

Table 5. Bulk Rock Major-Element (wt.%) and Trace-Element (ppm) Compositions of Amphibole-Rich and Chlorite-Rich Metasomatic Rocks

Sample	D3-45	3646-1205	3865-1355	3873-1250	3865-1245	3863-1157	D3-21	3647-1359	3877-1313	3863-1236
Depth, m		2327	783	956	795	862		1623	1009	837
Type	Amph schist	Amph schist	Amph schist	Amph-talc schist	Amph-chl schist	Amph fels	Amph fels	Amph-talc fels	Amph-chl fels	Chlorite-rich
<i>Major Elements, weight %</i>										
SiO ₂	43.87	49.69	46.85	44.25	49.41	51.30	49.30	50.84	54.95	28.22
TiO ₂	1.155	0.293	1.167	0.310	1.780	0.342	0.402	0.160	<d.l.	0.967
Al ₂ O ₃	7.95	5.69	9.54	10.11	5.15	5.43	4.87	4.50	1.85	20.70
Fe ₂ O ₃	13.95	8.43	5.82	5.35	5.91	4.96	9.08	8.61	3.64	4.94
MnO	0.153	0.163	0.081	0.070	0.120	0.082	0.098	0.141	0.080	0.025
MgO	21.80	24.22	20.67	26.64	22.20	21.99	27.21	26.48	23.34	31.26
CaO	4.55	6.24	11.29	6.44	10.31	11.64	2.65	2.68	12.30	0.11
Na ₂ O	0.35	0.44	1.98	0.75	0.77	1.59	0.29	0.21	0.50	0.09
K ₂ O	0.10	<d.l.	0.05	<d.l.	<d.l.	0.06	0.01	0.03	<d.l.	0.02
P ₂ O ₅	0.24	0.01	0.01	0.06	0.15	0.02	0.19	0.08	<d.l.	0.02
LOI*	5.45	4.59	2.74	6.38	3.72	2.15	5.85	5.29	2.98	12.32
Total	99.56	99.78	100.19	100.36	99.52	99.56	99.96	99.41	99.64	98.68
CO ₂ , wt%	0.21	0.01	0.02	0.00	0.01	0.02	0.03	<d.l.	0.31	0.02
Density, g/cm ³				2.80	2.84		2.80	2.89		
<i>Trace Elements, ppm</i>										
V	118	42	394	113	284	252	40	44	42	573
Cr	633	1390	2590	597	1503	1620	1430	1473	2987	111
Co	69	55	38	65	42	35	59	62	32	52
Ni	572	842	646	1337	854	749	1100	1076	710	1110
Cu	<d.l.	38	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.
Zn	<d.l.	72	<d.l.	<d.l.	31	<d.l.	37	39	32	<d.l.
Ga	16	14	11	12	9	8	9		4	8
Rb	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	1	<d.l.	<d.l.
Sr	4	5	14	7	8	7	6	5	7	4
Y	79.4	153.2	34.4	5.9	29.8	17.2	66.8	84.0	4.1	1.0
Zr	168	326	67	11	43	4	252	60	<d.l.	<d.l.
Nb	4.2	3.8	1.7	0.9	1.4	0.7	2.3	5.3	0.2	1.3
Cs	<d.l.	<d.l.	<d.l.			<d.l.	<d.l.	<d.l.		<d.l.
Ba	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	<d.l.	8	<d.l.	<d.l.
La	10.18	5.77	2.44	0.89	1.65	1.56	5.71	15.78	0.88	0.17
Ce	33.69	27.11	9.19	2.76	5.32	6.33	20.53	41.64	2.94	0.41
Pr	5.37	5.85	1.64	0.44	1.08	1.09	3.60	5.99	0.46	0.07
Nd	29.19	36.75	9.18	2.22	6.98	5.86	21.13	28.61	2.12	0.39
Sm	10.03	14.95	3.51	0.70	2.96	2.12	7.94	8.84	0.56	0.14
Eu	1.762	2.529	1.213	0.306	1.010	0.907	1.511	0.546	0.466	0.046
Gd	13.06	20.19	4.90	0.85	4.35	2.90	10.80	9.71	0.59	0.16
Tb	2.37	4.25	1.02	0.15	0.80	0.57	2.03	1.89	0.11	0.03
Dy	15.40	26.46	6.33	0.99	5.25	3.73	12.80	13.01	0.68	0.17



Table 5. (continued)

Sample Depth, m	D3-45	3646-1205 2327	3865-1355 783	3873-1250 956	3865-1245 795	3863-1157 862	D3-21	3647-1359 1623	3877-1313 1009	3863-1236 837
Type	Amph schist	Amph schist	Amph schist	Amph-talc schist	Amph-chl schist	Amph fels	Amph fels	Amph-talc fels	Amph-chl fels	Chlorite-rich
Ho	3.25	5.41	1.28	0.21	1.09	0.76	2.78	2.88	0.15	0.03
Er	10.14	17.89	4.19	0.60	3.07	2.30	8.49	8.82	0.46	0.12
Tm	1.525	2.627	0.644	0.093	0.449	0.357	1.273	1.351	0.070	0.022
Yb	8.81	15.36	3.72	0.64	2.89	2.23	7.41	9.48	0.48	0.13
Lu	1.286	2.166	0.536	0.100	0.447	0.327	1.109	1.338	0.073	0.021
Hf	5.9	10.4	2.3	0.3	1.3	0.3	7.6	2.6	0.1	0.9
Ta	0.18	<d.l.	0.01	0.05	0.13	<d.l.	0.06	0.40	0.01	<d.l.
Pb	<d.l.	<d.l.	<d.l.			<d.l.	<d.l.	<d.l.		<d.l.
Th	0.26	0.33	0.07	0.06	<d.l.	<d.l.	0.20	1.23	0.06	<d.l.
U	0.09	0.33	0.03	0.03	0.03	<d.l.	0.08	0.29	0.06	0.03
[La/Yb] _N	0.79	0.25	0.45	0.94	0.39	0.47	0.52	1.13	1.25	0.88
Eu/Eu*	0.47	0.44	0.89	1.21	0.86	1.11	0.50	0.18	2.45	0.94
[La/Sm] _N	0.63	0.24	0.43	0.80	0.35	0.46	0.45	1.11	0.98	0.77
[Gd/Yb] _N	1.20	1.06	1.07	1.08	1.22	1.05	1.18	0.83	0.99	0.98
[Dy/Er] _N	0.99	0.96	0.98	1.07	1.11	1.05	0.98	0.96	0.96	0.90