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**PETROCHEMISTRY OF THE BLACHFORD
LAKE COMPLEX, DISTRICT OF MACKENZIE**

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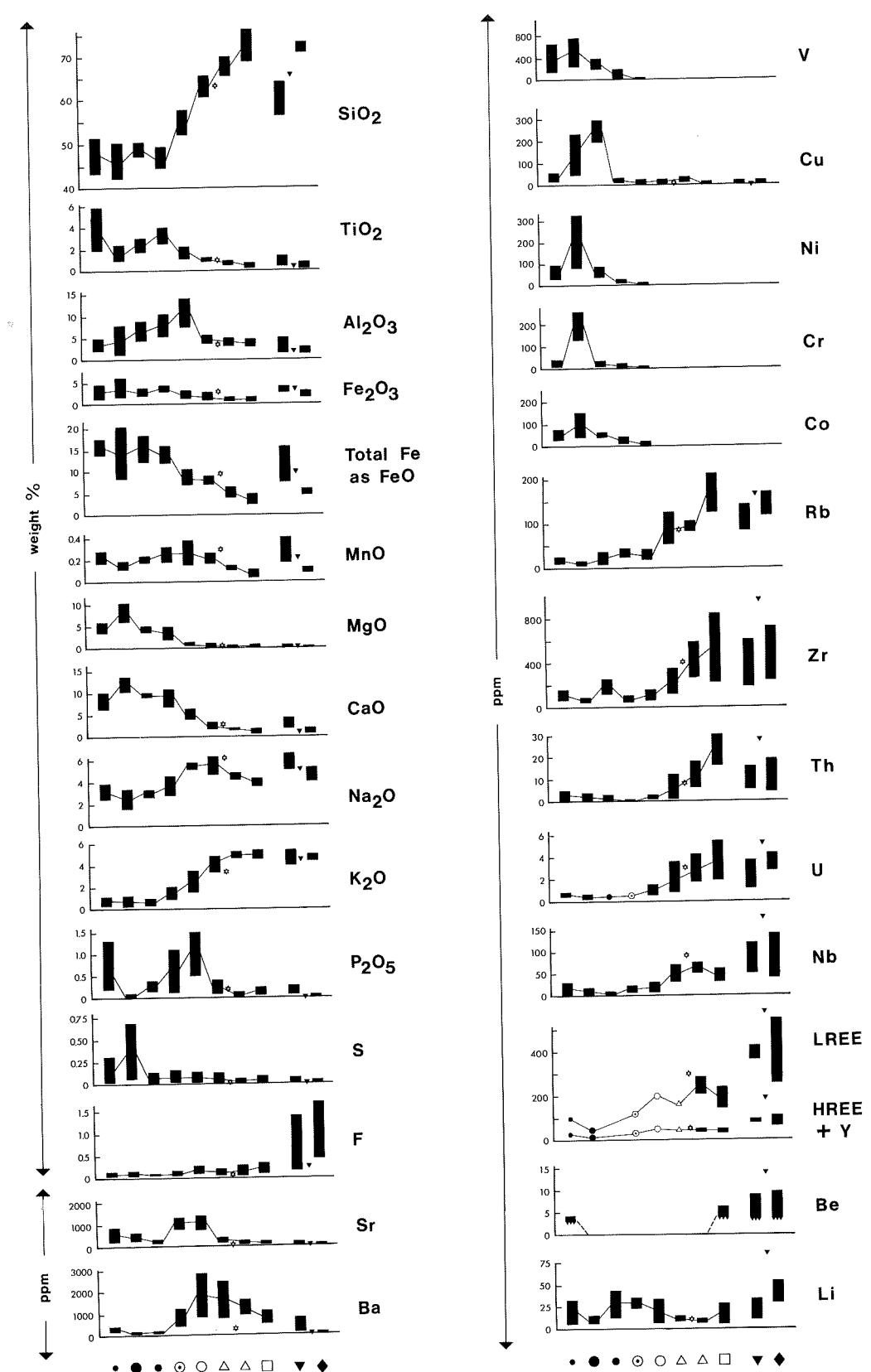


FIGURE 3: Ranges of element content in units of the Blachford Lake complex. See legend of Fig. 2 for symbols.

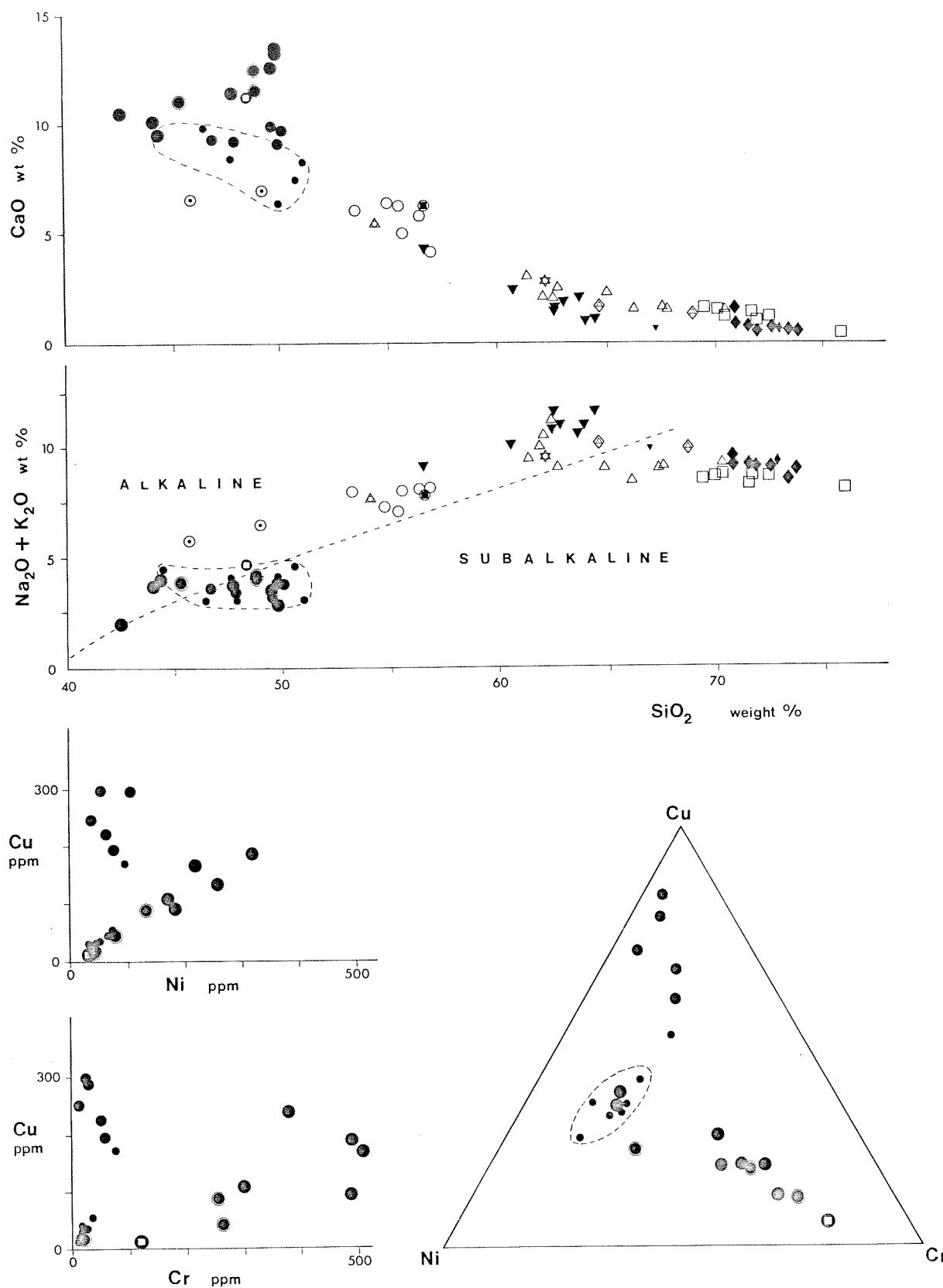


FIGURE 4: Variation diagrams: variation of lime and of alkalis with silica, and variation of Cu, Ni and Cr in mafic phases of the Caribou Lake Gabbro. See legend of Fig. 2 for symbols.

