Online Resource 5

Solid concentrations of selected metal(loid)s ≤ 2 mm, determined by aqua regia digestion

Article Title Metal(loid)s in mining contaminated subaquatic sediments of the Berthelsdorfer Hüttenteich, Saxony, Germany

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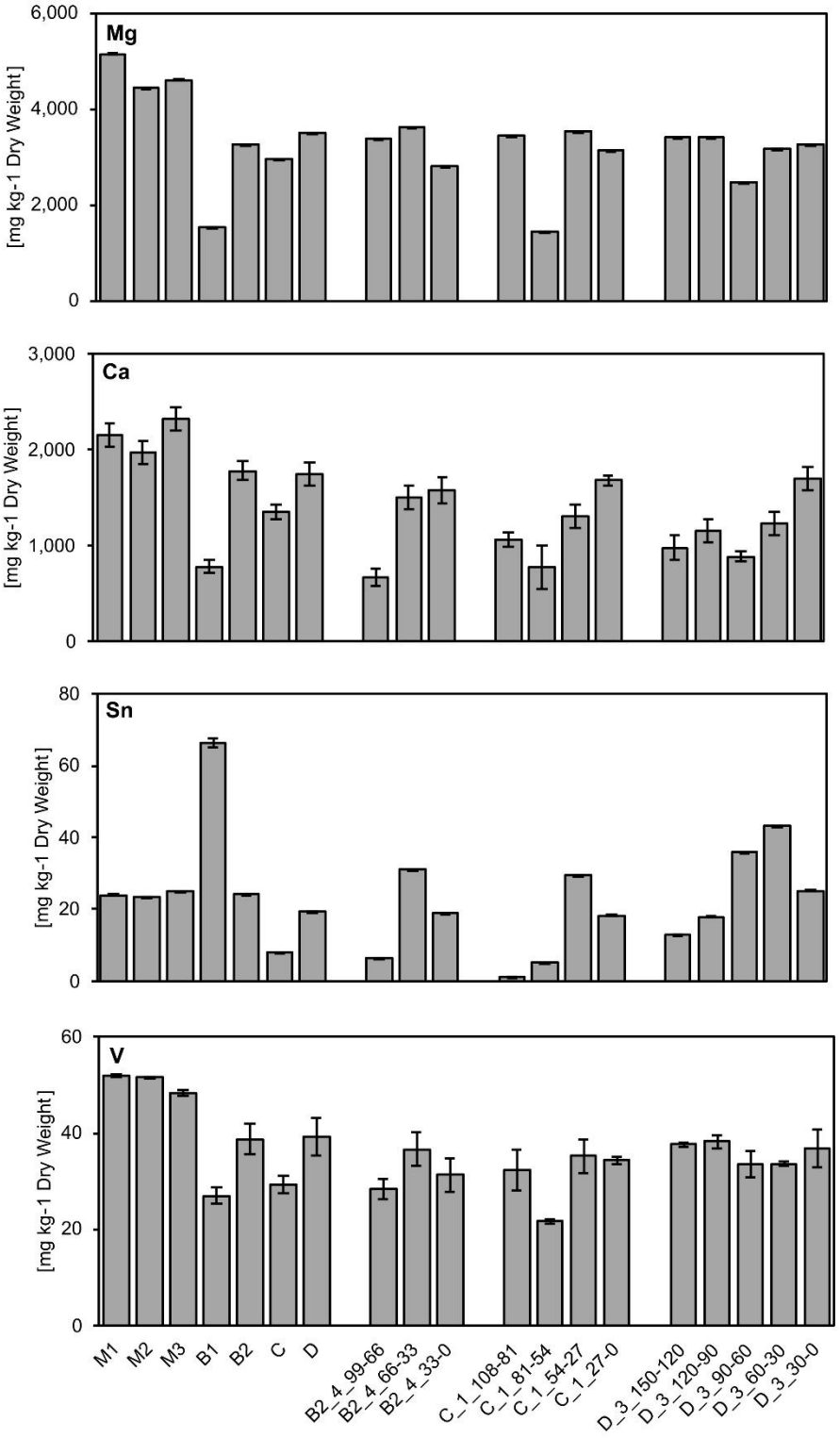

Fig 1 Spatial distribution of the total solid concentrations of selected metal(loid)s ≤ 2 mm of group (B) and (C), determined by aqua regia digestion. Presented bars show mean values (n = 2 per sampling site). Lines represent deviation from to the highest / lowest possible mean value.

