DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

a/ Sample type--1. Laminated rock from Roberts Mountains Formation.
2. Coarse-grained carbonate rock from Roberts Mountains Formation.
3. Carbonate rock from lower cherty unit of Roberts Mountains Formation.
4. Diagenetically silicified laminated rock in Roberts Mountains Formation.
5. Epigenetically altered laminated rock in Roberts Mountains Formation.
6. Laminated rock, post-Roberts Mountains Formation.
7. Laminated rock, pre-Roberts Mountains Formation.
8. Coarse-grained carbonate rock that is not Roberts Mountains Formation. Samples 8124, 6952, and 6964 are from Hanson Creek Formation; all others are post-Roberts Mountains Formation.
9. Altered laminated rock not in Roberts Mountains Formation.
10. Laminated dolomite equivalent to Roberts Mountains Formation but not included in Roberts Mountains Formation.
11. Coarse-grained dolomite interbedded with sample type 10.

b/ Stratigraphic position refers only to samples from Roberts Mountains Formation.
1 indicates sample is from lower half; 2 indicates sample is from upper half; 3 indicates sample is from cherty unit; and 4 indicates stratigraphic position in Roberts Mountains Formation is not known.

c/ Bar in box indicates item looked for but not found. Mineralogic composition not determined on GX samples.

d/ Tr in Other minerals column indicates 0.05 to 0.5 percent.

e/ All oxide analyses made by Branch of Analytical Laboratories personnel, U.S. Geological Survey; Leonard Shapiro, project leader. Methods used are described by Shapiro and Brannock (1942) and are supplemented by atomic absorption. Sulfur and organic carbon content determined by I. C. Frost using reduction furnace methods. Blank box indicates item not determined.

f/ Spectrographic analyses for rocks with oxide analyses are by Branch of Analytical Laboratories personnel; other analyses are by personnel in the Branch of Exploration Research of the Geological Survey. Spectrographic results are reported in the series of 1.0, 0.7, 0.5, 0.3, 0.2, 0.15, and 0.10, etc. which are mid-points of geometric brackets whose boundaries are in the series 1.2, 0.83, 0.56, 0.38, 0.26, 0.18, 0.12, etc. The precision of a reported value is approximately plus or minus one bracket at 68 percent and plus or minus two brackets at 95 percent confidence.
N indicates the element not detected at limit of detection.
L indicates element present but below limit of determination.
L indicates element present but below limit of determination.

g/ Tr in Remarks column indicates a few grains of mineral found in heavy mineral separate.

Sample information; Mineralogic composition in percent c/ (Determined by petrographic, x-ray diffraction, and chemical studies); Ratio of zircon to tourmaline

