MR44-7

Sericite - Sec. 8, T. 23, R. 70 - Winburn Development Co.
Sec. 5, (Jud 1) 209 C. A. Johnson Bldg., Denver
Elevation - 5280'
Photos - 8-4, 8-5, 8-6, 9-40

1. Sect. core S5/S4. Hb Schist outcrop. Gully 30' south. Road 35' N.
S8/S9
2. Contacted granite gneiss and Hb Schist. Schist to North. Dip 45° N. 40° W. Banded white and gray gneiss with stringers of quartz along gneissoid structure and cutting it. Sp. 1.
3. Crest of ridge. Granite gneiss. Varies from coarse to fine grained. Banded. Consists principally of quartz, pink and white feldspar, and mica (biotite). Sp 5 Fine-grained variety.
4. Pit 7'x15' in Hb Schist. Considerable biotite and some kyanite here. Sp 3. Road (old) 50' North.
5. Contact Hb Schist (South) and Gr Gneiss (North). Across gully from 2 and 3 to N.
6. On low ridge. West of 5. Granite Gneiss.
7. On ridge West of 6. Granite Gneiss.
8. S-E Stake. Independents No. 2. Hb Schist. Gr. Gneiss 50' N. Old road 27' South.
9. Pt in Gully N of main one.
10. Junction of 2 gullies at end of spur. Hb Schist.
11. Contact Gr Gneiss (S) and Hb Schist (N).
12. S-W. Independents No. 2. Gr. Gneiss. Crest of Ridge. Swale.
13. Crest of ridge. Granite Gneiss.
14. Pt in side road on swale. Hb Schist.
15. Junction of side road (14) and road to mine. Hb Schist.
16. End of large Gr. Gneiss area. Hb Schist. W and E of here.
17. C. Independents No. 2. Stake. Hb Schist.
18. Hb Schist - Gr Gneiss contact. Gr Gneiss to E continas considerable Hb Schist bands. Road 27' North.
19. Pit in gully. Hb Schist. Hb schist is a black rock with streaks of white (Feldspar and quartz?). In places shows gradation from a porphyrite Diorite with feldspar phenocrysts, through a stage with augen phenocrysts to streaked feldspar phenocrysts. Blastoporphyritic rock (See thin sections of Plumbago Canyon).
20. T.P. Hb Schist. On Spur S of instrument. Strike S 50° W. Dip 68° N. 40° W. Schist is mostly slabby and blocky; some massive. Weathers gray and brown.
21. Pt in gully. Hb-Schist.
22. On slope. Contact Hb Schist and Gr Gneiss. In places the Granite Gneiss contains lenses and bands of unassimilated Hb Schist. Average about 5 ft thick (21' to 715') several dozen feet long. Also lenses of Hb Schist altered to Biotite Schist.
23. Pt in old road on crest of ridge. Gr. Gneiss.
24. C. Independents No. 2. Hb Schist. Gr Gneiss contact. 26' North. Old road 5' North. Dip 60° North. Strike E-W.
25. Pt in gully.
26. Ne Independents No. 2.

27. Contact Granite and Hb Schist. Gneiss weathers yellow-brown. Sp. 4. Blactoporphyrite Hb. Schist.
28. Contact Granite and Hb Schist. Gneiss weathers yellow-brown.
29. Contact Granite and Hb Schist. At abrupt change in strike.
    Note
    Possibly a fault valley at 25 accounting for change in strike. Rocks offset so that N block moved W with respect to S block. Strike of Schist S 35° W.
30. Hb Schist mass (at lower pit of fault?) Gully 8' E.
31. Hb Schist mass (upper or West end).
32. Pt - in gully at nose of spur.
33. Pt - in gully at nose of spur.
34. Hb Schist-Gr Gneiss contact.
35. Hb Schist-Gr Gneiss contact. Chlorite-activolite Schist 60' N. 30 E. Sp 5 of here.
36. Break in slope on spur. Hb Schist.
37. Note
    Pink, coarse-grained Granite Gneissoid lens intrusive into Hb Schist. Apparently younger than the Granite Gneiss but its relations to the latter are not shown. A pink and white, fine to coarse-grained rock. Approx. 10' wide here where the band lenses out. Actually 7' more, beyond instrument (E). Gneissoid in places (mostly).
38. Same as 37. W end of lens. Continues 30' further W - From 10 to 15 plus feet thick. A few small faults - too small to map. Note - There are numerous small tears in these rocks, almost all too small to map.
39. Another band of red Gneissoid granite. Extends 15 feet further E. About 5' thick here. Note - Frequently it is impossible to obtain an accurate dip reading because of the slabby character of the rock and due to slumping. Dip 43° N. 15° W. Strike S 75° W. (approx. Rock slightly contorted here.)
40. S end of 39. Here Gneissoid Gr. is 40' thick. Between ends it is 15-20' thick. Gully at 40 about 15 below.
    Note - Apparently no sericite has developed as the result of dynamo-thermal metamorphism. In places hornblende schist has altered to biotite schist, and also to a chlorite-activolite schist (rarely). But sericite is found only where younger granite pegmatites cut the older rocks (check this!).
41. Backsight or T.P. Rod on belt 3 1/2' above surface.
42. Edge (center) of dump of sericite pit. Pit starts 8' N 18° W. of this point and is 20 ft. long and 7 1/2 ft. wide. Dip 70° N. 35° W.
    In this pit Hb Schist has been cut by 2 small granite(?) pegmatite dikes (6" to 8" wide). Right next to the dike is a narrow 6" zone of sericite. Then (right in Diag.) comes a 1' zone of Biotite Schist and then Hb Schist. Left in Diag. is a 1" zone of Verm. (following the sericite zone). Next (going left) a zone of quartz-sericite rock with Verm. stringers. The most intense alteration of Hb-Schist produced Sericite with accompanying quartz stringers. Somewhat less alteration produced vermiculite, and least alteration gave a biotite schist. Specimens

