Assessment of Soil Heavy Metals Pollution in Different Mining Zones of a Nonferrous Metal Mine – Guo Li Liao

Summary

The soil pollution features of heavy metals in a nonferrous metal mine were investigated. The contaminated soil area was divided into the tailing mineral, mineral drainage, settling dust with wind and mineral transportation zones. The concentrations of heavy metals in soil were detected by ICP-AES. A normalization procedure was established to construct the geochemical baseline model of soil environment. The pollution characteristics of heavy metals in soil were assessed by the baseline model. The seriously polluting metals are Zn (2805.2 $mg \cdot kg^{-1}$) and Pb (1709.2 $mg \cdot kg^{-1}$). Cd, Cu, and As only had pollution low-level in soil. Heavy metals pollution were mainly distributed in the mineral transportation zone, in which the average concentration of Zn, Pb, Cd, As, and Cu are 7958.5, 5808.3, 5.0, 66.7 and 344.4 $mg \cdot kg^{-1}$. The enrichment factors of Zn, Pb, Cd, Cu, and As were 986.8, 1303.8, 0.79, 0.89, and 4.31, respectively.