

Can polymetallic mineralizations in Hiekkapohja, Central Finland be part of a one porphyritic system?

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We have re-evaluated ore showings in the SE-part of the Paleoproterozoic Central Finland granitoid complex. Several small high grade mineralizations and glacially transported boulders are known from Hiekkapohja, in the vicinity of Jyväskylä city, concentrating on an aeromagnetic low (8 * 4 km). The mineralized samples, variably enriched in Pb, Cu, Zn, Mo, Ag and Au, display a zoned pattern. Samples richest in Au are on the outer edge of the aeromagnetic low of the negative anomaly and Cu-Mo-rich samples in the centre.

Most of the mineralized samples are variably tectonized and show variable signs of sericitization and saussuritization. Typical sulphur minerals in the area are arsenopyrite, chalcopyrite, sphalerite, pyrrhotite, galena and pyrite. Accessory phases include eg. acanthite, other Ag-sulphides and native Bi.

Most of the mineralizations could be connected to fluid activity during tectonic activity, but as they are concentrated in the area of the aeromagnetic low, they are likely generated by a spatially more restricted reason, for example a late magmatic fluid phase. This pulse would also be responsible for reducing the areal susceptibility by altering the magnetite. At the moment the best candidate for the fluid source are the small intrusions and dykes of a youngest even-grained granite phase, which could be significantly larger in depth. We interpret preliminary that: the mineralizations are co-genetic and associated to late magmatic hydrothermal activity and that the large scale zoning can be proposed as roughly similar to typical porphyritic mineralizations.