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Kolsvik Project
Report on geological, diamond drilling and metallurgical investigations

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Malm/metall	Au	

Sammendrag

BV 1984

KOLSVIK PROJECT

Joint venture between

A/S Sulfidmalm and Superior Norge Exploration Company

REPORT ON GEOLOGICAL, DIAMOND DRILLING AND METALLURGICAL INVESTIGATIONS

SEPTEMBER 1983

RONNIE SIVERTSEN
ØYSTEIN MJELDE

CONTENTS

APPENDIX

KOLSVIK PROJECT

LOCATION

The Kolsvik gold showing is located at approximately 65°40' E in Bindal community, Nordland County, Norway.

The showing lies on the western side of the Tosenfjord, some 4 kms directly south of Kolsvik Bay. The fjord is ice free year round and extends to considerable depth (up to 700 m).

From Kolsvik Bay there is a distance of 3 kms across the fjord to Lande which has road connections to Brønnøysund. To the local community center of Terråk is a distance of approx. 30 kms by boat.

At the head of Kolsvik Bay, a hydro-electric power station (Åbjøra power-station) is located. In connection with the power-station there is a small shipping quay and a good quality gravel road extending approx. 1 km south towards the gold showing.

Fig. 1. shows the general geographic location of the area. Fig. 2 shows the topographic conditions and location of the gold showings in relation to the fjord.

PREVIOUS WORK IN THE AREA

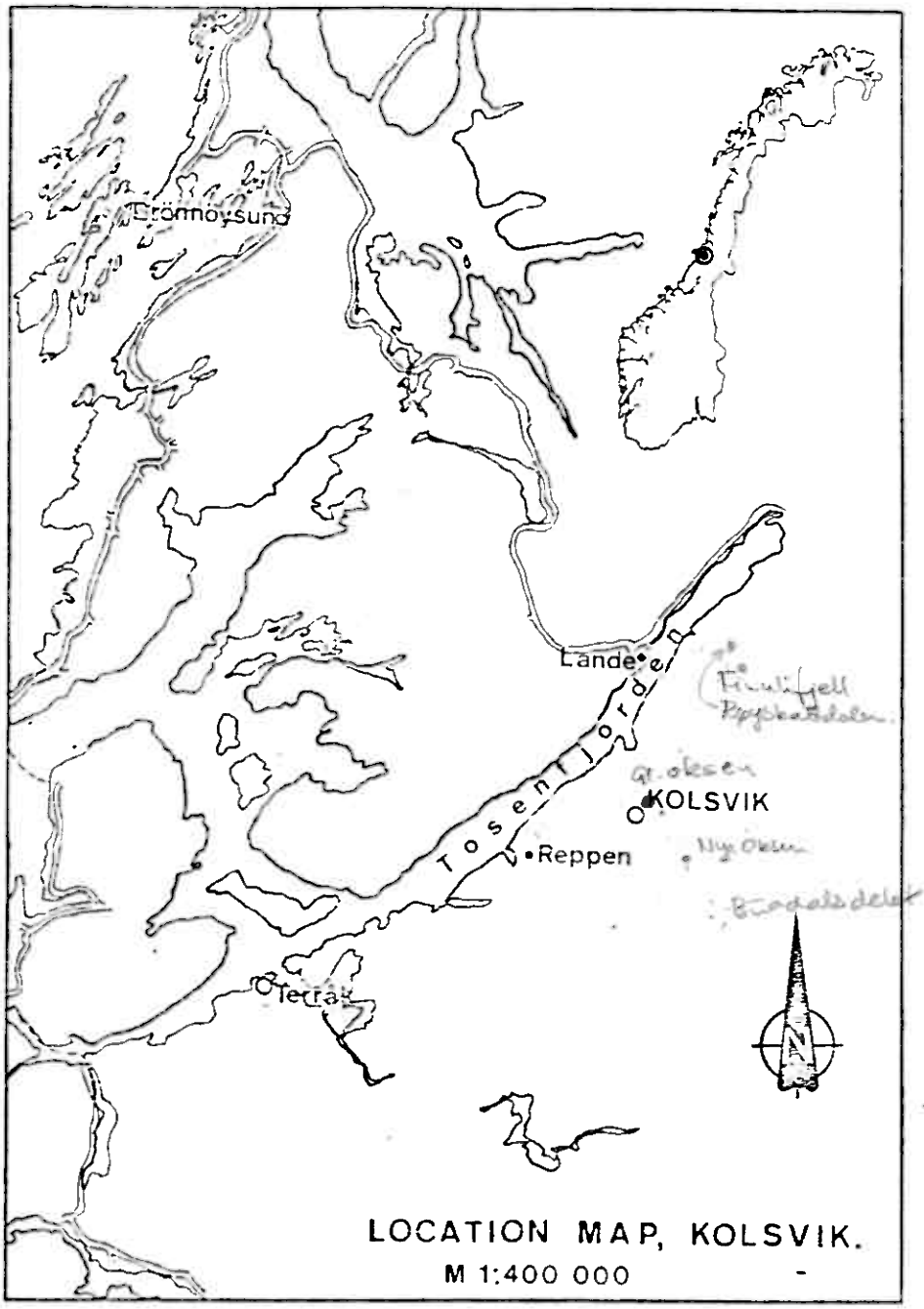
Gold has been known in the Kolsvik area since the 1920's, and investigations were carried out in the 1930's by a private Norwegian company. This work which mainly consisted of adit driving and sampling was terminated by the start of the Second World War and never recommenced.

The Swedish company Boliden were also involved during this period and were rumoured to be interested in taking over the property, but they could not accept the conditions stipulated by the Norwegian Government at that time.

Since the war the claims in the Kolsvik area have been held by the Norwegian State. Minor investigations were carried out by the Norwegian Geological Survey in 1962 and the property was optioned to A/S Sydvaranger for å short period in the early 1970's.

PRESENT OWNERSHIP

The mining claims to the Kolsvik property are owned by the Norwegian State. A/S Sulfidmalm became interested in the area in 1978 and in 1979 an agreement was signed whereby the Norwegian State optioned to Sulfidmalm



LOCATION MAP, KOLSVIK.
M 1:400 000

FIG.1.

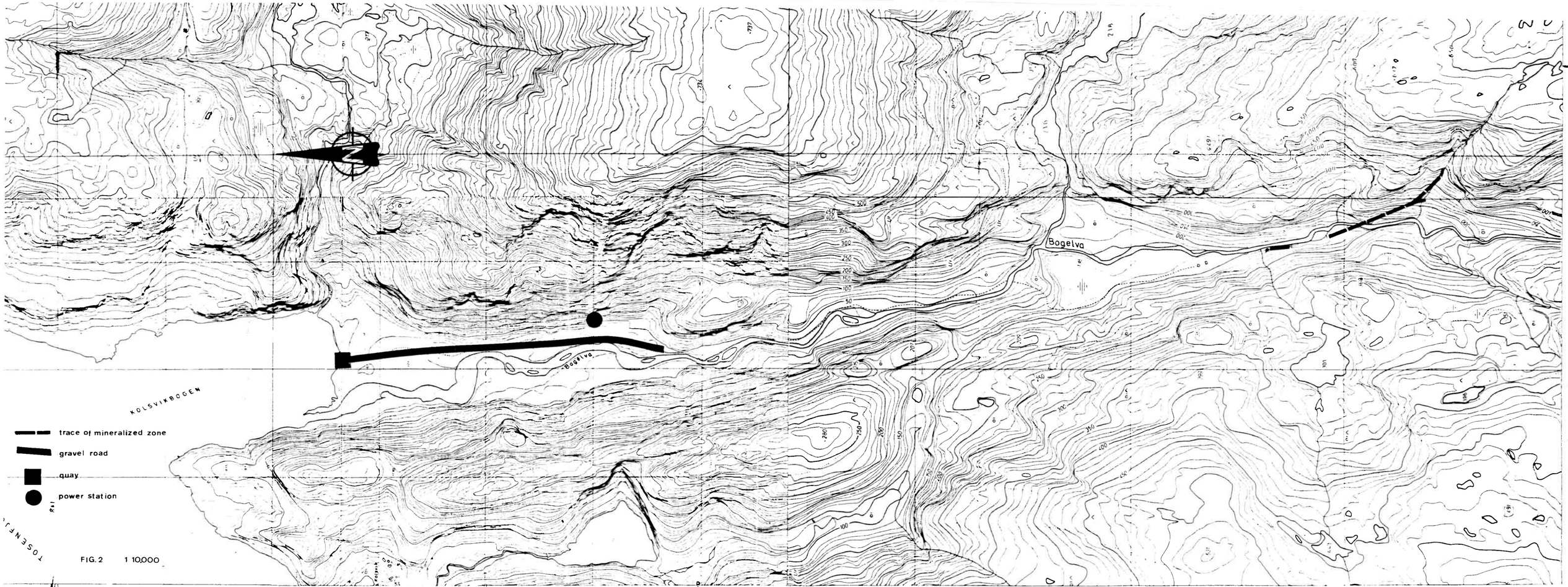

Bogelva
Bogelva
KOLSVIKBOGEN
trace of mineralized zone
gravel road
quay
power station

FIG. 2 1 10,000

the Kolsvik claims for a 5 year period.

A/S Sulfidmalm then commenced with exploration activities in the area on their own.

In 1981 Superior Norge Exploration Company (SNEC) became involved in the project and an agreement between Sulfidmalm and SNEC was signed giving SNEC the option to earn up to 49 % interest in the venture.

GEOLOGICAL SETTING

The geology of north-central Norway is dominated by nappes of relatively high grade psammitic, pelitic and calcareous metamorphic rocks with subordinate metavolcanics and with intrusive masses of Caledonian age. The depositional age of the metasediments of the nappe sequence has for a long time been regarded as most probably Cambro-Silurian, but recent age determinations and stratigraphic investigations are indicating that parts of certain successions may be of late Precambrian age.

The rocks in the Bindal region belong to the Helgeland Nappe which is the highest tectono-stratigraphic unit in this part of north-central Norway. (fig. 3, fig. 4.).

The area is dominated by basic intermediate and granitoid intrusives, some of which are extremely large in areal extent.

The granitic bodies show marked age differences and represent a complex batholitic development. The largest granitic body, the Bindal granite has given a Rb-Sr whole rock age of 424±26 m.y.

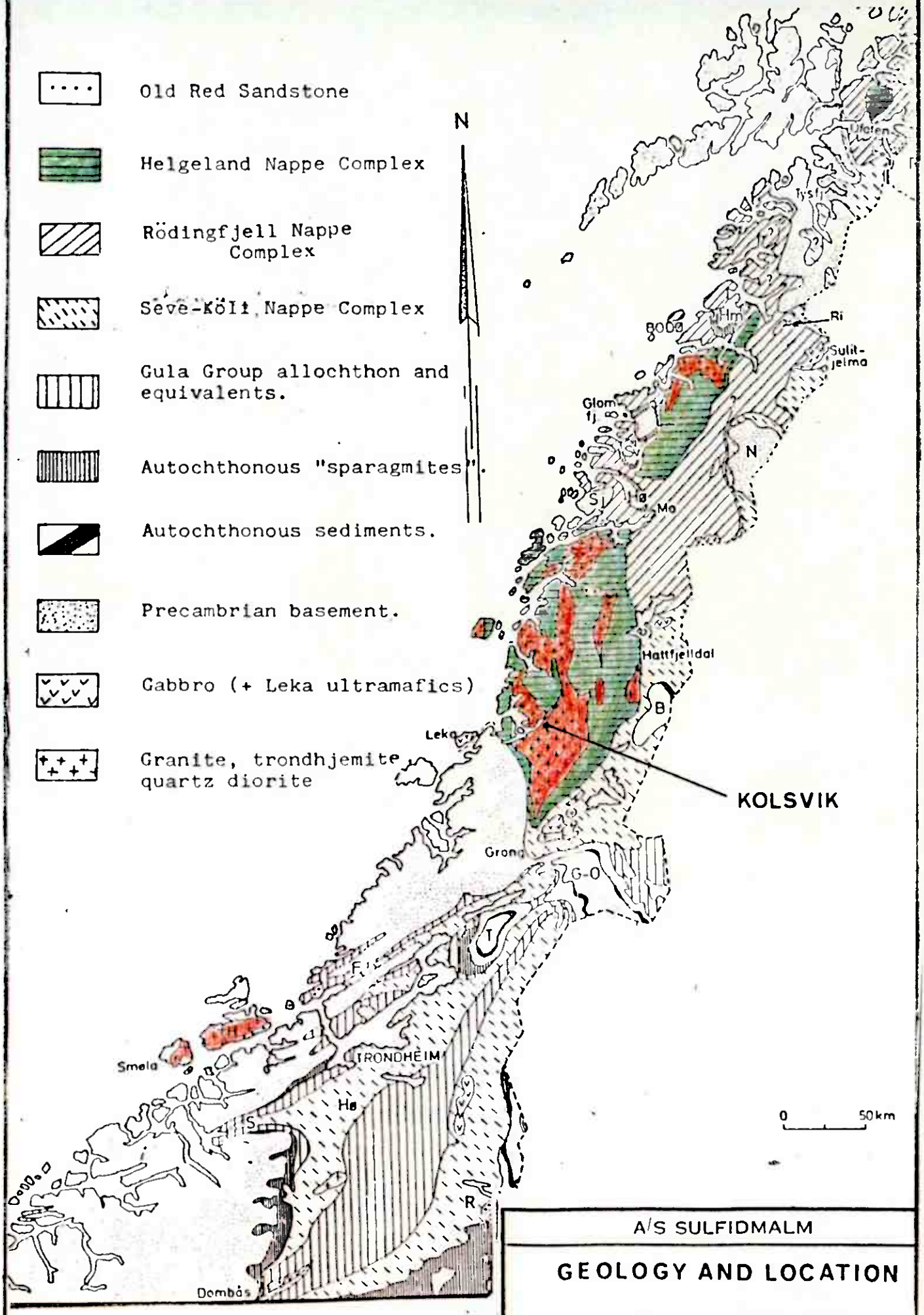
The immediate carapace to the granitic rocks of the region would appear to be of oceanic crust (ophiolite) with an unconformable or Palaeozoic cover sequence of psammitic pelitic and calcareous rocks.

The result of reconnaissance studies on the tectono-stratigraphy of these units reveal that several major thrust nappes must be present within the confines of the Helgeland Nappe itself.

Apart from Kolsvik, gold is also present at several other localities in the immediate area - one of these areas, Reppen, some 6 kms to the west of Kolsvik is at present under investigation.

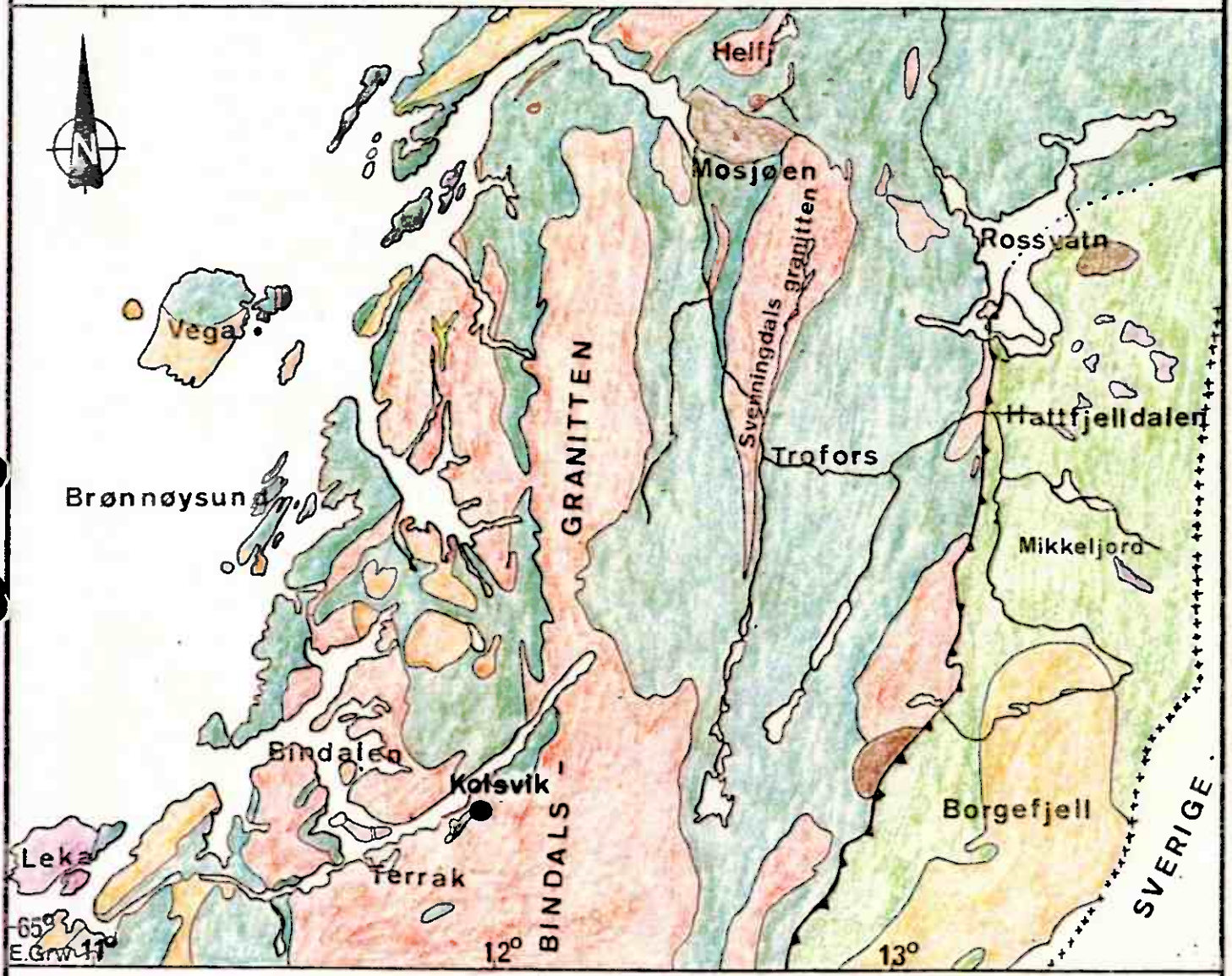
The area is also notable for its scheelite mineralization which again is the object of considerable exploration interest

Fig. 5 shows the geology of the immediate area to Kolsvik.



A/S SULFIDMALM	
GEOLOGY AND LOCATION CENTRAL NORWAY	
SCALE	DRAWN
DATE	TRACED

FIG. 3



High grade cambrian-silurian sediments

Low grade - " - " - " - " - " - " -

Caledonian granites, granodiorites, diorites.

Hypersthene monzodiorite

Ultrabasics

Gabbro

Precambrian rocks

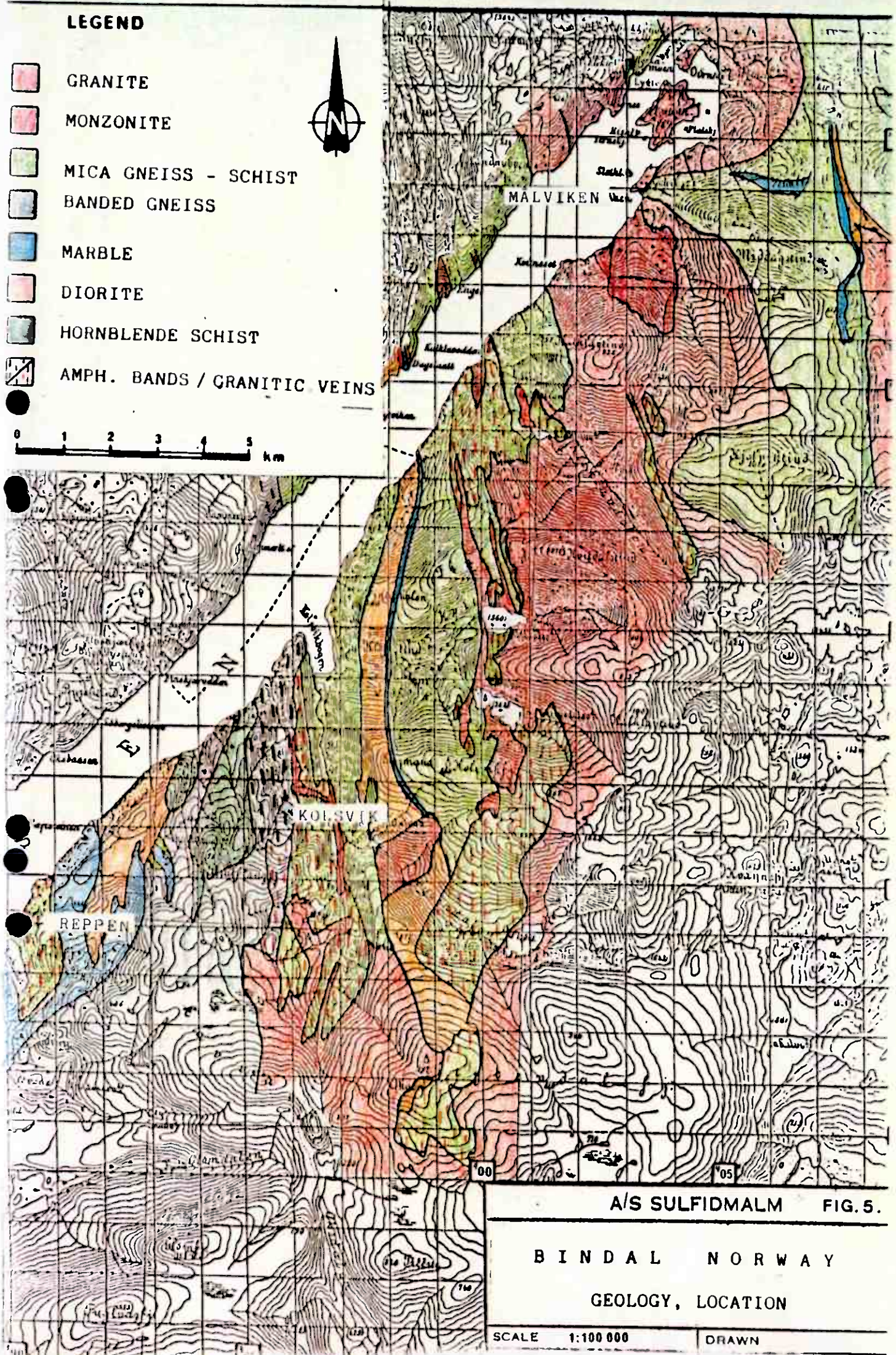
Thrust

FIG. 4.

A/S SULFIDMALM

GEOLOGICAL MAP
SØR HELGELAND

SCALE	1:750 000	DRAWN	
DATE	3.82	TRACED	AKB


LEGEND
GRANITE
MONZONITE
MICA GNEISS - SCHIST
BANDED GNEISS
MARBLE
DIORITE
HORNBLENDE SCHIST
AMPH. BANDS / GRANITIC VEINS
0 1 2 3 4 5 km
MALVIKEN
KOLSVIK
REPPEN
A/S SULFIDMALM FIG. 5.
BINDAL NORWAY
GEOLOGY, LOCATION
SCALE 1:100 000
DRAWN

WORK CARRIED OUT ON THE PROPERTY

1979 Initial location, mapping and sampling of several areas of gold/ arsenopyrite mineralization in the region.

1980 Regional mapping and regional geochemical sampling. Detailed mapping, sampling and diamond drilling at Kolsvik: - 4 holes totalling 390.35 m.

1981 Detailed geological mapping at structural interpretation in the Kolsvik area. Detailed sampling of surface showings and adits. diamond drilling 1.516.3 m in 15 holes.
Metallurgical testing of the Kolsvik mineralization.
Detailed mapping and sampling of alluvial and galciofluvial deposits north of the Kolsvik showing.

1982 Drilling 1 468.4 m in 15 holes.
Extra metallurgical testing.

DESCRIPTION OF THE PROPERTY

In describing the property various terms from the 1930 investigations have been used, and a short description of the area is given here, and is also shown on fig. 6.

The southernmost outcrops in the mountainside on the east side of the Bogdalen River are called the F-zone. The Storstein adit is driven along the F-zone. Moving north and down towards the river we find the Kaffistein adit.

Along the western side of the Bogdal River are a series of five adits comprising what is termed the C-zone. The adits from south to north are named Hartvig, Mannerheim, Boliden, South Skar and North Skar.

Immediately across the river from South Skar is a small showing termed the D-zone.

Further north from the C-zone is an old waterfilled shaft termed Seksa.

From Seksa there is a distance of some 300 m north to the B-area.

GEOLOGY AND MINERALIZATION

The major lithologies found in the Kolsvik area are:

I. Granite
II. Augen gneiss / banded gneiss (altered monzonite)
III. Marble
IV. Mica schists.

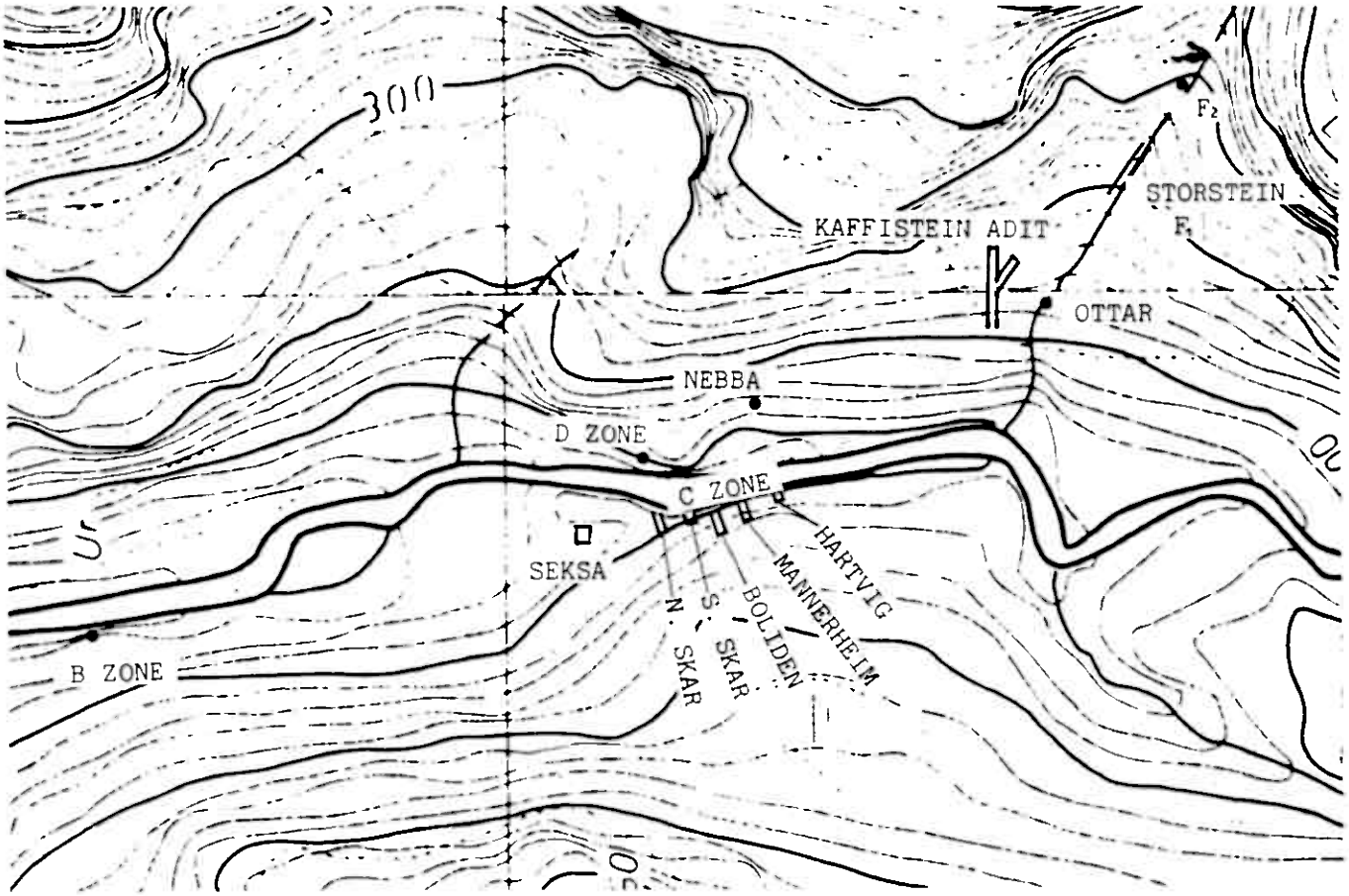


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FIG. 7.