Sample number	Sample type a/	Locality	Stratigraphic position b/	Rock type	Insoluble residue	Calcite	Dolomite	Quartz (total)	Quartz (detrital)	Quartz (secondary)	Clay (total)	Illite	Kaolinite	Chlorite	Other clay	K feldspar	Plagioclase feldspar	Other minerals d/	Ratio of zircon to tourmaline
Locality 5 Maggie Creek Canyon, sec. 26, T. 34 N., R. 51 E. Eureka County, Nevada, 40° 49' N, 116° 13' W. Schroeder Mountain quadrangle																			
8112	1	5	2		33	37	30	19	19	—	11	8	2	1	—	2	Tr.	1% Fe oxide	1:1
8113	1	5	2		55	15	30	40	40	—	10	8	2	—	—	4	Tr.	1% Fe oxide	1:1
8114	2	5	2		12	83	5	10	10	—	1	Tr.	1	—	—	1	Tr.	Tr. Fe oxide	1:1
8115	1	5	2		55	15	30	31	31	—	16	14	2	—	—	7	Tr.	Tr. pyrite Tr. Fe oxide	1:1
8116	1	5	2		GX sample														
8117	1	5	2		61	14	25	40	39	1	14	8	6	—	—	7	Tr.	Tr. pyrite Tr. Fe oxide	1:1
8118	5	5	2		62	3	35	42	35	7	14	12	2	—	—	3	Tr.	Tr. Fe oxide	1:1
8119	5	5	2		GX Sample														
8120	5	5	2		98	0	2	68	35	33	20	16	4	—	—	10	Tr.		1:1
8121	1	5	2		45	15	40	29	20	9	13	10	3	—	—	3	Tr.	Tr. Fe oxide	1:1
8122	5	5	2		96	3	1	70	35	35	17	9	8	—	—	9	Tr.	Tr. Fe oxide	1:1
8123	1	5	2		34	48	18	22	22	—	7	6	1	—	—	4	—	1% pyrite Tr. collophane	1:1
9042	5	5	2		68	10	22	35	35	—	27	27	Tr.	—	—	5	Tr.	1% Fe oxide	1:1
8124	8	5	—		3	1	96	2	—	2	1	Tr.	1	—	—	Tr.	—		1:1
Locality 6 Bootstrap mine, sec. 10, T. 36 N., R. 49 E. Elko County, Nevada 41° 02' N., 116° 25' W. Santa Renia Fields quadrangle																			
8124B	1	6	2		40	12	48	25	25	—	11	8	3	—	—	3	Tr.	1% Fe oxide	1:1
8125	2	6	2		39	55	6	34	4	30	5	3	2	Tr.	—	Tr.		Tr. collophane	1:1
8126	2	6	2		24	70	6	23	5	18	T	Tr.	—	—	—	1			1:1
8129	1	6	2		GX sample														
8128	2	6	2		11	87	2	9	1	8	2	2	—	—	—	Tr.		Tr. Fe oxide Tr. collophane	1:1
8129	1	6	2		51	9	40	30	29	1	6	6	Tr.	—	—	8		1% Fe oxide Tr. collophane	1:1
9043	2	6	2		14	81	5	11	8	3	2	1	1	—	—	1		Tr. Fe oxide	1:1
9044	8	6	—		7	89	4	4	3	1	2	1	1	—	—	1		Tr. Fe oxide	1:1
Locality 7 Silver Creek, sec. 21, T. 21 N. R. 44 E. Lander County, Nevada 39° 48' N., 117° 03' W. Vigus Butte NE quadrangle																			
8131	1	7	4		71	20	9	38	35	3	25	15	5	5	—	7	7	1% Fe oxide Tr. collophane	1:1
8132	1	7	4		40	24	36	23	23	—	10	10	—	—	—	5	—	2% Fe oxide	1:1
Locality 8 South Ravenswood window, sec. 9, T. 20 N., R. 42 E. Lander County, Nevada, 39° 36' N., 117° 15' W. Mount Airy Mesa Quadrangle																			
8133	5	8	1		59	39	2	40	20	20	Tr.	Tr.	—	—	—	5	—	Tr.	
8134	3	8	3		80	20	—	78	8	70	—	—	—	—	—	Tr.	—	Tr. Fe oxide 2% garnet	
8135	3	8	3		10	88	2	4	3	1	—	—	—	—	—	Tr.	—	Tr. Fe oxide Tr. collophane 5% garnet	
8136	1	8	1		4	96	—	2	2	—	Tr.	Tr.	—	—	—	—	—	2% talc Tr. Fe oxide	
8137	1	8	1		34	37	27	18	12	6	12	6	—	6	—	2	3	1% Fe oxide Tr. collophane	1:2
8138	1	8	2																
8139	1	8	2																
9019	1	8	1		45	55	—	30	27	3	5	5	—	—	—	8	Tr.	1% Fe oxide Tr. collophane	10:1
9020	1	8	1		38	43	19	22	20	2	7	5	—	—	2 montmorillonite	8	Tr.	1% iron oxide Tr. collophane	10:1
																			10:1
Locality 9 North Ravenswood window, about sec. 17, T. 22 N., R. 42 E. (unsurveyed), Lander County, Nevada, 39° 46' N., 117° 13' W., Gilbert Creek SE quadrangle																			
