

THE EXPEDITO MASSIVE SULFIDE DEPOSIT IN MATO GROSSO/BRAZIL.

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The Expedito massive sulfide Zn-Pb deposit is located 14 Km north of the Aripuanã town, northwestern Mato Grosso State, Brazil. The geological framework comprises a thick acidic to intermediate volcanic pile and co-magmatic intrusives of the Mesoproterozoic Uatumã Group. This assumption is supported by 1.75 Ga SHRIMP U-Pb zircon ages of dacitic and co-magmatic granite. The deposit is hosted by a distinctive dacitic lapilli and crystal tuff horizon interlayered with massive porphyritic flows of same composition, showing a NW trending monoclinel. The mineralization consists of several concordant but discontinuous lenses of massive to semi-massive pyrrhotite, pyrite, sphalerite, galena, chalcopyrite and arsenopyrite. There are two types of mineralization in terms of sulfide content: a) sphalerite-rich ore which is more prominent and b) chalcopyrite-rich ore with the highest Cu-Au grades. This mineralization is enveloped by an hydrothermal alteration halo consisting of chlorite, biotite, tremolite and calc-silicate minerals associated with carbonate. Magnetite-rich zones over the massive sulphides suggests post-depositional process of sulfide replacement. A system of discordant E-W trending gold-bearing quartz veins is related to late faulting. Although the intimate association of the ore lenses with volcanic rocks suggests a volcanogenic origin, this deposit have two particular characteristics, which are, the strong calc-silicate alteration and no definite association with seafloor environment, which difficult the proposition of a VMS genetic model.