6 to 11 taken here. Carbonate or kaolin stringers cut across all the rocks. Sp. 12. Dump 10' wide on top. About 12' high. (Pegmatite contains garnet or corundum and possibly sillimanite.) Hb Schist has some Biotite. Sericite has iron stains.

The pegmatite dike has been considerably altered by hydrothermal solutions and is iron stained. The carbonate or kaolin was the last mineral to form and consists of narrow (up to 1" wide) stringers cutting across the dip and schistosity of the other rocks. It is concentrated near the surface and presumably a weathering product. (Sericite is brilliant, glistening with a pale greenish tinge in places.)

43. Hb Schist-Gr Gneiss contact on slope of hill.
44. Gr Gneiss on crest of ridge.
45. Pt in gully. Gr Gneiss. Gneiss here has many Hb Schist bands which parallel the main one in which the sericite occurs. These bands are both wide (many feet thick) and long.
46. Gr. Gneiss-Hb Schist contact. (45) is along a fault valley.
47. Gr. Gneiss-Hb Schist contact. (45) is along a fault valley.
48. Gr. Gneiss-Hb Schist contact.
49. Hb Schist. Crest of ridge.
50. Hb Schist-Gr Gneiss contact 8' S. This Hb Schist is probably a lens parallel with the main one but just NW of it.
51. Contact Hb Schist-Gr Gneiss. T.P. No. 2.
52. N-W. Independents No. 3.
53. Center of long sericite pit above mine. Sericite zone about 7'-8' wide. Extends 3' farther S. Contains quartz stringers. From 4' to 5' of the zone is good sericite. No granite pegmatite here or it is badly altered and injected into biotite schist. Note - A pegmatite dike may not always be necessary for the production of sericite. Sericite may form where hydrothermal solutions had access along weak zones (schistosity and fracture).
54. Another point in sericite zone. (Curves considerably.)
55. Another point in sericite zone. (E side of zone.) Extends N. to 56 ft.
56. Sericite vein runs to here. Hoist and NW corner of bin. Road 14' N.
57. NE corner of bin.
58. SE corner of bin. (10'x20')
59. Pit in road where side gully ends. Main gully 50 ft. toward ?
60. Pit in road where side gully ends.
61. Pit in gully.
62. On ridge. Gr-Gneiss.
63. On ridge. Gr-Gneiss
64. On ridge. Gr-Gneiss.
65. T.P. No. 2.
66. Contact Hb Schist and Gr. Gneiss. Head of gully 15' S.
67. Crest of ridge. Note - Schist weathers and breaks down by mechanical action to a slabby and platy rock. The Gneissoid granite weathers to blocky massive masses. Sometimes, where not very gneissic it exhibits blocky weathered blocks typical of jointed granite. Hb Schist here. Contact with Gr. Gneiss about 60 ft. N. 45 W. Contact not very accurate.
68. Crest of ridge. Gr Gneiss.