LOCALITY NAMES IN KOLSVIK

I.) Granite

The notable feature of the granite in the Kolsvik area is its general lack of mafic constituents. In many cases its composition is simply quartz and feldspar (orthoclase, oligoclase, microcline). More biotite rich phases are only seen locally.

The granite is usually without any planar structure, but dark variants may show a weak biotite foliation.

The granite often shows alteration in the vicinity of tectonic zones, where carbonate, sericite, muscovite and chlorite are common. A characteristic pinkish alteration is also developed along joints. These joints are often lined with secondary minerals such as desmin, lammonite, ankerite, calcite and quartz. Especially quartz and carbonate veining is common.

Disseminated arsenopyrite is frequently seen in the vicinity of tectonic structures and is usually accompanied by alteration products. The quartz-gold and arsenopyrite bearing veins and segregations are usually limited to the granite. Good Au mineralization is often seen to be related to highly altered red granite especially in the C-area.

II.) The gneisses

The gneisses in the Kolsvik area vary in composition and texture from augen-/banded gneisses and dioritic gneisses to more schistose mica variants of these.

The augen-/banded gneiss structurally overlies the other rocks and can be seen especially in the F- and Kaffistein areas. It is a biotite rich rock with augen or bands of plagioclase and quartz. A planar structure is well developed and shows a constant N-S strike and steep dip towards E.

The diorite gneiss is usually more massive, but occasionally it shows foliation in more mica rich parts. The contacts between diorite gneiss and other gneisses and schists are generally diffuse, especially in sheared areas. Definite intrusive diorite is seen at several locations (especially in drill holes) but texturally similar rocks are also seen in sequences assumed to be metasediments.

In pol-thin section several of the augen and dioritic gneisses are shown to have a quartz monzonite composition, and often the more massive varieties, although having a distinct augen texture in hand specimen, exhibit a granitic texture in section with scattered coarse flakes of biotite and muscovite occuring in a coarse mosaic of feldspar, - both sodic and potassic and quartz.

The gneisses are cut by a great number of veins and at least three phases of granitic veins are noted, the earliest veins being highly deformed. Aspy mineralization is rare, but can be seen in some quartz and granitic veins. Py is a common mineral in both dioritic- and augen/banded gneisses.

III. The marble

The marbles (dominantly calcite marble) are all highly deformed rocks. They vary in composition and texture from banded marble, containing thin bands of pelitic composition which are often folded to highly deformed fragment rich marble, now showing a breccia texture.

A rapid interchange between marble and carbonate rich mica schists is seen in drill holes from the C-area.

Skarn (diopside-garnet) zones are frequently developed in the marble, especially in contact relations to younger crosscutting granite.

IV. Mica schists

The mica schists vary from fine to medium grained, mostly strongly sheared biotitic rocks. They are mainly found in or adjacent to shear zones, especially well developed in the C-area.

The mineralogical and textural variations of the schists are thought to represent both a primary change in the sequence and a strongly variable deformation of the rocks.

V. Mineralization

The gold and arsenopyrite mineralization occurs dominantly in granite near the contact zone with gneisses and metasediments. The mineralization is typically tectonically controlled and related to such structures as

a) Quartz vein fillings in fractures, shears and joints.
b) Quartz segregations in or associated to the above structures.
c) Quartz/Asp matrix fill in breccias.
d) Massive Asp zones in fractures and shears.
e) Joint smearings of Asp.

Relationships of tectonics and mineralization and extent of mineralization will be treated later in this report.

Two typical quartz vein type mineralizations show the following in polished thin section

Sample PTS 5629 C zone vein type

		Grain size (mm) max.	avg.
Quartz	95 %		
Muscovite	tr.		
Arsenopyrite	3-4 %	0.75	0.40
Native gold	1 %	0.25	0.05

Masses of euhedral arsenopyrite grains, locally intergrown with coarse blebs of native gold occupy fracture zones within a coarse interlocking quartz mosaic. Muscovite is the sole alteration mineral associated with the mineralization. Individual quartz grains exhibit undulose, strained extinction and together with arsenopyrite are commonly criss-crossed with microfractures. The latter manifest themselves in the form of thin "tracks" of microcrystalline quartz within the coarser vein quartz and quartz filled fractures transecting arsenopyrite grains.

Sample PTS 5630 C zone vein type

		Grain size max.	avg.
Quartz	55-60 %		
Alkali feldspar	4-5 %		
Carbonate	tr.		
Chlorite. Biotite	tr.		
Arsenopyrite	35-40 %	massive	
Galena	tr.		
Native gold	tr.	0.006	0.006
Rutile	tr.		

Texturally this sample is similar to PTS 5629. From a mineralogical point of view, however, subtle yet distinct differences exist. In place of muscovite an alteration assemblage of carbonate and chlorite/biotite is found associated with the arsenopyrite in fracture zones. Minor coarse grained K feldspar joins the quartz gangue and occurs both as localized grain aggregates and as isolated single crystals.

These two samples represent typical vein type mineralization which is common through the property. Another type of mineralization in the area and common in the F zone is a "breccia type". A typical PTS shows the following

Sample PTS 5631 F zone breccia type

		Grain size (mm) max.	avg.
Quartz	15-20 %		
K Feldspar Plagioclase (Albite)	65-70 %		
Chlorite	<1		
Apatite	tr.		
Sericite	tr.		
Arsenopyrite	5-10 %	3.00	1.50
Rutile	<1		
Zircon	tr.		
Native gold	tr.	0.006	0.006

Here masses of arsenopyrite together with associated chlorite alteration occur within fracture zones. The granitic host rock which has been strongly shattered consists of predominantly coarse interlocking K feldspar and albite grains with lesser interstitial (=primary) and fracture-filling (=secondary) quartz.

Scheelite has been noted in several of the gold bearing veins and detrital cassiterite has been found in glaciofluvial deposits north of the area.

STRUCTURAL OBSERVATIONS

I. Summary

The Kolsvik valley to which the gold property is located is a deeply glaciated valley, the course of which is influenced by the strong shattering associated with a major fault zone with a north south trend extending along the valley floor. This fault zone is a dominant structural feature, can be traced for some tens of kilometers and is readily seen on ERTS satellite images.

The lithological assemblage of the area has been variably affected by late Caledonian and subsequent deformation as revealed in fault, shears and joint systems. It is these faults, shears and joints which provided the passage for mineral-bearing solutions or the redistribution and concentration of metals.

Several categories of fracture characterize the late tectonic fabric of the Kolsvik district.

1) Shear zones and faults marked by zones of crush and or shear.
2) Joints.
3) Later joints and shear zones - possibly non Caledonian.
4) Rebound joints i.e. parallel to the ground surface.

Categories 1 and 2 are Caledonian in age and relate to granite emplacement and subsequent Caledonian tectonics.

Gold mineralization appears to occur chiefly in shear fractures, faults or joints together with arsenopyrite or in association with a gangue of quartz in which arsenopyrite can occur as fine disseminations, veinlets or irregular segregations. Native gold is commonly seen in the area and is most common in association with quartz. The arsenopyrite and/or quartz arsenopyrite veins usually occur as thin discontinuous veins or less regular elliptical bodies within the fractures. Vein quartz - sometimes Asp and Au bearing also occurs in systems of tension gash veins associated to some of the minor faults.

The most conspicuous development of sulphide occurs in very brittle rocks which become more heavily broken or diced up with successive fracture systems. Massive arsenopyrite fills the fractures, frequently giving the rock the appearance of a fault breccia.

Mineralization has been found on surface over an intermittent strike length of some 800 m from the F zone in the south through the C zone to B in the north. Diamond drilling has been concentrated between and around the F and C zones. Integrating the data from zones F, C and B brings out several features which are summarized below:

1) Each zone displays a rational but somewhat different pattern, indicating they are near coherent sub areas of a large tectonic framework.
2) Two systems of fractures seem to be significant in the distribution of mineralization in the area. In chronological sequence these are
   a) Conjugate system of gentle to moderately inclined shears and joints with an average 160° strike. The hanging wall in each case moves downwards indicative of a sub horizontal extension of the rocks. Tension gash veins of quartz are associated with these fractures in the more brittle rocks. These flat shears often contain development of massive Asp or elliptical vein quartz with Asp and Au. This conjugate

system is well seen in the C zone adits and the Kaffistein adit.

b) Steep shears-faults and joints with an average SE-NW trend (strike spread 90°-170°). They are well developed in the F zone, inner Kaffistein adit and in the C zone. The fractures frequently exhibit a suite of associated tension gash veins. The relative age relationships between the fracture systems can be seen in the C zone (Boliden adit) and in the Kaffistein adit where NNW-SSE and N-S fractures postdate the flat conjugate system.
These "b" type shears are quite dominant and some can be traced for several tens of meters as in the F and C zones.

3) The conjugate system of flat shears is compatible with sub-horizontal extension of the rocks i.e. distension above a rising plutonic mass of granite.

4) Stereographic plots indicate that despite their temporal difference the "a" and "b" systems belong to the same orogenic cycle.

5) The earliest phase of mineralization was emplacement of sulphide and sulphide-metal bearing vein quartz along the conjugate system of flat to moderately inclined fractures of "normal" type i.e. hanging-wall moves downwards.

6) Later faulting has affected redistribution of sulphides, in some cases producing a conspicuous increase in porosity and potential mineral sinks. In several places such as the F zone dramatic breakage occurs and when impregnated with massive sulphide the rock mass has the appearance of a breccia.

7) The major fault zone in the valley floor is a later event. It has effected disturbance of the mineralization and its associated fractures but the fault itself seems to carry no gold and is characterized by a low temp mineral assemblage.

8) Continuity of the various tectonic units can be established in places from surface observations and sporadic continuity can be intrepreted from drill holes. Within the tectonic units the general pattern appears to be one of somewhat erratic distribution of mineralization as demonstrated by assay results and as is to be expected in this type of deposit.

MINERALIZATION AND TECTONICS

The earliest mineralization seen is related to low angle conjugate joints supposedly related to granite intrusion. The most dominating mineralized structures in the area however are several easterly dipping and NW-SE (90°-170°) striking faults and shears with related minor fractures, shears and tension cracks. Brecciated zones are often developed as in the F zone.

Mapping and drilling in 1980/82 has indicated a "structurally controlled zone" extending from the F_2 area in the south to the B area in the north, a distance of some 900 m. The northernmost 300 m between Seksa and the B zone is completely covered by scree and offers no exposure and has not been drill tested.

The elevation difference between F_2 and B is 180 m.

This mineralized zone is cut by the late major N/S fault system in the valley floor - the Bogdalen fault. Splays on this fault parallel earlier NW-SE trending fractures and have caused minor re-orientation (dragging) and/or displacement. No evidence of major displacement has been established.

For purposes of description the property can be divided into two areas:
- the area from F to C zones and the C zone to B zone area.

a) The F-C area (fig. 7)

Mineralization in this area can be studied on surface in the Storstein adit, the Kaffistein adit and in the Ottar, Oppgangen and Nebba areas. The following drill holes are also located in this area: DDH 3, 4, 8, 9, 10, 11, 12, 13, 20 and 36.

The F-zone on which the Storstein adit is located consists of two major steep faults with an undulating trend. At the mouth of the adit the distance between the two faults is some 5 m narrowing to the south where they converge some 28 m within the adit again opening up further south. The granitic rocks between these fractures are well mineralized with arsenopyrite chlorite-quartz along steep fractures trending 120° and 180° - this gives a marked breccia appearance to the rock. Massive arsenopyrite occurs intermittently near the footwall of the easternmost fault. In the footwall to the westernmost fault related minor fractures and joints carrying arsenopyrite and quartz are present over a distance of some 20 m. Surface sampling has returned 10.63 Au g/t from bulk channel sampling over the easternmost 4.5 m of the zone at the mouth of the adit.

DDH 10

DDH 8

DDH11

DDH9

DDH 12

KAFFISTEINEN ADIT

OTTAR

KLØFTA

DDH 36

DDH 2

DDH 4

F-2

QUARTZ

GRANITE

MONZONITE
(Biotite rich granite?)

AUGEN GNEISS/BANDED GNEISS

MASSIVE Aspy

FRACTURES & JOINTS

FOLD STRUCTURES

MINOR FAULTS

MAJOR FAULTS

STRIKE/DIP OF FRACTURES & JOINTS

PLANAR STRUCTURES

STRIKE/DIP OF QUARTZ VEINS

F-ZONE
KOLSVIK, BINDAL
GEOLOGY

The F_2 showing located some 30 m to the SE and 40 m higher elevation returned 6.22 Au g/t over 1.5 m.

The Ottar showing located some 30 m below the F zone is interpreted as the western fault observed in the F zone. Two grab samples from Ottar sampled in 1980 indicate 4.5 g/t Au and 14.9 g/t Au over 0.5 m.

In the Kaffistein adit two well mineralized (Asp, Quartz) zones are seen with related joint and fracture mineralization. Low conjugate fracture sets of the earliest generation are also seen in this area to predate the later fractures. The zone of mineralization is of the order of 15 m, but chip sampling has revealed low numbers, 2g/t Au over 2 m.

The Oppgangen and Nebba areas are extremely poorly exposed but early conjugate fractures have been recognized being cut by later NW/SE fractures. Surface sampling has given 5.1 g/t over 1 m (Oppgangen) and 3.04 g/t over 7 m (Nebba).

Small surface showings have also been located at the D zone 22.4 g/t over 1 m and below the collar of DDH 12/13 4.7 g/t over 0.3 m.

A total of 11 drillholes have been drilled in this area. The topography is extremely difficult with the trace of the zone trending across a steep rugged valley side with most of the area being covered by large masses of scree and boulders. This necessitated most of the holes being drilled from the "wrong" side i.e. footwall side of the zone.

Two holes, DDH 3 and 4 were put down on the F-zone in 1980. DDH 3 proved the depth down to at least 90 m with the best values of 9.31 g/t Au over 3.25 m. DDH 4 intersected 22.3 g/t over 0.75 m which is interpreted as footwall mineralization.

The geology and assays of the holes are shown on enclosed sections. All of the holes intersected structurally controlled arsenopyrite/quartz mineralization and visible gold was noted from DDH 8, 12 and 13.

DDH 9, 10, 11 were put down to test the northward continuation of the F-zone. DDH 9 returned only traces of gold (3.43 g/t over 0.25 m). DDH 10 gave 4.88 g/t AU over 5.0 m. DDH 11 returned 3.38 g/t Au over 5 m (5.69 g/t over 2.5 m).

DDH 8 drilled to confirm the supposed northerly extension of the Kaffistein adit mineralization gave 3.96 g/t Au over 4.75 m (5.63 g/t Au / 0.75 m - 7.82 g/t / 1.75 m.)

DDH 12 and 13 were drilled to test the northerly continuation of the DDH 8 mineralization. DDH 12 hit 10.40 g/t Au over 1.5 m (5.22 g/t over 3.5 m) whereas in DDH 13 two zones were intersected - 8.06 g/t Au/ 3 m and 5.8 g/t Au.

DDH 20 intersected only two minor gold values over 0.5 m.

DDH 36 put down to intersect the F-zone at depth intersected minor mineralization between 117 and 125 m.

TABLE 1

Summary of DDH's drilled in the F - C area.

DDH	LOCATION	DIP	LENGTH	SIGNIFICANT ASSAYS			
				FROM	TO	LENGTH	Au g/t
3	352 S - 158 E	90°	94.20 m	60.0 62.0 65.25 79.50 87.50	61.0 62.5 66.50 80.0 90.75	1.0 0.5 1.25 0.5 3.25	3.3 2.05 4.88 15.0 9.31
4	352 S - 158 E	50°	93.05	17.0 28.75	18.0 29.5	1.0 0.75	4.05 22.3
8	285 S - 83 E	40°	88.30	55.5 58.50 61.75	56.25 60.25 62.25	0.75 1.75 0.50	5.63 7.82 1.03
9	373 S - 113 E	35°	94.6	63.75 68.0 80.0 80.5	64.0 68.25 80.25 80.75	0.25 0.25 0.25 0.25	2.4 1.1 3.43 1.03
10	362 S - 101 E	36°	144.0	54.0	59.0	5.0	4.88
11	362 S - 101 E	55°	159.3	114.0 (116.5	119.0 119.0	5.0 2.5	3.38 5.69)
12	201 S - 50 E	38°	124.5	38.0 (40.0	41.5 41.5	3.5 1.5	5.22 10.4)
13	201 S - 50 E	20°	63.7	30.0 40.5	33.0 41.5	3.0 1.0	8.06 5.8
14	420 S - 168 E	42°	120.8	NOT ASSAYED			
20	130 S - 30 E	45°	89.8	17.5	18.0	0.5	1.53
36	300 S - 42 E	36°	271.5	123.0	124.0	1.0	0.83

From the available surface information and drill hole data an overall continuous "mineralized zone" extending from F- to the C-area is indicated.

DDH 3 has indicated a minimum depth of 90 m.

b) The C-area (fig. 8.)

The C-area is dominated by strong shearing/faulting with a NNW-SSE direction and a steep easterly dip. A marked fault zone follows the contact between the granite and the country rocks.

This fault zone can be traced for some 125 - 150 m along strike. Coincident and partly enclosed in the fault zone are quartz-arsenopyrite veins and irregular bodies - in places up to 1.5 m wide. These can be traced sporadically along the length of the fault zone and often are seen to carry free gold.

Several adits are driven into the footwall of the fault zone in the C-area and both detailed mapping and sampling of the adits indicate several zones of mineralization in the footwall granite.

In the Boliden adit three separate zones occur, chip samples giving 7.3 g/t Au / 3 m - this correlates with the main C-vein fault. Further 4.1 g/t Au / 6 m from 7.0 - 13.0 m and finally 3.4 g/t Au / 4 m from 30.0 - 34.0 m.

Values from the other adits on the zone were however poor.

Two different joint sets carrying quartz ± Au and Asp have been mapped in the adits: - a) steep easterly dipping and b) low angle conjugate. The low angled fractures being the earliest.

Thirteen drill holes have been drilled in the C-zone area. DDH 15, 16, 17, 18, 19, 21, 22, 23, 24, 25, 27, 28 and 33.

DDH 15 which was put down to investigate the C-zone at depth intersected a well mineralized zone some 20 - 25 m below the level of the Boliden adit giving 26.1 g/t Au over 11.25 m. In core the mineralization is seen to relate to joints and shears with two sets being developed at right angles to each other.

DDH 16 and 17 put down on the same profile but lower than DDH 15 intersected mineralization over long core lengths (22.0 - 52.0 m in DDH 16; 22.0 - 68.0 m in DDH 17). These meters gave positive indications of gold but gave higher assays only in isolated areas.

DDH 16	34.0 - 36.5 m	2.25 g/t
DDH 17	45.0 - 48.0 m	2.8 g/t
	62.0 - 64.0 m	5.76 g/t

DDH 5
DDH 6
DDH 1
DDH 30
SENSA SHAFT
DDH 29
DDH 20
DDH 2
SKARET
N. SKARSTO
S. SKARSTO
DDH 17
KLONDYKE
C-1
C-2
DDH 18
DDH 16
DDH 22
BOLIDEN
DDH 15
DDH 28
MANNERHEIM
DDH 33
HARTNIG
E
D
DDH 25
DDH 23
DDH 26
OPPGANGEN
DDH 30
NEBBA

- QUARTZ
- GRANITE
- MICA SCHIST
- LIMESTONE
- AUGEN GNEISS/BANDED GNEISS
- MASSIVE Aspy
- FRACTURES & JOINTS
- MINOR FAULTS
- MAJOR FAULTS
- STRIKE/DIP OF FRACTURES & JOINTS
- PLANAR STRUCTURES
- STRIKE/DIP OF QUARTZ VEINS

0 10 m 20 m

DDH 26

C-ZONE
KOLSVIK, BINDAL
GEOLOGY

1:200

Sulfidmalm

28 02A7 6/96

The rest of the holes in this area all intersected significant core lengths of mineralized structures, with varying core assays. A summary of the drill holes and significant assay numbers are shown in table 2.

DDH	LOCATION	DIP	LENGTH	SIGNIFICANT ASSAYS FROM	TO	LENGTH	Au g/t
15	62 S 7.5 E	44°	93.45	27.25	38.50	11.25	26.1
16	62 S 7.5 E	65°	89.95	34.0 41.5	36.5 42.0	2.5 0.5	2.25 2.06
17	62 S 7.5 E	80°	80.60	32.0 45.0 62.0	32.5 48.0 64.0	0.5 3.0 2.0	2.06 2.80 5.76
18	62 S 7.5 E	45°	97.0	26.5 34.0	29.0 35.0	2.5 1.0	4.26 2.24
19	62 S 7.5 E	66°	56.3	9.0	9.5	0.5	2.87
20	101.5 S 27 W	90°	156.85	8.0 31.0	9.0 35.0	1.0 4.0	3.48 2.35
22	92 S 2 E	45°	38.0	0.0 22.0 26.0	2.0 24.0 27.0	2.0 2.0 1.0	1.39 1.5 1.74
23	101.5 S 27 W	60°	133.0	49.0 94.0	51.0 105.0	2.0 11.0	2.64 1.28
24	101.5 S 27 W	65°	140.7	45.0 91.0 104.0	46.0 92.0 107.0	1.0 1.0 3.0	1.41 2.03 3.09
25	61.5 S 43 W	60°	116.0	29.0 37.0 70.0 (70.0 (71.0 98.0	30.0 38.0 86.0 80.0 74.0 100.0	1.0 1.0 16.0 10.0 3.0 2.0	38.93 3.49 4.86 7.32) 21.65) 2.33
27	92 S 2 E	90°	39.4	0.0 15.0 25.0 31.0	10.0 20.0 27.0 33.0	10.0 5.0 2.0 2.0	1.63 1.7 4.89 1.11
28	92 S 13 W	Core lost in helicopter transport					
33	118 S 5 E	45°	46.1				

To the north of holes 25 and 18 drilling (DDH 1, 2, 5, 6, 26, 29, 39) has not encountered significant mineralization although on surface chip samples behind the Seksa shaft have given high gold numbers.

The situation in this area is still somewhat unclear and most of the drillholes may have drilled over the continuation of the mineralization.

From Seksa to the B-area some 350 m to the north, no outcrops occur and the area is covered by large amounts of boulder and scree. No holes have been drilled in this area.

On surface in the B-area a quartz arsenopyrite vein has given up to 5 g/t Au over 2 m. Four holes were drilled in section here but gave only a little mineralization.

All drill logs, sections and assays are appendixed to this report.

MINERALOGICAL AND METALLURGICAL EXAMINATIONS

I. Mineralogical investigations

Fourteen drill core samples of various lithologies from the Kolsvik area and four surface samples of mineralization have undergone petrographic examination and qualitative spectrographic analysis. The results are shown in appendix no. 6.

Six hand samples from the "C" and "F" areas have also been examined by R. Buchan for the relationship between gold and arsenopyrite. Two polished sections from each hand sample were prepared and examined using a high magnification objective of the polarizing microscope.

Gold was observed in three of the samples in four habits: as grains completely enclosed in Aspy, as blebs and elongate grains within fractures or shatter cracks in Aspy and as isolated grains in gangue.

Distribution af 68 grains observed in the three samples indicate that over 70 % (by estimated volume) occur enclosed in massive arsenopyrite, about 10 % within fractures in arsenopyrite and 20% within gangue. Grain sizes range from sub-micron, barely visible specks up to about 15 x 25 µm with an average grain size about 6-7 µm diameter.

The actual grain size distribution of the 68 grains is as follows

Grain size (diameter in µm)	No of grains
<1	7
1-3	27
3-5	18
5-10	9
>10	7

This distribution is in contrast to certain areas of the C zone where very coarse grains occur and average grain size is estimated at about 50 µm diameter.

TABLE 3

NATIVE GOLD DISTRIBUTION IN SAMPLES FROM BINDAL

		ASSOCIATION OF GOLD GRAINS No of grains (Est. % by volume)			
Sample	No of grains	Enclosed Aspy	Along grain boundaries of Asp	Within cracks in Aspy	In gangue
C 1	25	16 (49 %)	4 (40%)	5 (11 %)	-
C 2	18	13 (17 %)	1 (17%)	1 (33 %)	3 (63 %)
C 3	0	-	-	-	-
F 1	0	-	-	-	-
F 2	25	8 (61 %)	6 (26%)	11 (13 %)	-
F 3	0	-	-	-	-
All samples	68	37 (43%)	11 (28 %)	17 (9%)	3 (20 %)

II. Metallurgical investigations

An investigation into the recovery of gold from samples from F- and C-zones has been carried out by Lakefield Research of Canada Lmt. The reports of these investigations are enclosed as appendix 7.

TONNAGE POTENTIAL

The explored part of the area covers the ground from F to Seksa, a distance of 550 m. From the pattern of showings and diamond drill core sections the main tectonized zone is indicated to have minimum depth extension of 230 m (F_1 = 340 m - DDH 17 = 110 m.a.s.l.

The criteria used in outlining and limiting the area of potential gold bearing rock are

1) Minor structures such as shears, joints, brecciation, veins and quartz segregation.
2) Mineralization accompanying these minor structures, quartz, arsenopy, py.
3) Frequency of the minor structure as seen in drill core and on showings.
4) Gold assays.

The main tectonic zone thus outlined has been divided into blocks whose dimensions represent the observed mineralization potential criteria in the area. The blocks have then been reduced for topographic effects and a tonnage potential calculated for each block down to the minimum depth extension. The total tonnage of potential gold bearing area thus calculated to be associated with the main tectonic zone is in the range of 2 mill. tons. The area of potential mineralization are shown on summary sections in appendix 4.

SIGNIFICANCE OF RESULTS

From the information available it seems to be well established that a structurally controlled mineralized zone is trending from the F-area to the Seksa area - a distance of 550 m. Both on surface and in drill holes the mineralized zone is seen to have a fairly steep dip to the east and varies in width from narrow 0.5-5 m zones of cm wide veins, compact breccia zones up to 5 m in width and areas composed of several fractures and veins over substantial widths (as in the C-area). The tectonic zone from F - C gives the general impression of pinching and swelling, different minor structures related to the zone having different attitudes and occurrences along the zone.

The criteria which have been used in outlining the structurally controlled mineralized zone (the potential ore zone) are mainly geological, based on information from diamond drilling, surface and adit mapping.

The pattern and trend and frequency of minor structures and accompanying quartz and arsenopyrite within the tectonic zone are the most significant information factors.

In outlining the mineralized zone the gold values are only used as an indicator although positive gold values in most cases support and are co-incident with the geological interpretation.

Based on these criteria a tonnage potential of some 2 mill. tons is indicated.

Examination of the different minor structures show that the gold is irregularly distributed with nuggets and concentrations of smaller grains being common. Sampling of this type of mineralization using diamond drilling and/or chip samples will give an irregular pattern with overrepresentation of low numbers. In spite of this, averaging all the drill core samples in the main tectonic zone returns for the F-zone an average value of 2.09 g/t Au from 131 samples from 8 drill holes. For the C zone the average value of 634 samples was 1.46 g/t from 10 holes and 4 adits.

Sampling carried out by A/S Kolsvik Malmfelter in 1935 - 36 returned fairly good grades both from the C and F areas. The sample size normally brought out was in the range of 80 - 100 kg containing 6 - 12 g/t Au. The irregular and unpredictable gold values returned from samples was also noted by the early workers.

