

# SEG 2023 Conference: Resourcing the Green Transition

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## Geology and Gold Mineralization of the La Debo Permit, Southwestern Côte D'ivoire, West Africa

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Gold mineralization on the La Debo exploration permit is located within the Birimian Soubré greenstone belt in the Goh-Nawa region of southwestern Cote D'Ivoire in West Africa. Several mineralized occurrences are found within a 30-km NE-trending structural corridor, which are the focus of an ongoing research project and exploration program. The gold-bearing orebodies are located off major structures, commonly in areas of second-order shears or regional folds, or on extensive dilation jogs. The focus of this study is on the genesis of two NE-trending orebodies, G3 north and G3 south. These orebodies have been the subject of an earlier PEA, where an inferred resource of 500k ounces Au is defined. Reinterpretation of structural and geological models from current and historical drilling indicate the presence of several mineralized shear structures hosting a number of ore zones. Preliminary petrography results show a mineral assemblage of sericite-chlorite-biotite and minor pyrite, suggesting that the host rocks underwent propylitic alteration. Gold mineralization is broadly linked to post-peak metamorphism and is closely associated with sulfides, mainly pyrite and pyrrhotite and, to a lesser extent, chalcopyrite. Additionally, the presence of tourmaline and chlorite may indicate that the rocks were affected by intense shearing and associated boron-rich fluid circulation. The updated structural model shows that mineralization is likely related to wrench tectonics associated with shallow, NE-plunging regional fold hinges. This study will also delve into the physical and chemical explanations for the source and location of the mineralization, thereby improving the understanding of the auriferous potential of the orebodies.