



**Golden Cross Resources**  
**COPPER HILL PORPHYRY Cu-Au DEPOSITS**

**Sydney Mineral Exploration Discussion Group**



**SMEDG**



Sydney, Thursday, March 31, 2011

Kim Stanton-Cook

GCR Managing Director

## **Acknowledgments to**

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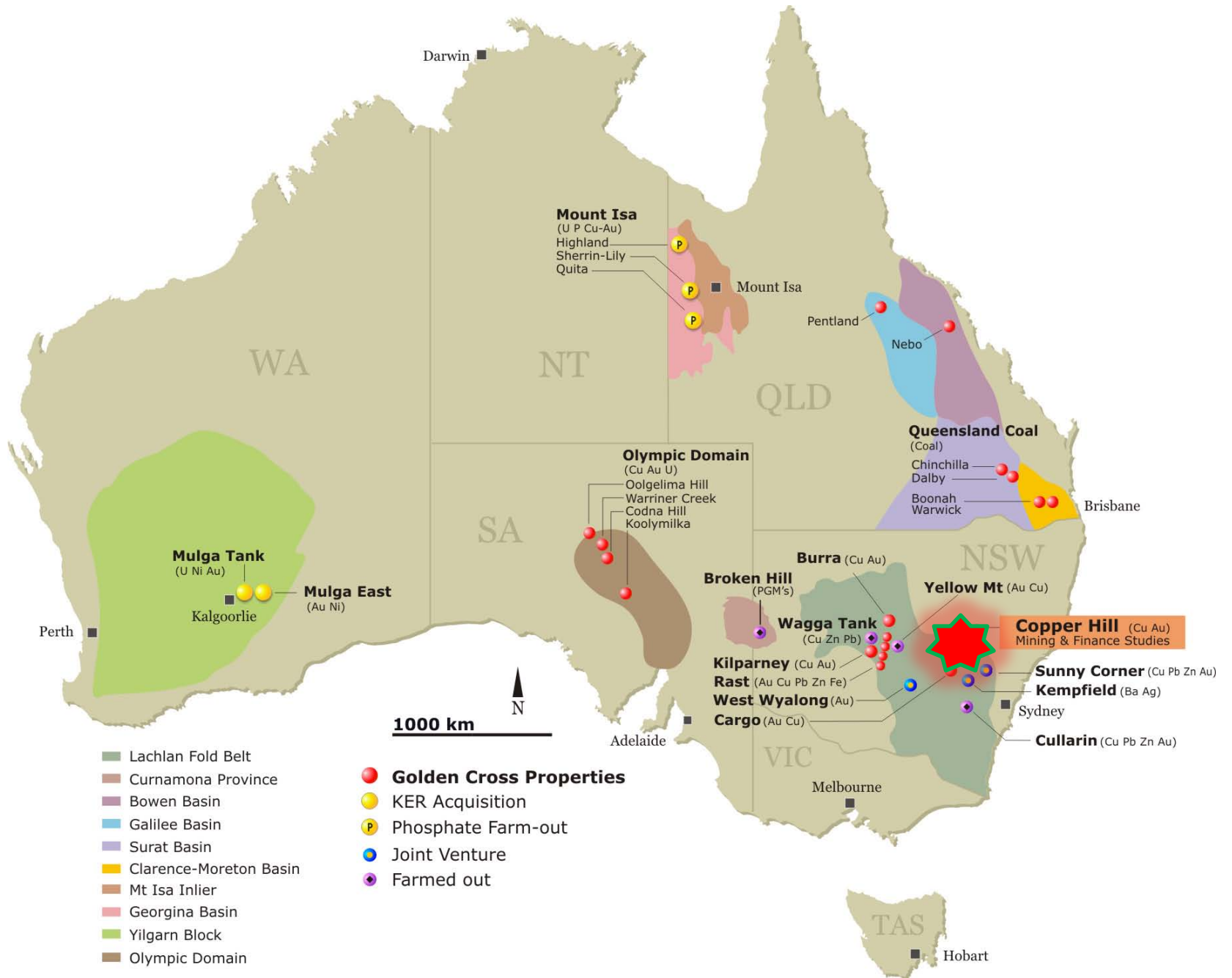
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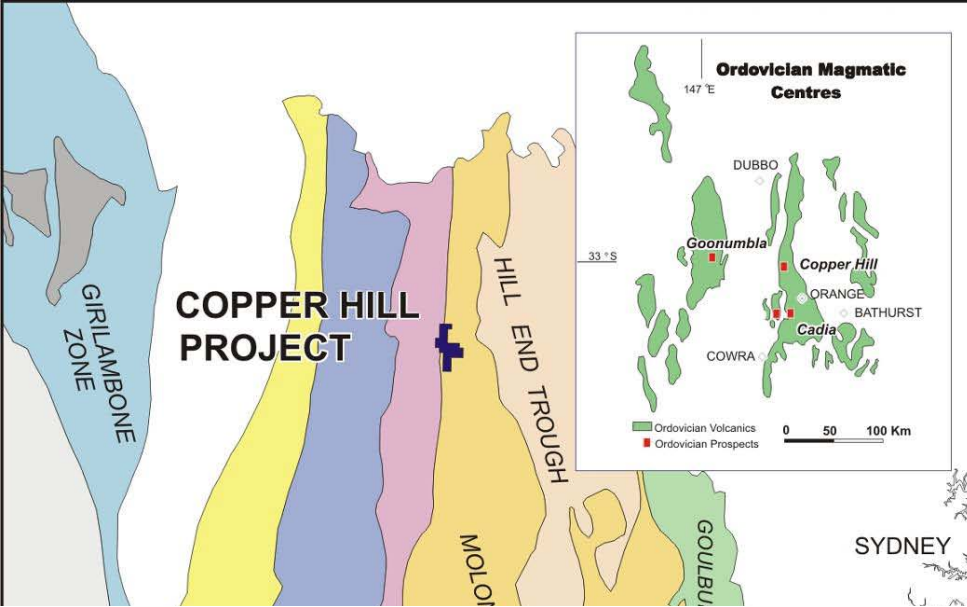
The information in this presentation that relates to Exploration Results is based on information compiled by Kim Stanton-Cook, who is a member of the Australian Institute of Geoscientists, is a full-time employee of GCR, and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Kim consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

March 2011



## GCR Project Locations





## Tectonic setting of porphyry copper-gold mineralisation in the Macquarie Arc

R. A. GLEN, A. J. CRAWFORD, D. R. COOKE

*The Ishihara Symposium: Granites and Associated Metallogensis*  
Geoscience Australia

“GROUP 3: ~450-445 Ma porphyries constitute the Copper Hill Suite, emplaced at the beginning of the 3rd phase of arc volcanism. Intrusives of this age form common but relatively small-volume mainly felsic intrusives in each of the volcanic belts. Mainly of dacitic composition, although sometimes extending to dioritic to gabbroic compositions, this suite is expressed mineralogically by the common quartz and hornblende phenocrysts in rocks with >60% SiO<sub>2</sub>. These rocks have medium K calc-alkaline affinities. These porphyries contain significant amounts of mineralisation in the Molong Volcanic Belt (Copper Hill, Cargo) and in the Narromine Igneous Complex in the Junee-Narromine Volcanic Belt.

GROUP 4: ~439 Ma porphyries were emplaced at the end of the 3rd phase of arc volcanism in all belts except the Kiandra Volcanic Belt. Intrusives are shoshonitic monzodiorite, monzonite, comagmatic with the most of Late Ordovician volcanics in the arc. Mineralised Group 4 porphyries comprise the world-class gold-copper resources at Northparkes and at Cadia-Ridgeway, as well as scattered mineralisation in the Forest Reefs area.”

147° E

DUBBO ■

**Galwadgere**  
2 Mt at 1% Cu, 0.3 g/t Au

**Tomingley**  
11 Mt at 2.29 g/t Au

**Peak Hill**  
11.3 Mt at 1.29 g/t Au, 0.11% Cu

**Northparkes**  
153 Mt at 1.03% Cu, 0.46 g/t Au

**Copper Hill Project**

173 Mt @ 0.31% Cu & 0.26g/t Au

33° S

**Cargo Prospect**

ORANGE

**Cadia East**  
2,347 Mt at 0.28% Cu, 0.44 g/t Au

**McPhillamys**  
92 Mt at 1.0 g/t Au, 0.07% Cu

**Cowal**  
121 Mt at 1.0 g/t Au




**Marsden**  
224 Mt at 0.32% Cu, 0.17 g/t Au

COWRA ■

**Junction Reefs**  
2.4 Mt at 3.25 g/t Au

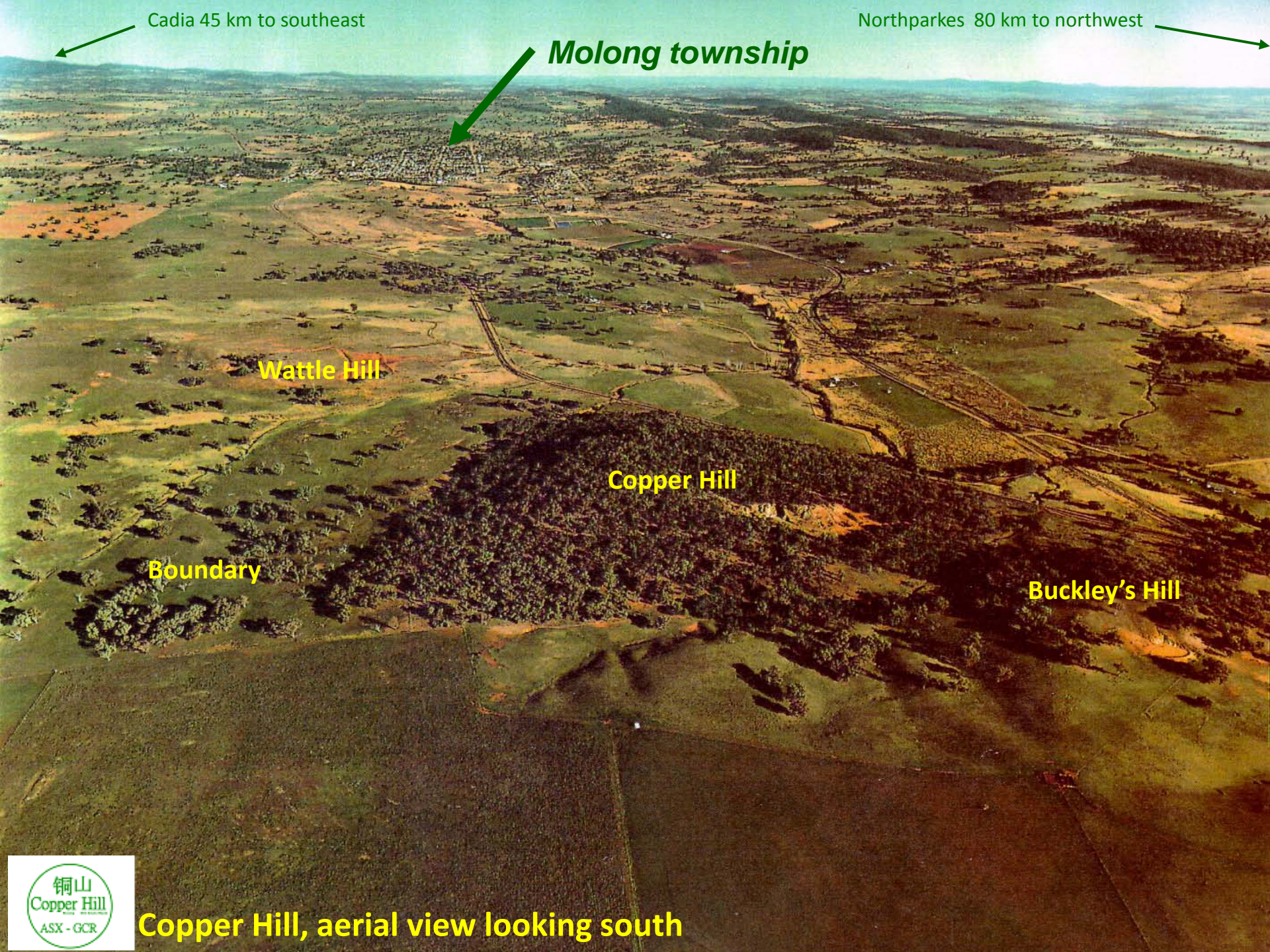
**Gidginbung**  
9.1 Mt at 2.4 g/t Au

0 50 km

-  **Golden Cross Property**
-  Cu-Au Mines
-  Ordovician Magmatic Centres

# Copper Hill: Regional Address





Cadia 45 km to southeast

Northparkes 80 km to northwest

**Molong township**

**Wattle Hill**

**Copper Hill**

**Boundary**

**Buckley's Hill**

**Copper Hill, aerial view looking south**





# Copper Hill

- Resources Block Model estimated by Hellman & Schofield: *173 million tonnes containing 0.53 million tonnes copper and 1.47 million ounces of gold. New Resource estimate soon and step-out drilling planned.*
- Copper Hill Igneous Complex of late-Ordovician calc-alkaline, multi-phase dacite-tonalite intrusions within a north-south trending sequence of Ordovician basaltic andesite lavas

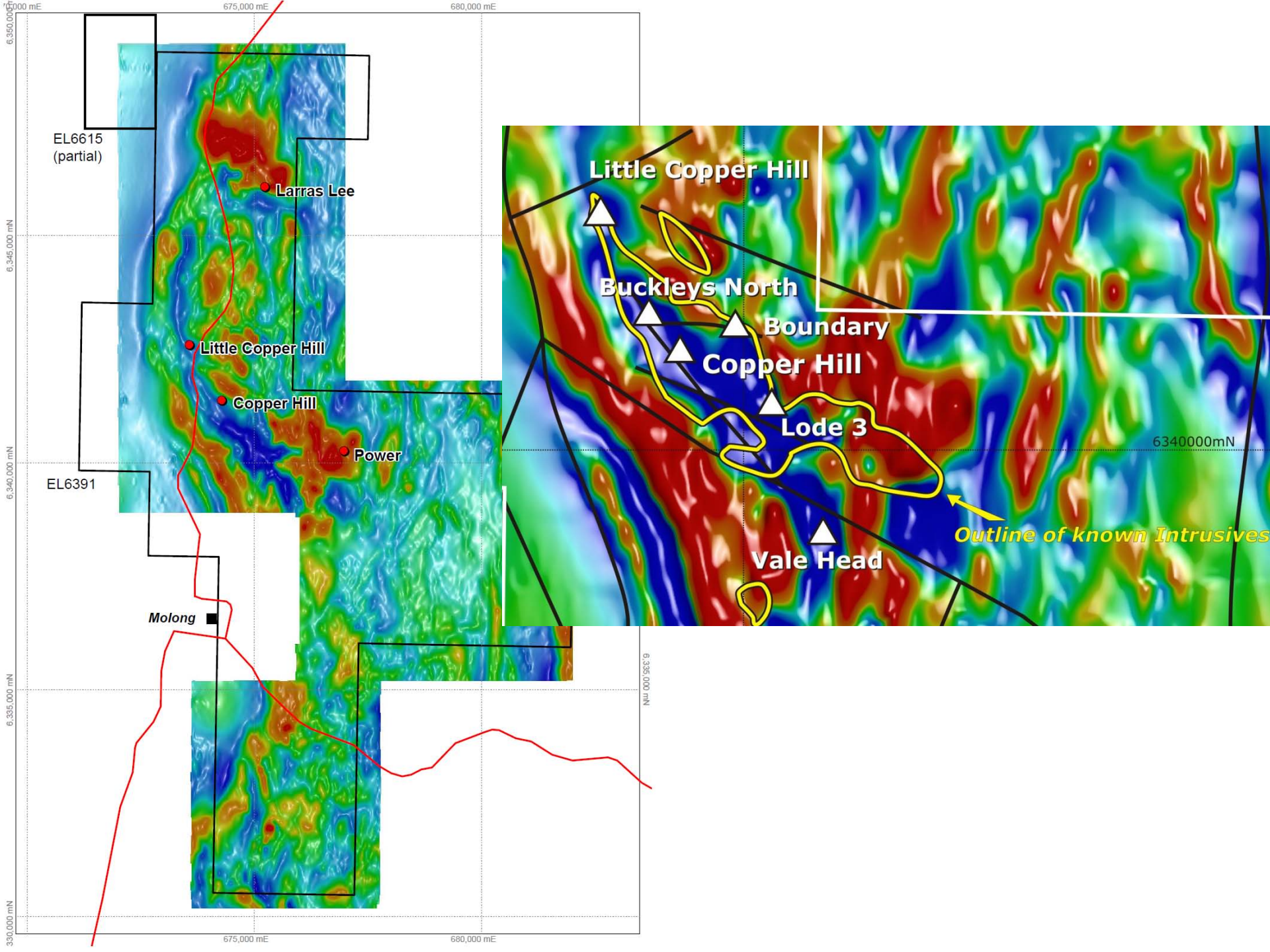


# COPPER HILL EXPLORATION HISTORY

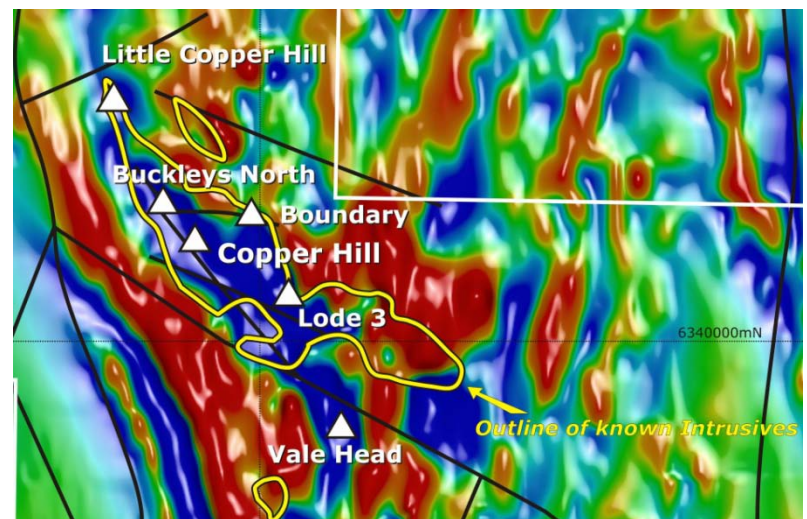
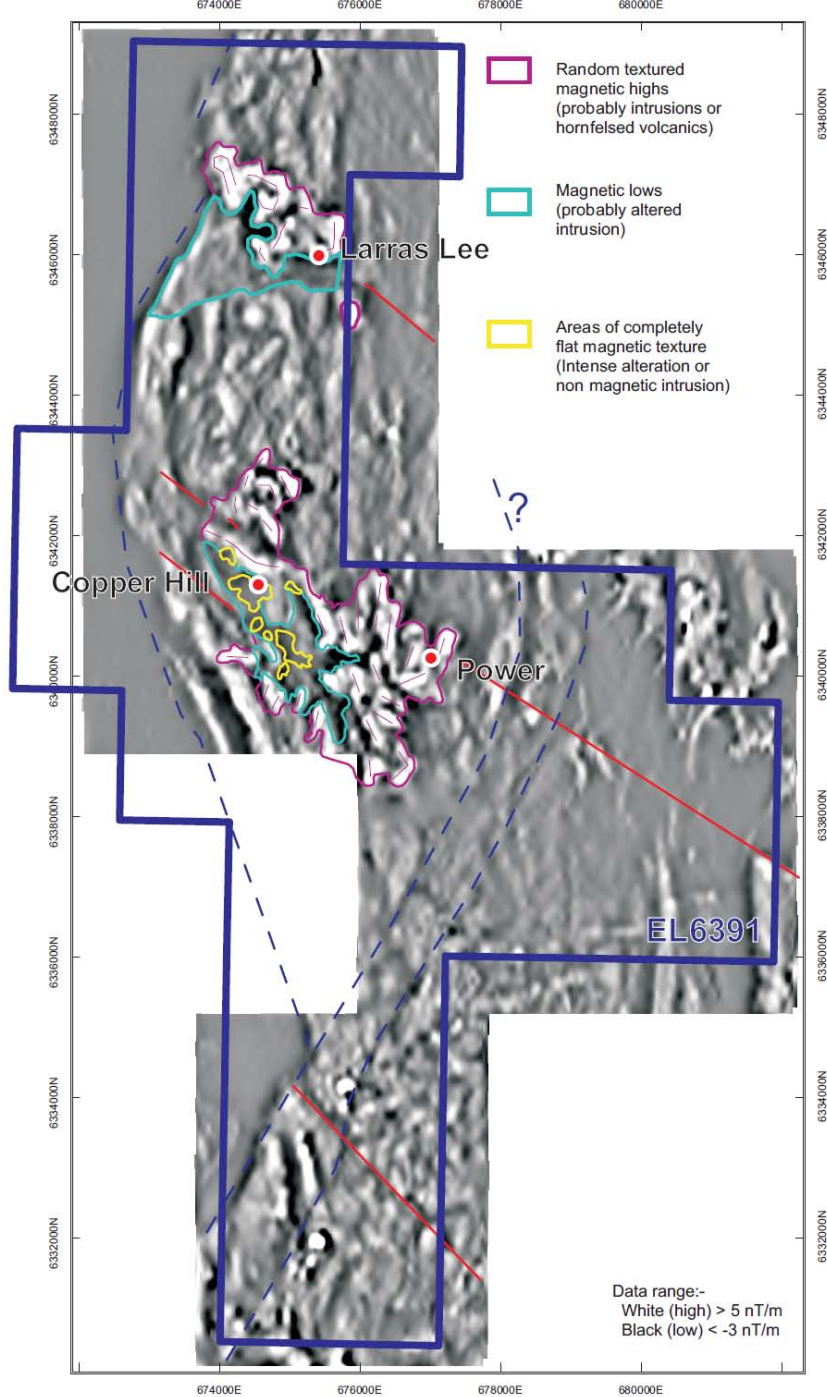
- Discovered and mined around 1845 – 60m deep shafts, cross-cuts and unsuccessful reverberatory furnace
- 1850 – 1966 sporadic small scale mining
- In the past forty years, the Copper Hill area and in particular the Copper Hill prospect has been explored by a number of mineral exploration companies and government agencies:
- 1966-67 - exploration for porphyry copper (Anaconda)
- 1970s – exploration for copper (Amax Australia, Le Nickel, NSW DMR)
- 1980s – exploration for copper and/or gold (BHP, Homestake, Cyprus Gold)
- 1990s – exploration for copper-gold (Amoco-Cyprus, Newcrest and MIM)
- 2000 to 2007 – exploration for gold-copper (MIM and GCO)
- Between 1984 and 2005, exploration at Copper Hill was undertaken primarily on EL 2290 by a number of companies including Eastern Gold, Homestake, Cyprus Gold, Mount Isa Mines Exploration, Newcrest Mining and Golden Cross Operations (GCO).
- Consolidation of EL's into a single merged tenement (EL 6391) in early 2005, all exploration has been undertaken by GCO Now 100% GCO.