69. Contact white Gneissoid Granite and Hb Schist. Note - This may be the actual contact and the bands of yellow-brown to rust which were mapped yesterday may simply be altered hornblende schist. O.K. Not quite sericite. Ridge crest is about 70 ft. S 20° E of here and is approx. 12 ft. above this in elevation.
70. Pt. on spur. Gr. Gneiss.
71. Pt. in road where gully crosses it.
72. Pt. in gully where side gully emerges. Road 25 ft. S.
73. Contact Hb. Schist and Gr. Gneiss on slope of hill.
74. NE Independents No. 3. Held rod 3' above ground. Gully 18' S. 50° W. Pt. on slope. Hb Schist.
75. Pt. on slope. Hb Schist. T.P. 3.
Note - There is no evidence that the sericite on Independents No. 2 is continuous with that at the mine. Nor that the latter continues unbroken to Independents No. 3 mine. All three are in the same Hb. Schist zone at approximately the same "horizon", but they pinch out and then begin again. Sp. 13 from Instrument Pt. /66 . Typical Hb. Schist. Sp. 14 about 100' N. 20 W. of /66 . Altered Hb. Schist.
76. Pt. at head of gully. Note - Dip of rocks at mine Ind. 3 50° N. 15° W.
77. Backsight on 75.
78. Instrument set-up (Troyer's 79).
79. Edge of dump about 7' wide. Road 20' toward Instrument.
80. Portal of mine. 30' long tunnel in sericite which pinches out but can be followed up hill. Dump here somewhat wider and maximum width of sericite is about 2 1/2 ft. Pinches to 6".
81. Contact Hb. Schist and Gr. Gneiss.
82. Pt. on slope in Gr. Gneiss for topog.
83. Pt. in gully. Approx. contact Hb Schist and Gneissoid Gr.
84. Pt. on ridge crest of a topog. Hb Schist.
85. Pt. on ridge crest of a topog. Hb Schist. Just beyond top of hill where pits are. Shallow gully between.
86. Sericite schist outcrop on hill top just above series of pits. Outcrop about 3 ft. wide. Pit just blow 86. Sp. 14 typical sericite; some is better. Sp. 15 Serpentine (?) from pit.
87. Pt. on ridge for topog. Hb Schist.
88. On spur. Pt. for topog. Hb Schist.
89. On spur. Pt. for topog. Hb Schist.
90. Note - Sericite Schist about 10' thick. Iron stained but may be better in depth. Can be traced on surface for about 300' until it narrows out. Last 110 ft. it is only about 1' to 2' thick. Strike S. 70° W.
91. Sericite Schist outcrop - continuation of 90. Pt. in gully. Low-angle dip. Perhaps 20° to 30°. N. 50° W. into hill.
92. Pit in Sericite Schist. Pit extends 20' along outcrop. Sericite about 4'-5' wide here. Dump about 15' beyond pt. 92 and 20 ft. wide. Extends 5' to edge of road.
92. Note - Hb. Schist has here altered near Bi Granite contact to Hb-Bi Schist. Next to Bi-Granite is the Sericite Schist which contains quartz and biotite and is iron stained. Bi Granite is in the bottom of the pit and may or may not be a pegmatite. Sp. 16 Hb-Bi Schist, 17 Sericite rock, 18 Bi-Granite.

93. C Independents No. 3. Hb Schist.
94. Pt. in gully.
95. Contact Hb. Schist and Gneissoid Granite - on hill slope.
96. Crest of ridge. Gneissoid Granite.
97. Crest of ridge. Gneissoid Granite.
98. Pt. in road where side gully enters.

Elevation - 5280'

Wheatland - 100 ft. W. of main RR track, 1 block N. of station, in stone foundation on E. side of Wheatland Roller Mills, 20 ft. from S. end of building, 20 in. above ground, 10 in. below 29th brick of first course numbering from S. end of building, 3 ft. N. of S. wareroom door; copper bolt, marked U.S. (+) B.M. (C. & G.S. b.m.J1.). 4,739.209.

Wheatland Sericite

100. Hb Schist outcrop. Strike E-W. Dip 50° N. About 30' toward /2 along strike the dip is 60° N. Oriented specimen.
101. Gneissic Granite. D & S taken 15' NE of 101 on banding. Dip 57 N. Strike E-W (S. 85° W.). Oriented specimen.
102. Gneissic Granite. Dip 60° N. Strike E-W. Same outcrop as 101 but to the E. The rock has been lit-par-lit injected by quartz veins (5" thick plus) and also contains a layer at this point 2 1/2'-3' thick, obiotite Gneiss. (sp. 102). The Biotite Gneiss contains occasional 1/4" thick stringers of granite. The Granite Gneiss, in addition to lit-par-lit quartz viens, contains lenses of quartz 1'-2' long by 1"-5" wide. Both rocks are medium grained.
103. Hb Schist. Dip 51° N. Strike E-W.
104. Gneissic Granite. Some pink feldspathic granite cuts the Gneissic Granite base. Dip 60° N. Strike N. 70° E.
105. Gneissic Granite. Dip 67° N. Strike N. 75° E.
106. Gneissic Granite. Dip 75 N. Strike N. 70 E. The Biotite Gneiss layers in the Gneissic Granite appear to be incompletely assimilated Hb Schist. Reading taken on Bi Schist band.
107. Gneissic Granite. Dip 70° N. Strike N. 70 E. Readings taken on Bi Schist band. Granite Gneiss here is pegmatite (coarse-grained) with enough muscovite to call the rock a Muscovite "Granite".
108. Gneissic Granite. Dip 56 N. Strike N. 80 W. Biotite Gneiss band about 5' thick with lit-par-lit injected bands (1/8" to 1" thick) of white granite. This granite has in places become thicker and formed angen (4" x 2 1/2", 2' x 4", etc.).
    Note - Pt. 13 is C Independents No. 1; S-W Independents No. 2. Considerable local contortion so that it is not possible to get a reliable dip and strike reading. This applies to area from 107 toward /2 to the road.
109. Gneissic Granite. Dip 70° N. Strike E-W. Readings taken on Biotite Schist layer.
110. Road.
111. Hb. Schist outcrop. Contains feldspar injectocrysts. Dip 55 N. Strike N. 75 E.
112. Hb Schist outcrop. Dip 50 N. Strike N. 72 E.
113. Hb Schist. Dip 57 N. Strike N. 75 E.