This pattern is also supported by sampling carried out by Sulfidmalm where two 100 kg samples returned 7.77 g/t Au from the F zone and 39.1 g/t Au from the C zone.

The structural/geological interpretation and tonnage potential estimation is based on surface observations and information from drill core. The significance of gold values returned from drill core is difficult to evaluate without taking into consideration the following.

1) The gold bearing minor structures vary both in orientation, attitude and width.

2) These minor structures also vary in intensity and distribution.

3) The internal gold distribution within the minor structures is irregular with the occurrence of nuggets or grain concentrations.

Given the very strong nugget effect and irregular distribution both of gold and gold bearing structures any grade evaluation based on core samples and chip samples will be highly uncertain.

The effect of nuggets on sampling and sample size are well demonstrated in the following models:

A) Using an ideal model with one m^3 of rock (2.5 t) containing an even distribution of equal sized gold grains totalling 12.5 g. This gives an average of 5 g/t Au.

The core sample used in assaying has a weight of 2.5 kg, in other words 1 m^3 consists of 1000 core samples.

We can consider 3 cases where the 12.5 g is divided among 1) 10 grains 2) 100 grains and 3) 1000 grains. In these cases the probability of getting 1 grain in core sample and the resulting ppm value in the sample is as follows:

	1	2	3
Grains Au	10	100	1000
Probability of one grain in core sample	1/100	1/10	1
ppm Au in sample	500	50	5

B) A model which tries to take into consideration the situation at Kolsvik with the nugget effect and the irregular distribution and concentration of smaller grains will be as follows.

In this case 1 m^3 contains 10.5 g/Au giving 4.2 g/t. Again one core sample is 2.5 kg giving 1000 samples/m^3.

Number of samples	5	10	10	25	50	100	100	200	500
g Au in each sample	0.5	0.25	0.1	0.05	0.025	0.01	0.005	0.001	0.0005
Probability of positive assay in core	1/200	1/100	1/100	1/40	1/20	1/10	1/10	1/5	1/2
ppm Au in sample	200	100	40	20	10	4	2	0.4	0.02

Also to be taken into consideration are mistakes introduced by core splitting and sample reducing prior to assaying.

Model B shows that the possibility for getting a low value in core sampling is statistically much higher than for getting an high or even average number.

Despite this the average value of all core samples in the "potential zone" return approx. 2 g/t Au.

Based on the models presented above one can argue that a true average grade should be at least 2 or 3 times higher than this. Attention should also be given to the two larger samples that have been taken from F and C, both of which returned high values.

CONCLUSIONS AND RECOMMENDATIONS

From the information available a tectonic mineralized gold bearing zone extends from the F-area to Seksa - a distance of some 500 m. Drilling has indicated a depth extension on the zone of 200 m.

The geometry of the mineralized sone varies and the distribution of mineralization varies. A tonnage potential of 2 million tons is indicated.

An accurate determination of the grade of the deposit is not possible based on the available information, but arguments can be presented that indicate the possibilities of an economic grade being present.

It is recommended that the results to date warrant more work and that a program of bulk sampling in the 5 - 10.000 ton range be carried out in order to evaluate an average grade that can be related to a given tonnage.

HOLE	CO-ORDINATES [1]	BEARING	DIP	LENGTH [2]	ASSAYS ppm Au							
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au
1.	0 - 0	274°	80°	117.80 m	13.5	16.0	4.5	<0.5				
					28.0	29.0	1.0	<0.5				
					45.0	45.75	0.75	<0.4				
					45.75	46.0	0.25	6.7				
					46.0	47.0	1.0	<0.5				
					50.0	52.0	2.0	<0.5				
					56.7	60.0	3.3	<0.5				
					60.0	60.25	0.25	0.8				
					60.25	61.25	1.0	<0.4				
					61.25	61.50	0.25	18				
					61.50	64.75	3.25	<0.4				
					66.25	69.20	3.05	<0.5				
					94.0	95.0	1.0	<0.5				
					112.0	112.5	0.5	<0.5				
2.	0 - 0	227°	55°	85.30	5.25	6.0	0.75	<0.4				
					13.0	18.0	5.0	<0.5				
					36.0	37.0	1.0	<0.5				
					37.0	37.3	0.3	1.9				
					44.0	48.0	4.0	<0.5				
3.	352 S 158 E		90°	94.20	8.0	12.0	4.0	<0.7				
					18.0	19.0	1.0	<0.6				
					20.0	22.5	2.5	<0.6				
					22.5	22.75	0.25	2.7				
					22.75	23.0	0.25	2.2				
					23.0	30.0	7.0	<0.8				
					34.0	38.25	4.25	<0.4				
					38.25	38.50	0.25	1.6				
					38.50	38.75	0.25	1.2				
					38.75	41.0	2.25	<0.6				

[1] Reference point 0|0 = Skaret

[2] All lenghts in meters

HOLE	CO-ORDINATES [1]	BEARING	DIP	LENGTH [2]	ASSAYS ppm Au							
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au
3	325 S 158 E		90°	94.20 m	53.0	57.0	4.0	<0.4				
					58.0	59.0	1.0	<0.4				
					60.0	60.25	0.25	5.7				
					60.25	60.50	0.25	4.7	60.0	61.0	1.0	3.3
					60.50	60.75	0.25	1.8				
					60.75	61.0	0.25	1.0				
					61.0	61.5	0.50	<0.6				
					61.5	61.75	0.25	1.4				
					61.75	62.0	0.25	<0.4				
					62.0	62.25	0.25	1.3	62.0	62.5	0.5	2.05
					62.25	62.50	0.25	2.8				
					62.50	65.25	2.75	<0.9				
					65.25	65.50	0.25	10.6				
					65.50	65.75	0.25	3.9				
					65.75	66.0	0.25	2.8	65.25	66.50	1.25	4.88
					66.0	66.25	0.25	5.5				
					66.25	66.5	0.25	1.6				
					66.5	67.25	0.75	<0.6				
					67.25	67.5	0.25	5.3				
					67.5	67.75	0.25	0.6				
					67.75	68.0	0.25	<0.4				
					68.0	68.25	0.25	1.7				
					68.25	68.5	0.25	1.0				
					68.5	68.75	0.25	3.4				
					68.75	70.0	1.25	<0.8				
					70.0	70.25	0.25	1.0				
					70.25	76.25	6.0	<0.4				
					76.25	76.50	0.25	1.0				
					76.50	77.25	0.75	<0.6				
					77.25	77.50	0.25	1.7				
					77.50	79.50	2.0	<0.8				
					79.50	79.75	0.25	15	79.50	80.0	0.5	15
					79.75	80.0	0.25	15				
					80.0	87.50	7.50	<0.4				

[1] Reference point 0|0 = Skaret

[2] All lengths in metres

HOLE	CO-ORDINATES	BEARING	DIP	LENGTH	ASSAYS ppm Au							
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au
3	352 S 158 E				87.50	87.75	0.25	3.3				
					87.75	88.0	0.25	2.0				
					88.0	88.25	0.25	37				
					88.25	88.50	0.25	1.9				
					88.50	88.75	0.25	3.5				
					88.75	89.00	0.25	6.7	87.50	90.75	3.25	9.31
					89.0	89.25	0.25	9.6				
					89.50	90.0	0.50	<0.5				
					90.0	90.25	0.25	9.0				
					90.25	90.5	0.25	13.9				
					90.5	90.75	0.25	14.8				
					90.75	93.0	2.25	<0.6				
4	352 S 158 E	226°	50°	93.05 m	13.75	14.75	1.0	<0.6				
					14.75	15.0	0.25	1.0				
					15.0	17.0	2.0	<0.6				
					17.0	17.25	0.25	1.0				
					17.25	17.50	0.25	7.0	17.0	18.0	1.0	4.05
					17.5	17.75	0.25	7.4				
					17.75	18.0	0.25	0.8				
					18.0	18.25	0.25	<0.3				
					18.25	18.50	0.25	1.9				
					18.50	19.75	1.25	<0.5				
					21.25	28.75	7.5	<0.5				
					28.75	29.0	0.25	2.9				
					29.0	29.25	0.25	63	28.75	29.5	0.75	22.3
					29.25	29.5	0.25	1.2				
					29.5	33.0	3.50	<0.5				
5.	48 N 1 E	082°	45°	122.0 m								
6.	48 N 1 E	082°	65°	92.0 m								
7.	ABANDONED IN OVERBURDEN AT 22 m.											

* Reference point 0|0 = Skaret

KOUSVIK, BINDALEN. DIAMOND DRILL RECORD.

HOLE	CO-ORDINATES	BEARING	DIP	LENGTH	ASSAYS ppm Au							
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au
8.	285 S 83 E	060°	40°	88.30 m	40.0	50.0	10.0	Nil				
					51.0	51.25	0.25	<0.01				
					54.0	55.5	1.5	<0.4				
					55.5	55.75	0.25	2.5				
					55.75	56.0	0.25	1.4	55.5	56.25	0.75	5.63
					56.0	56.25	0.25	13				
					56.25	58.50	2.25	<0.6				
					58.50	58.75	0.25	3.6				
					58.75	59.0	0.25	28				
					59.0	59.25	0.25	4.7				
					59.25	59.50	0.25	8.8	58.50	60.25	1.75	7.82
					59.50	59.75	0.25	6.1				
					59.75	60.0	0.25	1.4				
					60.0	60.25	0.25	2.2				
					60.25	61.75	0.50	<0.4				
					61.75	62.25	0.50	1.03				
					62.25	79.0	17.75	<0.3				
9.	373 S 113 E	052°	34.9°	94.6 m	40.25	43.0	2.75	<0.6				
					45.0	45.75	0.75	<0.1				
					48.0	63.75	15.75	<0.5				
					63.75	64.0	0.25	2.4				
				PR drag	64.0	68.0	4.0	<0.2				
					68.0	68.25	0.25	1.1				
					68.25	80.0	11.75	<0.2				
					80.0	80.25	0.25	3.43				
					80.25	80.50	0.25	-				
					80.5	80.75	0.25	1.03				
					80.75	84.0	3.25	<0.2				
10.	362 S 101 E	062°	36°	144. m	40.0	43.0	3.0	0.1				
					43.0	50.0	7.0	0.03				
					50.0	54.0	4.0	<0.1				
					54.0	55.0	1.0	9.29				
					55.0	56.0	1.0	9.29	54.0	59.0	5.0	4.88
					56.0	57.0	1.0	2.75				
					57.0	58.0	1.0	2.06				
					58.0	59.0	1.0	1.03				
					59.0	70.0	11.0	<0.3				

* Reference point 0|0 = Skaret

? All lengths in metres

KOLSVIK, BINDALEN, DIAMOND DRILL RECORD

HOLE	CO-ORDINATES	BEARING	DIP	LENGTH	ASSAYS ppm Au								
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au	
10.	362 S 101 E	062°	36°	144.0 m	70.0	72.0	2.0	0.06					
					72.0	74.0	2.0	Nil					
					74.0	79.0	5.0	0.05					
					79.0	80.0	1.0	Nil					
					80.0	88.0	8.0	0.2					
11.	362 S 101 E	062°	55°	159.3 m	83.0	94.0	11.0	Nil					
					94.0	103.0	9.0	0.7					
					103.0	103.5	0.5	1.03					
					103.5	114.0	10.5	0.7					
					114.0	114.5	0.5	1.38					
					114.5	115.0	0.5	1.72					
					115.0	115.5	0.5	1.72					
					115.5	116.0	0.5	0.17					
					116.0	116.5	0.5	0.34					
					116.5	117.0	0.5	4.47					
					117.0	117.5	0.5	16.86	116.5	119.0	2.5	5.69	
					117.5	118.0	0.5	3.10					
					118.0	119.0	1.0	2.0					
					119.0	120.0	1.0	<0.5					
					120.0	121.5	1.5	0.1					
					144.0	149.0	5.0	<0.3					
12.	201 S 50 E	072°	38°	124.50	30.0	38.0	8.0	Nil					
					38.0	39.0	1.0	2.56					
					39.0	40.0	1.0	0.13					
					40.0	40.5	0.5	28.8					
					40.5	41.0	0.5	1.4	40.0	41.5	1.5	10.4	
					41.0	41.5	0.5	1.0					
					41.5	45.0	3.5	0.4					
					45.0	65.0	20.0	Nil					
					66.0	75.0	9.0	<0.3					
					84.0	103.0	19.0	0.4					

114.0	119.0	5.0	3.38
38.0	41.5	3.5	5.22

[1] Reference point 0|0 = Skaret

[2] All lengthsin meters

HOLE	CO-ORDINATES [1]	BEARING	DIP	LENGTH [2]	ASSAYS ppm Au								
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au	
13.	201 S 50 E	072°	20°	63.7 m	10.0	27.0	17.0	Nil					
					27.0	30.0	3.0	<0.4					
					30.0	30.5	0.5	19					
					30.5	31.0	0.5	<0.4					
					31.0	31.5	0.5	25	30.0	33.0	3.0	8.06	
					31.5	32.0	0.5	1.2					
					32.0	32.5	0.5	<0.3					
					32.5	33.0	0.5	3.2					
					33.0	40.5	7.5	<0.4					
					40.5	41.0	0.5	2.7					
					41.0	41.5	0.5	8.92	40.5	41.5	1.0	5.8	
					41.5	50.0	8.5	Nil					
14.	420 S 168 E	075°	42°	120.8 m									NOT ASSAYED
15.	62 S 75 E	215°	44°	93.45	18.5	20.0	1.5	Nil					
					20.0	22.0	2.0	<0.3					
					22.0	24.0	2.0	<0.5					
					24.0	24.25	0.25	4.6					
					24.25	24.50	0.25	0.5					
					24.50	25.50	1.0	<0.5					
					25.50	25.75	0.25	1.1					
					25.75	26.0	0.25	0.3					
					26.0	26.25	0.25	1.7					
					26.25	26.50	0.25	<0.3					
					26.50	26.75	0.25	0.6					
					26.75	27.0	0.25	<0.3					
					27.0	27.25	0.25	<0.3					
					27.25	27.50	0.25	7.8					
					27.50	27.75	0.25	55					
					27.75	28.0	0.25	5.9					
					28.0	28.25	0.25	2.1					
					28.25	28.50	0.25	35					

[1] Reference point 0|0 = Skaret

[2] All lengths in meters

HOLE	CO-ORDINATES	BEARING	DIP	LENGTH	ASSAYS ppm Au							
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au
15.	62 S 75 E				28.50	28.75	0.25	40				
					28.75	29.0	0.25	28				
					29.0	29.25	0.25	5.6				
					29.25	29.50	0.25	17.				
					29.50	29.75	0.25	11				
					29.75	30.0	0.25	8.2				
					30.0	30.25	0.25	0.7				
					30.25	30.5	0.25	6.4				
					30.50	30.75	0.25	1.6				
					30.75	31.0	0.25	2.5	27.25	38.50	11.25	26.1
					31.0	31.25	0.25	0.5				
					31.25	31.50	0.25	0.3				
					31.30	31.75	0.25	< 0.4				
					31.75	32.0	0.25	2.5				
					32.0	32.25	0.25	5.7				
					32.25	32.50	0.25	< 0.3				
					32.50	32.75	0.25	< 0.2				
					32.75	33.0	0.25	21				
					33.0	33.25	0.25	< 0.3				
					33.25	33.50	0.25	0.3				
					33.50	33.75	0.25	< 0.3				
					33.75	34.0	0.25	5.9				
					34.0	34.25	0.25	3.3				
					34.25	34.50	0.25	0.2				
					34.50	34.75	0.25	5.5				
					34.75	35.0	0.25	11				
					35.0	35.25	0.25	777				
					35.25	35.50	0.25	2.0				
					35.50	35.75	0.25	0.9				
					35.75	36.0	0.25	6.0				
					36.0	36.25	0.25	0.5				
					36.25	36.50	0.25	0.4				
					36.50	36.75	0.25	0.6				
					36.75	37.0	0.25	33				
					37.0	37.25	0.25	0.8				
					37.25	37.50	0.25	2.7				
					37.50	37.75	0.25	0.4				
					37.75	38.0	0.25	1.2				
					38.0	38.25	0.25	6.4				
					38.25	38.50	0.25	4.9				
					38.50	39.0	0.5	< 0.3				

ilden pulp

n = 58
$\bar{x}$ 19.57 ppm (inkl 777)
s 101.8

n = 57
$\bar{x}$ 6.17 ppm (ex kl 777)
s 11.08
ungget effekt 3 gr
ger => 33.2 g/ton

All lenghtsin meters

HOLE	CO-ORDINATES	BEARING	DIP	LENGTH	ASSAYS FOR Au								
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au	
15.	62 S 75 E				39.0	39.5	0.5	1.0					
					39.5	40.0	0.5	2.2					
					40.0	43.0	3.0	<0.3					
					43.0	60.0	17.0	Nil					
16.	62 S 75 E	215°	65°	89.95 m	19.5	22.0	2.5	Nil					
					22.0	23.0	1.0	0.13					
				Prov	23.0	23.25	0.25	<0.3					Prov 23.0 - 30.5 (Gamle vatn. prøver)
					23.25	23.50	0.25	1.2					
					23.50	32.0	8.5	<0.3					
				Prov	32.0	32.50	0.5	1.4					Prov 32.0 - 34.0 (Borrkärna)
					32.50	34.0	1.5	<0.3					
					34.0	34.5	0.5	5.1					
				Prov	34.5	35.0	0.5	2.9					
					35.0	35.5	0.5	1.72	34.0	36.5	2.5	2.25	Prov 34.0 - 36.5 — " —
					35.5	36.0	0.5	0.17					
					36.0	36.5	0.5	1.37					
					36.5	37.0	0.5	0.17					
					37.0	37.50	0.5	0.17					Prov 36.5 - 44.0 — " —
				Prov	37.50	38.0	0.5	0.07					
					38.0	38.5	0.5	1.37					
					38.5	41.5	3.0	<0.4					
					41.5	42.0	0.5	2.06					
					42.0	43.5	1.5	<0.2					
					43.5	44.0	0.5	1.72					
				Prov	44.0	51.0	7.0	<0.7					Prov 44.0 - 51.0 — " —
					51.0	52.0	1.0	0.06					
					52.0	53.0	1.0	1.63					
					53.0	55.0	2.0	Nil					
					55.0	56.0	1.0	0.40					
					56.0	63.0	7.0	Nil					
					63.0	64.0	1.0	1.26					
					64.0	65.0	1.0	0.09					
					65.0	70.0	5.0	Nil					

' Reference point 0|0 = Skaret

' All lengths in meters

HOLE	CO-ORDINATES	BEARING	DIP	LENGTH	ASSAYS ppm Au							
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au
17.	62 S 75 E	215°	80°	80.60	20.0	23.0	3.0	Nil				
					23.0	24.0	1.0	0.08				
					24.0	24.5	0.5	0.16				
					24.5	32.0	7.5	0.2				
					32.0	32.5	0.5	2.06				
					32.5	34.5	2.0	0.2				
					34.5	35.0	0.5	0.01				
					35.0	36.0	1.0	1.15				
					36.0	45.0	9.0	0.09				
					45.0	46.0	1.0	0.83				
					46.0	47.0	1.0	0.32	45.0	48.0	3.0	2.80
					47.0	48.0	1.0	7.25				
					48.0	50.0	2.0	0.5				
					50.0	51.0	1.0	0.14				
					51.0	52.0	1.0	0.03				
					52.0	53.0	1.0	0.45				
					53.0	54.0	1.0	Nil				
					54.0	55.0	1.0	0.37				
					55.0	56.0	1.0	0.04				
					56.0	57.0	1.0	0.06				
					57.0	58.0	1.0	0.11				
					58.0	59.0	1.0	0.32				
					59.0	60.0	1.0	0.24				
					60.0	61.0	1.0	0.06				
					61.0	62.0	1.0	Nil				
					62.0	63.0	1.0	2.88	62.0	64.0	2.0	5.76
					63.0	64.0	1.0	8.64				
					64.0	65.0	1.0	0.01				
					65.0	66.0	1.0	Nil				
					66.0	67.0	1.0	0.01				
					67.0	68.0	1.0	0.04				
					68.0	69.0	1.0	0.21				
					69.0	75.0	6.0	Nil				

' Reference point 0|0 = Skaret
All lengths in meters

HOLE	CO-ORDINATES[1]	BEARING	DIP	LENGTH[2]	ASSAYS ppm Au								
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au	
18.	62 S 75 E	295°	45°	97.0 m	16.6	22.0	5.4	<0.6					
					26.5	27.0	0.5	1.26					
					27.0	27.50	0.5	6.84					
					27.5	28.0	0.5	4.14	26.5	29.0	2.5	4.26	
					28.0	28.5	0.5	7.86					24 - 26.5
					28.5	29.0	0.5	1.20					
					29.0	32.5	3.5	<0.9					
					32.5	33.0	0.5	3.25					
					33.0	34.0	1.0	<0.2					
					34.0	34.5	0.5	1.96	34.0	35.0	1.0	2.24	
					34.5	35.0	0.5	2.53					
					35.0	38.0	3.0	<0.1					
19.	62 S 75 E	048°	66°	56.3 m	7.5	9.0	1.5	<0.2					
					9.0	9.5	0.5	2.87					
					9.5	15.0	5.5	<0.8					
20.	130 S 30 E	087°	45°	89.8 m	15.0	17.5	2.5	<0.2					
					17.5	18.0	0.5	1.53					
					18.0	22.0	4.0	<0.1					
					24.0	26.0	2.0	<0.1					
					34.0	38.0	4.0	<0.1					
					47.0	67.0	20.0	<0.4					
21.	1015 S 27 W		90°	156.85 m	2.0	8.0	6.0	Nil					
					8.0	9.0	1.0	3.48					
					9.0	10.0	1.0	0.02					
					10.0	11.0	1.0	0.29					
					11.0	12.0	1.0	0.01					
					12.0	13.0	1.0	0.05					
					13.0	17.0	4.0	Nil					
					17.0	18.0	1.0	0.21					
					18.0	19.0	1.0	0.07					
					19.0	20.0	1.0	0.03					

[1] Reference point 0|0 = Skaret

[2] All lengths in meters

HOLE	CO-ORDINATES	BEARING	DIP	LENGTH	ASSAYS ppm Au							
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au
21.	1015 S 27 W		90°		26.0	27.0	1.0	Nil				
					27.0	28.0	1.0	0.63				
					28.0	29.0	1.0	0.01				
					29.0	30.0	1.0	Nil				
					30.0	31.0	1.0	0.07				
					31.0	32.0	1.0	0.14				
					32.0	33.0	1.0	8.66	31.0	35.0	4.0	2.35
					33.0	34.0	1.0	0.11				
					34.0	35.0	1.0	0.51				
					35.0	36.0	1.0	0.01				
					36.0	37.0	1.0	0.03				
					37.0	38.0	1.0	0.10				
					38.0	39.0	1.0	0.01				
					39.0	40.0	1.0	0.02				
					40.0	41.0	1.0	0.27				
					41.0	45.0	4.0	Nil				
					45.0	46.0	1.0	0.47				
					46.0	48.0	2.0	Nil				
					61.0	62.0	1.0	Nil				
					69.0	70.0	1.0	Nil				
					72.0	73.0	1.0	Nil				
					78.0	80.0	2.0	0.03				
					81.0	82.0	1.0	Nil				
					88.0	89.0	1.0	Nil				
					105.0	110.0	5.0	Nil				
					135.0	145.0	10.0	Nil				
22.	92 S 2 E	247°	45°	38 m	0.0	1.0	1.0	1.04				
					1.0	2.0	1.0	1.74				
					2.0	3.0	1.0	0.03				
					3.0	4.0	1.0	0.41				
					4.0	5.0	1.0	0.04				
					5.0	6.0	1.0	0.05				
					6.0	7.0	1.0	0.01				
					8.0	9.0	1.0	0.48				
					9.0	10.0	1.0	0.08				
					10.0	11.0	1.0	Nil				

' Reference point 0|0 = Skaret

' All lengthsin meters

HOLE	CO-ORDINATES	BEARING	DIP	LENGTH	ASSAYS ppm Au							
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au
22.	92 S 2 E	247°	45°	38 m	11.0	12.0	1.0	0.76				
					12.0	13.0	1.0	0.19				
					13.0	14.0	1.0	Nil				
					14.0	15.0	1.0	0.05				
					15.0	16.0	1.0	1.91				
					16.0	17.0	1.0	0.02				
					17.0	18.0	1.0	0.40				
					18.0	19.0	1.0	Nil				
					19.0	20.0	1.0	1.86				
					20.0	21.0	1.0	0.02				
					21.0	22.0	1.0	0.27				
					22.0	23.0	1.0	2.33				
					23.0	24.0	1.0	0.67				
					24.0	26.0	2.0	Nil				
					26.0	27.0	1.0	1.74				
					27.0	28.0	1.0	0.06				
					28.0	31.0	3.0	Nil				
					31.0	32.0	1.0	0.02				
					32.0	33.0	1.0	0.11				
					33.0	34.0	1.0	0.15				
					34.0	35.0	1.0	0.14				
					35.0	36.0	1.0	0.72				
					36.0	37.0	1.0	0.18				
					37.0	38.0	1.0	0.01				
23.	1015 S 27 W	095°	60°	133 m	40.0	41.0	1.0	0.49				
					41.0	42.0	1.0	0.01				
					42.0	43.0	1.0	0.08				
					43.0	44.0	1.0	Nil				
					44.0	45.0	1.0	0.05				
					45.0	46.0	1.0	0.37				
					46.0	47.0	1.0	0.01				
					47.0	48.0	1.0	Nil				
					48.0	49.0	1.0	0.03				
					49.0	50.0	1.0	1.19	49.0	51.0	2.0	2.64
					50.0	51.0	1.0	4.09				

' Reference point 0|0 = Skaret

" All lengths in meters

HOLE	CO-ORDINATES [1]	BEARING	DIP	LENGTH [2]	ASSAYS ppm Au							
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au
23.	1015 S 27 W	095°	60°	133 m	51.0	52.0	1.0	0.04				
					52.0	53.0	1.0	0.95				
					53.0	54.0	1.0	0.05				
					54.0	55.0	1.0	1.45				
					55.0	56.0	1.0	0.42				
					56.0	57.0	1.0	0.03				
					57.0	58.0	1.0	0.07				
					58.0	59.0	1.0	0.05				
					59.0	70.0	11.0	0.02				
					70.0	71.0	1.0	0.96				
					71.0	75.0	4.0	0.02				
					75.0	76.0	2.0	0.76				
					76.0	83.0	7.0	0.06				
					83.0	85.0	2.0	0.16				
					85.0	92.0	7.0	0.06				
					92.0	94.0	2.0	0.16				
					94.0	95.0	1.0	0.51				
					95.0	96.0	1.0	2.70				
					96.0	97.0	1.0	1.30				
					97.0	98.0	1.0	1.98	94.0	105.0	11.0	1.28
					98.0	99.0	1.0	0.24				
					99.0	100.0	1.0	2.12				
					100.0	101.0	1.0	0.97				
					101.0	102.0	1.0	0.40				
					102.0	103.0	1.0	1.67				
					103.0	104.0	1.0	0.36				
					104.0	105.0	1.0	0.75				
					105.0	110.0	5.0	0.08				
24.	1015 S 27 W	095°	65°	140.7	35.0	45.0	10.0	Nil				
					45.0	46.0	1.0	1.41				
					46.0	50.0	4.0	0.04				
					90.0	91.0	1.0	0.14				
					91.0	92.0	1.0	2.03				
					92.0	100.0	8.0	Nil				
					100.0	101.0	1.0	0.06				

