

**Table 1. Whole-rock geochemistry of mantle tectonites by x-ray fluorescence.**

Major and trace elements normalized to 100% anhydrous.

Sample	CR 114-3	CR 12-1	CR 90-1	CR 91-1	CR 92-1
SiO <sub>2</sub>	47.32	47.78	46.08	46.50	46.89
TiO <sub>2</sub>	0.01	0.03	0.03	0.01	0.01
Al <sub>2</sub> O <sub>3</sub>	0.21	0.54	0.50	0.19	0.21
FeO*	7.16	7.52	8.71	8.52	8.51
MnO	0.06	0.08	0.09	0.14	0.14
MgO	45.23	44.05	44.57	44.64	44.23
CaO	0.00	0.00	0.00	0.00	0.00
Na <sub>2</sub> O	0.00	0.00	0.00	0.00	0.00
K <sub>2</sub> O	0.00	0.00	0.00	0.00	0.00
P <sub>2</sub> O <sub>5</sub>	0.01	0.00	0.01	0.01	0.01
LOI	12.14	12.07	12.14	13.48	13.62
Nb	1.1	0.9	0.5	1	0.2
Zr	1	1	2	1	1
Y	2	1	2	1	2
Sr	0	1	1	4	6
Rb	0	0	0	0	0
Sc	3	1.2	8.5	2.8	2.9
V	11	18	27	8	7
Cr	2418	1952	1609	1700	1399
Ni	3214	2732	2618	2771	2700
Cu	13	4	43	1	1
Zn	34	34	32	43	37
Ba	0	20	10	0	0

**Table 2. Whole-rock geochemistry of wehrlitic suite.**

Major and trace elements normalized to 100% anhydrous.

Sample	CR 09-2	CR 10-1	CR 114-2	CR 88-2	CR 89-2	CR 90-4	CR 99-1
SiO <sub>2</sub>	45.71	45.70	45.56	48.55	50.19	46.84	42.76
TiO <sub>2</sub>	0.20	0.19	0.17	0.30	0.13	0.14	0.08
Al <sub>2</sub> O <sub>3</sub>	4.41	3.82	1.51	3.51	2.70	2.12	2.53
FeO*	10.42	10.32	9.79	8.66	8.91	8.38	10.75
MnO	0.18	0.18	0.18	0.16	0.17	0.15	0.15
MgO	30.48	31.35	33.96	26.41	32.15	36.21	40.75
CaO	8.27	8.16	8.69	11.88	5.71	6.03	2.95
Na <sub>2</sub> O	0.27	0.23	0.10	0.42	0.03	0.09	0.01
K <sub>2</sub> O	0.04	0.03	0.02	0.07	0.00	0.02	0.00
P <sub>2</sub> O <sub>5</sub>	0.02	0.02	0.01	0.03	0.01	0.01	0.01
LOI	3.68	3.94	4.54	1.62	4.20	4.94	8.26
Mg#	83.91	84.41	86.08	84.46	86.54	88.51	87.10
Nb	1.1	0.8	0.9	1	1	0.9	1.1
Zr	10	9	8	15	4	7	4
Y	7	7	7	8	5	5	2
Sr	52	44	19	35	13	15	11
Rb	1	0	0	0	0	0	1
Sc	27	29.9	24.7	39.8	24.2	21.9	13.7
V	123	118	102	177	99	86	57
Cr	1817	1906	1894	1463	2612	1969	1771
Ni	940	983	1010	775	1356	1476	1423
Cu	7	18	9	8	5	2	4
Zn	65	63	50	49	54	44	53
Ba	21	3	9	78	0	9	4

**Table 3. Whole-rock geochemistry of isotropic gabbros.**

Major and trace elements normalized to 100% anhydrous.

Sample	CR 08-1	CR 20-1	CR 21-1	CR 22-1	CR 49-1
SiO <sub>2</sub>	53.32	54.87	47.76	50.74	52.83
TiO <sub>2</sub>	1.28	1.67	1.57	1.31	0.93
Al <sub>2</sub> O <sub>3</sub>	13.63	13.97	14.20	14.29	12.47
FeO*	11.70	11.66	12.56	11.60	10.17
MnO	0.17	0.16	0.23	0.21	0.19
MgO	8.47	6.15	5.76	8.84	9.97
CaO	6.36	5.26	12.10	8.10	9.21
Na <sub>2</sub> O	4.59	5.93	5.13	4.10	2.86
K <sub>2</sub> O	0.29	0.03	0.46	0.51	1.22
P <sub>2</sub> O <sub>5</sub>	0.20	0.30	0.23	0.30	0.16
LOI	1.87	3.97	4.71	4.29	1.33
Mg#	56.32	48.42	44.95	57.58	63.58
Nb	1.6	5.8	3.5	4.8	0
Zr	103	131	107	136	106
Y	37	43	39	45	33
Sr	472	47	286	342	1176
Rb	5	0	9	17	20
Sc	27	16.2	23.3	25.1	34.2
V	374	298	404	285	323
Cr	33	28	25	71	61
Ni	21	2	22	24	54
Cu	4	8	78	47	83
Zn	32	60	67	69	69
Ba	68	39	69	131	5634
<b>CIPW normalizations</b>					
Orthoclase(Or)	1.69	0.17	2.74	2.99	7.20
Albite(Ab)	38.87	50.18	14.12	33.55	24.16
Anorthite(An)	15.71	11.42	14.32	19.10	17.61
Diopside(Di)	12.03	10.61	37.08	15.77	22.13
Hypersthene(Hy)	12.12	8.90			14.05
Olivine(Ol)	16.70	14.86	12.37	24.81	12.74
Ilmenite(Il)	2.44	3.17	2.98	2.48	1.77
Apatite(Ap)	0.45	0.70	0.53	0.69	0.37

**Table 4. Whole-rock geochemistry of volcanic suite.**

Major and trace elements normalized to 100% anhydrous.