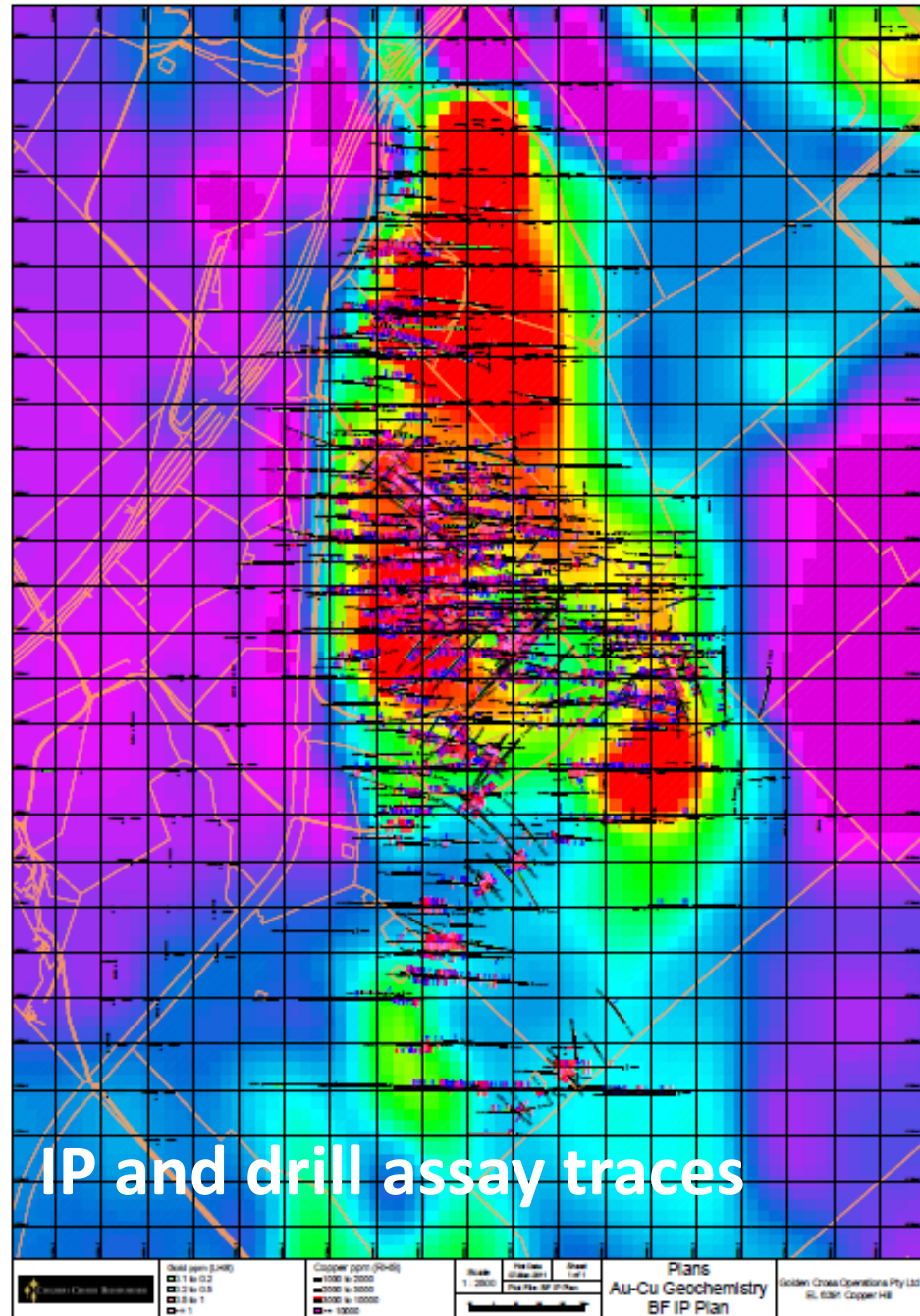
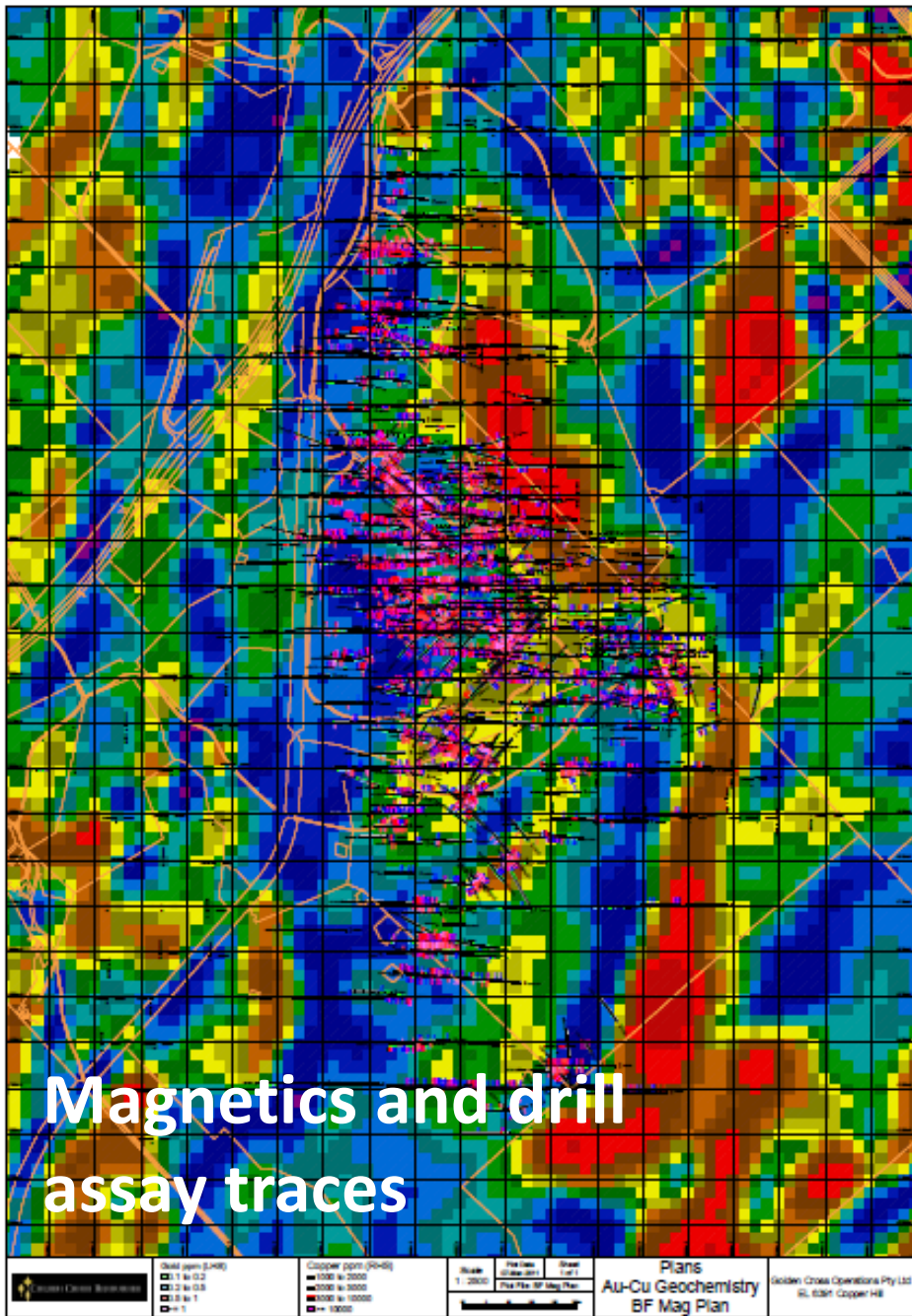
# Copper Hill – Exploration

- Airborne magnetic & radiometric surveys
- Induced Polarisation surveys
- Geochemical surveys
- Geological mapping and interpretations
- Drilling – logging (lithologies, mineralisation, alteration, structure) assigning domains
- Resource calculations
- Mining studies - feasibility



