

Appendix 1

Major element contents (in wt.%) of clay samples from study area

	Samples	SiO ₂	TiO ₂	Al ₂ O ₃	Fe ₂ O ₃	MgO	CaO	Na ₂ O	K ₂ O	LOI	
Parent rock	At2	76.33	0.1	10.98	1.11	0.03	0.93	0.5	5.18	3.4	
	At2-1	73.34	0.14	13.02	1.7	0.16	0.99	1.6	5.56	2.14	
Moderately altered rocks	SS1-6	75.1	0	14.8	0.53	0	0.3	3	5.2	1	
	SF3	72.4	0	15.8	1.4	0.5	0.2	1	4.2	3.6	
	SF1	70.6	0	15.9	1.99	0.5	2	2	3.3	3.1	
	*A52	85.13	0.2	12.75	0.29	0.11	0.81	0.1	n.d	0.5	
	*A43	76.29	0.2	22.05	0.16	0.11	0.54	0.1	n.d	0.51	
	Kgh2	75.7	0	12.7	1.36	0.08	0.1	2	5	2.2	
	SS1-4	70.7	0	18.2	1.78	0.54	0.3	1	3.2	3.1	
	SF	70.8	0	19.3	1	0.44	0.1	2	3.1	3.1	
Completely altered rocks	Samples from Rokhsefid and Baghsiah mines	Kg50	81.8	0	14.8	0.49	0.13	0.5	0	n.d	3.4
		BK51-2	61.86	0.1	28.31	0.69	0.07	0.41	0.3	0.01	7.71
		BK53-3	59.01	0.1	28.79	0.71	0.06	0.15	0.6	0.01	9.94
		A22	61.37	0.1	29.12	0.46	0.05	0.16	0.1	0.01	8.25
		KHA1	75.93	0.95	17.54	0.20	0.11	0.33	0.40	n.d	4.54
		GAW5	66.79	0.84	23.27	0.18	0.09	0.22	0.2	n.d	8.41
		EMB5	56.65	0.72	32.51	0.42	0.13	0.25	0.7	n.d	8.62
		BAM6	73.95	0.45	17.64	0.72	0.01	0.09	0.12	0.01	7.01
		*A23	63.47	0.9	19.41	0.48	0.23	0.8	0.1	0.01	14.5
		*A41	76.9	0.2	12.22	0.27	0.13	0.45	0.1	n.d	9.64
		*A32	55.94	1.5	28.53	2.39	0.22	0.84	0.6	n.d	9.89
		*AL1	61.4	1.2	24.16	4.84	0.16	0.56	0.4	n.d	7.24
		*AE5	63.45	1.2	23.66	3.7	0.16	0.35	0.3	n.d	7.12
*A22	74.8	0.1	20.43	0.25	0.1	0.37	0.3	n.d	4.64		
*EGA3	75	0.7	18.21	0.32	0.1	0.65	0.2	n.d	4.81		
Completely altered rocks	Samples from Kalatehno mine	omid1	62.5	0	13.7	4.78	0.09	2.1	0	4.4	8.9
		SS1	66.4	0	16.8	4.17	0.14	0.2	0	5.6	5.4
		K gh1	60.7	0	22.2	1.41	0.76	0.7	2	3.2	7.6
		SF5	60.5	0	21.8	2.3	0.96	0.2	1	4.1	7.6
		SS1-10	58	0	19.6	4.08	1.64	3	4	2.6	6.7
		SS1-5	50.9	0	27.8	1.63	1.18	0.1	1	5	7.7
		SF4	60.9	0	22.3	2.68	0.73	0.4	2	4.2	5.6
		SS1-9	67.3	0	18.5	1.83	0.53	0.5	1	3.6	5.5
		OMID3	61.9	0	16.8	2.56	0.55	0.9	1	5.1	5.5
		SS1-8	65.9	0	20.9	1.35	0.73	0.4	2	3.4	4.3
		SS1-7	71.2	0	16.9	1.41	0.61	0.5	1	3.8	4.1
		KN-g-1	61.6	0.6	23.92	1.96	1.07	0.05	0.1	6.14	4.09
		SF2	69.8	0	19	1.16	0.78	0.3	1	3.8	4
OMid2	74.3	0	11.1	2.94	0.61	1	1	3.6	4.9		
SS1-3	69.9	0	13.2	3.17	0.33	1.2	1	5.2	4.9		
Completely altered rocks	Samples from Yasmina mine	Kg2	63.7	0	24.8	1.06	0.76	1	1	4.7	4.2
		Kg4	66.7	0	20.2	1.01	0.84	0.5	1	4.5	5
		Kg6	66.7	0	17.3	2.4	1.15	0.4	1	6	5
		Kg12	49.5	0	32.6	1.52	1	0.3	0	8.3	5.8
		Kg14	57.3	0	26.9	0.68	0.63	4.4	0	n.d	11
		Kg15	70	0	18.3	1.42	0.7	1.3	0	2.1	5.8
		Kg16	69.3	0	19.9	1	0.75	0.9	0	1.1	5.5
		Kg38	72.5	0	22	0.31	0.16	0.5	0	n.d	5.9
		Kg47	81.5	0	12.4	0.36	0.1	0.3	0	0.3	4.9
		Kg48	73.5	0	20.5	0.28	0.18	0.4	0	0.5	4.4
		Kg49	81.5	0	13.1	0.42	0.14	0.4	0	0.4	4.4
YASS1	70.85	0.15	20.21	0.62	0.08	1.79	0.31	0.01	5.78		

*Data for Rokhsefid mine from Gharibnavaz et al. (2007). Data for Yasmina mine from Miranvari (2008). n.d: not detected.