

TABLE A. REPRESENTATIVE WHOLE-ROCK ANALYSES

	metagraywacke 89ASn89A	metapelite 89ASn89B	leucosome 89ASn62C	Ti1 91ASn93	Ti2 89ASn87C	Ti3 89ASn69	Ti3 91AHa2	Ti4 91AHa2
SiO ₂	68.53	62.33	70.00	60.18	71.89	77.01	68.74	67.75
Al ₂ O ₃	14.60	15.92	14.26	13.38	15.03	13.75	16.28	17.33
TiO ₂	0.61	0.86	0.45	0.25	0.19	0.07	0.41	0.16
Fe ₂ O ₃	4.86	6.89	3.72	6.16	1.41	0.66	2.91	2.18
MnO	0.06	0.11	0.06	0.12	0.04	0.05	0.05	0.03
MgO	2.25	3.17	1.65	7.62	0.46	0.24	1.33	1.9
CaO	2.40	3.24	2.74	5.81	2.19	0.74	4.3	4.51
Na ₂ O	3.10	2.83	3.47	1.64	4.92	3.16	3.73	4.34
K ₂ O	2.28	2.56	1.68	0.96	1.68	3.34	1.6	0.76
P ₂ O ₅	0.20	0.24	0.22	0.04	0.12	0.14	0.22	0.1
Ba	1185	963	913	385	685	485	546	432
Co	87	77	81	86	79	100	82	81
Cr	59	96	41	190	<0.5	<0.5	16	45
Sc	12.0	17.0	9.1	23	2.6	3.6	6.8	5.3
Sr	268	339	310	214	412	90	345	327
Y	16	26	16	18	6	10	20	4
Zr	159	161	94	99	75	51	243	48
Rb	70	82	50	31	46	64	47	23
Nb	10	13	9	5.8	5	6	7.9	2.4
Hf	4.2	4.7	2.6	1.6	2.6	3.2	2.8	1.8
U	3.1	3.8	2.4	4	1.5	3.6	2.4	0.9
Th	7.6	8.6	4.2	6.5	2.7	2.5	0.6	1.1
Cs	2.5	3.3	1.9	1.2	2.6	1.8	1.8	1.1
La	25.6	27.1	16.2	7.7	7.7	6.3	5.3	2.5
Ce	49.0	54.0	32.0	17	15.0	14.0	11	5
Nd	20.0	25.0	15.0	9	8.0	7.0	6	3
Sm	4.20	5.30	3.10	2.4	1.50	1.60	1.9	0.62
Eu	1.11	1.32	1.09	0.67	0.51	0.27	1.04	0.29
Gd	3.00	5.00	2.70	2.2	1.30	2.30	2.4	0.5
Tb	0.50	0.90	0.50	0.3	0.20	0.40	0.5	0.1
Yb	1.77	2.76	1.48	1.45	0.64	1.00	1.81	0.34
Lu	0.24	0.42	0.20	0.2	0.07	0.12	0.26	0.04
LOI	1.00	1.09	1.33	2.85	0.58	0.96	0.95	1.26
Total	99.89	99.24	99.58	98.99	98.51	100.12	100.53	100.32

Note: LOI is loss on ignition. Major and trace elements determined by XRF and REE determined by INAA at Activation Labs Ltd, Ontario, Canada.

TABLE B. SAMPLE LOCATIONS, DESCRIPTIONS, AND ISOTOPIC DATA

Sample	Location	Rock type	Concentration		Atomic Ratio 87Rb/86Sr	Measured ratio 87Sr/86Sr#
			Rb	Sr		
84APr45A	Richardson Highway	metagraywacke	60	314	0.55	0.705722±09
84APr50A	Richardson Highway	metagraywacke	57	314	0.53	0.706953±09
84APr50B	Richardson Highway	metapelite	95	180	1.53	0.707325±08
89ASn70B	Bunch Lake	metagraywacke	57	419	0.39	0.706514±09
89ASn89A	Tana River	metagraywacke	70	268	0.76	0.706949±10
89ASn89B	Tana River	metapelite	82	339	0.7	0.707076±10
89ASn62C	Bunch Lake	leucosome	50	310	0.47	0.706581±08
91ASn61B	Tana River	leucosome	52	339	0.44	0.706606±08
91ASn93	Goat Wallow Glacier	Ti1 xenolith	31	214	0.42	0.705810±08
89ASn52A	Ross Green Lake	Ti2 tonalite dike	32	494	0.19	0.704739±09
89ASn87C	Tana River	Ti2 trondhjemite dike	46	412	0.32	0.704134±11
89ASn69	Bunch Lake	Ti3 garnet-bearing granite dike	51	90	2.06	0.705600±09
89ASn71A	Bunch Lake	Ti3 biotite tonalite pluton	39	429	0.26	0.705502±07
89ASn72A	Bunch Lake	Ti3 biotite tonalite pluton	30	483	0.18	0.705436±09
89ASn77A	Bunch Lake	Ti3 granite dike	94	164	1.66	0.706760±09
89ASn83	Tana River	Ti3 trondhjemite dike	63	228	0.8	0.705601±07
89ASn87E	Tana River	Ti3 garnet-bearing granite dike	66	147	1.3	0.705006±10
91AHa2	Wernicke Glacier	Ti3 tonalitic gneiss	47	345	0.39	0.706622±07
91AHa12	Wernicke Glacier	Ti3 granodiorite dike	62	228	0.79	0.706675±09
91AHa14C	Wernicke Glacier	Ti3 granite dike	77	223	1	0.707041±07
91AHa42	Tana River	Ti3 tonalite pluton	40	219	0.53	0.706035±08
89ASn95	Tana River	Ti4 dacite dike	30	480	0.18	0.703970±08
91AHa26	Tana River	Ti4 dacite dike	23	327	0.2	0.704046±07
91AHa27	Tana River	Ti4 dacite dike	25	294	0.25	0.703908±09

