

Table 5.1a: Major and trace element composition of samples from the metagabbro unit

Sample	O/C-373a	O/C-373b	O/C-374b	MRH-23	MRH-78/1	MRH-78/2
Rock type	def. dike	gabbro	def. dike	gabbro	def. enclave	gabbro
SiO ₂	42.79	44.01	43.14	44.00	43.31	44.14
TiO ₂	0.86	0.82	0.64	0.75	0.87	0.77
Al ₂ O ₃	19.00	18.87	21.58	18.74	19.47	20.30
Fe ₂ O ₃	14.08	12.50	12.78	12.39	13.42	11.28
MnO	0.25	0.25	0.22	0.30	0.24	0.22
MgO	6.61	6.65	5.58	7.39	6.35	5.98
CaO	12.21	11.95	11.73	12.43	11.85	12.47
Na ₂ O	1.50	1.73	1.62	1.34	1.72	1.71
K ₂ O	0.16	0.15	0.23	0.15	0.27	0.23
P ₂ O ₅	0.13	0.16	0.08	0.09	0.14	0.23
BaO	20	22	82	46	41	36
Cr ₂ O ₃	48	67	0	138	40	61
LOI	2.51	3.03	2.69	3.08	2.26	2.91
Total	100.15	100.16	100.32	100.73	99.95	100.29
Ni	20	30	4	46	21	22
Sc xrf/icp	48/n.d.	42/n.d.	29/25	51/n.d.	49/n.d.	1
V xrf/icp	349/373	326/333	221/247	328/343	331/372	270/285

Major elements (in wt%) and Ba, Cr, Ni, Sc, and V (in ppm) were analyzed by standard XRF technique on pressed powder pellets at McGill University, Montreal. Additionally, Sc was analyzed by ICP-MS at Washington State University and V at Union College

Table 5.1a cont.

Sample	O/C-373a	O/C-373b		O/C-374b		MRH-23	MRH-78/1	MRH-78/2	
	UC	UC	WSU	UC	WSU	UC	UC	UC	WSU
Cr	29	46	n.d.	9	n.d.	75	27	37	n.d.
Rb	1.8	1.6	1.9	2.5	2.8	1.5	3.6	3.1	2.8
Sr	448	454	449	436	422	386	476	510	500
Y	24	22	24	11	12	19	20	20	21
Zr	23	22	21	14	n.d.	18	24	19	n.d.
Nb	0.37	0.40	0.40	0.22	0.25	0.28	0.45	0.42	0.42
Cs	0.33	0.32	0.33	0.41	0.39	0.20	0.76	0.41	0.39
Ba	31	29	34	43	41	29	47	55	58
La	2.55	3.00	3.26	1.61	1.81	1.92	3.57	3.80	3.99
Ce	9.98	11.1	10.8	5.38	5.57	7.63	11.9	12.3	11.6
Pr	2.15	2.27	2.16	1.04	1.03	1.63	2.24	2.30	2.13
Nd	13.4	13.5	12.8	6.00	5.70	9.75	12.4	12.9	11.5
Sm	4.10	4.08	4.27	1.77	1.89	2.96	3.50	3.67	3.74
Eu	1.31	1.29	1.40	0.66	0.72	1.11	1.20	1.18	1.23
Gd	4.69	4.50	4.52	1.88	2.03	3.11	3.74	4.07	3.95
Tb	0.74	0.68	0.74	0.30	0.32	0.49	0.58	0.62	0.62
Dy	4.54	4.15	4.60	1.89	2.12	3.14	3.53	3.80	3.91
Ho	0.88	0.81	0.94	0.39	0.43	0.66	0.70	0.73	0.78
Er	2.64	2.43	2.57	1.14	1.22	1.95	2.05	2.20	2.21
Tm	0.42	0.38	0.37	0.18	0.18	0.30	0.32	0.34	0.33
Yb	2.44	2.30	2.35	1.14	1.16	1.90	1.96	2.05	1.98
Lu	0.35	0.34	0.37	0.18	0.19	0.29	0.28	0.30	0.32
Hf	0.89	0.84	1.00	0.55	0.76	0.77	0.90	0.73	0.90
Ta	0.013	0.014	0.02	0.017	0.02	0.02	0.01	0.02	0.03
Pb	0.50	0.46	0.64	0.51	0.76	0.184	0.514	0.567	0.69
Th	0.02	0.04	0.14	0.02	0.06	0.02	0.04	0.06	0.10
U	0.02	0.02	0.04	0.02	0.1	0.01	0.02	0.03	0.1

UC... Trace element analysis by ICP-MS at Union College

WSU... Trace element analysis by ICP-MS at Washington State University

All trace elements are given in ppm.

n.d. ... not determined

<d.l. ... below detection

Table 5.1b: Major and trace element composition of hornblende quartz diorite in the metagabbro unit

Sample	GH-97-14	Sample	GH-97-14
Rock type	diorite		WSU
SiO ₂	53.95	Cr	n.d.
TiO ₂	0.68	Rb	1.8
Al ₂ O ₃	16.63	Sr	260
Fe ₂ O ₃	9.42	Y	25
MnO	0.17	Zr	48
MgO	5.13	Nb	0.58
CaO	9.43	Cs	0.13
Na ₂ O	2.46	Ba	76
K ₂ O	0.32	La	3.71
P ₂ O ₅	0.09	Ce	10.0
BaO	92	Pr	1.67
Cr ₂ O ₃	87	Nd	8.78
LOI	1.74	Sm	3.06
Total	100.08	Eu	0.91
		Gd	3.72
Ni	24	Tb	0.65
Sc xrf/icp	39/39.5	Dy	4.11
V	230	Ho	0.91
		Er	2.56
		Tm	0.39
		Yb	2.50
		Lu	0.39
		Hf	1.62
		Ta	0.03
		Pb	0.89
		Th	0.19
		U	0.07

