APPENDIX 1

Major-element concentrations in weight percent (wt.%), mean grain-size (Mz), standard deviation (SD), skewness and kurtosis in phi (Ø) units, chemical index of alteration (CIA) and chemical index of weathering (CIW) for the Ajali Sandstone

	QUARTZ ARENITES													MUDSTONES	
Sample Number	**AN1**	**AN2**	**AN3**	**AN4**	**AN5**	**AN6**	**AY1**	**AY2**	**BT1**	**BT2**	**DI1**	**DO1**	**DO2**	**BT3**	**DE1**
Mz	1.93	1.58	1.43	0.01	1.17	1.23	1.16	1.54	1.23	1.76	1.09	1.54	1.51	1.30	1.62
SD	1.09	0.79	0.74	0.73	0.73	0.87	0.97	0.98	0.85	0.76	0.86	0.77	0.79	0.76	0.91
Skewness	-0.39	-0.13	-0.09	2.10	-0.40	0.04	0.09	0.15	0.01	-0.24	0.15	0.19	0.17	0.13	0.12
Kurtosis	1.49	1.09	0.94	2.12	0.73	1.01	0.74	1.03	0.79	0.50	0.76	1.07	1.09	0.80	1.08
SiO2	99.23	98.29	100	97.29	100.3	99.69	99.36	99.21	96.74	96.74	98.06	97.43	99.09	49.07	74.5
Al_2O_3	0.47	1.17	0.16	0.2	0.14	0.22	0.27	0.48	1.96	2.02	0.58	0.7	0.2	30.32	16.21
Fe_2O_3total	0.45	0.9	0.29	0.95	0.41	1	1.1	0.92	1.02	0.78	1.17	1.15	1.2	1.83	1
MnO	0.005	0.008	<0.001	0.006	0.004	0.009	0.008	0.008	0.005	0.005	0.01	0.009	0.008	0.006	0.008
MgO	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.05	0.05
CaO	0.02	0.02	<0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.02	0.02	<0.01	0.02	0.03
Na_2O	0.04	0.04	0.02	0.02	0.03	0.04	0.06	0.04	0.04	0.04	0.03	0.03	0.03	0.03	0.06
K_2O	0.01	< 0.01	< 0.01	0.01	< 0.01	0.01	0.03	0.01	0.02	0.02	0.02	0.02	0.02	0.18	0.26
TiO_2	0.32	0.149	0.072	0.144	0.06	0.046	0.144	0.161	0.157	0.247	0.169	0.131	0.123	3.161	1.49
P_2O_5	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	0.12	0.04
LOI	0.16	0.3	0.05	-0.1	0.02	-0.13	-0.11	0.03	0.71	0.8	0.03	0.14	-0.13	13.61	6.9
Total	100.7	100.9	100.6	98.56	100.9	100.9	100.9	100.9	100.7	100.7	100.1	99.65	100.6	98.39	100.5
CIA	87.04	94.43	80.81	83.33	74.07	75.86	71.05	88.89	96.55	96.65	98.23	90.91	77.22	99.25	97.89
PIA	88.60	95.00	83.89	86.36	76.61	77.78	75.00	90.39	97.90	97.56	91.80	93.15	82.19	99.83	99.44
CIW	88.68	95.12	84.66	86.96	77.78	78.57	77.14	90.57	97.51	97.59	92.06	93.33	83.68	99.84	99.45
SiO_2/Al_2O_3	211.13	84.01	625	486.45	716.43	453.14	368	206.69	49.36	47.89	169.07	139.19	495.45	1.62	4.60
Al_2O_3/SiO2	0.005	0.012	0.002	0.002	0.001	0.002	0.003	0.005	0.02	0.021	0.006	0.007	0.002	0.618	0.218
K_2O/Al_2O_3	0.021	0.008	0.056	0.05	0.064	0.045	0.111	0.021	0.01	0.01	0.034	0.029	0.1	0.006	0.016
Fe_2O_3total + MgO	0.45	0.90	0.29	0.95	0.41	1.01	1.10	0.92	1.02	0.78	1.17	1.15	1.20	1.88	1.05
K_2O/Na_2O	0.25	0.22	0.45	0.50	0.30	0.25	0.50	0.25	0.50	0.50	0.67	0.67	0.67	6.00	4.33
Al_2O_3/TiO_2	1.47	7.85	2.22	1.39	2.33	4.78	1.88	2.98	12.48	8.18	3.43	5.34	1.63	9.59	10.88

CIA = $[Al_2O_3/(Al_2O_3 + CaO + Na_2O + K_2O)] \times 100$; PIA = $[Al_2O_3 – K_2O/(Al_2O_3 + CaO + Na_2O – K_2O)] \times 100$; CIW = $[Al_2O_3/(Al_2O_3 + CaO + Na_2O)] \times 100$