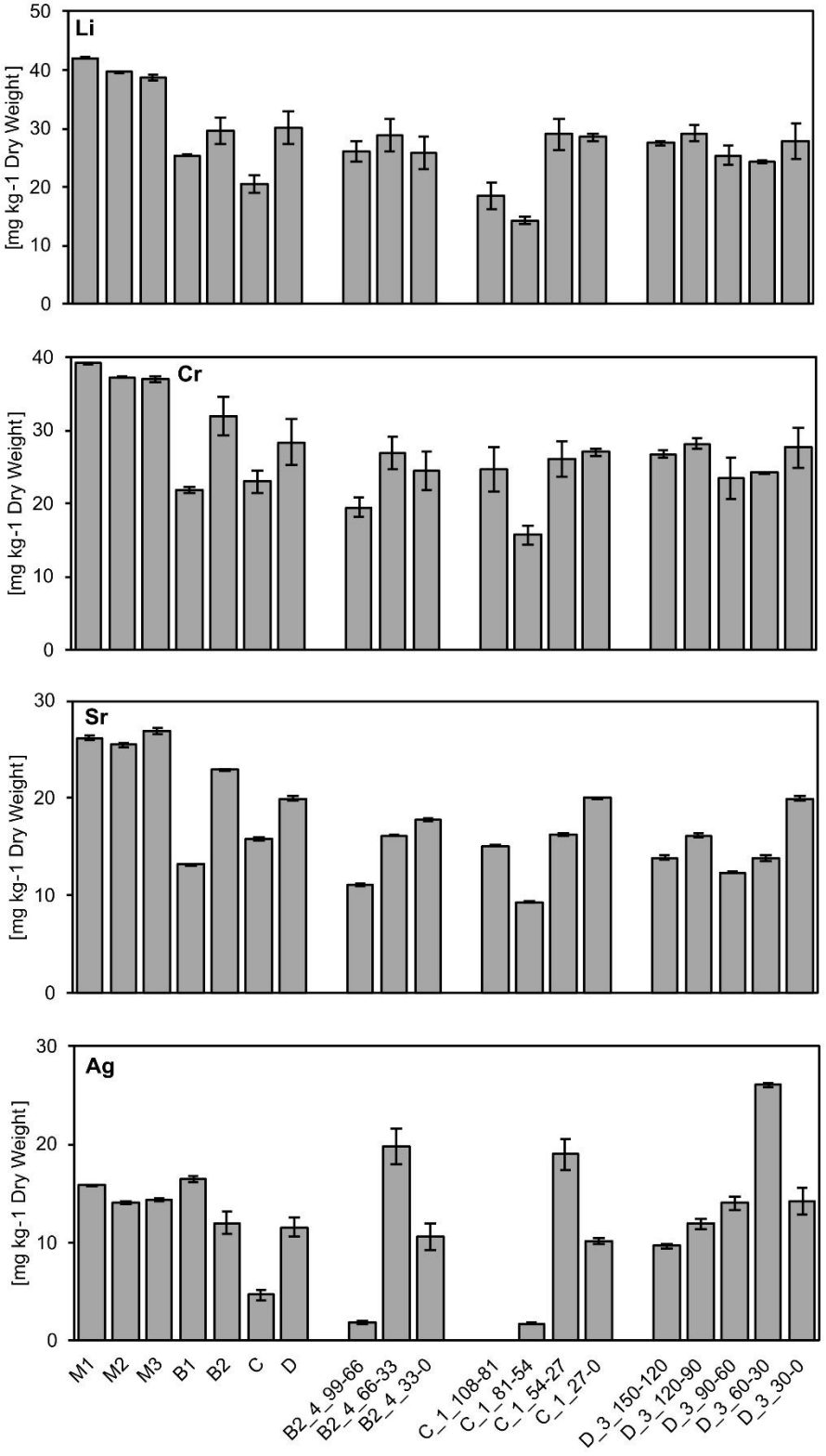

Fig 2 Spatial distribution of the total solid concentrations of selected metal(loid)s ≤ 2 mm of group (C), determined by aqua regia digestion. Presented bars show mean values (n = 2 per sampling site). Lines represent deviation from to the highest / lowest possible mean value.