[1] Reference point 0|0 = Skaret

[2] All lengths in meters

HOLE	CO-ORDINATES [1]	BEARING	DIP	LENGTH [2]	ASSAYS ppm Au								
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au	
24.	101.5 S 27 W				101.0	102.0	1.0	0.34					
					102.0	103.0	1.0	0.03					
					103.0	104.0	1.0	0.21					
					104.0	105.0	1.0	3.23					
					105.0	106.0	1.0	3.16	104.0	107.0	3.0	3.09	
					106.0	107.0	1.0	2.89					
					107.0	110.0	3.0	0.06					
					120.0	121.0	1.0	0.43					
					121.0	128.0	7.0	0.06					
25.	61.5 S 43 W		60°	116.0 m	25.0	29.0	4.0	Nil					
					29.0	30.0	1.0	38.93					
					30.0	31.0	1.0	0.09					
					31.0	32.0	1.0	0.24					
					32.0	37.0	5.0	0.05					
					37.0	38.0	1.0	3.49					
					38.0	39.0	1.0	0.66					
					39.0	44.0	5.0	0.06					
					44.0	45.0	1.0	0.36					
					50.0	66.0	16.0	Nil					
					66.0	70.0	4.0	0.04					
					70.0	71.0	1.0	0.60					
					71.0	72.0	1.0	4.09					
					72.0	73.0	1.0	41.64					
					73.0	74.0	1.0	19.21					
					74.0	75.0	1.0	0.57					
					75.0	76.0	1.0	2.0					
					76.0	77.0	1.0	0.52	70.0	86.0	16.0	4.86	70.0 - 80.0 10.0 7.32
					77.0	78.0	1.0	0.22					
					78.0	79.0	1.0	0.75					
					79.0	80.0	1.0	3.61					
					80.0	81.0	1.0	0.24					
					81.0	82.0	1.0	0.72					
					82.0	83.0	1.0	0.33					
					83.0	84.0	1.0	0.32					
					84.0	85.0	1.0	0.62					
					85.0	86.0	1.0	2.40					

[1] Reference point 0|0 = Skaret

[2] All lengthsin meters

HOLE	CO-ORDINATES	BEARING	DIP	LENGTH	ASSAYS ppm Au							
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au
25.	615 S 43 W				86.0	90.0	4.0	0.10				
					90.0	93.0	3.0	0.41				
					93.0	98.0	5.0	0.18				
					98.0	99.0	1.0	3.57				
					99.0	100.0	1.0	1.10	98.0	100.0	2.0	2.33
26.	23 S 25 W		31°	91.10 m	13.0	14.0	1.0	0.18				
					14.0	16.0	2.0	0.02				
					24.0	40.0	16.0	Nil				
					75.0	91.0	16.0	Nil				
27.	92 S 2 E		90°	39.4	0.0	1.0	1.0	4.6				
					1.0	2.0	1.0	1.8				
					2.0	3.0	1.0	1.0				
					3.0	4.0	1.0	0.96				
					4.0	5.0	1.0	0.35	0.0	10.0	10.0	1.63
					5.0	6.0	1.0	0.44				
					6.0	7.0	1.0	3.55				
					7.0	8.0	1.0	0.47				
					8.0	9.0	1.0	0.39				
					9.0	10.0	1.0	2.78				
					10.0	11.0	1.0	0.16				
					11.0	12.0	1.0	0.03				
					12.0	13.0	1.0	0.10				
					13.0	14.0	1.0	0.16				
					14.0	15.0	1.0	0.23				
					15.0	16.0	1.0	0.90				
					16.0	17.0	1.0	2.02				
					17.0	18.0	1.0	2.29	15.0	20.0	5.0	1.7
					18.0	19.0	1.0	0.35				
					19.0	20.0	1.0	2.94				
					20.0	21.0	1.0	Nil				
					21.0	22.0	1.0	0.03				
					22.0	23.0	1.0	0.64				
					23.0	24.0	1.0	0.22				
					24.0	25.0	1.0	0.03				
					25.0	26.0	1.0	9.26				
					26.0	27.0	1.0	0.52	25.0	27.0	2.0	4.89
					[illegible]	28.0	1.0	0.18				

Reference point 0|0 = Skaret

All lengths in meters

HOLE	CO-ORDINATES	BEARING	DIP	LENGTH	ASSAYS ppm Au								
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au	
27.	92 S 2 E				28.0	31.0	3.0	0.03					
					31.0	32.0	1.0	1.55					
					32.0	33.0	1.0	0.68					
					33.0	34.0	1.0	0.04					
					34.0	35.0	1.0	0.10					
					35.0	36.0	1.0	0.31					
					36.0	37.0	1.0	0.66					
					37.0	38.0	1.0	0.40					
					38.0	39.0	1.0	0.27					
					39.0	40.0	1.0	0.04					
28	92 S 13 W	Hole lost in helicopter transport											
29.	23 S 25 W		75°	45.20 m	9.0	11.0	2.0	0.06					
					11.0	12.0	1.0	0.68					
					12.0	24.0	12.0	Nil					
30	165 N 28 W	260°	45°	77.1									NOT ASSAYED
31.	341 N 53 W	270°	80°	49.15	1.5	7.0	5.5	0.02					
					7.0	8.0	1.0	1.17					
					8.0	9.0	1.0	0.14					
					9.0	10.0	1.0	0.23					
					10.0	12.0	2.0	Nil					
					12.0	14.0	2.0	0.03					
					14.0	15.0	1.0	Nil					
					15.0	18.0	3.0	0.04					
					18.0	20.0	2.0	Nil					
32.	340 N 48 W	90°	65°	95.6									NOT ASSAYED

' Reference point 0|0 = Skaret

' All lengths in meters

HOLE	CO-ORDINATES	BEARING	DIP	LENGTH	ASSAYS ppm Au							
					FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au
33.	118 S 5 E	256°	45°	46.1	1.0	2.0	1.0	Nil				
					2.0	7.0	5.0	0.18				
					7.0	9.0	2.0	Nil				
					9.0	15.0	6.0	0.27				
					15.0	17.0	2.0	Nil				
					17.0	25.0	8.0	0.08				
					25.0	27.0	2.0	Nil				
					27.0	37.0	10.0	0.03				
					37.0	44.0	7.0	Nil				
					44.0	46.0	2.0	0.02				
34.	340 N 48 W		90°	73.1	15.0	21.0	6.0	Nil				
					21.0	30.0	9.0	0.16				
35.	341 N 53 W	90°	65°	95.6								
36.	300 N 42 E		36°	271.5	52.0	53.0	1.0	Nil				
					53.0	56.0	3.0	0.12				
					56.0	58.0	2.0	Nil				
					115.0	117.0	2.0	Nil				
					117.0	122.0	5.0	0.02				
					122.0	123.0	1.0	0.28				
					123.0	124.0	1.0	0.83				
					124.0	125.0	1.0	0.04				
					210.0	218.0	8.0	0.02				
					219.0	240.0	21.0	Nil				

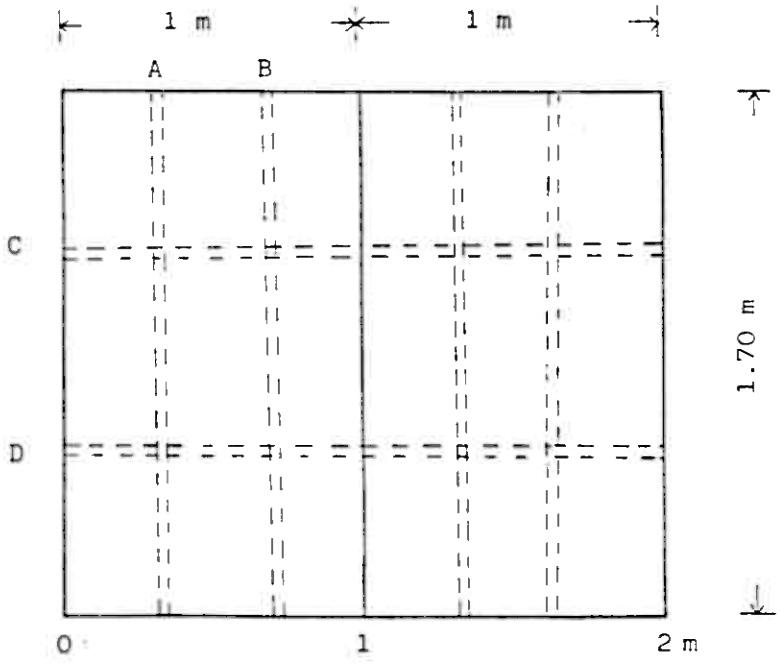
[1] Reference point 0|0 = Skaret

[2] All lengths in meters

A P P E N D I X

Channel samples from adits in the Kolsvik area.

The adits were sampled on one wall over 1 m intervals. 4 channel samples being taken over 1.70 m^2 as shown below.



BOLIDEN ADIT Sampled on South Wall

Location	Sample no.		Gold g/t	Average gold g/t
÷1 - 0 m	3242	A	1.64	
		B	22.94	7.23
		C	0.58	
		D	3.78	
0 - 1 m	3201	A	16.29	
		B	2.62	10.89
		C	16.49	
		D	8.18	
1 - 2 m	3202	A	3.09	
		B	1.56	3.87
		C	7.41	
		D	3.43	
2 - 3 m	3203	A	0.03	
		B	0.42	0.27
		C	0.14	
		D	0.49	
3 - 4 m	3204	A	1.04	
		B	0.08	0.37
		C	0.25	
		D	0.10	
4 - 5 m	3205	A	1.25	
		B	2.68	1.48
		C	0.51	
		D	Sample missing	
5 - 6 m	3206	A	1.27	
		B	0.98	0.65
		C	0.21	
		D	0.16	
6 - 7 m	3207	A	0.39	
		B	0.65	0.82
		C	1.67	
		D	0.56	

Boliden adit, sampled on south wall.

Location	Sample no.		Gold g/t	Average gold g/t
7 - 8 m	3208	A	0.45	
		B	1.18	1.16
		C	0.28	
		D	2.74	
8 - 9 m	3209	A	0.52	
		B	2.65	4.72
		C	0.62	
		D	15.09	
9 - 10 m	3210	A	1.14	
		B	0.18	1.56
		C	4.62	
		D	0.30	
10 - 11 m	3211	A	1.06	
		B	5.37	2.42
		C	2.84	
		D	0.41	
11 - 12 m	3212	A	1.06	
		B	7.58	11.15
		C	35.22	
		D	0.76	
12 - 13 m	3213	A	4.39	
		B	1.63	3.41
		C	7.43	
		D	0.21	
13 - 14 m	3214	A	0.99	
		B	0.41	0.74
		C	1.51	
		D	0.07	

Boliden adit, sampled on south wall.

Location	Sample no.		Gold g/t	Average gold g/t
14 - 15 m	3215	A	0.65	
		B	0.47	0.35
		C	0.07	
		D	0.21	
15 - 16 m	3216	A	Nil	
		B	0.03	0.04
		C	Nil	
		D	0.14	
16 - 17 m	3217	A	0.05	
		B	0.07	0.06
		C	0.01	
		D	0.12	
17 - 18 m	3218	A	0.03	
		B	0.10	0.05
		C	0.02	
		D	0.07	
18 - 19 m	3219	A	0.07	
		B	0.08	0.56
		C	2.06	
		D	0.10	
19 - 20 m	3220	A	0.06	
		B	0.07	0.38
		C	1.13	
		D	0.28	
20 - 21 m	3221	A	0.04	
		B	0.06	0.04
		C	0.03	
		D	0.28	

Location	Sample no.		gold g/t	average gold g/t
21 - 22 m	3222	A	0.04	
		B	0.03	0.10
		C	0.14	
		D	0.20	
22 - 23 m	3223	A	0.03	
		B	0.03	0.12
		C	0.22	
		D	0.21	
23 - 24 m	3224	A	0.23	
		B	0.86	0.44
		C	0.04	
		D	0.62	
24 - 25 m	3225	A	0.88	
		B	0.99	0.76
		C	0.08	
		D	1.10	
25 - 26 m	3226	A	0.03	
		B	0.07	0.15
		C	0.36	
		D	0.14	
26 - 27 m	3227	A	0.05	
		B	0.27	0.15
		C	0.02	
		D	0.25	
27 - 28 m	3228	A	0.03	
		B	0.05	0.45
		C	0.21	
		D	0.61	
28 - 29 m	3229	A	0.03	
		B	Nil	0.03
		C	0.01	
		D	0.07	

Boliden adit, sampled on south wall

Location	Sample no.		gold g/t	average gold g/t
29 - 30 m	3230	A	0.01	
		B	0.14	0.05
		C	0.03	
		D	0.03	
30 - 31 m	3231	A	0.04	
		B	1.86	6.40
		C	23.04	
		D	0.67	
31 - 32 m	3232	A	1.02	
		B	Sample missing	0.88
		C	0.85	
		D	0.78	
32 - 33 m	3233	A	1.79	
		B	0.22	0.67
		C	0.27	
		D	0.42	
33 - 34 m	3234	A	10.12	
		B	0.70	5.68
		C	0.16	
		D	11.73	
34 - 35 m	3235	A	0.46	
		B	0.18	0.22
		C	0.07	
		D	0.18	
35 - 36 m	3236	A	Nil	
		B	0.01	Nil
		C	0.01	
		D	Nil	
37 - 38	3237	A	Nil	
		B	Nil	Nil
		C	Nil	
		D	Nil	

Boliden adit, sampled on south wall

Location	Sample no.		gold g/t	average gold g/t
37 - 38 m	3238	A	0.03	
		B	Nil	0.28
		C	0.02	
		D	1.08	
38 - 39 m	3239	A	0.01	
		B	Nil	Nil
		C	Nil	
		D	Nil	
39 - 40 m	3240	A	Nil	
		B	Nil	Nil
		C	Nil	
		D	Nil	
40 - 41 m	3241	A	Nil	
		B	Nil	Nil
		C	Nil	
		D	Nil	

MANNERHEIM ADIT Sampled on north wall

Location	Sample no.		gold g/t	average gold g/t
0 - 1 m	3331	A	6.61	
		B	0.13	2.12
		C	0.17	
		D	1.57	
1 - 2 m	3332	A	0.20	
		B	0.24	0.24
		C	0.17	
		D	0.37	
2 - 3 m	3333	A	0.29	
		B	0.34	0.23
		C	0.31	
		D	Nil	
3 - 4 m	3334	A	0.01	
		B	0.19	0.13
		C	0.25	
		D	0.07	
4 - 5 m	3335	A	0.17	
		B	0.14	0.48
		C	0.87	
		D	0.74	
5 - 6 m	3336	A	0.24	
		B	3.41	1.13
		C	0.25	
		D	0.62	
6 - 7 m	3337	A	0.71	
		B	0.66	1.13
		C	2.56	
		D	0.59	

Mannerheim adit, sampled on north wall.

Location	Sample no.		gold g/t	average gold g/t
7 - 8 m	3338	A	0.14	
		B	0.03	0.09
		C	0.03	
		D	0.15	
8 - 9 m	3339	A	0.03	
		B	Nil	0.04
		C	Nil	
		D	0.15	
9 - 10 m	3340	A	0.02	
		B	0.14	0.05
		C	0.03	
		D	Nil	
10 - 11 m	3341	A	0.39	
		B	0.50	0.42
		C	0.24	
		D	0.55	
11 - 12 m	3342	A	0.04	
		B	0.10	0.06
		C	0.07	
		D	0.05	
12 - 13 m	3343	A	0.03	
		B	0.06	0.04
		C	0.03	
		D	0.04	
13 - 14 m	3344	A	0.07	
		B	0.17	0.10
		C	0.13	
		D	0.04	
14 - 15 m	3345	A	0.07	
		B	0.05	0.03
		C	Nil	
		D	Nil	

Mannerheim adit, sampled on north wall.

Location	Sample no.		gold g/t	average gold g/t
15 - 16 m	3346	A	Nil	
		B	0.17	0.05
		C	0.03	
		D	Nil	
16 - 17 m	3347	A	0.86	
		B	0.03	0.22
		C	Nil	
		D	Nil	
17 - 18 m	3348	A	Nil	
		B	0.10	0.12
		C	0.24	
		D	0.09	
18 - 19 m	3349	A	0.16	
		B	Nil	0.05
		C	Nil	
		D	0.03	
19 - 20 m	3350	A	0.01	
		B	0.03	
		C	0.01	0.01
		D	Nil	
20 - 21 m	3351	A	Nil	
		B	Nil	Nil
		C	0.05	
		D	NIl	
21 - 22 m	3352	A	0.26	
		B	0.51	
		C	0.72	0.37
		D	Nil	

SOUTH SKAR ADIT — Sampled on south wall

Location	Sample no.		gold g/t	average gold g/t
0 - 1 m	3251	A	0.05	
		B	0.20	0.08
		C	Nil	
		D	0.09	
1 - 2 m	3252	A	0.03	
		B	0.05	0.05
		C	0.03	
		D	0.10	
2 - 3 m	3253	A	0.08	
		B	0.07	0.05
		C	0.03	
		D	0.03	
3 - 4 m	3254	A	0.13	
		B	0.16	0.30
		C	0.81	
		D	0.10	
4 - 5 m	3255	A	0.22	
		B	0.10	0.15
		C	0.12	
		D	0.17	
5 - 6 m	3256	A	0.13	
		B	2.04	0.62
		C	0.16	
		D	0.15	
6 - 7 m	3257	A	0.98	
		B	1.17	0.65
		C	0.19	
		D	0.28	

South Skar adit, sampled on south wall.

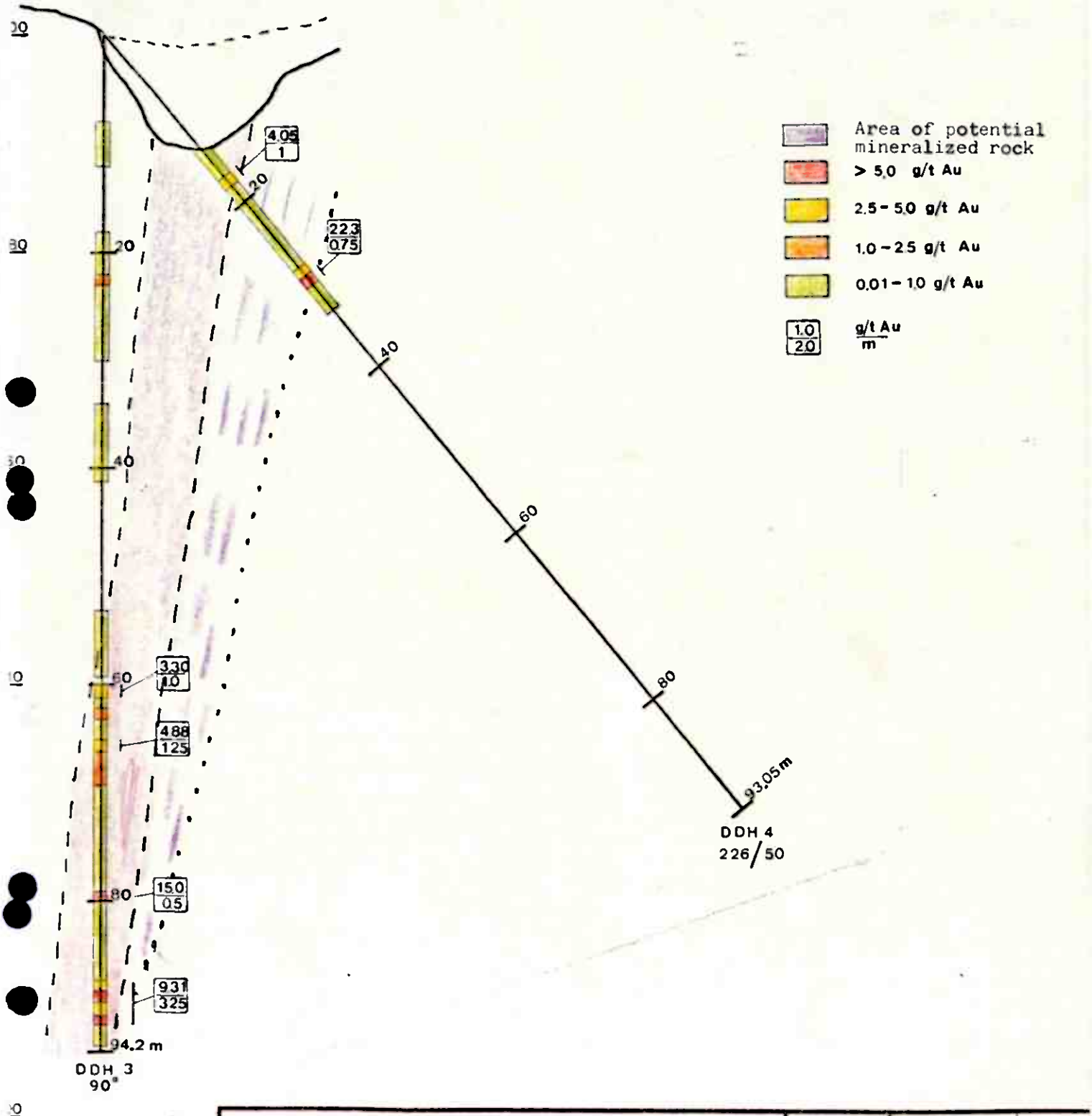
Location	Sample no.		gold g/t	average gold g/t
7 - 8 m	3258	A	0.49	
		B	0.01	0.32
		C	0.55	
		D	0.24	
8 - 9 m	3259	A	0.02	
		B	Nil	0.01
		C	0.03	
		D	0.01	
9 - 10 m	3260	A	Nil	
		B	Nil	Nil
		C	0.01	
		D	Nil	
10 - 11 m	3261	A	0.16	
		B	8.34	3.90
		C	7.17	
		D	0.08	
11 - 12 m	3262	A	0.65	
		B	0.95	0.48
		C	0.21	
		D	0.11	
12 - 13 m	3263	A	0.14	
		B	3.05	0.98
		C	0.55	
		D	0.15	

NORTH SKAR ADIT — Sampled on north wall

Location	Sample no.		gold g/t	average gold g/t
1 - 2 m	3314	A	Nil	
		B	Nil	0.01
		C	Nil	
		D	0.06	
2 - 3 m	3301	A	0.03	
		B	0.31	0.16
		C	0.22	
		D	0.07	
3 - 4 m	3302	A	0.02	
		B	0.07	0.06
		C	Nil	
		D	0.16	
4 - 5 m	3303	A	0.96	
		B	0.29	0.81
		C	0.44	
		D	1.56	
5 - 6 m	3304	A	0.21	
		B	1.44	0.53
		C	0.31	
		D	0.16	
6 - 7 m	3305	A	1.22	
		B	0.19	0.68
		C	0.76	
		D	0.55	
7 - 8 m	3306	A	0.12	
		B	0.03	0.17
		C	0.14	
		D	0.38	

North Skar adit, sampled on south wall.

Location	Sample no.		gold g/t	average gold g/t
8 - 9 m	3307	A	1.22	
		B	0.68	0.30
		C	0.22	
		D	0.20	
9 - 10 m	3308	A	2.45	
		B	0.05	0.68
		C	0.06	
		D	0.16	
10 - 11 m	3309	A	Nil	
		B	Nil	Nil
		C	0.02	
		D	Nil	
11 - 12 m	3310	A	Nil	
		B	0.10	
		C	0.02	0.03
		D	0.10	
12 - 13 m	3311	A	Nil	
		B	Nil	0.01
		C	0.06	
		D	Nil	
13 - 14 m	3312	A	0.46	
		B	0.04	0.17
		C	0.17	
		D	0.03	
14 - 15 m	3313	A	Nil	
		B	Nil	Nil
		C	0.01	
		D	Nil	



KOLSVIK, BINDAL, NORWAY.
DDH 3,4.

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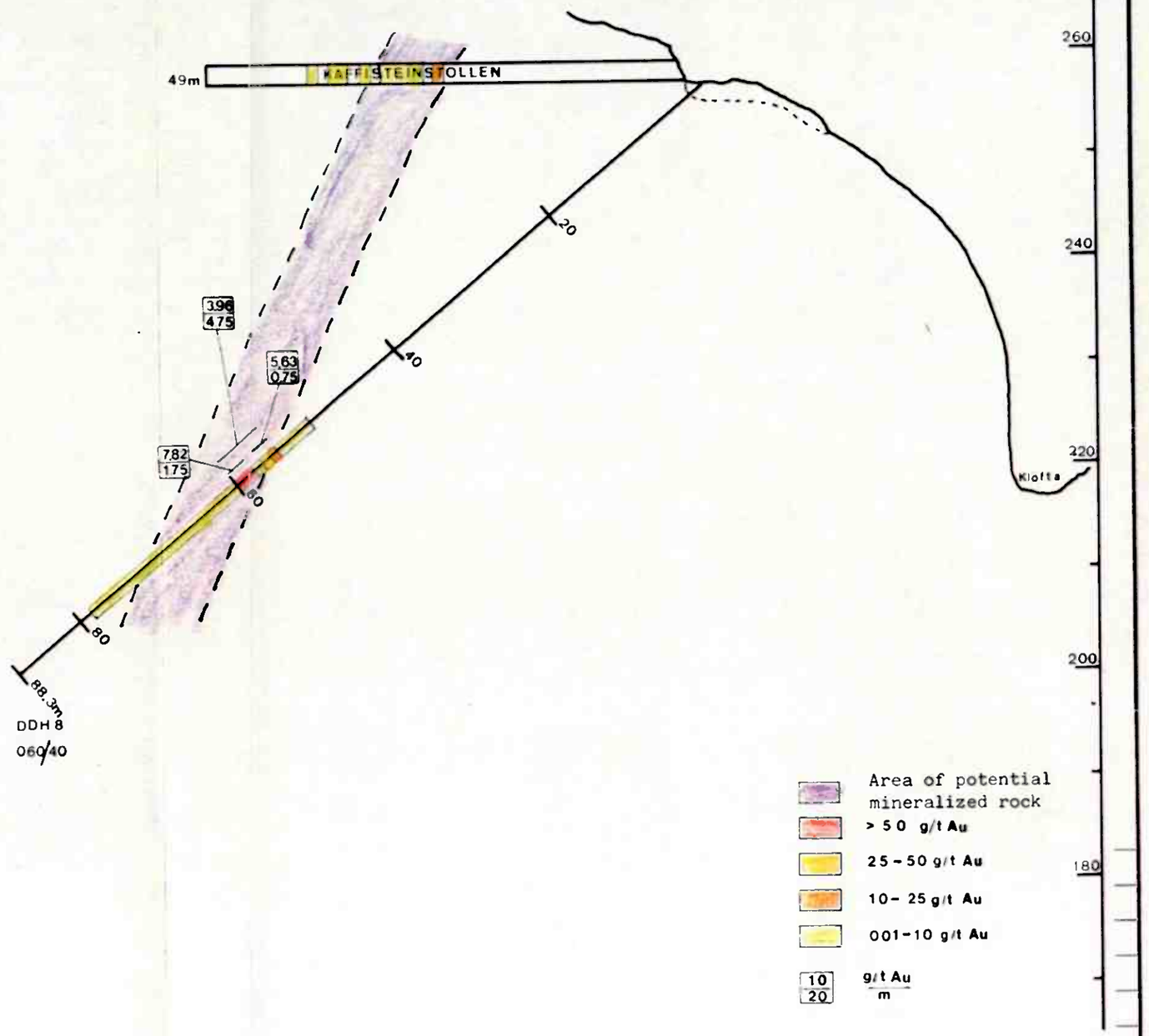
	TRAC.	
	CHK.	

MAP NO.

