

Supplementary Material 3: Whole-rock chemical analyses of the Closepet granitoids and the host gneisses (oxides in wt %, trace elements in ppm)

Sample No.	Type A				Type B				Type C			
	AT60	AT2B	AT44B	MR07/23	AT3B	AT4	AT42B	AT49B	AT5A	AT7A	AT28A	AT64B
SiO <sub>2</sub>	66.63	64.04	65.69	64.95	65.17	64.68	65.08	63.92	69.16	69.49	67.74	66.22
Al <sub>2</sub> O <sub>3</sub>	16.29	15.01	14.77	15.69	15.44	14.86	15.06	15.36	13.34	14.38	14.19	14.72
Fe <sub>2</sub> O <sub>3</sub>	2.74	4.83	4.50	4.52	4.37	4.82	4.50	5.22	3.52	2.86	3.86	4.62
MnO	0.04	0.08	0.07	0.05	0.07	0.08	0.06	0.08	0.06	0.05	0.07	0.04
MgO	0.89	1.61	1.55	1.46	1.46	1.52	1.48	1.69	1.17	0.96	1.26	1.51
CaO	1.87	3.57	3.07	2.98	3.06	3.42	3.07	3.40	2.84	2.81	2.78	2.80
Na <sub>2</sub> O	3.44	3.84	3.86	3.99	3.97	3.94	3.65	4.07	3.41	3.98	3.56	3.83
K <sub>2</sub> O	6.43	4.22	3.91	4.10	4.38	3.78	4.44	3.57	4.06	3.60	4.46	3.67
TiO <sub>2</sub>	0.39	0.69	0.60	0.65	0.63	0.71	0.52	0.72	0.56	0.40	0.52	0.68
P <sub>2</sub> O <sub>5</sub>	0.21	0.46	0.39	0.47	0.43	0.44	0.41	0.43	0.22	0.18	0.31	0.40
Total	98.93	98.35	98.41	98.86	98.98	98.25	98.27	98.46	98.34	98.71	98.75	98.49
Sc	2.88	5.69	5.51	3.81	4.45	5.29	8.13	5.64	3.81	3.99	5.86	2.54
V	9.44	13.05	10.15	14.03	12.91	12.50	7.20	10.58	11.57	7.93	12.50	10.45
Cr	12.03	11.11	9.01	10.66	9.76	7.50	12.85	8.96	10.16	9.16	11.66	8.07
Co	65.52	55.81	66.55	64.01	71.63	68.59	79.11	73.88	66.62	84.71	74.07	84.33
Ni	3.22	3.82	3.79	4.11	4.21	3.54	5.63	4.00	3.75	3.41	4.26	3.55
Cu	0.46	0.73	0.39	0.72	0.72	0.67	0.72	0.66	0.47	0.28	0.64	0.92
Zn	23.89	39.86	32.26	35.98	33.43	35.31	34.87	38.87	29.78	22.09	30.69	33.39
Ga	20.10	23.98	23.42	25.54	22.88	23.17	20.28	23.65	21.76	21.37	22.48	23.64
Rb	140.66	106.03	124.76	144.62	108.02	103.34	107.80	77.16	123.04	105.49	129.59	122.54
Sr	452.71	452.83	390.08	415.60	462.62	448.35	420.11	431.88	361.19	233.46	361.01	344.43
Y	14.33	51.69	47.40	37.39	41.89	43.55	26.47	52.74	17.94	15.71	42.86	26.54
Zr	105.08	319.39	218.39	266.95	208.94	252.18	180.33	216.70	222.35	332.19	162.69	226.27
Nb	6.10	16.72	20.57	8.22	10.26	16.55	4.98	13.33	10.52	32.53	13.18	8.11
Cs	1.23	0.64	0.90	0.68	0.68	0.69	0.53	0.50	0.83	0.95	1.65	0.61
Ba	543.71	370.23	295.27	349.62	360.22	323.14	394.46	333.64	369.72	228.50	343.77	280.00
