

Geology of the Turbidite-Hosted Mustang Gold Showing, Lower Eastmain Greenstone Belt, Superior Province, Quebec: Preliminary Results

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Abstract

The Mustang gold showing occurs on the Wabamisk property belonging to Virginia Mines Inc. The showing is located 60 km south of the Eleonore Mine (Goldcorp), in the Lower Eastmain greenstone belt that forms part of the La Grande Subprovince. The gold-bearing Mustang vein returned 23.28 g/t Au over 4.6 meters (channel) and up to 22.65 g/t Au over 2.25 meters (drill hole). The mineralization is hosted by turbiditic sedimentary rocks (Auclair Formation) located in the upper part of the stratigraphic sequence. Outcrop and trench mapping in mineralized areas reveal that the sediments have undergone at least three phases of deformation including NNW-trending F_1 folds refolded by ENE trending steeply east-plunging regional F_2 folds. The main foliation (S_2) is ENE-trending and axial planar to F_2 folds. D_3 is defined by a NE-trending disjunctive crenulation cleavage. Eight lithologies were identified and four generations of quartz veins were distinguished using cross-cutting relationships. The Mustang vein ($N240/80^\circ$) was stripped and drilled over 420 meters laterally. Its thickness varies from a few centimeters to 2.5 meters. The Mustang vein was emplaced subparallel to bedding early during D_2 . The vein contains milky and smoky quartz with laminar textures and clasts of altered and foliated wall rock. The wall rock hosting the Mustang vein is silicified and sericitized (\pm actinolite, clinozoisite) and contains 1 to 10% sulphide minerals including arsenopyrite, pyrrhotite and traces of pyrite and chalcopyrite. The mineralized zones and geological environment show some analogies in terms of structural setting and styles of mineralization to turbidite-hosted gold deposits such as the Meguma mineralization in Nova Scotia and Bendigo-Ballararat in Australia. The Mustang discovery is another new example of the diverse styles and settings of gold mineralization in the James Bay area, and one that emphasizes the potential of the sedimentary assemblages to host gold mineralization.