THE BOREHOLE NR. 51,
Hjerkinn.

Borhull nr. 51, H J E R K I N N .

Petrografical description.

0,00 - 6,70	The chloritic greenschist with chlorite actinolite, some epidote, klinozoisite and with albite and sericite too. This rock has a lot of very weak positions and veins (0,5 cm in average) and a lot of some grains (0,5 - 2 mm in average) of carbonate or carbonatic-dolomite. The schistosity is very cleae. The carbonatic positions and grains are clongation along schistosity. The total colour of this rock is green or dark green Average gradient of foliation is 40^{o}-45^{o} about.
6,70 - 7,30	The complex not thick positions amphibolitic, with chlorite and klinozoisite and the other carbonates too, greenschist and medium grained chloritic and klinozoisite-epidotic amphibolitic greenstone with the strong ore mineralization of FeS_2 (grains 1-2 mm in average) and of Fe_3O_4 (the positions which follow the schistosity of rock, 2, 5 mm and somewhere more in average. Average gradient of schistosity and foliation is 55^{o} about.
7,30 - 21,80	The chloritic greenschist, just the same as between 0,00 - 6,70 m. The quartze veins or positions are in metrage 15,10 - 15,25 m (with large plates of ilmenite) 15,40 - 15,75 m and 16,57 - 17,00 m. The quartze has white or yellow-white colour. The total colour of chloritic greenschist is green or dark green somewhere. Average gradient of foliation is 45^{o} round.
21,80 - 22,55	The complex of the other type of rocks carbonatic dolomite (bright green-gray colour), chloritic medium-grained or coarse-grained amphibolitic green stone (amphibolite, garnet, magnetit with the other minerals - biotite, klinozoisite, epidote etc. The impregnation of FeS_2 is present too but weak only, and green schist with chlorite albite some biotite and a lot of weak positions or clongation grains of carbonates or dolomite. Fe_3O_4 creat the weak parallel positions (2-5 mm in average thickness) mostly in amphibolitic carbonatic greenstone only. The average gradient of foliation is 55^{o} round.
22,55 - 23,15	The chloritic, albitic, carbonatic greenschist with some biotite somewhere. The carbonatic grains or positions (weak 1-2 mm in average thickness only) are clongating along schistosity of rock. The schistosity is very clear too. The total colour of this rock is green, gray-green or bright gray-green. Average gradient of foliation is 60^{o} - 65^{o} round.

23,15 - 24,00 The complex of rocks where exchange not thick so parallel positions amphibolitic medium-grained or somewhere coarse-grained greenstone(amphibolite, magnetit, garnet that creat grains ans flocking of grains clongat along foliation or schistosity. The other minerals are carbonates and carbonatic-dolomite, biotite and epidote-klinozoisite little too.), carbonatic-chloritic or amphibolitic-chloritic, dolomite and amphibolitic-carbonatic greenschist. The impregnation FeS_2 and FeS is present little only too. The average total colour of this rocks are bright green gray, green-gray and very dark green. The average gradient of foliation is 60° round.

24,00 - 26,00 The chloritic and carbonatic greenschist with a lot of biotite, somewhere with weak positions of Fe_3O_4 and with garnet's grains too somewhere (1 mm in average - may be andradite). The very much carbonatic and dolomite-carbonatic schliers are in green schist too and glongate along schistosity. The total colour of this rock is dark green. The average gradient of foliation is 60° or 65° about. The impregnation of FeS_2 and little FeS is very weak only. Fe304 (tiny or tender-grained) clear the schliers or positions 2-5 mm thickness in average.