Sample	CR 29-1	CR 29-2	CR 30-1	CR 38-2	CR 41-3	CR 66-1	CR 03-2	CR 04-1	CR 40-1	CR 42-1	CR 43-1	CR 46-1	CR 64-2	CR 68-1	CR 79-1	CR 07-2	CR 11-2	CR 30-2	CR 32-1	CR 33-1	CR 73-3
Suite	Arc	Arc	Arc	Arc	Arc	Arc	Boninite	Boninite	Boninite	Boninite	Boninite	Boninite	Boninite	Boninite	Boninite	MORB	MORB	MORB	MORB	MORB	MORB
SiO2	50.43	51.43	60.33	55.10	53.04	60.86	54.67	52.93	54.14	47.55	54.57	50.68	59.24	48.32	49.32	57.75	50.49	52.45	51.06	51.51	51.60
TiO2	0.66	0.69	0.51	0.69	0.77	0.67	0.44	0.55	0.57	0.85	0.66	0.92	0.60	0.48	0.90	1.01	1.16	1.86	2.42	2.02	2.22
Al2O3	13.64	15.68	14.91	14.20	14.15	18.09	11.14	10.63	15.58	14.36	14.04	13.64	17.28	9.87	14.49	15.57	13.09	13.18	12.70	13.26	13.69
FeO*	7.10	7.89	5.26	8.56	8.42	7.11	9.21	10.20	9.05	9.22	6.28	11.16	6.80	8.67	13.85	14.37	10.26	9.51	10.76	11.11	11.44
MnO	0.11	0.11	0.18	0.11	0.17	0.07	0.19	0.25	0.20	0.19	0.11	0.22	0.12	0.23	0.14	0.06	0.17	0.18	0.33	0.30	0.24
MgO	6.97	9.15	7.47	9.69	9.61	7.78	12.66	14.15	11.89	14.46	12.33	13.02	12.21	12.63	10.90	5.11	8.59	5.44	5.54	4.21	6.35
CaO	15.44	9.49	5.21	6.94	8.89	0.17	7.90	8.51	4.50	9.61	8.08	8.26	0.14	17.92	10.30	1.71	13.10	11.37	11.83	11.87	9.01
Na2O	5.50	5.39	5.90	4.55	4.80	4.80	3.71	2.53	3.93	3.60	3.81	1.92	2.67	1.80	0.00	3.77	2.93	5.73	5.08	5.42	5.17
K2O	0.03	0.09	0.03	0.04	0.02	0.41	0.04	0.13	0.05	0.01	0.03	0.03	0.87	0.02	0.00	0.18	0.09	0.08	0.01	0.09	0.01
P2O5	0.12	0.09	0.21	0.13	0.13	0.03	0.05	0.11	0.11	0.14	0.08	0.15	0.08	0.06	0.08	0.48	0.12	0.22	0.26	0.22	0.26
LOI	5.98	4.81	4.69	4.80	5.61	4.61	1.81	2.44	5.82	8.16	6.99	3.34	4.05	11.86	2.80	2.64	2.14	4.76	7.89	8.05	5.52
Mg#	63.62	67.39	71.69	66.86	67.03	66.12	71.01	71.19	70.07	73.65	77.78	67.52	76.19	72.20	58.39	38.77	59.88	50.49	47.84	40.31	49.71
Nb	1.8	1.1	3.5	1.8	1.8	1.7	1	1	1.4	2	1.9	0.6	2.3	0.8	1.7	2.7	1.5	4.6	4.9	4.6	5.5
Zr	51	69	83	45	61	47	32	33	46	61	51	68	54	29	61	106	70	117	131	130	133
Y	18	20	15	16	22	14	12	13	16	23	18	25	17	13	23	37	26	37	47	42	46
Sr	218	557	238	150	214	58	153	184	37	77	69	330	50	40	373	168	320	134	57	180	56
Rb	1	1	0	0	0	5	1	1	1	0	1	0	13	2	0	2	1	4	0	4	1
Sc	27.3	27.5	17.2	26.5	25.2	23.4	39.7	40.3	29.4	23.6	21.4	24.2	22.4	44	23.1	15	33.5	27.2	31.8	31.5	31.1
V	244	231	132	247	215	259	218	241	259	231	182	352	259	261	263	64	337	342	434	329	453
Cr	195	206	154	131	72	17	307	348	135	131	438	171	108	512	49	8	67	63	59	109	34
Ni	147	168	123	34	22	4	71	167	33	43	171	83	31	72	30	0	48	25	15	25	10
Cu	12	12	0	307	1	90	3	1220	52	6	7	658	34	26	148	2	33	45	46	21	31
Zn	31	59	44	50	66	25	63	49	97	67	44	48	65	70	16	7	33	83	131	60	108
Ba	82	203	60	90	25	83	31	57	26	126	44	15	281	32	3	39	663	68	12	112	34

**Table 5. Whole-rock geochemistry of diorite intrusive series.**

Major and trace elements normalized to 100% anhydrous.

Sample	CR 06-1	CR 07-1	CR 78-2	CR 80-1	CR 82-1	CR 84-4	CR 85-1	CR 87-1	CR 98-2
SiO <sub>2</sub>	70.20	53.14	52.69	72.85	74.46	69.01	69.59	68.52	61.07
TiO <sub>2</sub>	0.47	0.37	0.38	0.58	0.50	0.61	0.59	0.84	0.85
Al <sub>2</sub> O <sub>3</sub>	15.59	16.89	16.79	14.16	14.24	15.05	15.51	14.53	15.99
FeO*	3.40	6.41	6.53	1.83	1.47	3.73	3.47	3.19	6.67
MnO	0.03	0.15	0.15	0.04	0.02	0.05	0.05	0.05	0.10
MgO	1.51	9.74	10.05	1.21	1.01	2.16	2.19	2.20	4.67
CaO	3.32	10.51	10.66	2.19	2.16	2.72	2.87	4.12	6.34
Na <sub>2</sub> O	4.87	2.29	2.26	6.56	5.61	6.19	5.02	5.35	3.85
K <sub>2</sub> O	0.42	0.44	0.44	0.43	0.41	0.24	0.49	0.83	0.25
P <sub>2</sub> O <sub>5</sub>	0.18	0.06	0.06	0.16	0.11	0.23	0.23	0.35	0.22
LOI	0.98	1.41	1.21	0.77	0.81	1.25	1.20	0.99	1.24
Mg#	44.16	73.02	73.28	54.18	55.11	50.77	52.88	55.17	55.48
Nb	3	1.1	1.4	3.2	5.1	3.3	3.2	3.5	2.1
Zr	106	40	39	117	153	119	123	124	111
Y	30	13	13	22	27	29	28	38	44
Sr	422	342	339	420	352	317	421	365	415
Rb	4	4	5	5	3	2	6	10	2
Sc	13.5	37.7	33.4	12.5	6	7.9	15.8	14.8	24.5
V	13	174	185	57	40	44	59	50	221
Cr	0	32	34	26	28	18	30	5	51
Ni	0	45	44	0	2	0	1	1	11
Cu	0	3	1	0	0	0	339	0	1
Zn	4	25	28	5	2	4	4	5	21
Ba	118	127	132	74	101	94	167	220	81
CIPW normalizations									
Quartz (Q)	28.86			26.29	33.55	20.99	27.22	22.08	13.74
Corundum(C	1.51				0.91	0.22	2.04		
Orthoclase(C	2.50	2.59	2.58	2.56	2.42	1.41	2.88	4.90	1.48
Albite(Ab)	41.24	19.39	19.09	55.48	47.48	52.36	42.50	45.30	32.56
Anorthite(An	15.29	34.49	34.39	7.91	9.99	11.98	12.78	13.17	25.62
Diopside(Di)		13.98	14.67	1.54				4.12	3.63
Hypersthene	9.29	28.11	25.37	4.74	4.45	11.33	10.94	8.02	20.86
Ilmenite(II)	0.89	0.71	0.72	1.10	0.94	1.16	1.12	1.60	1.61
Apatite(Ap)	0.42	0.13	0.13	0.38	0.26	0.54	0.52	0.81	0.51

**Table 6. Whole-rock geochemistry of late stage intrusives analyzed by x-ray fluorescence.**

Major and trace elements normalized to 100% anhydrous.

Sample	CR 07-3	CR 100-1	CR 100-2	CR 10-2	CR 10-3	CR 75-1	CR 76-1	CR 81-2	CR 82-2	CR 82-2	CR 82-3	CR 84-6	CR 85-3	CR 87-2	CR 90-2	CR 98-1	CR 98-3	CR 99-3
SiO2	50.01	45.14	47.17	52.18	51.63	55.49	51.63	49.45	55.01	53.98	54.31	53.61	58.67	53.93	48.90	52.65	51.53	57.19
TiO2	1.39	1.17	1.67	0.73	0.54	1.59	0.54	1.29	1.76	0.53	0.45	0.79	0.53	0.43	1.49	1.16	0.98	1.20
Al2O3	14.41	12.93	15.14	13.99	12.56	14.55	12.56	14.94	13.77	16.94	17.27	15.16	16.46	12.49	14.68	13.84	13.73	14.43
FeO*	12.88	11.20	13.61	8.61	10.08	10.91	10.08	4.18	8.90	13.39	12.85	12.88	10.72	9.21	13.27	10.93	9.59	9.45
MnO	0.24	0.20	0.21	0.15	0.22	0.14	0.22	0.06	0.17	0.19	0.19	0.18	0.07	0.14	0.21	0.17	0.17	0.08
MgO	12.27	11.83	7.02	8.66	11.97	6.93	11.97	12.93	5.04	9.85	9.87	9.84	6.74	13.52	8.84	8.98	10.06	5.92
CaO	5.16	16.43	11.81	12.24	10.35	4.49	10.35	15.62	9.13	1.14	1.24	3.63	2.08	7.29	8.48	8.21	10.90	5.56
Na2O	3.36	0.88	2.84	3.14	2.38	5.38	2.38	1.29	5.90	3.61	3.38	3.66	4.19	2.13	3.83	3.67	2.65	5.98
K2O	0.11	0.07	0.24	0.20	0.21	0.17	0.21	0.05	0.10	0.23	0.31	0.11	0.35	0.79	0.00	0.25	0.25	0.02
P2O5	0.17	0.14	0.29	0.09	0.07	0.37	0.07	0.20	0.22	0.14	0.12	0.15	0.19	0.06	0.30	0.13	0.14	0.18
LOI	3.69	3.20	1.06	2.52	3.55	4.81	3.55	2.57	3.71	4.05	4.37	3.06	2.81	2.44	3.00	2.01	1.73	2.54
Mg #	62.93	65.31	47.91	64.20	67.92	53.08	67.92	84.65	50.21	56.73	57.78	57.65	52.84	72.35	54.29	59.40	65.17	52.77
Nb	1.7	0.8	0	1.9	0.7	5.3	4.6	1.5	2.5	2.5	2.3	2.9	1.9	1.8	3.3	1.8	2.4	2.4
Zr	80	40	80	61	70	134	121	42	87	87	84	83	75	47	98	90	81	85
Y	30	25	39	22	24	41	40	18	21	21	23	28	19	14	37	33	28	29
Sr	279	231	643	312	888	172	164	151	226	226	263	282	402	239	105	362	343	44
Rb	2	1	2	2	4	5	5	2	4	4	5	2	5	13	0	3	5	0
Sc	19.8	38.2	34.1	34.5	34.1	20.7	30.9	21.7	14	14	15	19.9	18	32.4	22.8	32.4	34.7	25.3
V	371	376	512	259	284	326	336	193	187	187	198	249	236	246	325	342	257	257
Cr	86	142	35	42	178	26	186	280	29	29	30	37	11	430	55	36	80	15
Ni	32	72	18	44	64	14	27	136	23	23	24	18	8	164	65	39	53	17
Cu	24	78	77	9	51	55	40	798	2856	2856	2009	5	2	4	60	5	70	4
Zn	20	75	85	38	38	82	73	76	25	25	26	20	11	22	91	31	59	12
Ba	5	1087	5510	926	768	43	73	33	68	68	86	33	108	429	83	103	257	19

