



Contribution ID: 160

Type: Oral Presentation

## Chemical contamination and radiological risk assessment of Richards Bay waters

Thursday, 7 July 2016 10:00 (20 minutes)

**Abstract content (Max 300 words) (Formatting & Special chars)**

South Africa can be pronounced a dry country. Though Kwazulu-Natal has a higher rainfall than most parts of the country, it has recorded cases of austere droughts. Drilling of bore hole is prohibited by the municipal by-laws. Advancement of heavy industries and their support services could produce a source of contamination to the surface and ground waters and possibly the main water resources of Richards Bay. Any potential contaminants need to be identified in order to control the activities that cause them. Water samples were collected from a stream within Transnet precinct, Lake Mzingazi, Indian Ocean, Esikawini tape and Richards bay effluent water. The samples were analyzed using inductively coupled plasma mass spectroscopy (ICP-MS) for elemental composition of elements considered to be possibly poisonous even at low concentration and the results revealed none of the samples was contaminated with Pb and U, but a gross contamination of Mn was established in effluent, river and stream samples. In this work we will report on the radio analysis results obtained and the conclusions drawn on the suitability of these water for domestic and irrigational usage.

**Apply to be considered for a student award (Yes / No)?**

Yes

**Level for award (Hons, MSc, PhD, N/A)?**

PhD

**Main supervisor (name and email) and his / her institution**

Masiteng P.L plmasiteng@uj.ac.za University of Johannesburg

**Would you like to submit a short paper for the Conference Proceedings (Yes / No)?**

Yes

**Please indicate whether this abstract may be published online (Yes / No)**

Yes

**Primary author:** Mr MASOK, Felix Bitrus (University of Johannesburg)

**Co-authors:** Dr MAVUNDA, Dazmen (UJ / Necsa); Dr MALEKA, Peane (iThemba LABS)

**Presenter:** Mr MASOK, Felix Bitrus (University of Johannesburg)

**Session Classification:** Nuclear, Particle and Radiation Physics (1)

**Track Classification:** Track B - Nuclear, Particle and Radiation Physics