

## **Stream sediment geochemistry of Komati sub-catchment of South Africa**

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Mining legacies have been linked to local and regional decreasing aquatic eco-system standards. The decrease in standards has been often attributed to the seepage of acid mine drainage and contaminants from mine tailings and waste dumps into the aquatic riverine ecosystem. Mining plays a significant role in South African economy. Mining, especially gold and coal mining activities are prevalent in the Komati sub-catchment of South Africa. Twenty two stream sediment samples were collected and analysed using XRF to assess the impact of these mining activities downstream. Based on the XRF analysis two distinct geochemical signatures were observed: (a) sediment samples collected downstream of the coal mining activities have shown major concentrations of Al, Fe and Mn; (b) sediment samples collected downstream of the Barberton Greenstone Belt gold mines have shown major concentrations of Al, Fe, Mn, Ni, Co, Cr, Cu, As and V. Comparison of elemental concentrations with statistical averages indicated elevated levels of these elements suggesting possible pollution due to mining activities upstream.

**Key Words:** Geochemistry, Sediments, Mining, Pollution