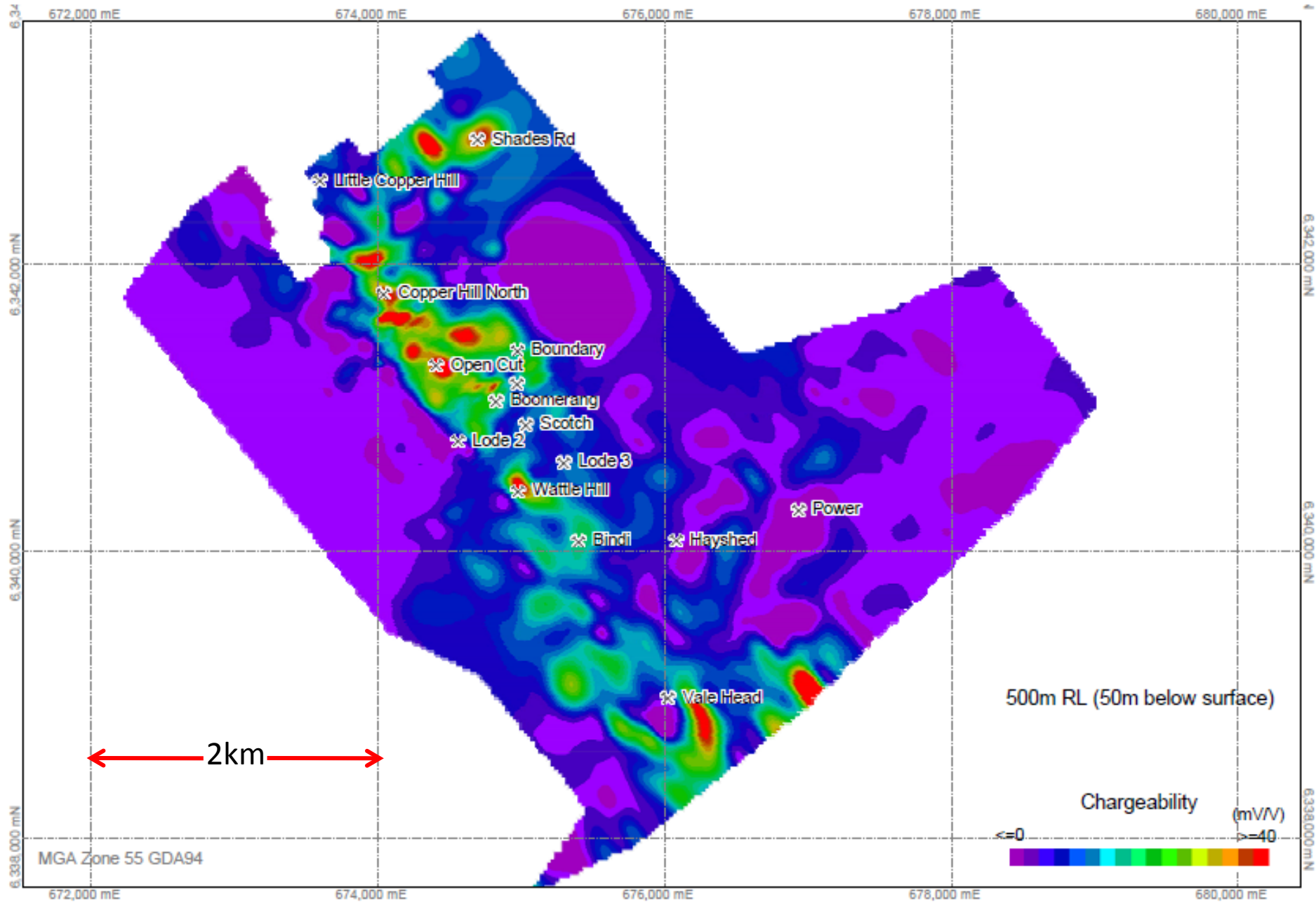








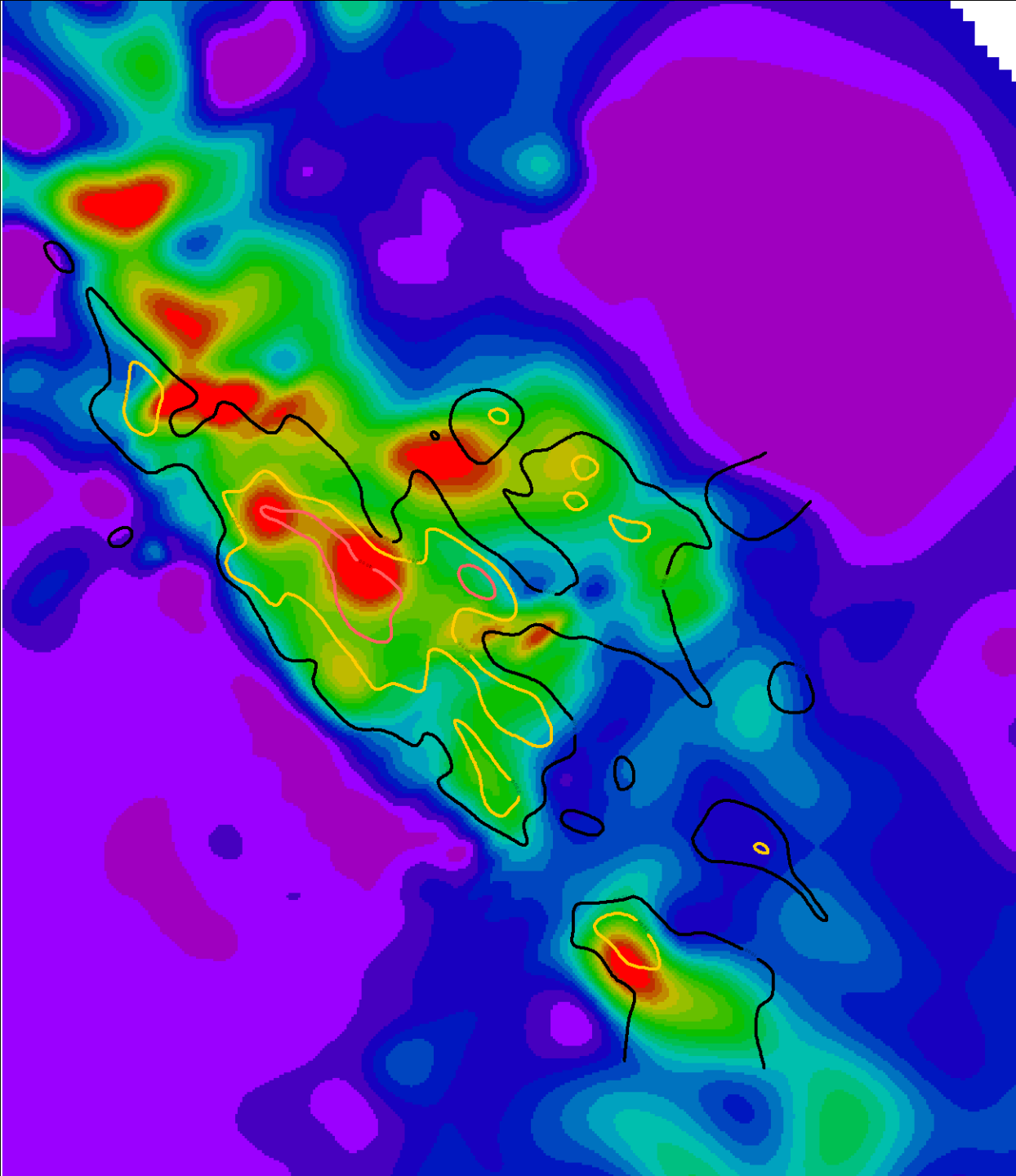
# Copper Hill IP - Chargeability

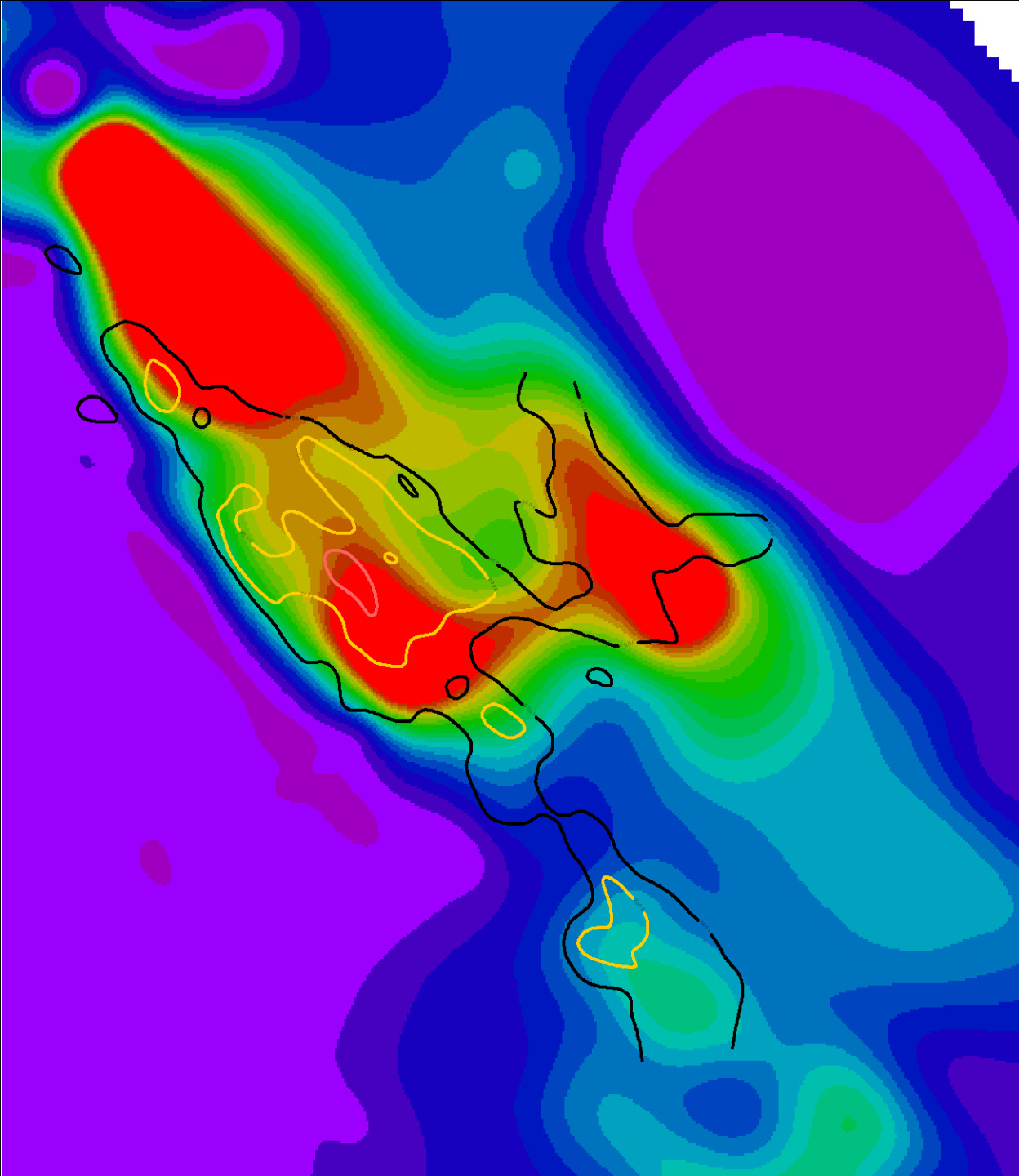




**100m  
below  
surface**

**1km**

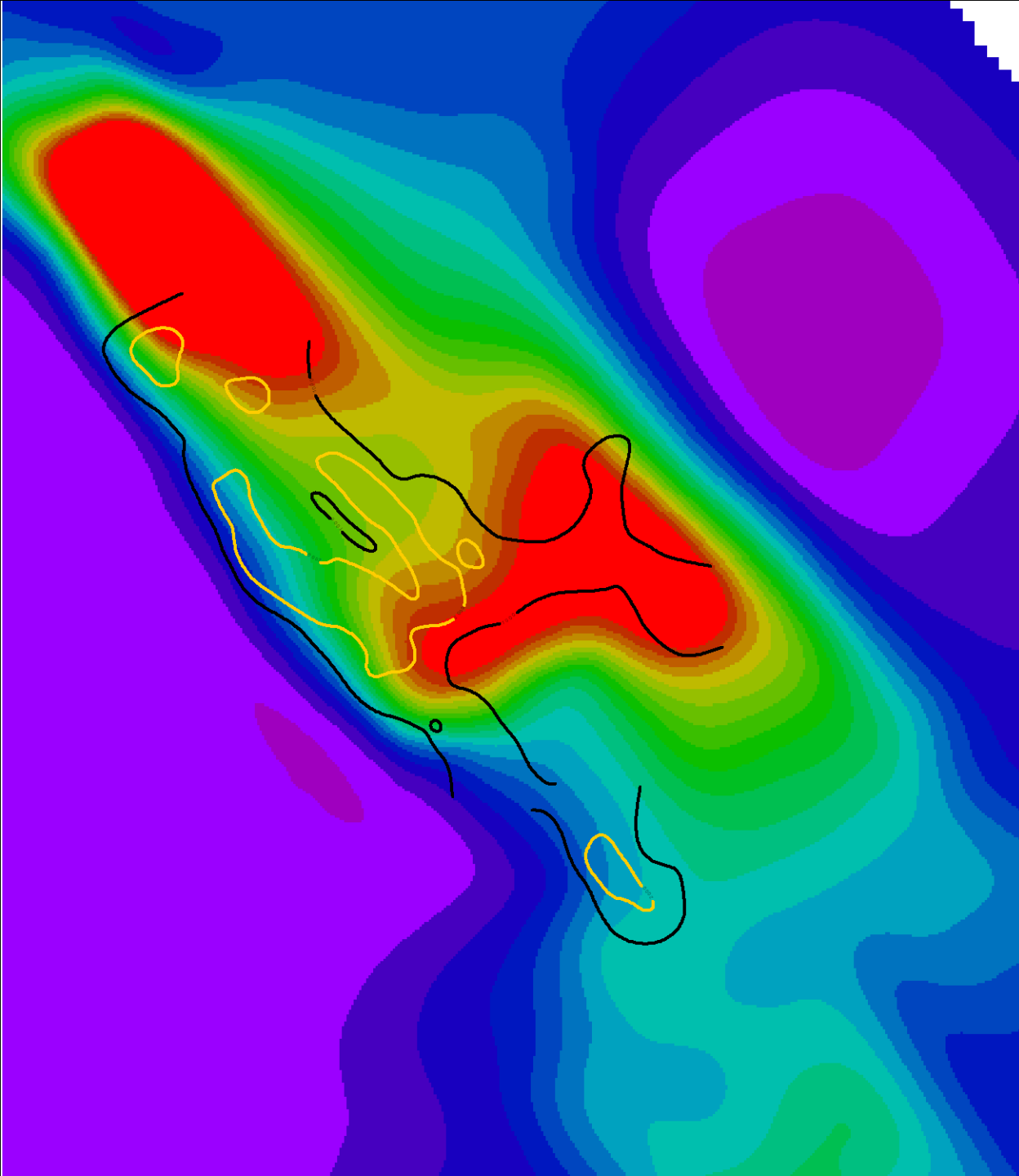




**200m  
below  
surface**

**1km**



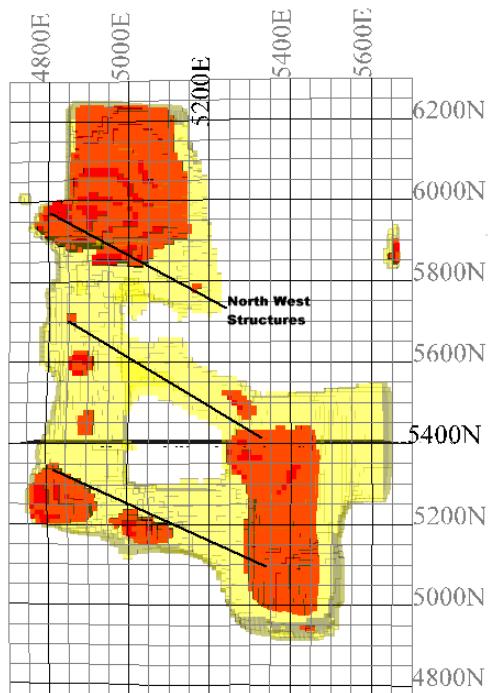


**300m  
below  
surface**

**1km**

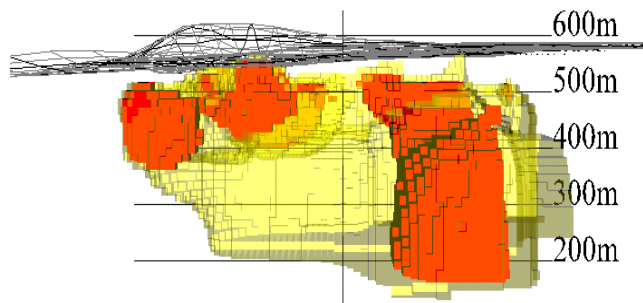




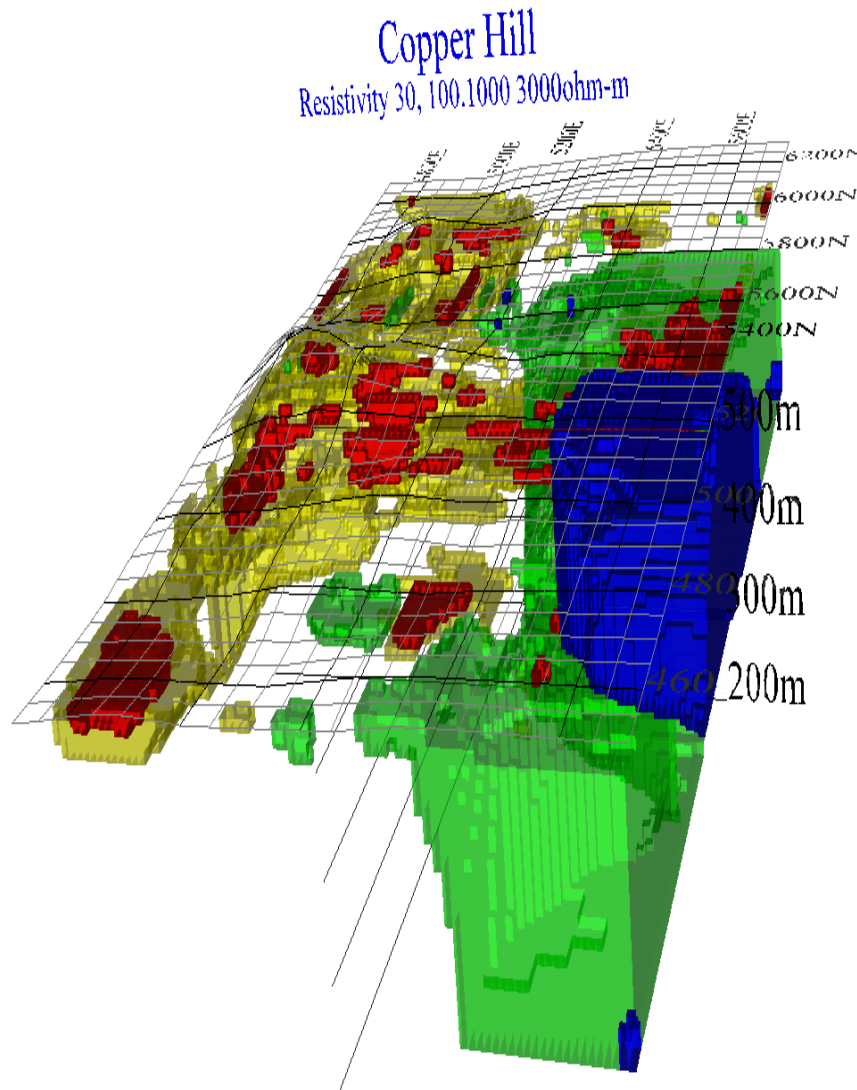


**Plan of 3D IP Chargeability Model.**  
Yellow 35, Red 45 mV/V. .

Copper Hill  
Chargeability 35 & 45mSec



**Perspective section of 3D chargeability model looking north.**

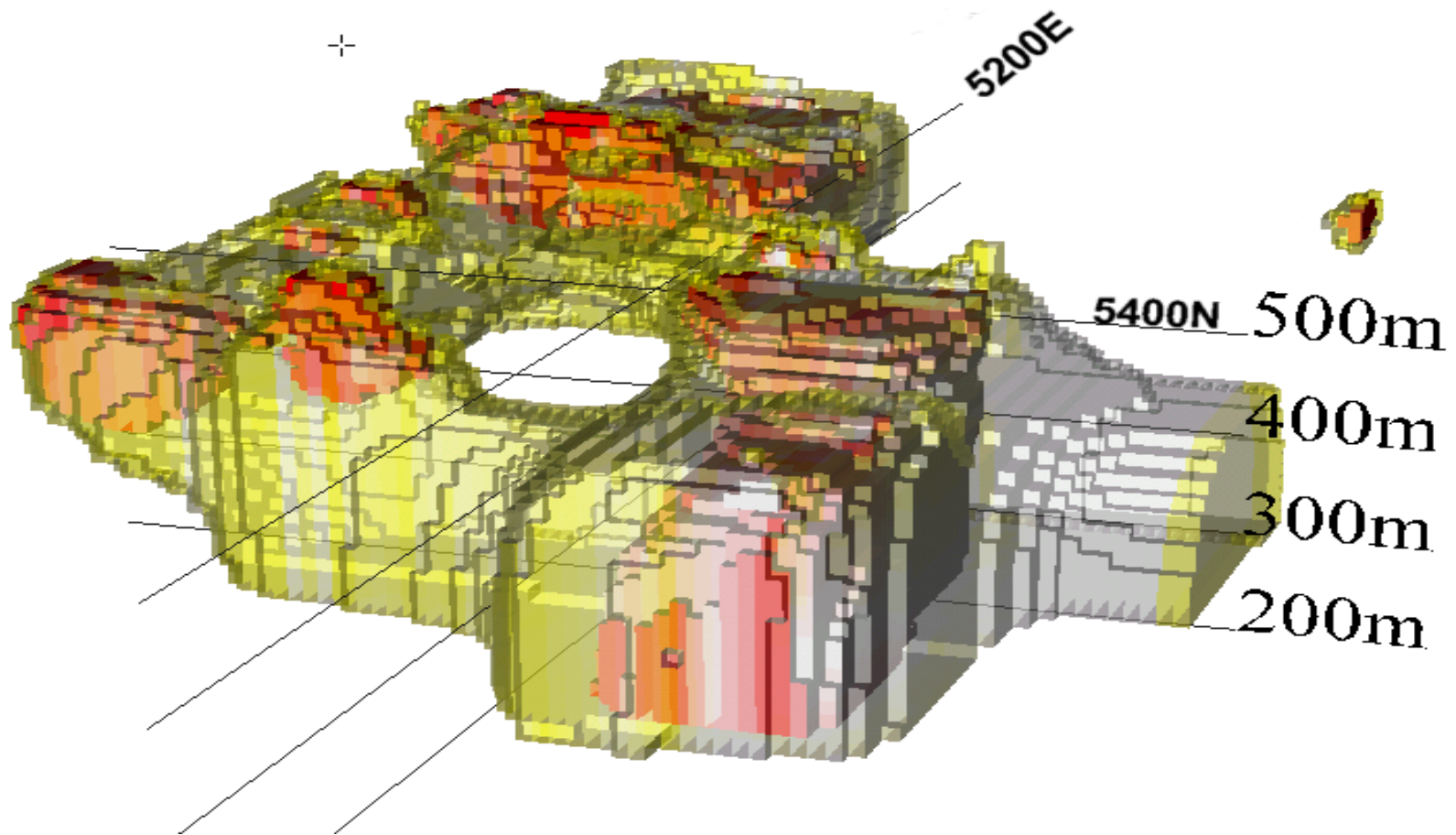


**.Resistivity Model. Red low to blue high resistivity. The green and blue area are coincident with the volcanics.**

From: A new survey design for 3D IP inversion modelling at Copper Hill.  
R.M.S. White S. Collins R. Denne R. Hee P. Brown

# Copper Hill

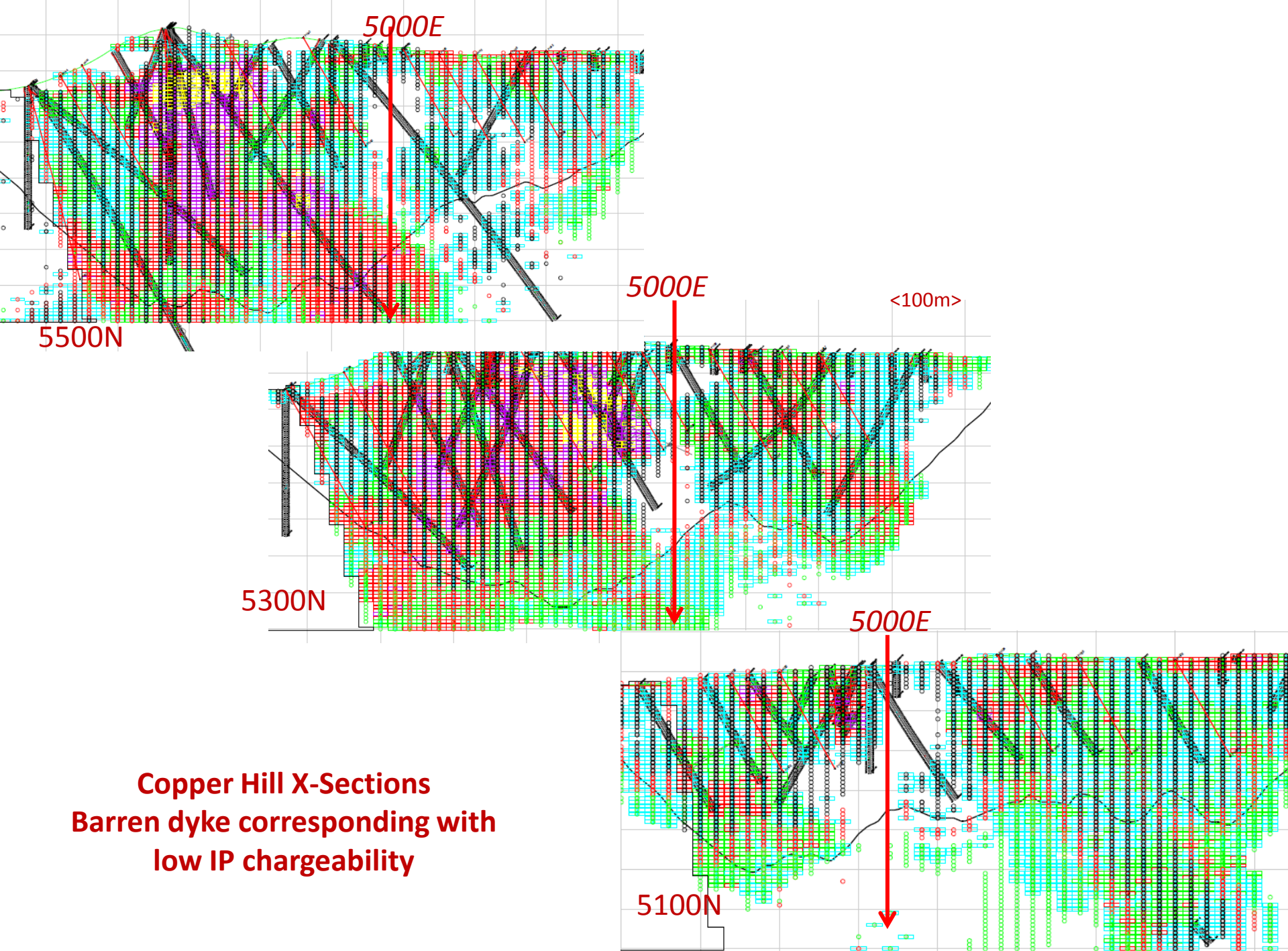
Chargeability 35, 45mSec



**3D Chargeability IP model of Copper Hill with sensitivity controlling the colour saturation.**

**From: A new survey design for 3D IP inversion modelling at Copper Hill.**

**R.M.S. White S. Collins R. Denne R. Hee P. Brown**



**Copper Hill X-Sections**  
**Barren dyke corresponding with**  
**low IP chargeability**

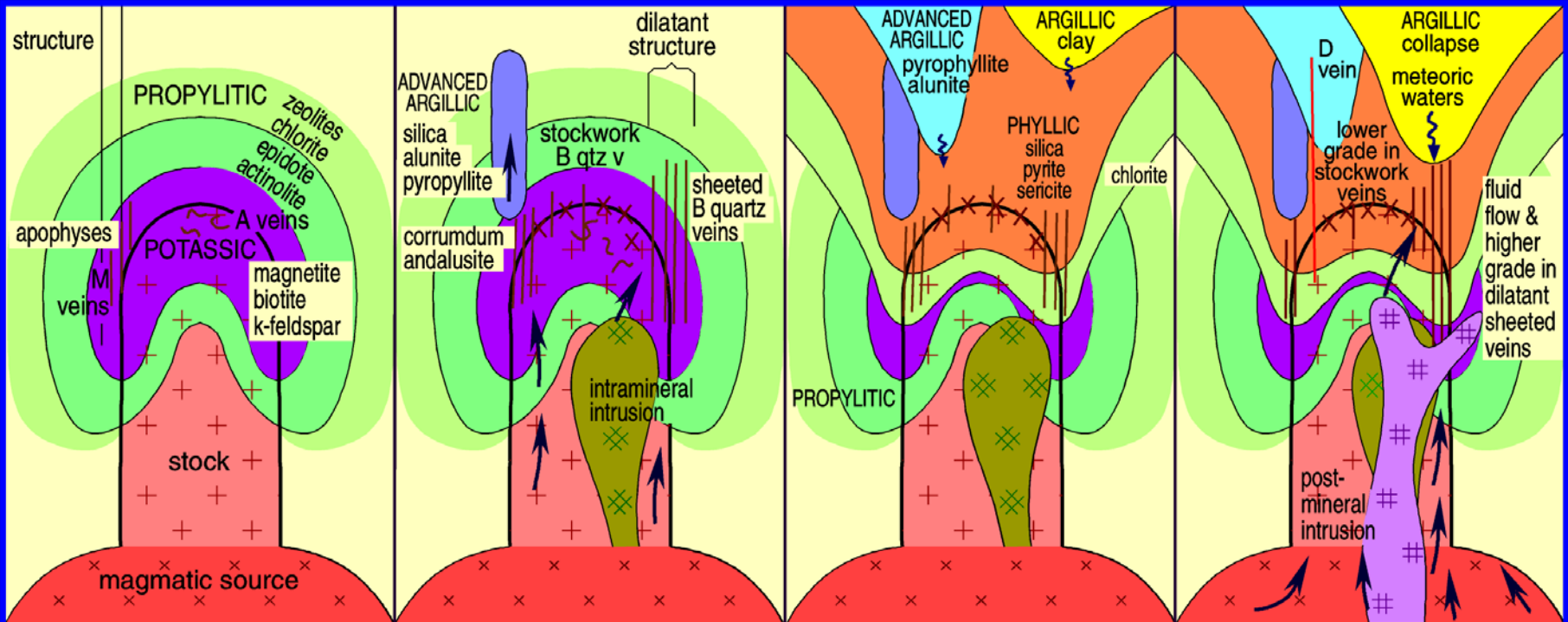


# Greg Corbett's Evolving Porphyries

## STAGED PORPHYRY Cu-Au EVOLUTION

EARLY

LATE



Intrusion emplacement and heat transfer.