% SULFIDMALM

MAP SHEET



KOLSVIK BINDAL NORWAY

DDH 8

SCALE	OBS.	
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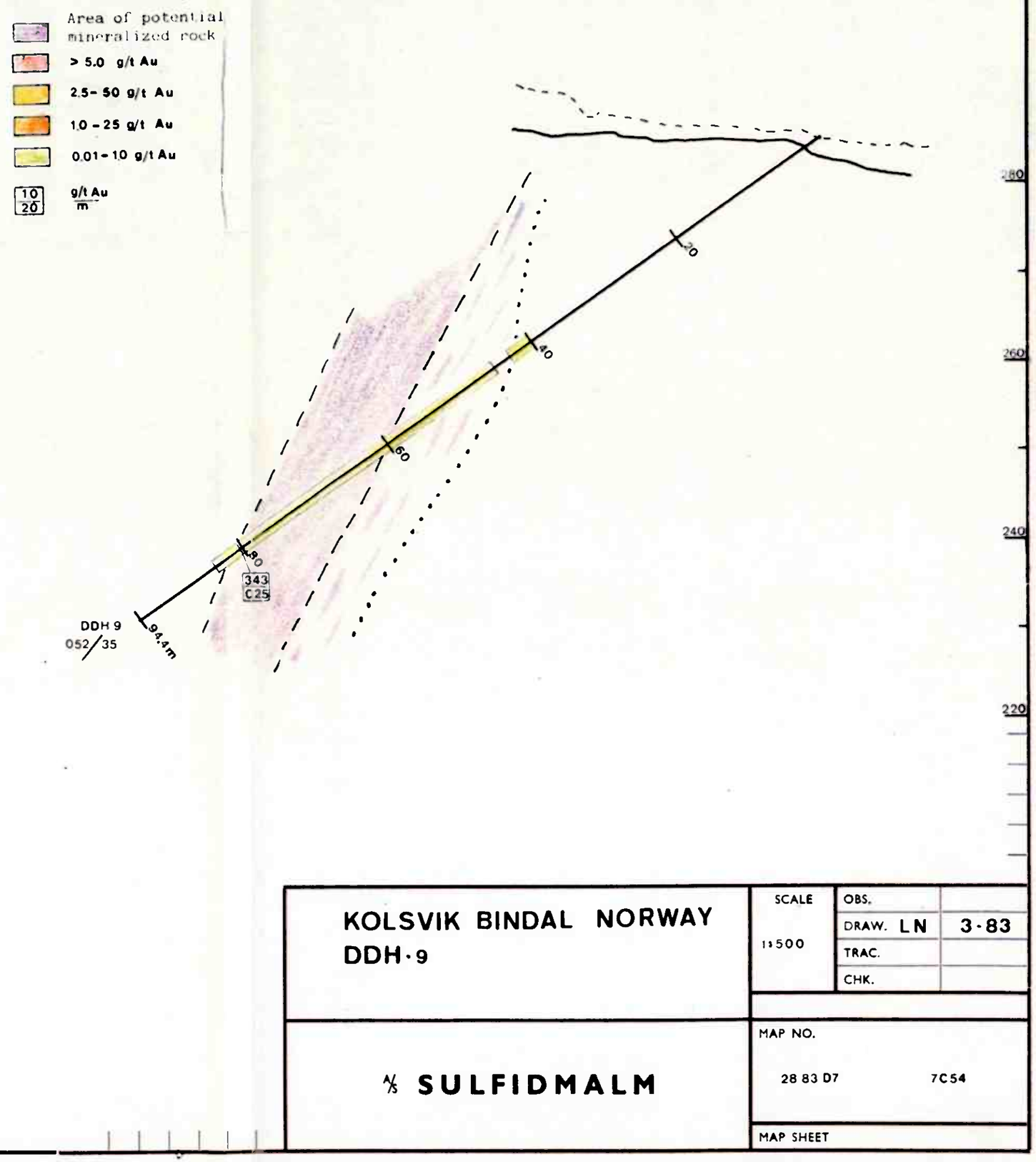
	TRAC.	
	CHK.	

⅛ SULFIDMALM

MAP NO. 28 83 D2 7C 49

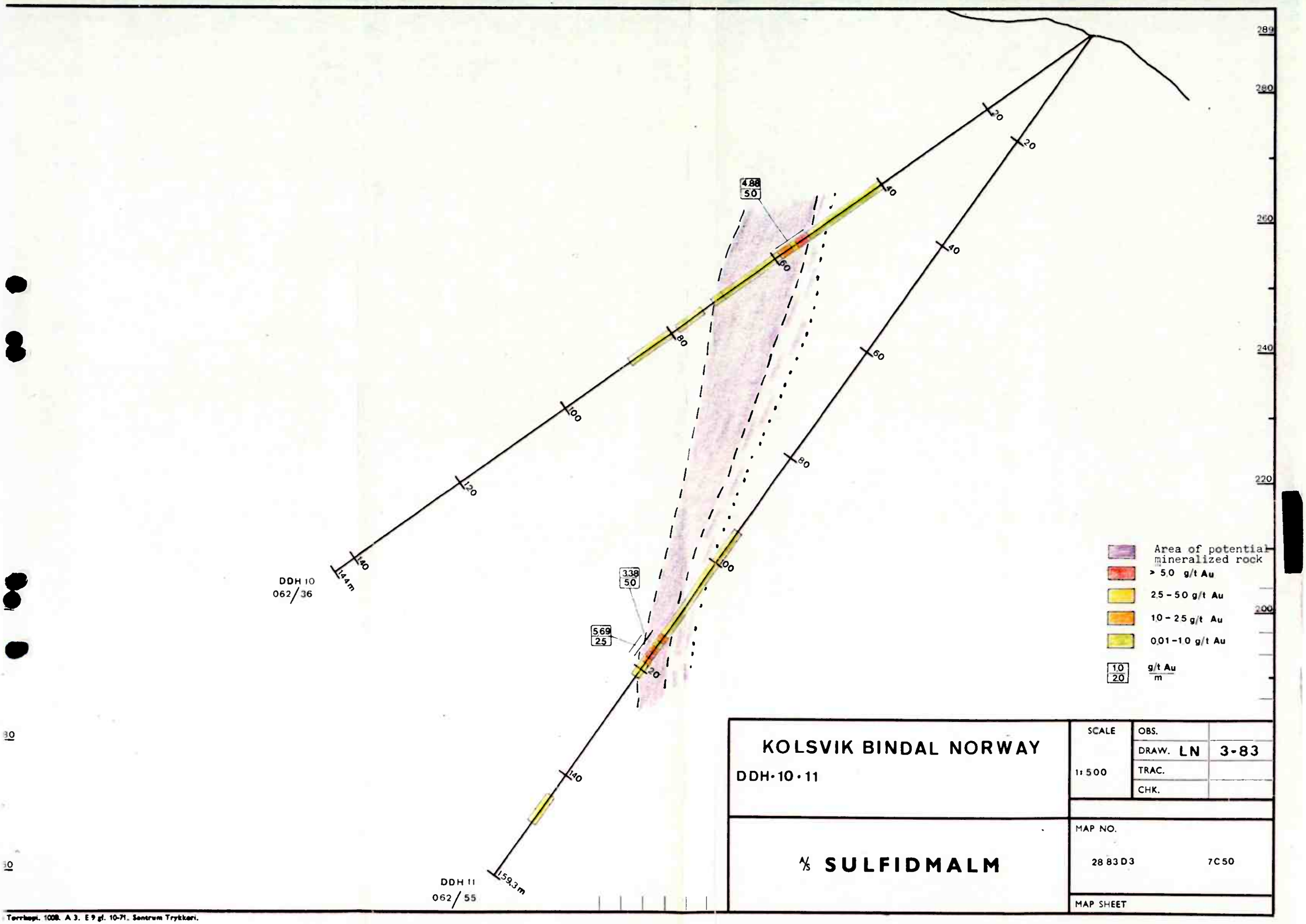
MAP SHEET

Terrkopi. 1000. A 3. E 9 gl. 10-71. Sørum Trykkeri.



KOLSVIK BINDAL NORWAY DDH·9	SCALE 1:500	OBS.	
		DRAW. LN	3-83
		TRAC.	
		CHK.	
⅛ SULFIDMALM	MAP NO. 28 83 D7 7C54		
	MAP SHEET		

Tørrkopi. 1000. A 3. E 9 gl. 10-71. Sentrum Trykkeri.



KOLSVIK BINDAL NORWAY

DDH-10-11

SCALE	OBS.	
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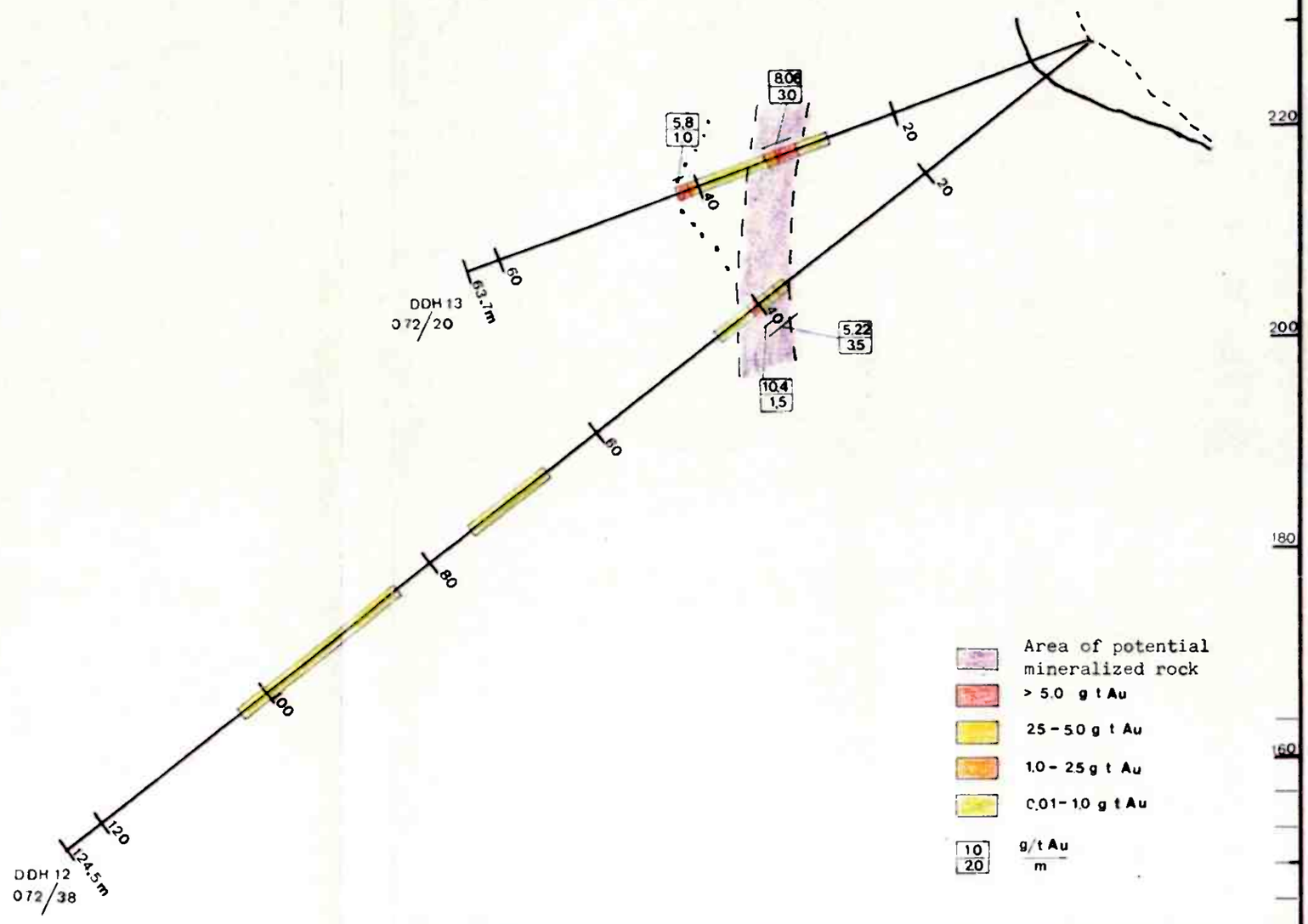
	TRAC.	
	CHK.	

MAP NO. 28 83 D3 7C50

⅞ SULFIDMALM

MAP SHEET

Tørrtrykk. 1008. A 3. E 9 gl. 10-71. Sentrum Trykkeri.



KOLSVIK BINDAL NORWAY

DDH 12, 13.

⅄S SULFIDMALM

SCALE 1:500

OBS.

DRAW. LN 3·83

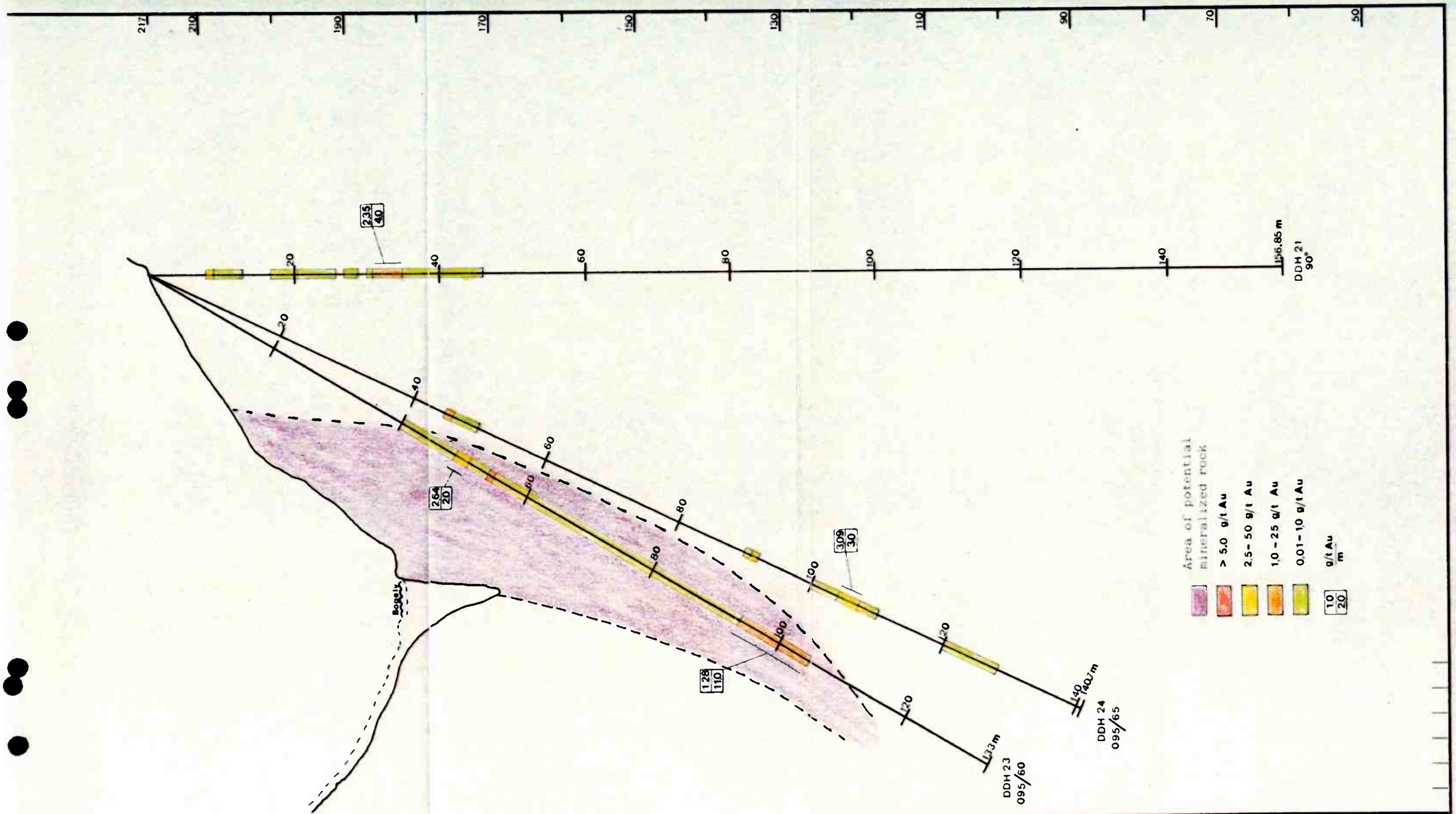
TRAC.

CHK.

MAP NO. 2883 D1 7C48

MAP SHEET

s Tertrykpi. 1008. A 3. E 9 gi. 10-71. Sentrum Trykkeri.



KOLSVIK BINDAL NORWAY

DDH 21·23·24

⅛ SULFIDMALM

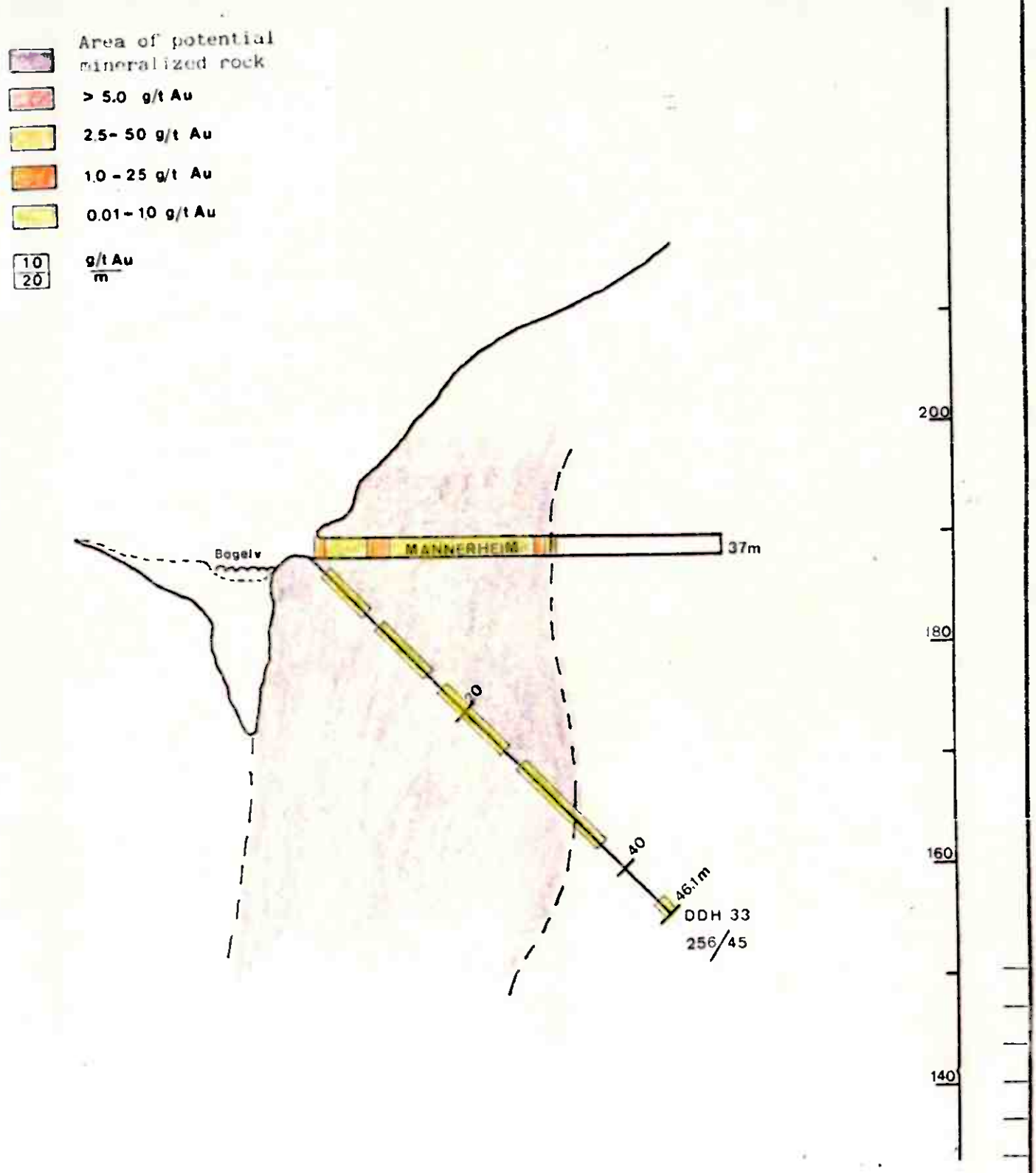
SCALE	OBS.	
1:500	DRAW. LN	3·83
	TRAC.	
	CHK.	

MAP NO.

28 83 D6 7C53

MAP SHEET

...o Terrkopi. 1008. A 3. E 9 gl. 10-71. Sentrum Trykkeri.



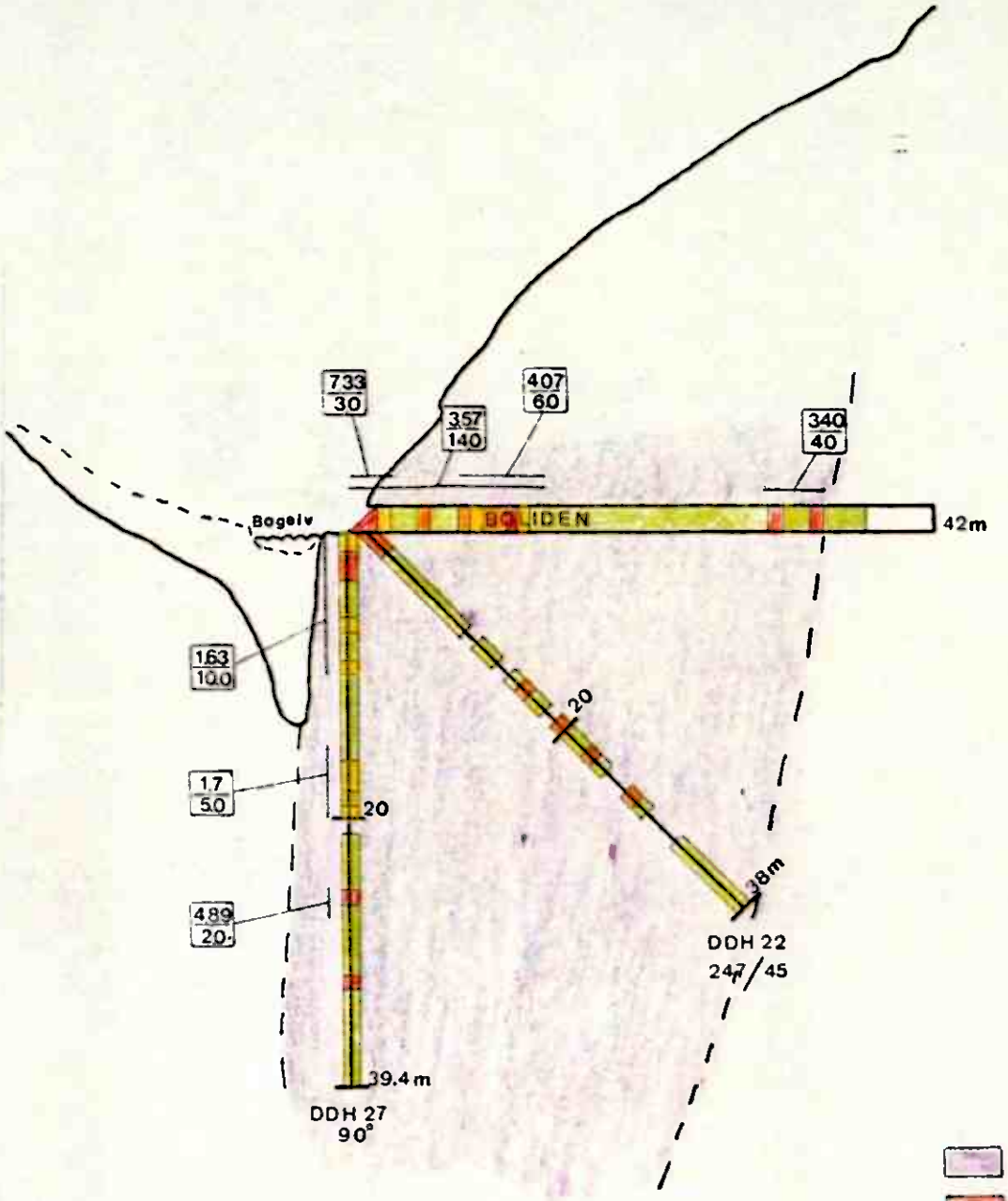
KOLSVIK BINDAL NORWAY
DDH 33

SCALE	OBS.	
1:500	DRAW.	
	TRAC.	
	CHK.	

MAP NO.

MAP SHEET

% SULFIDMALM



KOLSVIK BINDAL NORWAY

DDH 22·27

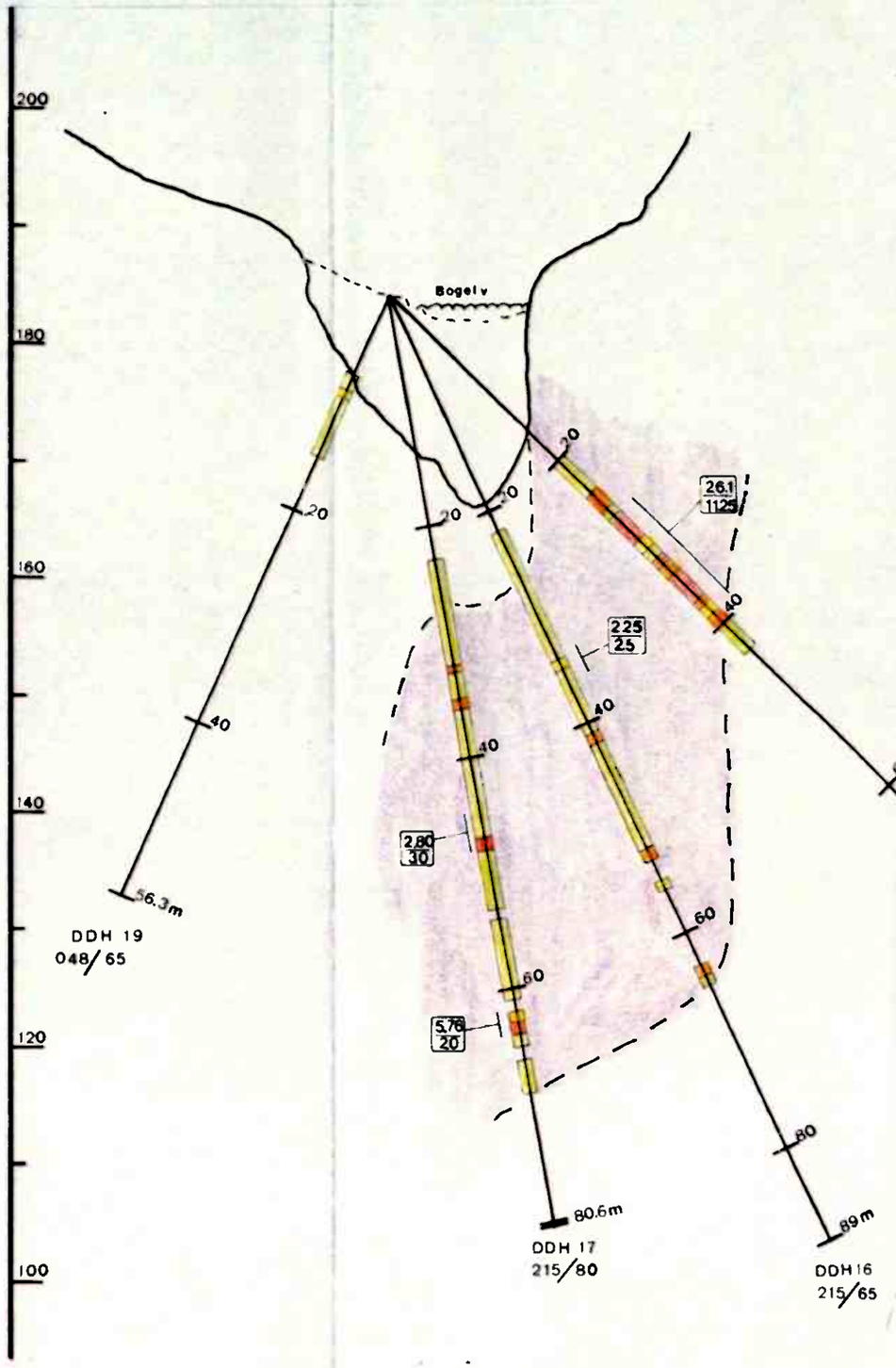
A/S SULFIDMALM

SCALE	OBS.	
1:500	DRAW. LN	3·83
	TRAC.	
	CHK.	

