Supplementary Information

Table S1 Characteristic parameters of techniques used for determination of selected components

Parameter	Method	Precision *RSD [%]*	Accuracy *R [%]*	Expanded uncertainty *U [%] (k=2, 95%)*
pH	Potentiometric	0.33	99.62	5.38
Eh	Electrochemical	8.25	108.41	14.41
EC	Conductometric	1.19	98.63	9.44
T	Classical, tactile measurement	—	100.5	0.1
Ag	ICP-MS	5.47	98.53	16.64
Al		3.94	102.48	14.78
As		3.77	100.17	14.70
B		5.84	100.63	17.31
Ba		2.32	99.69	12.68
Be		2.84	97.72	13.64
Br		4.58	101.80	13.60
Ca	ICP-OES	1.16	101.53	12.00
Cd	ICP-MS	3.88	100.93	14.79
Cl^-	Titration	2.12	99.02	12.80
Co	ICP-MS	3.67	100.39	14.19
Cr	ICP-OES	2.09	100.26	13.38
Cu	ICP-MS	5.49	104.52	16.61
Fe	ICP-OES	1.65	100.17	12.83
HCO_3^-	Titration	2.32	104.43	10.66
Hg	ICP-MS	7.33	94.50	17.94
I		6.37	100.68	14.67
K	ICP-OES	1.16	102.57	12.04
Li		1.96	102.93	12.84
Mg		0.85	104.70	11.81
Mn		1.30	103.65	12.23
Mo	ICP-MS	4.46	101.44	15.37
Na	ICP-OES	1.22	101.23	12.03
Ni	ICP-MS	3.58	101.71	14.27
P (recalculated on PO_4^{3-})		7.99	100.34	15.26
Pb		3.43	101.50	14.38
S (recalculated on SO_4^{2-})	ICP-OES	0.98	104.98	11.83
Sb	ICP-MS	9.00	98.89	18.20
Se		6.61	100.14	18.47
Si	ICP-OES	0.93	97.78	11.94
Sr		1.09	104.80	11.89
Ti	ICP-MS	5.84	104.13	14.90
Tl		2.92	100.67	15.49
V		4.34	100.17	14.57
W		9.53	102.10	18.88
Zn	ICP-OES	0.69	97.10	11.75
Zr	ICP-MS	4.37	100.95	13.72

Table S2 Basic physicochemical parameters of geothermal water of the Podhale Trough (archival data 2010–2019)

Geothermal well / Number of analysed data	**Statistics**	**Na^+**	**K^+**	**Ca^{2+}**	**Mg^{2+}**	**Cl^-**	**SO_4^{2-}**	**HCO_3^-**	**F^-**	**H_2SiO_3**	**TDS**	**pH**	**EC**	**T**	**Hydrogeochemical type**
		[mg·L^{-1}]										[—]	[mS·cm^{-1}]	[°C]	
GW_1	*mean*	485.7	45.6	201.5	41.1	497.7	830.9	319.4	n.a.	76.9	2259.6	6.71	3.29	85.68	SO_4-Cl-Na-Ca, H_2SiO_3
N= 48	*SD*	44.0	7.2	14.6	2.4	32.5	110.2	15.6	n.a.	12.3	104.1	0.26	0.27	0.79	
GW_2	*mean*	482.5	45.8	199.2	40.1	486.0	820.4	317.7	n.a.	78.9	2260.9	6.61	3.39	84.97	SO_4-Cl-Na-Ca, H_2SiO_3
N = 36	*SD*	44.7	3.8	12.6	3.8	29.4	90.8	13.6	n.a.	10.1	112.0	0.33	0.27	1.72	
GW_3	*mean*	491.3	46.9	204.9	40.0	500.5	844.9	323.9	n.a.	79.9	2291.2	6.63	3.45	77.99	SO_4-Cl-Na-Ca, H_2SiO_3
N = 26	*SD*	36.8	4.4	17.8	4.4	38.5	122.3	17.4	n.a.	9.2	129.7	0.19	0.15	10.75	
GW_4	*mean*	314.6	33.6	179.4	42.9	333.2	656.2	254.2	2.28	73.7	1686.9	6.77	2.59	75.00	SO_4-Cl-Na-Ca, H_2SiO_3
N = 7	*SD*	46.2	2.3	11.2	5.8	25.0	95.6	19.5	0.30	12.5	170.9	0.16	0.05	1.22	
GW_5	*mean*	222.4	20.5	165.3	41.8	172.8	672.5	212.3	n.a.	50.9	1401.5	7.04	2.12	n.a.	SO_4-Cl-Na-Ca
N = 54	*SD*	15.5	2.0	11.9	4.8	12.3	80.0	20.3	n.a.	6.3	94.7	0.21	0.05	n.a.	
GW_6	*mean*	10.17	3.38	43.9	19.8	3.40	44.4	215.6	0.35	20.7	231.6	7.31	0.402	31.78	HCO_3-SO_4-Ca-Mg
N = 9	*SD*	1.18	0.52	2.0	1.3	0.55	8.7	14.3	0.07	2.3	12.1	0.33	0.008	5.12	
GW_7	*mean*	1.70	1.22	45.4	22.4	3.65	22.93	226.0	0.20	8.68	210.5	7.39	0.376	22.08	HCO_3-Ca-Mg
N = 9	*SD*	0.23	0.20	2.1	1.2	0.67	3.81	9.4	0.04	1.08	8.9	0.32	0.008	1.46	
GW_8	*mean*	5.89	1.82	39.8	22.0	3.98	15.3	232.5	0.13	9.08	210.0	7.39	0.360	26.14	HCO_3-Ca-Mg
N = 6	*SD*	0.11	0.21	7.9	3.8	0.68	2.6	12.3	0.05	1.81	7.8	0.37	0.030	1.05	
GW_9	*mean*	69.1	16.3	177.0	38.7	19.3	567.4	175.8	1.41	64.2	975.2	7.22	1.41	83.43	SO_4-Ca-Mg
N = 41	*SD*	6.4	2.1	10.5	4.3	3.8	44.6	27.1	0.22	9.1	59.0	0.6	0.02	8.34	