Hf	2.72	8.34	6.01	6.57	5.25	6.52	4.52	5.83	5.74	8.92	4.48	5.79
Ta	0.41	0.77	0.82	0.08	0.47	0.90	0.28	0.57	0.68	2.10	0.75	0.29
Pb	13.91	14.72	12.10	13.08	13.12	12.92	19.77	12.10	12.46	12.73	13.08	11.47
Th	9.14	13.91	8.10	22.22	9.77	10.06	13.65	7.62	7.57	9.77	17.95	11.35
U	1.06	1.15	1.22	0.92	0.99	1.13	1.08	0.89	1.05	0.85	1.79	0.94
La	72.12	137.47	81.98	147.87	108.54	112.41	113.61	105.19	59.06	61.95	129.08	118.08
Ce	130.58	270.78	171.52	276.61	214.17	228.22	211.48	211.64	107.26	113.40	241.38	218.34
Pr	12.42	28.35	19.04	27.43	22.24	24.20	21.21	22.90	10.85	11.14	24.22	21.17
Nd	43.34	105.87	74.56	94.94	82.77	91.02	74.95	88.62	39.06	39.30	85.57	72.35
Sm	5.96	17.13	13.75	13.95	13.87	14.17	11.13	15.39	6.15	5.79	13.82	10.29
Eu	0.92	0.92	0.70	0.80	0.82	0.81	0.85	0.85	0.73	0.51	0.81	0.64
Gd	7.49	18.16	13.85	17.17	14.97	15.88	15.15	16.17	7.53	7.36	16.88	13.64
Tb	0.79	2.24	1.90	1.94	1.84	1.91	1.66	2.10	0.85	0.84	1.95	1.48
Dy	2.72	9.73	8.77	7.42	8.07	7.96	5.48	9.80	3.37	3.15	8.00	5.34
Ho	0.28	1.04	0.94	0.78	0.83	0.85	0.55	1.05	0.35	0.32	0.86	0.56
Er	1.30	4.08	3.49	3.09	3.33	3.54	2.47	4.06	1.46	1.35	3.44	2.26
Tm	0.11	0.41	0.36	0.26	0.30	0.35	0.19	0.42	0.14	0.12	0.33	0.18
Yb	1.20	4.27	3.74	2.47	3.06	3.81	1.96	4.45	1.44	1.26	3.53	1.78
Lu	0.19	0.64	0.56	0.38	0.46	0.59	0.30	0.64	0.22	0.20	0.54	0.26

Sample No.	Type D				Syenite vein				Host gneiss (within pluton)			
	AT29B	AT52	AT62	AT75	AT28B	AT57B	AT59C	AT64C	AT15A	AT53A	AT59A	AT57A
SiO <sub>2</sub>	69.75	72.05	73.97	66.48	72.06	73.29	63.16	71.32	71.39	61.27	64.14	66.12
Al <sub>2</sub> O <sub>3</sub>	14.66	14.55	14.29	14.97	14.43	13.50	17.43	14.79	13.46	12.60	14.58	14.35
Fe <sub>2</sub> O <sub>3</sub>	2.76	1.56	0.94	4.66	1.21	0.45	2.09	1.61	2.38	5.67	5.87	4.87
MnO	0.04	0.02	0.01	0.06	0.01	0.02	0.06	0.02	0.02	0.14	0.10	0.10
MgO	0.81	0.36	0.32	1.09	0.17	0.19	0.85	0.59	0.38	5.07	1.78	1.99
CaO	2.12	0.93	1.37	3.06	0.34	0.63	1.72	1.32	1.15	4.95	3.99	4.32
Na <sub>2</sub> O	3.88	3.69	2.77	4.51	2.43	2.14	3.00	3.10	2.77	4.24	4.32	4.37
K <sub>2</sub> O	4.14	5.14	4.21	2.78	7.37	8.15	9.21	5.38	6.16	3.00	2.52	1.63
TiO <sub>2</sub>	0.43	0.21	0.18	0.62	0.15	0.08	0.52	0.27	0.22	0.62	0.94	0.67
