

**Table S3: Laboratory analysis methods, precision and detection limits for water chemistry parameters**

Analyte	Ca <sup>+2</sup>	K <sup>+</sup>	Mg <sup>+2</sup>	Na <sup>+</sup>	Si	Cu	Fe	Cl <sup>-</sup>	SO <sub>4</sub> <sup>-2</sup>	ANC	δD	δO <sup>18</sup>
<b>Instrument/method</b>	Inductively Coupled Plasma Mass Spectrometer (ICP-MS)							Metrohm 840 Compact IC	Manual gran titration	Picarro L2130-i		
<b>Lab precision (% RSD)</b>	0.24%	0.59%	0.31%	0.43%	unknown			0.62%	0.17%	0.87%	0.10%	0.13%
<b>Analysis detection limit (µeq/L unless otherwise noted)</b>	0.49	0.09	0.11	0.1	0.183 ppb	0.008 ppb	0.010 ppb	0.17	0.06	n/a	n/a	n/a