MAP NO.

28 83 D5 7C52

MAP SHEET



Area of potential mineralized rock

> 5.0 g/t Au

2.5 - 50 g/t Au

1.0 - 25 g/t Au

0.01 - 10 g/t Au

10/20 g/t Au / m

KOLSVIK BINDAL NORWAY
DDH 15, 16. 17, 19.

SCALE 1 500

OBS.

DRAW.

TRAC.

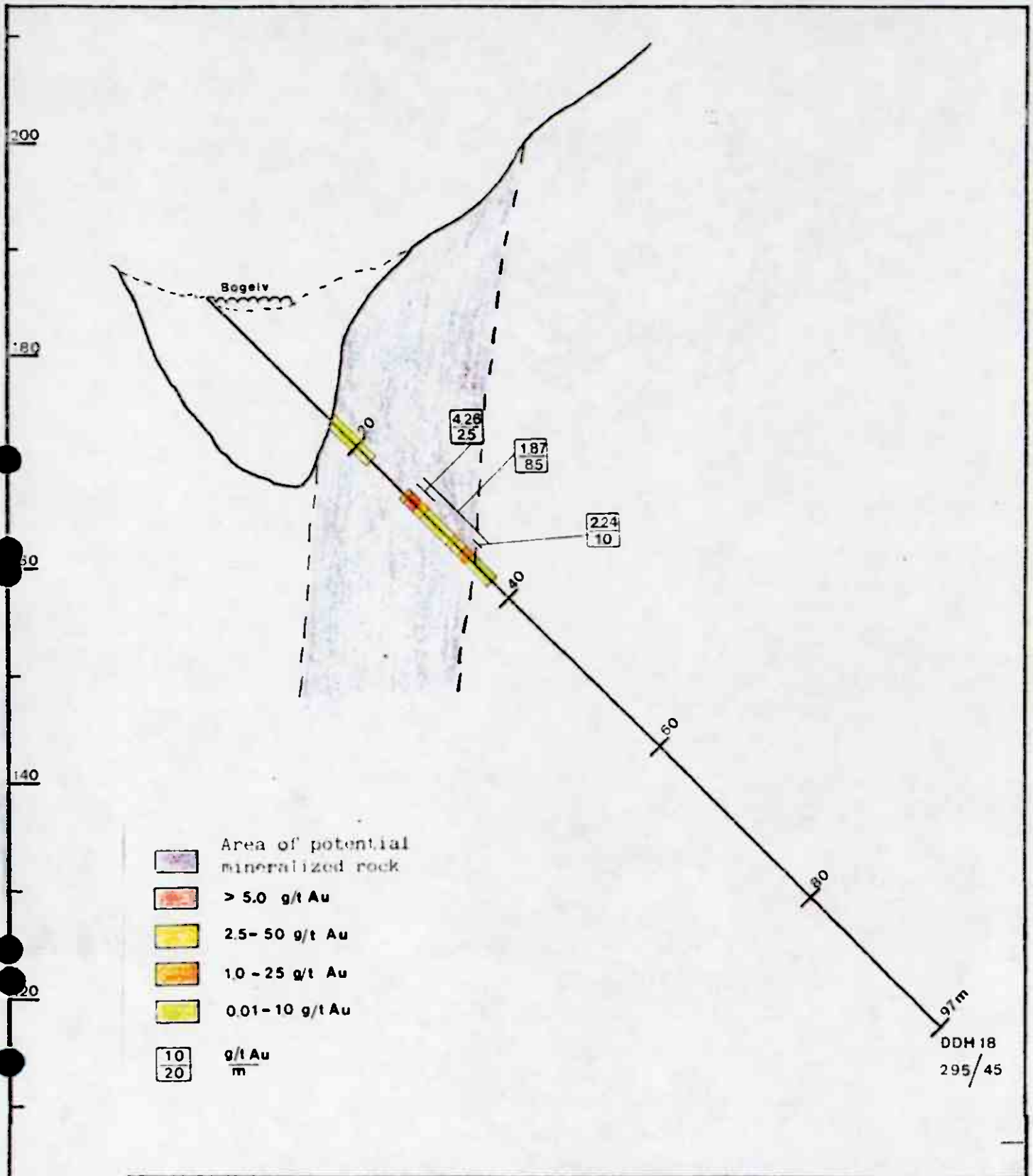
CHK.

MAP NO.

MAP SHEET

% SULFIDMALM

A.s Terrasopi. 1008. A 3. E 9 gi. 10-71. Seetrum Trykkeri.



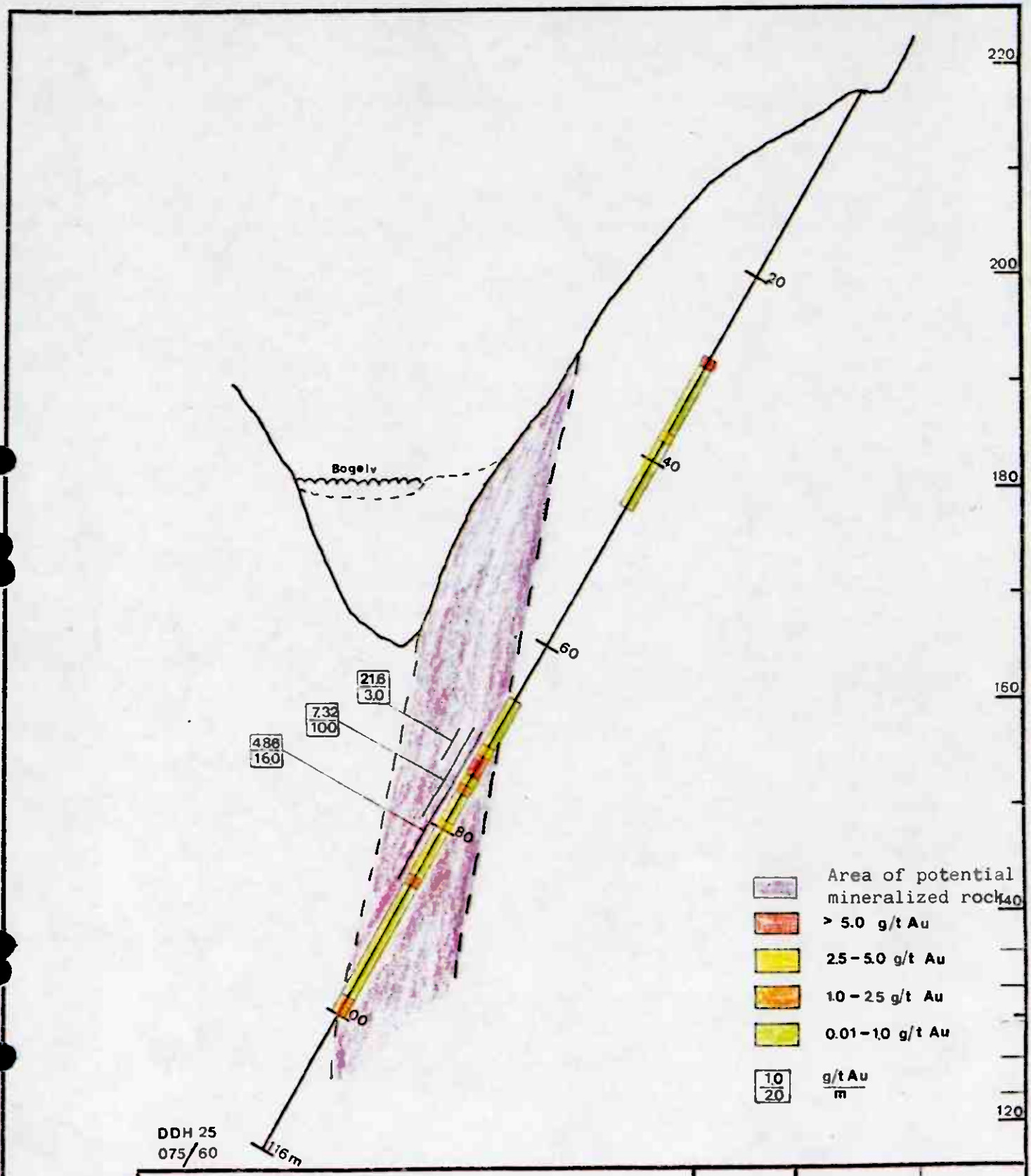
KOLSVIK BINDAL NORWAY
DDH 18

SCALE	OBS.	
1500	DRAW.	
	TRAC.	
	CHK.	

MAP NO.

% SULFIDMALM

MAP SHEET



KOLSVIK BINDAL NORWAY

DDH 25

SCALE	OBS.	
1: 500	DRAW. LN	3 · 83
	TRAC.	
	CHK.	

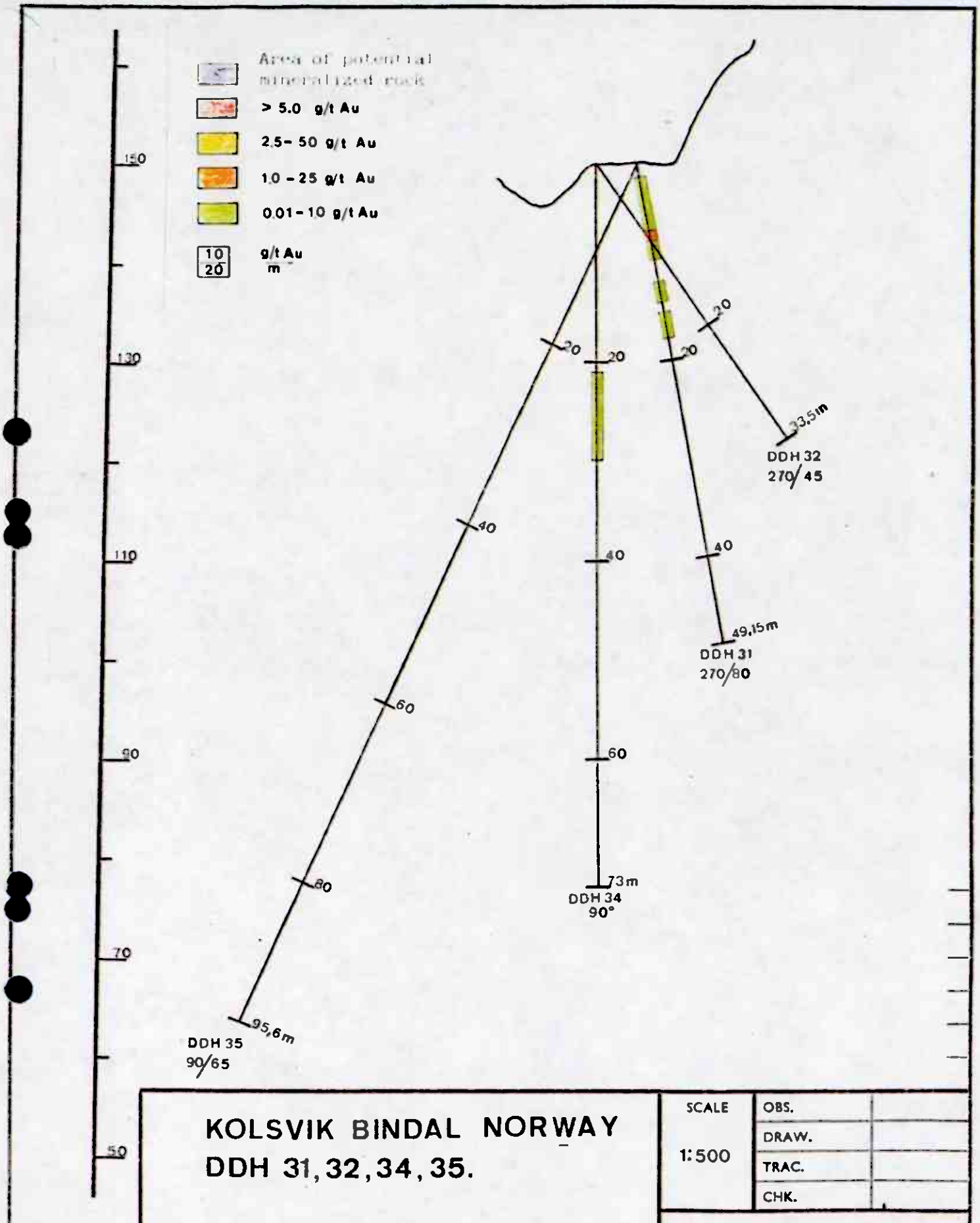
⅛ SULFIDMALM

MAP NO.

28 83 D4 7C51

MAP SHEET -

A.s Terrkopi. 10



KOLSVIK BINDAL NORWAY
DDH 31, 32, 34, 35.

SCALE	OBS.	
1:500	DRAW.	
	TRAC.	
	CHK.	

MAP NO. –

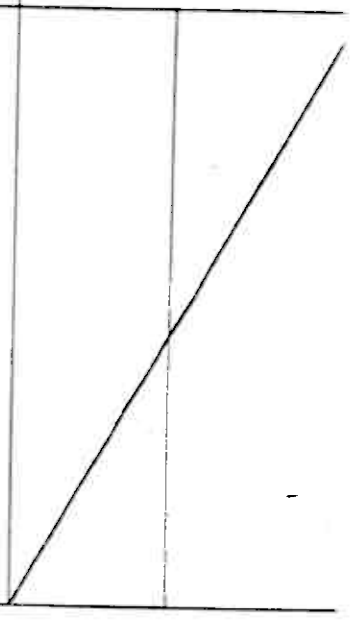
MAP SHEET

A/S SULFIDMALM

A.s Terrikopt. 1

Location	Kolsvik, Norway	Lab. No. 82-141
Sample Description	DDH 14 @ 61.95 m	PTS No. 6827

MINERALS	Est. % by Vol.	Grain Size (m.m.) Max.	Avg.
Feldspar - Oligoclase ± An_{22}	30 - 35		
Orthoclase	15 - 20		
Quartz	30 - 35		
Biotite	6 - 8		
Muscovite/Sericite	3 - 4		
Garnet	tr		
Zircon	tr		
Apatite	tr		
Magnetite, Ilmenite	tr		
Pyrite, Marcasite, Chalcopyrite	tr		



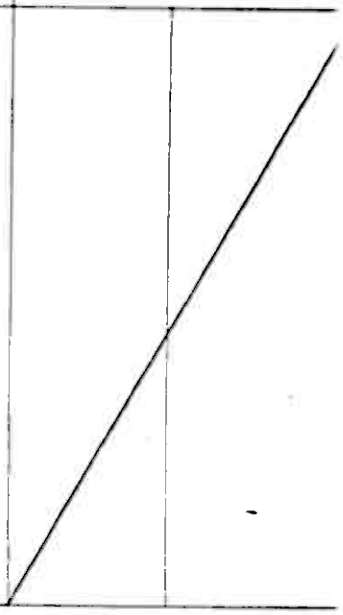
DESCRIPTION

Augen textures are evident in hand sample but the textures in pol-thin section are granitic. Scattered coarse flakes of biotite and muscovite occur in a coarse mosaic of feldspar, both sodic and potassic, and quartz. The latter shows evidence of deformation by the presence of strain shadows and slight granulation. One grain of garnet was observed in the section.

Augen gneiss of quartz monzonite composition

Location	Kolsvik, Norway	Lab. No. 82-141
Sample Description	DDH 14 @ 74.70 m	PTS No. 6828

MINERALS	Est. % by Vol.	Grain Size (m.m.) Max.	Avg.
Feldspar - Oligoclase	30 - 35		
Orthoclase	15 - 20		
Quartz	30 - 35		
Biotite	6 - 8		
Muscovite/Sericite	2 - 3		
Garnet	∿1		
Chlorite	2 - 3		
Apatite	tr		
Pyrrhotite, Marcasite	tr		
Magnetite, Ilmenite	tr		



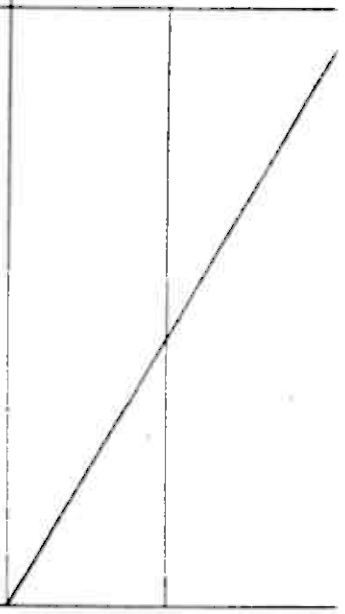
DESCRIPTION

Very similar in composition to the previous sample. However, the pol-thin section displays strong orientation of biotite/muscovite/chlorite flakes to produce a gneissic texture.

Augen gneiss of quartz monzonite composition

Location	Kolsvik, Norway	Lab. No.	82-141
Sample Description	DDH 14 @ 97.40 m	PTS No.	6829

MINERALS	Est. % by Vol.	Grain Size (m.m.) Max.	Avg.
Feldspar - Oligoclase ± An_{27}	30 - 35		
Orthoclase	12 - 15		
Quartz	15 - 20		
Amphibole	15 - 20		
Biotite	10 - 12		
Zircon, Apatite	tr		
Sphene	1 - 2		
Carbonate	tr		
Wolframite(?)	tr		
Pyrite	tr		



DESCRIPTION

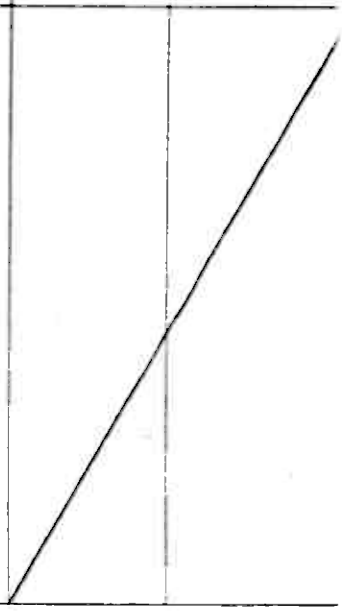
This sample is finer grained and more mafic than the samples at 61.95 m and 74.70 m. It contains about 25% dark minerals but from the total mineral assemblage it is likely a mafic member of the same quartz monzonite unit.

A brown translucent mineral was picked out from the section and subjected to X-ray powder diffraction. Its pattern fits closely that of wolframite but a search of the spectrographic film revealed no lines diagnostic of tungsten.

Quartz Monzonite

Location	Kolsvik, Norway	Lab. No. 82-141
Sample Description	DDH 14 @ 100.70 m	PTS No. 6830

MINERALS	Est. % by Vol.	Grain Size (m.m.) Max.	Avg.
Feldspar - Oligoclase ± An_{25}	40 - 45		
Orthoclase	8 - 10		
Quartz	6 - 8		
Amphibole	25 - 30		
Biotite	4 - 6		
Epidote	1 - 2		
Sphene	3 - 4		
Carbonate	1 - 2		
Sericite	tr		
Pyrite	tr		

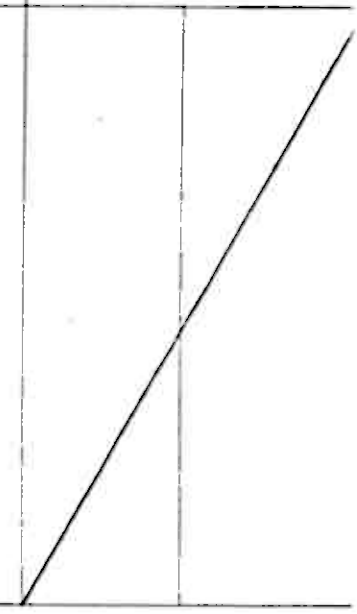


DESCRIPTION

This sample is less siliceous than the previous one and it is classified as a monzonite rather than a quartz monzonite. Dark green hornblende, green biotite and relatively abundant sphene are similar to the assemblage in PTS-6829.

Location	Kolsvik, Norway	Lab. No.	82-141
Sample Description	DDH 14 @ 125.40 m	PTS No.	6831

MINERALS	Est. % by Vol.	Grain Size (m.m.) Max.	Avg.
Feldspar - Oligoclase	45 - 50		
Orthoclase	10 - 12		
Quartz	6 - 8		
Amphibole	25 - 30		
Biotite	3 - 5		
Sphene	2 - 3		
Pyrite	tr		



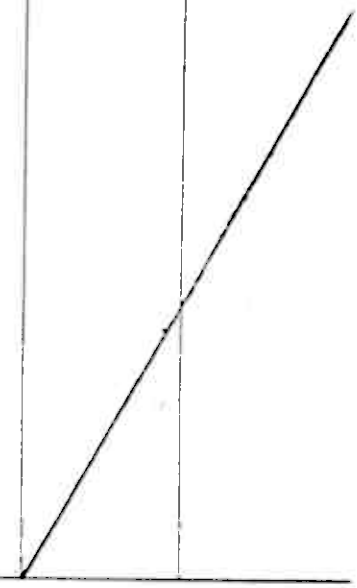
DESCRIPTION

Almost identical to the previous sample at 100.70 m.

Monzonite

Location	Kolsvik, Norway	Lab. No. 82-141
Sample Description	DDH 15 @ 30.60 m	PTS No. 6832

MINERALS	Est. % by Vol.	Grain Size (m.m.) Max.	Avg.
Quartz	70 - 75		
Feldspar - Orthoclase	6 - 8		
Oligoclase	1 - 2		
Carbonate	18 - 20		
Biotite	tr		



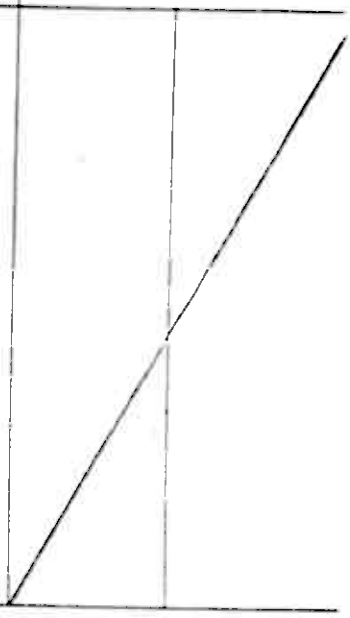
DESCRIPTION

Coarse irregular patches of highly strained quartz and carbonate occur with a heavily granulated, carbonatized, medium grained rock of granitic composition. Some late veins are lined by dog-tooth quartz and show vuggy textures.

Highly deformed and carbonatized granite

Location	Kolsvik, Norway	Lab. No.	82-141
Sample Description	DDH 15 @ 35.30 m	PTS No.	6833

MINERALS	Est. % by Vol.	Grain Size (m.m.) Max.	Avg.
Feldspar - {Andesine	20 - 25		
Feldspar - {Microcline	15 - 20		
Feldspar - {Orthoclase	50 - 55		
Quartz	4 - 5		
Muscovite	2 - 3		
Garnet	tr		
Apatite	tr		
Carbonate	~1		



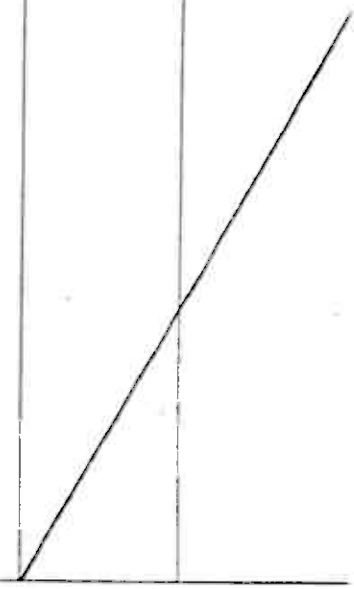
DESCRIPTION

This sample described as "typical red granite" contains only minor amounts of quartz and must be classified as syenite rather than granite.

Syenite

Location	Kolsvik, Norway	Lab. No.	82-141
Sample Description	DDH 15 @ 80.50 m	PTS No.	6834

MINERALS	Est. % by Vol.	Grain Size (m.m.) Max.	Avg.
Feldspar - {Microcline	40 - 45		
{Orthoclase	10 - 15		
{Oligoclase	10 - 15		
Quartz	20 - 25		
Muscovite/Sericite	4 - 5		
Chlorite	tr		
Carbonate	tr		



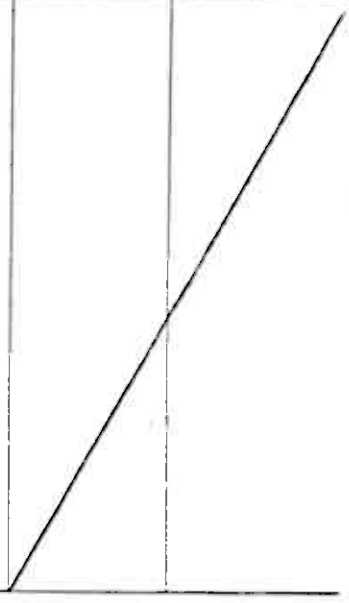
DESCRIPTION

A medium- to coarse grained granite shows evidence of strong deformation. Quartz invariably has strain shadows or is partly granulated.

Granite

Location	Kolsvik, Norway	Lab. No.	82-141
Sample Description	DDH 18 @ 18.85 m	PTS No.	6835

MINERALS	Est. % by Vol.	Grain Size (m.m.) Max.	Avg.
Feldspar - Orthoclase	25 - 30		
Oligoclase	8 - 10		
Quartz	8 - 10		
Chlorite	20 - 25		
Sericite	12 - 15		
Carbonate	10 - 12		
Sphene	1 - 2		
Apatite, Zircon, Pyrite	tr		
Ilmenite	2 - 3		



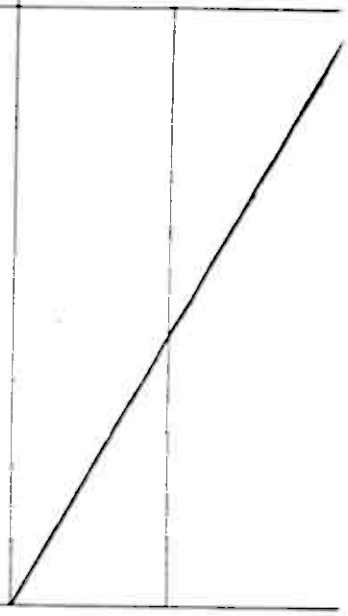
DESCRIPTION

The section is characterized by very high sericitic alteration of feldspar and by abundant flakes of chlorite. Carbonate usually occurs in late veinlets occasionally with quartz. Compared to others, the rock is generally fine grained and shows moderate gneissic textures.

Monzonite

Location	Kolsvik, Norway	Lab. No. 82-141
Sample Description	DDH 18 @ 22.65 m	PTS No. 6836

MINERALS	Est. % by Vol.	Grain Size (m.m.) Max.	Avg.
Feldspar - Oligoclase	6 - 8		
Quartz	10 - 12		
Amphibole	2 - 3		
Epidote	25 - 30		
Biotite	4 - 5		
Chlorite	25 - 30		
Carbonate	<1		
Apatite	∿1		
Garnet	1 - 2		
Sphene	∿1		
Pyrite	8 - 10		
Chalcopyrite	<1		



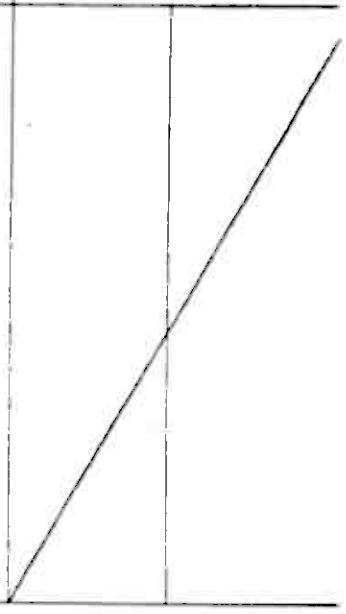
DESCRIPTION

Peculiar textures in pol-thin section shows coarse grained feldspar completely replaced by chlorite. Interstitial to the altered feldspar are coarse epidote, strained quartz, anhedral pyrite and occasional grains of fresh feldspar, biotite and anhedral orange garnet. Weak chalcopyrite mineralization occurs in gangue rather than in the coarse pyrite.

