

International Conference on the Management of Naturally Occurring Radioactive Materials (NORM) in Industry

VIRTUAL EVENT

International Conference on
**Management of Naturally
Occurring Radioactive
Material (NORM) in Industry**

19–30 October 2020

#NORM2020



Contribution ID: 136

Type: Poster

RADIOACTIVITY CONCENTRATIONS IN MINES

INTERNATIONAL CONFERENCE ON MANAGEMENT OF NATURALLY OCCURRING RADIOACTIVE MATERIAL (NORM) IN INDUSTRY, 19 –23 OCTOBER 2020

RADIOACTIVITY CONCENTRATIONS IN MINES, ZAMBIA

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Abstract

The mining and processing of copper concentrates in Zambia generates a variety of waste materials which contain radioactive and non-radioactive hazardous constituents. Conventional underground and open pit mining activities produce overburden mineralized waste and barren waste rock, which are generally low in their uranium and thorium contents and are left in proximity to the mining site. Economically, valuable ore is stockpiled and processed at mill sites, and the residual waste, mostly mill tailings, is normally disposed-off near the same mill sites. This waste is hazardous and requires appropriate management.

The Naturally Occurring Radioactive Materials (NORM) may present radiological risks to workers, members of the public and the environment, yet very little attention is attached to them, moreover, the risk of exposure may require some form of control to protect people and the environment. Recent Environmental Radiological Surveys conducted have revealed that readings at one of the major mines were above the recommended levels. This implies that much more needs to be done in managing such facilities.

This paper therefore, intends to provide information regarding one of the Radiological surveys that was conducted at one of the mines regarding NORM levels in order to draw recommendations on addressing challenges and propose possible solutions in Zambia.

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Session Classification: Session VI - Solutions for Residue and Waste Management

Track Classification: NORM Residue and Waste Management