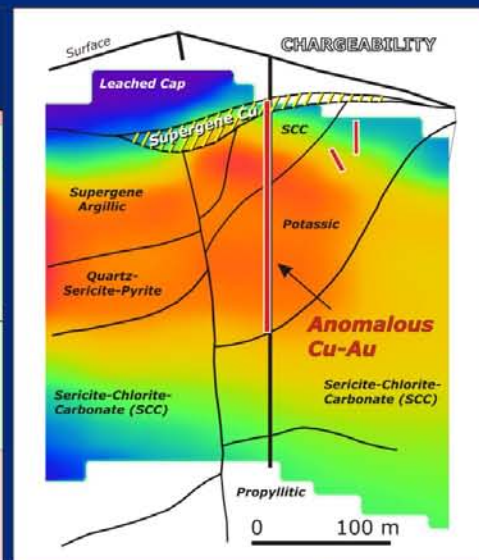
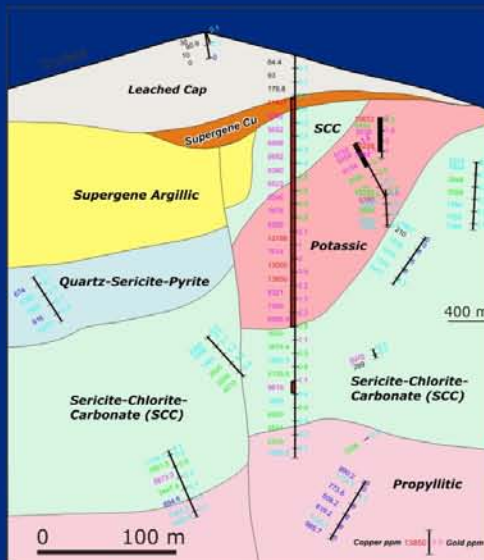
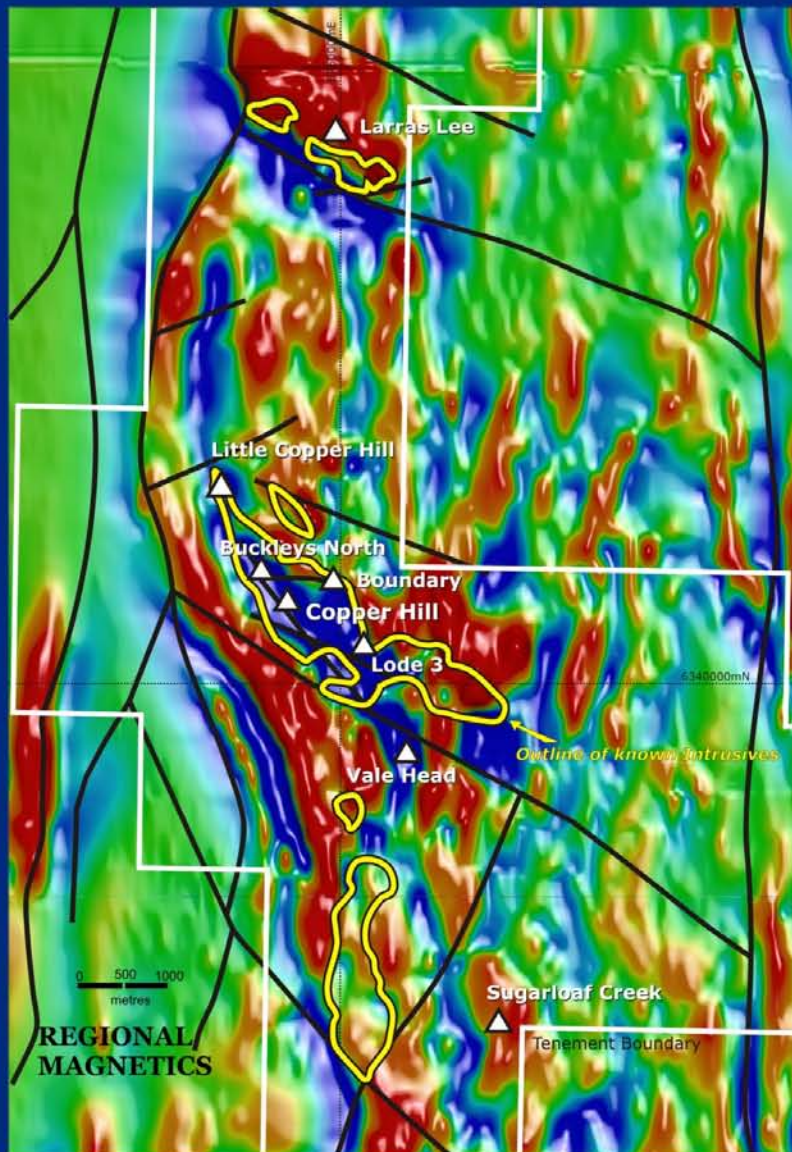
Initiation of A & M quartz vein formation and early mineralization

B quartz vein formation and continued prograde alteration and mineralisation.

Exsolution of magmatic volatiles.

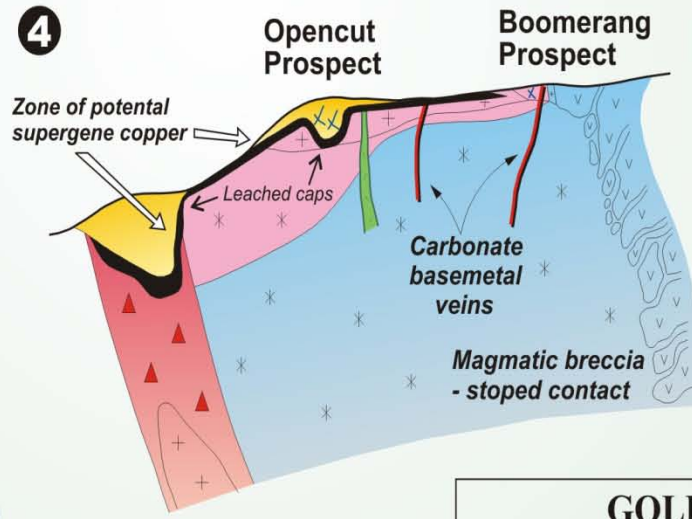
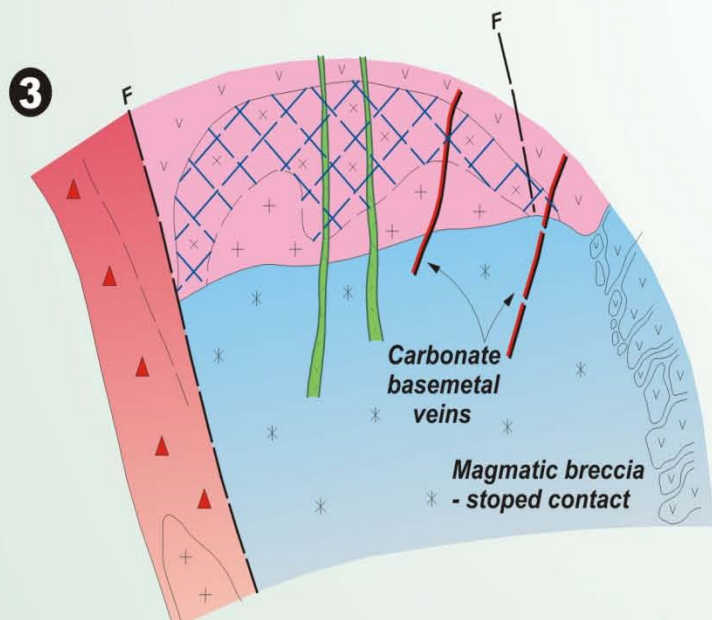
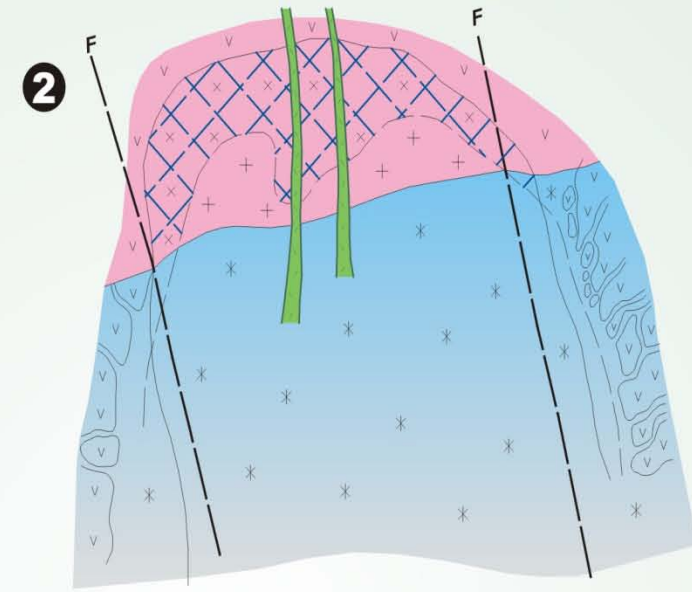
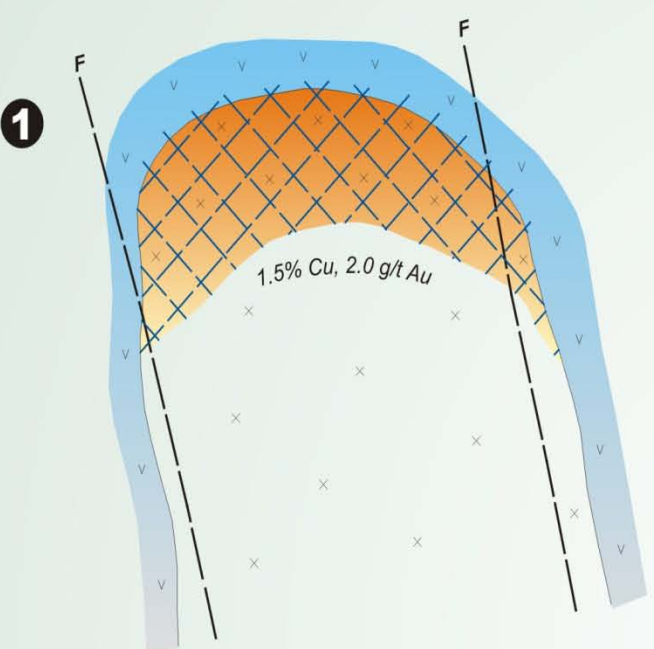
Cooling and collapsing of retrograde alteration.

Continued collapse, D vein mineralization, & post-mineral features.



Copper Hill  
Magnetics, Sections





LITHOLOGIES	
V V	Andesite volcanics
x x	Dacite porphyry (Dp1)
+ +	Intra-mineral dacite porphyry (Dp2)
* *	Intra-mineral dacite porphyry (Dp2+)
Green line	Late dacite dikes (Dpx)
Blue cross-hatch	Quartz stockwork (1.0% Cu, 1g/t Au)
Red triangle	Hydrothermal breccia

ALTERATION	
Yellow	Supergene argillic
Red	Quartz sericite pyrite
Pink	Sericite chlorite carbonate
Blue	Chlorite albite + magnetite epidote
Orange	Potassic

- 1** Dp1 intrusion into andesitic volcanics. Formation of sheeted stockwork quartz veining. Dominant trend ~330.60° Associated with potassic alteration.
- 2** Dp2, Dp2+ intra-mineral phases and retrograde carbonate chlorite sericite + pyrite magnetite overprint
- 3** Phyllic event + hydrothermal - diatreme breccia formation + carbonate base metal veins
- 4** Erosion and supergene development

**GOLDEN CROSS OPERATIONS  
COPPER HILL PROJECT**

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**Copper Hill Igneous Complex**

Figure 4





Sheeted laminated quartz-magnetite-sulphide (M style) veins within intrusion F - DDH107, 257 m.

Greg Corbett photographs



Stockwork B veins in intrusion F DDH 107 214m

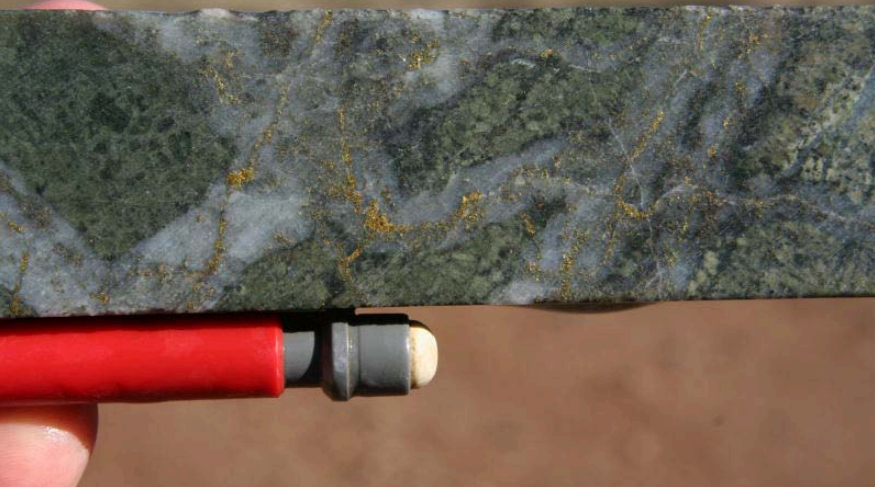


Sheeted B veins in sericite altered intrusion F. Note the central terminations with sulphide fill - DDH 64, 132m.



C vein style sulphides overprinting laminated quartz vein - DDH 64 139m

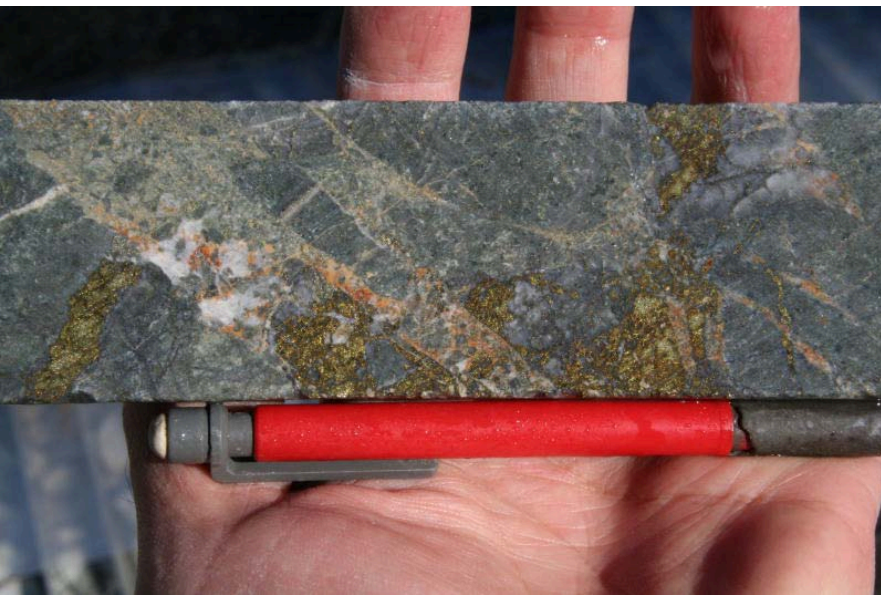




Later sulphides overprint laminated  
and B veins – DDH 64 130m



Early chlorite-magnetite alteration cut by  
later sulphides of a C vein style – DDH 74  
248m.



Sulphide fill breccia of a C vein  
type- DDH 107 232m.



Pyrite-rich D vein with later carbonate -  
DDH 74 245m



## Paul Ashley's Petrographic Studies



GCHR064      59.3 m      PTS

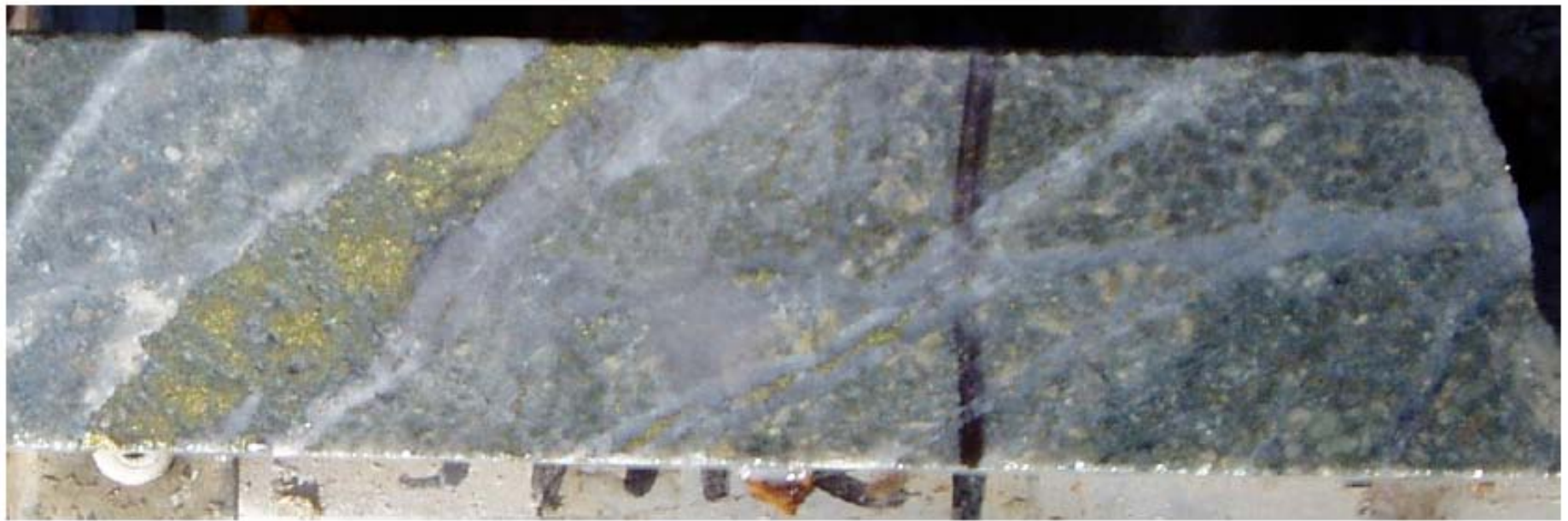
Summary: Very strongly hydrothermally altered, strongly porphyritic dacite or microtonalite porphyry. The rock originally contained abundant feldspar (probably plagioclase) phenocrysts, less common ferromagnesian and quartz phenocrysts and a few microphenocrysts of FeTi oxide and apatite, all set in a rather fine grained, inequigranular quartzofeldspathic groundmass. The rock has been subjected to phyllic alteration, with replacement of feldspar, ferromagnesian, FeTi oxide and groundmass components by an assemblage of sericite, quartz, subordinate carbonate and pyrite, and traces of rutile/leucoxene, chalcopyrite, tetrahedrite and sphalerite. About a pyrite-rich vein, the alteration selvedge contains less carbonate, but more pyrite than away from the vein. Further away from the vein, pseudomorphs after feldspar are dominated by carbonate and clay. The pyrite-rich vein also contains quartz and carbonate and traces of chalcopyrite, sphalerite, tetrahedrite and galena. Later thin veins are carbonate-rich.





**GCHR064      62.8 m      TS**

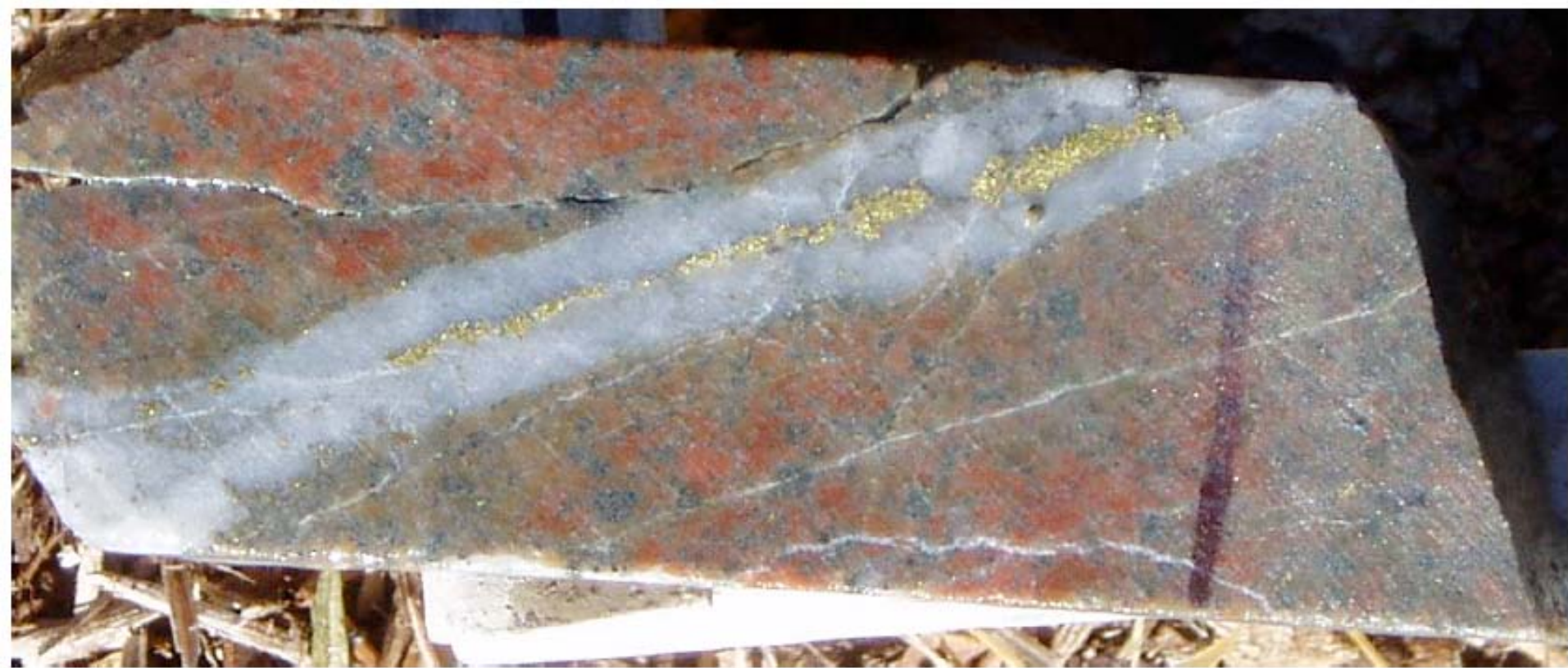
Summary: Porphyritic dacite (or microtonalite porphyry) originally containing phenocrysts of plagioclase, ferromagnesian phases, quartz and microphenocrysts of FeTi oxide in a fine grained quartzofeldspathic groundmass. The rock has undergone strong and pervasive hydrothermal alteration of propylitic type, with replacement of most phases (except quartz and some FeTi oxide) by quartz, carbonate, chlorite, sericite, clay and a little pyrite and leucoxene. The altered rock has been cut by a few veins containing quartz, carbonate, pyrite, chalcopyrite and a little chlorite.



**GCHR064**      **76.6 m**      **PTS**

Summary: Very strongly altered porphyritic dacite (or microtonalite porphyry) with local veining. The original rock contained scattered plagioclase, ferromagnesian and quartz phenocrysts, with a few microphenocrysts of FeTi oxide and apatite in a fine grained quartzofeldspathic groundmass. It probably underwent initial pervasive alteration with the formation of minor hydrothermal biotite at ferromagnesian sites, but subsequently this potassic alteration phase was overprinted by a pervasive propylitic alteration stage, causing extensive, strong replacement by sericite, carbonate, quartz, chlorite, clay, disseminated pyrite and a little chalcopyrite, hematite and rutile. The rock has been cut by a couple of sub-planar veins containing quartz and minor carbonate, pyrite, plus a little chalcopyrite, chlorite, magnetite and hematite. These veins are enveloped in strong phyllic alteration selvages, with a quartz-sericite assemblage plus minor pyrite and a little chalcopyrite and carbonate.