The intensity of alteration makes it difficult to assess the original rock type. However, from the mineral assemblage it likely represents a highly altered monzonite or diorite.

Location	Kolsvik, Norway	Lab. No. 82-141
Sample Description	DDH 18 @ 27.30 m	PTS No. 6837

MINERALS	Est. % by Vol.	Grain Size (m.m.) Max.	Avg.
Feldspar - Orthoclase	20 - 25		
Albite-oligoclase	15 - 18		
Quartz	10 - 12		
Biotite	35 - 40		
Rutile	2 - 3		
Carbonate	6 - 8		
Zircon	tr		



DESCRIPTION

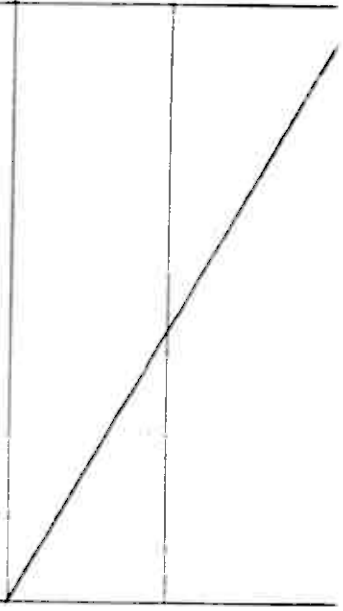
PTS-6837 consists of about 60:40 host rock to vein material. The latter is about 90% coarse grained, highly strained quartz with crosscutting veinlets and patches of carbonate. The texture of the biotite-rich host is almost sedimentary rather than igneous with grains of feldspar and quartz surrounded by biotite. Rutile is prominent in the section as small blocky translucent brown grains. Carbonate occurs as late shear infillings.

The rock is classified as a biotite schist of uncertain origin which is heavily penetrated by quartz/carbonate veinlets.

Location Kolsvik, Norway — Lab. No. 82-141

Sample Description DDH 18 @ 31.95 m — PTS No. 6838

MINERALS	Est. % by Vol.	Grain Size Max. (m.m.)	Grain Size Avg. (m.m.)
Feldspar - {Orthoclase	20 - 25		
Feldspar - {Microcline	20 - 25		
Feldspar - {Oligoclase ± An_{28}	15 - 20		
Quartz	25 - 30		
Chlorite	∿1		
Muscovite/Sericite	∿1		
Carbonate	4 - 5		
Apatite, Sphene	tr		
Arsenopyrite	2 - 3		
Sphalerite	∿1		



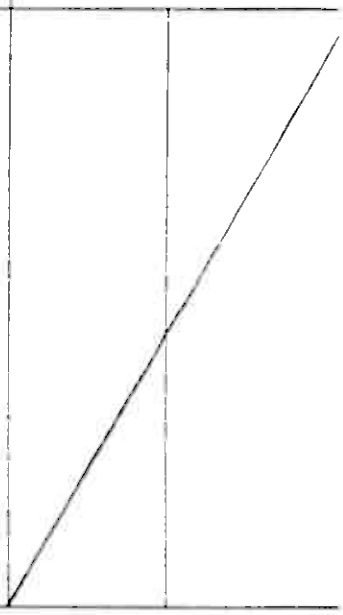
DESCRIPTION

Euhedral arsenopyrite grains in this granite are adjacent to or within shears. Patches of sphalerite are also invariably accompanied by shear infillings of carbonate.

Granite

Location	Kolsvik, Norway	Lab. No.	82-141
Sample Description	DDH 18 @ 39.95 m	PTS No.	6839

MINERALS	Est. % by Vol.	Grain Size (m.m.) Max.	Avg.
Feldspar - Orthoclase	30 - 35		
Oligoclase	10 - 12		
Quartz	12 - 15		
Hornblende	20 - 25		
Biotite	8 - 10		
Epidote	1 - 2		
Carbonate	2 - 3		
Sphene	3 - 4		
Chlorite	<1		
Apatite, Pyrrhotite, Chalcopyrite	tr		
Pyrite	∿1		

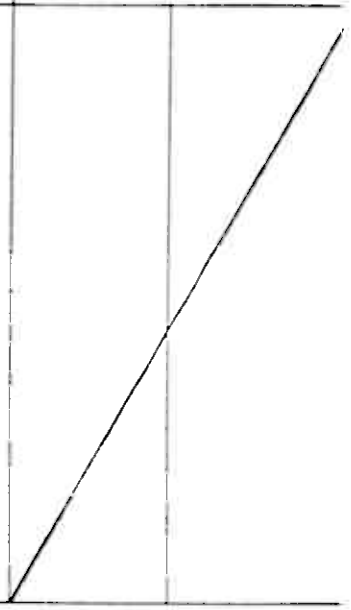


DESCRIPTION

This is a good example of a medium - to fine grained quartz monzonite which is closely approaching monzonite (<10% quartz) in composition. Sphene is very prominent throughout PTS-6839 in small subhedral to euhedral grains.

Location	Kolsvik, Norway	Lab. No. 82-141
Sample Description	DDH 18 @ 82.95 m	PTS No. 6840

MINERALS	Est. % by Vol.	Grain Size (m.m.) Max.	Avg.
Feldspar - {Orthoclase	30 - 35		
Feldspar - {Microcline	15 - 20		
Feldspar - {Oligoclase	15 - 20		
Quartz	25 - 30		
Muscovite/Sericite	4 - 5		
Chlorite	1 - 2		
Biotite	~1		
Magnetite, Pyrrhotite	tr		



DESCRIPTION

Good example of a leucocratic granite.

FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: _____ REPORT No. Q-1281

ANALYTICAL METHOD: _____

REQUESTED BY: _____ DATE: May 12, 1982

RECEIVED FROM: _____ CHARGE: JO#3064

SAMPLE No.: L#82-141 No. of SAMPLES: 15

SAMPLE DESCRIPTION: Miscellaneous Rocks

Kolsvik, Norway

	DDH 14 @ 61.95 m	DDH 14 @ 74.70 m	DDH 14 @ 97.40 m
10 – 100%	Si	Si	Si
3 – 30%	Fe, Al	Fe, Al	Fe, Al
1 – 10%	K, Ca	K, Ca	Mg, K, Ca
0.3 – 3%	Na, Ti	Na, Ti	Ti
0.1 – 1%	Mg	Mg	
0.03 – 0.3%			Cr
0.01 – 0.1%	Mn, Cr	Mn, Cr	Mn
0.003 – 0.03%	As, V, Zr, Ni	As, V, Zr, Ni	V, Zr, Ni
0.001 – 0.01%	Cu	Cu	Co
0.0003 – 0.003%	Co, Ba	Ba	Cu, Ba
0.0001 – 0.001%		Co	-
< 0.0003%			
I	Sr	Sr	Sr
S			Na>1%

I = Interference prevents positive identification.

S = Strong spectral lines, unable to estimate amount.

Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu, Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na; 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

FML-1017

Analyst _____

FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: _____ REPORT No. Q-1281

ANALYTICAL METHOD: _____

REQUESTED BY: _____ DATE: May 12, 1982

RECEIVED FROM: _____ CHARGE: JO#3064

SAMPLE No.: L#82-141 No. of SAMPLES: 15

SAMPLE DESCRIPTION: Miscellaneous Rocks

Kolsvik, Norway

	DDH 14 @ 100.70 m	DDH 14 @ 125.40 m	DDH 15 @ 30.60 m
10 – 100%	Si	Si	Si
3 – 30%	Fe, Al	Fe, Al	Al
1 – 10%	Mg, K, Ca	Mg, K, Ca	K, Ca
0.3 – 3%	Ti	Ti	Fe, Na, Ti
0.1 – 1%			As, Mg
0.03 – 0.3%	Cr	Cr	Cr
0.01 – 0.1%	Mn	Mn	
0.003 – 0.03%	V, Zr, Ni	V, Zr, Ni	Mn
0.001 – 0.01%	Co	Co	
0.0003 – 0.003%	Cu, Ba	Cu, Ba	Pb, Cu, Zr, Ni
0.0001 – 0.001%			V, Ba
< 0.0003%			Ag
I	Sr	Sr	Sr
S	Na>1%	Na>1%	

I = Interference prevents positive identification.

S = Strong spectral lines, unable to estimate amount.

Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu,Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na; 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

Analyst _____

FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: _____ REPORT No. Q-1281

ANALYTICAL METHOD: _____

REQUESTED BY: _____ DATE: May 12, 1982

RECEIVED FROM: _____ CHARGE: JO#3064

SAMPLE No.: L#82-141 No. of SAMPLES: 15

SAMPLE DESCRIPTION: Miscellaneous Rocks

Kolsvik, Norway

	DDH 15 @ 35.30 m	DDH 15 @ 80.50 m	DDH 18 @ 18.85 m
10 – 100%	Si	Si	Si
3 – 30%		Al	Fe,Al
1 – 10%	K	K	Mg, Ca
0.3 – 3%	Fe	Fe	Ti, K
0.1 – 1%	Ca	Mg, Ca	
0.03 – 0.3%		Ti	Cr
0.01 – 0.1%	Mg, Al, Cr	Cr	Mn, Ni
0.003 – 0.03%	As, Pb	As	As, V, Zr
0.001 – 0.01%	Mn, Ni	Mn	Cu, Co
0.0003 – 0.003%	Cu, Ti	Pb, Cu, Zr, Ni	
0.0001 – 0.001%		Ba	Ba
< 0.0003%	Ag		- Ag
I	Sr	Sr	Sr
S	Na>1%	Na>1%	Na>1%

I = Interference prevents positive identification.

S = Strong spectral lines, unable to estimate amount.

Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu, Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na; 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

Analyst _____

FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: _____ REPORT No. Q-1281

ANALYTICAL METHOD: _____

REQUESTED BY: _____ DATE: May 12, 1982

RECEIVED FROM: _____ CHARGE: JO#3064

SAMPLE No.: L#82-141 No. of SAMPLES: 15

SAMPLE DESCRIPTION: Miscellaneous Rocks

Kolsvik, Norway

	DDH 18 @ 22.65 m	DDH 18 @ 27.30 m	DDH 18 @ 31.95 m
10 – 100%	Si, Fe	Si	Si
3 – 30%	Al, K	Fe, Al	Al, K
1 – 10%	Mg, Ca	Mg, K, Ca	
0.3 – 3%	Ti	Ti	Fe, Ti, Ca
0.1 – 1%	Na		As, Mg
0.03 – 0.3%		As	
0.01 – 0.1%	Mn,Cr	Pb, Cr	Pb, Cr
0.003 – 0.03%	As,V,Cd,Zn,Zr,Ni	Mn, V, Zr	Zn
0.001 – 0.01%	Cu, Co		Mn, Zr
0.0003 – 0.003%	Sn	Cu, Ni, Ba	Cu, Ni
0.0001 – 0.001%	Mo	Co	V, Ba
< 0.0003%	Ag	Ag	Ag
I	Sr	Sr	Sr
S		Na>1%	Na>1%

I = Interference prevents positive identification.

S = Strong spectral lines, unable to estimate amount.

Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu,Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na; 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

FML-1017

Analyst _____

FALCONBRIDGE METALLURGICAL LABORATORIES

QUALITATIVE SPECTROGRAPHIC ANALYSIS

DISTRIBUTION: _____ REPORT No. Q-1281

ANALYTICAL METHOD: _____

REQUESTED BY: _____ DATE: May 12, 1982

RECEIVED FROM: _____ CHARGE: JO#3064

SAMPLE No.: L#82-141 No. of SAMPLES: 15

SAMPLE DESCRIPTION: Miscellaneous Rocks

Kolsvik, Norway

	DDH 18 @ 39.95 m	DDH 18 @ 82.95 m
10 – 100%	Si	Si
3 – 30%	Fe, Al, Ca	Al
1 – 10%	Mg, K	K
0.3 – 3%	Ti	Fe, Ca
0.1 – 1%		Mg
0.03 – 0.3%		Ti
0.01 – 0.1%	Mn	Cr
0.003 – 0.03%	As, V, Zr, Ni	As
0.001 – 0.01%	Cu, Cr	Mn
0.0003 – 0.003%	Co, Ba	Pb, Cu, Zr, Ni
0.0001 – 0.001%		Ba
< 0.0003%	Ag	
I	Sr	Sr
S	Na>1%	Na>1%

I = Interference prevents positive identification.
S = Strong spectral lines, unable to estimate amount.
Unless specified above, the following were not detected at the approx. ppm lower limits of 0.5 Cu, Ag; 1 Mn; 5 Mg, Cr; 10 Ba, Be, Bi, Ca, Co, Ni, V; 25 Ge, Fe, Pb, Mo, Si, Sr, Sn, Ti, Zr, Tl, Pd; 50 Al, Sb, B, Cd, Ga, In, Li, Zn; 100 As, Au, Na, 200 Rh, Re, Ir, Pt, Ru, Sc; 300 Te, Os; 1000 K, U, Th; 2000 P.

FML-1017

Analyst _____

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: C-zone
LOGGED BY: RS FN
CASING: 3.50
CORE SIZE:

BEARING: 274° DIP: 80 ; HOLE NO: 1.80. SHEET NO: 1.
STARTED: 3.6.80 ; PROPERTY: Kolsvik C-zone
FINISHED: 12.6.80 Bindal
TESTS (CORRECTED): RC

From	To		Description
0	3.0		Overburden i- n
3.0	8.30		Sequence of dominantly mica schist with calc-silicat bands. A zone of marble between 6.40-7.00. The sequence is broken and fractured with quartz and carbonate veins and veinlets running in all directions. 7.00 - 7.10 Granitic vein with some Asp on thin fractures. 7.45 - 7.70 Coarse gr. diorite 8.20 - 8.30 Skarn developed against underlying marble. Garnets diopside and a few specks of pyrite.
8.30	11.45		Dominantly banded marble - well foliated. No dominant fractures or vein fillings. Over last 20 cms some intermixing of other sediments.
1145	26.60		Granite Altered with both greenish colouring (sericite) and a pink alteration associated with thin carbonate lined joints. 20.50 1 cm qtz vein with py specks. 25.10 - 26.30 Fault zone - granite broken brecciated and riddled with carbonate veins. 30 cms clay faults gouge zone. Some Asp seen on joint surfaces. Fragments of mica schist/amphibolite form 12.0 - 13.5.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION C-Zone BEARING: 274° DIP: 80 HOLE NO: 1.80 SHEET NO 2
LOGGED BY: RS FN STARTED 2.6.80 PROPERTY Kolsvik C-zone
CASING: 3.50 FINISHED: Bindal
CORE SIZE: 42 cms TESTS (CORRECTED):

From	To		Description
26.60	28.90		Highly contorted gneiss with carbonate veining. 28.0 - 28.90 Qtz and granitic veining with pyrite in the gneiss as isolated specks and also as fracture fillings. Only 1-2%.
28.90	29.30		Reddish altered granite with carbonate and xeolite lined fractures.
29.30	30.75		Mica schist with an even foliation cut by thin carbonate filled joints.
30.75	31.25		Brecciated and altered granite cut by small shear zones that postdate breccia.
31.25	32.0		Schist highly altered and brecciated. X cut by carbonate veins. Graphite noted on joint (foliation) planes at 31.80.
32.45	33.25		Fractured and altered granite.
33.25	34.35		Mica schist cut by granite and carbonate veins. 34.00 - 34.35 Marble.
34.35	35.50		Granite. Still cut by carbonate veining but not as prominant as previous section. Granite is dominantly grey white in colour with no obvious alteration colours.
35.50	40.00		Marble. Somewhat fractured in places.
40.00	41.90		Mica schist cut by several granitic veins. Some py on fractures especially around 41 m.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: C-zone | BEARING: 274° | DIP: 80 | HOLE NO. 1.80 | SHEET NO 3
LOGGED BY: RS FN | STARTED: 2.6.80 | PROPERTY: Kolsvik C-zone
CASING: 3.50 | FINISHED: | Bindal
CORE SIZE: 42 mm | TESTS (CORRECTED):

From	To		Description
			40.10 Graphite on joint planes
			41.30 - 41.50 Altered sericite rich granite sheared from 41.00 - 41.50
41.90	48.85		Granite. Dominantly med. grained white in colour. Sericite development in places. Cut by several vein types.
			Quartz veins - whitish blue 0.5 - 2 cm.
			These are cut by thin carbonate and chlorite lined joints which run in a x cross pattern.
			Most quartz veining between 44 and 47 m
			43 60 44 00 Mica schist
			45.50 - 46 00 Spread grains of Asp
			Quartz veining has a fairly constant angle to drill core - whereas the carbonate and chlorite lined joints give the rock a somewhat brecciated appearance. especially over the last 2 m
48.85	55.80		Extremely sheared and broken mica schist/amphibolite and marble (dominant)
			50.00 51.00 5% pyrite
55.90	69.30		Granite. Dominantly white in colour as above has some pink alteration associated to joints. Some serici alteration also noted.
			Cut by several small qtz veins and segregations especially over first 10 m.
			57.55 Thin fracture zone lined with Asp.
			60.10 - 60.25 Asp as thin vein and 1-2 m aggregates associated with qtz veining.
			60.35 - 61.00 Amphibolite
			61.25 Thin 1 cm Asp vein.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION C-zone BEARING 274° DIP 80 HOLE NO 1.80 SHEET NO 4

LOGGED BY RS FN STARTED 2.6.80. PROPERTY Kolsvik C-zone

CASING 3.50 FINISHED Bindal

CORE SIZE 42 mm TESTS (CORRECTED)

From	To		Description
69.30	72.15		Mica schist - sheared contact with granite. Contains some calc-silicate bands. Some quartz veining parallel to shearing in upper contact over 1-2 cm. Otherwise fairly uniform - cut by small carbonate veins.
72.15	76.80		White even med.gr. granite. Fairly unaltered. Upper contact slightly sheared with 2 cm quartz vein.
76.80	80.90		Mica schist with some limited quartz veining.
80.90	82.90		Granite, dominantly light coloured with inclusions of a darker more granodiorite rock. Some slight alteration noted but granite is generally massive not showing many fractures.
82.90	86.60		Dominantly mica schist/amphibolitic rocks cut irregularly by even gr. diorite. Also cut by a 15 cm vein of granite which contains assimilated fragments of diorite.
86.80	103.60		Granite. Dominantly massive with no major shear or fracture zones. Some thin carbonate lined fractures. Somewhat altered between 88 and 90 m. Contains assimilated diorite. 91.00 - 91.50 Mica schist 92.40 - 92.85 Carbonate breccia 97.50 - 99.00 Med. gr. diorite gneiss.
103.60	104.00		Amphibolite

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: C-zone
LOGGED BY: RS FN
CASING: 3.50
CORE SIZE: 42
BEARING: 274° DIP: 80 HOLE NO: 1.80. SHEET NO 5
STARTED: 2.6.80. PROPERTY Kolsvik C-zone Bindal
FINISHED:
TESTS (CORRECTED):

From	To		Description
104.00	104.40		Granite med. gr. veined with a green xeolite mineral?
104.40	104.80		Sheared amphibolite with carbonate veins.
104.80	110.50		Granite. 104.80 -105.10 Med. gr. unaltered. 105.10 - 106.90 Quartz segregations and veins, no Asp. Granite also contains qtz segregations between 108.20 and 110.50.
110.50	111.85		Mica schist, quite fractured especially near contacts where it contains granite inclusions.
111.85	112.50		Qtz rich granite
112.50	113.00		Carbonate breccia and consolidated fault gauge and thin mylonitic quartz veins.
113.00	115.60		Granite. Down to 114.20 extremely qtz rich - mylonitic and recrystallized from 113.00 - 113.40.
	115.60		End of hole.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: C-zone
LOGGED BY: RS FN
CASING: 3.50
CORE SIZE: 42 mm

BEARING: 274° DIP: 80° HOLE NO: 1-80 SHEET NO 6
STARTED: 2.6.80 PROPERTY Kolsvik C-zone
FINISHED: Bindal
TESTS (CORRECTED):

From	To		Description

Core angles *NB 0=parallel core

meterage	Angle*	Type
6.60	55	foliation
7.25	70	"
9.40	55	"
13.40	50	shear
20.0	15	joint
26.60	60	contact
30.0	55	foliation
29.50	15	joint
31.0	55	fracture
33.50	20	fracture
41.60	45	shear
41.90	0	contact
48.70	35	shear
48.85	55	contact
52.25	50	shearing
49.80	70	"
56.40	45	Qtz vein
60.10	10	Asp lined joint
57.55	20	- " -
69.30	45	Sheared contact
72.15	50	- " - - " -
82.90	45	contact
98.50	35	shear
104.50	30	shear
109.00	50	fracture
110.50	25	fractured contact
111.60	60	shearing

Hole was drilled to intersect gold bearing C-zone structu
at depth. On surface this zone consists of gold/Asp
bearing quartz veins associated with sheared and fractur
sediments and granite.

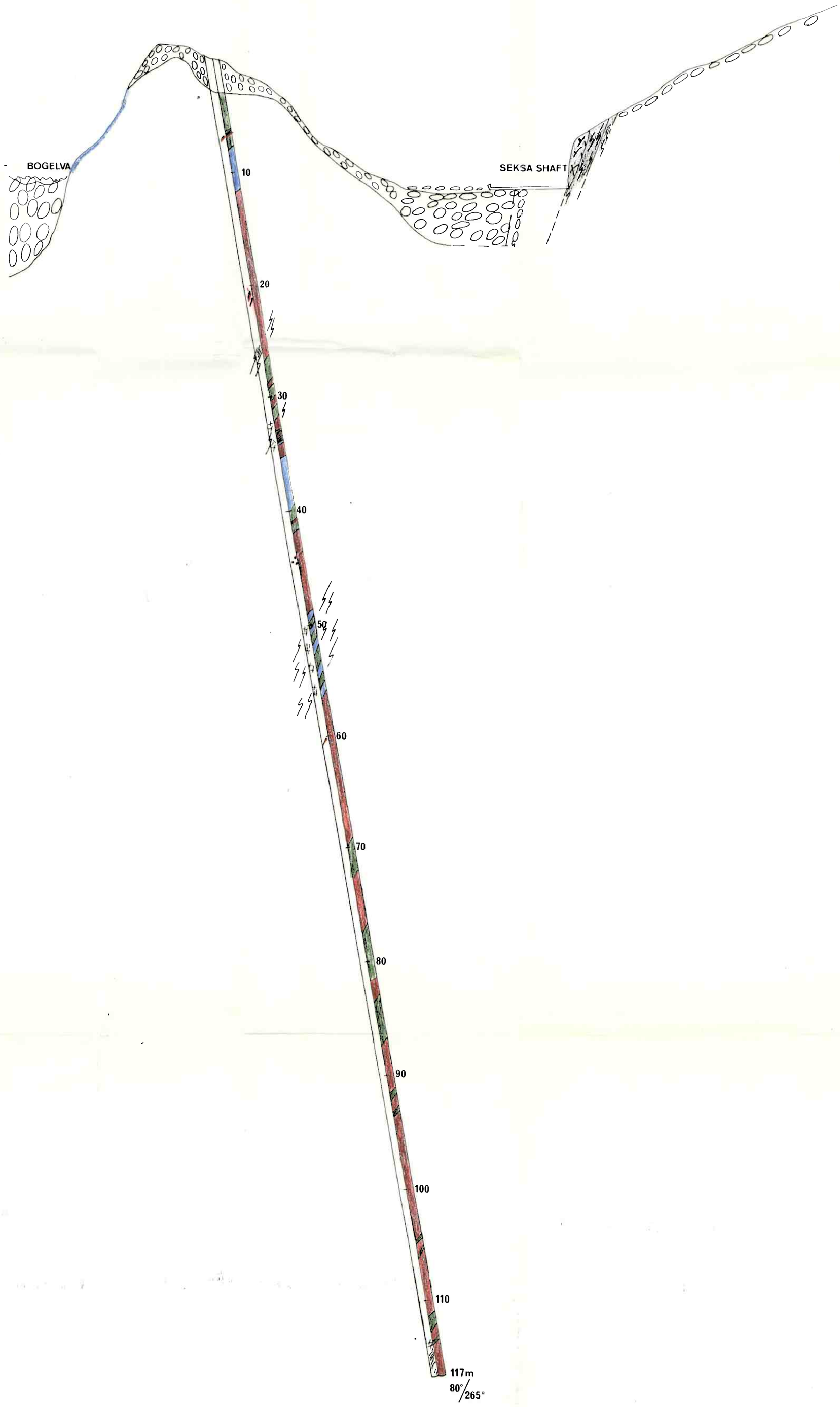
A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: C-zone
LOGGED BY: RS FN
CASING: 3.50
CORE SIZE: 42 mm

BEARING: 274° DIP: 80 HOLE NO: 1.80 SHEET NO 7
STARTED 2.6.80 PROPERTY Kolsvik C-zone
FINISHED Bindal
TESTS (CORRECTED):

From	To		Description
			The hole intersected this zone between ca. 46 m - 62 m. at a vertical depth of some 50 m giving a true width of some 10 m. Only limited Asp mineralization was noted and only two significant assays were returned from the zone, these being 45.75 - 46.00 5.7 g/t Au 61.25 - 61.50 18 g/t Au



LEGEND

- OVERBURDEN
- QUARTZ
- LIMESTONE
- GRANITE
- GNEISSES & SCHISTS
- SHEAR/SHEARING
- FRACTURES
- BRECCIATION
- ASPY & QUARTZ ALONG FRACTURES
- " " ON BRECCIA
- DISSEMINATED ASPY

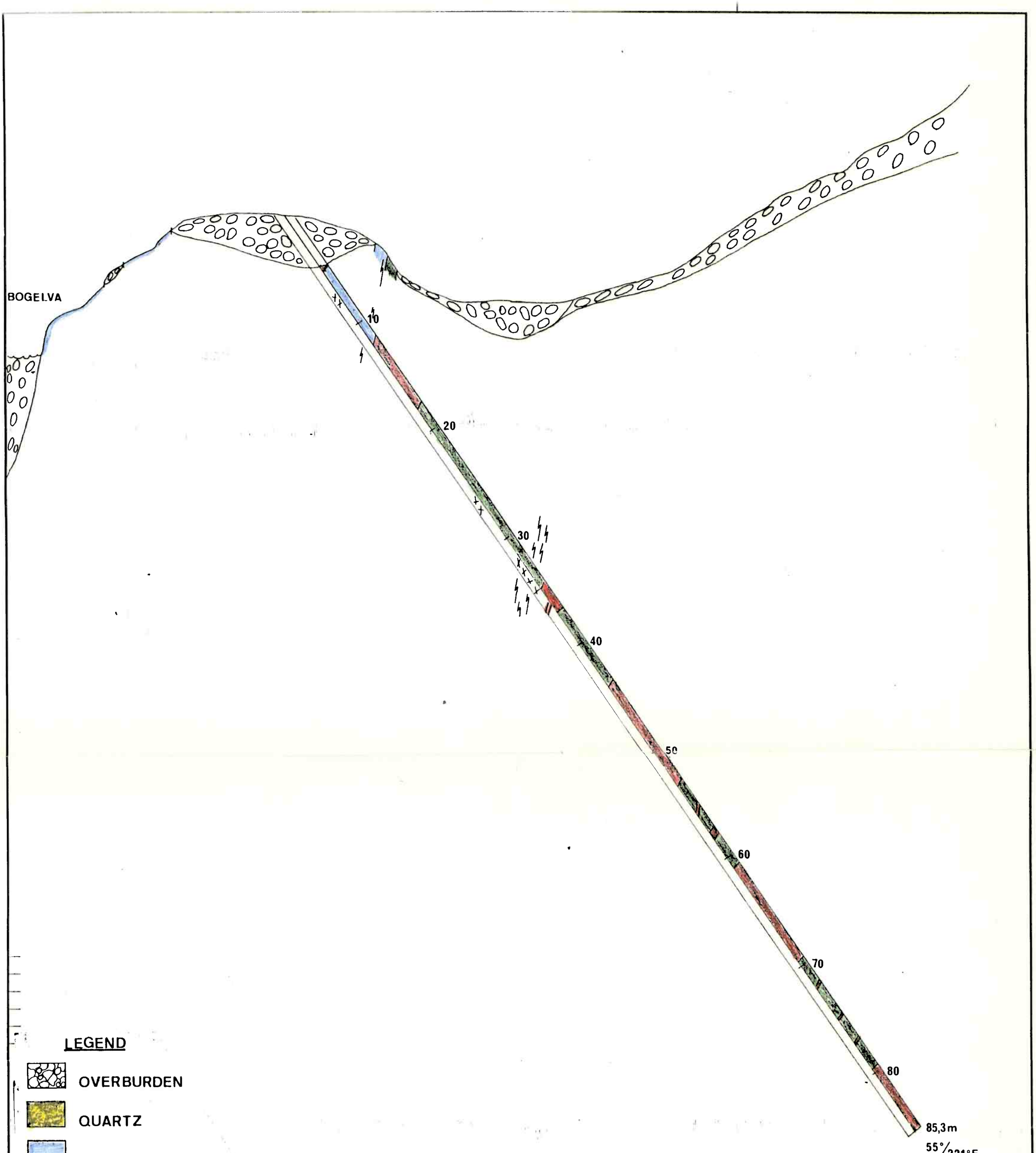
KOLSVIK, BINDAL.
DDH 1

1/5 SULFIDMALM

SCALE	OBS.	
1:200	DRAW.	
	TRAC. SN	05-83
	CHK.	

