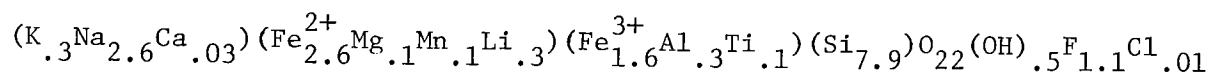


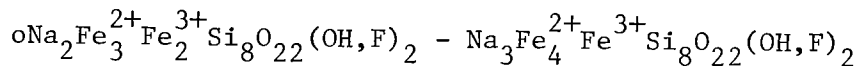
TABLE 17.—SODIC AMPHIBOLE ANALYSES—WICHITA GRANITE GROUP

Hale Spring Locality						
Dike #1 Johnson, 1955		WM5	WM2	Quanah WM3	Lugert WW7	
		V	V	M	M	V
SiO <sub>2</sub>	50.58	50.8	49.8	49.4	46.0	48.5
TiO <sub>2</sub>	.82	.8	1.2	.7	.7	.2
Al <sub>2</sub> O <sub>3</sub>	1.40	.5	.7	.6	2.5	.2
Fe <sub>2</sub> O <sub>3</sub>	13.54					
FeO	19.74	32.4	34.6	34.4	32.0	27.9
MnO	.52	.9	.9	1.1	4.5	2.8
MgO	.44	.5	.2	nd	1.2	.5
CaO	.14	.2	.5	nd	5.6	14.9
Na <sub>2</sub> O	8.50	8.5	7.4	11.81(?)	4.8	3.8
K <sub>2</sub> O	1.49	1.7	1.6	1.48	0.9	.05
Li <sub>2</sub> O	.44			nd	nd	
H <sub>2</sub> O+	.48			nd	nd	
H <sub>2</sub> O-	.04			nd	nd	
F	2.16	1.9	1.8	1.3	0.5	.07
Cl	.02	.07	.02	nd	nd	.01
	100.31	98.3	98.7	100.8	98.7	98.9
less O for F & Cl	.91	.8	.8	.6	.2	.03
	99.40	97.5	97.9	100.2	98.5	98.9

Formula: Analyzed sample from Johnson



Theoretical formulae: riebeckite-arfvedsonite



Hale Spring amphiboles is 0.537, which is on the high-fO<sub>2</sub> side of the stability range. Further, if the total pressure during intrusion of the source granite were assumed to have been low (see Gilbert, this guidebook, for a summary of the arguments), at no more than 500 bars (1.5 km overburden), then the maximum temperature possible for the pegmatite would be about 500°C.

Because the MgO content is so low, the discussion of Wones (1981, fig. 5) is pertinent as well. The reactions riebeckite = acmite + quartz + magnetite and sanidine + magnetite = annite intersect, forming a lower temperature, relatively oxidizing phase space within which the pegmatite must lie. This is completely consistent with the compositions of the coexisting feldspars, which are almost pure albite