n.a. – not analysed

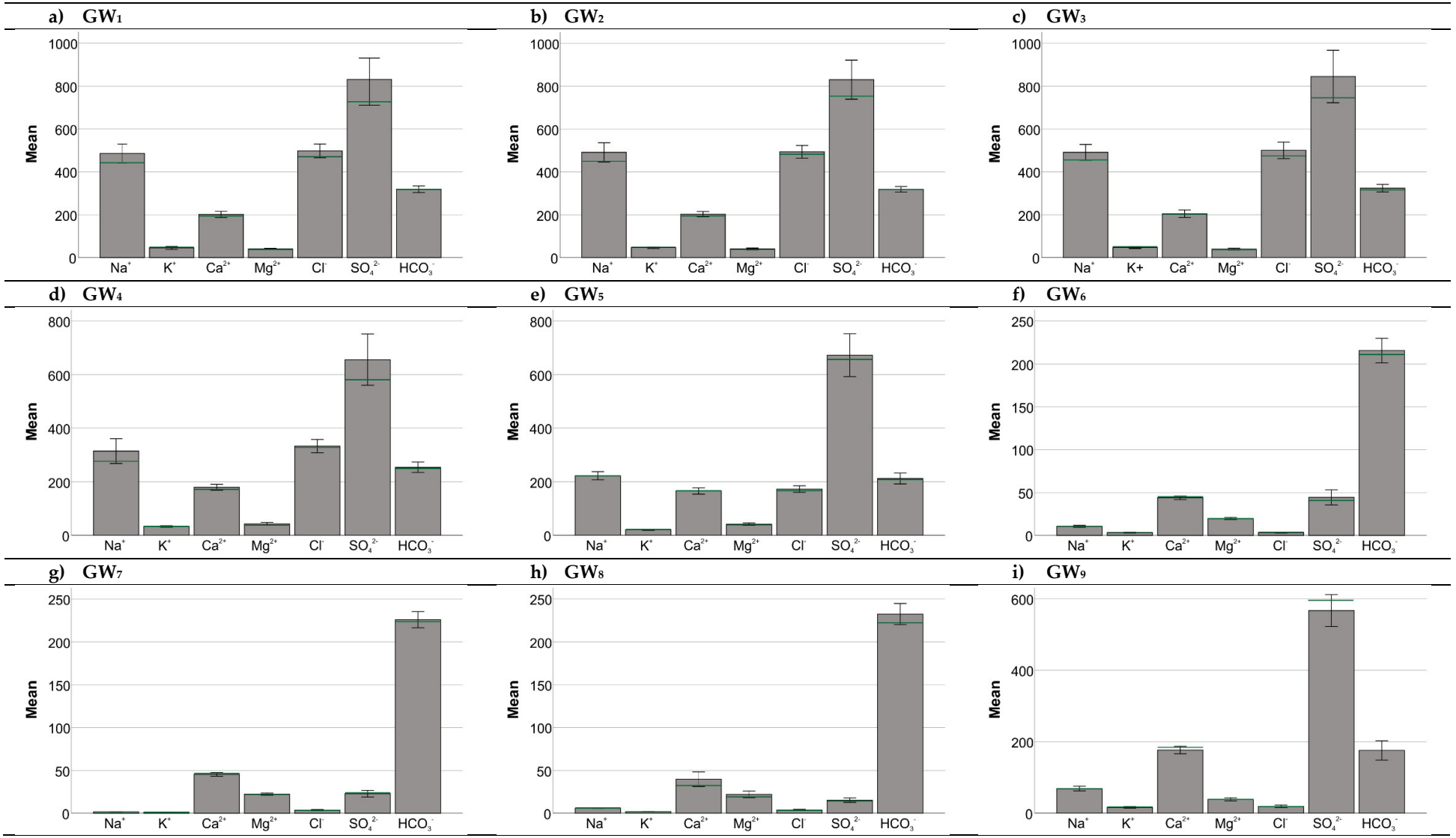

Figure S1 Bar graphs presenting the major ions concentrations (mg·L^{-1}) in geothermal water of Podhale Trough (mean values and standard deviation in accordance with table S2, the green line presents results of the latest sampling series)

