

Table S1. Reference concentrations of heavy metals.

	Cd (mg kg ⁻¹)	Cr (mg kg ⁻¹)	Ni (mg kg ⁻¹)	Zn (mg kg ⁻¹)	Mn (mg kg ⁻¹)	Fe (mg kg ⁻¹)
Background value	0.310	113.3	39.1	99.5	794.0	16140

Background values are referred to [47].

Table S2. Grades of environment by potential ecological risk index.

E_rⁱ value	Grade of ecological risk of single trace metal	RI	Grade of ecological risk to the environment
E _r ⁱ < 40	Low ecological risk	RI < 150	Low ecological risk
40 < E _r ⁱ ≤ 80	Moderate ecological risk	150 < RI < 300	Moderate ecological risk
80 < E _r ⁱ ≤ 160	Appreciable ecological risk	300 < RI < 600	High ecological risk
160 < E _r ⁱ ≤ 320	High ecological risk	RI ≥ 600	Significantly high ecological risk

Table S3. Classification of contamination.

Class	Degree	Contamination		Ecological Risk
		ICF	GCF	RAC (%)
I	Low	<1	<6	<10
II	Moderate	1–3	6–12	10–30
III	Considerable	3–6	12–24	30–50
IV	High	>6	>24	>50