

Supplementary data (complete tables):

Table S1. Soil. Total mercury (HgT) mean concentrations, standard error of the mean (SEM), median, 25th and 75th percentiles, and number of determinations (N) for different soil types.

Table S2. Stream water. Total dissolved mercury (HgT)_D, particulate mercury (HgT)_P, dissolved monomethylmercury (MMHg)_D, and particulate monomethylmercury (MMHg)_P mean concentrations, SEM, median, 25th and 75th percentiles, and number of determinations.

Table S3. Rain, throughfalls, stagnant (overlying) waters and pore hydromorphic soil waters. Total dissolved mercury (HgT)_D and dissolved monomethylmercury (MMHg)_D mean concentrations, SEM, median, 25th and 75th percentiles, and number of determinations. Subscript 1 relates to single location of the gold mined flat between 1 and 10 cm for stagnant waters and 0 to 15 cm for pore waters, and subscript 2 relates to various locations in the gold mined flat.

Table S4. Stream waters at the outlet of the pristine oxisol sub-watershed and the entire watershed. Total dissolved mercury (HgT)_D, particulate mercury (HgT)_P, dissolved monomethylmercury (MMHg)_D, and particulate monomethylmercury (MMHg)_P mean specific fluxes, SEM, median specific fluxes, 25th and 75th percentiles, and number of determinations.

Soil type	Oxisol (pristine slopes)		Ultisol (pristine slopes)		Hydromorphic soil (contaminated flat)	
	0-50	> 50	0-50	> 50	0-50	> 50
Soil depth (cm)	0-50	> 50	0-50	> 50	0-50	> 50
Mean ($\mu\text{g g}^{-1}$)	0.37	0.38	0.25	0.10	1.31	1.01
(SEM) ($\mu\text{g g}^{-1}$)	0.04	0.03	0.07	0.04	0.35	0.26
Median ($\mu\text{g g}^{-1}$)	0.35	0.42	0.20	0.07	0.82	0.75
25th perc. ($\mu\text{g g}^{-1}$)	0.31	0.33	0.17	0.04	0.45	0.28
75th perc. ($\mu\text{g g}^{-1}$)	0.38	0.42	0.35	0.15	1.40	1.34
N	6	5	3	3	16	16

TABLE S1. Soil. Total mercury (HgT) mean concentrations, standard error of the mean (SEM), median, 25th and 75th percentiles, and number of determinations (N) for different soil types.

	Sampling location	Stream water (PS)	Stream water (MS)	Stream water (CO)	Stream water (BR)
(HgT) _D (ng L ⁻¹)	Mean	0.98	2.77	4.78	4.94
	SEM	0.13	0.75	1.46	3.43
	Median	0.94	1.34	1.75	1.67
	25th perc.	0.45	0.69	1.16	1.29
	75th perc.	1.21	3.35	3.50	6.14
	N	23	17	52	5
(HgT) _P (μg g ⁻¹)	Mean	0.53	0.82	1.99	1.42
	SEM	0.13	0.17	0.94	0.33
	Median	0.25	0.61	0.88	1.51
	25th perc.	0.09	0.30	0.62	0.73
	75th perc.	0.74	0.83	1.08	1.82
	N	28	24	42	8
(MMHg) _D (ng L ⁻¹)	Mean	0.016	0.048	0.062	0.025
	SEM	0.004	0.033	0.005	0.004
	Median	0.006	0.009	0.056	0.024
	25th perc.	0.004	0.002	0.042	0.020
	75th perc.	0.019	0.024	0.081	0.029
	N	23	17	52	5
(MMHg) _P (ng g ⁻¹)	Mean	1.86	0.75	9.59	2.67
	SEM	0.37	0.67	1.28	1.33
	Median	1.84	0.75	6.802	1.69
	25th perc.	0.70	0.09	5.32	0.93
	75th perc.	2.58	1.42	11.71	1.98
	N	16	2	44	8

TABLE S2. Stream water. Total dissolved mercury (HgT_D), particulate mercury (HgT_P), dissolved monomethylmercury (MMHg_D), and particulate monomethylmercury (MMHg_P) mean concentrations, SEM, median, 25th and 75th percentiles, and number of determinations.

	Sampling location	Rain (PS)	Throughfall (PS)	Soil overlying water (Pristine subwatershed)	Soil overlying water ¹ (Mined flat)	Soil overlying water ² (Mined flat)	Soil pore water ¹ (Mined flat)	Soil pore water ² (Mined flat)
(HgT) _D (ng L ⁻¹)	Mean	4.63	3.93	3.11	-	2.01	-	5.49
	SEM	0.74	0.68	1.25	-	0.40	-	1.65
	Median	4.83	3.98	1.70	-	2.01	-	2.34
	25th perc.	3.31	2.12	1.23	-	0.95	-	2.18
	75th perc.	5.63	4.90	3.98	-	2.69	-	6.24
	N	6	10	6	-	8	-	11
(MMHg) _D (ng L ⁻¹)	Mean	0.011	0.026	0.007	0.670	0.243	0.113	0.231
	SEM	0.003	0.008	0.002	0.080	0.098	0.034	0.047
	Median	0.010	0.017	0.005	0.615	0.082	0.136	0.161
	25th perc.	0.005	0.012	0.004	0.579	0.048	0.037	0.121
	75th perc.	0.013	0.037	0.013	0.775	0.499	0.178	0.338

	N	6	10	6	3	8	5	11
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TABLE S3. Rain, throughfalls, stagnant (overlying) waters and pore hydromorphic soil waters. Total dissolved mercury (HgT_D) and dissolved monomethylmercury (MMHg_D) mean concentrations, SEM, median, 25th and 75th percentiles, and number of determinations. Subscript 1 relates to single location of the gold mined flat between 1 and 10 cm for stagnant waters and 0 to 15 cm for pore waters, and subscript 2 relates to various locations in the gold mined flat.

	Sampling location	Pristine spring (PS) (surface 0.12 km ²)	Contaminated flat outlet (CO) (surface 1.27 km ²)
(HgT) _D (ng s ⁻¹ km ⁻²)	Mean	147	628
	SEM	32	276
	Median	113	117
	25thperc.	49	62
	75thperc.	159	274
	N	27	42
(HgT) _P (ng s ⁻¹ km ⁻²)	Mean	1458	2951
	SEM	521	1158
	Median	517	1104
	25thperc.	130	450
	75thperc.	1708	2787
	N	26	41
(MMHg) _D (ng s ⁻¹ km ⁻²)	Mean	0.97	4.17
	SEM	0.30	0.51
	Median	0.67	4.20
	25thperc.	0.36	1.50
	75thperc.	1.10	6.20
	N	17	32
(MMHg) _P (ng s ⁻¹ km ⁻²)	Mean	4.2	21.6
	SEM	0.96	3.80
	Median	3.50	14
	25thperc.	2.20	4.80
	75thperc.	5.40	26
	N	12	37

TABLE S4. Stream waters at the outlet of the pristine oxisol sub-watershed and the entire watershed. Total dissolved mercury (HgT)_D, particulate mercury (HgT)_P, dissolved monomethylmercury (MMHg)_D, and particulate monomethylmercury (MMHg)_P mean specific fluxes, SEM, median specific fluxes, 25th and 75th percentiles, and number of determinations.