

Mapping and Petro-Structural Study of Formations in the Northern Sector of Komborodougou, in the Gold-Bearing District of Korhogo: A Substantial Contribution to Mining Exploration in Côte d'Ivoire

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ABSTRACT

Tongon gold mine put on hold since 1998, the geological mapping services hardly offer geological maps at 1/200,000 and 1/50,000. The situation of unavailability of detailed geological maps does not help mining operators to choose prolific zones. and also, to the interpretation of geochemical anomalies or gold mineralization. Consequently, during the years 2020 and 2021, we undertook a campaign of geological mapping and petro-structural study of the northern sector of Komborodougou, located in the southern extension of the Banfora furrow. This work, which made it possible to produce a geological map at 1/20,000 scale, reveals that:- the region contains three major lithological units: (i) a volcano-sedimentary unit consisting on the one hand of metasediments : metaarenites , metasilites and metaflyschs , which metamorphosed outcrop in the form of sericite or quartzosericite schists) and on the other hand of metavolcanites (metabasalts and metarhyolites); (ii) a metaplutonic and intrusive unit composed on the one hand of quartz metadiorites and metagabbros, and on the other hand of granite and granodiorite intrusives; (iii) and finally, a unit of vein rocks formed of microgranite, microgabbro , aplite and smoky quartzite.-the volcano-sedimentary complex is associated with a regional fold with an axis subparallel to the regional tectonic grain and an S1 schistosity oriented NE-SW to NNE-SSW with strong dips (>60°), except those of the metaflyschs which are weak (<40°); a NW-SE regional compression would be at the origin of the establishment of this schistosity. The volcano -sediment and metaplutonite unit is crossed in NNE-SSW direction by a shear zone or main shear -zone with sinistral play and secondary shear - zones oriented sometimes NE-SW or NS. These shear -zones are cut by more or less dextral or sinistral strike-slip faults-oriented NW-SW and EW. Vein systems with NS to NNE-SSW (N0-20°) and NW-SE (N130-160°) directions associated with the different shear - zones are the bearers of gold mineralization in the region. These veins have been exploited by clandestine operators for more than two decades. The northern sector of Komborodougou is in the NNE continuity of gold mineralization highlighted by the mining company MAKO GOLD on its Gogbala and Tchaga prospects, Napie project.

Keywords: Geological, Petro-structural mapping, Gold mineralization, Komboro, Ivory Coast.