Major elements (in wt%) and Ba, Cr, Ni, Sc, and V (in ppm) were analyzed by standard XRF technique on pressed powder pellets at McGill University, Montreal. Additionally, Sc was analyzed by ICP-MS at Washington State University WSU... Trace element analysis by ICP-MS at Washington State University All trace elements are given in ppm.

n.d. ... not determined

<d.l. ... below detection

Table 5.2: Major and trace element composition of samples from the metatonalite unit

Sample	GH-97-2b	GH-97-3	O/C-11 S16a	O/C-367	O/C-368B	O/C-368G	O/C-11 S-16b	O/C-368f
	trondhj.	trondhj.	tonalite	tonalite	tonalite	trondhj.	def. dike	enclave
SiO ₂	73.64	71.58	65.78	67.39	65.54	70.80	55.79	59.78
TiO ₂	0.38	0.64	0.76	0.65	0.57	0.59	0.76	0.59
Al ₂ O ₃	12.93	13.99	13.10	13.66	14.33	13.82	15.50	14.42
Fe ₂ O ₃	2.15	1.49	4.95	5.70	6.04	2.10	8.34	9.97
MnO	0.02	0.03	0.08	0.08	0.03	0.03	0.17	0.04
MgO	0.77	1.07	1.83	1.01	1.86	1.17	4.88	3.20
CaO	4.79	4.29	7.59	4.97	5.60	5.26	7.97	6.64
Na ₂ O	3.87	5.79	3.00	4.22	4.28	4.90	3.74	4.05
K ₂ O	0.18	0.16	0.24	0.18	0.31	0.17	0.08	0.20
P ₂ O ₅	0.10	0.27	0.29	0.19	0.15	0.17	0.25	0.09
BaO	59	117	84	89	67	67	118	160
Cr ₂ O ₃	25	35	33	26	122	33	18	60
LOI	1.26	0.85	1.92	1.57	1.40	0.95	2.86	1.57
Total	100.10	100.18	99.57	99.64	100.15	99.99	100.37	100.59
Ni	<d/l	<d/l	9	<d/l	193	12	15	<d/l
Sc xrf/icp	16/13	15/17	17/22	23/18	16/19	17/14	11/n.d.	31/33
V xrf/icp	33/n.d.	44/n.d.	107/n.d.	33/n.d.	113/n.d.	52/n.d.	181/178	191/210

Major elements (in wt%) and Ba, Cr, Ni, Sc, and V (in ppm) were analyzed by standard XRF technique on pressed powder pellets at McGill University, Montreal. Additionally, Sc was analyzed by ICP-MS at Washington State University and V at Union College

Table 5.2 cont.

Sample	GH-97-2b	GH-97-3	O/C-11 S16a	O/C-367	O/C-368B	O/C-368G	O/C-11 S-16b	O/C-368f	
	WSU	WSU	WSU	WSU	WSU	WSU	UC	UC	WSU
Cr	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	9	32	n.d.
Rb	2.1	1.7	2.0	1.4	2.7	1.1	0.4	1.1	1.3
Sr	266	222	316	303	322	259	380	286	276
Y	27	22	26	30	18	22	24	26	27
Zr	109	70	85	97	74	78	62	39	n.d.
Nb	2.38	2.22	2.04	2.01	1.33	1.60	2.34	1.69	1.42
Cs	0.17	0.08	0.06	0.05	0.17	0.06	0.04	0.05	0.05
Ba	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	46	86	85
La	4.89	6.87	13.25	11.83	9.05	7.16	17.1	8.99	9.18
Ce	9.57	17.1	27.4	23.8	17.8	16.3	37.2	24.0	22.9
Pr	1.35	2.40	3.55	3.15	2.16	2.21	4.76	3.43	3.18
Nd	6.99	11.4	16.3	14.6	9.59	10.7	19.9	15.5	14.3
Sm	2.67	3.36	4.41	4.31	2.59	3.17	4.46	3.90	4.16
Eu	1.07	1.17	1.23	1.37	0.98	1.09	1.07	0.94	1.02
Gd	3.44	3.64	4.55	4.83	2.90	3.60	4.48	4.22	4.39
Tb	0.63	0.58	0.74	0.83	0.48	0.59	0.68	0.68	0.77
Dy	4.20	3.65	4.69	5.50	3.12	3.87	4.10	4.48	4.88
Ho	0.93	0.78	0.98	1.17	0.66	0.83	0.82	0.94	1.02
Er	2.58	2.21	2.60	3.30	1.86	2.30	2.35	2.78	2.91
Tm	0.40	0.32	0.38	0.49	0.27	0.35	0.35	0.43	0.44
Yb	2.49	2.06	2.38	3.10	1.79	2.15	2.29	2.75	2.84
Lu	0.40	0.32	0.39	0.49	0.30	0.34	0.35	0.42	0.46
Hf	3.22	2.13	2.57	3.05	2.40	2.60	1.88	1.37	1.90
Ta	0.16	0.12	0.13	0.13	0.1	0.1	0.13	0.082	0.09
Pb	0.68	0.68	0.78	0.69	0.48	0.42	0.64	0.40	0.67
Th	2.10	2.17	2.91	2.11	1.84	1.66	2.48	1.25	1.31
U	0.22	0.33	0.81	0.66	0.29	0.28	0.55	0.30	0.43

