreywacke, carbonaceous siltstones, graphitic slate,
minor quartzite; iron formations; metadolerite, amphibolite

Deep basin, fine sediment-dominated, turbiditic deposition

Fining Upwards packages that weakly coarsen upwards

NOTE: Schematic Stratigraphies ONLY.
No bed thickness relationships implied,
however, relative lithological proportions INDICATIVE.

West of CLONCURRY FAULT

Depositional LITHOLOGY

- doleritic sills
- basalt
- carbonates
- iron formation
- carbonaceous siltstone-shale
- siltstone-shale
- fine grained arenite
- fine-medium-grained arenite
- medium(-coarse)-grained arenite