

“Capacity Building and Strengthening Institutional Arrangement”

Workshop: “Hazardous Substances and Wastes”

Working Group n° 4

“Perform a quantitative risk assessment exercise of an example of contaminated site, given assigned environmental data”

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Perform a quantitative risk assessment exercise of an example of contaminated site, given assigned environmental data

At a former scrap metal operation site, soil is found contaminated with lead. The site will be redeveloped for residential use. Houses with backyards will be built on the site. Observed wide areas of lead soil sources (down to 1.5 m depth) have an average (UCL 95%) concentration of 2795 mg/kg.

This concentration exceeds soil screening values for residential use. A tier 2 analysis is to be performed in order to assess site specific risks.

According to Conceptual Site Model the only exposure route is soil ingestion. Critical receptors are children playing in backyards. The following exposure and toxicity parameters are applied.

Perform an analysis at national/regional level of potential soil contamination and evidences of environmental (and health) impacts

	Data
$C_{Pb\ s.s.}$ [mg/kg]	2795
RfD_{Pb} [mg/kg . day]	0,0035
IR_{child} [mg/day]	200
EF [day/year]	350
ED_{child} [year]	6
BW_{child} [kg]	15
AT_{child} [year]	6

Exercise: Assess the quantitative risk (HI) related to the site. Is risk acceptable?