UC... Trace element analysis by ICP-MS at Union College

WSU... Trace element analysis by ICP-MS at Washington State University

All trace elements are given in ppm.

n.d. ... not determined

<d.l. ... below detection

Table 5.3a: Major and trace element composition of samples from the sheeted dike complex (cumulate gabbro and anorthosite)

Sample	GH-97-23	GH-97-25	GH-97-27	O/C-358	OC-360
	cum gab.	anorthosite	anorthosite	cum gab.	cum gab.
SiO ₂	45.77	53.58	54.30	47.87	47.43
TiO ₂	0.15	0.35	1.51	0.26	0.16
Al ₂ O ₃	24.65	26.00	24.16	14.39	19.53
Fe ₂ O ₃	4.06	1.40	0.82	8.11	6.32
MnO	0.06	0.02	0.02	0.13	0.09
MgO	4.27	0.61	0.34	10.32	6.92
CaO	14.89	8.45	9.78	14.23	14.13
Na ₂ O	2.07	5.49	6.42	1.27	2.04
K ₂ O	0.12	1.75	0.48	0.20	0.15
P ₂ O ₅	0.02	0.02	0.49	0.02	0.01
BaO	23	409	141	0	32
Cr ₂ O ₃	100	355	93	407	231
LOI	4.26	2.28	1.73	2.81	3.17
Total	100.34	100.03	100.09	99.66	100.01
Ni	28	9	3	90	70
Sc xrf/icp	19/19.2	0/7.5	10/6.7	55/n.d.	42/n.d.
V xrf/icp	60/n.d.	42/n.d.	98/n.d.	167/191	138/156

Major elements (in wt%) and Ba, Cr, Ni, Sc, and V (in ppm) were analyzed by standard XRF technique on pressed powder pellets at McGill University, Montreal. Additionally, Sc was analyzed by ICP-MS at Washington State University and V at Union College

Table 5.3a cont.

Sample	GH-97-23	GH-97-25	GH-97-27	O/C-358	OC-360
	WSU	WSU	WSU	UC	UC
Cr	n.d.	n.d.	n.d.	291	157
Rb	2.0	33	6.9	3.7	1.4
Sr	234	298	297	188	274
Y	4	8	33	6	5
Zr	8	9	127	9	7
Nb	0.22	0.31	2.59	0.15	0.12
Cs	0.11	0.98	0.37	0.08	0.06
Ba	n.d.	n.d.	n.d.	29	46
La	0.87	0.77	3.30	0.72	0.67
Ce	1.63	1.95	9.49	1.68	1.48
Pr	0.25	0.33	1.53	0.28	0.24
Nd	1.23	1.96	8.48	1.56	1.28
Sm	0.43	0.88	3.47	0.61	0.45
Eu	0.29	0.39	1.29	0.29	0.25
Gd	0.59	1.24	4.90	0.87	0.62
Tb	0.09	0.22	0.88	0.15	0.11
Dy	0.65	1.44	5.85	1.05	0.75
Ho	0.14	0.30	1.25	0.22	0.16
Er	0.39	0.78	3.42	0.66	0.48
Tm	0.05	0.11	0.52	0.10	0.08
Yb	0.35	0.64	2.97	0.63	0.47
Lu	0.05	0.09	0.40	0.09	0.07
Hf	0.25	0.35	3.97	0.27	0.18
Ta	0.016	0.014	0.20	0.01	0.01
Pb	0.45	0.58	0.90	0.45	0.54
Th	0.10	0.16	0.8	0.1	0.1
U	0.051	0.060	0.4	0.04	0.03

UC... Trace element analysis by ICP-MS at Union College

WSU... Trace element analysis by ICP-MS at Washington State University

All trace elements are given in ppm.

n.d. ... not determined

<d.l. ... below detection

Table 5.3b: Major and trace element composition of samples from the sheeted dike complex
(Diabasic and microdioritic dikes)

Sample	O/C-1S1	O/C-1S2	O/C-4S3	O/C-5S4	O/C-6S5	O/C-58	O/C-325*
Rock type	Diab	Diab	Microdio	Diab	Microdio	Diab	Def. dike
SiO ₂	51.51	53.53	54.55	53.36	55.74	49.36	48.44
TiO ₂	1.13	1.11	0.80	0.74	0.62	0.89	0.56
Al ₂ O ₃	16.28	15.22	14.14	14.96	14.83	15.87	11.83
Fe ₂ O ₃	9.90	11.69	8.61	8.48	8.66	10.13	9.46
MnO	0.10	0.10	0.09	0.08	0.09	0.18	0.20
MgO	5.47	4.17	7.13	6.07	5.79	7.09	14.40
CaO	8.88	8.13	8.98	9.37	8.65	11.66	7.07
Na ₂ O	4.36	3.67	2.29	3.69	3.66	2.30	1.72
K ₂ O	0.11	0.27	0.46	0.05	0.15	0.29	0.03
P ₂ O ₅	0.10	0.10	0.13	0.07	0.13	0.08	0.10
BaO	129	202	221	85	134	124	0
Cr ₂ O ₃	189	52	546	103	319	124	1584
LOI	2.59	2.00	2.63	2.95	2.10	2.76	5.79
Total	100.50	100.06	99.93	99.87	100.50	100.67	99.83
Ni	49	38	150	40	62	46	415
Sc	34	29	23	37	23	32	29
V xrf/icp	276/270	348/376	255/258	204/200	252/260	241/233	202/200