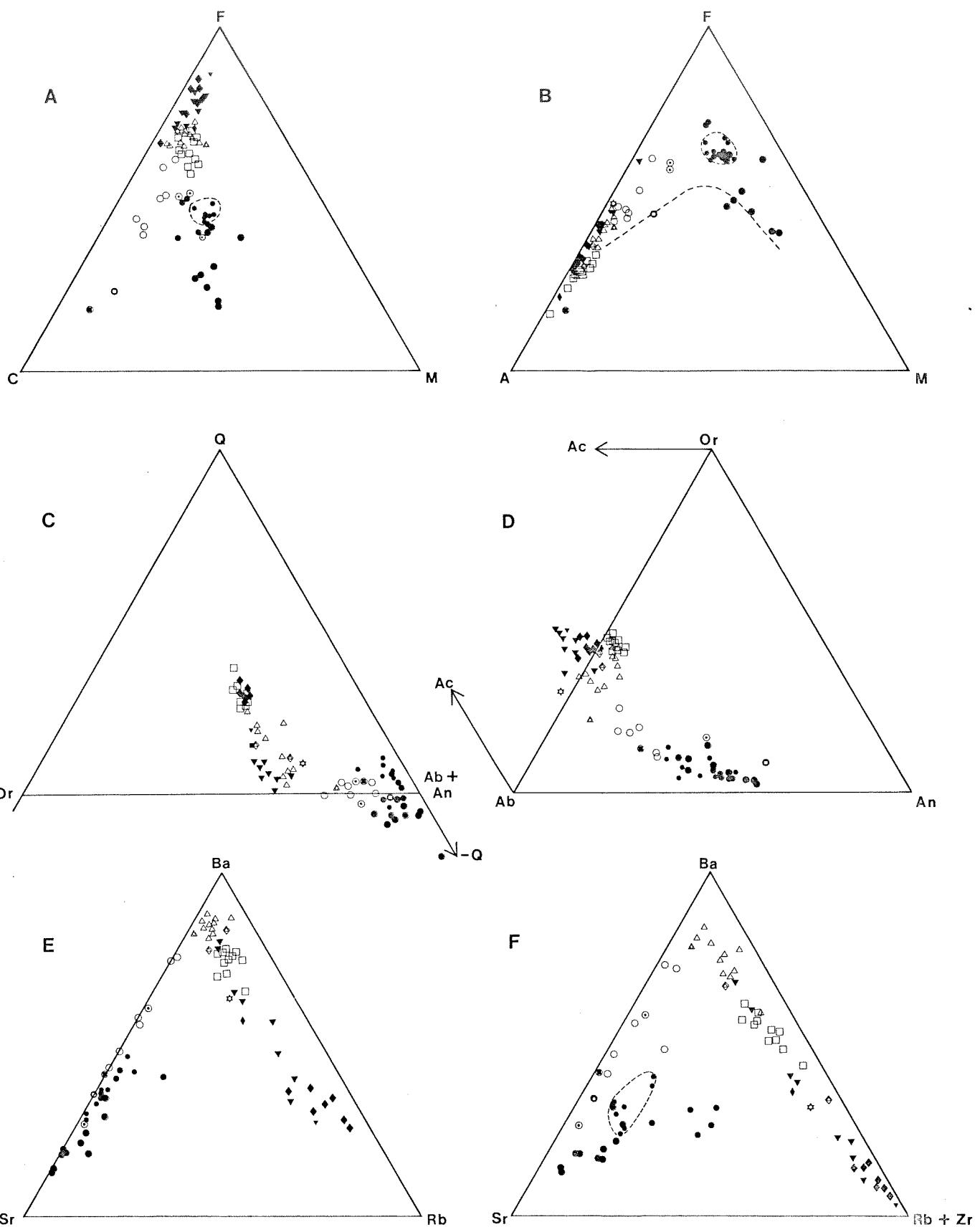


FIGURE 5: Variation diagrams:

- A - CFM = CaO - Total Fe as FeO - MgO;
- B - AFM = Na₂O + K₂O - Total Fe as FeO - MgO;
- C - Normative Q - Or - Ab+An; normative Ne and Fo+Fa are recalculated to Ab and En+Fs respectively, giving -Q;
- D - Normative Ac - Or - Ab - An; rocks with normative acmite are peralkaline;
- E,F - Sr - Ba - Rb; and Sr - Ba - Rb+Zr.
See legend of Fig. 2 for symbols.

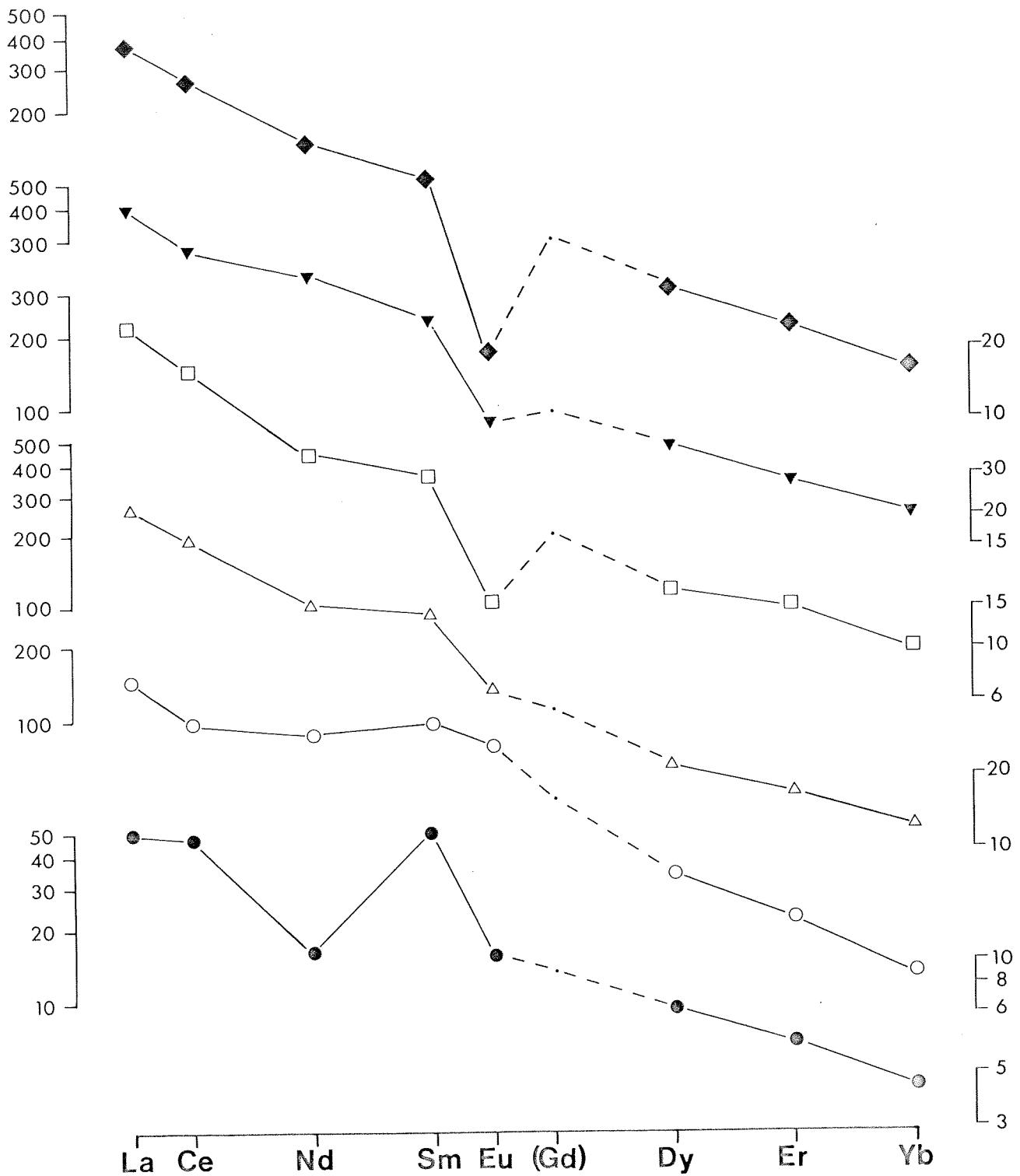
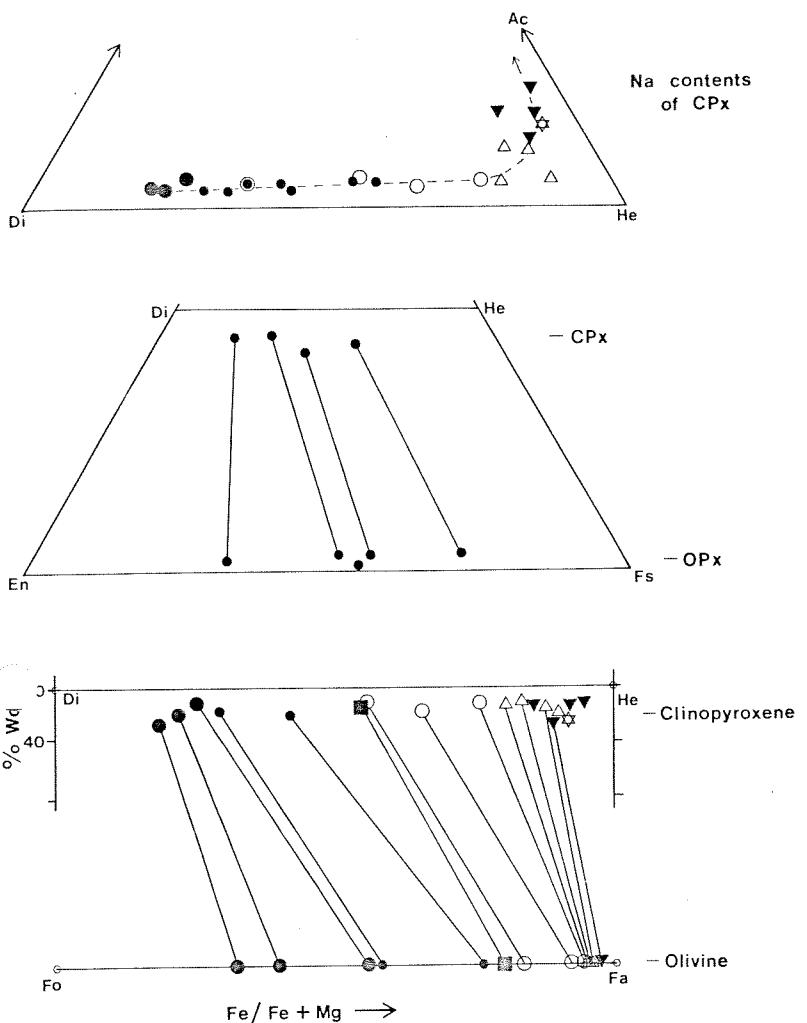