**Table 7. Whole-rock geochemistry for tuffaceous radiolarian cherts by XRF.**

Major and trace elements normalized to 100% anhydrous.

Sample	CR 36-1	CR 31-1	CR 63-1	CR 26-1	CR 54-3	CR 27-2	CR 37-1	CR 33-2	CR 52-1	CR 44-1	CR 70-1	CR 25-1
SiO <sub>2</sub>	83.05	82.93	79.30	81.25	91.73	84.25	85.88	87.61	80.25	84.19	94.12	84.99
TiO <sub>2</sub>	0.22	0.25	0.29	0.25	0.00	0.25	0.19	0.15	0.29	0.23	0.07	0.26
Al <sub>2</sub> O <sub>3</sub>	7.73	8.52	10.59	8.58	4.40	6.92	7.74	7.36	9.46	6.56	2.78	8.14
FeO*	5.28	5.28	5.88	6.96	2.51	5.96	4.10	2.84	5.31	6.33	2.08	3.90
MnO	0.24	0.17	1.30	0.24	0.01	0.13	0.17	0.19	0.37	0.34	0.06	0.09
MgO	1.81	1.27	0.45	1.95	0.17	1.99	0.76	0.73	1.24	1.53	0.43	1.04
CaO	0.10	0.19	0.13	0.00	0.00	0.05	0.02	0.07	1.00	0.12	0.09	0.08
Na <sub>2</sub> O	0.86	0.33	0.42	0.00	0.68	0.00	0.36	0.00	0.79	0.00	0.00	0.00
K <sub>2</sub> O	0.66	0.87	1.41	0.62	0.39	0.30	0.65	0.95	1.12	0.60	0.09	1.29
P <sub>2</sub> O <sub>5</sub>	0.06	0.20	0.21	0.15	0.10	0.15	0.12	0.09	0.17	0.10	0.29	0.22

Table 8. Pyroxene compositions, Mg#, suite, and formula per 6 oxygen.