* contains ~25% olivine xeno- or phenocrysts and ~5% cpx phenocrysts

Sample	O/C-333	O/C-356	O/C-357b	O/C-362	MRH-45b	MRH-45a	MRH-111
	Diab	Diab	Diab	Microdio	Microdio	Microdio	Diab
SiO ₂	49.33	49.32	51.76	57.81	56.99	56.64	50.71
TiO ₂	0.87	1.1	0.58	0.7	0.7	0.63	0.93
Al ₂ O ₃	14.68	15.05	15.94	15.26	15.94	14.83	15.82
Fe ₂ O ₃	9.41	10.3	7.93	7.46	7.1	7.5	11.94
MnO	0.16	0.15	0.1	0.06	0.08	0.12	0.17
MgO	8.83	7.58	7.3	4.68	4.56	5.79	7.79
CaO	11.81	11.34	11.83	9.31	9.15	9.33	5.27
Na ₂ O	2.05	2.93	2.33	3.21	3.16	2.78	2.13
K ₂ O	0.15	0.29	0.16	0.19	0.32	0.37	0.05
P ₂ O ₅	0.09	0.11	0.06	0.12	0.17	0.1	0.36
BaO	86	159	140	119	162	151	100
Cr ₂ O ₃	433	306	133	140	150	387	75
LOI	2.7	2.04	2.14	1.89	2.25	2.35	5.13
Total	100.17	100.29	100.18	100.75	100.48	100.53	100.34
Ni	82	64	43	41	33	77	23
Sc	44	47	41	35	24	17	40
V xrf/icp	225/200	253/251	175/186	247/231	258/241	223/269	197/194

Major elements (in wt%) and Ba, Cr, Ni, Sc, and V (in ppm) were analyzed by standard XRF technique on pressed powder pellets at McGill University, Montreal. Additionally, V was analyzed by ICP-MS at Union College

Table 5.3b cont.

Sample	O/C-1S1	O/C-1S2	O/C-4S3	O/C-5S4	O/C-6S5	O/C-58	O/C-325*
	UC	UC	UC	UC	UC	UC	UC
Cr	204	14	326	54	190	73	1125
Rb	0.37	3.08	9.1	0.13	0.92	3.9	0.20
Sr	181	253	282	73	279	197	113
Y	21	23	19	20	13	17	15
Zr	73	51	61	44	47	44	49
Nb	2.77	1.72	1.66	1.25	1.22	1.84	1.02
Cs	0.12	0.27	0.36	0.03	0.05	0.24	0.08
Ba	37	86	155	21	85	52	11
La	3.45	5.51	5.90	1.82	7.80	4.05	5.63
Ce	8.61	14.8	12.5	4.80	14.7	9.73	11.8
Pr	1.33	2.30	1.78	0.79	1.86	1.49	1.72
Nd	6.91	11.20	8.32	4.27	7.94	7.43	7.54
Sm	2.19	2.93	2.31	1.52	1.90	2.17	2.07
Eu	0.73	1.28	0.68	0.58	0.79	0.87	0.63
Gd	2.89	3.50	2.73	2.31	2.12	2.71	2.33
Tb	0.52	0.60	0.46	0.47	0.35	0.47	0.38
Dy	3.42	3.82	3.01	3.34	2.17	3.06	2.43
Ho	0.73	0.82	0.63	0.75	0.46	0.64	0.52
Er	2.08	2.36	1.85	2.24	1.32	1.82	1.56
Tm	0.32	0.36	0.29	0.35	0.21	0.28	0.24
Yb	2.11	2.35	1.91	2.23	1.38	1.80	1.52
Lu	0.32	0.36	0.29	0.34	0.22	0.28	0.23
Hf	1.86	1.57	1.81	1.42	1.51	1.26	1.37
Ta	0.18	0.095	0.099	0.079	0.088	0.13	0.063
Pb	0.42	0.58	0.54	0.33	0.71	0.12	0.85
Th	0.29	0.61	1.06	0.32	1.39	0.32	0.83
U	0.12	0.37	0.40	0.12	0.39	0.12	0.31

UC... Trace element analysis by ICP-MS at Union College

WSU... Trace element analysis by ICP-MS at Washington State University

All trace elements are given in ppm.

n.d. ... not determined

<d.l. ... below detection

* contains ~25% olivine xeno- or phenocrysts and ~5% cpx phenocrysts

Table 5.3b cont.

Sample	O/C-333	O/C-356	O/C-357b	O/C-362	MRH-45b	MRH-45a	MRH-111
	UC	UC	UC	UC	UC	UC	UC
Cr	260	185	79	69	278	84	35
Rb	1.3	3.0	1.9	1.98	6.5	5.0	0.34
Sr	146	179	202	310	256	347	252
Y	17	22	14	18	13	21	19
Zr	35	65	32	56	48	69	35
Nb	1.73	3.07	0.93	1.43	1.32	1.99	0.73
Cs	0.10	0.25	0.29	0.11	0.21	0.14	0.06
Ba	38	92	85	78	96	93	20
La	2.39	3.32	2.39	8.05	6.26	19.10	3.90
Ce	6.36	9.30	4.99	17.8	12.2	37.3	9.42
Pr	1.02	1.44	0.73	2.56	1.62	4.98	1.56
Nd	5.22	7.48	3.65	11.85	7.45	22.37	8.39
Sm	1.68	2.37	1.27	2.98	1.86	5.21	2.58
Eu	0.65	0.91	0.45	1.00	0.57	1.80	0.87
Gd	2.32	3.11	1.78	3.14	2.10	4.87	3.17
Tb	0.42	0.57	0.32	0.49	0.35	0.69	0.52
Dy	2.74	3.68	2.18	2.99	2.22	3.92	3.32
Ho	0.57	0.78	0.46	0.61	0.47	0.77	0.71
Er	1.68	2.22	1.35	1.74	1.36	2.11	2.02
Tm	0.26	0.34	0.21	0.27	0.21	0.31	0.31
Yb	1.64	2.18	1.40	1.71	1.45	1.99	1.99
Lu	0.25	0.32	0.21	0.26	0.24	0.30	0.32
Hf	1.03	1.71	0.92	1.70	1.50	2.04	1.09
Ta	0.11	0.19	0.067	0.083	0.081	0.095	0.044
Pb	0.29	0.44	0.24	0.44	0.46	0.60	0.69
Th	0.18	0.22	0.25	1.53	0.99	2.19	0.53
U	0.092	0.076	0.14	0.60	0.27	0.68	0.18

