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Physics of noise and its impediment to the health of mine workers

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Abstract content
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This paper covers the physics of noise and its impact on the health of mine workers at a typical manganese mine in the Northern Cape. It also covers the status-quo of the noise exposure levels and prevalence of Noise Induced Hearing Loss(NIHL) over the past three years at that mine in order to assess the effectiveness of the HCP implemented at the mine. Wessels Mine was selected to conduct this study. A review of NIHL data of the employees was performed. The information was accessed from the database of the mine's clinic and analysed. A walk through survey was conducted to observe the work practices and employees' behaviour as related to noise in their working sections. Note that noise levels measurements were taken around the mine both on the surface and underground beforehand. The results obtained showed that at least two employees were diagnosed with early NIHL each year from 2012 to 2015. In addition, three cases of severe NIHL were identified in the same period. It was also noticed that high noise level at the mine was generated by mechanized equipment. The principal sources of noise were mostly from production areas underground and processing plant on the surface. Since the audiometric data collected from the clinic indicated little incidences of NIHL, it is clear that NIHL is well mitigated at the Mine. This informs us that the HCP employed at Wessels mine is yielding good results and is therefore effective in preventing the spread of NIHL. However, the average noise level in most working sections exceeds the tolerable permissible level. This is an indication that people working in those areas are likely to develop NIHL in the near future. It is important for the mine to think of new strategies to further control noise from sources both in underground and surface working areas.

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