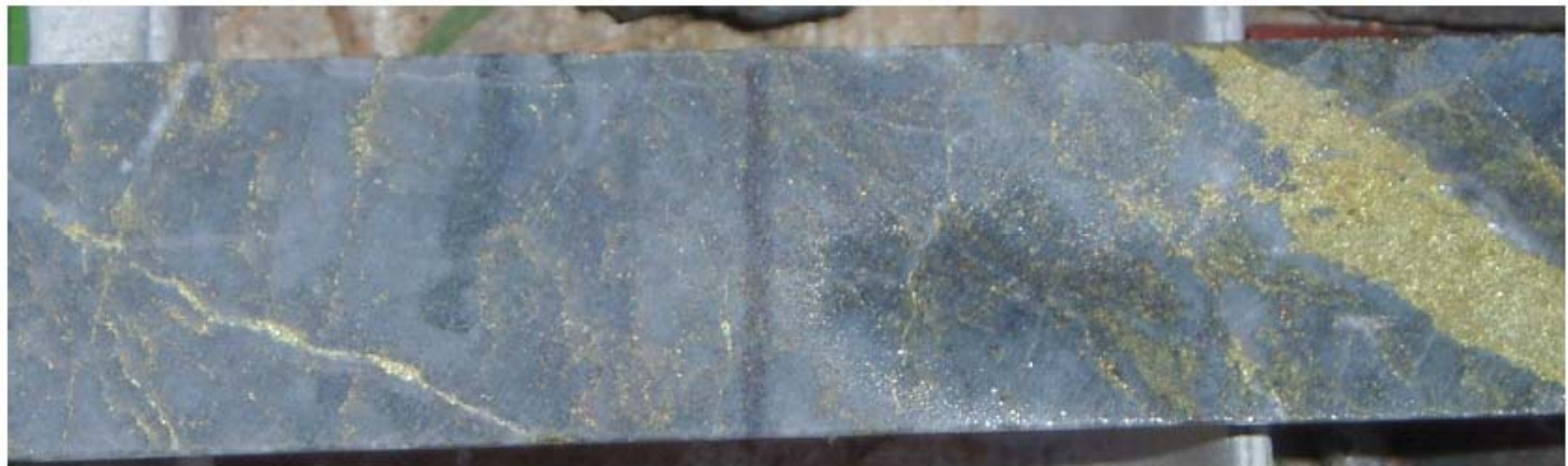




**GCHR064**      **89.5 m**      **PTS**

**Summary:** Porphyritic dacite (or microtonalite porphyry) with crowded phenocryst texture with moderate to strong pervasive hydrothermal alteration. The rock has been cut by a prominent quartz-rich vein containing disseminated chalcopyrite and carbonate. The original rock contained abundant plagioclase phenocrysts and less common phenocrysts and microphenocrysts of quartz, ferromagnesian material and FeTi oxide, set in a subordinate amount of fine grained inequigranular quartzofeldspathic groundmass. The rock may have undergone initial alteration to albite and hydrothermal biotite, with a little chalcopyrite and magnetite being deposited, coeval with the emplacement of the quartz-chalcopyrite-carbonate vein. Subsequently, the rock underwent retrograde propylitic alteration, with replacement by chlorite, carbonate and sericite and emplacement of a few thin carbonate veins containing a little chalcopyrite.





**GCHR064**      **118.4 m**      **PTS**

Summary: Mostly hydrothermal vein infilling with minor retention of highly altered screens of host rock. It is likely that the host rock (presumably porphyritic dacite or similar, but no relict texture preserved) was initially intensely altered to assemblages ranging from hydrothermal biotite + quartz, with minor chalcopyrite and a little magnetite, to quartz-rich. There was invasion by a sheeted vein system showing crack-seal textures. The veins are dominated by quartz, with minor chalcopyrite and carbonate, and a little magnetite and trace bornite. Subsequent later veining has occurred with emplacement of a few carbonate + chalcopyrite veins. There was also retrograde alteration imposed on the remnant screens of host rock, with replacement of biotite by chlorite and a little carbonate and chalcopyrite, plus trace rutile.



**GCHR064**      **134.75 m**      **PTS**

Summary: Contact between fine grained porphyritic dacite and microtonalite porphyry, with both rock type displaying strong hydrothermal alteration and veining. It is possible that the dacite could be an enclave in, or a dyke in, the microtonalite porphyry, although the actual contact zone shows a thin strip of microbreccia, suggesting that it might be faulted. The dacite has scattered altered phenocrysts of plagioclase and ferromagnesian material (probably hornblende) and a few microphenocrysts of quartz and FeTi oxide in a very fine grained and slightly fluidal quartzofeldspathic groundmass. The microtonalite porphyry contains altered plagioclase and ferromagnesian phenocrysts and a few relict phenocrysts of quartz and FeTi oxide in an inequigranular, fine to medium grained quartzofeldspathic groundmass. Both rock types appear to have undergone early alteration, with local replacement by hydrothermal biotite and minor chalcopyrite and quartz. Albitisation of plagioclase could have occurred during this event, along with emplacement of a few veins of quartz, with aggregates of chalcopyrite, a little carbonate and trace pyrite and magnetite. Later, the sample underwent pervasive propylitic retrograde alteration with replacement by sericite, clay, chlorite and carbonate and the emplacement of several carbonate-rich veins.





**GCHR107      206.05 m      TS**

**Summary:** Strongly porphyritic dacite, with relict quartz phenocrysts and pseudomorphs after former phenocrysts of plagioclase and ferromagnesian material in a very fine grained quartzofeldspathic groundmass. There has been very strong pervasive hydrothermal alteration of phyllic type imposed, with replacement of feldspar, ferromagnesian and groundmass components. The alteration assemblage is dominated by quartz, sericite and carbonate, with a little clay, pyrite and chlorite, and a few veins containing carbonate, minor pyrite and trace chalcopyrite.



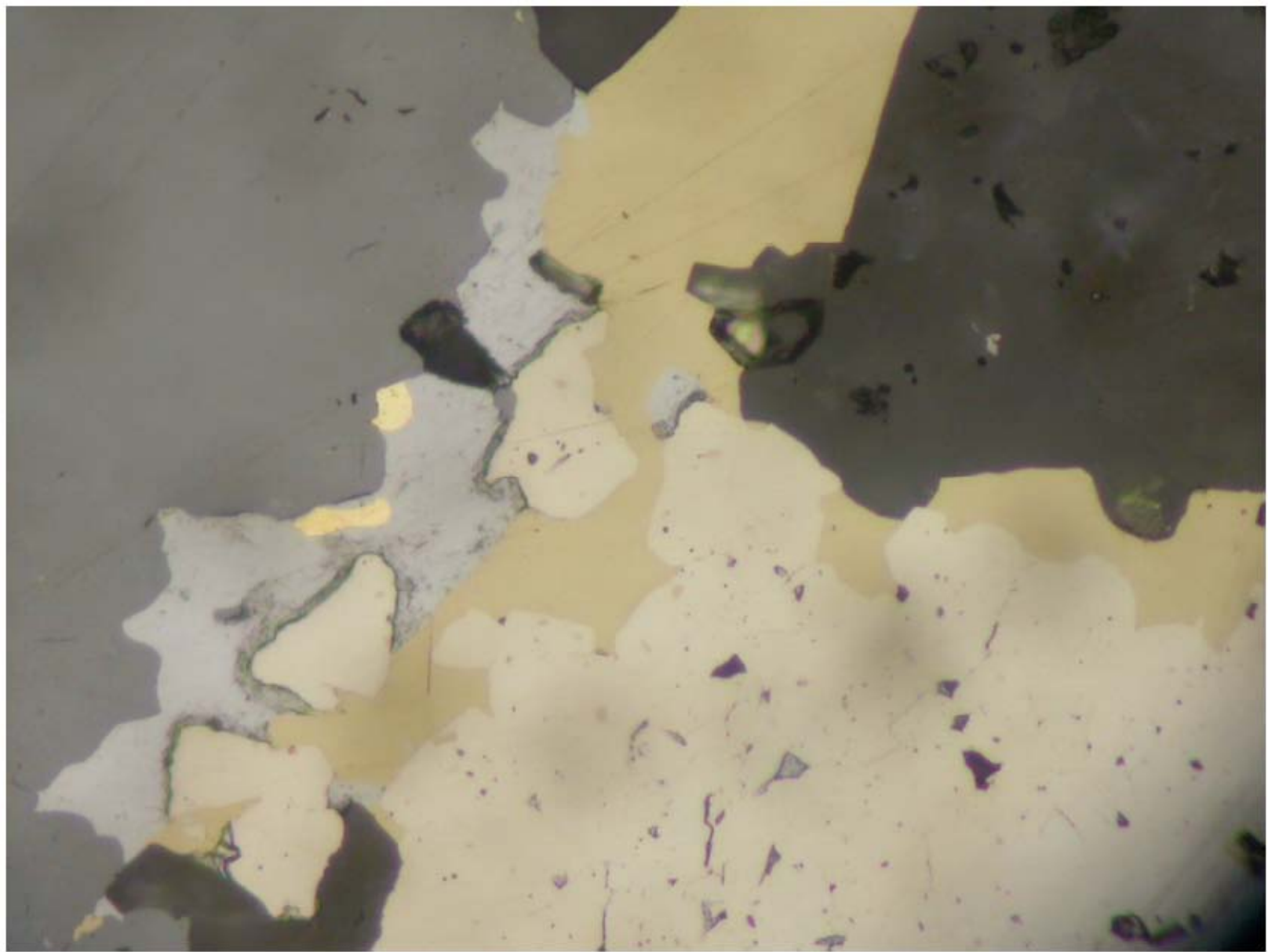


**GCHR107**      **216.8 m**      **PTS**

Summary: Very strongly hydrothermally altered porphyritic intermediate to felsic igneous rock with abundant veining. The original rock may have contained phenocrysts of feldspar and ferromagnesian material in a fine grained quartzofeldspathic groundmass. There may have been initial alteration with replacement by biotite, quartz, chalcopyrite and pyrite, perhaps coeval with the emplacement of numerous sheeted veins containing quartz and minor chalcopyrite, pyrite and carbonate. Later retrograde alteration of propylitic type was imposed, causing replacement of all feldspar and ferromagnesian components by sericite, carbonate and chlorite. The later alteration was accompanied by the emplacement of several carbonate-rich veins.



**Fig. 42:** Portion of coarse chalcopyrite mass with a small composite inclusion of gold (pale yellow) and sphalerite (mid-grey). Gold grain is about 10 microns across. Plane polarised reflected light, field of view ~0.2 mm across.



**Fig. 45:** GCHR107/353.05 m: Sulphide composite aggregate associated with quartz (dark grey) in breccia matrix. The sulphides include pyrite (pale creamy), chalcopyrite (yellow), sphalerite (mid-grey) and galena (pale grey). Two grains of gold (pale yellow) are at a galena-sphalerite contact. Plane polarised reflected light, field of view ~0.2 mm across.



# Copper Hill Geological/Mineral/Alteration DOMAINS

- **Mineralising Tonalite Porphyry - mineraliser domain**

- Position – central top of area enclosed by pit shell, directly below the supergene zone.
- Rock host – mainly MTP, some andesitic volcanics and TP dykes
- Mineralisation style - dense to moderately dense veining – ‘M’ veins and ‘B’ veins + sulphide disseminations, mostly cpy.
- Alteration- sericite-magnetite-chlorite (SCM) and sericite-chlorite-carbonate (SCC), typically.
- M veins – quartz-mt-cpy-bn-(py) and gold
- B veins – quartz – cpy – py- (bn, carbonate), characterised by a central zone of sulphide within the veins
- Estimated volume of total ore tonnage– 31%

- **Unassigned LG primary**

- Position – peripheral to the MTP mineraliser and Crowded Tonalite Porphyry/carapace domains.
- Consistent low grade copper-gold mineralisation, vein hosted and disseminated, within the pit shell but peripheral to the higher grade MTP-mineraliser domain.
- Host rock not well defined but usually MTP or CTP/TP. Alteration – SCC, combinations of chlorite, sericite, carbonate, epidote, albite (propylitic)
- Estimated volume of total ore tonnage– 31%

## ● **CTP/carapace domain**

- Position – below the MTP-mineraliser domain
- Rock host – mainly CTP, some MTP, TP dykes and andesitic volcanic
- Mineralisation style - moderately dense to sparse veining – ‘B’ veins, ‘C’ veins and ‘D’ veins. Disseminated cpy and py also.
- C veins – white to pink carbonate (Mn-bearing?) carbonate veins, commonly bearing some or all of cpy, sphal, gal, bn, py and gold. Base metal carbonate veins. These veins are commonly triangular in shape, as if infilling spaces formed by brecciation.
- D veins – very late-stage veining – calcite, siderite or laumontite (gypsum, anhydrite at depth). These are unmineralised.
- Estimated volume of total ore tonnage – 20%

## ● **Argillic domain**

- Position – near-surface on the western side of the deposit, and in small patches in the Unassigned LG domain.
- The least well defined zone in a sparsely drill-tested part of the deposit.
- Rock host – Undifferentiated tonalite porphyry, CTP, MTP.
- Mineralisation style – mainly disseminated py and cpy with some B vein hosted mineralisation.
- This zone is characterised by its alteration style – white clay – sericite – minor silicification patches and chlorite, bordering on phyllic alteration.
- Estimated volume of total ore tonnage – 6%



- **Mineralised breccia domain**

- To date, only intersected at Wattle Hill. Estimated volume of total ore tonnage ~1%.

- **Mixed tonalite porphyry/andesitic volcanic domain**

- Position – north-western part of the deposit. A discontinuous domain from 5200N to 6200N (local grid). Typified by mineralisation in GCHR298 and 319, where many small intrusions of tonalite are present in andesitic volcanic host rocks. This domain includes contact zone hydrothermally/magmatically brecciated andesite with tonalite porphyry clasts.
- The mineralisation is 'B', 'C' and 'D' vein and disseminated pyrite and chalcopyrite. The alteration is variable reddening-ser-si-carb-chl.
- Estimated volume of total ore tonnage = 8%

- **Mineralised waste**

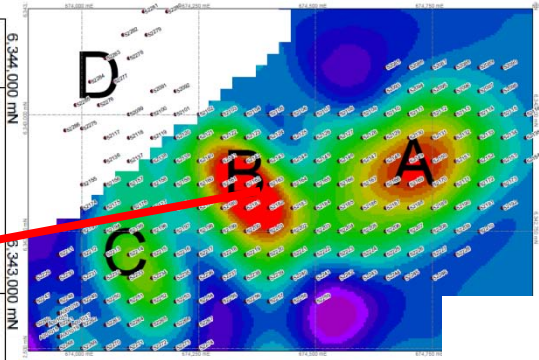
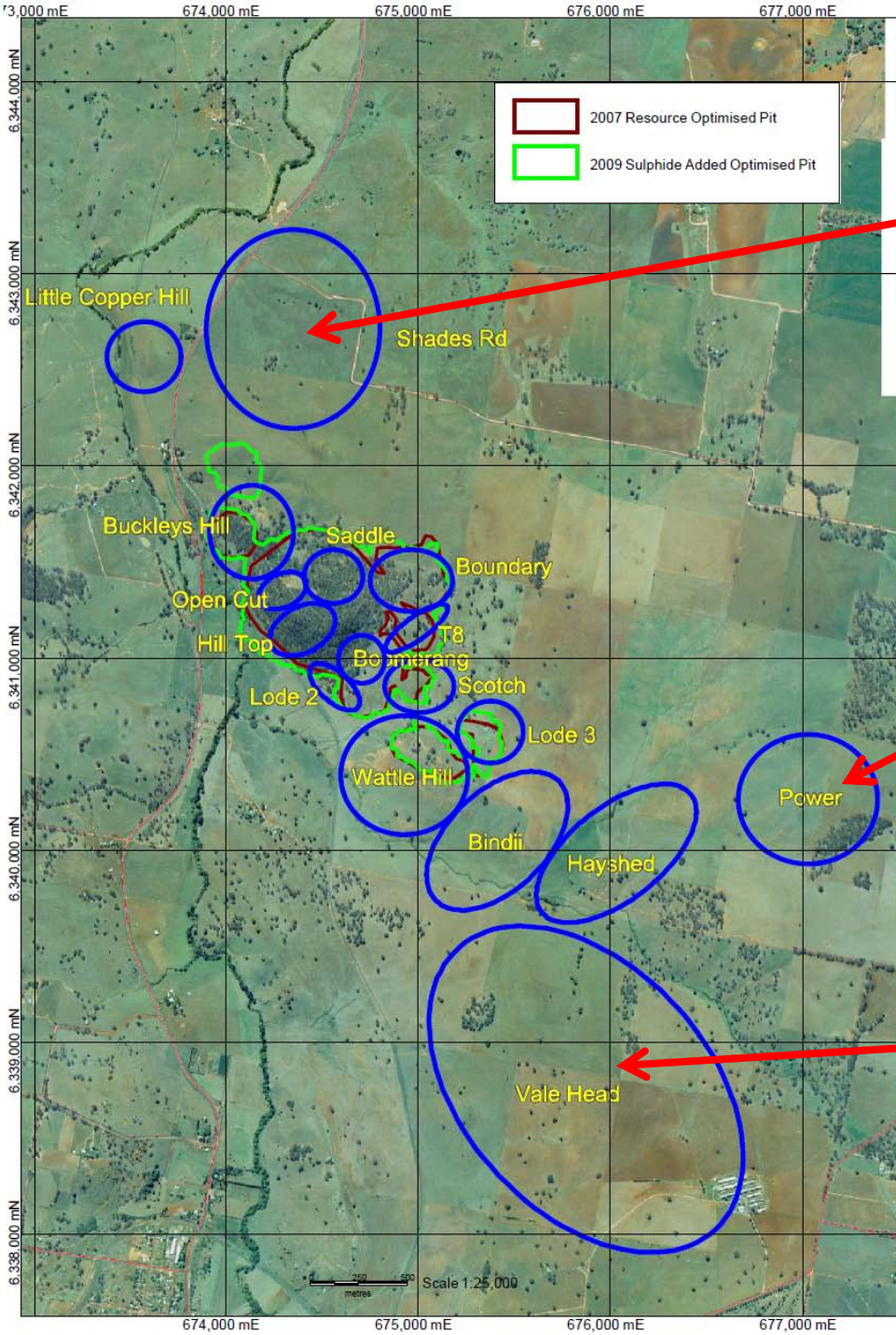
- Samples of core judged to be below ore grade.

- **Barren intrusions/ QTP**

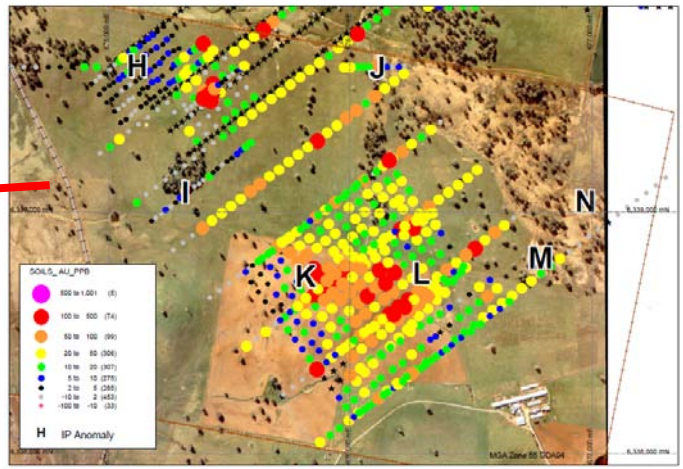
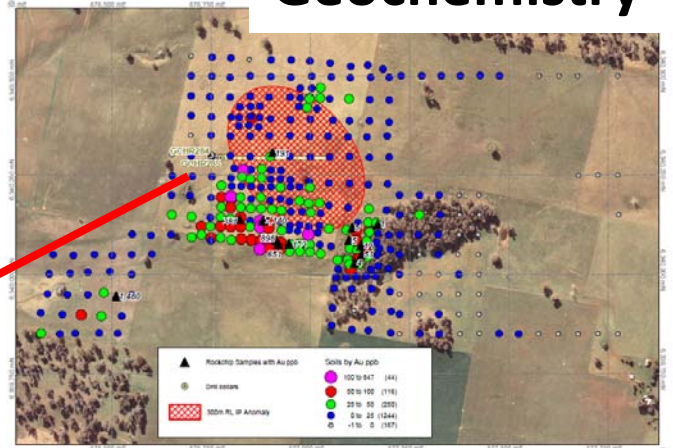
- Very barren, late, unaltered quartz tonalite porphyry dykes/intrusions. Average copper grade – 60ppm, average gold grade - <0.01g/t. This type of intrusion produces high grade gold and copper mineralisation in host rock around its contacts, probably by remobilisation into quartz veins.

- **Barren Zone/low-grade core**

- The 'Barren Zone' is a poorly drill-defined zone in the south-eastern part of the Copper Hill area. The gold and copper grades are sub-ore but above background levels, making it more mineralised than the Barren intrusion/QTP domain. The host rock is probably Crowded Tonalite Porphyry.



