

GEOFILE 2011-12 SURFICIAL GEOCHEMISTRY OF THE GALAXY PORPHYRY COPPER-GOLD DEPOSIT, KAMLOOPS, B.C. (NTS 092I/09)

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INTRODUCTION

In a preliminary report of a geochemical orientation survey carried out in 1992 over the Galaxy (MINFILE [092INE007](#)) Cu-Au deposit (Figure 1) Kerr, Sibbick and Getchell, 1993 describe the geology, sampling and analytical methods and a map showing the distribution of Cu in the surficial deposits (till). No other elements were included in their report. This Geofile reports additional element values, location coordinates and partial field notes in digital format.



Figure 1 – Galaxy Location

GEOLOGY

The Galaxy deposit is one of seven porphyry copper-gold deposits located within the Afton camp. These deposits, as well as the Afton and Ajax orebodies, are hosted within the Iron Mask batholith, an elongate, northwest-trending, alkaline subvolcanic intrusive complex about 20 kilometres long by 4 kilometres wide that intrudes comagmatic and coeval andesitic to basaltic flows, pyroclastics and sedimentary rocks of the Triassic Nicola Group. The batholith comprises four intrusive phases

ranging in composition from pyroxenite and gabbro to diorite to monzonite and syenite. Emplacement of the intrusive units and the subsequent mineralizing events were controlled by a complex system of recurring northwesterly,

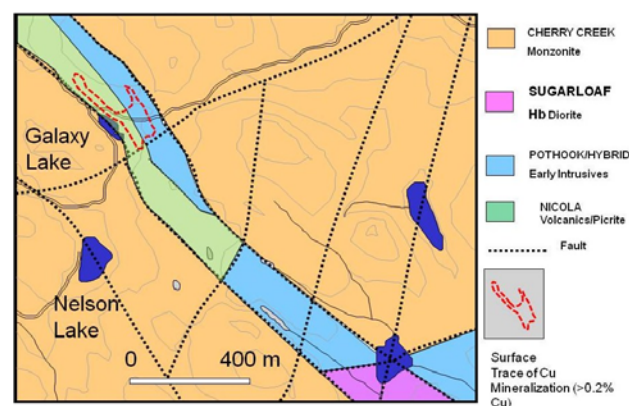


Figure 2 – Galaxy Bedrock Geology

northeasterly and northerly trending faults and related fracture zones. Primary Cu-Au mineralization is fracture-controlled chalcopyrite and bornite accompanied by pyrite, pyrrhotite and magnetite.

Copper mineralization on the Galaxy property consists of chalcopyrite and minor bornite with only minor, near-surface oxidation associated with a small stock of Sugarloaf diorite (Figure 2). The main deposit occurs within a keel-shaped zone, about 150 metres wide, 400 metres long and up to 70 metres thick, which is part of a northwest-trending, graben-like structure composed of sheared and strongly fractured Nicola Group volcanics and dioritic phases of the Iron Mask batholith restricted by a basal thrust. Irregular shaped bodies of sheared, serpentinized olivine-pyroxene-rich basic intrusive, referred to as picrite, are exposed along the southwest margin of the graben. The graben is bounded on the

south-west and northeast by fine-grained syenite and micro-Syenite of the late Cherry Creek phase.

SURFICIAL GEOLOGY

The last glacial episode in the Kamloops region occurred during the Late Wisconsinan (Fraser Glaciation). Ice movement during this final event was primarily to the southeast, as interpreted from ice-flow indicators such as well-developed drumlin fields.