114. Hb Schist. Dip 50 N. Strike N. 80 E. Typical Hb Schist. Some injectocrysts.
115. Gneisic Gr. Dip 65° N. Strike N. 85 W. Contains layers of Hb Schist.
116. Gneissic Gr. Dip 65° N. Strike N. 85 E.
117. Gneiss ic Granite. Dip 75° N. Strike N. 70 E. Readings taken on Hb Schist layer 5' thick. Gneissic Granite and Hb Schist have same D & S.
118. Gneissic Granite. Dip 65 N. Strike N. 65 E.
119. Hb Schist with 1/8" injectocrysts. Dip 65 N. Strike N. 65 E.
120. Dip 70° N. Strike N. 50 E. Hb Schist.
121. Hb Schist. Dip 65° N. Strike N. 35 E.
122. Chlorite Schist. E. End 2' thick here, 5'-6' thick between 122 and 123.
123. Chlorite Schist W end 1' thick. Apparently the Hb Schist has been altered by the granite to the S. to Chlorite Schist.
124. Center Granite dike at offset.
125. Center Granite dike at offset. Dip 45° N. Strike with outcrop. Chlorite Schist band 6' thick to S. A pink and white granite, medium grained which has intruded Hb Schist lit-par-lit. This outcrop is principally granite with schist bands. Granite is cut by lit-par-lit veins of quartz.
126. Quartzite and Hb Schist. Most of the hill S. of the road consists of quartzite with Hb Schist bands or layers. The Quartzite locally contains appreciable epidote. In places the Hb Schist has been altered to Activolite Schist. Pegmatite dikes averaging only a few ft. wide cut the other rocks; chiefly lit-par-lit.
127. Hb Schist. Dip 65 N. Strike N. 75 W.
128. Similar to 126. E. end of mass.
129. Hb Schist. Dip 70 N. Strike N. 55 E. Sp. 129 from 30' SW along strike. Rock here appears to be an activolite-Talc Schist. Quartzite-Hb Schist zone from here to 130.
130. Quartzite. Extends 15' from here NW. Dip 65 N. Strike N. 65 E.
131. NW Independents No. 2. Dip 72° N. Strike N. 42 E. Reading taken on Hb Schist band. Reading on Activolite-Talc layer is same.
132. Hb Schist. Dip 70 N. Strike N. 47 E.
133. S. end pit 8' wide by 15' long by 4'. Trends N. 20 W.
134. S. end pit 10' x 10' x 10'. In Epidote Quartzite which is gneissic and has been mineralized. Note specularite and red (hematite?). At /42 Hb Schist. Dip 50° N. Strike N. 77° E.
135. Gneissic Granite. Dip 60° N. Strike N. 80° E.
136. Gneissic Granite. Dip 80° N. Strike N. 75° E.
137. Gneissic Granite. Dip 45° N. Strike E-W. Contact Hb Schist about 20' S.
138. Hb Schist. Dip 70 N. Strike N. 80 E. Possible T.P.
139. Hb Schist. Dip 55° N. Strike N. 77 E.
140. Pit 15' x 15' in Meta-Diorite(?) cut by pink Granite. Diorite schistose and granite gneissic.
141. Contact Hb Schist and Quartzite. The latter is gneissic, very hard and compact, fine-grained, and gray.
142. Same as 141. Quartzite (N. Border) is 30' S. of Independents stakes (C No. 1 and SW No. 2). Some Bi Schist, Musc Schist, and pegmatite stringers in Quartzite zone.
143. Approx. contact Quartzite (S) and Gneissic Gr. (N).

144. Quartzite outcrop. Dip 55° N. Strike E-W. This Quartzite may be a very fine-grained Gneissic Granite.

Depth 50' (Check this).
Dip of hanging wall (Hb Schist) 85° at roof and 70° near floor. Same dip on foot-wall.
Sericite parallel with schistosity.
Drag folds in sericite indicate that the hanging wall moved up.
Plunge of drag folds is 25-35 N. 65 E.
The sericite is localized along a drag fold in the Hb Schist. Also, the entire sericite zone occurs in a major fold in the Hb Schist. Map also Gr. Gneiss. Hanging wall contact between sericite and Hb Schist is sharp. Foot wall contact shows a gradation.