# Soil Geochemistry

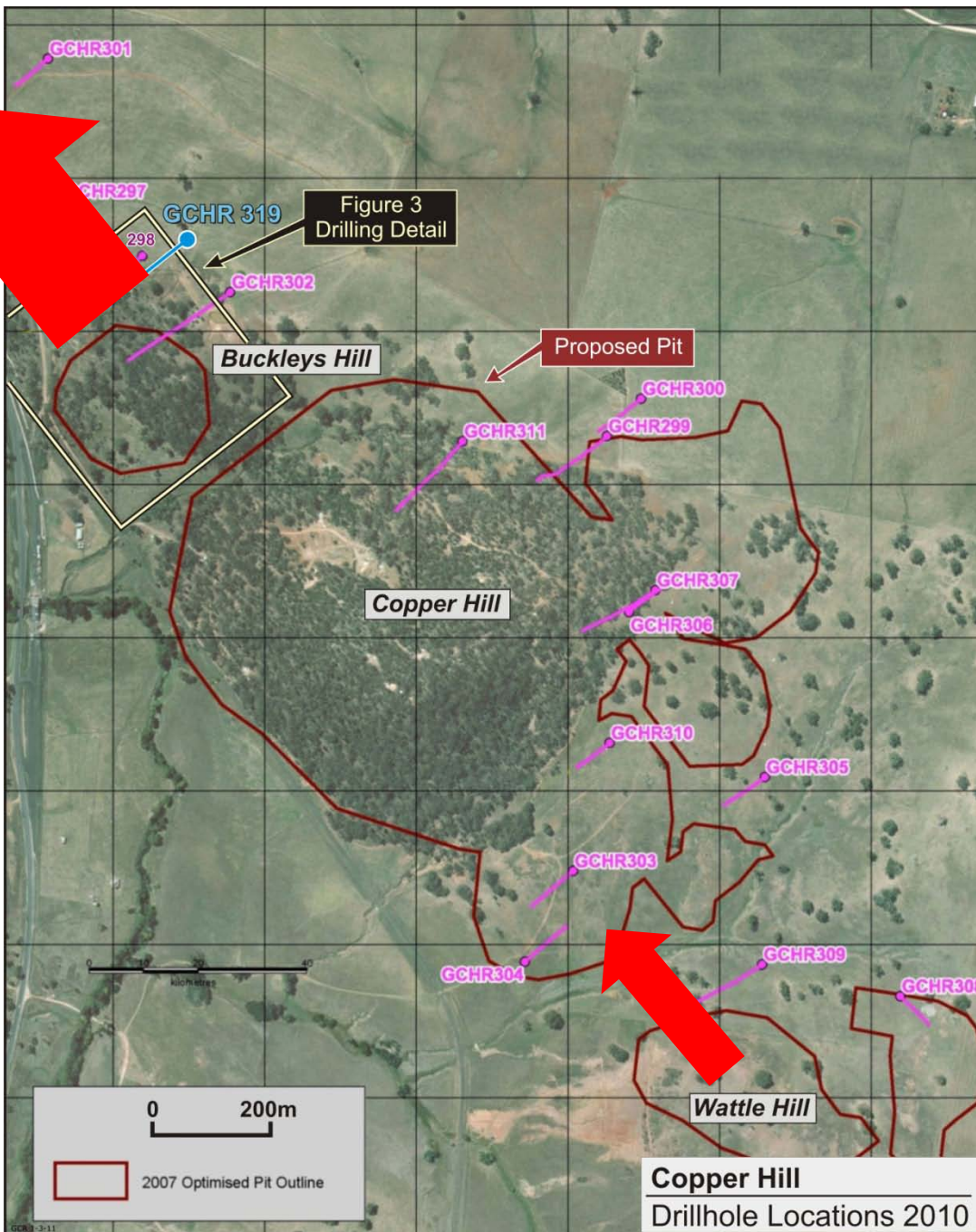




# COPPER HILL DRILLING 2010 and into 2011

## NEW ZONES

**Buckley's Hill  
Extensions  
&  
Wattle Hill Infill &  
Deeps**

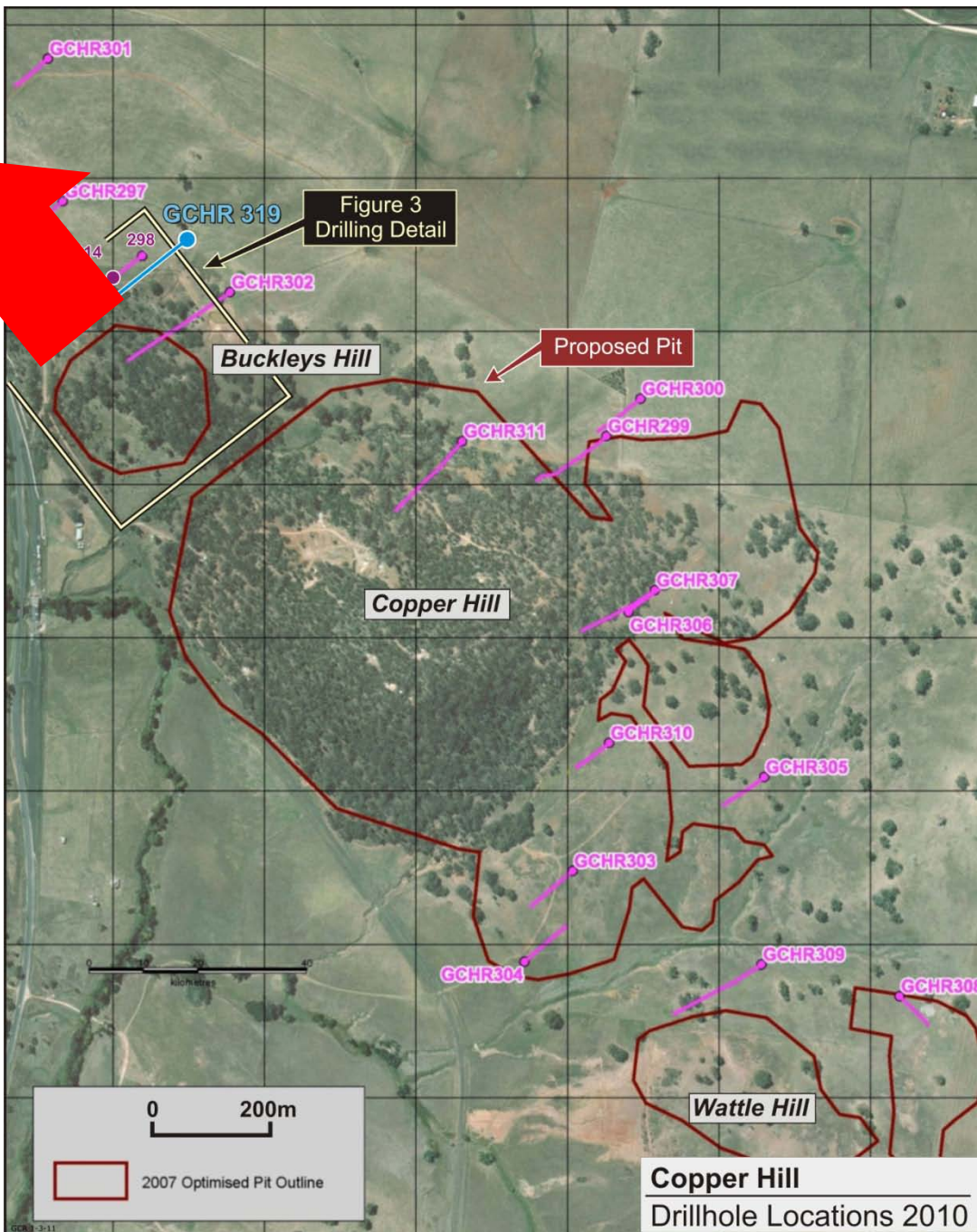


# COPPER HILL DRILLING 2010 and into 2011 Buckley's Hill Extensions

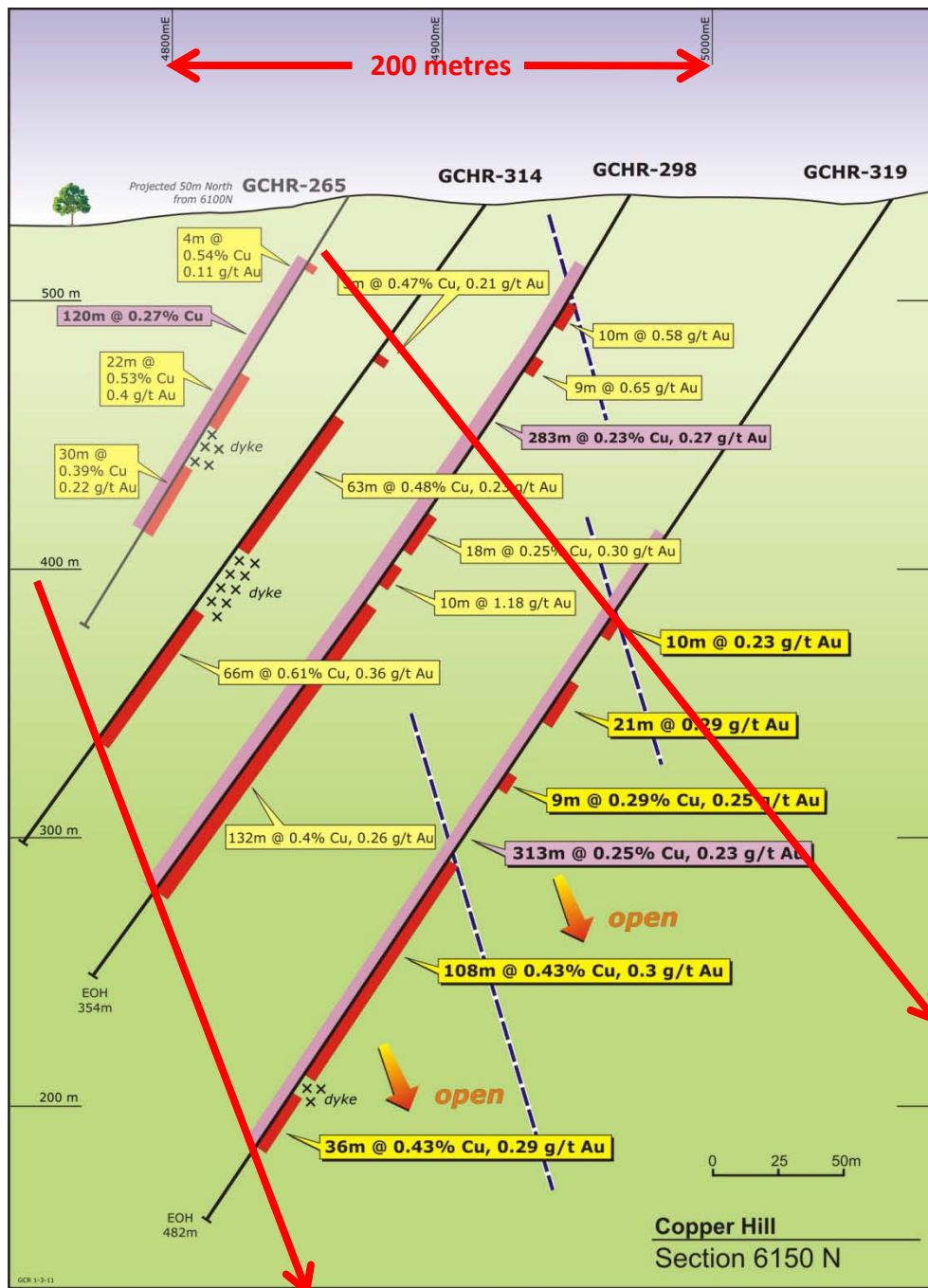
+200m wide near surface  
+480m wide at depth

Drill intervals of:  
486m @ 0.33% Cu  
283m @ 0.23%Cu  
with  
66m @ 0.6% Cu  
108m @ 0.43% Cu  
+ gold credits

**OPEN ALONG STRIKE & DEPTH**



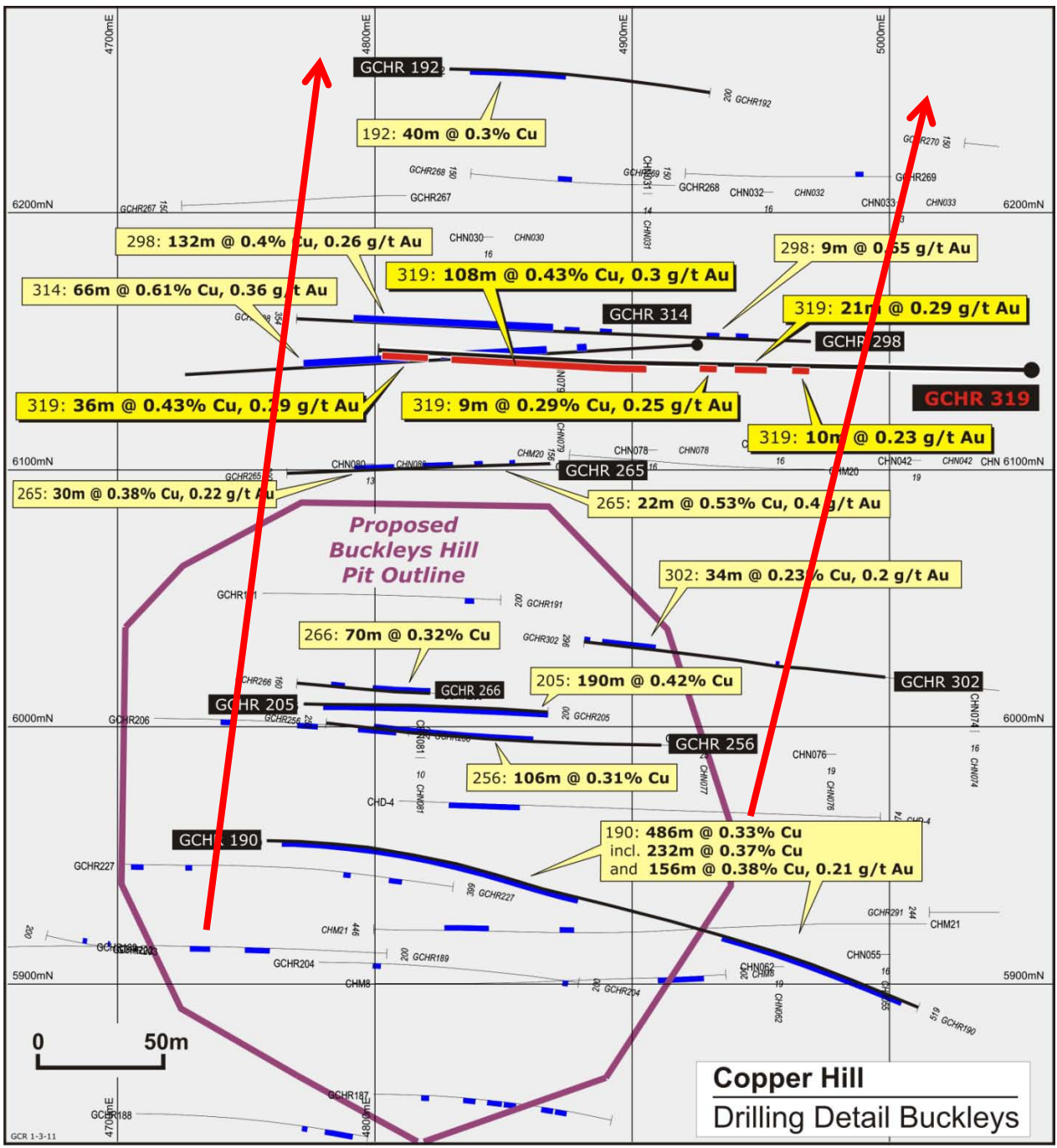




## Buckley's Hill, Section 6150N

- Big & expanding zone indicated
- Copper and gold grades remain elevated and above average.
- Substantial extensions indicated along strike to the northwest
- Step-out core drilling to begin immediately.
- Cross-sections both north and south of the 6150N section are not drilled at depth.
- Sizeable increase in the resource if similar mineralization can be drilled on the 6100N and 6050N sections, as the 6000N section also provides strong encouragement.
- Strong vector to significant higher grade mineralisation at depth These will all contribute significantly to the next resource estimate.



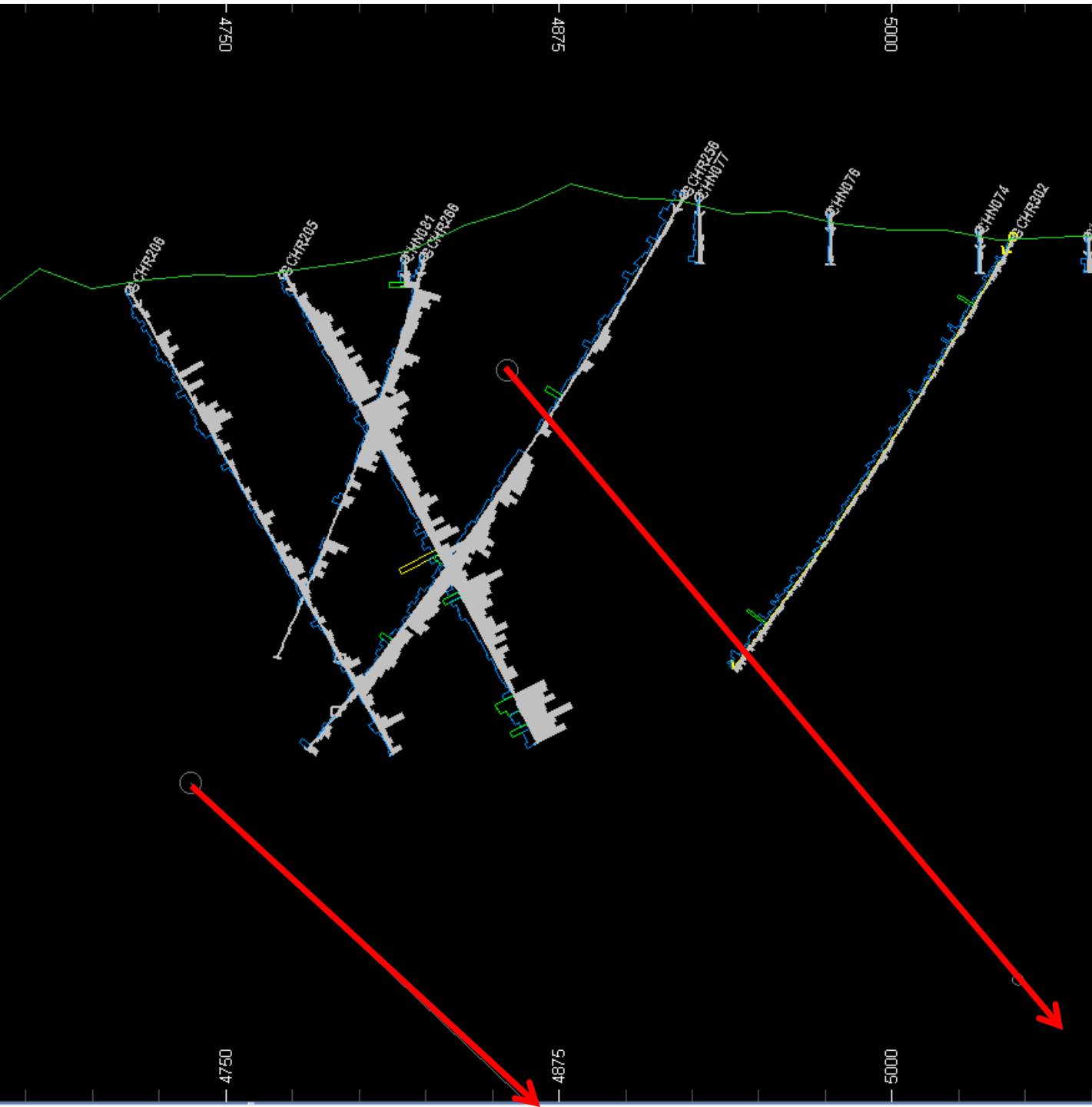


6250N ← **Open, next section to be drilled**

6200N  
6150N ← **283m @ 0.23% Cu  
313m @ 0.25% Cu**

6100N  
6050N  
6000N ← **190m @ 0.42% Cu  
106m @ 0.31% Cu  
(Shallow holes)**

← **486 m @ 0.33% Cu**

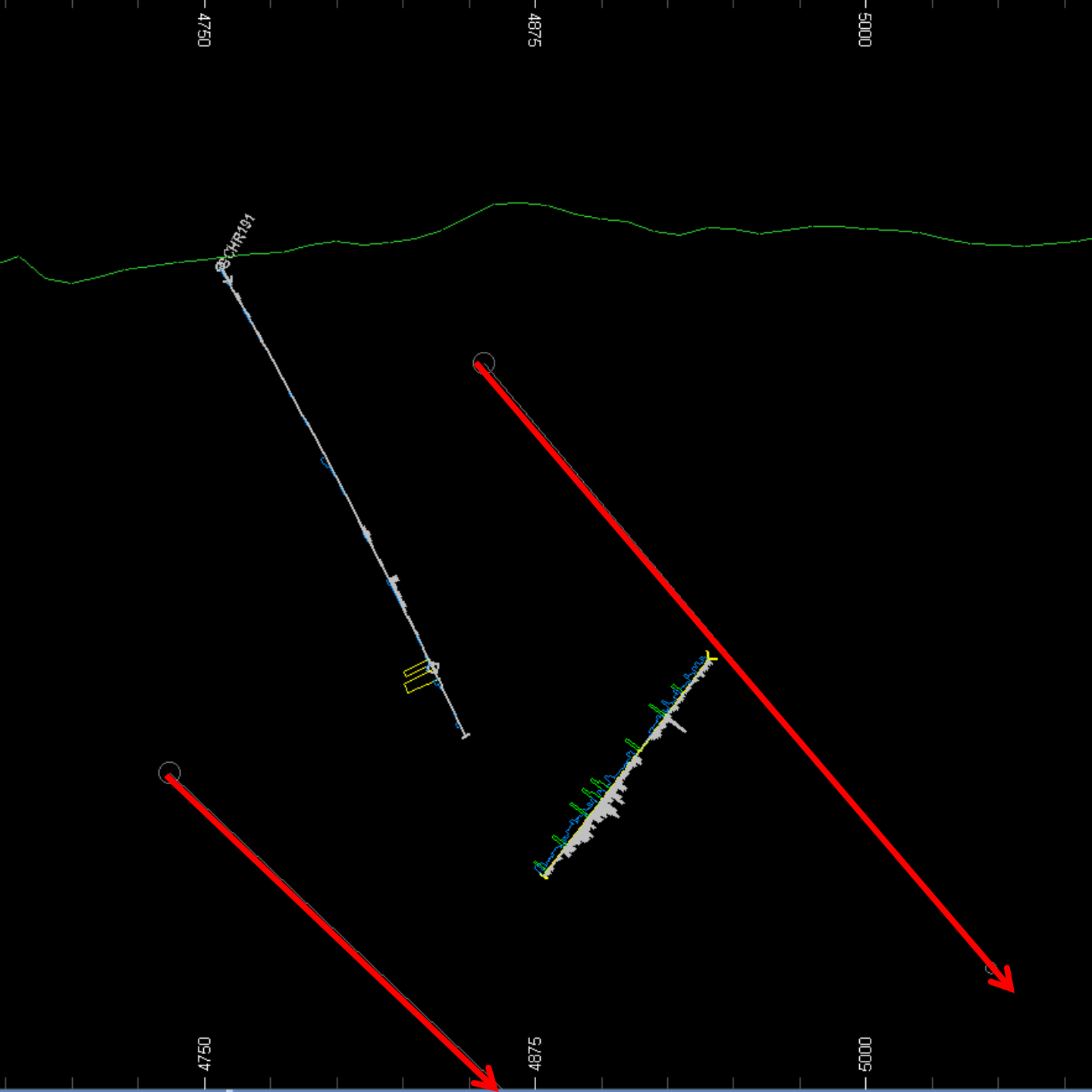


# 6000N

A quick tour is coming.....