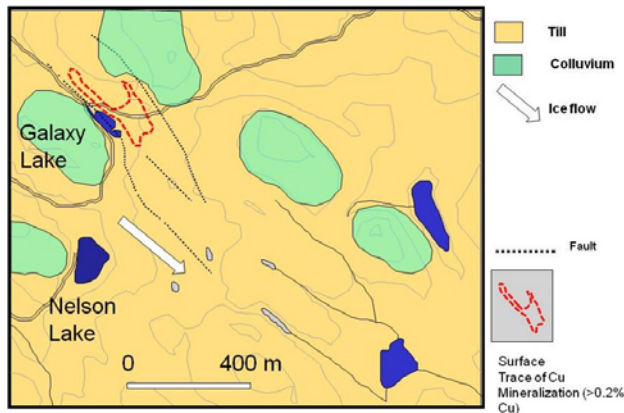


Figure 3 - Surficial Geology

Previous glacial episodes also affected the area, but the conditions surrounding these older events can only be interpreted from more deeply buried deposits preserved in bedrock depressions and larger valleys. During deglaciation phases, ice appears to have retreated towards the north and northwest. Drumlinized till sediments are widespread throughout the Kamloops area occurring primarily as a blanket (1 metre) in the northern and southern plateaus along the South Thompson Valley, as well as in range country which continues discontinuously south to Princeton. The shape and size of the flutings are variable, but the dominant trend of these landforms is to the southeast.

Surficial sediments identified in the Galaxy area include fluted diamicton (till) of variable thickness, thin veneers (metre) of colluviated till over till on steeper slopes, and less than 5 per

cent bedrock (Figure 3). Drift cover ranges from less than 1 metre to tens of metres in thickness. Near the deposit, surficial sediment cover averages 3 to 5 metres, obscuring much of the bedrock near the deposit. Drill-hole data from assessment reports shows significant thicknesses of unconsolidated sediments, in excess of 20 to 30 metres, are common southeast and south of the deposit. For most areas, the till is compact, very poorly sorted and consists of angular to well-rounded pebbles to boulders in a sand-silt-clay matrix.

GEOCHEMISTRY

The samples collected by Kerr et al. 1993 are from the oxidized C soil horizon between 0.5 and 0.75 metre below the surface at 169 sites on a grid extending for 1500 metres in a down-ice direction from the deposit. Sample locations are shown in Figure 4 and field records are in Appendix A. Some of the field records are missing so sample depth has to be assumed to be between 0.5 and 0.75 metre. The samples were analysed for 47 elements by aqua regia digestion and by inductively coupled plasma emission spectrometry (AR-ICPES) and instrumental activation (INAA). Sample preparation and analytical methods are described in more detail by Kerr et al. 1993. Element values are listed in Appendix B. Figure 5 shows the distribution of Cu in till and Figure 6 the distribution of Au by INAA. Appendix C lists values for selected elements in analytical duplicate samples and Figures 7 and 8 show scatter plots for Cu and Au in the duplicates.

REFERENCE

Kerr, D.E., Sibbick, S.J and Getchell, G.D. (1993): Preliminary Results of glacial dispersal studies on the Galaxy property, Kamloops, BC. BC Ministry of Energy, Mines and Petroleum Resources Geological Fieldwork 1992, Paper 1993-1, pages 439-442.

