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### Evaluation of accumulated heavy metals in the area surrounding suk AL- Khamees cement Factory (case study)

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#### ABSTRACT

In this paper, an evaluation of accumulated selected heavy metals in the soil caused by Cement Kiln Dust (CKD) emitted in the area surrounding Suk Al – Khamees –Emsehel Cement Factory was conducted. Samples were collected from soils sites at four directions around the factory from top soils (0-10 cm) and deep soils (30 cm and 60 cm) at distances 250 m, 1000 m and 3000 m then analyzed for Fe, Zn and Pb using Atomic absorption spectrophotometer as major pollutants, together with control sample. The results showed that, top surface soil iron (Fe) concentrations ranged between 920 – 1170 ppm at all direction where, the background concentration (control sample) of Fe at 25km ranged between 1003 –1202 ppm which is within the values of the background concentration. Soil lead (Pb) levels in test and control sites were  $890 \pm 43$  ppm and  $105.75 \pm 3.76$  ppm respectively and it was found that lead concentrations on top soils were elevated by six folds than background concentrations. The average range of Enrichment factor for Fe, Zn and Pb were 0.91-0.97, 0.8-1.20 and 8.3-8.5 respectively. These results concluded that, the concentration of iron and zinc within the range but lead is high compared with European Union standard which is a wild life destroyed and has reverse effects on environmental & human health.

**Keywords.** environment pollution, Heavy metals, Cement Kiln Dust.