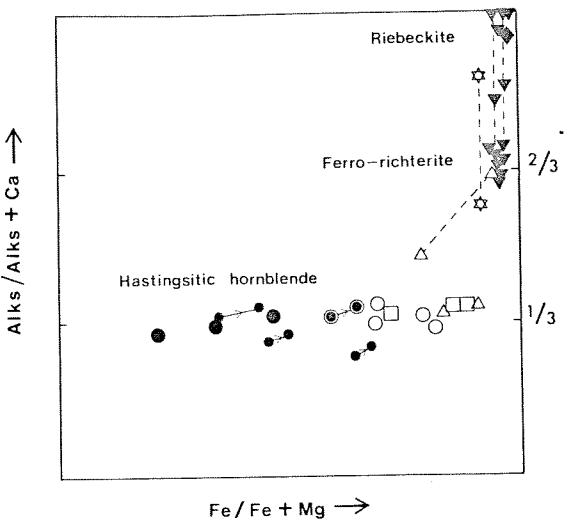
FIGURE 6: Chondrite-normalized rare-earth element spectra for map-units BCa (● - average of 2 analyses), Bcb (○ - average of 2), Bw (△ - average of 3), BH, BM (□ - average of 2), BT (▼ - average of 3) and BG (◆ - average of 3).

Pyroxenes & Olivines



Black square symbol is mafic ferrogabbro.

Amphiboles



Biotites

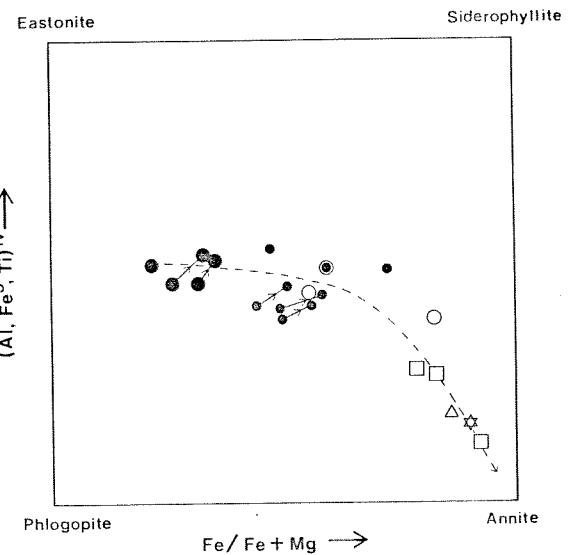


FIGURE 7: Variation in composition of mafic minerals in the Blachford Lake complex. See legend of Fig. 2 for symbols.

TABLE 1

Analyses, trace element contents, and norms of representative samples of the Blachford Lake complex. Analyzed rocks are described in Table 2, and their locations are plotted on Fig. 2.

- * Note - (page 1 of Table) - norm is calculated ignoring CO₂, but the calculated calcite content (4.7%) is also given; thin section shows secondary calcite replacing plagioclase. In other rocks with more than traces of normative calcite, e.g. analyses 3 and 4, calcite is present as discrete, interstitial grains.

TABLE 1 p.1

	1	2	3	4	5	6	7
wt - ANALYSIS							
SiO ₂	45.3	46.2	48.1	47.8	49.7	49.7	51.5
TiO ₂	5.2	4.28	4.15	4.08	3.36	3.37	1.7
Al ₂ O ₃	13.6	13.1	13.9	12.1	14.8	12.9	14.5
Fe ₂ O ₃	3.5	4.14	3.2	4.15	1.03	4.58	1.5
FeO	13.6	12.51	11.9	12.82	12.71	10.21	12.6
MnO	0.28	0.21	0.22	0.20	0.26	0.17	0.24
MgO	3.93	5.18	4.43	4.87	3.85	4.58	5.8
CaO	9.4	9.77	8.45	9.13	6.30	7.28	8.4
Na ₂ O	3.5	2.50	3.3	2.56	3.59	3.21	2.4
K ₂ O	0.88	0.39	0.66	0.34	0.39	1.17	0.48
P ₂ O ₅	1.31	0.28	0.38	0.26	1.33	0.19	0.40
F	0.11	0.03	0.06	0.03	0.07	0.06	0.04
Cl	0.03	0.03	0.04	0.02	0.04	0.04	0.02
S	0.21	0.29	0.17	0.29	0.15	0.13	0.01
CO ₂	0.2	0.3	1.3	0.9	1.8	0.2	0.6
H ₂ O	0.7	0.3	0.8	0.2	0.4	0.4	0.6
O=SFC1	-0.16	-0.16	-0.12	-0.16	-0.11	-0.10	-0.03
Total	101.59	99.35	100.94	99.59	99.65	98.09	100.76
ppm - ELEMENTS							
Li	22	12	16	14	6	33	19
Rb	24	18	16	6	6	50	11
Cs	1.0	1.4	3.4	0.7	0.4	3.0	1.3
Sr	830	625	495	400	375	360	190
Ba	475	250	250	175	215	300	175
Be	4.8	4.3	3.5	4.2	-	-	-
Zr	165	140	88	100	53	82	56
Y	55	-	40	-	-	-	47
Ce	-	260	-	215	-	-	-
La	-	-	-	-	-	-	-
Yb	-	-	-	-	-	-	-
Cu	17	34	19	41	30	53	170
Ni	39	50	31	61	29	70	94
Co	49	78	41	76	28	58	67
Cr	10	22	12	16	16	33	76
V	140	505	435	630	255	540	410
Nb	20	30	20	20	20	20	60
U	0.7	0.6	0.6	1.4	0.5	1.3	0.8
Th	2	1	2	1	-	5	2
NORM -							
C					0.3		
Q		2.2	3.0	5.5	4.0	4.3	4.6
Or	5.4	2.3	4.0	2.1	2.4	7.3	2.9
Ab	32.2	23.5	30.1	24.0	33.8	30.4	21.8
An	19.2	24.4	21.7	21.3	23.5	18.1	27.9
Ne							
Ac							
Di	6.9	10.2	4.0	7.9		8.1	2.9
He	7.2	7.3	3.4	6.5		5.1	3.0
En	3.4	9.9	10.6	10.1	11.2	9.3	15.0
Fs	3.5	7.1	8.9	8.3	15.2	5.8	15.2
Fo	3.2						
Fa	3.4						
Mt	3.8	4.5	3.4	4.5	1.1	5.0	1.6
Hm							
Il	7.4	6.3	5.9	5.9	4.9	4.9	2.4
Py	0.6	0.8	0.4	0.8	0.4	0.3	
Ap	3.3	0.7	1.3	0.7	3.2	0.5	1.2
Fl		0.2		0.2		0.3	
Cc	0.6	0.8	3.4	2.3	4.7*	0.6	1.6
xF							