Note: values used for CHUR (chondritic uniform reservoir) are $143\text{Nd}/144\text{Nd} = 0.512638$, $147\text{Sm}/144\text{Nd} = 0.1967$.

Decay constants: Sm = 6.54×10^{-12} yr $^{-1}$; Rb = 1.42×10^{-11} yr $^{-1}$. Sm and Nd concentrations determined by isotope dilution by addition of a mixed 149Sm-150Nd spike prior to sample dissolution. Rb and Sr concentrations determined by XRF at Activation Labs Ltd, Ontario, Canada. Repeat analysis of SRM-987 = 0.710247 ± 10 ; Repeat analysis of BCR-1 for $143\text{Nd}/144\text{Nd} = 0.512633 \pm 10$. Errors measured for $87\text{Sr}/86\text{Sr}$ and $143\text{Nd}/144\text{Nd}$ are 2s of the mean.

#corrected for mass fractionation by normalizing to $86\text{Sr}/88\text{Sr} = 0.1194$

##corrected for mass fractionation by normalizing to $146\text{Nd}/144\text{Nd} = 0.72190$

* $e\text{Nd}(T) = [(143\text{Nd}/144\text{Nd}(T)\text{sample}/143\text{Nd}/144\text{Nd}(T)\text{CHUR}) - 1] \times 104$.

TABLE B. SAMPLE LOCATIONS, DESCRIPTIONS, AND ISOTOPIC DATA

Sample	Initial Ratio 87Sr/86Sr	Concentration Sm	Nd	Atomic Ratio 147Sm/144Nd	Measured Ratio 143Nd/144Nd##	eNd (T)*
84APr45A	0.70529	4.51	21.88	0.1246	0.512648±08	0.7
84APr50A	0.70654	3.768	19.25	0.1184	0.512218±18	-7.6
84APr50B	0.70613	5.339	25.1	0.1286	0.512529±06	-1.6
89ASn70B	0.70621	4.013	19.9	0.1219	0.512449±05	-3.2
89ASn89A	0.70636	3.692	18.84	0.1185	0.512512±09	-1.9
89ASn89B	0.70653	5.07	23.72	0.1292	0.512427±06	-3.6
89ASn62C	0.70622	3.191	14.94	0.1292	0.512495±06	-2.3
91ASn61B	0.70626	3.445	16.17	0.1289	0.512525±06	-1.7
91ASn93	0.70548	2.038	8.24	0.1497	0.512538±08	-1.6
89ASn52A	0.70459	1.263	6.7	0.114	0.512501±14	-0.1
89ASn87C	0.70388	1.395	6.56	0.1286	0.512685±07	1.4
89ASn69	0.70399	1.873	7.33	0.1546	0.512836±10	4.2
89ASn71A	0.7053	1.15	5.05	0.1379	0.512545±07	-1.4
89ASn72A	0.7053	3.001	10.94	0.1659	0.512515±19	-2.2
89ASn77A	0.70546	2.167	10.58	0.1239	0.512585±06	-0.5
89ASn83	0.70498	2.009	10.8	0.1125	0.512572±06	-0.7
89ASn87E	0.70399	1.968	8.59	0.1386	0.512764±10	2.9
91AHa2	0.70631	1.77	5.8	0.1845	0.512506±19	-2.5
91AHa12	0.70606	2.662	11.61	0.1386	0.512530±07	-1.7
91AHa14C	0.70626	2.707	11.92	0.1373	0.512484±05	-2.6
91AHa42	0.70562	3.079	15.11	0.1232	0.512555±06	-1.1
89ASn95	0.70383	0.891	4.59	0.1174	0.512954±07	6.7
91AHa26	0.70389	0.622	2.76	0.1363	0.512916±08	5.8
91AHa27	0.70372	0.627	2.76	0.1376	0.512928±06	6.1