9021	1	9	1		16	82	2	10	5	5	5	3	—	—	montmorillonite	1	—	1% Fe oxide	1:1
9022	5	9	1		97	2	1	92	30(?)	62(?)	2	2	—	—	—	1	—	2% Fe oxide	1:1
																			1:1
Locality 10 Point of Rocks, sec. 36, T. 17 N., R. 42 E., Lander County, Nevada, 39° 18' N., 117° 12' W., Austin quadrangle																			
8140	9	10			37	61	2	30	5	25	7	6	1	—	—	—	—	—	1:1
8141	9	10			18	82	—	14	4	10	4	2	1	1	—	Tr.	Tr.	Tr. Fe oxide, pyrite, and collophane	1:10
8142	1	10	1		23	72	5	16	16	—	4	4	—	—	—	2	Tr.	Tr. Fe oxide and pyrite	1:10
8143	1	10	1		17	80	3	15	5	10	2	2	—	—		Tr.	Tr.	Tr. Fe oxide and pyrite	1:1
8144	4	10	2		42	46	12	32	7	25	6	2	2	—	2% montmorillonite	2	Tr.	Tr. Fe oxide and pyrite	1:1
9017	6	10			95	4	1	36	36	Tr.	52	42	10	—	—	3	Tr.	3% Fe oxide	10:1
9018	1	10	2		28	70	2	22	7	15	5	4	1	—	—	1	—	Tr. Fe oxide	
Locality 11 Clear Creek, Toiyabe Range, sec. 11, T. 15 N., R 43 E, Lander County, Nevada, 39° 11' N., 117° 07' W., Millett Ranch quadrangle																			
8145	1	11	4		44	33	23	36	36	Tr.	4	1	—	3	—	3	Tr.	Tr. Fe oxide and collophane	
8146	5	11	4		90	9	1	45	—	45	45	30	15	—	—	Tr.	Tr.	Tr. Fe oxide	
9013	1	11	4		14	82	4	11	10	1	3	2	1	—	—	Tr.	Tr.	Tr. Fe oxide	
9014	1	11	4		44	11	43	26	24	2	16	10	6	—	—	3	Tr.	1% Fe oxide	1:1
9015	7	11		8000	10	85	5	8	—	8	2	1	1	Tr.	—	Tr.	—	Tr. Fe oxide	1:5
9016	1	11	4		14	85	1	11	10	1	3	1	2	—	—	Tr.	—	Tr. Fe oxide	1:1
Locality 12 Petes Canyon area sec. 10, T. 16 N, R 46 E, Lander County, Nevada, 39° 19' N, 116° 46' W., Wildcat Peak quadrangle																			
8147	1	12	1		31	30	38	17	17	Tr.	7	5	—	2	—	5	Tr.	1% pyrite Tr. collophane	2:1
8148	5	12	1		52	18	30	35	20?	15?	4	2	—	2	—	10	1	Tr. Fe oxide	1:1
8149	1	12	1		46	14	40	27	20	7	7	4	—	3		4	3	3% sepiolite, Tr. pyrite, 2% Fe oxide	1:1
Locality 13 Clear Creek Mountain, Monitor Range, about section 36, T. 12 N., R. 48 E., Nye County, Nevada, 38° 50' N., 116° 32' W., Danville quadrangle																			
8150	10	13			40	—	60	29	26	3	8	6	2	—	—	2	Tr.	1% sepiolite Tr. Fe oxide	1:1
9060	10	13			23	6	71	13	12	1	9	8	1	—	—	1	—	Tr. Fe oxide	5:1
9061	11	13			25	5	70	16	15	1	7	7	—	—	—	1	—	1% collophane Tr. Fe oxide	1:1
Locality 14 Copenhagen Canyon, sec. 36, T. 16 N., R. 49 E., Eureka County, Nevada, 39° 13' N., 116° 24' W. Horse Heaven Mountain quadrangle																			
8151	2	14	1	7000	4	73	8	4	4	Tr.	Tr.	—	Tr.	—	—	Tr.	Tr.	15% collophane Tr. Fe oxide	1:1
8151A	1	14	1		7	92	1	5	—	5	Tr.	Tr.	Tr.	—	—	1	—	Tr. collophane and Fe oxide	1:1
9062	1	14	2		20	60	20	14	14	—	4	2	2	—	—	1	—	Tr. collophane 1% Fe oxide	1:1
9063	3	14	3		10	85	5	10	1	9	Tr.	Tr.	Tr.	—	—	Tr.	—	—	
Locality 15 Birch Creek, sec. 22, T. 24 N., R. 50 E., Eureka County, Nevada, 39° 56' N., 116° 19' W., Roberts Creek Mountain quadrangle																			
8152	1	15	1		10	85	5	8	8	—	2	2	—	Tr.	—	Tr.	—	Tr. Fe oxide and collophane	1:1
Locality 16 Lone Mountain, Eureka County, Nevada, sec. 19, T. 20 N., R. 51 E., 39° 36' N., 116° 17' W., Bartine Ranch quadrangle																			
8153	10	16			13	0	87	10	3	7	2	1	—	1	—	1	—	Tr. Fe oxide and collophane	1:1
8154	10	16			7	3	90	5	5	—	1	—	—	1	—	1	—	Tr. Fe oxide	1:1