P <sub>2</sub> O <sub>5</sub>	0.15	0.07	0.06	0.24	0.10	0.02	0.18	0.19	0.14	0.66	0.40	0.17
Total	98.74	98.58	98.12	98.47	98.27	98.47	98.22	98.59	98.07	98.22	98.64	98.59
Sc	2.64	2.90	2.05	4.09	0.97	1.14	3.40	2.13	1.61	9.10	5.10	8.00
V	6.75	5.68	7.74	12.76	25.22	15.99	34.49	33.01	7.85	12.61	15.07	16.11
Cr	11.01	15.64	9.48	10.17	9.97	11.53	12.68	12.80	14.43	345.03	10.02	12.49
Co	75.54	151.96	104.58	82.20	122.16	103.26	47.55	101.63	116.74	48.77	58.56	133.18
Ni	3.70	2.88	2.81	3.85	6.97	7.39	11.15	9.05	2.93	16.48	4.88	6.75
Cu	0.37	0.26	0.22	0.60	2.16	10.04	4.58	3.79	0.37	1.31	0.73	0.71
Zn	28.20	20.60	17.54	38.06	43.02	51.77	85.87	72.57	21.34	58.56	47.50	61.82
Ga	19.08	19.58	17.30	23.93	13.35	11.56	19.97	17.03	17.94	27.48	25.68	26.76
Rb	116.06	164.61	131.79	89.63	179.64	165.31	225.27	144.61	155.51	277.49	90.43	88.70
Sr	295.62	118.93	313.09	209.96	578.61	319.39	896.50	676.62	392.68	560.02	394.45	199.35
Y	13.32	13.59	8.18	28.54	3.84	1.08	119.85	12.78	13.25	206.45	36.27	37.67
Zr	189.81	259.37	162.30	182.61	19.18	18.63	82.59	220.56	293.42	441.08	146.23	174.16
Nb	8.19	5.32	5.47	13.37	1.19	1.31	44.06	4.11	2.40	36.60	18.64	10.54
Cs	0.88	0.91	1.26	1.32	0.57	0.32	0.54	0.38	0.44	6.30	0.57	0.73
Ba	261.45	209.47	324.69	183.72	1638.99	1326.30	1792.76	1426.07	577.94	212.47	212.80	97.42
Hf	5.20	7.63	4.63	4.93	0.46	0.56	2.86	4.59	7.35	12.80	4.14	5.01
Ta	0.42	0.28	0.64	0.33	0.14	0.13	4.34	0.23	0.13	3.22	0.85	0.55
Pb	18.75	20.37	17.96	16.39	48.95	51.52	54.75	45.79	19.82	19.61	18.63	20.51
Th	11.99	37.77	18.23	10.20	0.84	2.46	17.62	2.43	12.36	27.49	10.98	10.33
U	1.15	3.92	3.80	1.68	0.35	0.46	2.30	1.19	1.60	5.68	0.81	1.26
La	73.21	64.12	75.68	66.91	10.59	14.26	72.11	27.69	44.79	153.74	61.39	53.59
Ce	133.52	117.50	138.79	129.14	18.42	19.63	205.04	54.46	80.23	307.21	125.92	102.55
Pr	12.86	11.78	13.16	13.42	1.83	1.51	26.76	5.35	7.97	33.20	14.17	11.03
Nd	43.21	40.80	42.06	49.40	7.34	4.87	117.95	20.32	28.84	126.89	56.38	41.82
Sm	5.80	6.33	4.76	8.64	1.39	0.60	29.03	3.91	4.40	24.50	10.65	8.27
Eu	0.61	0.42	0.65	0.49	2.72	2.40	5.06	2.89	0.95	0.83	0.65	0.46
Gd	8.29	7.96	7.73	10.07	1.32	0.79	23.99	3.89	5.81	27.66	11.30	8.88
Tb	0.82	0.81	0.69	1.26	0.14	0.05	3.27	0.41	0.65	4.63	1.50	1.29
Dy	2.55	2.66	1.57	5.44	0.67	0.19	20.26	2.17	2.51	31.24	6.78	6.86