Sample Point	CR 29-2 pyx1	CR 29-2 pyx2	CR 29-2 pyx3	CR 29-2 pyx4	CR 29-2 pyx5	CR 29-2 pyx6	CR 29-2 pyx7	CR 29-2 pyx8	CR 29-1 pyx1	CR 29-1 pyx2	CR 29-1 pyx3	CR 29-1 pyx4	CR 29-1 pyx5	CR 29-1 pyx6	CR 29-1 pyx7	CR 88-2 pyx8	CR 88-2 pyx9	CR 88-2 pyx10	CR 88-2 pyx11	CR 88-2 pyx12	CR 88-2 pyx13	CR 88-2 pyx14	CR 88-2 pyx15	CR 88-2 pyx16	CR 88-2 pyx17	CR 88-2 pyx18	CR 88-2 pyx19	CR 88-2 pyx20	CR 88-2 pyx21	CR 88-2 pyx22	CR 88-2 pyx23	CR 88-2 pyx24	CR 88-2 pyx25	CR 88-2 pyx26	CR 88-2 pyx27	CR 88-2 pyx28	CR 88-2 pyx29	CR 88-2 pyx30	CR 88-2 pyx31	CR 88-2 pyx32	CR 88-2 pyx33	CR 88-2 pyx34	CR 88-2 pyx35	CR 88-2 pyx36	CR 88-2 pyx37	CR 88-2 pyx38	CR 88-2 pyx39	CR 88-2 pyx40	CR 88-2 pyx41	CR 88-2 pyx42	CR 88-2 pyx43	CR 88-2 pyx44	CR 88-2 pyx45	CR 88-2 pyx46	CR 88-2 pyx47	CR 88-2 pyx48	CR 88-2 pyx49	CR 88-2 pyx50	CR 88-2 pyx51	CR 88-2 pyx52	CR 88-2 pyx53	CR 88-2 pyx54	CR 88-2 pyx55	CR 88-2 pyx56	CR 88-2 pyx57	CR 88-2 pyx58	CR 88-2 pyx59	CR 88-2 pyx60	CR 88-2 pyx61	CR 88-2 pyx62	CR 88-2 pyx63	CR 88-2 pyx64	CR 88-2 pyx65	CR 88-2 pyx66	CR 88-2 pyx67	CR 88-2 pyx68	CR 88-2 pyx69	CR 88-2 pyx70	CR 88-2 pyx71	CR 88-2 pyx72	CR 88-2 pyx73	CR 88-2 pyx74	CR 88-2 pyx75	CR 88-2 pyx76	CR 88-2 pyx77	CR 88-2 pyx78	CR 88-2 pyx79	CR 88-2 pyx80	CR 88-2 pyx81	CR 88-2 pyx82	CR 88-2 pyx83	CR 88-2 pyx84	CR 88-2 pyx85	CR 88-2 pyx86	CR 88-2 pyx87	CR 88-2 pyx88	CR 88-2 pyx89	CR 88-2 pyx90	CR 88-2 pyx91	CR 88-2 pyx92	CR 88-2 pyx93	CR 88-2 pyx94	CR 88-2 pyx95	CR 88-2 pyx96	CR 88-2 pyx97	CR 88-2 pyx98	CR 88-2 pyx99	CR 88-2 pyx100	CR 88-2 pyx101	CR 88-2 pyx102	CR 88-2 pyx103	CR 88-2 pyx104	CR 88-2 pyx105	CR 88-2 pyx106	CR 88-2 pyx107	CR 88-2 pyx108	CR 88-2 pyx109	CR 88-2 pyx110	CR 88-2 pyx111	CR 88-2 pyx112	CR 88-2 pyx113	CR 88-2 pyx114	CR 88-2 pyx115	CR 88-2 pyx116	CR 88-2 pyx117	CR 88-2 pyx118	CR 88-2 pyx119	CR 88-2 pyx120	CR 88-2 pyx121	CR 88-2 pyx122	CR 88-2 pyx123	CR 88-2 pyx124	CR 88-2 pyx125	CR 88-2 pyx126	CR 88-2 pyx127	CR 88-2 pyx128	CR 88-2 pyx129	CR 88-2 pyx130	CR 88-2 pyx131	CR 88-2 pyx132	CR 88-2 pyx133	CR 88-2 pyx134	CR 88-2 pyx135	CR 88-2 pyx136	CR 88-2 pyx137	CR 88-2 pyx138	CR 88-2 pyx139	CR 88-2 pyx140	CR 88-2 pyx141	CR 88-2 pyx142	CR 88-2 pyx143	CR 88-2 pyx144	CR 88-2 pyx145	CR 88-2 pyx146	CR 88-2 pyx147	CR 88-2 pyx148	CR 88-2 pyx149	CR 88-2 pyx150	CR 88-2 pyx151	CR 88-2 pyx152	CR 88-2 pyx153	CR 88-2 pyx154	CR 88-2 pyx155	CR 88-2 pyx156	CR 88-2 pyx157	CR 88-2 pyx158	CR 88-2 pyx159	CR 88-2 pyx160	CR 88-2 pyx161	CR 88-2 pyx162	CR 88-2 pyx163	CR 88-2 pyx164	CR 88-2 pyx165	CR 88-2 pyx166	CR 88-2 pyx167	CR 88-2 pyx168	CR 88-2 pyx169	CR 88-2 pyx170	CR 88-2 pyx171	CR 88-2 pyx172	CR 88-2 pyx173	CR 88-2 pyx174	CR 88-2 pyx175	CR 88-2 pyx176	CR 88-2 pyx177	CR 88-2 pyx178	CR 88-2 pyx179	CR 88-2 pyx180	CR 88-2 pyx181	CR 88-2 pyx182	CR 88-2 pyx183	CR 88-2 pyx184	CR 88-2 pyx185	CR 88-2 pyx186	CR 88-2 pyx187	CR 88-2 pyx188	CR 88-2 pyx189	CR 88-2 pyx190	CR 88-2 pyx191	CR 88-2 pyx192	CR 88-2 pyx193	CR 88-2 pyx194	CR 88-2 pyx195	CR 88-2 pyx196	CR 88-2 pyx197	CR 88-2 pyx198	CR 88-2 pyx199	CR 88-2 pyx200	CR 88-2 pyx201	CR 88-2 pyx202	CR 88-2 pyx203	CR 88-2 pyx204	CR 88-2 pyx205	CR 88-2 pyx206	CR 88-2 pyx207	CR 88-2 pyx208	CR 88-2 pyx209	CR 88-2 pyx210	CR 88-2 pyx211	CR 88-2 pyx212	CR 88-2 pyx213	CR 88-2 pyx214	CR 88-2 pyx215	CR 88-2 pyx216	CR 88-2 pyx217	CR 88-2 pyx218	CR 88-2 pyx219	CR 88-2 pyx220	CR 88-2 pyx221	CR 88-2 pyx222	CR 88-2 pyx223	CR 88-2 pyx224	CR 88-2 pyx225	CR 88-2 pyx226	CR 88-2 pyx227	CR 88-2 pyx228	CR 88-2 pyx229	CR 88-2 pyx230	CR 88-2 pyx231	CR 88-2 pyx232	CR 88-2 pyx233	CR 88-2 pyx234	CR 88-2 pyx235	CR 88-2 pyx236	CR 88-2 pyx237	CR 88-2 pyx238	CR 88-2 pyx239	CR 88-2 pyx240	CR 88-2 pyx241	CR 88-2 pyx242	CR 88-2 pyx243	CR 88-2 pyx244	CR 88-2 pyx245	CR 88-2 pyx246	CR 88-2 pyx247	CR 88-2 pyx248	CR 88-2 pyx249	CR 88-2 pyx250	CR 88-2 pyx251	CR 88-2 pyx252	CR 88-2 pyx253	CR 88-2 pyx254	CR 88-2 pyx255	CR 88-2 pyx256	CR 88-2 pyx257	CR 88-2 pyx258	CR 88-2 pyx259	CR 88-2 pyx260	CR 88-2 pyx261	CR 88-2 pyx262	CR 88-2 pyx263	CR 88-2 pyx264	CR 88-2 pyx265	CR 88-2 pyx266	CR 88-2 pyx267	CR 88-2 pyx268	CR 88-2 pyx269	CR 88-2 pyx270	CR 88-2 pyx271	CR 88-2 pyx272	CR 88-2 pyx273	CR 88-2 pyx274	CR 88-2 pyx275	CR 88-2 pyx276	CR 88-2 pyx277	CR 88-2 pyx278	CR 88-2 pyx279	CR 88-2 pyx280	CR 88-2 pyx281	CR 88-2 pyx282	CR 88-2 pyx283	CR 88-2 pyx284	CR 88-2 pyx285	CR 88-2 pyx286	CR 88-2 pyx287	CR 88-2 pyx288	CR 88-2 pyx289	CR 88-2 pyx290	CR 88-2 pyx291	CR 88-2 pyx292	CR 88-2 pyx293	CR 88-2 pyx294	CR 88-2 pyx295	CR 88-2 pyx296	CR 88-2 pyx297	CR 88-2 pyx298	CR 88-2 pyx299	CR 88-2 pyx300	CR 88-2 pyx301	CR 88-2 pyx302	CR 88-2 pyx303	CR 88-2 pyx304	CR 88-2 pyx305	CR 88-2 pyx306	CR 88-2 pyx307	CR 88-2 pyx308	CR 88-2 pyx309	CR 88-2 pyx310	CR 88-2 pyx311	CR 88-2 pyx312	CR 88-2 pyx313	CR 88-2 pyx314	CR 88-2 pyx315	CR 88-2 pyx316	CR 88-2 pyx317	CR 88-2 pyx318	CR 88-2 pyx319	CR 88-2 pyx320	CR 88-2 pyx321	CR 88-2 pyx322	CR 88-2 pyx323	CR 88-2 pyx324	CR 88-2 pyx325	CR 88-2 pyx326	CR 88-2 pyx327	CR 88-2 pyx328	CR 88-2 pyx329	CR 88-2 pyx330	CR 88-2 pyx331	CR 88-2 pyx332	CR 88-2 pyx333	CR 88-2 pyx334	CR 88-2 pyx335	CR 88-2 pyx336	CR 88-2 pyx337	CR 88-2 pyx338	CR 88-2 pyx339	CR 88-2 pyx340	CR 88-2 pyx341	CR 88-2 pyx342	CR 88-2 pyx343	CR 88-2 pyx344	CR 88-2 pyx345	CR 88-2 pyx346	CR 88-2 pyx347	CR 88-2 pyx348	CR 88-2 pyx349	CR 88-2 pyx350	CR 88-2 pyx351	CR 88-2 pyx352	CR 88-2 pyx353	CR 88-2 pyx354	CR 88-2 pyx355	CR 88-2 pyx356	CR 88-2 pyx357	CR 88-2 pyx358	CR 88-2 pyx359	CR 88-2 pyx360	CR 88-2 pyx361	CR 88-2 pyx362	CR 88-2 pyx363	CR 88-2 pyx364	CR 88-2 pyx365	CR 88-2 pyx366	CR 88-2 pyx367	CR 88-2 pyx368	CR 88-2 pyx369	CR 88-2 pyx370	CR 88-2 pyx371	CR 88-2 pyx372	CR 88-2 pyx373	CR 88-2 pyx374	CR 88-2 pyx375	CR 88-2 pyx376	CR 88-2 pyx377	CR 88-2 pyx378	CR 88-2 pyx379	CR 88-2 pyx380	CR 88-2 pyx381	CR 88-2 pyx382	CR 88-2 pyx383	CR 88-2 pyx384	CR 88-2 pyx385	CR 88-2 pyx386	CR 88-2 pyx387	CR 88-2 pyx388	CR 88-2 pyx389	CR 88-2 pyx390	CR 88-2 pyx391	CR 88-2 pyx392	CR 88-2 pyx393	CR 88-2 pyx394	CR 88-2 pyx395	CR 88-2 pyx396	CR 88-2 pyx397	CR 88-2 pyx398	CR 88-2 pyx399	CR 88-2 pyx400	CR 88-2 pyx401	CR 88-2 pyx402	CR 88-2 pyx403	CR 88-2 pyx404	CR 88-2 pyx405	CR 88-2 pyx406	CR 88-2 pyx407	CR 88-2 pyx408	CR 88-2 pyx409	CR 88-2 pyx410	CR 88-2 pyx411	CR 88-2 pyx412	CR 88-2 pyx413	CR 88-2 pyx414	CR 88-2 pyx415	CR 88-2 pyx416	CR 88-2 pyx417	CR 88-2 pyx418	CR 88-2 pyx419	CR 88-2 pyx420	CR 88-2 pyx421	CR 88-2 pyx422	CR 88-2 pyx423	CR 88-2 pyx424	CR 88-2 pyx425	CR 88-2 pyx426	CR 88-2 pyx427	CR 88-2 pyx428	CR 88-2 pyx429	CR 88-2 pyx430	CR 88-2 pyx431	CR 88-2 pyx432	CR 88-2 pyx433	CR 88-2 pyx434	CR 88-2 pyx435	CR 88-2 pyx436	CR 88-2 pyx437	CR 88-2 pyx438	CR 88-2 pyx439	CR 88-2 pyx440	CR 88-2 pyx441	CR 88-2 pyx442	CR 88-2 pyx443	CR 88-2 pyx444	CR 88-2 pyx445	CR 88-2 pyx446	CR 88-2 pyx447	CR 88-2 pyx448	CR 88-2 pyx449	CR 88-2 pyx450	CR 88-2 pyx451	CR 88-2 pyx452	CR 88-2 pyx453	CR 88-2 pyx454	CR 88-2 pyx455	CR 88-2 pyx456	CR 88-2 pyx457	CR 88-2 pyx458	CR 88-2 pyx459	CR 88-2 pyx460	CR 88-2 pyx461	CR 88-2 pyx462	CR 88-2 pyx463	CR 88-2 pyx464	CR 88-2 pyx465	CR 88-2 pyx466	CR 88-2 pyx467	CR 88-2 pyx468	CR 88-2 pyx469	CR 88-2 pyx470	CR 88-2 pyx471	CR 88-2 pyx472	CR 88-2 pyx473	CR 88-2 pyx474	CR 88-2 pyx475	CR 88-2 pyx476	CR 88-2 pyx477	CR 88-2 pyx478	CR 88-2 pyx479	CR 88-2 pyx480	CR 88-2 pyx481	CR 88-2 pyx482	CR 88-2 pyx483	CR 88-2 pyx484	CR 88-2 pyx485	CR 88-2 pyx486	CR 88-2 pyx487	CR 88-2 pyx488	CR 88-2 pyx489	CR 88-2 pyx490	CR 88-2 pyx491	CR 88-2 pyx492	CR 88-2 pyx493	CR 88-2 pyx494	CR 88-2 pyx495	CR 88-2 pyx496	CR 88-2 pyx497	CR 88-2 pyx498	CR 88-2 pyx499	CR 88-2 pyx500	CR 88-2 pyx501	CR 88-2 pyx502	CR 88-2 pyx503	CR 88-2 pyx504	CR 88-2 pyx505	CR 88-2 pyx506	CR 88-2 pyx507	CR 88-2 pyx508	CR 88-2 pyx509	CR 88-2 pyx510	CR 88-2 pyx511	CR 88-2 pyx512	CR 88-2 pyx513	CR 88-2 pyx514	CR 88-2 pyx515	CR 88-2 pyx516	CR 88-2 pyx517	CR 88-2 pyx518	CR 88-2 pyx519	CR 88-2 pyx520	CR 88-2 pyx521	CR 88-2 pyx522	CR 88-2 pyx523	CR 88-2 pyx524	CR 88-2 pyx525	CR 88-2 pyx526	CR 88-2 pyx527	CR 88-2 pyx528	CR 88-2 pyx529	CR 88-2 pyx530	CR 88-2 pyx531	CR 88-2 pyx532	CR 88-2 pyx533	CR 88-2 pyx534	CR 88-2 pyx535	CR 88-2 pyx536	CR 88-2 pyx537	CR 88-2 pyx538	CR 88-2 pyx539	CR 88-2 pyx540	CR 88-2 pyx541	CR 88-2 pyx542	CR 88-2 pyx543	CR 88-2 pyx544	CR 88-2 pyx545	CR 88-2 pyx546	CR 88-2 pyx547	CR 88-2 pyx548	CR 88-2 pyx549	CR 88-2 pyx550	CR 88-2 pyx551	CR 88-2 pyx552	CR 88-2 pyx553	CR 88-2 pyx554	CR 88-2 pyx555	CR 88-2 pyx556	CR 88-2 pyx557	CR 88-2 pyx558	CR 88-2 pyx559	CR 88-2 pyx560	CR 88-2 pyx561	CR 88-2 pyx562	CR 88-2 pyx563	CR 88-2 pyx564	CR 88-2 pyx565	CR 88-2 pyx566	CR 88-2 pyx567	CR 88-2 pyx568	CR 88-2 pyx569	CR 88-2 pyx570	CR 88-2 pyx571	CR 88-2 pyx572	CR 88-2 pyx573	CR 88-2 pyx574	CR 88-2 pyx575	CR 88-2 pyx576	CR 88-2 pyx577	CR 88-2 pyx578	CR 88-2 pyx579	CR 88-2 pyx580	CR 88-2 pyx581	CR 88-2 pyx582	CR 88-2 pyx583	CR 88-2 pyx584	CR 88-2 pyx585	CR 88-2 pyx586	CR 88-2 pyx587	CR 88-2 pyx588	CR 88-2 pyx589	CR 88-2 pyx590	CR 88-2 pyx591	CR 88-2 pyx592	CR 88-2 pyx593	CR 88-2 pyx594	CR 88-2 pyx595	CR 88-2 pyx596	CR 88-2 pyx597	CR 88-2 pyx598	CR 88-2 pyx599	CR 88-2 pyx600	CR 88-2 pyx601	CR 88-2 pyx602	CR 88-2 pyx603	CR 88-2 pyx604	CR 88-2 pyx605	CR 88-2 pyx606	CR 88-2 pyx607	CR 88-2 pyx608	CR 88-2 pyx609	CR 88-2 pyx610	CR 88-2 pyx611	CR 88-2 pyx612	CR 88-2 pyx613	CR 88-2 pyx614	CR 88-2 pyx615	CR 88-2 pyx616	CR 88-2 pyx617	CR 88-2 pyx618	CR 88-2 pyx619	CR 88-2 pyx620	CR 88-2 pyx621	CR 88-2 pyx622	CR 88-2 pyx623	CR 88-2 pyx624	CR 88-2 pyx625	CR 88-2 pyx626	CR 88-2 pyx627	CR 88-2 pyx628	CR 88-2 pyx629	CR 88-2 pyx630	CR 88-2 pyx631	CR 88-2 pyx632	CR 88-2 pyx633	CR 88-2 pyx634	CR 88-2 pyx635	CR 88-2 pyx636	CR 88-2 pyx637	CR 88-2 pyx638	CR 88-2 pyx639	CR 88-2 pyx640	CR 88-2 pyx641	CR 88-2 pyx642	CR 88-2 pyx643	CR 88-2 pyx644	CR 88-2 pyx645	CR 88-2 pyx646	CR 88-2 pyx647	CR 88-2 pyx648	CR 88-2 pyx649	CR 88-2 pyx650	CR 88-2 pyx651	CR 88-2 pyx652	CR 88-2 pyx653	CR 88-2 pyx654	CR 88-2 pyx655	CR 88-2 pyx656	CR 88-2 pyx657	CR 88-2 pyx658	CR 88-2 pyx659	CR 88-2 pyx660	CR 88-2 pyx661	CR 88-2 pyx662	CR 88-2 pyx663	CR 88-2 pyx664	CR 88-2 pyx665	CR 88-2 pyx666	CR 88-2 pyx667	CR 88-2 pyx668	CR 88-2 pyx669	CR 88-2 pyx670	CR 88-2 pyx671	CR 88-2 pyx672	CR 88-2 pyx673	CR 88-2 pyx674	CR 88-2 pyx675	CR 88-2 pyx676	CR 88-2 pyx677	CR 88-2 pyx678	CR 88-2 pyx679	CR 88-2 pyx680	CR 88-2 pyx681	CR 88-2 pyx682	CR 88-2 pyx683	CR 88-2 pyx684	CR 88-2 pyx685	CR 88-2 pyx686	CR 88-2 pyx687	CR 88-2 pyx688	CR 88-2 pyx689	CR 88-2 pyx690	CR 88-2 pyx691	CR 88-2 pyx692	CR 88-2 pyx693	CR 88-2 pyx694	CR 88-2 pyx695	CR 88-2 pyx696	CR 88-2 pyx697	CR 88-2 pyx698	CR 88-2 pyx699	CR 88-2 pyx700	CR 88-2 pyx701	CR 88-2 pyx702	CR 88-2 pyx703	CR 88-2 pyx704	CR 88-2 pyx705	CR 88-2 pyx706	CR 88-2 pyx707	CR 88-2 pyx708	CR 88-2 pyx709	CR 88-2 pyx710	CR 88-2 pyx711	CR
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**Table 9. Olivine chemistry, suite, and Fo content.**

