

MINERAL POTENTIAL OF GRANITE PLUTONS AND PEGMATITE IN THE ASHUANIPI COMPLEX, SUPERIOR PROVINCE, WESTERN LABRADOR

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The ca. 3.0-2.65 Ga Ashuanipi Complex of western Labrador is a granulite-facies migmatite terrane consisting of paragneiss, tonalite to diorite orthogneiss, diatexite, mafic and ultramafic intrusive rocks, granite and tonalite plutons and pegmatite (Figure 1). Current exploration surveys being undertaken by Labrador Gold Corporation are focused on gold and base metal mineralization hosted in gneiss and associated iron formation rocks. Recent 1:50 000-scale bedrock mapping (van Nostrand and Broughm, 2017) and preliminary litho-geochemical results from the region indicate that late-stage granite plutons and pegmatite may have the potential to host gold, uranium, thorium and REE mineralization. The granite plutons are 10s of kilometre-scale intrusions (Figures 1, 2) that postdate migmatite formation and are coincident with strong regional aeromagnetic signatures (Figure 3). Within some of these intrusions, local elevated gold is hosted in unaltered granite and pyrite-bearing gossan zones that occur proximal to brittle to ductile fault zones and indicate that potential mineralization in these rocks may be, in part, structurally controlled. Syn- to late deformation pegmatite veins occur throughout the region and range from metres to 10s metres in thickness. Locally these rocks contain anomalous Th, U and REE contents. Only preliminary exploratory work has been carried out on the granite plutons and pegmatite and a systematic examination of these potential host rocks is required to assess their mineral potential.