UC... Trace element analysis by ICP-MS at Union College

WSU... Trace element analysis by ICP-MS at Washington State University

All trace elements are given in ppm.

Table 5.4: Major and trace element composition of samples from the pillow unit

Sample	O/C-113 diab. dike	O/C-186 diab. dike	O/C-224 pillow	O/C-227a pillow	O/C-227b diab. dike
SiO ₂	53.81	55.54	53.82	53.69	54.04
TiO ₂	0.51	1.06	0.74	0.79	0.96
Al ₂ O ₃	14.78	13.94	15.64	14.49	13.61
Fe ₂ O ₃	9.99	12.28	10.97	9.98	13.29
MnO	0.17	0.18	0.17	0.19	0.18
MgO	4.03	4.06	4.83	4.57	4.33
CaO	12.40	5.12	6.58	8.40	6.95
Na ₂ O	2.21	5.60	5.35	3.30	3.58
K ₂ O	0.26	0.15	0.11	0.41	0.29
P ₂ O ₅	0.07	0.12	0.07	0.09	0.08
BaO	81	36	120	125	130
Cr ₂ O ₃	89	29	62	36	57
LOI	2.01	2.14	2.06	4.52	3.24
Total	100.28	100.23	100.41	100.47	100.61
Ni	27	11	25	14	15
Sc xrf/icp	37/n.d.	38/n.d.	35/n.d.	37/n.d.	42/n.d.
V xrf/icp	261/277	307/375	366/387	223/263	353/428

Sample	O/C-379 pillow	O/C-380 pillow	Pb-1 pillow	O/C-231a rhyol. dike
SiO ₂	57.65	56.15	54.50	78.08
TiO ₂	1.06	0.90	0.85	0.26
Al ₂ O ₃	13.49	14.46	14.05	12.09
Fe ₂ O ₃	11.50	12.09	13.52	0.89
MnO	0.18	0.16	0.19	0.01
MgO	3.02	2.66	4.73	0.32
CaO	5.54	3.10	5.52	0.78
Na ₂ O	5.34	5.90	5.05	6.48
K ₂ O	0.04	0.04	0.05	0.14
P ₂ O ₅	0.11	0.08	0.08	0.05
BaO	98	122	106	29
Cr ₂ O ₃	24	17	39	47
LOI	2.17	4.22	1.98	0.72
Total	100.15	99.80	100.58	99.85
Ni	4	<d/l	12	6
Sc xrf/icp	22/n.d.	37/n.d.	19/n.d.	16/11.6
V xrf/icp	306/312	166/167	284/312	11/n.d.

Major elements (in wt%) and Ba, Cr, Ni, Sc, and V (in ppm) were analyzed by standard XRF technique on pressed powder pellets at McGill University, Montreal. Additionally, Sc was analyzed by ICP-MS at Washington State University and V at Union College

Table 5.4 cont.

Sample	O/C-113	O/C-186	O/C-224	O/C-227a	O/C-227b	O/C-379	O/C-380	Pb-1	O/C-231a
	UC	UC	UC	UC	UC	UC	UC	UC	WSU
Cr	53.5	18.0	42.5	27.0	32.5	9.7	8.0	19.9	n.d.
Rb	3.87	0.74	0.84	5.38	3.98	0.20	0.19	0.42	1.58
Sr	163	87	161	179	169	58	61	61	58.65
Y	13.4	28.8	17.5	19.2	22.9	25.5	32.1	21.0	30.33
Zr	30.8	68.4	30.0	49.4	45.4	57.6	35.5	40.4	86.25
Nb	0.61	1.62	0.83	1.39	0.68	1.29	0.64	0.69	1.16
Cs	0.07	0.02	0.10	0.76	0.32	0.05	0.05	0.02	0.06
Ba	62.5	38.7	46.7	99.2	74.7	24.0	28.7	22.6	45.41
La	2.14	3.35	2.13	2.90	2.15	3.16	1.84	1.93	3.51
Ce	5.17	8.99	5.29	7.19	5.59	8.36	4.78	5.30	8.62
Pr	0.85	1.56	0.89	1.16	1.03	1.46	0.90	0.96	1.39
Nd	4.64	8.86	4.98	6.37	5.88	7.90	5.22	5.47	7.43
Sm	1.57	2.97	1.71	2.05	2.00	2.65	2.03	1.92	2.85
Eu	0.59	1.02	0.64	0.78	0.75	0.94	0.85	0.63	0.65
Gd	2.04	3.98	2.41	2.67	2.70	3.56	3.03	2.73	3.73
Tb	0.36	0.70	0.44	0.47	0.50	0.63	0.56	0.49	0.71
Dy	2.36	4.76	2.92	3.11	3.41	4.20	3.85	3.33	4.86
Ho	0.51	1.03	0.64	0.66	0.74	0.92	0.85	0.74	1.07
Er	1.51	3.03	1.87	1.97	2.16	2.63	2.45	2.14	3.04
Tm	0.23	0.46	0.30	0.30	0.33	0.41	0.39	0.34	0.51
Yb	1.58	3.00	1.98	2.06	2.21	2.63	2.55	2.26	3.20
Lu	0.25	0.48	0.31	0.32	0.37	0.42	0.42	0.36	0.54
Hf	0.99	2.09	1.02	1.39	1.40	1.79	1.25	1.34	2.95
Ta	0.037	0.092	0.063	0.096	0.037	0.087	0.038	0.060	0.10
Pb	2.29	1.06	0.52	0.90	1.13	1.46	0.91	0.47	0.53
Th	0.33	0.38	0.32	0.32	0.30	0.34	0.21	0.25	0.69
U	0.14	0.16	0.14	0.14	0.12	0.16	0.11	0.15	0.26