Sample	CR 99-1	CR 99-1	CR 99-1	CR 99-1	CR 99-1	CR 10-1	CR 114-3
Point	oliv1	oliv2	oliv3	oliv4	oliv5	oliv1	oliv1
<i>Suite</i>	<i>wehrlite</i>	<i>wehrlite</i>	<i>wehrlite</i>	<i>wehrlite</i>	<i>wehrlite</i>	<i>wehrlite</i>	<i>mantle</i>
SiO <sub>2</sub>	40.730	40.443	40.559	40.540	40.542	40.580	38.961
TiO <sub>2</sub>	0.055	0.005	0.065	0.060	0.000	0.000	0.112
FeO*	13.697	13.813	13.533	14.095	13.913	16.861	12.622
MnO	0.096	0.239	0.269	0.319	0.320	0.243	0.092
MgO	46.201	45.636	45.883	45.672	45.848	43.589	43.576
CaO	0.034	0.055	0.069	0.178	0.072	0.048	0.027
Cr <sub>2</sub> O <sub>3</sub>	0.026	0.016	0.054	0.012	0.037	0.018	0.013
SUM	100.839	100.207	100.431	100.875	100.732	101.337	95.402
 Fo	 85.736	 85.481	 85.799	 85.238	 85.449	 82.165	 86.018
 <i>Formula per 4 oxygen</i>							
Si	1.006	1.006	1.006	1.004	1.004	1.011	1.014
Ti	0.001	0.000	0.001	0.001	0.000	0.000	0.002
Fe	0.283	0.287	0.281	0.292	0.288	0.351	0.275
Mn	0.002	0.005	0.006	0.007	0.007	0.005	0.002
Mg	1.700	1.692	1.696	1.685	1.693	1.619	1.690
Ca	0.001	0.001	0.002	0.005	0.002	0.001	0.001
Cr	0.000	0.000	0.001	0.000	0.000	0.000	0.000