Photos = 8-4, 8-5, 8-6, 9-40

Sericite – S8, T23, R70 (Ind. 1)
19-V-44

Winburn Development Co.
209 C.A. Johnson Bldg, Denver
Elevation – 5280'

1. Sect. cor. 3 5 | S 4 / S 8 | S 9 Hb Schist outcrop, Gully 30' South Road 35' N.

2. Contact contorted granite gneiss & Hb. Schist. Schist to North. Dip 45° N 40° W. Banded white & gray gneiss with stringers of quartz along gneissoid structure & cutting it. Sp. ①

3 Crest of ridge, Granite gneiss. Varies from coarse to fine grained. Banded. Consists principally of quartz, pink & white feldspar, & mica (biotite). Sp ⑤ Fine-gr. variety

4 Pit 7' x 5' in Hb. Schist. Considerable biotite & some pegmatite here. Sp. ③ Road (old) 50' North

5 Contact Hb Schist (South) & Gr. Gneiss (North). Across gully from 2 & 3 Pt. N

6 On low ridge West of 5. Granite Gneiss

7 On ridge West of 6. Granite Gneiss

8 S-E Stake Independents No. 2 Hb. Schist Gr. Gneiss 50' N. Old road 27' South

9. Pt. in gully N of main road.

10 Junction of 2 gullies at end of spur. Hb Schist

11 Contact Gr. Gneiss (S) & Hb. Schist (N).

Dip of Hb Schist near Tree 55° N 20 W (N 12° W of tree about 12')

12 S-W Independents No. 2 Gr. Gneiss Crest of Ridge Swale

13 Crest of ridge. Granite Gneiss

14 Pt. in side road on swale. Hb. Schist

15 Junction of side road (14) and road to mine Hb. Schist

16 End of large Gr. Gneiss area. Hb. Schist W & E of here

17 C. Independents No. 2. Stake Hb. Schist

18 Hb Schist – Gr. Gneiss contact. Gr. Gneiss to E contains considerable Hb Schist bands Road 27' North

19 Pt. in gully Hb Schist. Hb schist is a black rock with streaks of white (Feld & Quartz?). In places shows gradation from a porphyritic diorite with feld. phenocrysts, through a stage with augen phenocrysts to streaked feldspar phenocrysts. Blastoporphyritic rock (See thin sections of Plumbago Canyon)

20-V-44

20 T.P. Hb. Schist On Spur S of instrument. Stake S 50° W. Dip 68° N 40° W Schist is mostly slabby & blocky; some massive. Weathers gray & brown

21 Pt. in gully Hb. Schist

22 On slope. Contact Hb Schist & Gr. Gneiss. In places the Granite Gneiss contains lenses and bands of unassimilated Hb. Schist. Average about 5 ft. thick (<1' to >15') several dozen feet long. Also lenses of Hb Schist altered to Biotite Schist

23 Pt. in old road on crest of ridge. Gr. Gneiss

24 C. Independents No. 2 Hb. Schist - Gr. Gneiss contact 26' North. Old road 5' North. Dip 61° North Strike E-W.

25 Pt. in gully

26 NE Independents No. 2

Sp ④ Stratoporphyritic Hb. Schist

27 Contact Granite and Hb. Schist. ~~Gneiss weathers yellow-brown~~

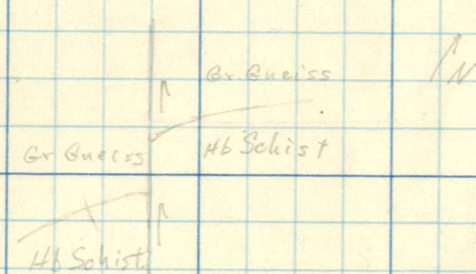
28 " " " " " "

29 " " " " At abrupt change in strike.

Note -
Possibly a fault valley at 25 accounting for change in strike. Rocks offset so that N block moved W with respect to S block. Strike of schist S 35° W.

30 Hb Schist mass (at lower pt of fault?) Gully 8' E.

31 " " (upper or West end)



32 Pt. in gully at nose of spur.

33 " " "

34 Hb. Schist - Gr. Gneiss contact. Sp ⑤ of hurl.

35 " " " Chlorite-actinolite Schist 60' N 30 E

36 Break in slope on spur. Hb. Schist

Note

37 Pink, coarse-grained Granite (→ Gneissoid) lens intrusive into Hb. Schist. Apparently younger than the Granite Gneiss but its relations to the latter are not shown. A pink + white, fine to coarse-grained rock. Approx. 10' ft wide here, where the band comes out. Actually 7' more, beyond instrument (E) Gneissoid in places (mostly)

38 Same as 37 W end of lens. (Continues 30' further W - From 10 to 15+ feet thick. A few small tear faults too small to map. Note - There are numerous small tears in these rocks, almost all too small to map.