TABLE 1 p.2

8 9 10 11 12 13 14

SiO ₂	47.1	47.9	49.5	49.1	50.3	48.8	48.2
TiO ₂	2.91	2.72	1.68	1.69	2.29	1.47	1.95
Al ₂ O ₃	15.7	15.4	15.5	14.3	18.6	17.6	14.1
Fe ₂ O ₃	3.57	3.09	2.29	1.84	2.44	3.13	3.20
FeO	14.26	13.38	11.86	13.02	9.35	6.33	7.41
MnO	0.23	0.24	0.19	0.21	0.17	0.11	0.15
MgO	3.27	2.93	4.74	4.91	3.28	5.78	6.52
CaO	9.34	9.19	9.85	8.96	9.71	11.5	12.3
Na ₂ O	2.91	2.86	2.69	2.75	3.26	3.39	2.67
K ₂ O	0.48	0.44	0.39	0.89	0.45	0.72	1.27
P ₂ O ₅	0.31	0.29	0.16	0.18	0.18	0.03	0.03
F	0.02	0.04	0.03	0.03	0.06	0.02	0.15
C1	0.05	0.07	0.05	0.02	0.02	0.09	0.03
S	0.08	0.13	0.10	0.05	0.09	0.08	0.10
CO ₂	0.1	1.2	-	0.1	-	-	-
H ₂ O	0.3	0.3	0.7	0.4	0.3	0.8	0.8
O=SFC1	0.06	0.10	0.07	0.04	0.07	0.07	0.12
Total	100.57	100.08	99.66	98.41	100.43	99.78	98.76

Li	12	6	8	8	12	19	40
Rb	14	12	5	57	5	52	40
Cs	1.0	0.7	0.3	0.2	1.1	2.0	0.3
Sr	255	225	260	170	278	515	430
Ba	185	175	140	160	150	125	195
Be	-	-	-	-	-	-	-
Zr	240	160	105	120	155	49	70
Y	-	-	-	-	-	-	-
Ce	-	-	-	-	-	-	-
La	-	-	-	-	-	-	-
Yb	-	-	-	-	-	-	-
Cu	295	250	195	220	270	83	44
Ni	56	35	74	61	85	130	77
Co	59	40	49	42	45	35	35
Cr	22	12	63	51	25	260	255
V	260	190	265	245	330	340	380
Nb	-	-	-	-	-	10	-
U	0.1	0.3	0.1	0.3	0.4	0.2	0.3
Th	1	2	-	1	3	2	1

C							
Q		3.3	0.8		2.2		
Or	2.9	2.6	2.3	5.5	2.7	4.2	7.7
Ab	27.1	26.5	25.0	25.8	29.0	27.9	23.2
An	29.3	28.9	30.0	25.0	35.8	31.1	23.3
Ne						1.7	0.8
Ac							
Di	4.6	2.3	7.4	6.9	4.6	15.7	22.1
He	8.1	4.3	8.2	8.6	4.9	5.6	8.1
En	6.2	7.2	9.9	8.8	7.0		
Fs	10.8	13.2	10.9	10.9	7.4		
Fo	0.6			1.4		6.2	5.6
Fa	1.1			1.8		2.2	2.1
Mt	3.9	3.4	2.5	2.0	2.3	3.3	3.4
Hm							
Il	4.2	3.9	2.4	2.4	3.3	2.0	2.7
Py	0.2	0.4	0.3	0.1	0.2	0.2	0.3
Ap	0.8	0.7	0.3	0.5	0.6	0.1	0.1
F1	0.1	0.2	0.1	0.2			0.7
Cc	0.2	3.1		0.2			
xF							

TABLE 1 p.3

TABLE 1, p.4

	23	24	25	26	27	28	29	30
SiO ₂	48.5	46.2	49.4	53.6	54.4	55.9	56.6	55.4
TiO ₂	0.99	3.00	2.48	2.22	1.07	1.18	1.09	1.18
Al ₂ O ₃	26.7	23.4	15.2	16.4	20.2	20.9	19.1	17.6
Fe ₂ O ₃	1.68	3.62	3.8	1.70	1.22	1.31	1.40	1.40
FeO	3.42	7.79	9.2	8.4	5.76	5.19	5.32	6.50
MnO	0.07	0.18	0.31	0.27	0.17	9.16	0.15	0.23
MgO	1.40	1.91	2.04	1.14	0.92	0.97	0.58	0.90
CaO	11.2	6.89	7.0	6.12	6.33	6.38	5.77	4.93
Na ₂ O	3.16	3.65	4.6	5.5	5.52	5.43	5.32	5.50
K ₂ O	1.28	2.00	1.67	2.30	1.61	1.51	2.67	2.37
P ₂ O ₅	0.07	0.05	1.13	1.54	0.48	0.50	1.05	0.55
F	0.04	0.03	0.11	0.25	0.08	0.15	0.08	0.10
Cl	0.08	0.13	0.13	0.04	0.09	0.11	0.04	0.11
S	0.03	0.01	0.05	0.16	0.01	0.05	0.10	0.11
CO ₂	0.4	0.3	1.9	0.3	0.4	0.5	0.5	2.1
H ₂ O	1.2	1.7	1.7	0.6	0.8	0.8	0.6	0.7
O=SFC1	-0.05	-0.05	-0.10	-0.19	-0.06	-0.11	-0.10	-0.12
Total	100.17	100.81	100.62	100.35	99.00	100.93	100.27	99.56
Li	29	30	21	7	35	28	8	9
Rb	8	36	22	15	1	9	30	9
Cs	2.9	2.2	2.6	1.5	4.9	4.7	1.7	1.5
Sr	1290	1280	750	980	1080	1240	1210	1090
Ba	710	490	1180	2870	810	1150	1310	1480
Be	-	-	-	-	-	-	-	-
Zr	72	37	73	75	67	49	270	74
Y	-	-	45	41	-	-	-	-
Ce	-	-	-	-	-	-	-	-
La	-	-	-	-	-	-	-	-
Yb	-	-	-	-	-	-	-	-
Cu	11	11	13	9.9	7.1	7.0	14	-
Ni	27	15	24	21	-	-	-	-
Co	14	12	20	14	-	-	-	-
Cr	115	31	7.8	7.5	-	22	-	6.0
V	145	190	26	29	-	21	20	-
Nb	10	-	60	20	20	-	20	-
U	0.1	0.2	0.3	0.5	0.5	0.2	1.2	0.3
Th	-	1	1	1	1	2	2	3
C	0.9	3.9	0.7			1.1	0.7	
Q			2.3			2.8	2.8	1.8
Or	7.6	12.2	10.3	13.7	9.6	8.8	15.7	14.3
Ab	28.5	33.4	42.0	49.2	49.9	48.1	48.3	50.3
An	52.8	31.5	14.5	13.4	25.8	25.2	18.1	16.6
Ne								
Ac								
Di				0.6				
He				1.7				
En	1.4	1.6	5.8	2.9	2.6	2.6	1.6	2.5
Fs	1.0	1.7	8.8	7.9	6.9	5.6	5.9	7.7
Fo	1.9	2.8						
Fa	1.4	3.0						
Mt	1.8	3.8	3.9	1.8	1.3	1.4	1.3	1.5
Hm								
Il	1.3	4.3	3.5	3.1	1.5	1.6	1.5	1.7
Py	0.1		0.1	0.4		0.1	0.2	0.3
Ap	0.2	0.2	3.2	3.3	1.2	1.2	2.6	1.4
F1				1.2	0.1			0.4
Cc	1.0	0.8	4.9	0.8	1.0	1.2	1.2	1.5
xF	0.3	0.3			0.2	0.5		