26.00 - 65,90 The chloritic-carbonatic greenschist with biotite and sericite somewhere too. The carbonates or dolomitic carbonates creat grains, schliers or parallel positions which follow by clongation schistosity. The plagioclase (albite) is present too and clear porphyroblasts very clongate along schistosity. The impregnation of FeS_2 or FeS is present in rock too but very, very weak only. In metrage 32,05 - 32,32 m and 36,60 - 36,90 m the positions (1-3 cm thickness in average) of chloritic carbonates or carbonatic feldspatic-dolomite exchange chloritic-carbonatic greenschist. These two parts have some more impregnation of FeS_2 and FeS too. The more strong impregnation of FeS and FeS_2 is in parts between 42,90 - 43,30 m, 48,00 - 48,60 m and 49,70 - 50,80 m where exchange a lot of not thick positions feldspatic-carbonatic greenschist and dark greenschist with chlorite and biotite too and carbonatic or carbonatic-dolomitic. The white quartz, filling of some joints, without some mineralisation is between 48,15 - 48,25 m with average angle of dip 25°-30° round. The average total colour of rock is green or gray-green The average gradients of foliation are in 27 m 55°, in 36 m 55° in 48 m 55°, in 57 m 55° and in 65 m 55°

65,90 - 72,30 The chloritic-amphibolitic tiny-grained greenstone or greenschist. This rock has more amphibole that creat tiny acicular crystals. The rock is very strong carbonatic too. The albit is present too in. The impregnation of FeS_2 and FeS is more strong than in the rocks before. In 68,60 - 68,65 m, 68,85 - 68,98 m and 69,20 - 69,45 m is the strong mineralisation of FeS_2 and FeS too in laminated

weak positions of greenschist, greenstone and carbonates or carbonate-dolomites. From these positions is one very interesting because over there the rocks little positions have been folding to little folds of cm amplitude. The mineralization of FeS_2 and FeS too in laminated weak positions of greenschist, greenstone and carbonates or carbonate-dolomites. From these positions is one very interesting because overthere the rocks little positions have been folding to little folds of cm amplitude. The mineralization of FeS_2 and FeS have been showing overthere syngenetic may be (?) In 68,90 - m is joint, which fill carbonates with limonite, dip angle of this joint is 25° and the other 60° about. The total colour of this rock is dark green and dark gray-green. The average gradient of foliation is 65° about.

72,30 - 74,30 — The position where exchange positions of carbonatic or carbonatic-dolomitic rocks and chloritic tiny-grained greenstone or greenschist. These every types of rock have very strong mineralisation (or impregnation) of FeS_2 and FeS. The schistosity is very clear. Average gradient of foliation is 60° or 65° round.

74,30 - 86,00 — The medium-grained amphibolitic and chloritic greenstone, on some place more greenschist for more chlorite, sericite and biotite too. These rocks are very strong carbonatic or carbonate-dolomitic. This carbonatic and dolomitic matter creat a lot of weak positions, schliers and grains clongated along schistosity. The impregnation of FeS_2 and FeS too is little strong or very weak somewhere. In 78,05 - 78,15 m is very strong mineralisation FeS_2 and FeS in exchangeing positions of greenstone, greenschist and carbonatic-dolomite etc. The mineralization just the same but more poor is in 83,80 - 84,30 m. The same joint, which is filling by carbonates and limonite is in 75,80 m. The dip angle of this joint is 10° and 25° about. Round this joint exist some more strong epidatization. The total colour of rock is green or dark gray-green. The general average is 65° and 70° round.

86,00 - 87,35 — The chloritic-epidotic greenstone without clear schistosity. The rock is strong calcarcous.

87,35 - 105,50 — The carbonatic, chloritic and sericitic greenschist with a lot of positions, schliers of carbonates or carbonatic-dolomite. The schistosity is very clear. Somewhere amphibolitic small acicular crystals are present. The impregnation of FeS_2 is very very weak on some without this one. In 90,70 - 91,05 m, 92,30 - 92,40 m and 99,90 - 100,15 m are clear some mineralisation of FeS_2 and FeS but very poor only. Some exchanging of carbonatic, carbonate-dolomitic, medium-grained or coarse-grained greenstone and chloritic greenschist are there. Very nice the positions of carbonates and dolomite (5-8 cm thick in average) and coarse-grained amphibolitic greenstone with big rodlike or acicular crystal are in 90,70 - 91,05 m. The total colour of rocks

are green, gray-green and bright or dark gray-green too. The average gradient of foliation is 75°, 80°, or 85° too round.