Table 10. Hornblende chemistry

Sample Point	CR 88-2 hbl1	CR 88-2 hbl2	CR 88-2 hbl3	CR 88-2 hbl4	CR 88-2 hbl5	CR 88-2 hbl6	CR 10-1 hbl1	CR 10-1 hbl2	CR 10-1 hbl3	CR 10-1 hbl4	CR 87-1 hbl1	CR 87-1 hbl2	CR 88-2 hbl1	CR 88-2 hbl2	CR 88-2 hbl3	CR 88-2 hbl4	CR 10-3 hbl1	CR 10-3 hbl2	CR 10-3 hbl3	CR 10-3 hbl4	CR 10-3 hbl5	CR 10-3 hbl6	CR 10-3 hbl7	CR 10-3 hbl8
Suite	diorite	diorite	late dike	late dike	late dike	late dike	late dike	late dike	late dike	late dike	late dike	wehrlite	wehrlite	wehrlite	wehrlite	wehrlite	wehrlite	wehrlite	wehrlite	wehrlite	wehrlite	wehrlite	wehrlite	wehrlite
SiO2	48.522	48.522	51.37	52.72	52.24	53.03	52.30	51.91	54.08	53.81	51.71	44.438	44.285	47.415	43.636	44.306	45.589	44.558	45.235	45.878	45.549	47.505	47.505	49.79
TiO2	0.220	0.220	0.39	0.43	0.41	0.37	0.39	0.46	0.15	0.20	0.25	3.154	2.894	1.371	2.394	2.399	2.175	2.204	2.075	0.579	1.043	0.390	0.390	1.18
Al2O3	6.865	6.865	4.40	2.97	2.78	2.81	3.12	3.04	2.32	2.46	3.48	8.971	8.699	7.927	8.901	8.971	9.130	8.940	9.082	8.861	8.740	8.099	8.099	5.32
FeO*	18.200	18.200	16.06	15.51	16.58	13.95	14.42	14.83	12.35	12.77	14.62	7.827	8.010	7.227	7.819	7.954	7.885	7.472	7.419	8.259	8.628	7.549	7.549	6.40
MnO	0.347	0.347	0.46	0.59	0.48	0.32	0.42	0.44	0.36	0.30	0.29	0.099	0.077	0.030	0.049	0.071	0.061	0.052	0.090	0.139	0.088	0.093	0.093	0.09
MgO	12.048	12.048	12.46	14.59	13.60	14.16	14.67	14.29	15.65	15.43	13.18	16.017	16.218	17.551	16.047	16.125	16.767	15.820	16.805	17.100	17.714	17.626	17.626	16.54
CaO	8.691	8.691	11.55	10.72	11.26	12.52	11.36	11.47	12.29	12.23	12.44	11.886	11.903	12.087	12.034	11.823	11.837	11.924	11.676	11.689	10.898	12.171	12.171	16.44
Cr2O3	0.001	0.001	0.01	0.02	0.03	0.00	0.07	0.05	0.05	0.02	0.05	0.313	0.313	0.381	0.346	0.308	0.387	1.299	1.358	0.362	0.509	0.313	0.313	0.74
Na2O	0.369	0.369	0.33	0.27	0.32	0.16	0.32	0.28	0.16	0.20	0.27	2.436	2.341	1.917	2.325	2.334	2.291	2.448	2.519	2.485	2.371	1.872	1.872	1.25
K2O	0.326	0.326	0.08	0.10	0.18	0.02	0.10	0.10	0.06	0.06	0.04	0.300	0.312	0.063	0.295	0.290	0.322	0.435	0.299	0.401	0.324	0.454	0.454	0.14
SUM	95.590	95.590	97.11	97.93	97.90	97.34	97.17	96.89	97.48	97.48	96.33	95.441	95.051	95.970	93.846	94.582	96.444	95.151	96.558	95.754	95.863	96.072	96.072	97.88
recalculated values																								
Si	6.585	6.588	6.862	6.561	6.606	6.660	6.611	6.567	6.732	6.365	7.752	7.752	6.543	6.954	7.224	7.414	7.584	7.612	7.758	7.690	7.616	7.724	7.762	7.682
Al	1.415	1.412	1.138	1.439	1.394	1.340	1.389	1.433	1.268	1.635	0.248	0.248	1.457	1.046	0.776	0.586	0.416	0.388	0.242	0.310	0.384	0.276	0.238	0.318
Ti	0.324	0.352	0.149	0.271	0.269	0.239	0.246	0.227	0.064	0.110	0.026	0.026	0.040	0.043	0.128	0.009	0.043	0.047	0.046	0.040	0.043	0.052	0.017	0.022
Al	0.110	0.156	0.214	0.139	0.183	0.232	0.174	0.121	0.265	0.000	1.045	1.045	0.000	0.351	0.134	0.000	0.349	0.118	0.244	0.170	0.152	0.257	0.156	0.097
Fe	0.996	0.970	0.875	0.983	0.992	0.963	0.927	0.901	1.014	1.008	2.432	2.432	0.870	0.924	0.776	0.420	1.983	1.872	2.059	1.692	1.755	1.846	1.483	1.525
Mn	0.010	0.012	0.004	0.006	0.009	0.008	0.006	0.011	0.017	0.010	0.047	0.047	0.011	0.012	0.011	0.012	0.058	0.073	0.061	0.039	0.052	0.056	0.044	0.036
Mg	3.594	3.539	3.785	3.596	3.583	3.650	3.498	3.636	3.740	3.689	2.869	2.869	3.618	3.845	3.577	4.280	2.741	3.140	3.009	3.061	3.182	3.168	3.348	3.282
Ca	1.896	1.888	1.874	1.939	1.889	1.853	1.895	1.816	1.838	1.632	1.488	1.488	1.796	1.909	2.556	1.797	1.828	1.658	1.792	1.946	1.772	1.829	1.891	1.871
Cr	0.037	0.037	0.044	0.041	0.036	0.045	0.152	0.156	0.042	0.056	0.000	0.000	0.034	0.036	0.084	0.010	0.002	0.002	0.004	0.000	0.008	0.006	0.006	0.002
Na	0.675	0.700	0.538	0.678	0.675	0.649	0.704	0.709	0.707	0.643	0.114	0.114	0.500	0.532	0.352	0.063	0.093	0.075	0.094	0.045	0.089	0.081	0.045	0.055
K	0.059	0.057	0.012	0.057	0.055	0.060	0.082	0.055	0.075	0.058	0.067	0.067	0.080	0.085	0.026	0.000	0.015	0.019	0.035	0.004	0.019	0.020	0.010	0.010