Weight percent of major oxides, organic carbon, and sulfur determined by chemical methods e/

Sample number	SiO_2	Al_2O_3	Fe_2O_3	FeO	MgO	CaO	Na_2O	K_2O	H_2O^-	H_2O^+	TiO_2	P_2O_5	MnO	CO_2	Organic C	S
Locality 5																
8112																
8113															.20	.04
8114															.18	.03
8115	44.1	5.4	0.73	0.52	7.7	17.2	0.03	1.8	0.19	1.3	0.27	0.03	0.02	20.6	.29	.21
8116																
8117															.18	.04
8118															.43	.02
8119																
8120	84.8	7.7	.30	.16	.82	.62	.02	2.3	.29	1.7	.35	.03	.00	.44	.05	.09
8121															.40	.06
8122															.20	.02
8123	28.0	2.3	.51	.28	4.1	32.2	.02	1.0	.13	1.0	.18	.03	.00	29.4	.37	.28
9042	53.1	8.4	.86	.76	5.3	12.5	.03	2.1	.38	1.7	.42	.06	.06	14.2	.04	.02
8124															.08	.06
Locality 6																
8124B															.40	.07
8125															.20	.04
8126	23.7	0.09	0.07	0.08	1.4	40.8	0.03	0.28	0.06	0.78	0.11	0.00	0.00	32.5	.15	.06
8129																
8128															.16	.03
8129	41.4	4.4	.73	.52	9.0	19.4	0.48	2.0	.27	1.3	.27	.04	.00	21.8	.43	.06
9043																
9044	4.6	1.0	.00	.85	0.98	51.0	.00	.23	.05	.28	.03	.00	.03	41.3	.05	.04
Locality 7																
8131	52.6	8.9	2.0	.36	3.4	14.3	0.02	2.3	0.51	2.4	0.56	0.06	0.00	12.5	0.17	0.05
8132															.24	.05
Locality 8																
8133															.12	.03
8134															.50	.03
8135	5.5	.09	.39	.08	.36	52.1	.00	0.13	.14	.29	.32	.16	.00	39.6	.17	.06
8136															.56	.03
8137	26.6	2.2	.24	.69	8.1	30.2	.32	.92	.11	.58	.15	.04	.03	29.6	.18	.09
8138																
8139																
9019	35.6	4.0	.68	.24	0.56	30.7	.09	1.7	.49	.91	.23	.10	.02	24.6	.20	.04
9020	30.3	3.7	.85	.32	4.3	29.3	.11	1.7	.48	.33	.22	.08	.01	28.2	.16	.04
Locality 9																
9021	11.4	1.5	.13	.24	0.51	45.8	.02	0.27	.47	1.0	.07	.03	.02	37.8	.05	.05
9022																
Locality 10																
8140															.22	.02
8141															.30	.05
8142	19.4	1.3	.37	.18	1.2	42.1	.09	.55	.14	.32	.08	.04	.00	34.2	.16	.04
8143															.36	.03
8144	36.5	2.6	.47	.40	2.8	29.4	.00	.56	.14	1.0	.07	.03	.02	25.9	.11	.03
9017	63.6	16.3	3.2	.60	1.1	3.4	.15	4.3	.62	3.0	.56	.18	.02	2.5	.44	.04
9018	25.2	1.2	0.68	.28	0.62	39.0	.05	0.28	.14	0.70	.05	.06	.00	32.4	.12	.02
Locality 11																
8145	40.0	1.3	0.46	0.40	5.8	25.3	0.02	0.78	0.07	0.76	0.18	0.05	0.00	24.4	0.32	0.17
8146															.30	.03
9013																
9014	35.1	5.7	.83	.88	9.0	18.7	.11	1.3	.35	1.8	.28	.07	.02	25.6	.10	.04
9015																
9016																
Locality 12																
8147	24.1	3.0	1.0	0.32	9.4	28.8	.09	1.0	.12	0.83	.16	.13	.00	31.0	.36	.76
8148															.20	.07
8149	36.3	2.9	0.88	1.2	9.4	20.4	.45	0.85	.10	.90	.21	.03	.04	25.4	.34	.23
Locality 13																
8150	33.0	2.8	.55	.08	12.6	19.6	.00	.71	.12	1.2	.18	.05	.02	28.4	.12	.03
9060	17.5	2.5	.28	.44	16.7	29.5	.00	.89	.15	0.66	.13	.02	.04	36.1	.11	.03
9061	20.5	2.0	.29	.28	15.9	24.0	.00	.63	.11	.60	.13	.32	.04	35.2	.11	.03
Locality 14																
8151												6.01			.12	.03
8151A	5.1	0.00	.16	.06	0.60	51.7	.02	.27	.07	.43	.04	0.17	.02	40.9	23	.08
9062																
9063																
Locality 15																
8152															.26	.03
Locality 16																
8153	11.3	.48	.19	.04	17.7	29.0	.02	.21	.07	.45	.05	.15	.00	40.4	.18	.06
8154	6.2	.00	.12	.04	18.6	30.6	.03	.23	.08	.59	.05	.00	.00	43.4	.08	.04

