

**ASSESSMENT OF SURFACE RADIATION DOSE RATE AND
ACCUMULATION OF Cd, Ni AND Pb IN THE ROADSIDE
SOILS ALONG BANDAR PUSAT JENGKA
TO TOL CHENOR, PAHANG**

NORIHAN BINTI ZAINUN ABIDEN

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ABSTRACT

ASSESSMENT OF SURFACE RADIATION DOSE RATE AND ACCUMULATION OF Cd, Ni AND Pb IN THE ROADSIDE SOILS ALONG BANDAR PUSAT JENGKA TO TOL CHENOR, PAHANG

Studies have been carried out along the road of Bandar Pusat Jengka to Tol Chenor, Pahang in order to determine surface radiation dose rate and concentration of heavy metals in the roadside soils as a result of transportation of mining wastes. The in situ surface radiation dose and concentration of Cd, Ni and Pb were studied and compared with the results obtained from an area with no transportation of mining wastes. The outcomes of this research also compared with the tolerable radiation dose and maximum allowable metal concentration in soils recommended by regulators. In this present study, radiation dose at the surface was found in a range of 0.146-0.467 $\mu\text{Sv/hr}$ with a mean value of 0.227 $\mu\text{Sv/hr}$ while radiation dose at 1 m above the ground was found in a range of 0.101-0.322 $\mu\text{Sv/hr}$ with an average value of 0.151 $\mu\text{Sv/hr}$. Accumulation of Cd, Ni and Pb in soil samples at study areas were yield an average concentration of 1.90 ± 0.54 , 61.45 ± 14.71 and 104.41 ± 8.62 mg/kg respectively. The result of this study indicates elevated doses of radiation which is above the recommended value. Meanwhile, the distribution of heavy metals in the roadside soils at the sampling areas noted a lower level of metal concentration than their background limit. The findings of this preliminary study indicates the importance of radiological and heavy metals studies on the side of preventing further dispersion and distribution of these toxicants in the environment besides monitoring and protecting the ecosystem balance for present and future's generation.