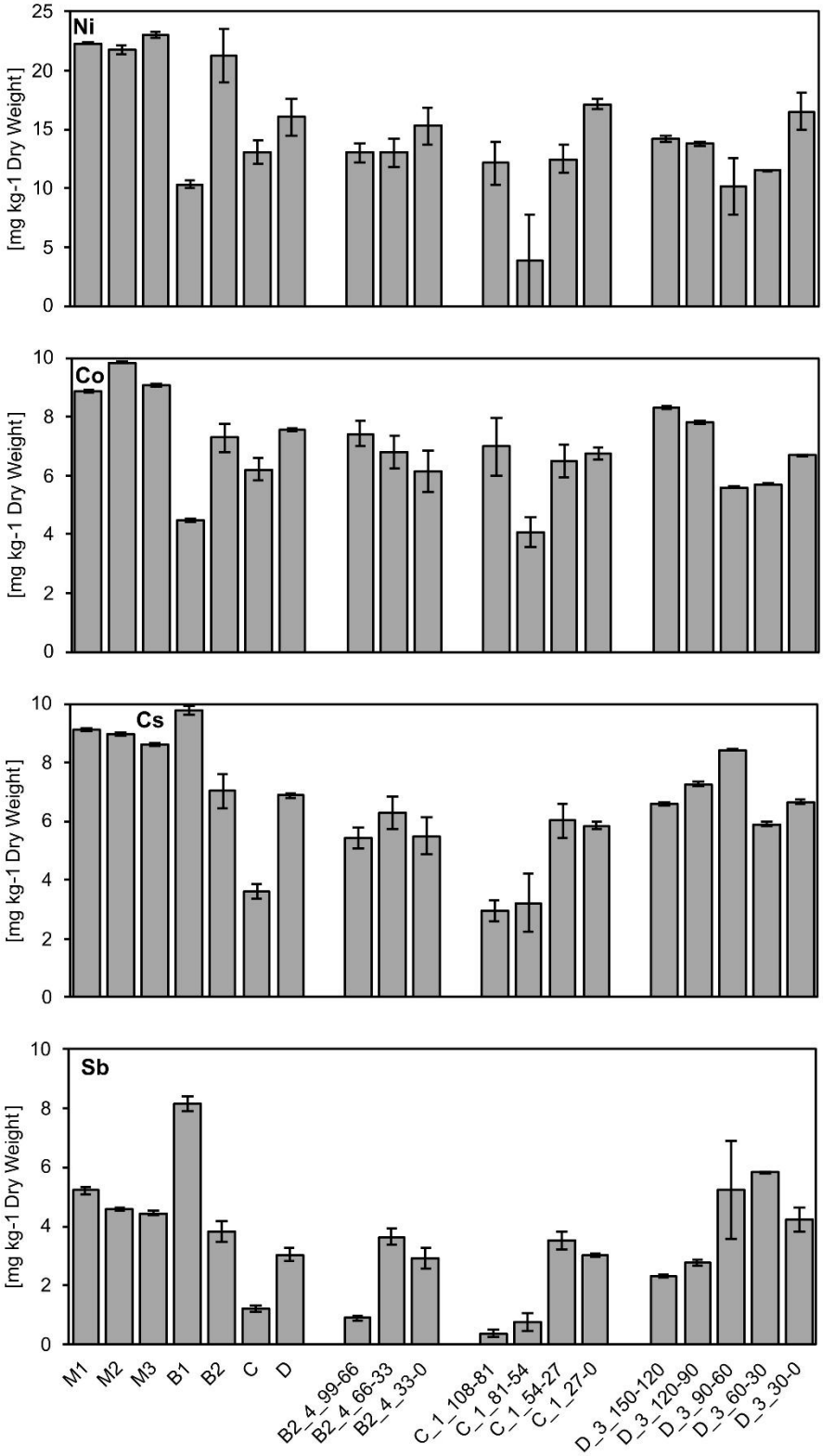

Fig 3 Spatial distribution of the total solid concentrations of selected metal(loid)s ≤ 2 mm of group (C), determined by aqua regia digestion. Presented bars show mean values (n = 2 per sampling site). Lines represent deviation from to the highest / lowest possible mean value.

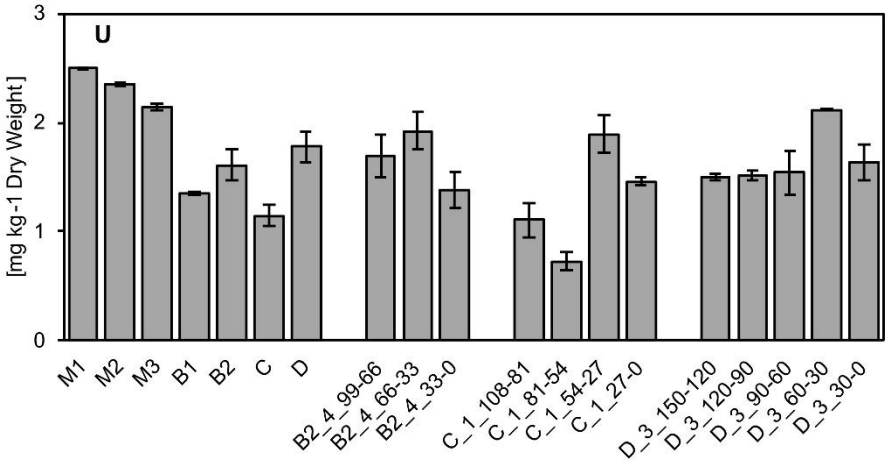

Fig 4 Spatial distribution of the total solid concentrations of selected metal(loid)s ≤ 2 mm of group (C), determined by aqua regia digestion. Presented bars show mean values (n = 2 per sampling site). Lines represent deviation from to the highest / lowest possible mean value.

