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ASSESSMENT OF CONTAMINATION LEVEL AND POTENTIAL SOURCES OF HEAVY METALS IN SOIL FROM GREEN SPACES (CASE STUDY: AZADI PARK IN SHIRAZ)

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The present study investigates the distribution, contamination level and potential sources of heavy metals (HMs) in soil from green spaces of Azadi park in Shiraz, South-west Iran. A total of 24 topsoil samples were collected and analyzed for Cd, Co, Cr, Cu, Ni, Zn, Pb, and As. Geographical information system (GIS) and enrichment factor (EF) were used for the source identification and prepare distribution maps of HMs. Also the pollution index (PI) was used for assessment of contamination level of HMs. Results revealed that the contamination levels of HMs were in the descending order of Cu>Zn>As>Pb>Ni>Cr>Co>Cd. Moreover, based on enrichment factor (EF), approximately all of HMs in this area came from geogenic sources. These results supply basic information about heavy metal contamination control and environment management in green spaces. For non-carcinogenic effects, hazard index (HI) of studied metals for child decreased in the order of Cr>As>Cd>Pb>Ni>Cu>Co>Zn. The results of HI for adult showed the same mainstream and the only difference was the higher amount of Co than Cu. The Arsenic, chromium and cadmium were regarded as the priority pollutants. Carcinogenic risks due to Cd and As in green space soils were within tolerable risk to human health. Children and adults faced same health risk in their daily life.

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