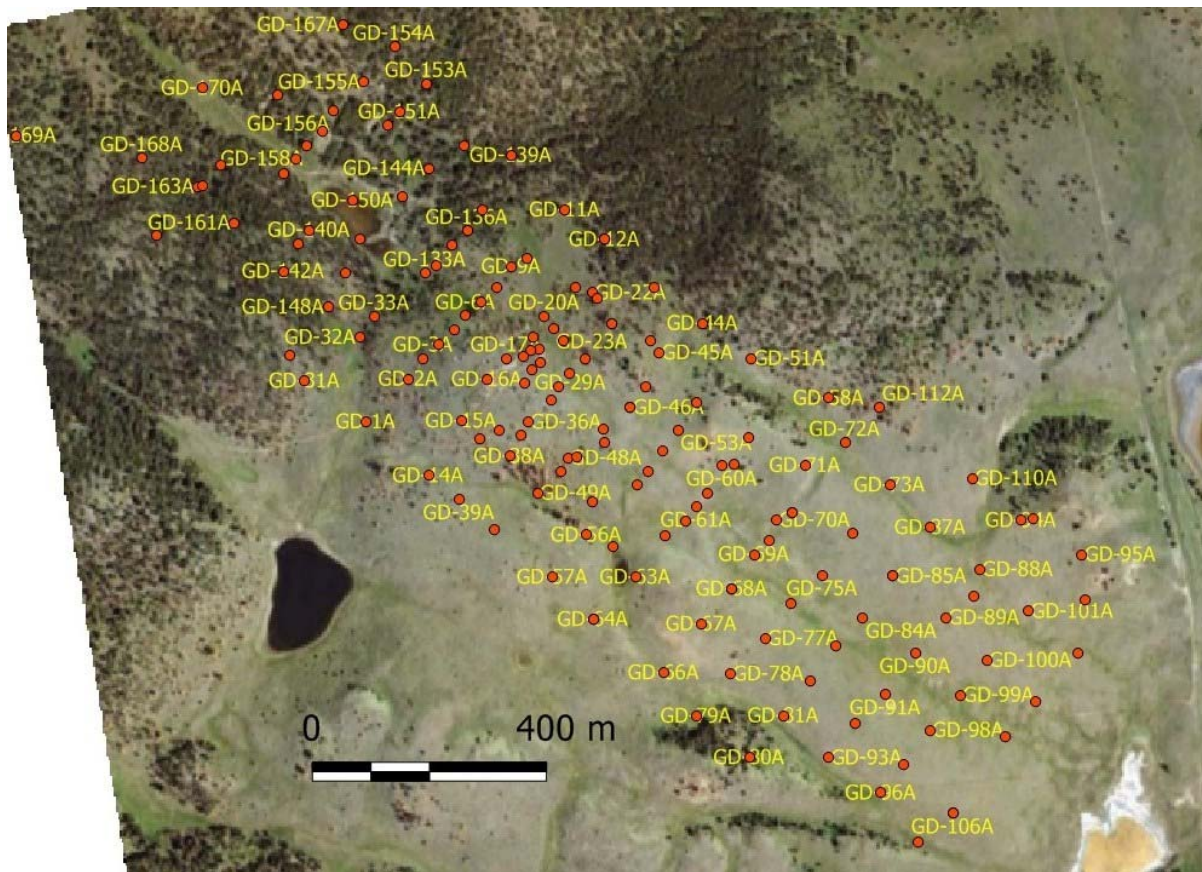


Figure 4 - Sample locations

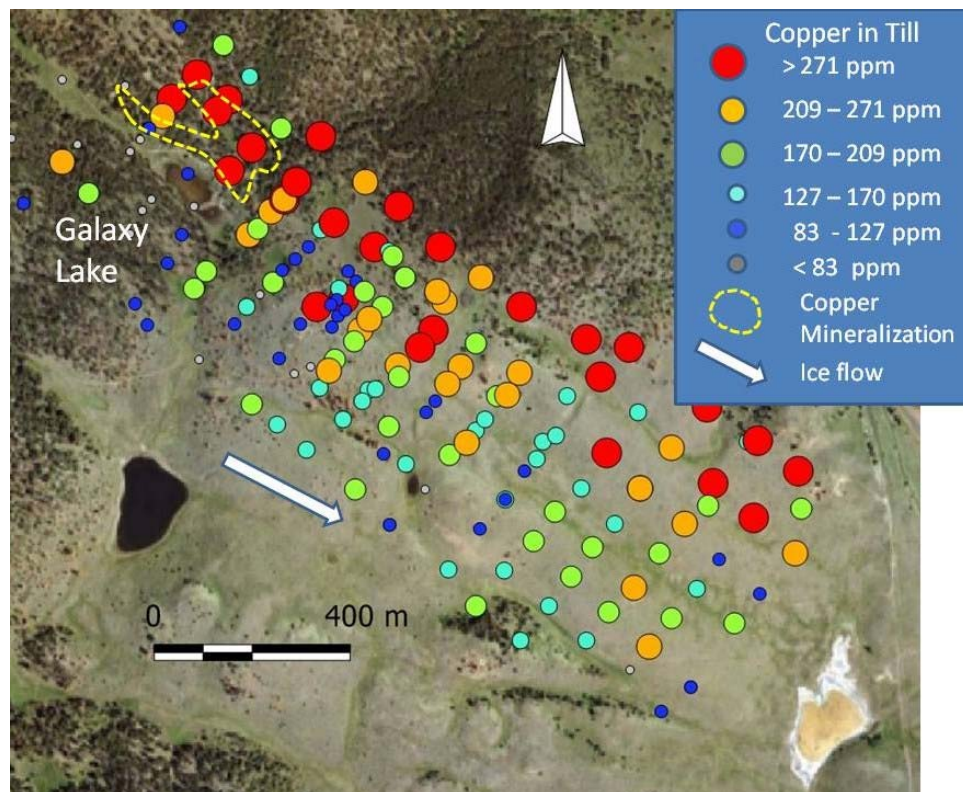


