

Heavy mineral sands ore deposits in Somaliland (Southern Gulf of Aden) coastal areas

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Heavy mineral enriched samples along the Somaliland coast were analysed using X-ray Fluorescence, X-ray Diffraction and SEM-EDS techniques. This study reveals that a considerable amount of heavy minerals is present along the Somaliland coast and confirms the presence of high concentration titanium and iron bearing minerals. The titanium detected in geochemical analysis occurs in the form of ilmenite, rutile, titanite and titaniferous magnetite. Also, present in minor or trace amounts, are garnet, zircon and monazite.

Heavy mineral accumulations in the east and west of Somaliland have different mineralogical assemblages. The east of Somaliland is dominated by quartz with moderate concentration of plagioclase, K-feldspar, magnetite, hematite and titanium bearing minerals, whereas in the west of Somaliland, the dominant minerals are quartz, K-feldspar and plagioclase with variable proportions of ilmenite, rutile, mica, amphibole and pyroxene. These variations in mineral assemblages suggest different composition of the catchment areas that supply sediment to these deposits. The catchment area in the east of Somaliland consists mainly of Proterozoic crystalline basement of the Qabri Bahar complex, Gabbro-Syenite belt and granitic intrusions that outcrop in Hudiso, Tulo Dibijo and surrounding areas. The primary sources of heavy minerals in the west of Somaliland comprise of high-grade metamorphic rocks of the Mora and Qabri Bahar complexes as well as the Miocene volcanics that outcrop in Laferug and Hagabo areas.

The heavy mineral sand deposits observed along the Somaliland coast have the potential to provide commercially important heavy minerals, in particular ilmenite.

Keywords: Heavy mineral sands deposits, Ilmenite, Rutile, Titanium Oxide