

Table 3

Sulfur contents and sulfur isotope compositions of bulk rock, and extracted sulfide and sulfate of serpentinites, talc-schist, basalt, and gabbros collected at the southern wall of the Atlantis Massif

Sample	Type	Depth (mbsl)	Mono-sulfide-sulfur content (ppm)	Disulfide-sulfur content (ppm)	Sulfate-sulfur content (ppm)	Elemental sulfur content (ppm)	Total sulfur content (ppm)	SO ₄ /S _{total}	$\delta^{34}\text{S}$ mono-sulfide (‰)	$\delta^{34}\text{S}$ disulfide (‰)	$\delta^{34}\text{S}$ sulfate (‰)	$\delta^{34}\text{S}$ S ⁰ (‰)	$\delta^{34}\text{S}$ bulk rock (‰) ^a	$\delta^{34}\text{S}$ bulk rock EA (‰) ^b
3639-1055	Serpentinite	1615	0	39	705	n.d.	744	0.95	n.d.	-22.9	20.2	n.d.	17.9	16.3
3651-1252	Serpentinite	795	0	11	566	6.0	577	0.98	n.d.	10.7	6.1	-5.7	6.2	9.0
3863-1301	Serpentinite	834	0	14	332	n.d.	346	0.96	n.d.	14.9	21.1	n.d.	20.9	19.0
3867-1623	Serpentinite	759	0	13	272	n.d.	285	0.95	n.d.	13.9	22.0	n.d.	21.6	20.2
3872-1136	Serpentinite	798	0	15	108	n.d.	123	0.88	n.d.		21.4	n.d.		18.0
3873-1300	Serpentinite	950	0	15	132	n.d.	147	0.90	n.d.	7.9	20.5	n.d.	19.2	18.2
3877-1158	Serpentinite	1115	5	15	214	n.d.	234	0.91	n.d.	8.8	21.7	n.d.	20.4	19.7
3877-1344	Serpentinite	913	3	14	244	n.d.	261	0.93	n.d.	13.4	20.5	n.d.	19.9	18.7
3877-1406	Serpentinite	908	5	27	170	n.d.	202	0.84	n.d.	8.2	20.8	n.d.	18.6	18.3
3881-1119	Serpentinite	860	144	1718	466	167	2328	0.20	-6.2	-6.0	-8.3	-5.3	-6.5	-8.4
3881-1132a	Serpentinite	822	0	13	231	n.d.	244	0.95	n.d.	11.0	19.8	n.d.	19.3	12.5
H03-R2243	Serpentinite	834	172	588	333	n.d.	1093	0.30	27.1	19.4	19.7	n.d.	20.7	n.d.
H03-R2301	Serpentinite	820	102	4563	732	n.d.	5397	0.14	20.0	16.3	15.9	n.d.	16.3	n.d.
3645-1225	Talc-schist	955	0	10	15	n.d.	25	0.60	n.d.	7.7	20.3	n.d.	15.3	19.3
3639-1003	Gabbro	1648	371	238	Trace	n.d.	612	0.00	-2.3	-1.7	n.d.	n.d.	-2.1	n.d.
3646-1138	Gabbro	2393	406	984	Trace	n.d.	1391	0.00	-0.3	-1.7	n.d.	n.d.	-1.3	n.d.
3649-1257	Gabbro	1188	68	165	3	n.d.	236	0.01	0.6	-1.7	3.6	n.d.	-1.0	0.2
3880-1349	Gabbro	819	311	4084	1627	n.d.	6022	0.27	17.6	5.5	11.0	n.d.	7.6	8.3
3645-1145	Basalt	957	22	205	15	n.d.	242	0.06	-2.5	-1.5	16.9	n.d.	-0.5	n.d.

^a $\delta^{34}\text{S}$ values of the bulk rock obtained by mass balance calculations.^b $\delta^{34}\text{S}$ values of the bulk rock measured with the EA-IRMS.