**Table 11. Plagioclase chemistry, suite, and An content.**

Sample	CR 29-2	CR 87-1	CR 87-1	CR 87-1	CR 75-1
Point	plag1	plag1	plag2	plag3	plag1
Suite	<i>volcanic</i>	<i>diorite</i>	<i>diorite</i>	<i>diorite</i>	<i>late dike</i>
SiO <sub>2</sub>	67.56	67.48	66.82	68.37	67.05
TiO <sub>2</sub>	0.00	0.05	0.17	0.00	0.01
Al <sub>2</sub> O <sub>3</sub>	20.71	21.42	21.55	20.22	15.57
FeO*	0.16	0.44	0.63	0.20	0.49
MnO	0.23	0.30	0.01	0.05	0.00
MgO	0.11	0.11	0.35	0.00	0.13
CaO	0.52	0.51	1.10	0.46	0.18
Cr <sub>2</sub> O <sub>3</sub>	0.01	0.00	0.02	0.00	0.00
Na <sub>2</sub> O	11.22	10.62	10.47	11.34	10.71
K <sub>2</sub> O	0.19	0.80	0.25	0.05	0.13
SUM	100.71	101.73	101.37	100.69	94.28
An	4.82	4.81	10.25	4.24	1.77

Table 12. REE data from ICP-MS for Cuesta Ridge samples.

Sample	CR 80-1	CR 80-1 *	CR 78-2	CR 78-2 *	CR 09-2	CR 20-1	CR 08-1	CR 79-1	CR 68-1	CR 07-1	CR 10-1	CR 30-2	CR 88-2	CR 98-2	CR 98-2 *	CR 4-1	CR 73-3	CR 75-1	CR 90-2	CR 40-1	CR 43-1	CR 64-2	CR 07-3	CR 46-1	CR 100-1	CR 114-2	CR 21-1	CR 87-1	CR 22-1	CR 32-1	CR 3-2	CR 42-1	CR 99-1	CR 33-1
La ppm	5.38	5.45	8.65	8.85	0.61	6.76	3.82	3.10	2.67	2.44	0.42	5.11	0.93	7.13	7.21	5.25	6.89	5.53	5.15	3.46	2.25	5.12	3.37	4.36	2.05	0.64	5.35	7.07	6.60	6.73	1.52	3.44	0.22	6.51
Ce ppm	12.22	12.08	17.89	18.15	1.74	18.06	10.54	5.96	6.15	5.34	1.25	14.26	2.45	17.88	17.96	9.75	17.32	15.10	13.17	6.28	5.67	11.44	8.44	9.34	6.08	1.90	13.58	17.54	16.69	17.27	3.70	8.45	0.61	16.68
Pr ppm	1.68	1.65	2.41	2.43	0.28	2.79	1.72	1.15	0.85	0.73	0.20	2.23	0.41	2.72	2.74	1.49	2.64	2.32	2.02	0.96	0.93	1.61	1.36	1.51	1.04	0.33	2.07	2.59	2.53	2.67	0.57	1.34	0.10	2.51
Nd ppm	7.90	7.84	11.17	11.24	1.58	15.08	9.66	6.20	4.26	3.69	1.29	11.97	2.36	14.38	14.39	7.45	14.12	12.62	11.08	4.76	4.91	8.09	7.42	7.81	6.00	1.90	11.14	13.34	13.32	14.20	3.09	7.22	0.58	13.40
Sm ppm	2.37	2.33	3.39	3.47	0.68	5.42	3.71	2.30	1.41	1.26	0.54	4.34	1.00	5.05	5.08	2.20	5.24	4.58	4.07	1.48	1.92	2.67	2.88	2.77	2.44	0.73	3.97	4.48	4.76	5.01	1.14	2.63	0.26	4.82
Eu ppm	0.91	0.91	0.94	0.94	0.26	1.99	1.41	0.98	0.39	0.52	0.23	1.49	0.37	1.47	1.45	0.62	1.85	1.52	1.66	0.32	0.74	0.74	0.97	1.33	0.96	0.24	1.49	1.24	1.69	1.64	0.35	1.00	0.11	1.67
Gd ppm	2.69	2.64	3.94	3.82	0.94	7.10	5.16	3.09	1.67	1.50	0.84	5.46	1.32	6.06	6.26	2.38	6.53	5.74	5.46	1.79	2.48	2.94	3.90	3.39	3.33	0.83	5.32	5.28	6.31	6.43	1.58	3.26	0.32	6.15
Tb ppm	0.46	0.45	0.69	0.69	0.18	1.34	0.96	0.56	0.29	0.28	0.16	1.03	0.24	1.13	1.15	0.41	1.23	1.09	1.02	0.32	0.46	0.53	0.74	0.63	0.63	0.15	1.01	0.97	1.15	1.19	0.29	0.59	0.06	1.13
Dy ppm	2.98	2.99	4.45	4.40	1.21	8.85	6.47	3.92	1.89	1.85	1.06	6.67	1.65	7.45	7.41	2.55	8.11	7.13	6.71	2.19	3.06	3.22	4.80	4.08	4.06	0.92	6.52	6.29	7.66	7.83	2.01	3.81	0.45	7.43
Ho ppm	0.68	0.66	0.95	0.95	0.26	1.92	1.41	0.83	0.40	0.40	0.22	1.40	0.34	1.61	1.62	0.52	1.71	1.49	1.48	0.50	0.64	0.65	1.05	0.86	0.88	0.19	1.42	1.39	1.68	1.69	0.44	0.79	0.10	1.56
Er ppm	1.96	1.93	2.69	2.61	0.71	5.28	3.91	2.28	1.08	1.10	0.63	3.88	0.92	4.48	4.47	1.46	4.79	4.11	4.12	1.47	1.80	1.71	2.95	2.38	2.43	0.50	3.97	3.82	4.62	4.71	1.23	2.23	0.27	4.28
Tm ppm	0.31	0.30	0.40	0.41	0.10	0.75	0.56	0.34	0.16	0.16	0.09	0.55	0.13	0.64	0.67	0.22	0.67	0.59	0.59	0.23	0.26	0.24	0.43	0.34	0.35	0.07	0.58	0.57	0.69	0.69	0.18	0.32	0.04	0.61
Yb ppm	2.04	2.03	2.61	2.65	0.65	4.77	3.55	2.10	1.00	1.07	0.56	3.44	0.77	4.14	4.14	1.38	4.22	3.59	3.64	1.51	1.59	1.43	2.73	2.17	2.16	0.45	3.61	3.59	4.25	4.30	1.18	2.00	0.26	3.76
Lu ppm	0.34	0.33	0.42	0.43	0.10	0.74	0.55	0.33	0.16	0.17	0.09	0.54	0.12	0.65	0.65	0.21	0.65	0.57	0.57	0.27	0.25	0.23	0.43	0.35	0.34	0.07	0.58	0.58	0.68	0.67	0.18	0.30	0.04	0.57
Ba ppm	92.63	93.07	365.27	368.35	15.38	30.27	80.84	6.34	24.32	128.15	14.02	66.12	91.66	75.35	75.01	59.75	17.21	87.30	89.00	29.62	39.95	285.27	28.31	28.32	1281.40	10.25	82.97	260.55	145.42	14.75	28.08	100.14	6.93	115.01
Th ppm	1.80	1.84	1.89	1.91	0.07	0.57	0.35	0.33	0.42	0.38	0.06	0.49	0.14	0.90	0.90	0.95	0.54	0.51	0.41	0.53	0.27	1.08	0.43	0.50	0.04	0.06	0.40	1.11	0.55	0.52	0.27	0.28	0.02	0.53
Nb ppm	1.97	1.97	2.35	2.38	0.11	4.31	1.35	0.61	0.44	0.47	0.07	3.17	0.16	2.17	2.20	0.60	3.84	3.26	2.82	0.78	0.63	1.02	0.93	0.84	0.64	0.08	2.91	2.34	4.04	3.78	0.55	1.02	0.03	3.94
Y ppm	20.16	19.32	26.50	26.53	7.40	51.57	37.54	21.87	10.76	11.00	12.91	36.73	8.97	43.56	43.63	13.44	45.81	40.83	40.21	14.39	17.62	16.58	28.85	23.79	23.96	5.23	43.03	37.06	45.71	45.04	11.73	21.85	3.06	42.01
Hf ppm	3.07	3.07	3.66	3.76	0.27	3.88	2.67	1.43	0.76	0.86	0.20	3.15	0.42	2.97	2.95	0.82	3.56	3.19	2.75	1.40	1.34	1.45	2.04	1.67	1.09	0.23	2.75	3.29	3.55	3.47	0.85	1.58	0.11	3.40
Ta ppm	0.15	0.15	0.17	0.17	0.01	0.31	0.10	0.05	0.03	0.04	0.01	0.24	0.01	0.15	0.15	0.04	0.27	0.23	0.20	0.06	0.05	0.08	0.07	0.06	0.04	0.01	0.21	0.17	0.28	0.28	0.03	0.07	0.00	0.27
U ppm	0.53	0.57	0.58	0.59	0.02	0.23	0.12	0.12	0.10	0.13	0.02	0.52	0.04	0.32	0.32	0.82	0.37	0.51	0.13	0.21	0.11	0.33	0.14	0.18	0.01	0.02	0.22	0.36	0.18	1.62	0.19	0.09	0.01	0.25
Pb ppm	1.78	1.78	2.15	2.18	1.61	1.83	1.56	1.61	2.26	1.72	1.57	2.16	1.64	1.57	1.60	3.51	3.81	2.24	1.68	1.92	3.43	1.92	1.48	2.31	1.91	1.59	2.05	1.75	2.15	2.92	1.78	2.93	1.54	2.22
Rb ppm	5.20	5.21	10.73	10.85	0.58	0.39	4.42	0.03	0.22	4.04	0.63	3.02	0.85	2.66	2.60	1.20	0.25	3.88	0.13	0.33	0.37	11.01	1.35	0.39	0.52	0.42	7.49	9.31	13.98	0.26	0.24	0.20	0.22	1.84
Cs ppm	0.33	0.34	0.24	0.25	0.14	0.25	0.10	0.00	0.04	0.62	0.14	0.12	0.28	0.13	0.14	0.02	0.11	0.14	0.03	0.01	0.03	0.12	0.04	0.03	0.26	0.09	1.12	0.19	1.29	0.13	0.01	0.15	0.14	0.25
Sr ppm	409.10	406.86	211.90	213.05	54.05	58.89	468.33	374.38	38.00	333.97	47.91	130.32	37.09	408.87	407.71	199.33	62.24	162.87	112.14	39.39	66.49	51.35	268.51	343.06	232.73	21.24	268.53	350.47	332.42	62.83	154.58	78.08	11.88	177.16
Sc ppm	11.06	10.64	10.38	10.36	43.50	41.49	44.24	34.80	47.46	33.11	39.91	35.31	61.18	23.80	24.51	54.15	36.42	34.84	40.98	35.76	28.53	31.29	41.76	36.31	42.18	42.56	35.48	16.04	37.65	35.56	51.55	38.64	21.94	40.42
Zr ppm	99.06	97.46	119.73	121.51	6.87	134.24	87.02	42.81	21.30	25.31	5.34	104.37	12.07	90.88	91.24	24.79	121.39	108.51	92.27	40.99	43.11	47.14	64.33	54.04	25.29	5.80	91.53	104.27	120.41	116.37	24.73	52.38	2.72	116.92

