Structure of the Cachimbo Graben and related mineralizations, Southern Amazonia, Brazil

[1]VITULICH, E.B. and [1]PIRES, F.R.M.; [1]Degeo/UFRJ, Rio de Janeiro, RJ, Brazil

Cachimbo graben is a NW trending structure separated from the Caiabis and
Dardanelos grabens through a gneissic horst. The Cachimbo graben is an asymmetric structure with marine sediments at the SW portion grading to continental deposits (Gorotire and Beneficent Groups) northeastward. The boundaries of the structure are given by vertical faults converted after ductile to brittle shear zones. A plutono-volcanic sequence of granite, pyroclastic and rhyolitic rocks related to the Iriri Event, forms a mineralised belt in gold, along the SW contact zone. At the northern part of the graben, Mn-oxides form horizons within quartzites and metasiltites near Sucunduri River and Beneficente, denoting an oxidising environment. At the deeper parts of the basin, under more reducing conditions, disseminated pyrite, chalcopyrite, bornite, sphalerite and baryte have been found in sandstones, siltites and dolomites around the Sucunduri uplift. Apparently Cachimbo graben was a very irregular structure, with variable depth, with episodic and irregularly distributed volcanism and intrusions. In that circumstance, sedimentation was controlled by the basin conditions, which determined in shallow platform, the deposition of the Mn oxides. Splays diverging from the main shear zone, at the border of the subsiding Cachimbo graben during the Mesoproterozoic, were responsible for the significant variation in depth and consequently to the nature of mineralizations. Alkaline intrusive and rapakivi-type granitic plutonism, some mineralized in tin, occurred during a continental tectonic reactivation. Gold-pyrite disseminated ores occur in Iriri acid volcanics and along EW fault zones as quartz-pyrite-chalcopyrite, galena and sphalerite hydrothermal veins.