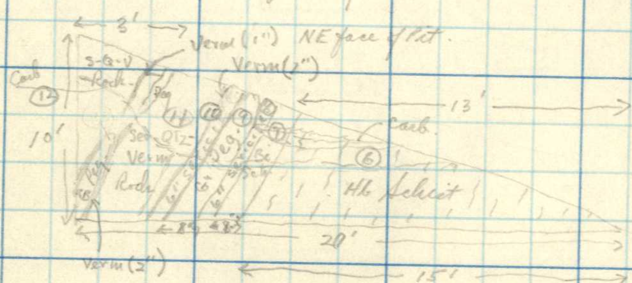
39 Another band of red Gneissoid granite. Extends 15 feet farther E. About 5' thick here. Note. Frequently it is impossible to obtain an accurate dip reading because of the slabby character of the rock + due to slumping. Dip 43° N 15° W Strike S 75° W. (approx. Rock slightly contorted here)

40 S end of 39 here Gneissoid Gr. is 40' thick. Between ends it is 15-20' thick. Gully at 40 about 15' below

Note -- Apparently no sericite has developed as the result of dynamothermal metamorphism. In places hornblende schist has altered to biotite schist, and also to a chlorite actinolite schist (rarely). But sericite is found only where younger granite pegmatites cut the older rocks (check this!)

41 Backsight on T.P. Rod on belt 3 1/2' above surface

42 Edge (center) of dump of sericite pit. Pit starts 8' N18°W of this point and is 20 ft long and 7 1/2 ft. wide Dip 70° N35°W



In this pit Hb Schist has been cut by a small granite (?) pegmatite dike (6" to 8" wide). Right next to the dike is a narrow 6" zone of sericite. Then (right in Diag.) comes a 1' zone of Biotite Schist and then Hb Schist. Left in Diag. is a 1" zone of Verm. (following the sericite zone). Next (going left) a zone of quartz-sericite rock with Verm stringers. The most intense alteration of Hb-Schist produced sericite with accompanying quartz stringers. Somewhat less alteration produced vermiculite, and least alteration gave a biotite schist. Specimens ⑥ to ⑪ taken here. Carbonate or kaolin stringers cut across all the rocks. Sp. ⑫

Dump 10' wide on top. About 12' high. (Peg. contains garnet or corun and possibly sillimanite)

Hb Schist has some Biotite. Sericite has iron stains.

The pegmatite dike has been considerably altered by hydrothermal solutions and is iron stained. The carbonate or kaolin was the last mineral to form and consists of narrow (up to 1" wide) stringers cutting across the dip & schistosity of the other rocks. It is concentrated near the surface & presumably a weathering product. (Sericite is brilliant glistening w. a pale greenish tinge in places.)

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44 Gr. Gneiss on crest of ridge

45 Pit in gully. Gr Gneiss. Gneiss here has many Hb Schist bands which parallel the main one in which the sericite occurs. These bands are both wide (many feet thick) & long

46 Gr. Gneiss - Hb Schist contact (45) is along a fault valley

47 " " " "

48 " " "

49 Hb Schist Crest of ridge

50 Hb Schist - Gr Gneiss contact 8' S. Here Hb Schist is

probably a lens parallel with the main one but just
NW of it
51 Contact Hb Schist - Gr. Gneiss T.P. No. 2
52 N-W Independents No. 3
53 Center of long sericite pit above mine. Sericite zone about
7-8' wide. Extends 3' farther S. Contains quartz stringers
From 4 to 5' of the zone is good sericite. No granite pegmatite
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Extends N. to 56 ft.
56 Sericite vein runs to here - Hoist and NW cor of bin - Rd. 14' N.
57 NE cor of bin
58 SE " " (10' x 20')
59 Pt. in road where side gully ends. Main gully 50 ft toward East
60 Pt in road where side gully ends.
61 Pt in gully
62 On ridge Gr.-Gneiss
63 " " " "
64 " " " "

21-V-44
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67 Crest of ridge Note:- Schist weathers & breaks down by
mechanical action to a slabby & platy rock. The Gneissoid
granite weathers to blocky massive masses. Sometimes,
where not very gneissic, it exhibits blocky weathered
blocks typical of jointed granite.
Hb. Schist here. Contact with Gr. Gneiss about 60 ft N 45° W
Contact not very accurate
68 Crest of ridge Gr. Gneiss
69 Contact white Gneissoid Granite & Hb Schist. Note: This may be
the actual contact and the bands of yellow-brown to rust
which were mapped yesterday may simply be altered
hornblende schist. (OK → not quite sericite) Ridge crest is about 70 ft S 20° E
of here and is approx 12 ft above this in elevation
70 Pt. on spur. Gr. Gneiss
71 Pt. in road where gully crosses it.
72 Pt in gully where side gully emerges. Road 25 ft S.
73 Contact Hb. Schist & Gr. Gneiss on slope of hill
74 NE Independents No. 3 Held rod 3' above ground on foot.
Gully 18 ft. S 50° W.
74 Pt. on slope Hb-schist

75 Pt. on slope. Hb. Schist. T.P. 3

Note - There is no evidence that the sericite on Independents No. 2 is continuous with that at the mine. Iron that the latter contains, unbeknown to Independents No. 3 mine. All three are in the same Hb. Schist zone at approximately the same "horizon" but they pinch out and then begin again.

Sp (13) from Instrument Pt. (66) Typical Hb. Schist

Sp. (14) about 100' N20W of (66) altered Hb. Schist

76 Pt. at head of gully.

Note Dip of schist at mine Pit 2 50° N15°W (approx.)