Figure 5 - Copper in surficial samples

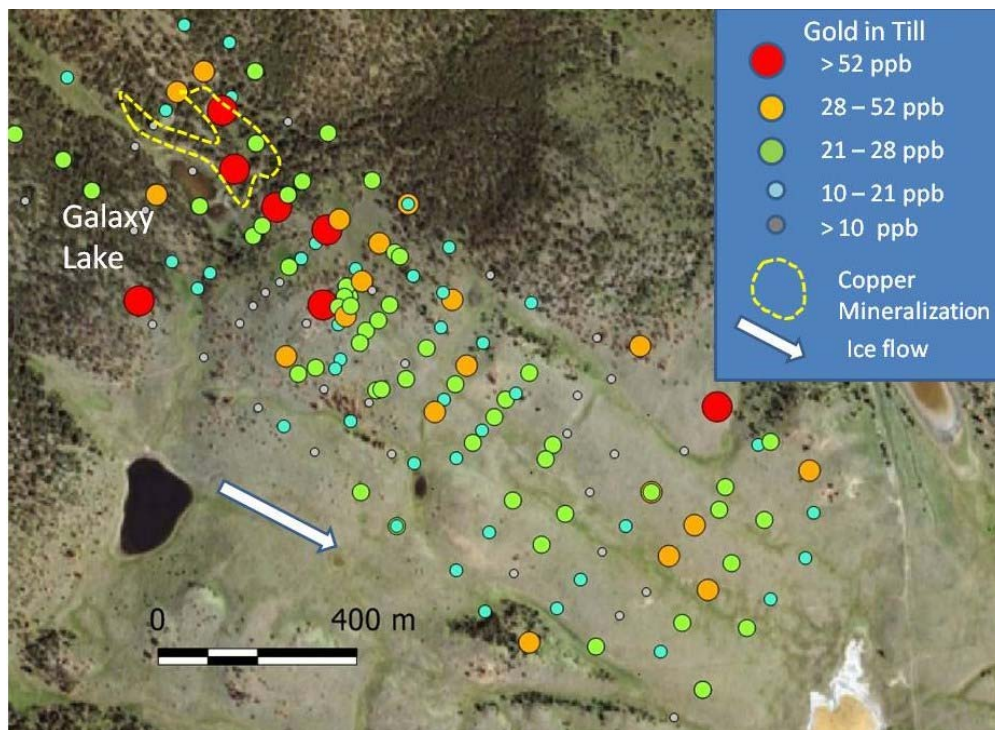


Figure 6 - Gold in surficial samples

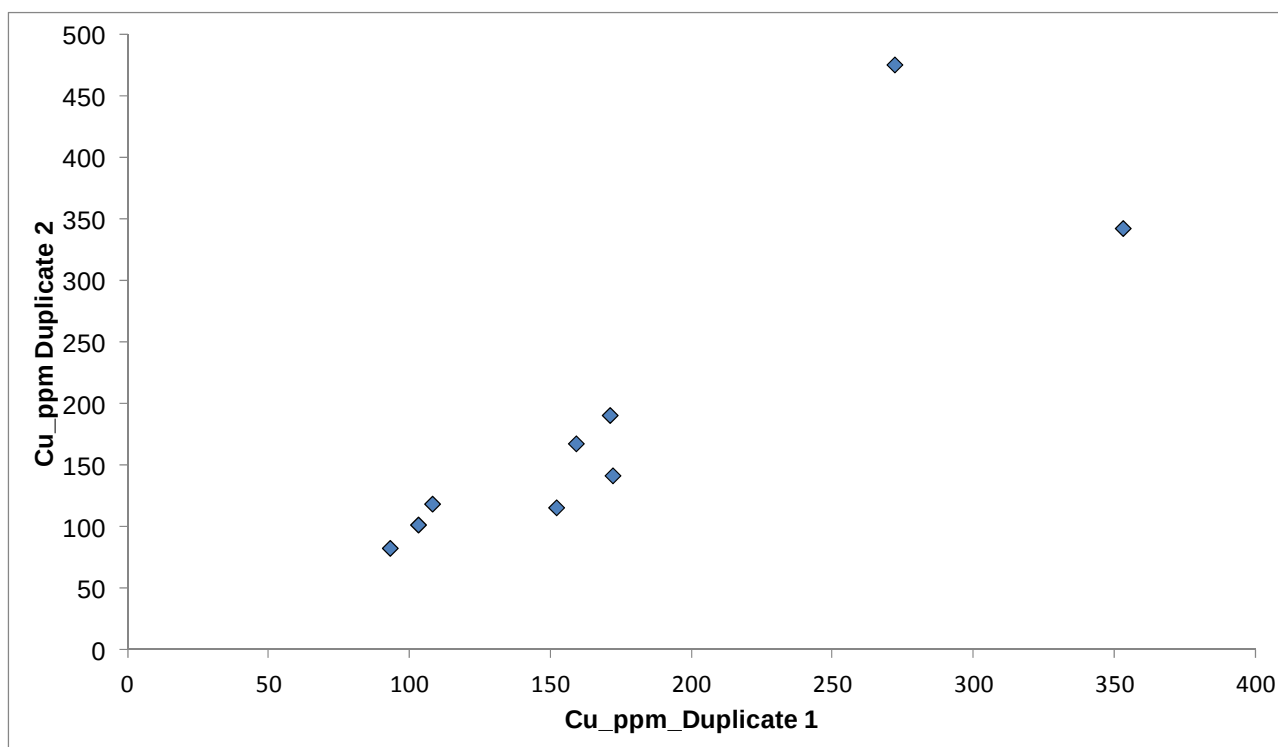