UC... Trace element analysis by ICP-MS at Union College

WSU... Trace element analysis by ICP-MS at Washington State University

All trace elements are given in ppm.

n.d. ... not determined

<d.l. ... below detection

Table 5.5: Major and trace element composition of samples from the Mule Mountain volcanics

Sample	O/C-80	O/C-81a	O/C-81b*	O/C-82	O/C-88	O/C-147	O/C-217
SiO ₂	61.14	48.99	50.02	54.58	52.29	67.74	68.25
TiO ₂	0.71	0.51	0.51	0.72	0.93	0.79	0.88
Al ₂ O ₃	14.36	14.49	13.80	16.05	15.05	14.13	14.13
Fe ₂ O ₃	8.93	9.61	9.67	10.06	11.35	5.70	6.06
MnO	0.13	0.15	0.15	0.17	0.17	0.10	0.11
MgO	2.41	9.99	10.29	3.84	5.10	1.36	1.28
CaO	2.64	10.36	11.04	7.86	10.18	1.71	1.22
Na ₂ O	5.94	1.49	1.34	3.47	1.15	6.29	5.64
K ₂ O	0.83	0.48	0.49	0.39	0.05	0.08	0.08
P ₂ O ₅	0.11	0.05	0.05	0.10	0.09	0.19	0.22
BaO	499	132	198	156	0	118	272
Cr ₂ O ₃	27	564	741	52	154	24	18
LOI	2.78	4.05	3.17	2.93	3.82	2.21	2.07
Total	99.98	100.26	100.67	100.22	100.23	100.31	99.93
Ni xrf	<d.l.	121	126	20	43	<d.l.	<d.l.
Sc xrf/icp	<d.l./n.d.	45/n.d.	45/n.d.	17/n.d.	39/n.d.	14/n.d.	15/17
V xrf/icp	156/130	219/239	225/238	300/328	336/363	50/26	40/31

* contains ~11% cpx, 7% olivine and ~6% plagioclase phenocrysts

Sample	GDH-1	GDH-2A	GDH-2B	GDH-5A	GDH-7	GDH-8	SC-15JS
SiO ₂	67.89	67.89	68.83	66.64	53.05	52.91	53.12
TiO ₂	0.40	0.39	0.39	0.40	0.58	0.61	0.72
Al ₂ O ₃	13.72	14.38	13.64	14.51	15.77	16.31	14.75
Fe ₂ O ₃	5.26	4.32	5.86	4.90	9.37	9.62	11.30
MnO	0.06	0.10	0.13	0.10	0.13	0.16	0.15
MgO	1.67	1.32	2.10	1.85	5.47	5.45	5.16
CaO	1.95	1.54	0.76	1.99	7.41	9.52	4.05
Na ₂ O	5.39	6.73	5.90	6.67	3.87	2.26	4.08
K ₂ O	0.57	1.31	0.25	1.04	0.24	0.42	0.16
P ₂ O ₅	0.06	0.09	0.06	0.09	0.06	0.09	0.05
BaO	194	448	64	239	54	79	56
Cr ₂ O ₃	29	0	20	31	74	101	80
LOI	2.53	1.76	2.48	1.75	4.37	2.75	7.00
Total	99.54	99.83	100.43	99.98	100.37	100.15	100.58
Ni xrf	10.05	8.04	6.03	3.01	42	33	23
Sc xrf/icp	13/24	20/18	25/24	24/19	27	44	33/44
V xrf/icp	104/n.d.	72/n.d.	114/n.d.	92/n.d.	232/232	258/281	194/n.d.

Major elements (in wt%) and Ba, Cr, Ni, Sc, and V (in ppm) were analyzed by standard XRF technique on pressed powder pellets at McGill University, Montreal. Additionally, Sc was analyzed by ICP-MS at Washington State University and V at Union College

Table 5.5 cont.