TABLE 1, p.5

	31	32	33	34	35	36	37	38
wt % ANALYSIS	SiO ₂	57.7	56.3	54.1	62.7	62.6	62.6	62.0
	TiO ₂	1.37	0.47	1.99	0.84	1.15	0.89	1.18
	Al ₂ O ₃	17.6	23.8	13.3	15.4	14.9	15.0	14.8
	Fe ₂ O ₃	1.3	0.48	3.2	1.7	0.9	1.6	1.0
	FeO	7.7	1.38	11.0	5.5	6.8	6.5	7.4
	MnO	0.27	0.04	0.38	0.19	0.21	0.22	0.26
	MgO	0.50	0.48	0.98	0.26	0.39	0.93	0.30
	CaO	4.29	4.93	5.47	2.01	2.11	2.02	3.17
	Na ₂ O	5.7	5.94	5.2	6.3	5.8	5.7	4.6
	K ₂ O	3.48	1.90	2.33	4.79	4.64	4.33	4.00
	P ₂ O ₅	0.74	0.12	0.65	0.18	0.40	0.22	0.25
	F	0.09	0.03	0.13	0.05	0.13	0.11	0.07
	Cl	0.07	0.04	0.05	0.01	0.06	0.06	0.04
	S	0.07	0.06	0.13	0.04	0.06	0.12	-
	CO ₂	0.2	1.2	0.3	0.2	0.2	0.6	0.2
	H ₂ O	0.6	1.1	0.7	0.7	0.6	0.3	0.4
	O=SFCI	-0.09	-0.05	-0.13	-0.04	-0.10	-0.12	-0.04
	Total	101.59	99.48	99.78	100.33	100.85	101.08	100.63
								98.90
ppm TRACE ELEMENTS	Li	4	19	15	10	12	13	14
	Rb	33	-	39	76	81	88	51
	Cs	1.5	-	1.6	0.2	0.7	3.0	1.0
	Sr	730	1080	330	39	160	150	345
	Ba	2320	790	1680	745	990	1040	2150
	Be	-	-	-	-	-	-	-
	Zr	145	29	99	105	195	125	120
	Y	40	-	42	-	42	-	-
	Ce	-	-	-	-	-	-	-
	La	-	-	-	-	-	-	-
	Yb	-	-	-	-	-	-	-
	Cu	29	-	19	8.4	12	11	19
	Ni	17	-	-	-	-	-	-
	Co	10	-	-	-	-	-	-
	Cr	5.8	-	9	-	-	-	9.2
	V	22	-	-	-	-	-	-
	Nb	20	-	20	30	40	60	60
	U	1.3	0.1	1.1	0.7	2.8	1.6	1.7
	Th	3	3	2	1	12	6	8
								11
NORM	C		4.1					0.1
	Q		3.2	1.1	2.3	4.2	5.5	5.7
	Or	20.3	11.0	14.3	28.0	27.3	25.2	23.7
	Ab	50.4	52.7	47.9	55.0	51.6	50.5	47.6
	An	11.9	21.9	6.1		0.8	2.5	5.8
	Ne				0.7			
	Ac							
	Di	0.3		2.1	0.6	0.4	0.2	0.5
	He	2.1		9.4	5.1	3.1	0.7	4.7
	En	1.0	1.3	1.8	0.5	0.9	2.4	0.7
	Fs	6.5	1.1	8.0	3.9	6.9	7.3	7.0
	Fo	0.2						
	Fa	1.5						
	Mt	1.3	0.5	3.4	1.5	0.9	1.7	1.3
	Hm							
	Il	1.9	0.7	2.8	1.2	1.5	1.2	1.7
	Py	0.2	0.2	0.4	0.1	0.2	0.3	
	Ap	2.1	0.3	1.4	0.4	0.9	0.4	0.5
	F1			0.7	0.2	0.7	0.6	0.4
	Cc	0.4	2.9	0.8	0.5	0.6	1.5	0.5
	xF		0.1					1.5

TABLE 1, p.6

	39	40	41	42	43	44	45
ANALYSIS - wt							
SiO ₂	65.6	65.3	67.6	67.5	70.2	69.2	65.1
TiO ₂	0.83	0.72	0.63	0.73	0.55	0.50	0.60
Al ₂ O ₃	14.3	14.9	14.0	13.6	13.2	13.8	15.6
Fe ₂ O ₃	1.3	1.13	0.6	1.4	0.9	1.3	2.53
FeO	5.8	5.48	4.9	4.6	2.8	3.5	3.74
MnO	0.19	0.17	0.12	0.15	0.10	0.10	0.18
MgO	0.40	0.38	0.53	0.38	0.37	0.36	0.33
CaO	2.28	1.45	1.54	1.69	1.44	1.28	1.67
Na ₂ O	4.5	4.82	4.4	4.35	4.2	4.8	5.86
K ₂ O	4.41	3.38	4.73	4.65	4.87	5.05	4.28
P ₂ O ₅	0.14	0.11	0.10	0.10	0.07	0.08	0.08
F	0.10	0.03	0.10	0.08	0.06	0.26	0.11
Cl	0.07	0.04	0.06	0.08	0.05	0.06	0.09
S	0.02	0.04	0.01	0.01	-	-	0.05
CO ₂	0.5	0.3	0.2	0.1	0.5	0.1	0.1
H ₂ O	0.6	0.5	0.6	0.6	0.5	0.5	0.4
O=SFC1	-0.07	-0.04	-0.06	-0.06	-0.04	-0.12	-0.09
Total	101.07	98.71	100.06	99.96	99.77	100.57	100.63
TRACE ELEMENTS - ppm							
Li	8	6	12	10	7	6	7
Rb	86	64	94	87	81	102	130
Cs	2.4	2.0	1.4	2.8	1.2	1.0	4.2
Sr	215	225	185	170	155	82	235
Ba	1650	1470	1570	1600	1160	890	1240
Be	-	-	-	-	-	4.7	-
Zr	135	340	360	255	580	1540	250
Y	-	-	-	43	-	60	-
Ce	-	-	-	-	-	-	-
La	-	-	-	140	-	-	-
Yb	-	-	-	-	-	-	-
Cu	11	16	12	18	36	12	13
Ni	-	-	-	-	-	-	-
Co	-	-	-	-	-	-	-
Cr	-	8.1	-	6.0	-	-	-
V	-	-	-	-	-	-	-
Nb	70	30	60	55	60	170	80
U	2.9	0.9	2.1	2.2	1.6	3.8	2.2
Th	12	1	15	16	9	21	6
NORM							
C		1.9					
Q	14.2	17.3	16.5	17.7	22.3	11.9	9.4
Or	26.8	20.5	28.3	27.9	29.3	31.6	25.1
Ab	40.4	44.3	39.8	39.5	37.9	45.6	52.1
An	5.4	4.4	4.4	4.0	2.8	0.7	3.6
Ne							
Ac							
Di	1.1		0.1	0.3	0.0	0.4	0.4
He	7.3		0.3	1.6	0.1	1.8	1.6
En		1.1	1.4	0.9	1.0	0.8	0.7
Fs		7.1	6.4	4.7	3.0	3.3	2.6
Fo							
Fa							
Mt	1.3	1.2	0.6	1.5	0.9	1.4	2.6
Hm							
Il	1.1	1.0	0.9	1.0	0.8	0.8	0.8
Py	0.1	0.1					0.1
Ap	0.3	0.3	0.2	0.2	0.2	0.2	0.2
Fl	0.8	0.2	0.6	0.5	0.4	1.2	0.7
Cc	1.2	0.8	0.5	0.3	1.2	0.3	0.2
xF							