Table 1 Total concentrations of metal(loid)s selected compared to Consensus-Based Sediment Quality Guidelines (SQG) of freshwater systems for prediting sediment toxicity. Concentrations exceeding the Probable Toxic Effect Threshold (PEC) of IKSE 2014 (bold) are presented red.

SQG	Threshold Effect Concentrations (TEC) [mg kg-1 Dry Weight]			Probable Effect Concentrations (PEC) [mg kg-1 Dry Weight]			Samples (≤ 2 mm) [mg kg-1 Dry Weight]									
	IKSE 2014[a]	de Deckere et al. 2011[b]	MacDonald et al. 2000[c]	**IKSE 2014[d]**	de Deckere et al. 2011[e]	MacDonald et al. 2000[f]	Composite Samples							Single Samples		
Region	Elbe, Germany	Flanders, Belgium	United States	**Elbe, Germany**	Flanders, Belgium	United States	M1	M2	M3	B1	B2	C	D	B2_4_ 99-66	C_1_ 108-81	D_3_ 150-120
As	7.9	7.9	9.79	**40**	50	33	**98.3**	**135**	**100**	**102**	**108**	39.5	**68.0**	**47.0**	23.1	61.3
Cd	0.22	0.93	0.99	**2.30**	7.8	4.98	**13.0**	**13.5**	**13.5**	**9.67**	**10.5**	**4.50**	**9.82**	1.78	0.15	**8.18**
Cr	26	26	43.4	**640**	68	111	39.1	37.3	37.0	21.8	32.0	23.0	28.4	19.5	24.7	26.7
Cu	14	14	31.6	**160**	60	149	98.8	89.8	92.4	70.8	80.8	37.7	71.9	31.3	11.7	66.9
Pb	25	25	35.8	**53**	118	128	**1,296**	**1,138**	**1,222**	**1,226**	**1,013**	**404**	**991**	**180**	25.5	**732**
Ni	3	11	22.7	**53**	32	48.6	22.3	21.8	23.0	10.3	21.3	13.0	16.1	13.0	12.1	14.2
Zn	200	146	121	**800**	800	459	**1,020**	**1,022**	**1,146**	689	**964**	445	**892**	198	68.2	740

[a] Statistically based, formal threshold below which all management objectives dependent on good sediments quality can be achieved according to Environmental Quality Standards (EQS) of Directive 2000/60/EC (European Parliament and Council 2000), their national implementations, national laws of Germany and Czech Republic, international agreements and scientific studies (MacDonald et al. 2000; de Deckere et al. 2011)

[b] Average of Lowest Effect Levels (LELs (Neff et al. 1986) and Threshold Effect Levels (TELs (MacDonald et al. 1992; MacDonald et al. 1996; Smith et al. 1996a; Vangheluwe et al. 2000; MacDonald et al. 2003), based on Vangheluwe et al. 2000)

[c] Geometric mean of TELs (Smith et al. 1996b; US EPA 1996), Effect Range Low Values (ERLs, (Long und Morgan 1991)), Lowest Effect Levels (LELs (Persaud et al. 1993)), Minimal Effect Thresholds (METs (Environment Canada and Ministere de l'Environnement du Quebec 1992)), Sediment Quality Advisory Levels (SQALs (US EPA 1997)))

[d] Environmental Quality Standards (EQS) according to European Parliament and Council 2000

[e] Average of Severe Effect Level (SEL (Neff et al. 1986)) and Probable Effect Level (PEL (MacDonald et al. 1992; MacDonald et al. 1996; Smith et al. 1996a; Vangheluwe et al. 2000; MacDonald et al. 2003), based on Vangheluwe et al. 2000)

[f] Geometric mean of Probale Effect Levels (PELs (Smith et al. 1996b; US EPA 1996)), Effect Range Median Values (ERMs (Long und Morgan 1991)), Severe Effect Levels (SELs (Persaud et al. 1993)), Toxic Effect Thresholds (TETs (Environment Canada and Ministere de l'Environnement du Quebec 1992))

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