TABLE A. MAJOR AND TRACE ELEMENT CHEMISTRY OF SOUTHERN OCEAN SEAFLOOR SAMPLES

Sample No:	09-4A	09-4B(i)	09-4B(ii)	09-4B4	09-4B5	09-4C	10-1B	10-1C	10-3A	11-2A	11-2A(iii)	11-2A(iv)	11-2B	13-3(iii)	13-3D
Major Elements (wt %):															
SiO_2	50.22	50.79	51.72	49.78	50.93	48.10	50.26	50.22	49.87	50.45	49.68	50.12	48.11	48.70	50.21
TiO_2	1.91	2.02	2.16	2.07	2.08	1.75	0.59	0.72	1.29	1.36	1.35	1.34	1.39	1.10	0.99
Al_2O_3	15.49	15.63	16.19	14.83	15.85	16.88	16.25	16.11	16.70	15.92	15.76	15.87	17.30	15.72	16.00
Fe_2O_3	10.41	9.26	7.56	12.09	9.14	10.43	6.44	6.54	8.79	9.53	10.30	9.28	10.14	9.38	9.10
FeO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MnO	0.16	0.16	0.14	0.19	0.14	0.14	0.12	0.12	0.15	0.16	0.16	0.15	0.15	0.19	0.18
MgO	5.64	5.14	5.38	4.73	5.17	4.34	9.23	9.01	8.03	6.50	6.71	6.73	5.49	8.48	8.03
CaO	10.56	10.70	10.85	9.73	10.56	9.93	13.69	12.86	11.05	12.00	11.80	11.89	11.63	10.06	7.71
Na_2O	3.65	4.11	3.91	4.00	3.77	3.81	2.50	2.78	3.08	3.10	3.00	3.09	3.04	3.22	4.27
K_2O	0.56	0.51	0.35	0.81	0.57	0.44	0.06	0.07	0.09	0.26	0.27	0.21	0.27	0.18	0.16
P_2O_5	0.23	0.33	0.27	0.26	0.29	0.31	0.06	0.08	0.13	0.18	0.18	0.17	0.17	0.14	0.12
LOI	1.61	1.11	1.76	1.25	1.91	3.63	0.95	1.22	0.81	0.80	0.90	1.04	2.46	2.65	3.02
Total	100.44	99.76	100.29	99.74	100.41	99.76	100.15	99.73	99.99	100.26	100.11	99.89	100.15	99.82	99.79
Mg#	55.87	56.47	62.45	47.77	56.93	49.30	77.01	76.30	68.10	61.45	60.35	62.89	55.85	67.87	67.34
FeO*	9.37	8.33	6.80	10.88	8.22	9.39	5.79	5.88	7.91	8.58	9.27	8.35	9.12	8.44	8.19
Trace Elements (ppm):															
Ba	44	36	36	37	35	26	14	4	7	16	59	19	15	80	99
Rb	15	9	3	23	14	11	1	<1	<1	5	3	4	5	3	2
Nb	5.6	6.2	6.3	5.5	6.6	4.7	0.4	0.4	0.8	3.1	2.9	2.9	3.2	7.9	8.0
Sr	202	226	240	186	231	226	113	155	124	168	153	166	147	184	210
Zr	166	177	178	183	187	156	31	51	85	96	91	96	98	80	98
Y	45	46	49	50	48	44	17	22	32	33	34	33	34	27	26
Ni	54	41	47	27	43	99	162	158	134	71	54	80	62	89	99
Cr	246	171	176	94	171	352	572	1053	261	386	398	378	299	290	309
V	305	296	312	321	284	277	181	200	228	269	286	272	291	249	230
Sc	42	42	48	44	45	43	40	39	31	41	45	43	36	44	41
Hf	3.61	3.85						1.21		2.00		2.03		1.69	2.17
Th (XRF)	<1.0	1.30	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.10	3.80
Th (INAA)	0.40	0.63						<0.1		0.39		0.29		0.93	2.34
Pb	1.80	<1.5	<1.5	1.50	1.80	1.50	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Rare Eath Elements (ppm):															
La	7.03	7.18						1.71		3.90		3.91		6.21	7.92
Ce	18.50	21.40						5.53		11.50		12.00		16.10	19.50
Nd	15.30	17.20						5.28		9.44		10.30		11.00	12.60
Sm	4.98	5.22						2.01		3.30		3.24		3.03	3.13
Eu	1.59	1.76						0.76		1.32		1.20		1.09	1.07
Tb	0.96	1.04						0.47		0.83		0.79		0.66	0.63
Ho	1.30	1.41						0.65		1.20		1.13		0.93	0.93
Yb	3.37	3.52						1.78		2.63		2.73		2.30	2.26
Lu	0.51	0.50						0.23		0.35		0.38		0.34	0.28

Note: Major and trace element abundances were determined by X-ray fluorescence (XRF) spectrometry at the Geology Department, University of Tasmania following the methods of Norrish and Hutton (1969) and Norrish and Chappell (1977) respectively. Rare earth element, Hf and Th (as marked) abundances were measured by instrumental neutron activation analysis (INAA) performed by Bequerel Laboratories Pty. Ltd. using the Australian Nuclear Science and Technology Organisation's HIFAR irradiation facility at Lucas Heights. Details of analytical conditions are given in Lanyon (1994).

References Cited

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