Ho	0.26	0.28	0.16	0.57	0.11	0.03	3.45	0.37	0.27	3.83	0.70	0.76
Er	1.27	1.27	1.00	2.26	0.33	0.10	10.43	1.16	1.12	14.46	2.81	2.79
Tm	0.11	0.11	0.07	0.21	0.04	0.02	1.55	0.15	0.10	1.92	0.29	0.32
Yb	1.18	1.17	0.89	2.27	0.28	0.10	10.82	1.09	1.13	19.15	3.17	3.29
Lu	0.18	0.19	0.14	0.35	0.04	0.02	1.37	0.16	0.19	2.87	0.47	0.54

Sample No.	Host gneiss (within pluton)			Host gneiss (outside pluton)		
	AT30A	AT8	AT73B	AT38B	AT54	AT9C
SiO <sub>2</sub>	69.31	58.69	63.89	67.12	70.38	72.63
Al <sub>2</sub> O <sub>3</sub>	14.94	13.98	15.45	14.88	13.32	13.48
Fe <sub>2</sub> O <sub>3</sub>	3.04	8.25	5.70	4.39	3.39	2.21
MnO	0.04	0.17	0.08	0.09	0.05	0.04
MgO	0.57	3.14	1.82	1.34	0.73	0.52
CaO	2.20	5.89	3.75	3.64	1.89	1.66
Na <sub>2</sub> O	4.16	4.16	4.84	4.56	3.57	3.73
K <sub>2</sub> O	3.62	2.14	1.75	1.45	4.53	4.25
TiO <sub>2</sub>	0.41	0.93	0.83	0.55	0.54	0.34
P <sub>2</sub> O <sub>5</sub>	0.15	0.76	0.30	0.20	0.20	0.12
Total	98.44	98.11	98.41	98.22	98.60	98.98
Sc	9.24	2.42	4.31	5.12	4.69	3.65
V	18.03	9.34	13.25	11.69	5.52	5.69
Cr	18.37	54.73	39.30	10.72	11.61	13.29
Co	54.36	72.81	82.49	88.05	117.29	70.49
Ni	12.13	7.85	15.19	4.26	3.73	8.23
Cu	1.16	0.31	0.71	0.58	0.50	0.31
Zn	61.45	37.16	62.73	34.24	34.72	48.92
Ga	30.74	22.37	27.86	22.63	23.01	23.29
Rb	91.57	102.58	99.25	158.39	183.34	229.46
Sr	342.51	251.93	263.36	156.91	152.33	167.07
Y	110.14	7.45	13.18	34.08	92.33	49.09
Zr	111.02	188.07	250.00	125.98	336.25	393.60
Nb	24.63	6.22	11.13	16.85	39.33	21.82
Cs	1.20	0.44	1.59	4.65	2.70	2.38
Ba	137.18	242.34	91.50	80.64	388.74	283.57
Hf	4.01	5.05	6.46	3.71	9.16	10.76
Ta	1.10	0.33	0.42	2.06	3.74	1.41
Pb	5.01	6.48	5.84	16.53	20.16	7.91
Th	7.25	6.69	19.67	6.73	23.27	28.65
U	1.39	0.75	1.13	15.74	5.17	3.92
La	62.77	43.22	113.99	25.69	147.31	111.85
Ce	173.85	78.89	204.77	56.02	282.03	208.49
Pr	24.67	7.73	18.88	6.36	29.24	20.16
Nd	112.87	26.58	59.54	25.06	106.61	67.06
Sm	25.67	3.77	7.02	5.28	18.74	10.33
Eu	0.80	0.52	0.35	0.31	0.91	0.56
Gd	22.57	5.28	12.29	5.75	23.14	14.31
Tb	3.62	0.51	1.04	0.91	3.06	1.65
Dy	19.55	1.50	2.57	5.44	15.34	7.54
Ho	2.10	0.14	0.26	0.63	1.74	0.92
Er	7.72	0.75	1.52	2.36	6.73	3.85
Tm	0.88	0.06	0.10	0.31	0.78	0.43
Yb	9.23	0.60	1.14	3.40	8.47	4.34
Lu	1.38	0.09	0.19	0.56	1.29	0.65