105,50 - 105,70 The coarse-grained amphibolitic-chloritic greenstone with klinozoisite, albite and a lot of carbonates too. The schistosity isn't clear. The total colour of rock is dark gray-green. Contact with the other next rock has angle of dip 25° about.

105,70 - 105,90 The tiny-grained very strong carbonatic, chloritic-amphibolitic greenstone (the small acicular of amphibolite have been exchangeing to chlorite). The contact with the other next type of rock has the angle of dip 35° round.

105,90 - 107,55 The coarse-grained amphibolitic-chloritic greenstone, just the same as between 105,50 - 105,70 m.

107,55 - 107,70 It is just the same type of tiny-grained strong carbonatic, amphibolitic-chloritic greenstone of gray or green-gray colour. Contacts with both rocks in overliying and substratum have the same angle of dip, it is 80° round.

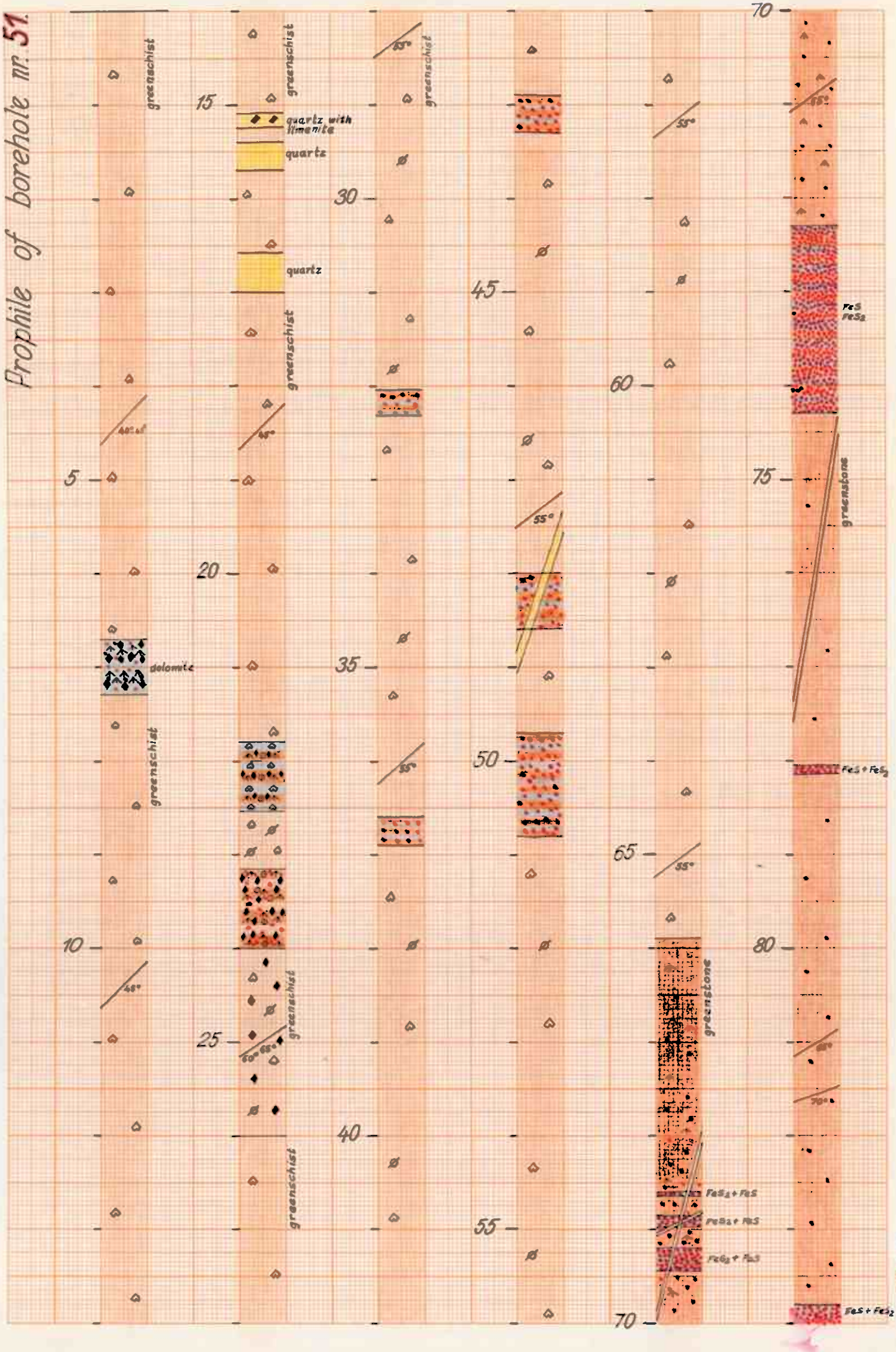
107,70 - 109,08 The very strong amphibolitic and chloritic greenschist (the amphibole creat acicular porphyroblasts 3-5 mm long in average, which clongat to all directions). This rock is very strong calcarcous with a lot of weak positions and schliers of carbonates. The impregnations is not present in. The total colour of this rock is gray-green. The average gradient of foliation is 80°-85° about.