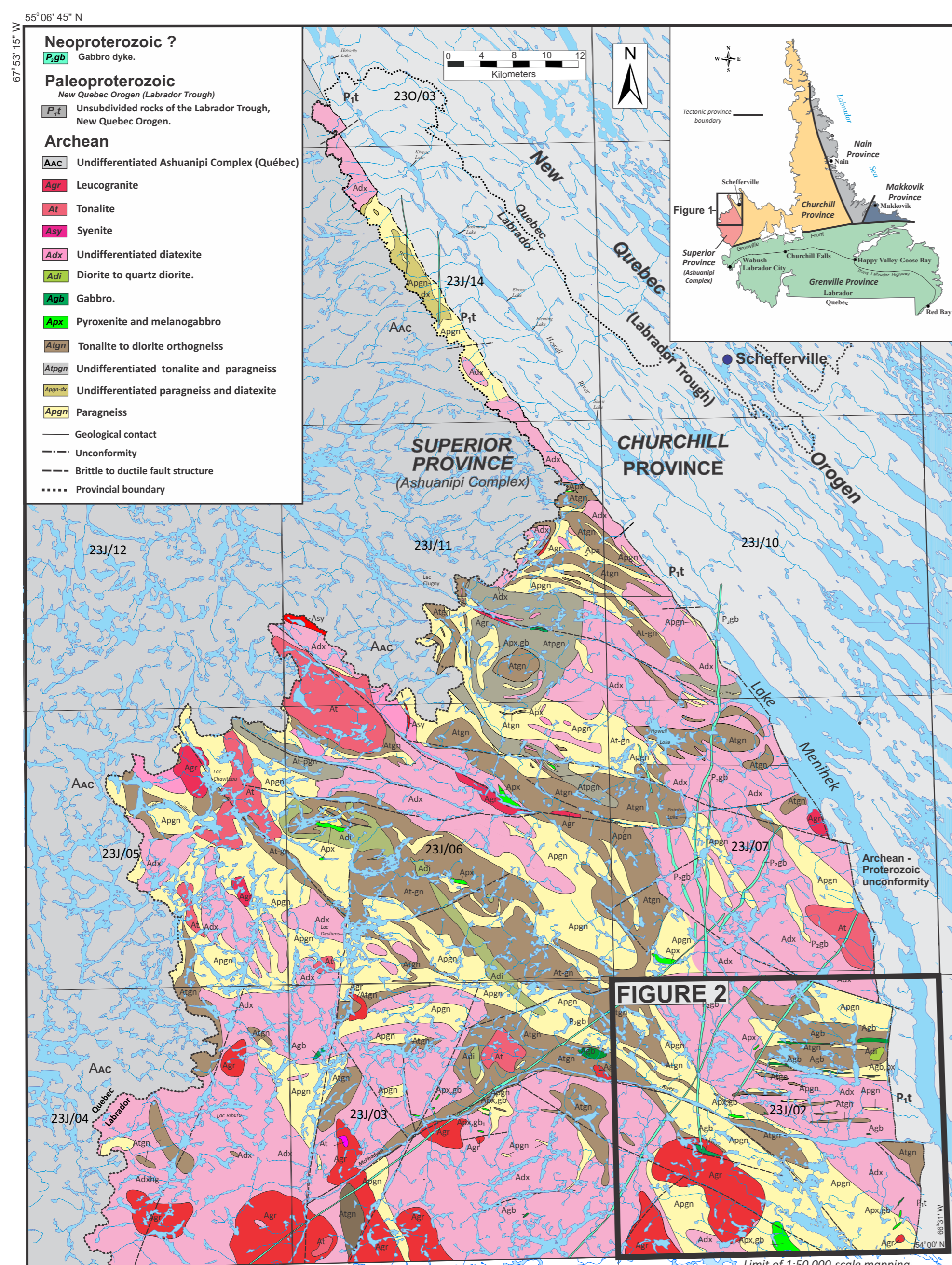


Figure 1. Simplified regional geological compilation of the northern part of the Ashuanipi Complex in western Labrador (modified after van Nostrand, 2017b). The late-stage granite plutons (Unit Agr) may have the potential to host structurally-controlled gold and base metal mineralization associated with late stage faults. Pre- to posttectonic pegmatite is a ubiquitous rock type in the region and locally contain anomalous Th, U, REE's and local elevated gold (see Figure 2)

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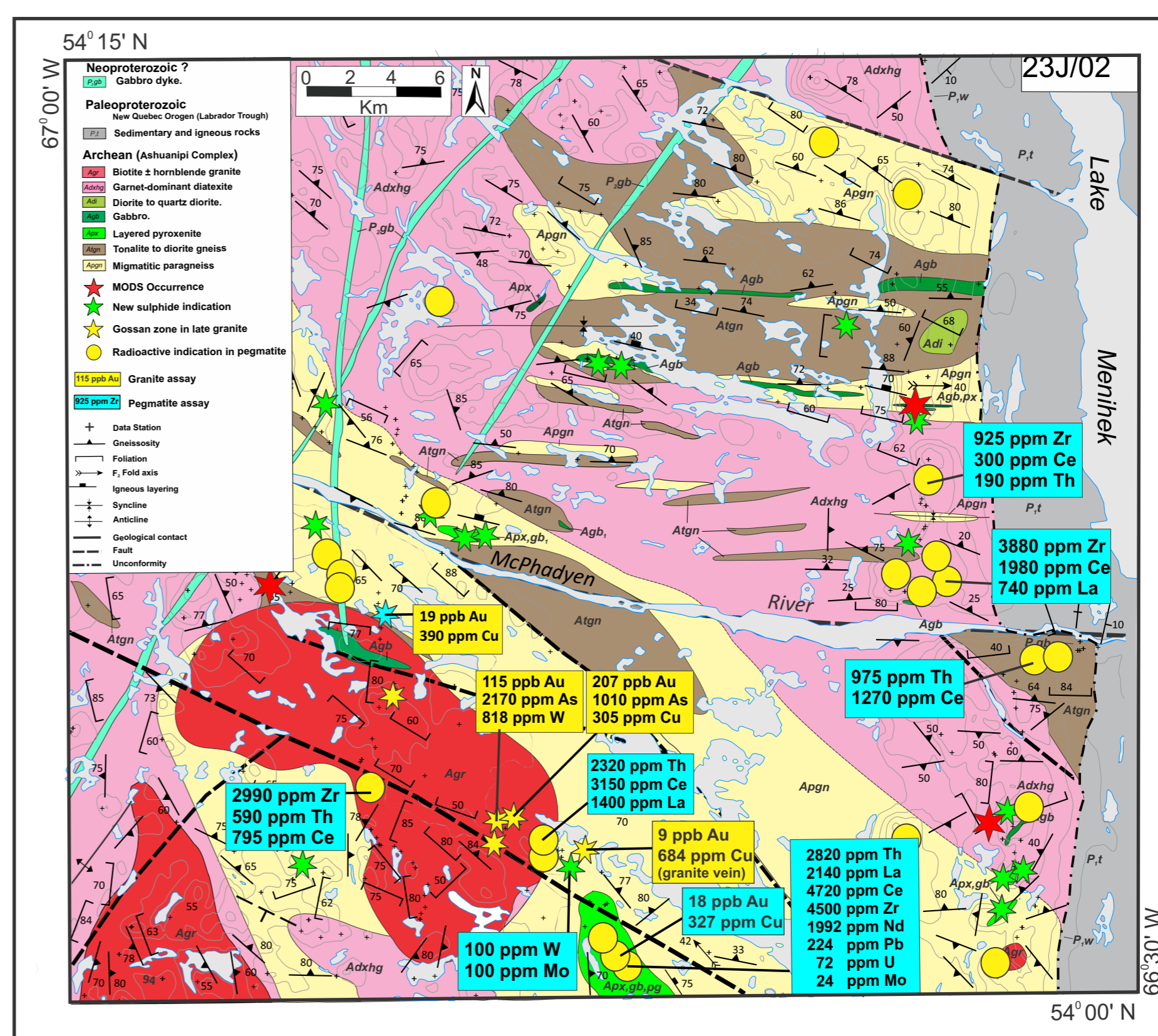


Figure 2. Geological compilation of NTS 23J/02 showing rock sample assays from granite and late stage pegmatite. The granite pluton is transected by a southeast-striking brittle to ductile fault zone and local mineralization with associated elevated gold and base metal assays appears to be, in part, structurally-controlled. Syn- to posttectonic pegmatite occurs throughout the region and many of these veins have anomalous Th, U and REE's and locally slightly elevated gold. Geology after van Nostrand and Broughm (2017) and rock assay values are from van Nostrand (2017b).

