

# SEG 2024 Conference: Sustainable Mineral Exploration and Development

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## Geology of the Southwestern Part of Kakula: Structural Complexities and Evidence of Tectonic Inversion

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Kamoa copper SA, Kolwezi, Democratic Republic of the Congo (Kinshasa)

The Kakula Copper deposit part of the Kamoa-Kakula Complex is located approximately 25km west of Kolwezi. The deposit contains 540Mt of indicated resource at 2.67% Cu and 90Mt of measured resource at 3.1% Cu (1% Cu cut-off).

The southwestern part of the Kakula deposit shows a complex structural architecture between the Kakula dome and the current mining zone. The deposition of the Grand Conglomérat formations occurred in an actively forming rift basin, which controlled the geometry, grade distribution and thickness variation. The main growth fault was formed during the extension of the Kakula sub-basin. Near the Kakula Dome, there is evidence of steep beds with 40° average dips, small-scale folds, fractures, thrust faults and intense foliation. The zone of high foliation is often associated with quartz and carbonate veins bearing copper sulfides. These structures are evidence of tectonic inversion related to the Kolwezian phase of the Panafrican Orogeny. Detailed underground mapping coupled with cover drilling constitute very effective tools to investigate the complexity of the deposit. The poster shows the position and extent of the geological variations in the southwestern area of the Kakula mine.