TABLE 1, p.7

	46	47	48	49	50
SiO ₂	70.5	70.7	71.0	71.8	71.9
TiO ₂	0.46	0.48	0.43	0.37	0.35
Al ₂ O ₃	13.4	13.4	14.6	13.1	13.3
Fe ₂ O ₃	1.3	1.3	1.4	1.7	1.8
FeO	2.7	3.1	2.6	1.9	1.9
MnO	0.08	0.08	0.08	0.08	0.07
MgO	0.34	0.34	0.20	0.39	0.23
CaO	1.31	1.50	1.36	1.34	0.92
Na ₂ O	4.0	4.0	4.0	3.6	3.7
K ₂ O	5.04	4.68	4.76	4.65	4.93
P ₂ O ₅	0.10	0.11	0.09	0.06	0.08
F	0.21	0.15	0.15	0.30	0.24
Cl	0.08	0.09	0.14	0.09	0.13
S	-	-	-	-	-
CO ₂	0.2	0.2	0.2	0.2	0.1
H ₂ O	0.5	0.6	0.6	0.9	0.7
O=SFC1	-0.11	-0.08	-0.09	-0.15	-0.13
Total	100.11	100.65	101.52	100.33	100.22
Li	13	10	10	12	12
Rb	176	147	159	213	165
Cs	3.1	2.6	3.4	4.4	2.8
Sr	95	175	155	95	120
Ba	880	1050	860	895	870
Be	-	-	-	5.8	-
Zr	495	335	315	835	460
Y	-	-	-	65	-
Ce	-	-	-	-	-
La	-	-	-	-	-
Yb	-	-	-	4.7	-
Cu	9.8	-	11	-	8.1
Ni	-	-	-	-	-
Co	-	-	-	-	-
Cr	-	5.1	-	6.7	-
V	-	-	-	-	-
Nb	50	60	50	60	40
U	4.6	1.7	2.4	4.7	3.4
Th	23	21	30	25	24
C	0.4	0.3	1.8	1.4	1.6
Q	23.2	23.7	24.4	28.8	28.0
Or	30.0	28.0	28.1	27.8	29.6
Ab	36.1	36.1	35.7	32.6	33.6
An	2.7	4.1	3.2	2.6	1.2
Ne					
Ac					
Di					
He					
En	1.0	1.0	0.6	1.1	0.6
Fs	2.8	3.3	2.6	1.4	1.3
Fo					
Fa					
Mt	1.4	1.4	1.5	1.8	1.9
Hm					
Il	0.7	0.7	0.6	0.5	0.5
Py					
Ap	0.2	0.2	0.2	0.1	0.2
Fl	1.1	0.9	1.0	1.5	1.4
Cc	0.5	0.5	0.5	0.5	0.3
xF					

TABLE 1, p.8

	51	52	53	54	55	56
% - wt - ANALYSIS						
SiO ₂	70.2	70.3	68.8	72.8	73.0	76.7
TiO ₂	0.64	0.62	0.63	0.34	0.36	0.20
Al ₂ O ₃	13.2	13.6	13.6	13.5	13.0	12.9
Fe ₂ O ₃	0.4	0.7	1.12	1.2	1.6	0.17
FeO	3.7	3.5	3.48	2.0	1.9	1.51
MnO	0.08	0.11	0.08	0.07	0.05	0.03
MgO	0.54	0.57	0.53	0.25	0.24	0.10
CaO	1.39	1.70	1.48	0.87	1.22	0.57
Na ₂ O	3.9	3.8	3.73	4.2	4.0	3.54
K ₂ O	4.73	4.76	4.45	5.29	4.63	4.54
P ₂ O ₅	0.21	0.23	0.16	0.06	0.08	0.05
F	0.15	0.16	0.13	0.08	0.21	0.13
Cl	0.09	0.10	0.08	0.06	0.09	0.06
S	0.01	0.01	-	0.02	-	0.08
CO ₂	0.4	0.1	0.1	0.1	0.1	0.1
H ₂ O	0.7	0.8	0.5	0.5	0.4	0.3
O=SFC1	-0.09	-0.09	-0.07	-0.05	-0.11	-0.11
Total	100.25	100.97	98.80	101.29	100.77	100.87
TRACE ELEMENT - ppm						
Li	22	26	29	6	14	11
Rb	186	147	155	124	167	174
Cs	4.0	1.8	3.6	2.1	-	1.5
Sr	160	145	185	110	130	92
Ba	830	960	770	800	855	490
Be	-	-	-	-	-	-
Zr	310	615	240	325	610	205
Y	-	48	-	-	-	-
Ce	-	-	-	-	-	-
La	-	-	-	-	-	-
Yb	-	-	-	-	-	-
Cu	-	14	7.1	7.2	10	-
Ni	-	-	-	-	-	-
Co	-	-	-	-	-	-
Cr	-	-	-	-	-	-
V	-	-	-	-	-	-
Nb	40	30	30	50	50	30
U	2.4	3.1	2.2	4.5	2.3	12.8
Th	27	23	18	21	21	19
NORM						
C	1.1	0.5	1.1	0.0	0.3	2.0
Q	23.7	23.1	24.0	23.8	27.5	34.7
Or	28.4	28.2	27.0	31.2	27.5	26.8
Ab	35.4	34.4	34.3	37.5	35.9	32.1
An	1.7	4.8	4.8	2.4	3.0	0.8
Ne						
Ac						
Di						
He						
En	1.5	1.6	1.5	0.7	0.7	0.3
Fs	4.7	4.2	3.9	1.9	1.4	1.4
Fo						
Fa						
Mt	0.4	0.8	1.2	1.2	1.7	0.3
Hm						
Il	0.9	0.9	0.9	0.5	0.5	0.3
Py	0.1	0.1		0.1		0.2
Ap	0.5	0.5	0.4	0.1	0.2	0.2
Fl	0.8	0.9	0.7	0.5	1.1	0.7
Cc	1.0	0.3	0.2	0.3	0.3	0.1
xF						

TABLE 1, p.9

	57	58	59	60	61
SiO ₂	56.4	60.5	62.9	63.7	62.5
TiO ₂	1.23	0.55	0.41	0.40	0.51
Al ₂ O ₃	11.4	14.9	13.9	14.3	14.1
Fe ₂ O ₃	4.0	3.19	2.5	2.66	2.9
FeO	11.3	6.26	6.6	5.39	5.7
MnO	0.40	0.25	0.28	0.20	0.25
MgO	0.40	0.39	0.16	0.22	0.39
CaO	4.35	2.35	1.36	2.16	1.55
Na ₂ O	5.1	5.25	6.5	6.30	5.8
K ₂ O	3.92	4.73	5.01	4.17	4.89
P ₂ O ₅	0.26	0.08	0.09	0.09	0.10
F	0.14	0.13	0.28	0.23	0.29
Cl	0.05	0.04	0.07	0.05	0.09
S	0.05	0.02	-	0.01	-
CO ₂	-	0.65	-	-	0.02
H ₂ O	0.7	0.55	0.6	0.3	0.8
O=SFCl	-0.10	-0.07	-0.13	-0.11	-0.14
Total	99.60	99.77	100.53	100.07	99.93
Li	15	10	30	13	17
Rb	83	99	130	107	130
Cs	3.9	2.9	3.1	1.8	2.3
Sr	98	130	40	69	34
Ba	615	750	155	275	215
Be	-	-	7.3	4.6	5.7
Zr	225	170	330	245	595
Y	78	40	79	55	83
Ce	-	-	275	-	-
La	145	-	190	125	150
Yb	-	-	6.5	4.0	8.6
Cu	17	8.9	11	12	18
Ni	24	-	20	-	-
Co	21	-	13	-	15
Cr	13	-	6.9	-	-
V	-	-	-	-	20
Nb	60	60	95	90	115
U	0.7	1.0	1.3	1.6	2.6
Th	5	7	11	8	10
C					
Q	0.5	3.8	3.9	4.8	5.2
Or	23.8	28.3	29.5	24.5	29.0
Ab	40.5	49.2	45.7	52.9	48.0
An		2.1			
Ne					
Ac	5.5		7.9	3.6	3.4
Di	1.1	0.4	0.1	0.5	0.4
He	14.3	2.5	2.8	6.2	2.6
En	0.6	1.0	0.4	0.4	0.9
Fs	8.2	6.2	8.6	4.1	6.1
Fo					
Fa					
Mt	2.2	3.1		1.3	1.7
Hm					
Il	1.7	0.8	0.6	0.6	0.7
Py	0.2	0.1			
Ap	0.6	0.3	0.2	0.3	0.2
Fl	0.8	0.5	1.4	1.0	1.3
Cc		1.7			0.5
xF					