Sample	O/C-80	O/C-81a	O/C-81b*	O/C-82	O/C-88	O/C-147	O/C-217	
	UC	UC	UC	UC	UC	UC	UC	WSU
Cr	7	381	515	33	94	14	11	n.d.
Rb	9.59	6.72	7.13	6.17	0.18	0.25	0.79	0.98
Sr	134	150	148	228	233	75	59	60.0
Y	17.9	12.9	12.5	19.8	23.1	44.6	41.0	46.5
Zr	74	25	23	41	48	112	113	n.d.
Nb	1.57	0.39	0.37	0.76	0.72	2.18	2.14	1.83
Cs	0.12	0.34	0.36	0.34	0.04	0.02	0.04	0.03
Ba	608	140	137	103	17	96	321	194
La	3.67	1.29	1.28	2.63	2.33	5.59	4.99	5.41
Ce	8.51	3.37	3.27	6.58	6.48	14.9	13.57	13.60
Pr	1.30	0.59	0.57	1.07	1.15	2.53	2.33	2.28
Nd	6.37	3.21	3.17	5.86	6.48	13.6	12.7	12.4
Sm	2.01	1.18	1.11	2.01	2.29	4.57	4.18	4.63
Eu	0.56	0.48	0.45	0.68	0.85	1.39	1.21	1.40
Gd	2.56	1.64	1.59	2.65	3.11	6.04	5.38	6.10
Tb	0.44	0.30	0.29	0.46	0.56	1.06	0.94	1.17
Dy	2.95	2.09	1.99	3.18	3.77	7.01	6.49	7.79
Ho	0.62	0.45	0.43	0.70	0.81	1.49	1.43	1.68
Er	1.87	1.33	1.27	2.09	2.36	4.42	4.31	4.92
Tm	0.30	0.21	0.20	0.33	0.37	0.70	0.67	0.72
Yb	1.97	1.40	1.34	2.15	2.41	4.46	4.29	4.72
Lu	0.32	0.22	0.21	0.33	0.37	0.67	0.66	0.76
Hf	2.25	0.76	0.71	1.34	1.51	3.59	3.58	3.50
Ta	0.097	0.033	0.035	0.051	0.053	0.14	0.14	0.15
Pb	1.19	0.99	1.05	1.78	1.06	1.18	2.87	3.36
Th	0.69	0.20	0.19	0.39	0.30	0.75	0.72	0.76
U	0.32	0.10	0.08	0.19	0.12	0.31	0.39	0.40

UC... Trace element analysis by ICP-MS at Union College

WSU... Trace element analysis by ICP-MS at Washington State University

All trace elements are given in ppm.

n.d. ... not determined

<d.l. ... below detection

* contains ~11% cpx, 7% olivine and ~6% plagioclase phenocrysts

Table 5.5 cont.

Sample Mag. type	GDH-1 WSU	GDH-2A WSU	GDH-2B WSU	GDH-5A WSU	GDH-7 UC	GDH-8 UC	SC-15JS WSU
Cr	n.d.	n.d.	n.d.	n.d.	49	75	n.d.
Rb	5.91	18.14	3.51	12.87	2.66	4.44	2.14
Sr	133	137	140	101	220	194	104
Y	34.4	28.7	42.5	22.5	19.9	17.8	5.9
Zr	69	92	67	82	38	36	n.d.
Nb	1.14	2.51	1.02	2.19	0.69	0.72	1.03
Cs	0.07	0.07	0.09	0.05	0.25	0.32	0.04
Ba	163	385	76	223	52	90	44.3
La	3.93	10.96	4.05	8.97	2.97	3.02	2.96
Ce	8.85	20.46	8.79	17.8	6.69	7.09	5.93
Pr	1.47	2.85	1.63	2.34	1.16	1.17	0.80
Nd	7.86	13.0	9.03	10.7	5.62	5.76	3.49
Sm	2.96	3.47	3.36	2.89	1.88	1.86	0.84
Eu	0.76	0.95	0.85	0.78	0.64	0.67	0.41
Gd	4.18	3.92	5.11	3.16	2.65	2.44	0.89
Tb	0.76	0.68	0.96	0.54	0.47	0.43	0.15
Dy	5.12	4.35	6.63	3.68	3.16	2.90	1.06
Ho	1.14	0.93	1.46	0.79	0.68	0.65	0.21
Er	3.36	2.69	4.09	2.24	2.04	1.98	0.69
Tm	0.49	0.42	0.62	0.35	0.32	0.32	0.11
Yb	3.12	2.63	3.90	2.26	2.02	1.99	0.79
Lu	0.49	0.44	0.61	0.37	0.30	0.31	0.16
Hf	2.31	2.70	2.31	2.41	1.19	1.15	1.46
Ta	0.091	0.17	0.085	0.16	0.041	0.041	0.08
Pb	1.93	2.74	2.67	3.16	2.93	2.87	3.41
Th	0.58	2.32	0.58	2.01	0.38	0.42	0.59
U	0.24	0.69	0.23	0.59	0.17	0.35	0.68

Table 5.6: Major and trace element composition of samples from the Half Moon Bar diorite

Sample	OC-174b	OC-375c	OC-375d	O/C-118A	O/C-174A	O/C-376	O/C-377
	dike	dike	dike	gabbro	gabbro	gabbro	gabbro
SiO ₂	56.87	58.62	56.03	52.15	56.53	56.88	59.59
TiO ₂	0.56	0.58	0.61	0.74	0.60	0.55	0.49
Al ₂ O ₃	15.57	16.22	16.60	16.23	14.74	15.98	15.59
Fe ₂ O ₃	9.46	8.67	9.20	10.65	8.51	9.18	8.82
MnO	0.17	0.11	0.14	0.14	0.14	0.13	0.13
MgO	4.54	3.41	3.94	5.24	6.06	3.80	3.49
CaO	7.72	8.36	8.71	9.35	6.96	8.19	7.04
Na ₂ O	2.90	2.89	3.32	2.98	3.71	2.95	2.44
K ₂ O	0.41	0.23	0.28	0.60	0.74	0.43	0.47
P ₂ O ₅	0.11	0.12	0.11	0.06	0.12	0.15	0.09
BaO	281	199	254	227	267	248	245
Cr ₂ O ₃	80	38	27	75	205	39	23
LOI	1.99	1.49	1.32	1.81	2.00	1.42	1.68
Total	100.38	100.75	100.32	100.03	100.19	99.71	99.88
Ni xrf	10.05	<d.l.	6.03	18.09	121.57	18.08	6.03
Sc xrf/icp	24/n.d.	33/n.d.	46/n.d.	43/45	40/41	32/35	30/33
V xrf/icp	221/243	220/235	246/256	344/n.d.	235/n.d.	224/n.d.	188/n.d.