109,08 - 109,50 The positions feldspatic schist with biotite and quartz, greenschist, tiny-grained greenstone, carbonate and carbonatic-dolomite, which exchange and together have some weak or little bit strong mineralization of FeS_2 and FeS somewhere. The colour of rock is gray or dark gray. The schistosity is very clear in. The total average gradient of foliation is 75° round.

109,50 - 112,08 The chloritic mica greenschist that is strong calcarcous, with a lot of positions and schliers of carbonates or carbonatic-dolomite. From minerals are present chlorit, muscovite, little biotite, klinozoisite, epidote, albite and amphibolite too. The mineralization (impregnation) is not present or very weak only somewhere. The total colour of rock is dark gray-green or gray-green. The schistosity is very clear. Average gradient of foliation is 80°-85° about.

The borehole was finished at 112,08 m. The angle of dip this hole is 50°.

(M. Motys).


Profile of borehole nr. 51.
greenschist
quartz with limonite
quartz
quartz
greenschist
greenschist
dolomite
greenschist
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greenschist
greenschist
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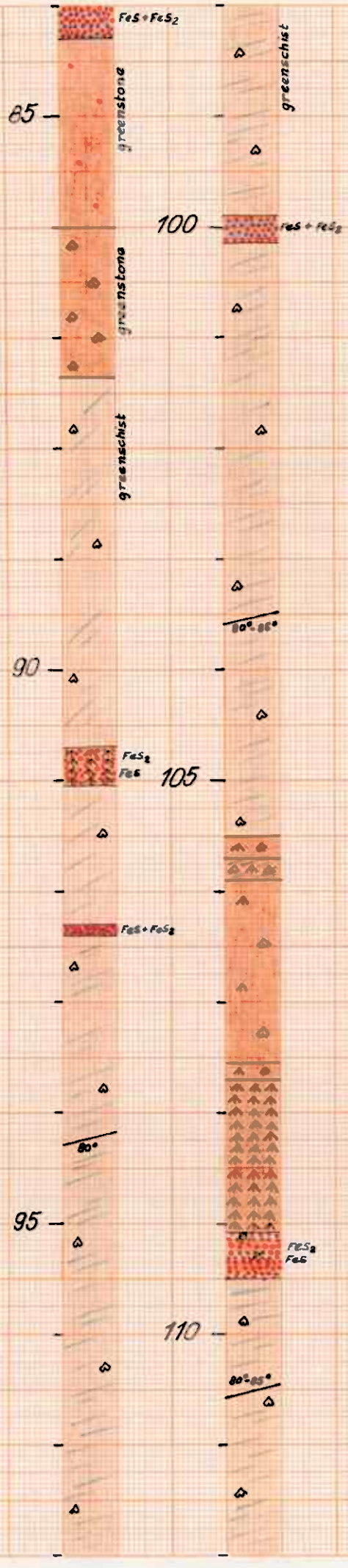

This borehole nr. 51 was finished at 112,08 m.