



Thermal, CO₂-rich water in Bad Salzig

The small town Bad Salzig is located approximately 20 km south of Koblenz and is —as indicated by its name— known for the occurrence of salty water. This water, additionally characterized by a high temperature and CO₂-content, used to be recognized as Heilwasser and available for spa purposes.

Anomalies

Both the Leonoren- and Barbaraquelle show an elevated water temperature of around 18 °C (Bräuer et al., 2013; Griesshaber et al., 1992; Hänel, 2020; Käß and Käß, 2008), distinctly higher than the expected maximum temperature of 12 °C for shallow groundwater (< 500 m depth). In addition, CO₂-concentrations vary between 963 and 1050 mg/l (Griesshaber et al., 1992; Käß and Käß, 2008), significantly higher than the threshold value of 250 mg/l to be classified as Sauerbrunnen (Weertz and Weertz, 2007). The CO₂ in Bad Salzig has a magmatic origin, either from the upper mantle or related to the Tertiary-Quaternary volcanism. The CO₂-enriched and heated groundwater likely rises to the surface along the SW-NE-oriented, deep-seated joint system (Käß and Käß, 2008).

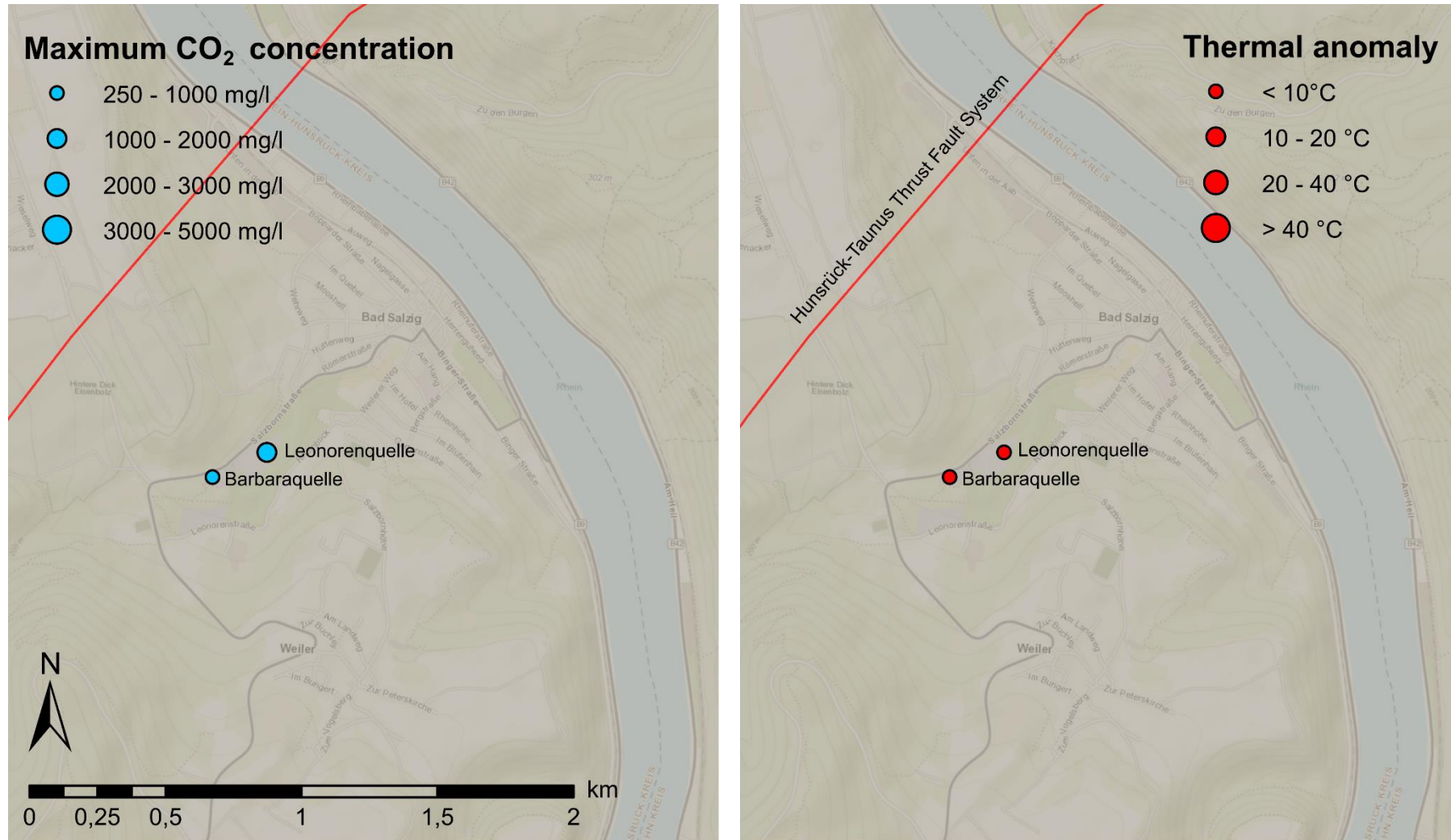


Figure 1: Thermal, CO₂-rich water in Bad Salzlig



Data

ID	Coordinates	T	Depth	TDS°	Cl	Na	SO ₄	Free CO ₂	He	³ He/ ⁴ He	Analysis year	References
		°C	m	g/l	mg/l	mg/l	mg/l	mg/l	ppmv			
Leonorenquelle	50°12'04" North 07°37'32" East	17			1520	2170	1227	981			1988	Griesshaber et al. (1992)
										0.62	1992	
		17		7.45	1520	2170	1227	1050			1988	Käβ and Käβ (2008)
		18.4							1630	0.7	2003	Bräuer et al. (2013)
		30	446.5		972	1414	758				<2020	Hänel (2020)
Barbaraquelle	50°12'01" North 07°37'21" East	18	281	7.55				963			1905	Käβ and Käβ (2008)

° TDS = Total Dissolved Solids

References

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