APPENDIX 3

Representative chemical analyses and structural formulae (O^2 = 23) of amphiboles from the Popiel Hill

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	2701	2701	2701	2702	2702	2703	2703	2704	2704	2704	AK3201	AK3201	AK3201	AK3202	AK3202	AK3205	AK3205	AK3205	AK3207	AK3207	AK3207	AK3210	AK3210	AK3210	AK3211	AK3212	AK3212	AK3214	AK3214	AK3214	AK3216
SiO_2	58.29	55.46	51.82	58.21	47.97	55.91	49.54	50.80	58.31	55.13	50.15	54.20	58.03	53.65	57.97	57.96	51.74	56.99	52.65	58.24	47.53	58.21	53.45	46.79	55.36	46.88	57.82	54.01	57.57	50.18	50.96
TiO_2	0.06	0.18	0.66	0.02	0.72	0.09	0.92	0.74	0.00	0.20	0.87	0.38	0.07	0.29	0.09	0.02	0.73	0.10	0.51	0.01	0.71	0.02	0.35	1.31	0.15	0.80	0.04	0.22	0.13	0.81	0.82
Al_2O_3	0.69	3.21	7.17	0.46	10.52	2.01	8.73	7.56	0.23	3.34	8.23	4.53	0.60	4.76	0.53	0.37	6.71	0.84	5.83	0.41	7.50	0.14	5.04	11.03	2.89	10.83	0.74	4.76	1.13	8.41	7.38
Cr_2O_3	0.01	0.10	0.16	0.03	0.18	0.12	0.18	0.18	0.01	0.04	0.41	0.22	0.04	0.10	0.11	0.08	0.27	0.08	0.27	0.02	0.15	0.00	0.04	0.26	0.12	0.16	0.06	0.09	0.26	0.27	0.25
FeO[1)]	2.39	3.52	4.88	2.88	6.08	3.76	5.94	5.51	2.23	3.98	5.33	3.78	2.58	8.12	2.61	2.50	4.66	5.59	4.67	3.12	7.31	2.77	4.40	6.09	3.94	7.18	3.28	4.22	3.10	5.40	4.71
MnO	0.20	0.13	0.15	0.12	0.14	0.18	0.06	0.05	0.03	0.20	0.11	0.11	0.12	0.25	0.11	0.12	0.07	0.17	0.16	0.15	0.17	0.13	0.14	0.10	0.13	0.13	0.10	0.13	0.15	0.11	0.08
NiO	0.06	0.10	0.05	0.08	0.09	0.07	0.05	0.09	0.03	0.05	0.12	0.06	0.11	0.07	0.09	0.08	0.09	0.10	0.09	0.10	0.14	0.07	0.09	0.08	0.11	0.05	0.06	0.05	0.07	0.12	0.07
MgO	23.55	22.48	19.97	23.32	18.19	22.78	18.72	19.63	23.52	22.50	18.97	21.63	23.30	28.90	23.29	23.30	19.99	22.95	20.75	23.32	24.57	23.19	21.09	18.06	22.08	18.34	23.25	21.33	22.61	19.20	19.55
CaO	13.11	12.60	12.75	12.80	12.48	12.27	12.57	12.80	13.54	12.28	12.69	12.51	12.94	2.39	13.09	13.11	12.82	12.85	12.07	12.57	9.16	13.19	12.61	12.72	12.59	11.45	12.51	12.58	12.74	12.57	12.75
Na_2O	0.03	0.09	0.30	0.00	1.01	0.08	0.65	0.50	0.00	0.24	0.00	0.49	0.06	0.09	0.05	0.04	0.46	0.05	0.42	0.05	0.73	0.00	0.35	1.09	0.13	0.93	0.21	0.30	0.05	0.45	0.31
K_2O	0.01	0.03	0.10	0.01	0.22	0.01	0.11	0.14	0.01	0.04	0.00	0.04	0.02	0.02	0.00	0.00	0.05	0.01	0.08	0.03	0.12	0.01	0.06	0.26	0.05	0.17	0.01	0.05	0.02	0.06	0.08
sum	98.40	97.90	98.02	97.93	97.60	97.29	97.48	97.99	97.92	98.00	96.88	97.95	97.86	98.65	97.94	97.57	97.59	99.72	97.48	98.02	98.09	97.72	97.60	97.78	97.55	96.91	98.10	97.73	97.82	97.56	96.95
Si	7.92	7.63	7.20	7.95	6.78	7.74	6.98	7.10	7.96	7.59	7.07	7.48	7.93	7.30	7.92	7.95	7.22	7.77	7.33	7.96	6.70	7.97	7.43	6.63	7.66	6.69	7.90	7.48	7.89	7.04	7.16
Ti	0.01	0.02	0.07	0.00	0.08	0.01	0.10	0.08	0.00	0.02	0.09	0.04	0.01	0.03	0.01	0.00	0.08	0.01	0.05	0.00	0.08	0.00	0.04	0.14	0.02	0.09	0.00	0.02	0.01	0.09	0.09
Al	0.11	0.52	1.17	0.07	1.75	0.33	1.45	1.24	0.04	0.54	1.37	0.74	0.10	0.76	0.08	0.06	1.10	0.14	0.96	0.07	1.25	0.02	0.83	1.84	0.47	1.82	0.12	0.78	0.18	1.39	1.22
Cr	0.00	0.01	0.02	0.00	0.02	0.01	0.02	0.02	0.00	0.00	0.05	0.02	0.00	0.01	0.01	0.01	0.03	0.01	0.03	0.00	0.02	0.00	0.00	0.03	0.01	0.02	0.01	0.01	0.03	0.03	0.03
Fe	0.27	0.40	0.57	0.33	0.72	0.44	0.70	0.64	0.25	0.46	0.63	0.44	0.29	0.92	0.30	0.29	0.54	0.64	0.54	0.36	0.86	0.32	0.51	0.72	0.46	0.86	0.38	0.49	0.36	0.63	0.55
Mn	0.02	0.02	0.02	0.01	0.02	0.02	0.01	0.01	0.00	0.02	0.01	0.01	0.01	0.03	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.02	0.02	0.01	0.02	0.02	0.01	0.01
Ni	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Mg	4.77	4.61	4.14	4.75	3.83	4.70	3.93	4.09	4.79	4.62	3.99	4.45	4.75	5.86	4.75	4.76	4.16	4.67	4.31	4.75	5.16	4.74	4.37	3.81	4.55	3.90	4.74	4.40	4.62	4.01	4.09
Ca	1.91	1.86	1.90	1.87	1.89	1.82	1.90	1.92	1.98	1.81	1.92	1.85	1.89	0.35	1.92	1.93	1.92	1.88	1.80	1.84	1.38	1.94	1.88	1.93	1.87	1.75	1.83	1.87	1.87	1.89	1.92
Na	0.01	0.02	0.08	0.00	0.28	0.02	0.18	0.14	0.00	0.06	0.00	0.13	0.02	0.02	0.01	0.01	0.12	0.01	0.11	0.01	0.20	0.00	0.09	0.30	0.03	0.26	0.06	0.08	0.01	0.12	0.08
K	0.00	0.00	0.02	0.00	0.04	0.00	0.02	0.02	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.02	0.00	0.01	0.05	0.01	0.03	0.00	0.01	0.00	0.01	0.01
Mg#	0.95	0.92	0.88	0.94	0.84	0.92	0.85	0.86	0.95	0.91	0.86	0.91	0.94	0.86	0.94	0.94	0.88	0.88	0.89	0.93	0.86	0.94	0.90	0.84	0.91	0.82	0.93	0.90	0.93	0.86	0.88