Elemental composition as determined from spectrographic data except gold and mercury determined by atomic absorption f/ (Fe, Mg, Ca, Ti expressed in weight percent; others expressed in parts per million)

Sample number	Fe	Mg	Ca	Ti	Mn	B	Ba	Co	Cr	Cu	La	Mo	Nb	Ni	Pb	Sc	Sr	V	Y	Zn	Zr	Hg	Au	Remarks g/
Locality 5																								
8112	0.7	5.	20.	0.07	150	10	300	6	30	15	5	N	N	10	10	L	200	150	15	N	50	0.18	<0.02	Tr. authigenic tourmaline
8113	.7	5.	15.	.15	150	30	300	5	30	7	20	N	L	7	10	5	100	50	15	N	300	.22	.02	Tr. amphibole and authigenic tourmaline
8114	.1	1.5	>20	.015	200	N	200	N	5	L	5	N	L	L	N	N	500	50	15	N	30	3.00	.10	Tr. fluorite
8115	1.	3.	10.	.1	100	50	300	N	30	7	2	N	N	10	N	N	150	70	N	N	150	1.00	<.02	
8116	.2	2.	>20	.01	150	L	70	N	5	20	5	N	N	L	L	N	500	30	15	N	10	0.40	<.02	
8117	1.5	3.	10	.2	150	30	500	5	50	5	20	N	L	15	10	5	100	150	20	N	300	1.40	<.02	
8118	1.5	5	10	2	300	30	300	7	70	10	20	N	N	50	10	5	20	150	15	N	300	0.50	<.02	Calcite removed
8119	.7	3.	5.	.15	100	50	300	L	30	15	20	N	L	20	L	5	N	200	10	L	100	.60	.02	
8120	.3	.3	.5	.2	20	100	2,000	N	70	70	2	N	N	10	N	5	N	20	10	N	200	.60	.02	
8121	1.	7.	15.	.15	300	50	200	L	50	15	5	N	N	10	10	5	150	50	10	N	150	.70	<.02	
8122	.2	.5	1.	.3	10	50	500	5	50	15	20	N	N	L	L	5	N	50	20	N	700	.30	.02	Calcite in vein Tr. amphibole
8123	.5	2.	>20	.07	70	N	150	N	20	7	2	5	N	10	N	N	500	200	10	N	100	.22	.04	
9042	1.	2.	7.	.15	100	30	300	N	50	10	50	5	L	30	15	7	150	100	20	N	150	.50	.02	
8124	.1	10.	>20	.02	200	N	700	N	N	5	20	N	N	50	20	N	150	20	L	N	L	.01	<.02	Pure dolomite. Calcite in seam. Hanson Creek Formation
Locality 6																								
8124B	1.	5.	10.	.2	200	50	500	L	50	15	20	N	N	10	15	5	30	150	15	N	300	0.22	<0.02	Tr. amphibole
8125	.1	.7	>20	.005	100	L	1,500	L	L	5	L	N	N	10	15	5	30	150	15	N	300	.28	<.01	Tr. amphibole
8126	.15	.7	>20	.01	100	N	70	N	5	L	N	N	N	N	N	N	300	15	N	N	20	.30	<.02	
8129	1.5	7.	>20	.1	300	30	200	5	30	20	N	N	N	20	10	5	200	150	10	N	150	.40	<.02	
8128	.2	.7	>20	.05	70	N	30	N	L	5	20	N	N	L	N	N	300	20	20	N	10	.22	<.02	Tr. amphibole
8129	.7	5.	10.	.1	100	50	300	N	30	7	N	N	N	15	10	L	150	70	10	N	150	.22	<.02	Tr. amphibole. Only 3 percent plagioclase feldspar identified in slide
9043	.3	1.	20	.05	50	N	70	N	7	7	N	N	N	N	N	N	300	10	10	N	50			
9044	.1	1.	>20.	.15	30	N	50	N	7	5	N	N	N	5	N	N	200	5	N	N	30	.05	<.02	
Locality 7																								