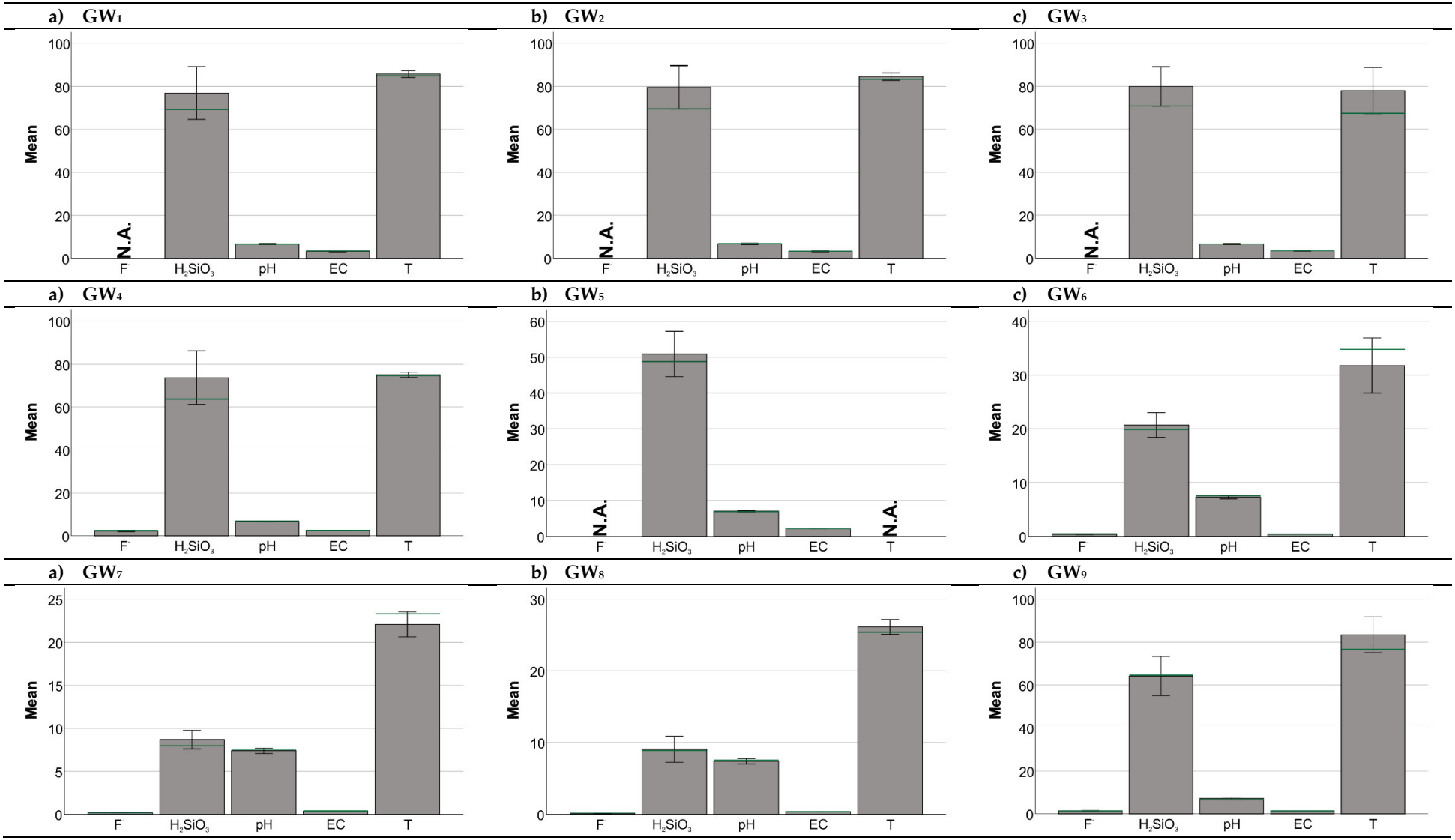

Figure S2 Bar graphs presenting the specific components concentrations (mg·L^{-1}) and physical parameters measurements (pH [—], EC [mS·cm^{-1}], T [°C]) in geothermal water of Podhale Trough (mean values and standard deviation in accordance with table S1, the green line presents results of the latest sampling series; N.A. – not analysed)