TABLE 1, p.10

	62	63	64	65	66
wt - ANALYSIS					
SiO ₂	63.4	63.1	64.1	63.2	66.1
TiO ₂	0.37	0.48	0.46	0.94	0.30
Al ₂ O ₃	13.6	13.5	13.9	13.4	11.9
Fe ₂ O ₃	2.5	4.2	3.0	2.9	3.72
FeO	4.5	4.3	5.0	6.9	5.32
MnO	0.17	0.21	0.17	0.29	0.21
MgO	0.21	0.15	0.34	0.31	0.23
CaO	1.19	1.91	1.04	2.79	0.74
Na ₂ O	6.5	6.1	5.6	6.2	5.26
K ₂ O	4.99	4.85	5.31	3.38	4.46
P ₂ O ₅	0.06	0.08	0.09	0.18	-
F	0.32	1.40	0.28	0.05	0.28
Cl	0.07	0.07	0.06	0.06	0.06
S	-	-	0.01	0.06	-
CO ₂	0.2	-	0.3	0.2	0.1
H ₂ O	0.6	0.6	0.7	0.8	0.1
O=SFC1	-0.15	-0.61	-0.14	-0.06	-0.13
Total	98.53	100.34	100.22	101.60	98.65
TRACE ELEMENTS - ppm					
Li	28	28	26	11	86
Rb	138	129	142	86	168
Cs	2.8	0.2	2.7	1.7	3.6
Sr	34	49	98	68	38
Ba	115	84	445	270	78
Be	9.3	5.3	5.5	-	14
Zr	370	505	445	405	1740
Y	66	68	68	56	245
Ce	-	-	240	-	265
La	135	120	170	-	160
Yb	8.5	5.1	6.3	-	11
Cu	18	11	9.7	12	-
Ni	-	-	-	23	-
Co	-	-	-	-	-
Cr	-	-	-	6.8	5.3
V	26	-	20	-	-
Nb	110	120	85	90	290
U	1.9	3.7	2.0	2.7	5.4
Th	12	16	12	8	28
NORM					
C					
Q	6.4	7.3	7.7	7.0	14.9
Or	29.6	27.8	31.3	19.9	27.0
Ab	45.0	43.8	44.4	52.9	39.1
An					
Ne					
Ac	8.4	7.6	4.7	2.0	7.3
Di	0.1		0.1	0.8	0.1
He	1.2		0.5	7.8	0.6
En	0.5	0.4	0.9	0.5	0.7
Fs	6.1	5.2	6.2	4.3	7.2
Fo					
Fa					
Mt		1.5	1.4	2.3	1.2
Hm					
Il	0.6	0.6	0.7	1.3	0.5
Py				0.2	
Ap	0.2	0.2	0.2	0.4	
Fl	1.4	5.2	1.2	0.3	1.4
Cc	0.6		0.8	0.6	0.2
xF		0.5			

TABLE 1, p. 11

ANALYSIS - wt%

	67	68	69	70	71	72	73	74
SiO ₂	71.2	71.2	72.7	70.6	73.4	72.2	71.6	72.7
TiO ₂	0.35	0.47	0.31	0.61	0.04	0.62	0.56	0.36
Al ₂ O ₃	12.8	12.0	11.5	11.4	11.9	11.3	12.7	13.4
Fe ₂ O ₃	2.1	2.6	1.4	3.15	2.12	2.87	2.52	0.86
FeO	2.5	1.9	3.3	2.38	1.82	1.57	1.67	1.84
MnO	0.11	0.11	0.09	0.12	0.09	0.08	0.09	0.09
MgO	0.17	0.09	0.04	0.06	0.09	0.17	0.08	0.13
CaO	0.75	1.63	0.72	0.61	0.50	0.62	0.89	0.61
Na ₂ O	5.2	4.5	4.6	4.29	4.41	3.87	4.32	4.29
K ₂ O	4.41	4.50	4.43	4.57	4.43	4.40	4.81	4.99
P ₂ O ₅	0.05	0.02	0.03	-	-	-	0.02	0.09
F	0.38	1.70	1.10	0.50	0.45	0.45	0.90	0.22
Cl	0.05	0.05	0.05	0.05	0.05	0.06	0.05	0.02
S	0.01	-	-	0.02	-	-	-	0.01
CO ₂	0.01	-	-	-	-	-	-	0.01
H ₂ O	0.5	0.5	0.3	0.2	0.4	0.4	0.2	0.2
O=SFC1	-0.18	-0.73	-0.47	-0.23	-0.20	-0.20	-0.39	-0.12
Total	100.50	100.54	100.10	98.33	99.50	98.41	100.02	99.75

TRACE ELEMENTS - ppm

Li	58	24	54	37	30	33	38	20
Rb	121	120	142	170	116	113	153	150
Cs	0.9	1.4	3.1	0.7	0.8	0.8	2.4	0.8
Sr	-	39	12	34	16	-	26	83
Ba	45	91	60	69	65	64	110	320
Be	4.9	4.6	5.7	9.4	-	-	4.6	-
Zr	355	370	710	705	245	225	625	310
Y	58	97	80	71	53	-	91	-
Ce	-	-	-	-	-	-	-	-
La	165	115	105	-	-	-	155	-
Yb	-	5.4	6.1	-	-	-	4.2	-
Cu	7.7	9.2	-	-	-	-	18	-
Ni	-	-	-	-	-	-	-	-
Co	-	-	-	-	-	-	-	-
Cr	-	-	-	-	-	-	-	-
V	-	-	-	-	-	-	-	-
Nb	140	110	130	110	40	90	120	60
U	3.4	2.4	3.9	3.6	1.3	1.0	3.4	2.6
Th	18	11	19	18	4	6	17	8

NORM

C						0.2	0.2	0.7
Q	21.1	24.8	25.2	26.5	28.2	30.9	25.0	24.9
Or	26.0	25.9	25.8	27.6	26.4	26.9	28.2	29.6
Ab	43.4	37.6	36.0	36.1	39.0	35.7	39.6	39.1
An							0.6	
Ne								
Ac	2.4	1.3	3.8	2.7	0.7			
Di								
He								
En	0.5	0.2	0.1	0.2	0.2	0.5	0.3	0.5
Fs	2.8	0.9	4.7	1.5	1.5			2.0
Fo								
Fa								
Mt	1.2	2.2	0.1	2.4	2.0	2.6	2.3	0.8
Hm						0.4	0.3	
Il	0.5	0.6	0.4	0.9	0.1	0.9	0.8	0.5
Py				0.1				
Ap	0.2		0.1					
Fl	1.6	4.7	2.1	1.9	1.5	1.9	2.5	1.0
Cc	0.2							0.1
xF	0.1	1.7	1.9	0.3	0.4	0.2	0.8	

TABLE 2
ROCK SAMPLE DATA

Analysis No.	Sample No.	Laboratory Batch/No.	Map Unit	Sample comments
1	71DMC263△2	81-77/03	BCa	Fine grained gabbro with large biotites, a few metres from the west contact S of Caribou Lake.
2	77DM84b	57-78/77	BCa	Very fine grained gabbro, 1m from contact, NE bay of Camp Lake.
3	77DM73c	81-77/01 81-77/04	BCa	Fine grained gabbro, 2½m from contact, W end of Whiteman Lake.
4	77DM61c-1	57-78/67	BCa	Chilled gabbro at contact with granite (AM), SW Caribou Lake.
5	77DM73b-1	57-78/71	BCa	Very fine grained gabbro, 65cm from contact, W end of Whiteman Lake.
6	77DM71a	57-78/70	BCa	Fine grained gabbro, rich in biotite, 2m from contact at N end of Caribou Lake.
7	71DM340△1a	81-77/02	BCa	Chilled gabbro at contact with metasedimentary hornfels (YB), just N of E end of Camp Lake.
8	77DM84d	57-78/78	BCa	Gabbro, approx. 70m E of contact; coarser equivalent of analysis 7.
9	77DM90e	57-78/81	BCa	Gabbro, east end of outcrop near S shore, E end of Camp Lake.
10	77DM85a	57-78/79	BCa	Noritic gabbro (type specimen), promontory at campsite, Camp Lake.
11	77DM86	57-78/80	BCa	Medium grained gabbro, close to and 'overlying' granite (AM), S of Camp Lake.
12	71DM334△2	81-77/07 57-78/61	BCa	Leucocratic phase of noritic gabbro; contains two pyroxenes intergrown. From outcrop near road north of Camp Lake.
13	77DM93	57-78/82	BCa	Coarse pegmatitic gabbro, interlayered with finer, rusty gabbro. Island in Caribou Lake.
14	77DM76a	57-78/73	BCa	Pegmatitic phase of analysis 15, approx. 8m from contact with metasedimentary hornfels.
15	77DM76b	57-78/74	BCa	Uniform, medium grained olivine gabbro, further from contact than analysis 14; Whiteman Lake.
16	75FY03-04	81-77/06	BCa	Fresh, grey olivine gabbro; core from paleomagnetism drillhole, small island in Caribou Lake.