[1)] – total Fe as FeO; 1 – tremolite grain in aggregate of acicular amphibole (blue point 1 – Fig. 3C); 2, 3 – 300 μm tremolite grain overgrown by magnesiohornblende (blue points 2, 3 – Fig. 3D); 4, 5 – tremolite grain (40 μm long) with magnesiohornblende rim (blue points 4, 5 – Fig. 3B); 6 – 15 μm tremolite grain in amphibole-orthopyroxene-olivine aggregate; 7 – 100 μm magnesiohornblende grain in amphibole-orthopyroxene-olivine aggregate; 8 – 20 μm magnesiohornblende grain inside olivine grain with orthopyroxene intergrowths; 9 ,10 – tremolite in amphibole mass surrounding fragmented olivine grain; 11 – magnesiohornblende grain (15 μm) embedded in serpentine matrix as a fragment of fractured amphibole-olivine-spinel aggregate; 12 – tremolite needle (10 μm) in corroded, acicular amphibole aggregate; 13 – irregular tremolite patch in grain consisting of tremolite and magnesiohornblende; 14 – magnesiohornblende grain (40 μm) embedded in serpentine matrix; 15 – 200 μm long, elongated tremolite grain in serpentine matrix; 16 – tremolite grain (25 μm) in amphibole aggregate in the contact with serpentine; 17 – magnesiohornblende rim on tremolite grain (25 μm); 18 – elongated magnesiohornblende intergrowth in tremolite grain in acicular amphibole aggregate; 19 – patch in the magnesiohornblende grains of variable composition; 20 – 70 μm grain of tremolite; 21 – magnesiohornblende intergrowth in olivine grain; 22 – irregular tremolite patch in grain consisting of tremolite and magnesiohornblende ; 23 – 35 μm magnesiohornblende grain in serpentine matrix; 24 – irregular magnesiohornblende grain; 25 – irregular tremolite patch in grain consisting of tremolite and magnesiohornblende; 26 – 50 μm magnesiohornblende grain in serpentine matrix; 27 – crushed tremolite grain (50 μm) with magnesiohornblende rim (blue point 27 – Fig. 4A); 28 – irregular tremolite patch in grain consisting of tremolite and magnesiohornblende; 29 – tremolite part of amphibole grain; 30 – 60 μm long, magnesiohornblende grain in orthopyroxene-amphibole aggregate; 31 – 50 m long, magnesiohornblende grain in amphibole aggregate