Metallogeny of Vila Nova Metamorphic Suite, Ipitinga Hills, Amazon Region Brasil

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The Vila Nova Metamorphic Suite, 2.26Ga in age, consists of mafic-ultramafic metavolcanics, overlain by BIF's and clastic metassediments. Hydrothermal syn-depositional volcanogenic sulphide (pyrrhotite, pyrite, chalcopyrite and sphalerite), associated with Au and Ag, occurs in the basal metavolcanic sequence (273°-320°C and 0.7 – 2.3Kb).

Gold is found also in sheared quartz veins and in their host rocks, associated with pyrite, chalcopyrite and covellite. The gold mineralization is syn-deformation of the host rock and late to sulphide deposition. Mineral assemblage and temperature suggest that the veins are mesothermal lode-gold type. Gold also occurs in rocks altered by supergenic processes, showing preserved original metamorphic textures, consisting of hematitic-goethitic plasmas, involving residual mineral. Incipient gibbsite with dominant relict textures suggests that these rocks are imature laterites or gossans.

Significant contents of Pt were found in diferent lithologies, showing evidence of strong hydrothermal alteration: amphibolites (0.01- 0.07 ppm); hornfels (0.04-0.1 ppm); clinopyroxene-bearing metasediments (0.03ppm); cordierite-anthophyllite-bearing rocks (0.02-0.09ppm); silicate-type BIF's (0.17-0.54 ppm); oxide-type BIF's (0.03 ppm); and pelitic metasediments (0.07ppm). Pt was neither detected in the hydrothermally-altered basalts that host the sulphide mineralization, nor in the sulphides.