8131	1.5	1.5	10.	0.15	150	50	1,000	3	70	15	N	N	N	N	N	N	300	15	N	50	20	0.10	<.02	Near dike but no metamorphic minerals in rock
8132	2.	5.	20.	.15	300	100	>5,000	10	70	5	30	N	L	30	20	10	200	50	20	100	100	.10	<.02	Tr. amphibole 1ppm Be
Locality 8																								
8133	1.	3.	>20	.2	100	L	1,500	L	50	L	30	N	N	30	30	5	500	300	30	300	70	.10	<0.02	15% diopside
8134	.2	.1	2.	.03	50	N	500	N	50	5	20	N	L	20	N	N	100	100	10	N	20	.20	<.02	2% secondary grossularite
8135	.3	.2	>20	.02	70	N	50	N	20	10	N	N	N	15	N	N	500	300	30	N	15	.20	<.02	5% secondary grossularite
8136	.01	.7	>20	.02	70		150	N	10	L	20	N	N	N	L	N	500	30	N	N	10	.10	<.01	Tr. amphibole
8137	.7	3.	>20	.07	200	N	700	N	20	L	N	N	N	7	N	N	500	100	N	N	30	.10	<.01	Tr. amphibole
8138	2.	7.	20	.2	150	100	500	7	150	30	30	N	10	50	20	10	150	300	50	N	200	.10	<.02	High Fe rock just beneath thrust
8139	2.	7.	>20	.2	200	100	300	5	100	15	50	N	10	30	10	L	200	200	50	N	200	.10	<.02	High Fe rock just beneath thrust
9019	.7	.7	>20	.15	150	5	1,000	N	50	15	N	10	N	20	10	L	300	300	20	50	100		<.02	
9020	.7	2.	>20	.15	70	5	1,000	N	50	15	N	10	N	15	10	L	300	150	15	50	70			Tr. amphibole
Locality 9																								
9021	.5	.5	>20	.05	200	N	150	N	10	L	N	N	N	5	N	N	2,000	20	10	N	30			
9022	1.5	.7	.2	.15	100	70	700	N	50	30	N	L	10	50	10	L	N	700	15	200	50		.04	Cristobalite bearing. Cristobalite included with secondary quartz. Tr. amphibole. 3 ppm Be
Locality 10																								
8140	1.	2.	>20	.05	150	50	100	N	20	L	20	N	L	5	L5	N	3,000	20	10	N	70	0.10	<.02	Slightly metamorphosed. 2-4% amphibole
8141	.7	1.	>20	.03	150	L	100	N	10	L	N	N	N	L	10	L	3,000	20	10	N	70	.07	<.02	Tr. amphibole and authigenic tourmaline
8142	.3	.7	>20	.03	100	N	200	N	15	L	N	N	N	N	N	N	1,500	15	10	N	100	.20	<.02	Tr. authigenic tourmaline, galena, fluorite, and sphalerite
8143	.5	.7	>20	.03	100	L	100	N	15	L	20	N	N	L	10	L	2,000	20	15	N	100	.10	<.02	Tr. amphibole. Secondary quartz probably derived from detrital quartz
8144	.7	1.	>20	.07	150	L	150	N	20	7	N	N	N	10	L	N	700	30	N	N	100	.05	<.02	Tr. amphibole
9017	3.	.5	3.	.5	100	150	2,000	7	100	10	50	N	L	30	10	15	L	70	10	N	150		.04	Phyllite. Possibly transitional to western facies Devonian rocks. 1 ppm Be.
9018	.5	.5	>20	.02	100	L	150	N	7	3	N	N	N	N	L	N	2,000	N	15	N	50			Secondary quartz probably derived from detrital quartz. Tr. amphibole.
												N												
Locality 11																								