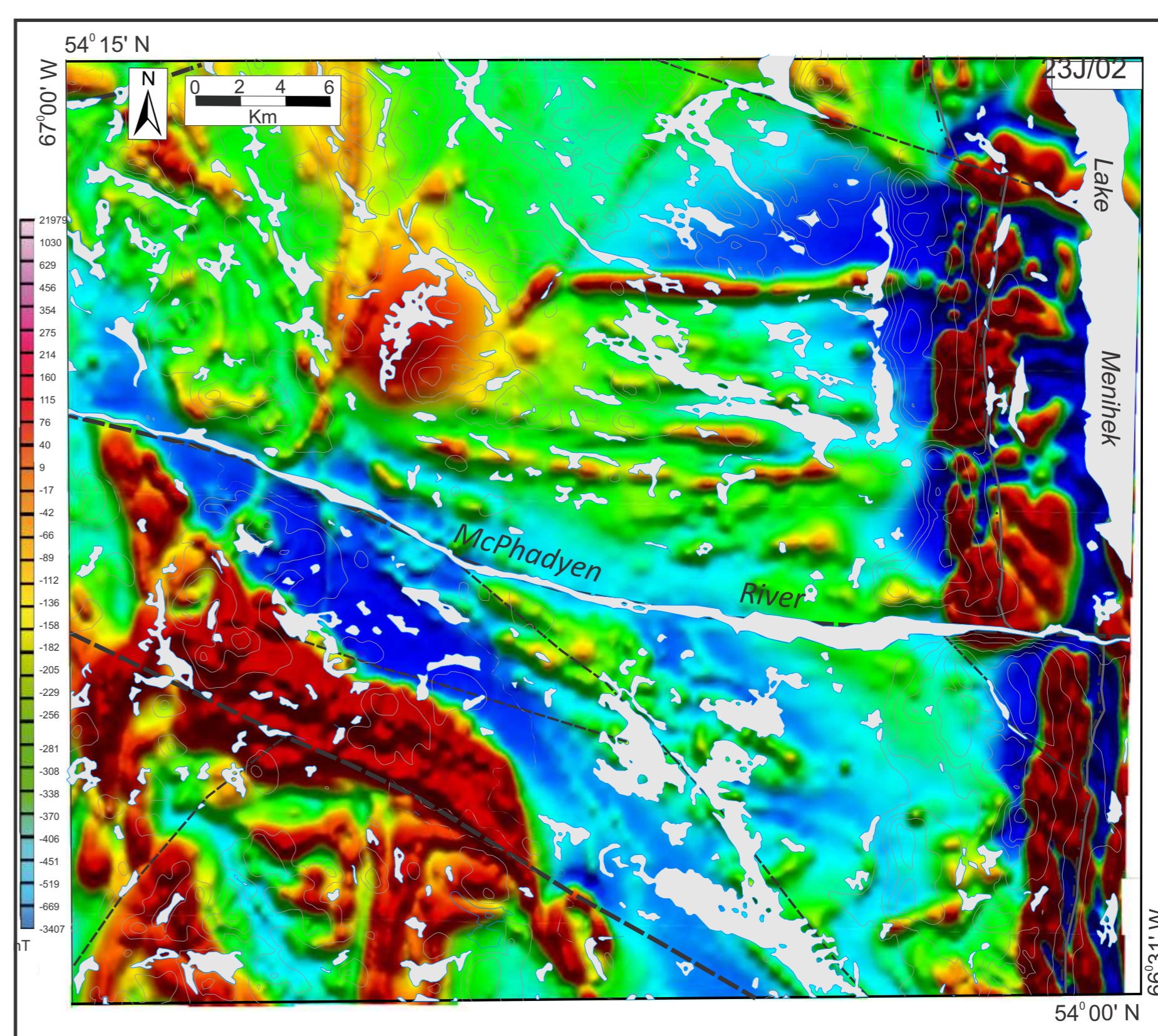


Figure 3. Residual aeromagnetic map of NTS 23J/02 illustrating the coincidence of late granite plutons and strong positive magnetic signatures (after Miles and Oneschuk, 2013)

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