77 Back sight on 75

78 Instrument set up (Traverse 79)

79 Edge of dump about 7' wide. Road 20' toward Instrument

80 Portal of mine - 30' long tunnel in sericite schist, pinches out but can be followed up hill. Dump here somewhat wider. Maximum width of sericite is about 2½ ft. Pinches to 6"

81 Contact Hb. Schist + Qz Gneiss

82 Pt on slope in Qz Gneiss - fair topog.

83 Pt in gully. Approx. contact Hb. Schist + Gneissoid Qtz.

84 Pt on ridge east of topog. Hb. Schist

85 " " " Just beyond top of hill where pits are. Shallow gully between

86 Sericite schist outcrop on hill top just above series of pits. Outcrop about 3 ft. wide.

Pit just below 86. Sp (12) typical sericite, some is better

Sp (15) Serpentine (?) from pit

87 Pt on ridge for topog - Hb. Schist

88 On spur. Pt for topog. Hb. Schist

89 " " "

Note

90 Sericite Schist about 10' thick. Iron stained but may be better in depth. Can be traced on surface for about 300' until it narrows out. Last 110 ft. it is only about 1' to 2' thick. Strike S70°W

91 Sericite Schist outcrop - continuation of 90. Pt in gully. Iron - angle dip. Perhaps 20° to 30° N10°W into hill.

92 Pit in Sericite Schist. Pit extends 20' ft. along outcrop. Sericite about 4'-5' wide here. Dump about 15' beyond pit 92 and 20 ft. wide. Extends 5' to edge of road.

Note - Hb. Schist has here altered near Bi Granite contact to Hb-Bi Schist. West to Bi-Granite is the Sericite Schist which contains quartz and biotite + is iron stained. Bi Granite is in the bottom of the pit + may or may not be a pegmatite.

Sp. (16) Hb Bi Schist (17) Sericite rock (18) Bi-Granite

93 C. Independent No 3 Hb Schist

94 Pt. in gully

95 Contact Hb. Schist + Gneissoid Granite - On hill, slope

96 Crest of ridge, Gneissoid Granite

97 " "

98 Pt. in road, where cuts gully enters.

Elevation 5280'

Wheatland - 100 ft. W. of main RR track, 1 block N. of station, in stone foundation on E. side of Wheatland Roller Mills, 20 ft. from S. end of building, 20 in. above ground, 10 in. below 29th brick of first course numbering from S. end of building, 3 ft. N. of S. warehouse door; copper bolt, marked "U. S. ⊕ B.M. (C. + G.S. b.m. J1.) 4,739.209

2-VII-45 Wheatland Sericite

100 Hb. Schist outcrop. Strike E-W Dip 50° N

(about 30' toward ⊿ along strike the dip is 60° N. Oriented Specimen

101 Gneissic Granite. D + S, taken 15' NE of 101 on bearing Dip 57 N. Strike E-W (280° W) Oriented Specimen

102 Gneissic Granite. Dip 60° N. Strike E-W Same outcrop as 101 but to the E. The rock has been lit-par-lit injected by quartz veins (15" thick) ± and also contains a layer at this point 2½-3' thick of Biotite Gneiss. (Sp 102) The Biotite Gneiss contains occasional ½" thick stringers of granite. The Granite Gneiss, in addition to lit-par-lit quartz veins, contains lenses of quartz 1-2' long by 1"-5" wide ± Both rocks are medium grained

103 Hb. Schist. Dip 51° N Strike E-W

104 Gneissic granite - some pink feldspathic granite cuts the gneissic granite here Dip 60° N. Strike N 70° E

105 Gneissic Granite Dip 67° N. Strike N 75° E

106 Gneissic Granite Dip 75 N Strike N 70 E The Biotite gneiss layers in the Gneissic Granite appear to be incompletely assimilated Hb Schist Readings taken on Oi Schist band

107 Enemii Granite - Dip 70°N, Strike N 70 E Readings taken on Bi Schist, hand Granite Enemii here is pegmatitic (coarse-grained) with enough muscovite to call the rock a "Muscovite Granite"

108 Enemii Granite. Dip 56°N, Strike N 80W. Biotite Gneiss band about 5' thick, with bit-par. lot injected bands (1/8" to 1" thick) of schistic granite. This granite has in places become strained and formed augen (1" x 2½", 2" x 4", etc.)

Note. Pt # 12 is C Independents W; S-W Independents No 2 Considerable local contortion so that it is not possible to get a reliable dip + strike reading. This applies to area from 107 Eastward (E) to the road.

