

MEMORANDUM

To:

Gerald Riverin

From:

lan Morrison

Copies:

C. Burge, file

93·M/1

Date:

November 22, 1995

Subject:

Booker Gold's Hearne Hill Cu-Au Porphyry Project

INTRODUCTION

I.M. and C.B visited Booker Gold's office in Vancouver to review data from their Hearne Hill property in the Babine Lake area, 65 km NE of Smithers, B.C. The visit was prompted by the release of recent results from hole 95-16 which assayed 0.75% Cu and 0.32 g/t Au over its entire length of 998 feet. The data presented by Booker was in a state of disarray but we did see some core and confirmed that they were indeed in a porphyry system and that the numbers were believable. I.M. followed up with a visit to the property and had the opportunity to see more core and additional data, as well as discuss the project with Les Demczuk, the geologist on site. Mr. Demczuk has previously spent several years exploring the Kemess deposit.

HISTORY

The Hearne Hill property is situated in the Babine district, a well known B.C. porphyry belt which hosts the Bell Copper (116Mt @ 0.48% Cu, 0.35g/t Au), Morrison (86Mt @ 0.42% Cu, 0.3g/t Au) and Grandisle (52Mt @ 0.4% Cu, 0.1g/t Au) deposits. High grade copper-gold mineralized breccia (the "Chapman breccia") was discovered on the property in 1967 and subsequently drilled by Texas Gulf Sulphur (TGS) in 1967-68. TGS intersected low grade porphyry mineralization in the area immediately east of the present drilling but subsequently dropped the property. Additional work was done

by Canadian Superior in 1968-69 and Noranda-Bell In 1989-90. Booker Gold acquired the property and attempted to locate the source of high grade breccia float by trenching and drilling. Twelve holes were drilled in 1994 which did not Ifind the source of the float but did extend the low grade porphyry mineralization 250 metres to the east of Texas Gulf's projected limit. In 1995, geophysics (mag and IP) and soil geochemistry were done over a 1 km square area, as well as further drilling. The drilling continued to intersect lower grade porphyry alteration until hole 16 which hit the above mentioned high grade Cu-Au in breccia mineralization, extending from surface to a depth of 998 feet. Subsequent drilling, all within 100 metres of this hole, have hit narrower high grade zones of similar material within lower grade porphyry mineralization.

GEOLOGY

The area is poorly exposed but underlain by volcanics and sediments of the Jurassic-aged Hazelton Group, which have been intruded by porphyritic bodies of the Eocene-aged Babine Igneous suite. These rocks are host to the porphyry deposits elsewhere in the district. Regional NNW and E-W trending faults transect the area, with significant intersections coincident with the porphyry deposits.

GEOCHEMISTRY

Regional government silt geochemical surveys, both provincial and GSC, have covered the area and are essentially flat with respect to Cu, Zn, Pb, Ag and Au, whereas the Bell Copper and Grandisle deposit areas are anomalous. On the property scale, soil geochemistry done by Booker along 50 metre spaced lines exhibits spikey anomalies in the TGS area with the best anomaly being downslope (west) from hole 16. The undrilled area to the east is geochemically flat in Cu and Au.

GEOPHYSICS

The entire survey area exhibits elevated chargeability with locally very high chargeabilities. Some of these features have been drilled but not explained. Resistivities are for the most part inconclusive to date. Magnetic data is similar to the chargeability map exhibiting a high background.

ALTERATION AND MINERALIZATION

Drilling to date by Booker Gold has been largely within intermediate volcanics (massive and fragmental) and minor sediments, all of which have been intruded by biotite-feldspar porphyry (BFP) dykes. Potassic (biotite) alteration is well developed in all lithologies, although its extent is unknown due to the limited area drill tested so far. Clay-sericite alteration and lesser silicification is also well developed and overprints the biotite alteration. Pyrite (usually fracture controlled) and magnetite (disseminated) is widespread.

The higher copper gold drill assays come from a narrow (30 metre?) zone of sulphide-healed breccia developed within clay-sericite altered, biotite feldspar porphyry dykes and volcanics. Heavy chalcopyrite occupies fracture controlled veins which cement breccia fragments. Good mineralization is also locally developed outside (but proximal to) the breccia zone but is also associated with sulphide veinning. Disseminated chalcopyrite is developed within the potassic (biotite) altered volcanics but so far is minor and localized.

CONCLUSIONS

To date, the high grade breccia zone at Hearne Hill appears to be a 30 metre wide zone with a tested strike length of 100 metres, steeply dipping/plunging and remains open to the east and west. Hole 16 seems to have followed the zone down dip and two subsequent holes within 50 metres of 16 intersected much narrower zones. Booker has extended the porphyry system beyond TGS's previously defined limit and it remains open to the east. This newly extended area is, in terms of rock types, alteration and mineralization, reportedly similar to that seen by TGS. Copper grades (excluding the breccia zone) are similarly low as well (TGS did not assay for gold.).

The ultimate scale of both the porphyry system and the breccia zone is not yet known but geophysically and geochemically it appears to be small. The low geochemistry to the east seems to suggest that the porphyry itself is limited in that direction.

The Hearne Hill porphyry is similar in terms of lithologies, alteration and mineralization to the Bell Copper porphyry deposit 15 km to the south, except that it lacks both a significant quartz stockwork (which is present at Bell Copper and

fundamental to other significant porphyry deposits world wide) as well as supergene enrichment (also present at Bell Copper). The breccia zones present at Bell were reportedly unmineralized with metal depleted envelopes. The model proposed at Bell envisages copper and gold being mobilized to higher levels via these breccia zones. This may be what is preserved at Hearne Hill.

On the regional scale, both the number and coincidence of major intersecting structures, as well as the widespread copper and gold enrichment in silts which are present at Bell Copper and Grandisle, are much less well developed at Hearne Hill, probably indicating a smaller system.

RECOMMENDATIONS

There is no evidence to suggest that Hearne Hill as a porphyry system will be better than other deposits in the Babine belt, which themselves fall short of our target thresholds. The breccia mineralization, although high grade, is thus far limited in size and probably erratic. The lack of regional and property-scale geochemical signature to the east, the lack of supergene and quartz stockwork and the lack of intersecting major regional structures in the area are all limiting factors for the property. No further action other than monitoring the project, is recommended at this time.



Mineralization: Biotite feldspar porphyry (left). clay-sericite alteration front with cpy veinning (centre) high grade cpy stockwork (right)



Miineralization: cm scale cpy vein in volcanics (left), strong clay sericite altered volcanic with cpy veinning (centre), clay-sericite altered volcanic with cpy vein (right)



Hearne Hill - drill located left of centre



Miineralized fragment-supported breccia (float) Sericitized porphyry fragments with sulphide matrix



Collar location - hole 95-16



View of camp - November 18, 1995