**Table 13. Sample location data for analyzed samples.**

Sample	Latitude <i>dd.mm.sss</i>	Longitude <i>dd.mm.sss</i>	Elevation <i>feet</i>	Sample	Latitude <i>dd.mm.sss</i>	Longitude <i>dd.mm.sss</i>	Elevation <i>feet</i>
CR 03-2	35.20.848	120.37.903	1910	CR 44-1	35.24.565	120.43.859	2600
CR 04-1	35.20.673	120.38.510	2060	CR 46-1	35.20.696	120.38.473	1920
CR 06-1	35.20.954	120.38.749	2070	CR 49-1	35.20.112	120.38.491	1340
CR 07-1	35.21.044	120.38.694	2110	CR 52-1	35.20.196	120.37.802	1400
CR 07-2	35.21.044	120.38.694	2110	CR 54-3	35.20.434	120.37.826	1240
CR 07-3	35.21.044	120.38.694	2110	CR 63-1	35.25.241	120.43.972	1680
CR 08-1	35.21.058	120.38.898	2540	CR 64-2	35.24.869	120.43.975	2630
CR 09-2	35.21.342	120.39.135	2170	CR 66-1	35.24.899	120.44.014	2630
CR 10-1	35.21.356	120.39.182	2240	CR 68-1	35.24.907	120.44.269	2530
CR 10-2	35.21.356	120.39.182	2240	CR 70-1	35.23.989	120.42.994	2470
CR 10-3	35.21.356	120.39.182	2240	CR 73-3	35.23.632	120.42.557	2580
CR 11-2	35.21.392	120.39.286	2310	CR 75-1	35.23.127	120.42.034	2390
CR 12-1	35.21.579	120.39.329	2380	CR 76-1	35.23.100	120.42.020	2380
CR 20-1	35.22.802	120.41.544	2480	CR 78-2	35.20.627	120.38.565	1940
CR 21-1	35.22.856	120.41.602	2380	CR 79-1	35.20.646	120.38.872	1830
CR 22-1	35.22.891	120.41.643	2390	CR 80-1	35.20.663	120.38.590	1830
CR 25-1	35.23.024	120.41.617	2650	CR 81-2	35.20.667	120.38.614	1800
CR 26-1	35.23.024	120.41.617	2660	CR 82-1	35.20.657	120.38.679	1780
CR 27-2	35.23.024	120.41.617	2670	CR 82-2	35.20.657	120.38.679	1780
CR 29-1	35.23.080	120.41.848	2510	CR 82-3	35.20.657	120.38.679	1780
CR 29-2	35.23.080	120.41.848	2510	CR 84-4	35.20.739	120.38.701	1740
CR 30-1	35.23.084	120.41.964	2410	CR 84-6	35.20.739	120.38.701	1740
CR 30-2	35.23.084	120.41.964	2410	CR 85-1	35.20.752	120.38.773	1690
CR 31-1	35.23.424	120.42.322	2450	CR 85-3	35.20.752	120.38.773	1690
CR 32-1	35.23.638	120.42.558	2600	CR 87-1	35.20.844	120.38.945	1570
CR 33-1	35.23.721	120.42.416	2660	CR 87-2	35.20.844	120.38.945	1570
CR 33-2	35.23.721	120.42.416	2660	CR 88-2	35.21.482	120.39.503	2150
CR 36-1	35.24.569	120.43.844	2580	CR 89-2	35.210.43	120.39.512	2070
CR 37-1	35.24.676	120.43.952	2580	CR 90-1	35.21.383	120.39.606	1990
CR 38-2	35.24.743	120.44.024	2580	CR 90-2	35.21.383	120.39.606	1990
CR 40-1	35.24.876	120.44.286	2170	CR 90-4	35.21.383	120.39.606	1990
CR 41-3	35.24.474	120.43.941	2180	CR 91-1	35.21.784	120.41.149	1660
CR 42-1	35.24.526	120.43.923	2240	CR 92-1	35.21.757	120.41.227	1650
CR 43-1	35.24.541	120.43.870	2420				