109 Enemii Granite Dip 70°N, Strike E-W Readings taken on biotite Schist layer

110 Road

111 N6 Schist outcrop. Contains "Feldspar" injections Dip 56 N. Strike N-S E

112 N6 Schist outcrop. Dip 50 N. Strike N 70 E

113 N6 Schist Dip 57 N. Strike N 75 E

114 N6 Schist Dip 50 N. Strike N 80 E Type of N6 Schist. Some injections

115 Enemii Gr. Dip 65°N, Strike N 85 W. Contains layers of N6 Schist

116 Enemii Gr Dip 65°N. Strike N 85 E

117 Enemii Granite Dip 75°N, Strike N 70 E Readings taken on N6 Schist layer 5' thick. Enemii Granite and N6 Schist have parallel S + S

118 Enemii Granite Dip 65°N Strike N 65 E

119 N6 Schist with ½" injections Dip 65 N Strike N 65 E

120 Dip 70°N Strike N 50 E N6 Schist

121 N6 Schist Dip 65°N, Strike N 35 E

122 Chlorite Schist - E end 3' thick between 5'6" thick between 122 + 123

123 Chlorite Schist W end 1' thick. Apparently the N6 Schist has been altered by the granite to the E to Chlorite Schist

124 Contact granite dike at right.

125 " " " " Dip 45°N Strike with outcrop Chlorite Schist band 6" thick to S. Apinch and schist granite.

medium grained which has intruded Hb Schist lit-par-lit. This outcrop is principally granite with schist bands. Granite is cut by lit-par-lit veins of quartz

126 Quartzite and Hb. Schist. Most of the hill S of the road consists of quartzite with Hb. Schist bands or layers. The Quartzite locally contains appreciable epidote. In places the Hb. Schist has been altered to Actinolite Schist. Pegmatite dikes averaging only a few ft wide cut the other rocks; chiefly lit-par-lit

127 Hb. Schist. Dip 65 N Strike N 25 W.

128 Similar to 126 E end of mass

129 Hb Schist. Dip 70 N. Strike N 55 E. Up 129 from 30' SW along strike. Rock here appears to be an Actinolite-Talc Schist. Quartzite-Hb Schist zone from here to 130.

130 Quartzite. Extends 15' from here NW. Dip 65 N. Strike N 65 E.

131 NW Independents No 2 Dip 72° N. Strike N 42 E Reading taken on Hb Schist band. Reading on Actinolite-Talc layer is same

132 Hb Schist Dip 70 N Strike N 47 E.

133 Send pit 8' wide by 15' long by 4'. Trends N 20 W

134 " 10'x10'x10' In Epidote Quartzite which is gneissic + has been mineralized. Note specularite + red xls (hematite?)

3-VI-45

At △42 Hb. Schist. Dip 50° N. Strike N 77° E.

135 Gneissic Granite. Dip 60° N, Strike N 80° E

136 " " Dip 80° N Strike N 75° E

137 " " Dip 45° N Strike E-W Contact Hb. Schist about 20' S

138 Hb Schist Dip 70 N Strike N 80 E Possible T.P.

139 Hb Schist Dip 55° N. Strike N 77 E

140 Pit 15'x15' in Meta-Diorite (?) cut by pink Granite. Diorite schistose + granite gneissic

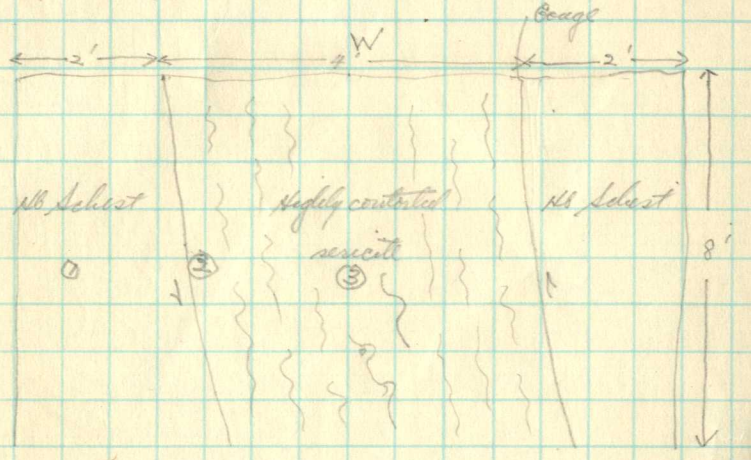
141 Contact Hb Schist + Quartzite. The latter is gneissic, very hard + compact, fine-grained, + gray

142 Same as 141. Quartzite (N border) is 30' S of Independents stakes (C No 1 + SW No 2) Some Bi Schist, Musc Schist + pegmatite stringers in Quartzite zone

143 Approx contact Quartzite (S) + Gneissic gr. (N)

144 Quartzite outcrop. Dip 55° N, Strike E-W. This Quartzite may be a very fine-grained Gneiss, Granite

Depth 50' (check this.)



Dip of hanging wall (NB Schist) 85° at roof & 70° near floor. Same dip on foot wall.

Sericite parallel with schistosity.

Drag folds in sericite indicate that the hanging wall moved up.

Plunge of drag folds is 25-25 N65 E.

The sericite is localized along a drag fold in the NB Schist. Also, the entire sericite zone occurs in a synclinal fold in the NB. Schist - Map also for Gneiss

Hanging wall contact bet. sericite & NB Schist is sharp. Foot wall contact shows a gradation.