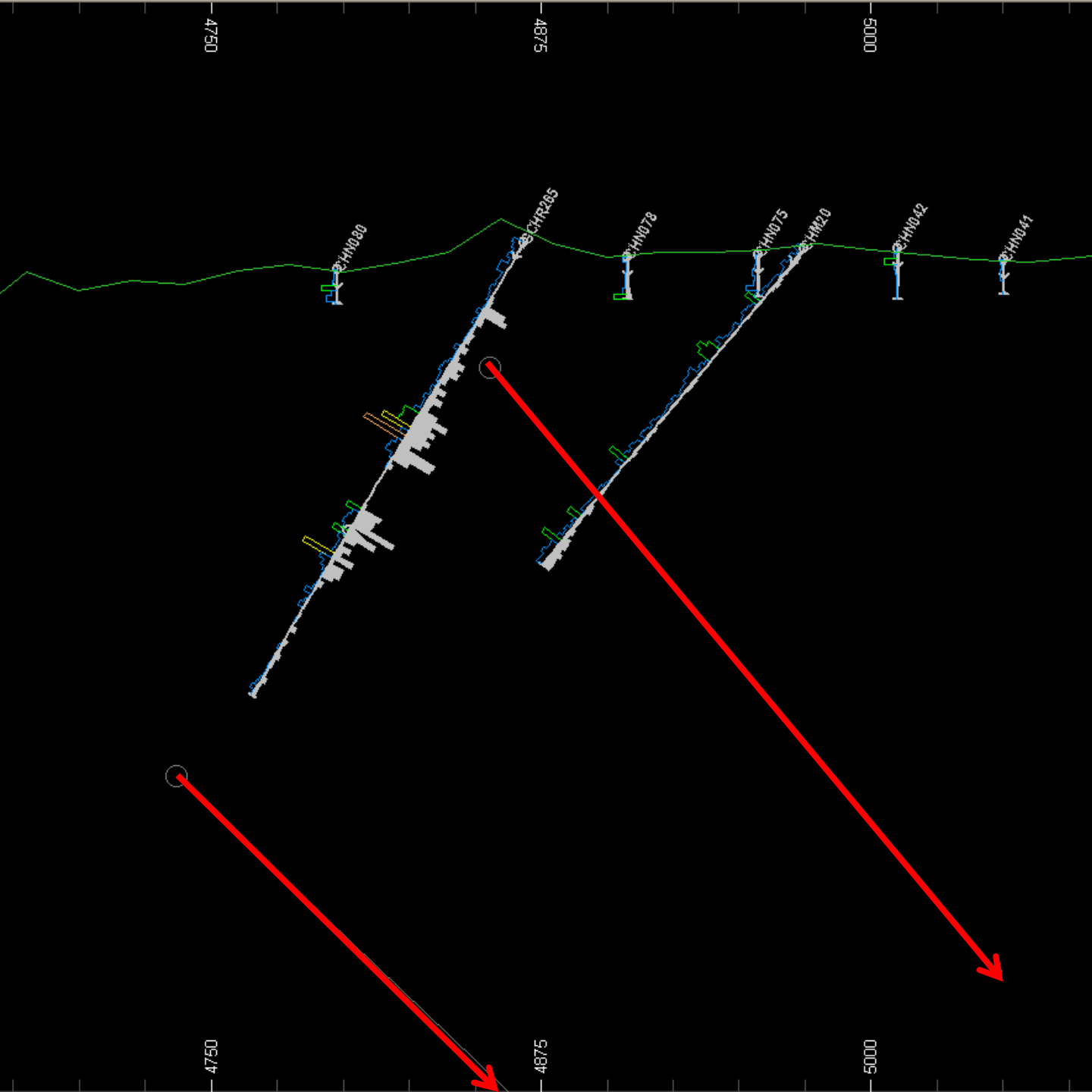
Fill in the gaps, imagine what results could be achieved when GCR drills between the red lines marking out the 6150N zone