TABLE 2, continued

Analysis No.	Sample No.	Laboratory Batch/No.	Map Unit	Sample Comments
17	77DM97	81-77/05	BCa	Fresh, fine grained olivine gabbro, not iron-stained; type specimen. Caribou Lake.
18	77DM74	57-78/72	BCa	Olivine gabbro, S shore of Whiteman Lake.
19	77DM65	57-78/68	BCa	Fine grained mafic gabbro, faintly layered, relatively rich in pyrite; 750m east of west contact, Caribou Lake.
20	77DM113a	57-78/84	BCa	Hornblende-bearing olivine gabbro; matrix to anorthosite blocks; transitional to noritic gabbro type. Between Caribou and Camp Lakes.
21	71DM315△2	57-78/54	BCa	Similar to analysis 20; SW of S end of Caribou Lake.
22	77DM83b	57-78/76	BCa	Pegmatitic gabbro from zone separating olivine gabbro and leucodiorite (BCb), east side of Caribou Lake.
23	71DM336	57-78-57	a	Anorthosite from large block in transitional gabbro-diorite; S of Caribou Lake.
24	77DM99	57-78/83	BCb	Transitional leucogabbro adjacent to mafic ferrogabbro; S of Caribou Lake.
25	77DM144	81-77/09	BCb	Transitional hornblende-bearing gabbro-diorite.
26	75FY07-02	81-77/08	BCb	Fayalite-hedenbergite leuco-ferrodiorite; core from paleo-magnetism drillhole, east of S end of Caribou Lake.
27	71DM320△1	57-78/55	BCb	Light grey-green leuco-ferro-diorite; type specimen.
28	71DM321△2	57-78/56	BCb	Light grey leuco-ferrodiorite.
29	71DM324	81-77/10 57-78/62	BCb	Greenish grey, fresh fayalite-hedenbergite leuco-ferrodiorite.
30	71DM357△2	57-78/60	BCb	Leucodiorite from close to contact of mass included in Hearne Channel Granite (BH).
31	71DM362a	81-77/11	BCb	Leucodiorite from raft incorporated in Grace Lake Granite (BG); shore of Hearne Channel.

TABLE 2, continued

Analysis No.	Sample No.	Laboratory Batch/No.	Map Unit	Sample Comments
32	71DM345Δlb	57-78/58	a	Sodic anorthosite from block included in leuco-ferrodiorite.
33	77DM132a	81-77/12	BCb	Leuco-ferrodiorite from raft in in Whiteman Lake Quartz Syenite (BW) and cut by Mad Lake Granite (BM), N shore of Mad Lake.
34	71DM372	81-77/14	BW	Green fayalite-hedenbergite syenite; type specimen of the syenitic phase.
35	71DM368a	81-77/16	BW	Green fayalite-hedenbergite syenite.
36	77DM130b	81-77/13	BW	Green-buff hedenbergite syenite.
37	71DM346a	81-77/17	BW	Hedenbergite-hornblende syenite from dyke extending south from main body of pluton.
38	71DM347Δ1	81-77/15	BW	Quartz syenite; close to south contact with leuco-ferrodiorite, southwest of Mad Lake.
39	71DM326Δ1	81-77/18	BW	Quartz syenite from dyke in leuco-ferrodiorite southeast of Caribou Lake.
40	77DM79	57-78/75	BW	Greenish quartz syenite matrix of xenolithic phase, south of Whiteman Lake.
41	77DM81	81-77/20	BW	Hornblende granite, type specimen of granitic phase; south shore of Whiteman Lake.
42	77DM80a	81-77/19 81-77/21	BW	Hornblende granite, south shore of Whiteman Lake.
43	77DM94	81-77/22	BW	Hornblende granite from ring dyke, island in Caribou Lake.
44	71DM19b	81-77/23	BW	Quartz syenite in contact with Grace Lake Granite (BG), SE of Whiteman Lake.
45	71DM2Δ1	81-78/31 57-78/51	BW	Quartz syenite from raft in Grace Lake Granite (BG), SE of south bay of Blachford Lake.
46	71DM330Δ1	81-77/25	BH	Biotite-hornblende granite
47	71DM355	81-77/27	BH	Biotite-hornblende granite; type specimen of the Hearne Channel Granite.

TABLE 2, continued

Analysis No.	Sample No.	Laboratory Batch/No.	Map Unit	Sample Comments
48	71DM333Δ2	81-77/26	BH	Biotite-hornblende granite
49	71DM363b	81-77/28	BH	Close to contact with Grace Lake Granite (BG), near shore of Hearne Channel.
50	71DMC251	81-77/29	BH	Transitional to Mad Lake type of granite.
51	77DM135	81-77/35	BM	Subporphyritic hornblende-biotite granite with salt-and-pepper texture; type specimen of Mad Lake Granite.
52	71DMR16Δ5	81-77/34	BM	Fine grained equigranular phase of Mad Lake Granite.
53	71DM348	57-78/59	BM	Porphyritic phase, SW bay of Mad Lake.
54	71DM318Δ2	81-77/32	BM	Fine grained pink granite dyke in leuco-ferrodiorite (BCb).
55	71DM31Δ1	81-77/24	BM	Granite matrix around included blocks of Whiteman Lake Quartz Syenite, S shore of Mad Lake.
56	71DM21a	81-77/33 57-78/88	BM	Contact phase against xenolithic Whiteman Lake Quartz Syenite (BW), north of Mad Lake.
57	71DMR212f	81-77/45	BTa	'Rim rock'; rusty weathering mafic syenite from ridge NE of Thor Lake.
58	71DM3c	81-77/41 57-78/86	BTa	'Rim rock', as above; contains fayalite and hedenbergite.
59	71DMC31Δ7	81-77/46	BTa	Enigmatite-bearing 'rim rock' syenite, adjacent to leuco-syenite, BTb.
60	71DMR212e	81-77/44 57-78/87	BTb	Ferroricterite leucosyenite, adjacent to mafic syenite, BTa.
61	71DMR205Δ4	81-77/43	BTb	Leucosyenite, east side of Thor Lake Syenite.
62	77DM171	81-77/47	BTb	Leucosyenite, type specimen, N side of Thor Lake Syenite.
63	77DM187	81-77/49	BTc	Poikilitic ferroricterite syenite, central part of Thor Lake Syenite.
64	77DM175	81-77/42 81-77/48	BTd	Porphyritic (K-feldspar) syenite, N of Thor Lake.

TABLE 2, continued

Analysis No.	Sample No.	Laboratory Batch/No.	Map Unit	Sample Comments
65	77DM104	81-77/30	BT?	Hedenbergite-ferrorichterite syenite from dike in gabbro (BCa), S of Caribou Lake.
66	71DM3△2	57-78/52	BT	Fine grained quartz syenite from dyke cutting leucosyenite (BTb), just south of 'rim rock' NE of Thor Lake.
67	JHI005b	81-77/39	BG	Riebeckite granite, north shore of Blachford Lake; type specimen.
68	71DM37△7	81-77/37	BG	Riebeckite granite, just east of 'rim rock' (BTa), east of Thor Lake.
69	77DM132c	81-77/38	BG	Enigmatite-bearing riebeckite granite, particularly fresh, greenish buff colour; from large ice-transported slab at Mad Lake.
70	71DMR214g	57-78/66	BG	Granite below 'rim rock' (BTa), NE of Thor Lake.
71	71DM38b	57-78/53	BG	Granite east of Thor Lake Syenite.
72	71DMR212c	57-78/65	BG	Granite in contact with 'rim rock' syenite (BTa), NE of Thor Lake.
73	71DM23a	81-77/36 57-78/90	BG	Granite, SW Blachford Lake, S shore; type specimen of part altered, pink type.
74	71DM23b	81-77/40 57-78/91	BG	Fine-grained granite dyke cutting granite of analysis 73.