8145	.7	2.	>20	0.03	100	N	200	N	10	3	N	N	N	L	N	N	500	10	N	N	100	0.09	<0.02	Tr. amphibole
8146	3.	1.	1.5	.5	100	200	2,000	20	100	20	70	N	10	50	30	20	N	100	20	L	200	.10	<.02	Sheared rock; clay and quartz in bands 2 mm wide
9013	1.	3.	>20.	.15	200	20	700	L	10	10	L	L	L	L	10	L	5,000	50	30	L	150			Tr. amphibole. Sr-bearing mineral not recognized
9014	.5	7.	>20.	.15	200	20	1,500	L	50	15	N	L	N	30	15	L	200	500	10	N	70			Tr. authigenic tourmaline
9015	1.	1.5	>20.	.05	200	L	150	L	10	10	50	L	L	15	20	L	2,000	20	20	L	50			Tr. amphibole
9016	.5	1.5	>20.	.1	200	L	1,000	L	10	10	50	L	L	5	L	L	5,000	30	10	N	200			
Locality 12																								
8147	.7	5.	>20.	.07	100	L	700	L	50	30	N	N	N	15	10	5	500	100	20	N	150	0.40	<.02	
8148	1.	3.	20.	.15	100	70	700	10	50	20	30	N	L	50	30	7	300	200	30	N	200	0.20	.02	Altered phase of 8147. Tr. amphibole. 1ppm Be, 10 ppm Bi
8149	1.5	5.	>20.	.05	300	N	1,000	N	20	7	N	N	N	10	N	N	300	20	N	N	100	.10	<.02	Tr. amphibole
Locality 13																								
8150	.5	5.	10.	.07	100	N	70	N	15	5	N	N	N	N	L	N	70	15	N	N	100	.20	<.02	High Ca dolomite
9060	.3	5.	7.	.05	50	L	50	N	15	5	N	N	L	5	N	N	70	30	L	N	30	.06	<.02	High Ca dolomite. Tr. amphibole
9061	.2	5.	10.	.05	50	L	50	N	15	3	N	N	L	5	N	N	70	20	10	N	150			Tr. amphibole
Locality 14																								
8151	1.	3.	>20	.02	100	L	70	N	15	10	150	N	N	15	10	L	100	100	200	N	20	.20	<.02	Tr. amphibole. 10 ppm Bi. Collophane soluble, but counted as insoluble in table. Non-carbonate on triangular diagrams
8151A	.15	.3	>20	.015	200	L	150	N	15	7	N	N	N	10	L	N	700	200	15	N	10	.10	<.02	
9062	.5	1.5	20.	.05	70	10	100	N	10	10	N	N	N	15	N	N	500	150	15	N	70			Tr. amphibole
9063	.05	.5	20.	.007	10	N	20	N	L	N	N	N	N	7	N	N	300	5	L	N	L	.03	<.02	Tr. amphibole
Locality 15																								
8152	.2	1.5	>20	.03	70	N	1,500	N	L	L	20	N	N	5	L	L	500	100	15	N	50	.10	<.02	
Locality 16																								
8153	.15	5.	>20.	.015	100	N	200	N	15	10	N	N	N	5	N	N	100	7	N	N	15	.08	<.02	Mosaic high Ca dolomite.
8154	.1	7.	>20.	.015	100	N	100	N	10	L	N	N	N	N	N	N	100	7	N	N	70	.05	<.02	Mosaic pure dolomite. All calcite in veins

PLATE 4-- MINERALOGIC AND CHEMICAL COMPOSITION OF 246 SAMPLES OF THE LAMINATED LIMESTONE UNIT OF THE ROBERTS MOUNTAINS FORMATION AND RELATED FORMATIONS, NORTH-CENTRAL NEVADA

By
Thomas E. Mullens

U.S. Geological Survey
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