6050N

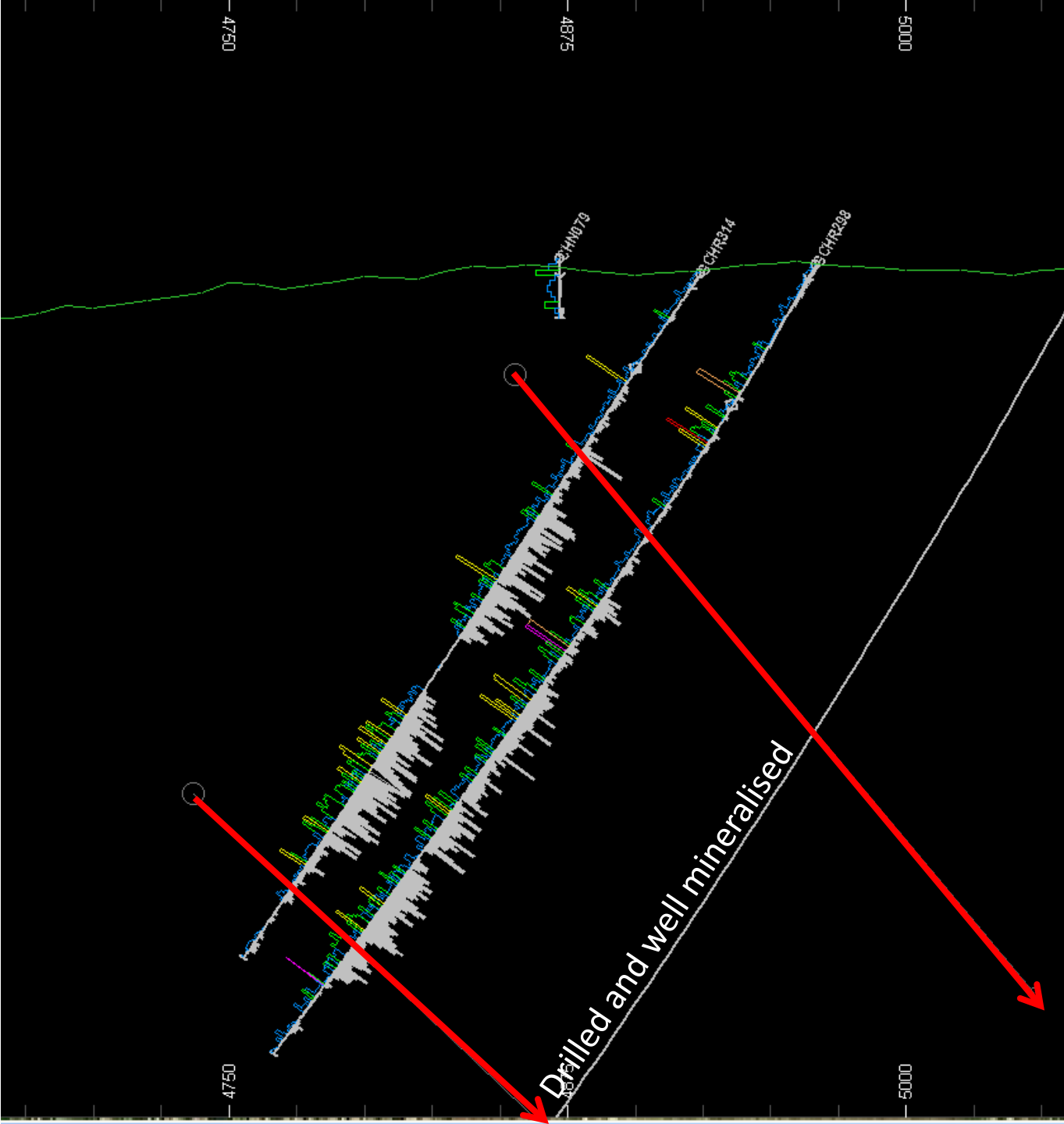




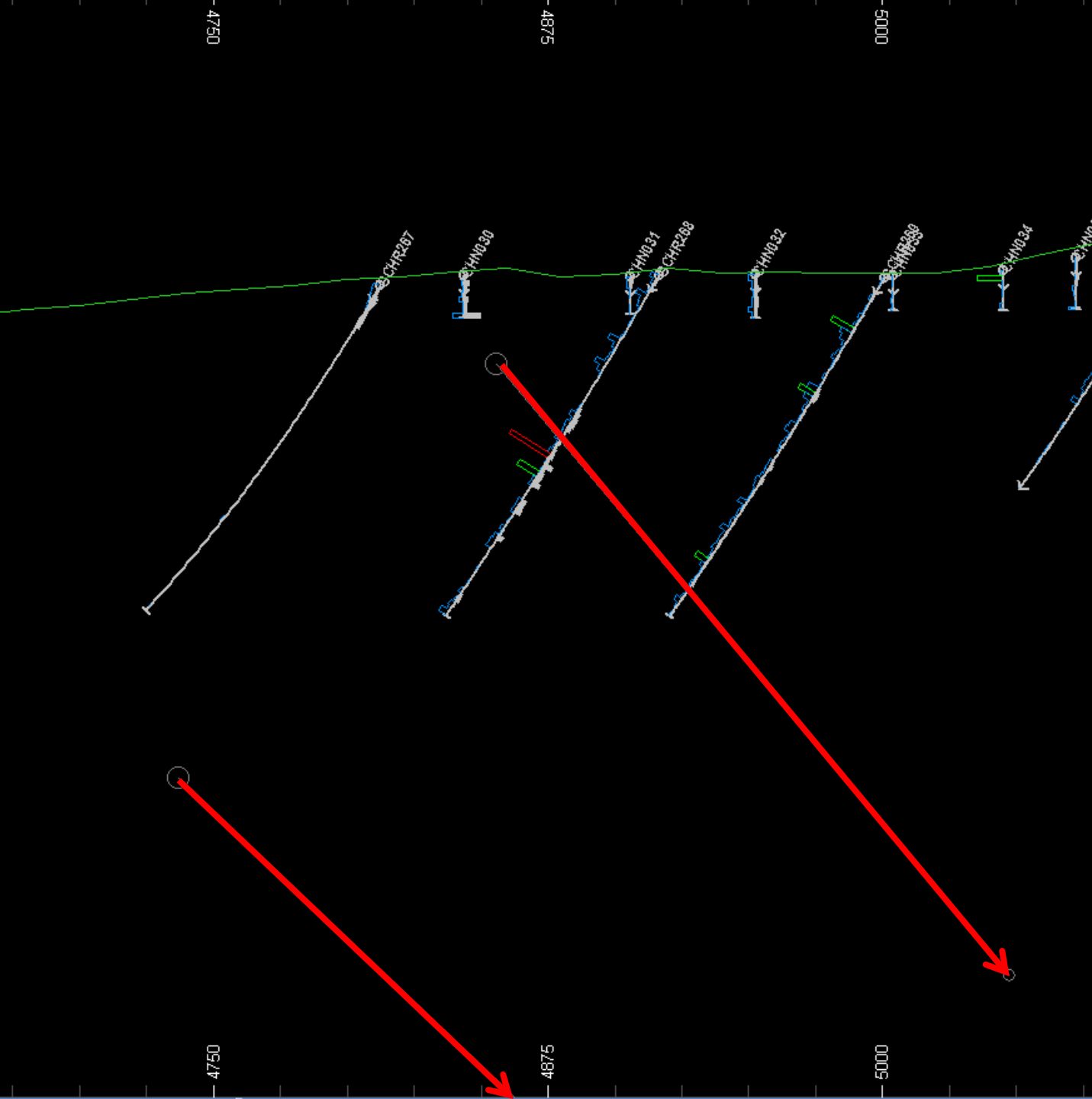
6100N



6150N

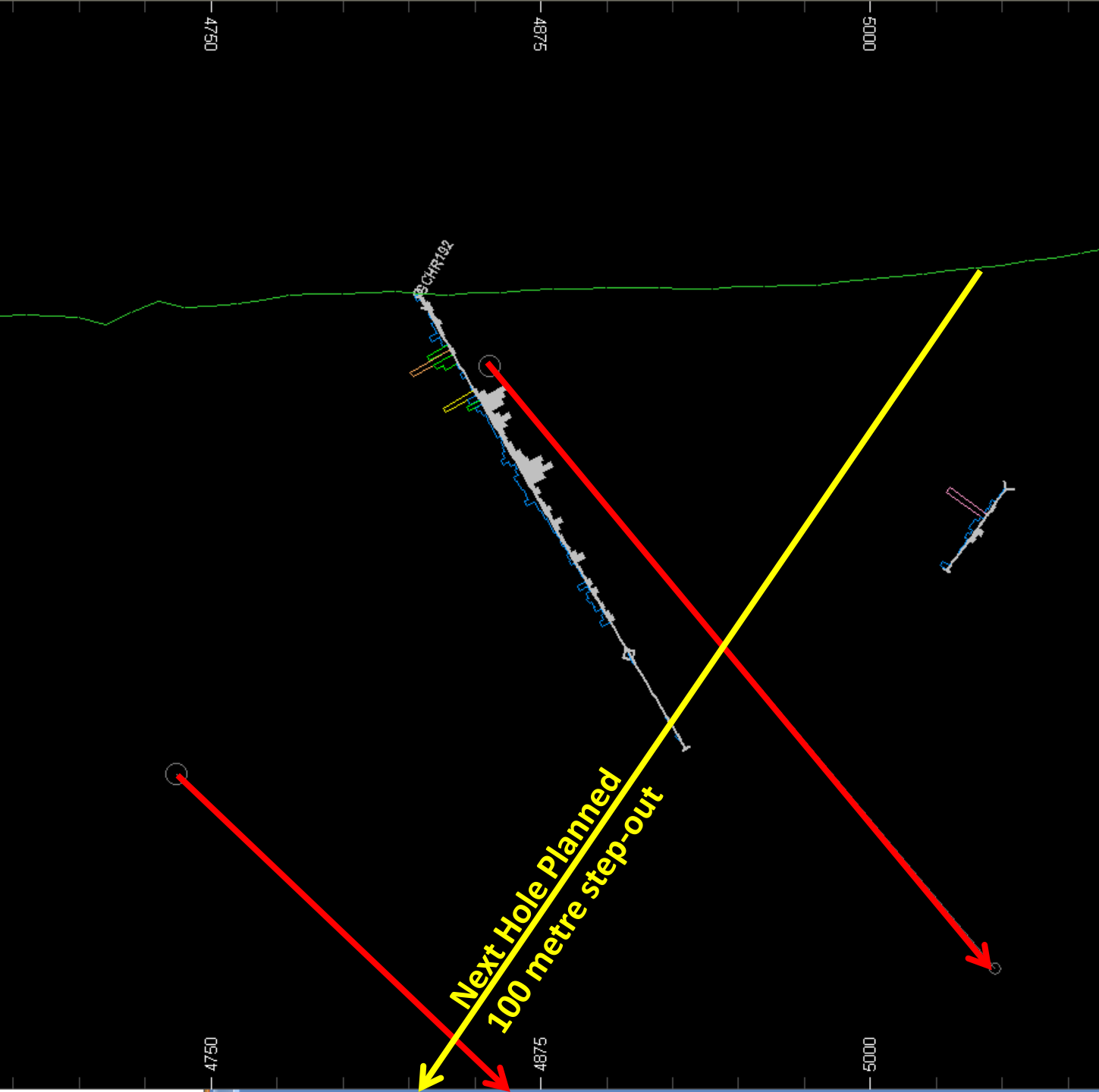


6200N





6250N



# COPPER HILL DRILLING 2010 and into 2011

## NEW ZONES Wattle Hill Infill & Deeps

73m @ 0.45% Cu, 0.42g/t Au

85m @ 0.39% Cu, 0.82g/t Au

101m @ 0.21% Cu

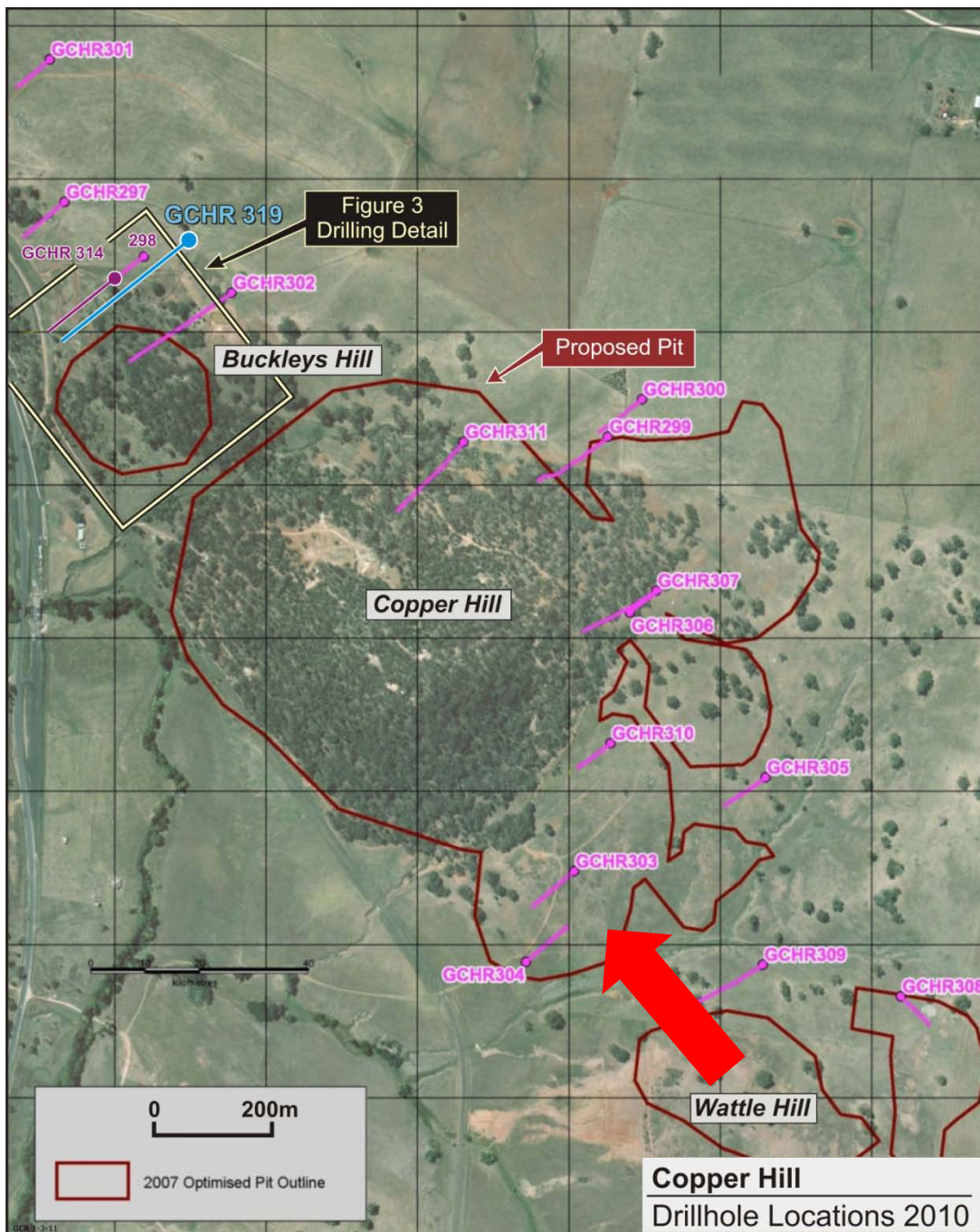
26m @ 0.5g/t Au

+

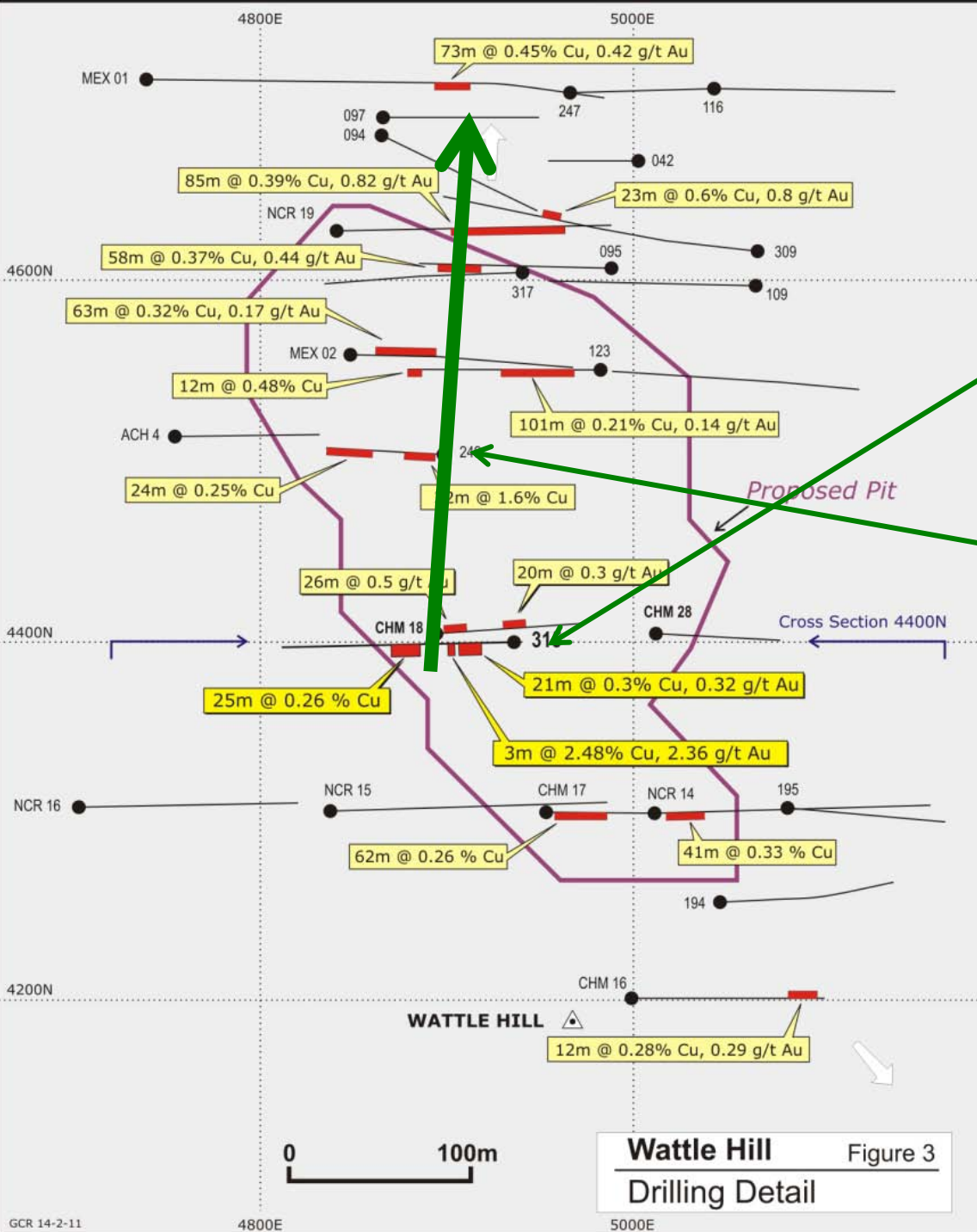
High grade NW plunging zone  
carrying

3m @ 2.48% Cu

8m @ 3.72% Cu



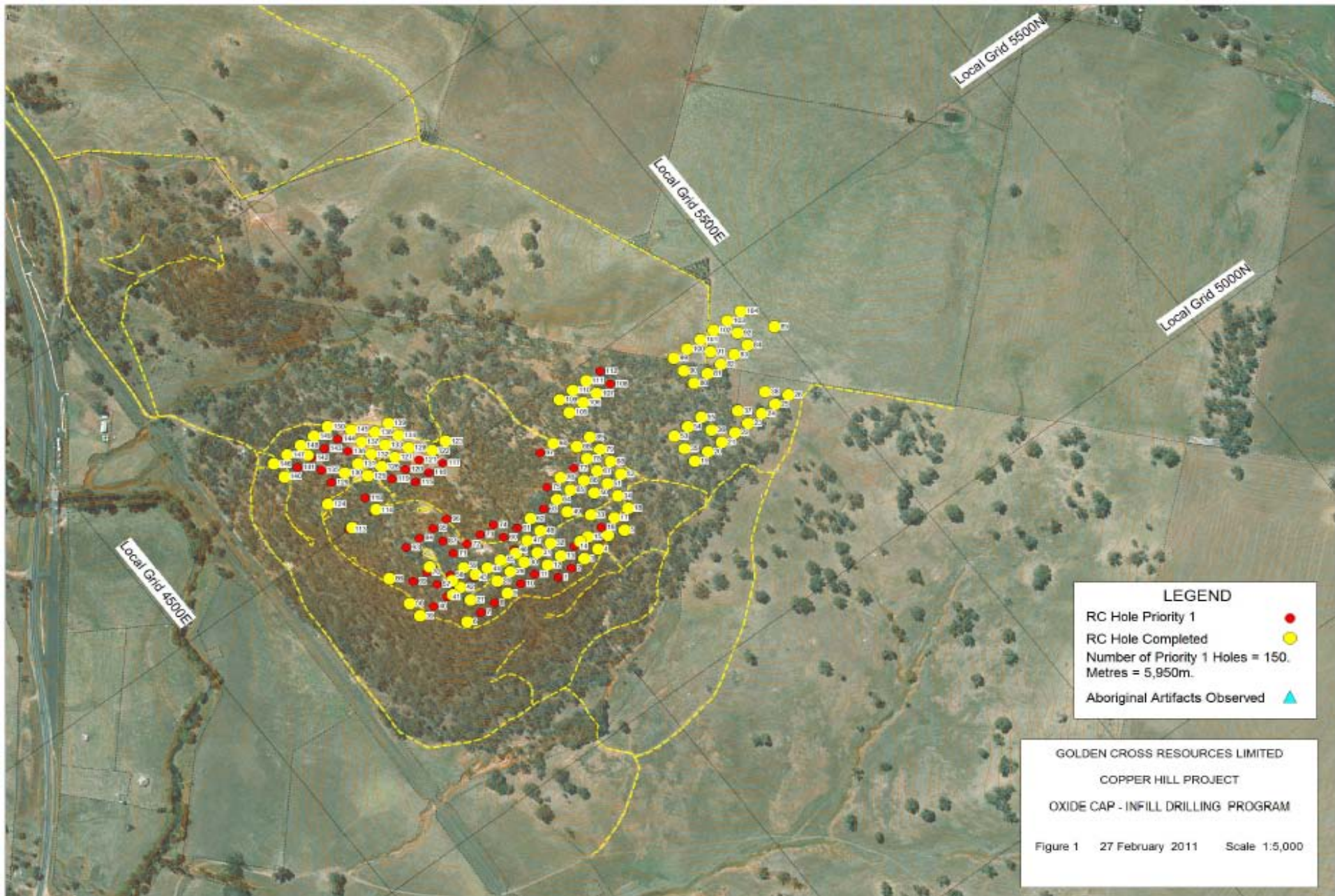
# WATTLE HILL DRILLING



- **GCHR315** confirms and extends the intercepts in drill hole **CHM18** of **26 metres @ 0.5g/t gold** from 2 metres and **20 metres @ 0.32g/t gold** from 74 metres.
- The **3m @ 2.48% copper** at 82 metres down-hole may correlate with the zone of **8m @ 3.72% copper** in **GCHR249**, located 100m northwest on section 4500N.
- This zone may plunge further towards and beneath Copper Hill
- Strike extensive zones of +1% copper could lie between Wattle Hill and extend beneath the current optimised Copper Hill open pit.

**Wattle Hill** Figure 3  
Drilling Detail





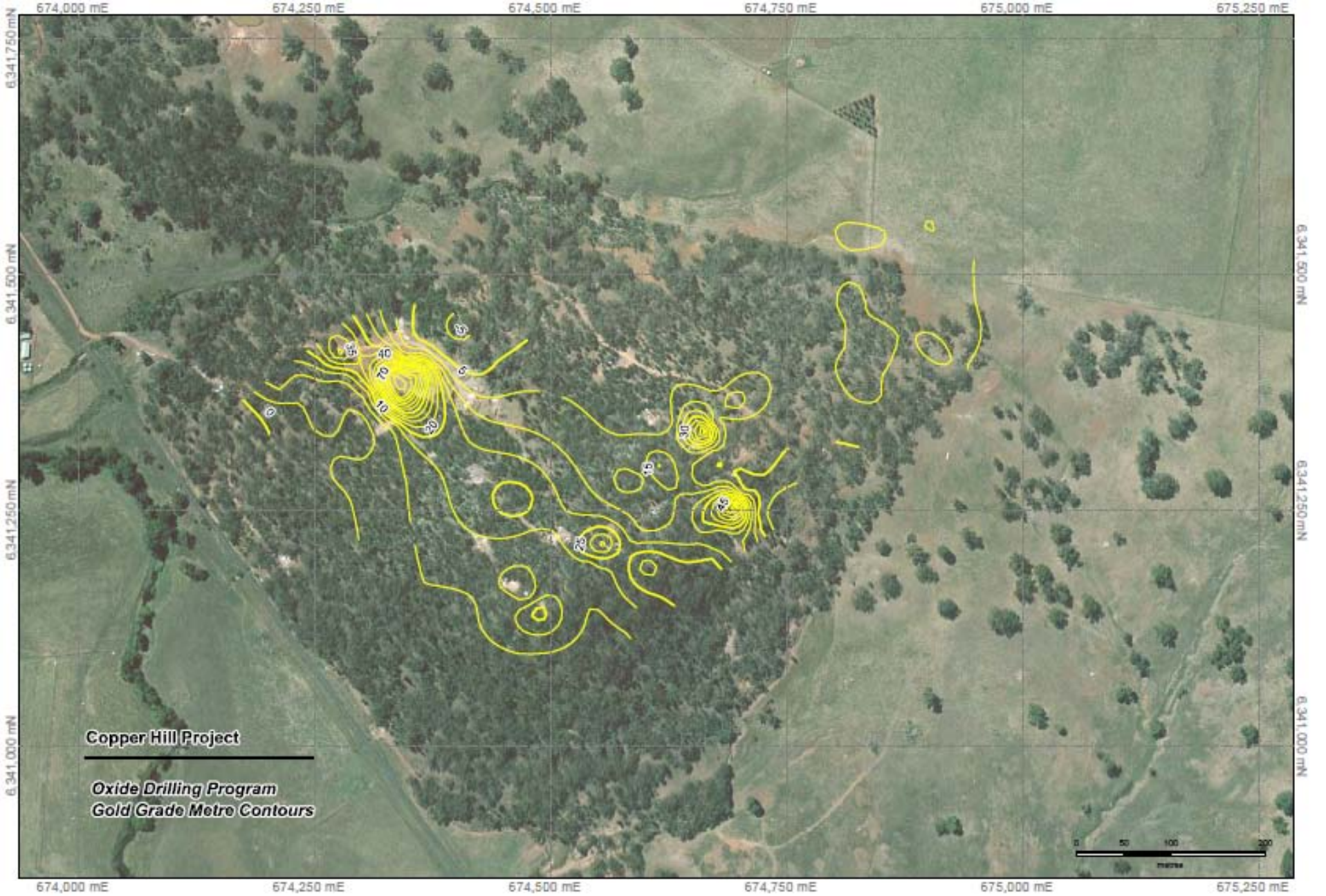
# Oxide Resource Drilling – Stage 1

# Copper Hill Oxide Resource Program – best gold results

Significant gold results at a 0.3g/t cut-off grade

Hole ID	Easting	Northing	From (m)	Interval (m)	Copper %	Gold g/t
GCHR354	674696	6341363	0	16	0.23	0.83
GCHR365	674656	6341337	0	48	0.27	1.00
GCHR389	674555	6341216	2	42	0.06	0.74
GCHR400	674346	6341409	0	21	0.97	0.77
GCHR401	674311	6341414	0	19	0.74	1.08
GCHR402	674276	6341419	2	25	0.46	1.42
GCHR410	674359	6341396	0	31	0.81	1.81
GCHR411	674332	6341391	0	22	0.62	3.07
GCHR412	674368	6341372	0	30	0.55	1.20
GCHR413	674342	6341367	0	37	1.44	1.80
GCHR414	674346	6341349	6	34	0.53	1.05
GCHR423	674657	6341207	28	14	0.66	0.87
GCHR431	674692	6341251	0	64	0.54	0.88





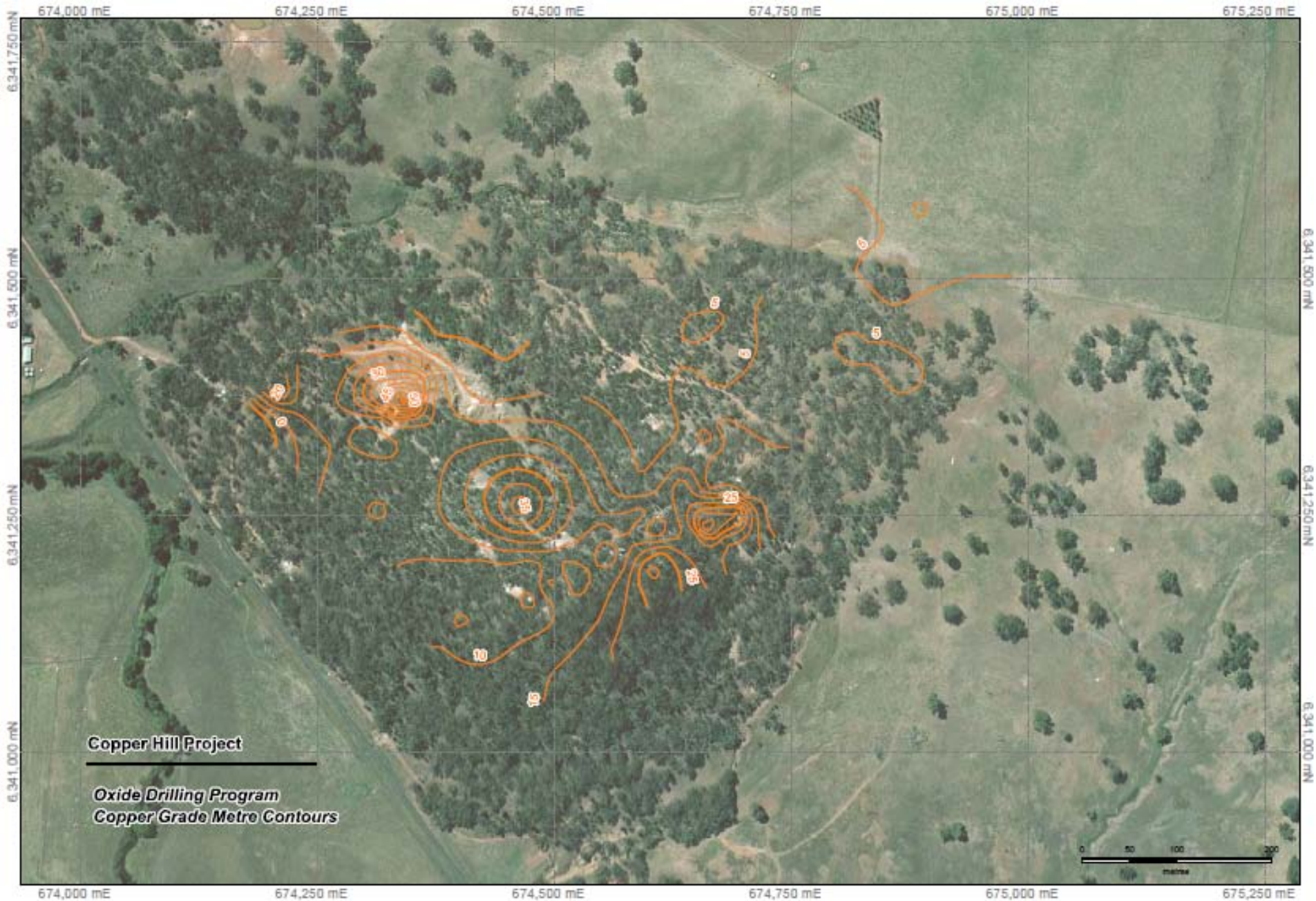
**Oxide Resource Drilling Gold grade g/t x thickness contours**



# Copper Hill Oxide Resource Program – best copper results

Significant copper results at a 0.2% cut-off grade

Hole ID	Easting	Northing	From	Interval	Copper %	Gold g/t
GCHR400	674346	6341409	0	22	0.97	0.77
GCHR404	674213	6341376	14	14	1.55	0.46
GCHR410	674359	6341396	0	31	0.81	1.81
GCHR411	674332	6341391	0	40	0.78	1.85
incl			16	12	1.82	0.87
GCHR412	674368	6341372	8	22	0.7	1.51
GCHR413	674342	6341367	10	27	1.92	2.01
GCHR414	674346	6341349	14	26	0.66	1.19
GCHR415	674336	6341340	20	23	0.42	0.37
GCHR429	674658	6341237	32	32	0.99	0.32
incl			34	20	1.18	0.27
and			74	8	0.5	0.25
GCHR431	674692	6341251	0	64	0.54	0.88



**Oxide Resource Drilling Copper grade % x thickness contours**

# ***GCHR312 & GCHR313 Metallurgical Holes confirm and extend higher grade zones at Copper Hill***

**GCHR312** bulk interval\* 143metres @ 0.57% copper and 0.7 g/t gold

and, using a 0.2% copper cut-off,

<b>Interval (m)</b>	<b>Copper (%)</b>	<b>Gold (g/t)</b>	<b>From (m)</b>
<b>67</b>	<b>0.79</b>	<b>0.93</b>	<b>7</b> <i>including</i>
23	0.97	0.32	23
16	1.41	2.39	60
<b>70</b>	<b>0.42</b>	<b>0.55</b>	<b>90</b> <i>Including</i>
2	1.12	4.44	90

**GCHR313** bulk interval\* 244 metres @ 0.33% copper and 0.46 g/t gold

and, using a 0.2% copper cut-off,

<b>Interval (m)</b>	<b>Copper (%)</b>	<b>Gold (g/t)</b>	<b>From (m)</b>
<b>15</b>	<b>0.39</b>	<b>1.10</b>	<b>78</b>
<b>30</b>	<b>0.29</b>	<b>0.31</b>	<b>121</b>
<b>10</b>	<b>0.33</b>	<b>0.14</b>	<b>157</b>
<b>73</b>	<b>0.44</b>	<b>0.59</b>	<b>171</b> <i>Including</i>
12	0.58	1.33	200



# The Copper Hill Resource at a cut-off grade of 0.2% copper

Note: The Measured, Indicated and Inferred Resource Estimates are reported under the 2004 JORC Code and Guidelines.

Search parameters for the categories as follows:

Measured = 40m x 45m x 40m (min 12 data);

Indicated = 60m x 65m x 60m (min 10 data);

Inferred = 100m x 110m x 100 (min 6 data)

<b>Class</b>	<b>Tonnes (Mt)</b>	<b>Copper (%)</b>	<b>Gold (g/t)</b>	<b>Contained Copper (Kt)</b>	<b>Contained Gold (M oz)</b>	<b>% of Tonnes</b>
Measured	75	0.342	0.324	258	0.79	43
Indicated	64	0.292	0.227	186	0.46	37
Inferred	34	0.273	0.200	91	0.22	20
<b>Total</b>	<b>173</b>	<b>0.31</b>	<b>0.26</b>	<b>535</b>	<b>1.47</b>	<b>100</b>

Primary mineralisation comprises 96% of the resource (tonnage) with 2% supergene and 2% oxide copper, as shown below:

The resource estimates were performed using ordinary kriging, constrained above and below the base of oxidation and either side of the Western Fault, but otherwise unconstrained. The different mineralisation types and rock densities, as well as the orientation of the primary mineralisation domains, were determined from the GCR geological interpretation. Block densities were modelled using the results from 525 samples taken of drill core

<b>Zone</b>	<b>Tonnes (Mt)</b>	<b>Copper (%)</b>	<b>Gold (g/t)</b>	<b>Contained Copper (Kt)</b>	<b>Contained Gold (M oz)</b>	<b>% of Tonnes</b>
Primary	166	0.309	0.265	512	1.41	96
Transition	3	0.351	0.267	12	0.03	2
Oxide	4	0.296	0.243	11	0.03	2
<b>Total</b>	<b>173</b>	<b>0.31</b>	<b>0.26</b>	<b>535</b>	<b>1.47</b>	<b>100</b>

# Copper Hill Mine - Critical Issues

- Preliminary open pit, mine infrastructure, ROM pad, waste dump, and tailings dam designs in progress
- Metallurgy/Processing test-work continuing

## Under consideration:

- Capex & Financing
- Property purchases
- Water entitlements
- Regulatory approvals





Cadia 45 km to southeast

Molong township

Power: 132 Kv Sub-station

Trans-Australia Railway

Existing unused Railway

Limestone Aquifers

4.5 km

Wattle Hill

Mitchell Highway

Copper Hill

Outcropping mineralisation, low strip ratio

Buckley's Hill

Plant & Mill Site

*Copper Hill – the next major copper-gold porphyry mine in NSW*



ASX - GCR