Figure 7 - Copper in duplicate samples

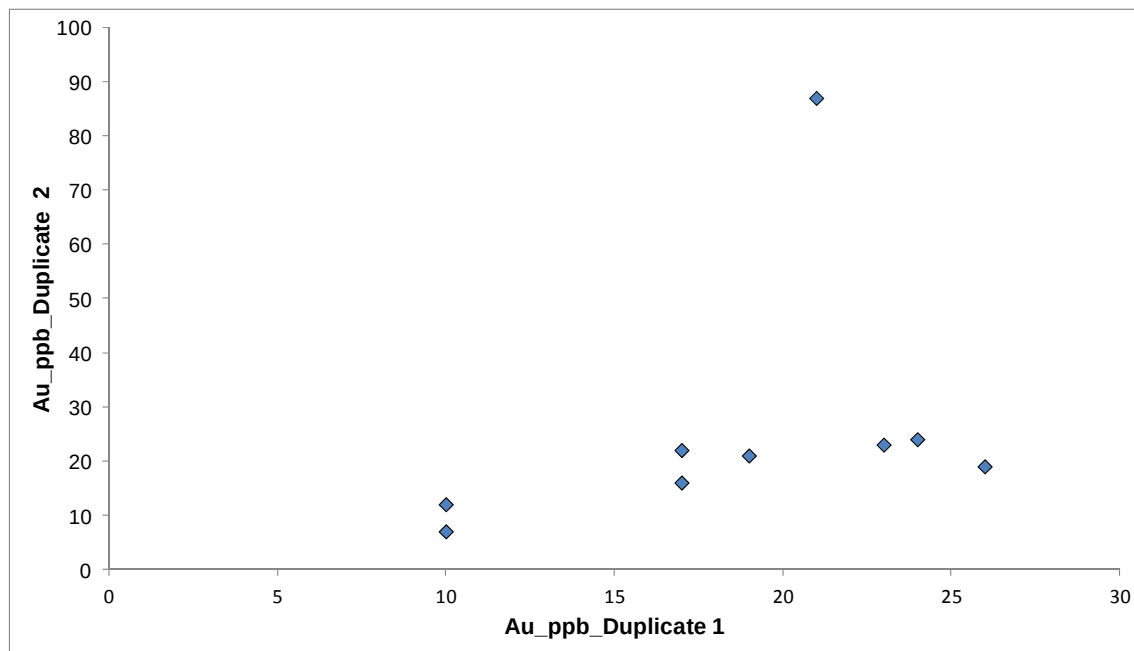


Figure 8 - Gold in duplicate samples