

Table S1. XRF Analysis of the marl sample. ($n = 2$).

Main Oxides	Contents (%)
SiO ₂	41.0 ± 3.8
Al ₂ O ₃	15.8 ± 1.8
Fe ₂ O ₃	5.9 ± 0.5
MnO	0.1 ± 0.0
MgO	2.6 ± 0.0
CaO	11.2 ± 4.0
Na ₂ O	0.2 ± 0.0
K ₂ O	6.1 ± 0.7
TiO ₂	0.7 ± 0.1
P ₂ O ₅	0.1 ± 0.0
L.O.I	16.0 ± 2.8
TOTAL	99.6 ± 0.1

*L.O.I means Loss of Ignition.

Table S2. Arsenic contents in soil grain-size fractions after wet-sieving.

Grain-size fraction (μm)	Weight (%)	As ($\text{mg}\cdot\text{kg}^{-1}$)	As recovery (%)
1000–2000	2.2	51 ± 2	1.4
500–1000	4.8	38 ± 3	2.3
250–500	11.8	38 ± 2	5.6
125–250	12.5	45 ± 2	7.1
63–125	8.1	75 ± 1	7.6
<63	60.6	100 ± 3	76.0

Table S3. Minerals phases identified using XRD analysis.

Ref. Code	Score	Compound Name	Displacement [$^{\circ}2\theta$.]	Scale Factor	Chemical Formula
01-072-1652	53	Calcite	0.102	0.851	CaCO ₃
00-005-0622	32	Dolomite	-0.082	0.602	CaMg(CO ₃) ₂
01-083-2472	28	Quartz low, syn	-0.472	0.639	SiO ₂