Analyses of rocks of the Belt series

[All analyses made in the laboratory of the U. S. Geological Survey. Samples ID-15150, 15250, 15350, 15450 were analysed by Robert N. Eecher. Samples ID-13550, 15650 13750, 13850, 13950, 14050, 21350, 21450, 21550, 21650 were analysed by Harry M. Hyman]

	ID-14050 [1]	ID-13950 [2]	ID-21650 [3]	ID-21550 [4]	ID-21350 [5]	ID-21450 [6]	ID-13650 [7]	ID-13550 [8]	ID-15450 [9]	ID-13850 [10]	ID-13750 [11]	ID-15350 [12]	ID-15150 [13]	ID-15250 [14]
Silica (SiO_2)	18.85	69.82	65.74	66.73	63.25	70.21	70.15	23.73	48.81	7.53	42.16	53.57	71.66	66.45
Alumina (Al_2O_3)	1.90	11.96	14.42	15.97	16.55	14.19	15.29	4.25	7.51	1.23	6.17	11.98	4.50	16.05
Ferric oxide (Fe_2O_3)	.12	.84	.71	.90	5.08	1.79	3.36	.45	.24	.25	.37	1.35	.78	1.02
Ferrous oxide (FeO)	.62	2.25	[15] 3.47	3.70	2.16	2.22	.63	.99	1.65	1.58	1.72	2.67	.76	2.54
Magnesia (MgO)	16.36	2.12	2.33	2.77	2.57	2.58	1.58	2.73	3.73	17.36	3.68	6.43	4.44	3.32
Calcium oxide (CaO)	23.79	3.22	2.32	.20	.26	.17	.12	36.31	17.55	28.85	22.81	6.47	5.73	.28
Soda (Na_2O)	.18	2.03	1.62	1.42	.78	1.04	1.69	.32	1.13	.08	.66	.61	.54	1.42
Potash (K_2O)	1.06	2.90	3.98	4.01	5.27	3.98	4.22	.94	1.91	.36	1.39	3.99	1.65	4.65
Water freed below 100° C (H_2O-)	.02	.09	.03	.07	.06	.05	.07	.14	.04	.05	.16	.10	.02	.17
Water freed above 100° C (H_2O+)	.01	1.61	2.36	3.09	3.10	2.69	2.00	1.19	1.49	.22	1.32	2.54	.67	3.15
Titanium oxide (TiO_2)	.06	.42	.54	.57	.63	.60	.61	.14	.33	.05	.22	.50	.08	.54
Carbon dioxide (CO_2)	36.65	2.39	1.77	.10	.02	.11	.03	28.61	15.42	41.97	18.94	9.37	8.63	.11
Phosphoric oxide (P_2O_5)	.12	.04	.15	.10	.19	.05	.08	.07	.07	.03	.05	.12	.09	.08
Manganese oxide (MnO)	.05	.10	.08	.04	.02	.02	.01	.07	.03	.27	.04	.04	.12	.01
Sulphur (S)			.52											
Total	99.91	99.79	100.04	99.67	99.94	99.70	99.84	99.90	99.91	99.83	99.69	99.74	99.67	99.79
Less O for S			.26											
Difference			99.78											
Bulk density			2.74	2.72	2.79	2.70								
Powder density			2.70	2.71	2.74	2.68								
Calcium carbonate [16] ($CaCO_3$)	42.46	3.27	2.00	.01	.00	.01	.00	60.47	28.91	51.50	37.06	10.68	11.29	.02
Magnesium carbonate [16] ($MgCO_3$)	34.21	1.82	1.70	.17	.03	.20	.05	3.83	5.18	36.31	5.10	8.96	7.02	.19

[1] Altyn limestone from near Many Glacier Hotel, Glacier National Park.
[2] Appekunny argillite from near Many Glacier Hotel, Glacier National Park.
[3] Dark Appekunny argillite from highway above Lake McDonald, Glacier National Park.
[4] Green beds in Appekunny argillite from highway above Lake McDonald, Glacier National Park.
[5] Purple beds in Grinnell argillite from highway above Lake McDonald, Glacier National Park.
[6] Green beds in Grinnel argillite from highway above Lake McDonald, Glacier National Park.
[7] Purple beds in Grinnell argillite, from Noisy Creek, Nyack quadrangle.
[8] Siyeh limestone, from Alpine trail, Nyack quadrangle.
[9] Siyeh limestone, from U. S. Highway 2.
[10] Shepard formation, from unsurveyed NW¼, sec. 22, T. 35 N., R. 17 W., Glacier National Park, collected by M. E. Beatty.
[11] Limestone in the Missoula group, from Emery Creek, Nyack quadrangle.
[12] Green calcareous argillite, near base of Missoula group, from Middle Fork of the Flathead River, Nyack quadrangle.
[13] Red-purple quartzite of Missoula group, from Middle Fork of the Flathead River, Nyack quadrangle.
[14] Green argillite of Missoula group, from Middle Fork of the Flathead River, Nyack quadrangle.
[15] Because of the presence of acid-soluble sulfides, results for ferrous iron are not reliable. Sample contains organic matter.
[16] Calculated content of calcium and magnesium carbonates on the assumption that the CaO and MgO combine proportionately with available CO_2 to form carbonates.