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Characterization of surface and trapped dust samples around some ownerless and abandoned asbestos mine dumps in Limpopo province, South Africa

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Although asbestos mining in South Africa was banned in 2002, the presence of abandoned and ownerless asbestos mine dumps continue to be a concern to government and local communities. Asbestos mine dumps still pose serious health problems to nearby and far local communities. The dust being transported from these asbestos dumps, especially the unrehabilitated dumps, is contaminated with the asbestos material dispersed to the communities. Fine asbestos fibres that are suspended in the air get into the human system through inhalation (by nose or mouth) and end up being deposited into the throat and gas exchange region of the lung.

The aim of this research is to monitor, measure and characterize surface and trapped dust samples collected around human settlements in the vicinity of abandoned and ownerless asbestos mine dumps. Surface and trapped dust samples were collected during November 2015 in Limpopo Province at the following five sampling sites: Cork, Baviaankop, Kromellenboog, Penge 1 and Streatham 1. Samples were prepared for analysis with X-Ray Diffraction (XRD) and Scanning Electron Microscopy - Energy Dispersive X-ray (SEM-EDX) techniques. The preliminary data confirm presence of amphibole group (amosite) and serpentine group (chrysotile).

XRD and SEM-EDX results will be presented during the conference.