Major elements (in wt%) and Ba, Cr, Ni, Sc, and V (in ppm) were analyzed by standard XRF technique on pressed powder pellets at McGill University, Montreal. Additionally, Sc was analyzed by ICP-MS at Washington State University and V at Union College

Table 5.6 cont.

Sample	OC-174b	OC-375c	OC-375d	O/C-118A	O/C-174A	O/C-376	O/C-377
	UC	UC	UC	WSU	WSU	WSU	WSU
Cr	44.0	18.5	18.1	n.d.	n.d.	n.d.	n.d.
Rb	5.19	2.94	2.88	7.98	10.1	4.93	5.81
Sr	358	370	410	337	407	357	374
Y	16.9	18.6	17.4	15.4	20.3	19.3	25.4
Zr	51	56.8	50.3	33	53	49	48
Nb	1.45	1.67	1.45	0.99	1.48	1.32	1.87
Cs	0.528	0.665	0.66	1.018	1.148	0.709	0.635
Ba	216	157.7	188	211	262	223	223
La	5.47	6.10	5.21	4.23	4.59	5.38	7.13
Ce	11.9	13.30	11.8	9.9	10.4	11.9	16.3
Pr	1.75	1.95	1.76	1.45	1.54	1.73	2.41
Nd	8.2	8.97	8.20	6.7	7.6	8.4	11.4
Sm	2.20	2.35	2.16	1.93	2.36	2.50	3.25
Eu	0.70	0.68	0.65	0.63	0.75	0.71	0.72
Gd	2.36	2.58	2.42	2.29	2.92	2.80	3.51
Tb	0.40	0.43	0.42	0.40	0.51	0.48	0.62
Dy	2.70	2.95	2.79	2.67	3.57	3.31	4.15
Ho	0.59	0.64	0.60	0.57	0.74	0.69	0.94
Er	1.75	1.89	1.81	1.59	2.03	1.91	2.66
Tm	0.27	0.30	0.28	0.25	0.31	0.30	0.41
Yb	1.81	1.97	1.86	1.53	1.98	1.89	2.54
Lu	0.28	0.31	0.30	0.25	0.32	0.31	0.41
Hf	1.55	1.74	1.55	1.05	1.64	1.46	1.68
Ta	0.079	0.094	0.083	0.067	0.093	0.081	0.11
Pb	0.53	0.68	0.75	1.06	0.87	0.86	0.75
Th	1.06	1.22	1.01	0.62	1.04	1.05	1.14
U	0.39	0.44	0.29	0.2	0.28	0.29	0.40

UC... Trace element analysis by ICP-MS at Union College

WSU... Trace element analysis by ICP-MS at Washington State University

All trace elements are given in ppm.

n.d. ... not determined

<d.l. ... below detection

Table 5.7: Major and trace element composition of dikes in the metagabbro unit

Sample	GH-97-6	GH-97-20	Sample	GH-97-6	GH-97-20
	tonalite	tonalite		WSU	WSU
SiO ₂	74.76	74.34	Cr	n.d.	n.d.
TiO ₂	0.17	0.03	Rb	6.4	48.8
Al ₂ O ₃	12.69	15.05	Sr	236	97
Fe ₂ O ₃	2.04	1.31	Y	4.9	45
MnO	0.05	0.80	Zr	64	41
MgO	0.92	0.25	Nb	1.57	4.64
CaO	3.17	0.83	Cs	0.32	0.63
Na ₂ O	4.03	3.09	Ba	165	1716
K ₂ O	0.54	2.43	La	6.34	16.4
P ₂ O ₅	0.04	0.06	Ce	10.8	31.5
BaO	187	1958	Pr	1.04	3.71
Cr ₂ O ₃	27	27	Nd	3.38	14.43
LOI	1.64	1.80	Sm	0.65	3.61
Total	100.08	100.20	Eu	0.28	0.43
Ni	<d.l.	<d.l.	Gd	0.65	3.94
Sc xrf/icp	17/4.8	11/3.8	Tb	0.10	0.81
V	23	<d.l.	Dy	0.70	6.03
			Ho	0.15	1.34
			Er	0.47	3.92
			Tm	0.08	0.61
			Yb	0.51	4.08
			Lu	0.10	0.61
			Hf	2.27	1.86
			Ta	0.13	0.20
			Pb	1.48	8.71
			Th	1.52	1.78
			U	1.20	0.55

Major elements (in wt%) and Ba, Cr, Ni, Sc, and V (in ppm) were analyzed by standard XRF technique on pressed powder pellets at McGill University, Montreal. Additionally, Sc was analyzed by ICP-MS at Washington State University WSU... Trace element analysis by ICP-MS at Washington State University All trace elements are given in ppm.

n.d. ... not determined

<d.l. ... below detection