MAP NO.

MAP SHEET



LEGEND

- OVERBURDEN
- QUARTZ
- LIMESTONE
- GRANITE
- GNEISSES & SCHISTS
- SHEAR/SHEARING
- FRACTURES
- BRECCIATION
- ASPY & QUARTZ ALONG FRACTURES.
- " " ON BRECCIA
- DISSEMINATED ASPY

KOLSVIK, BINDAL.
DDH 2

SCALE 1:200

OBS.
DRAW.
TRAC. SN 05-83
CHK.

MAP. NO.

MAP SHEET

% SULFIDMALM

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: C-zone | BEARING: 227° | DIP: 55 | HOLE NO: C-80 | SHEET NO: 1

LOGGED BY: RS FN | STARTED: 13.6.80 | PROPERTY: Kolsvik C-zone

CASING: 5.50 | FINISHED: 17.8-80 | Bindal

CORE SIZE: 42 mm | TESTS (CORRECTED):

From	To		Description
0	5.25		Overburden
5.25	5.50		Granite, white in colour, coarse gr. unaltered.
5.50	12.0		Dominantly marble with thin zones of more mica/amphibol rich supracrustals. Cut in places by a few thin carbon veins. Near upper contact with granite a few thin 1-2 qtz veins and segregations. Marble is banded and well foliated. 7.60 - 7.75 Breccia zone with granite fragments, cut by later thin carbonate ve
12.00	18.00		Granite. Dominantly med. gr. some limited alteration along joints. Very few qtz veins or segregations. No dominant structures.
18.00	33.70		Dominantly mica schist with amphibolitic bands. Cut by and contain "fragments" of diorite. Also cut by a few granitic veins. 29.15 - 29.35 Brecciated zone.
33.70	35.45		Breccia/Fault gauge zone. Mylonitic in places. Several generations of movement.
35.45	37.30		Qtz rich (veins & segregrations) altered granite. Qtz veins in order 0.5 - 2 cm randomly orientated. Only a very weak Asp min. found associated with two small quartz veins around 37.10 - 15.0
37.30	43.20		Dominantly mica schist.
43.20	53.30		Granite, dominantly white in colour and not very altered Contains some small xenoliths of schist and diorite especially between 48-49 m. Only a few fractures.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: C-zone BEARING: 227° DIP: 55 HOLE NO: 2.80 SHEET NO. 2

LOGGED BY: BS FN STARTED 13.6.80 PROPERTY Kollavik C-zone

CORE SIZE: AP mm FINISH (COMPLETED):

From	To		Description
53.30	57.70		Dominantly mica schist/amphibolite.
			54.90 - 55.40 Granite white & unaltered
			56.40 - 56.50 Granite vein with some mineral contact.
			Small 2-5 cm veinlets of granite especially over last 2 m.
57.70	58.50		Granite
			58.00 - 58.50 Reddish alteration along joints.
58.50	60.80		Gneisses with small intrusions of granite.
			60.00 - 60.40 heavily X cross veined with thin veinlets of green xeolite? mineral.
60.80	69.80		Granite. Altered along joints-reddish. Also a little sericite noted.
			Carbonate on some joint planes.
			Some thin chlorite veining from 69.50 - 69.70
			Lower contact is somewhat fractured.
69.80	79.60		Dom. mica schist with granite veins up to 50 cm.
79.60	85.30		Granite. Dom. med. even grained. Some alteration along joints. Very little quartz.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: C-zone | BEARING: 227° | DIP: 55 | HOLE NO: 2.80 | SHEET NO 3

LOGGED BY: RS FN | STARTED: 13.6.80 | PROPERTY Kolsvik, C-zone

CASING: 5.50 | FINISHED: 17.8.80 | BIndal

CORE SIZE: 42 mm | TESTS (CORRECTED):

From	To		Description
			Core angles 0=parallel core
			Meterage / Angle / Type
			10.50 / 75 / foliation
			6.20 / 60 / foliation
			11.15 / 40 / shear
			18.50 / 55 / foliation
			24.10 / 55 / foliation
			27.40 / 60 / foliation
			35.10 / 50 / breccia band
			35.30 / 45 / shear plane
			37.50 / 90 / foliation-shearing
			39.70 / 75 / foliation
			40.80 / 80 / foliation
			53.30 / 75 / contact
			56.40 / 25 / sheared qtz vein
			58.10 / 20 / joint
			65.00 / 30 / joint
			73.50 / 75 / foliation
			80.00 / 20 / joint
			Hole was drilled to intersect gold bearing C-zone structure at depth. On surface this zone consists of gold / Asp bearing quartz veins associated with she and fractured sediments and granite. The hole intersected this zone between ca. 32 - 40 m giving a true width of some 6-7 m at a vertical depth of som 30 m. Only very limited Asp mineralization was noted and only one assay over 0.25 cms from the zone returned over 1 g/t Au (1.9g/t).

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: Kolsvik, F zone | BEARING: | DIP: 90 | HOLE NO: 3 80 | SHEET NO 1.

LOGGED BY: JH FN KK | STARTED: 22.8. | PROPERTY Kolsvik

CASING: 3.50 | FINISHED: 7.9. | Bindal

CORE SIZE: | TESTS (CORRECTED):

From	To		Description
0	3,20		Overburden
3.20	20.0		Dioritic gneiss, even grained, dominantly coarse grained. Cut by a number of small 2-3 cm qtz veins and granite veins. Foliation is noticable and can be seen to be folded Dominant jointing is vertical-subvertical and sever joints are seen to be lined by Asp and pyrite.
			4.45 - 4.60 Granite vein-subvertical joints lined with muscovite & carbonate.
			5.00 - 5.50 Qtz rich granite with subvertical fra tures.
			9.00 - 10.00 Weak pyrite impregnation.
			9.95 -0.5 cm Asp veinlet.
			10.60 - 11.15 Asp on subvertical veinlets and joint fillings. Also some secondary quartz introduced.
			18.80 - 19.20 Asp lined joints.
20.00	23.10		Pegmatite extremely quartz rich granite-sericite bea- ring (on joints). Some little Asp noted on joints.
23.10	27.70		Dioritic gneiss, extremely shattered and sheared, breaking down along numerous joints. A little py and Asp noted.
27.70	28.50		Quartz vein, cut by chlorite lined joints that x cros and start brecciating the rock - extremely thin joint however, some py noted.
28.50	38.10		Dioritic gneiss/biotite schist still tectonized and frac- tured down to 30.20. From 30 m get a development of feldspar augens and roc becomes a biotite augen gneiss. The augens are irregu lar and no foliation can be measured. Small Asp disse minations and grains often lie around the augens. Asp is also present as thin stringers.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: Kolsvik F-zone
BEARING: DIP: 90° HOLE NO: 3.80 SHEET NO: 2
LOGGED BY: JH FN KK
STARTED:
PROPERTY Kolsvik Bindal
CASING: 3.50
FINISHED:
CORE SIZE:
TESTS (CORRECTED):

From	To		Description
			33.60 - 33.80 Granitic vein
38.10	40.15		Quartz vein with coarse granular aggregates of Asp - up to 3 cm across, especially well developed between 38.0 - 39.50. A few thin joints are lined with chlorite. Qtz vein is creamy white in colour and does not appear to have undergone much deformation
40.15	45.25		Dioritic gneiss - extremely muscovite rich (with some sericite). Cut in part by pure cream white quartz veins that have no sulphides and few fractures. 41.65 - 42.50 Qtz vein 43.50 - 43.90 Qtz veining 45.00 - 45.45 Qtz rich
45.25	45.50		White granitic vein extremely quartz rich
45.50	54.30		Dominantly fine-medium gr. biotite gneiss. Cut through by a network av quartz veins between 45.50 - 50.00 Xenolith relationships are complex. 49.40 - 49.90 Sheared zone. Extremely sheared and fractured, riddled with qts veins from 53.25 - 53.70
54.30	84.25		White quartz rich granite 54.45 - 57.40 Coarser grained granite with many small fractures containing Asp. 57.40 - 61.45 Brecciated granite with Asp matrix and mm size stringers. Granite is altered. Brecciation increases with depth.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: Kolsvik F zone BEARING: ..... DIP: 90 HOLE NO: 3 80 SHEET NO: 3

LOGGED BY: JH FN KK STARTED: 22.8. PROPERTY Kolsvik

CASING: 3.50 FINISHED: 7.9. Bindal

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
			61.45 - 61.9 Sheared amphibolitic rock. Granite is highly brecciated and mineralized proximal to shear.
			61.90 - 70.65 Fractured granite with a little Asp as stringers.
			70.65 - 74.5 White fine-med. gr. feldspar rich granite.
			74.5 - 75.15 76.0 - 76.1 Asp mineralization on fractures 76.65 - 77.65
			78.85 - 78.95 Small shear 78.95 - 79.95 Brecciated granite with py at shear zone contact and Asp as fill and stringers.
			79.95 - 82.9 Unfractured granite
			82.9 - 83.0 Small shear zone
			83.75 - 83.8 Small shear zone.
84.25	87.30		Dioritic gneiss (biotite augen gneiss) quite a lot of Asp 0.5 - 1 % as stringers, joint linings and isolated disseminations.
87.30	87.65		Granitic vein with xenoliths of dioritic gneiss and thin chlorite lined fractures.
87.65	91.20		Dominantly dioritic gneiss cut by later quartz and granitic veins. Down to 90 m sheared and brecciated. Between 88-89 m rich in quartz — with arsenopyrite veins and chlorite veins.
			90.0 - 90.40 Thin 5 m vertical zone of Asp mineralization running though diorite into granite (90.40-90.70). Granite is cut by qtz veins 0.5 cm - 1 cm in which one grain of free gold was seen
			91.10 - 91.35 Granite x cross cut by chlorite veins

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: Kolsvik, F-zone
LOGGED BY: JH FN KK
CASING: 3.50
CORE SIZE:

BEARING: DIP: 90 HOLE NO: 3 80 SHEET NO. 4
STARTED: 22.8. PROPERTY Kolsvik
FINISHED: 7.9. Bindal
TESTS (CORRECTED):

From	To		Description
			Core angles
			0 = parallel core
		Meterage	Angle — Type
		4.20	56 — foliation
		16.50	49 — foliation
		27.50	15 — shear
		44.25	35 — foliation
		49.50	35 — shear
		52.25	37 — foliation
		52.70	37 — shearing
		68.90	12 — shear
		72.30	43 — sheared foliation

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION F-zone BEARING: 226 DIP: 50 HOLE NO: 4 80 SHEET NO 1

LOGGED BY JH FN KK STARTED: 8.9. PROPERTY Kolsvik

CASING 15.00 FINISHED: 15.9. Bindal

CORE SIZE 36 mm TESTS (CORRECTED):

From	To	Description
0	13.75	Overburden
13.75	13.85	Dioritic gneiss
13.85	19.45	Granite with dominant pink colour in upper portions. Cut by quartz veins which have often Asp concentrations in contacts. Asp is also present in thin veinlets without quartz - in certain cases approaching breccia structure. Most Asp concentrations between 17.25 and 17.85 wher coarse aggregates in association with quartz approac 2 cm in size.
19.45	32.15	Dominantly dioritic gneiss with typical augen struct 20.0 - 21.0 Qtz rich 24.0 - 25.0 Thin granitic vein parallel to core 26.0 - 26.40 Quartz rich granitic vein. 26.40 - 27.75 Dark med.gr. amphibolitic rock. 27.70 - 28.0 Fractured. 28.25 - 28.35 Quartz rich granite with thin vein of 29.10 - 29.40 Quartz rich granite with typical Asp breccia mineralization.
32.15	61.40	Granite 32.15 - 36.95 Dominantly white and massive. 36.95 - 37.15 Fine gr. biotite/amphibole rock. 40.5 - 40.55 Unmineralized shear zone. 55.1 - 55.7 Subvertical fracture with a little Asp and muscovite. Granite is dominantly white in colour with few xenoliths and only limited fracturing and veining.
61.40	62.5	Biotite augen gneiss (dioritic).
62.50	62.90	White granitic vein
62.90	63.20	Biotite augen gneiss
63.20	63.75	White granitic vein
63.75	68.55	Biotite augen gneiss 65.35 - 65.55 Fine gr. biotite-amphibole rock 67.90 - 68.55 Brecciated granite and gneiss in a chlorite rich matrix with thin quartz veins.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: F-zone BEARING: 226 DIP: 50 HOLE NO: 4 80 SHEET NO: 2

LOGGED BY: JH FN KK STARTED: 8.9.80 PROPERTY Kolsvik

CASING: 15.0 FINISHED: 15.9.80 Bindal

CORE SIZE: 36 mm TESTS (CORRECTED):

From	To		Description
68.55	70.9		Granite which in lower portions is quite gneissic.
70.90	85.65		Dominantly dioritic gneiss
			70.95 - 71.35 white granitic vein
			75.00 - 76.25 med.gr. biotite amphibole feldspar gneiss
			78.15 - 78.95 white granite with pyrite
			79.95 - 80.15 brecciated with secondary xeolithe minerals.
			80.15 - 83.1 grey granite
85.65	91.3		White granite
91.3	91.45		Qtz vein with brecciated contact.
91.45	91.70		White granite with quartz veining
91.70	92.70		Biotite-feldspar, chlorite granitic gneiss.
92.70	93.05		White granite

Core Angles

0 = parallel core

Meterage	Angle	Type
13.80	33	foliation
19.25	46	foliation
23.40	49	foliation
28.50	50	shearing
30.30	65	foliation
56.80	47	foliation
61.35	36	contact/foliation
63.75	43	sheared contact
66.40	42	foliation
68.60	47	shearing
69.50	46	foliation

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: F zone
LOGGED BY: JH FN KK
CASING: 15.0
CORE SIZE: 36 mm
BEARING: 226 DIP: 50 HOLE NO: 4 80 SHEET NO: 3
STARTED: 8.9.80 PROPERTY Kolsvik
FINISHED: 15.9.80 Bindal
TESTS (CORRECTED):

From	To		Description
			Core Angles
			Meterage — Angle — Type
			71.35 — 56 — contact
			78.95 — 37 — contact
			88.90 — 18 — foliation
			88.35 — sub-horizontal to core contact
			91.70 — 15 — contact
			92.70 — 15 — contact

300
290
280
270
260
250
240
230
220
210
200 m.a.s.l.

10
13.75
20
30
40
50
60
70
80
90
93.05 m
DDH 4 226° 50°

10
20
30
40
50
60
70
80
90
94.2 m
90°

LEGENDE

- OVERBURDEN
- QUARTZ
- LIMESTONE
- GRANITE
- GNEISSES & SCHISTS
- SHEAR/SHEARING
- FRACTURES
- BRECCIATION
- ASPY & QUARTZ ALONG FRACTURES
- " " ON BRECCIA
- DISSIMINATED ASPY

KOLSVIK, BINDAL.,
DDH 3-4 80

SULFIDMALM

SCALE	OBS.	
1:200	DRAW.	
	TRAC.	
	CHK.	

MAP NO. 2882D23 10D13

MAP SHEET

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 30 m N - 16 m E BEARING: 082° DIP: 45° HOLE NO: 5/81 SHEET NO: 1

LOGGED BY: ØM - KK STARTED: May 81 PROPERTY Kolsvik, Bindal.

CASING: FINISHED: May 81

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
0	5.70		Overburden
5.70	6.00		Mica schist, rich in carbonate
6.00	6.30		Loss of core
6.30	22.75		Sequence of mica schist. Strong variation in carbonate and quartz-fld. content. Mostly foliated (foliation 34°-45°). Fractures parallel|subparallel foliation.
			14.70 - 15.50 Finegrained, dark zone rich in sulphides, mostly pyrite.
			20.55 - 22.75 Schist rich in quartz/fld eyes.
22.75	29.00		Granite. Pink alteration. Weak brecciation in quartz rich parts. Aspy on some joint surfaces.
			25.80 - 25.85 Aspy in shearzone.
29.00	31.75		Marble
			29.00 - 30.50 Carbonate breccia (Marble with fragments of mich sch.
			30.50 - 31.75 Recrystallized limestone
31.75	37.50		Reddish altered granite with some carbonate fractures
			34.50 - 37.50 Weak brecciation and much muscovite on fractures.
37.50	39.40		Marble with fragments of mica schist
39.40	42.40		Reddish altered granite. Some Aspy near the 39.40 contact.
42.40	46.40		Foliated marble with fragments of schist
46.40	47.70		Fine grained mica schist. Foliation 50°. 47.50-contact crushed.
47.70	56.30		Marble with fragments of schist.
56.30	60.00		Skarn. Rich in epidote, garnet, amphibole and chlorite. Zone cut by several granitic veins.
60.00	60.50		Granite
60.50	61.80		Mica schist.
61.80	62.60		Granite
62.60	63.00		Mica schist
63.00	64.20		Granite. Some subparallel fractures.
64.20	66.10		Mica schist. Foliation 51°.
66.10	66.40		Granite. Breccia texture. Traces of Aspy.
66.40	67.20		Mica schist
67.20	67.30		Granite. Breccia texture.
67.30	69.15		Mica schist. Foliation 55°.
69.15	69.70		Granite

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 30 m N - 16 m E BEARING: 082° DIP: 45° HOLE NO: 5/81 SHEET NO: 2.

LOGGED BY: ØM / KK STARTED: May 81 PROPERTY: Kolsvik, Rindal.

CASING: FINISHED: May 81

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
69.70	72.20		Mica schist. The sequence is broken and fractured. Most fractures 65°. Breccia texture in more quartz/fld. rich zone. Some carbonate veining.
72.20	72.55		Granite. Rich in quartz and good brecciation.
72.55	73.05		Mica schist.
73.05	73.60		Granite.
			74.40 - 75.70 Reddish alteration
			75.60 - 76.40 Increasing amount of dark minerals.
			76.40 - 88.45 Massive granite with some fractures (∿parallel core) 77.60-77.90: good
			Aspy mineralization on fractures. Also some chalcopyrite.
			86.00: Aspy associated with pyrite & chalcopyrite on fractures.
88.45	89.25		Diorite. Medium-grained and rich in mica. No foliation.
89.25	91.20		Granite
91.20	91.35		Diorite
91.35	91.80		Granite
91.80	92.80		Diorite
92.80	94.40		Granite
94.40	97.55		Diorite
97.55	97.80		Granite
97.80	99.55		Diorite
99.55	100.00		Granite
		100.00	End of hole.

A/S SULITJELMA

DIAMOND DRILL RECORD

LOCATION: 30 m N - 16 m E BEARING: 082° DIP: 55° HOLE NO: 6/81 SHEET NO: 1

LOGGED BY: ØK / KK STARTED: May 81 PROPERTY: Kolevik, Birdal.

CASING: FINISHED: May 81

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
0	8.00		Overburden
8.00	11.80		Marble with fragments of schist
11.80	12.60		Mica schist. Well foliated (30°).
12.60	14.30		Granite. Dominantly massive with no major shear or fracture zones. Some thin carbonate lined fractures.
14.30	18.30		Metasedimentary sequence. Mostly mica schist, but also horizons of marble. Foliation approximately 50°-60°. Well sheared from 16.50 till 16.90 and from 17.50 till 17.70. Fractures and shear-zones mostly parallel and subparallel foliation.
18.30	18.60		Marble
18.60	20.95		Well-foliated mica schist (foliation 55°)
20.95	29.40		Granite. Rich in quartz and variable reddish alteration. Occasionally rich in chlorite. Aspy on some fractures and as scattered grains.
29.40	30.90		Well-foliated mica schist. Foliation approximately 60°.
30.90	32.60		Marble
32.60	32.95		Granite, dominantly massive.
32.95	33.35		Marble
33.35	33.60		Granite
33.60	34.80		Marble. From 34.60 till 34.80 good skarn mineralization, rich in diopside and garnet.
34.80	37.00		Granite. Dominantly massive with no major shear or fracture zones.
37.00	41.45		Marble 37.00 - ab. 40.00 Marble with fragments of mica schist. Foliation 57°. 40.00 - 41.45 Marble with skarn mineralization.
41.45	41.80		Well fractures mica schist.
41.80	42.25		Marble
42.25	42.60		Granite
42.60	42.85		Marble
42.85	43.05		Granite
43.05	44.30		Marble
44.30	47.20		Mica schist 45.00 - 45.80 Extremely well sheared. 45.80 - 47.20 Well fractures and brecciated. Dominating fractures are 27°
47.20	54.15		Marble 47.20 - ab 49.10: breccia texture. 49.10 - 54.15 foliated marble

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 30 m N - 16 m E BEARING: 082° DIP: 65° HOLE NO. 6/81 SHEET NO. 2

LOGGED BY: PW / KK STARTED: May 81 PROPERTY Kolsvik, Bindal.

CASING: FINISHED: May 81

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
54.15	56.90		Granite. Dominantly massive with no major shear or fracture, but some crushing near the 56.90 contact.
56.90	65.60		Mica schist. 56.90 - 62.70 Well foliated mica schist. Foliation variable between 25° and 60°. 62.70 - 63.00 Shear zone 63.50 - 63.70 Shear zone 64.80 - 65.00 Skarn mineralization.
65.60	67.20		Granite
.20	68.85		Well-fractured mica schist.
68.85	69.95		Brecciated granite. Chlorite and epidote on breccia texture.
69.95	70.20		Well fractured mica schist
70.20	75.10		Granite. Local brecciation, particularly near the contacts.
75.10	78.10		Mica schist. Foliation 70°.
78.10	78.80		Brecciated granite.
78.80	79.30		Mica schist, fractured near the contact zones.
79.30	90.00		Granite 79.30 - 80.00 Brecciated granite 80.00 - 90.00 Massive medium grained granite.
		90.00	End of hole.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 254 m S - 85 m E BEARING: 060° DIP: 40° HOLE NO: 8/81 SHEET NO: 1

LOGGED BY: ØM STARTED: PROPERTY: Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
0	2.00		Overburden
2.00	13.20		Granite 2.00 - 10.00 Medium grained granite. Some fractures and thin quartz veins are cutting. Aspy on some fractures, also pyrite. 10.00 - 10.25 Granite rich in quartz. Some Aspy mineralizatior 10.25 - 13.20 Medium grained granite. Some fractures and quart veining. Good Aspy-mineralization on fracture at 11.10 m.
13.20	16.10		Gneiss. Gneiss rich in biotite, varying from augen to banded appearance. Foliation (40°-50°) is cut by quartz-veins near the 13,20 contact. Some pyrite is seen in gneiss.
16.10	16.80		Granite rich in muscovite. Disseminated pyrite on Aspy on quartz vein near 16.80 contact.
16.80	17.10		Augen gneiss.
17.10	18.70		Granite. Muskovite-granite cut by quartz veins. Aspy, py, cpy on vein parallel core.
18.70	19.70		Gneiss 18.70 - 19.40 Foliated banded gneiss (foliation 40°) 19.40 - 19.70 Finegrained, biotite rich gneiss. Foliated diorite (foliation 25°).
19.70	20.00		Loss of core
20.00	20.15		Finegrained dioritic gneiss.
20.15	20.65		Medium grained granite, white in colour.
20.65	27.90		Augen gneiss. Good foliation (45°). Most fractures parallel/ subparallel foliation. Disseminated pyrite and Aspy, Aspy espe cially in quartz-eyes.
27.90	28.75		Granite, white in colour.
28.75	32.30		Foliated augen gneiss, cut by small granite veins, Py on some fractures.
32.20	33.00		Granite. Aspy at the 33.00-contact.
33.00	34.80		Banded, fine grained gneiss.
34.80	35.05		Granite. i.e. vein.
35.05	46.70		Foliated banded gneiss. Quartz/fld. bands are folded. Alte-ration (zeolite mineralization) along some fractures. Py on fractures. From 35.5 - 40.0 Gneiss. Mostly augen texture, but also more fine grained horizons. Foliation varying from 10° - 60°. Ab. 41.00: massive Aspy. Quartz vein cutting nearly parallel foliation.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 254 m S - 85 m E BEARING: 060° DIP: 40° HOLE NO: 8/81 SHEET NO: 2

LOGGED BY: ØM STARTED: PROPERTY Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
46.70	50.05		Granite rich biotite
			At 46.80 - 47.15 Quartz
			Aspy on fracture at 49.80 m.
			At 50.0 Quartz vein. Aspy mineralization in 50.05 contact zone
50.05	54.45		Gneiss. Granite veins are cutting foliation.
54.45	54.80		Granite.
			54.45 - ab 55.50 Granite containing some biotite. Some Aspy veini on fractures and near 54.45 contact.
			ab 55.50 - 55.80. Brecciated granite. Little dark minerals. Aspy on breccia texture. Visible Au at 55.65.
55.80	58.55		Gneiss
			55.80 - 57.00 Brecciated and fractured augen gneiss.
			57.00 - 58.55 Fractured augen gneiss, no breccia texture.
58.55	59.40		Brecciated granite. Late fractures are cutting breccia texture. Good Aspy mineralization. Visible Au at 58.90.
59.40	59.90		Foliated augen gneiss (foliation 30°). Contacts are crushed.
59.90	64.55		Granite.
			59.90 - 60.70: Weak breccia tex. in quartz/fld-rich granite. Scattered Aspy mineralization.
			60.70 - 61.50 More biotite, no brecciation.
			61.50 - 64.55 Well-fractured and weakly brecciated granite. Some Aspy mineralization.
64.55	65.05		Fine grained and foliated dioritic gneiss.
65.05	71.45		Granite
			65.05 - 67.10 Quartz/fld-rich granite. Breccia texture at contacts.
			67.10 - 67.50 Massive granite
			67.10 - 71.45 Brecciated quartz/fld-rich granite. Aspy mineralization. Occasionally rich in epidote.
71.45	74.00		Brecciated and sheared augen gneiss.
74.00	74.20		Fractured granite.
74.20	74.40		Sheared augen gneiss.
74.40	77.70		Brecciated and sheared granite. Aspy, especially from 74.40 - 76.0
77.70	78.20		Sheared augen gneiss.
78.20	78.60		Granite containing fragments of gneiss show brecciations. Only epidote chlorite on breccia texture.
78.60	78.90		Sheared augen gneiss.
78.90	79.30		Brecciated granite. Scattered Aspy minerals

A/s SULFIDMALM

DIAMOND DRILL RECORD

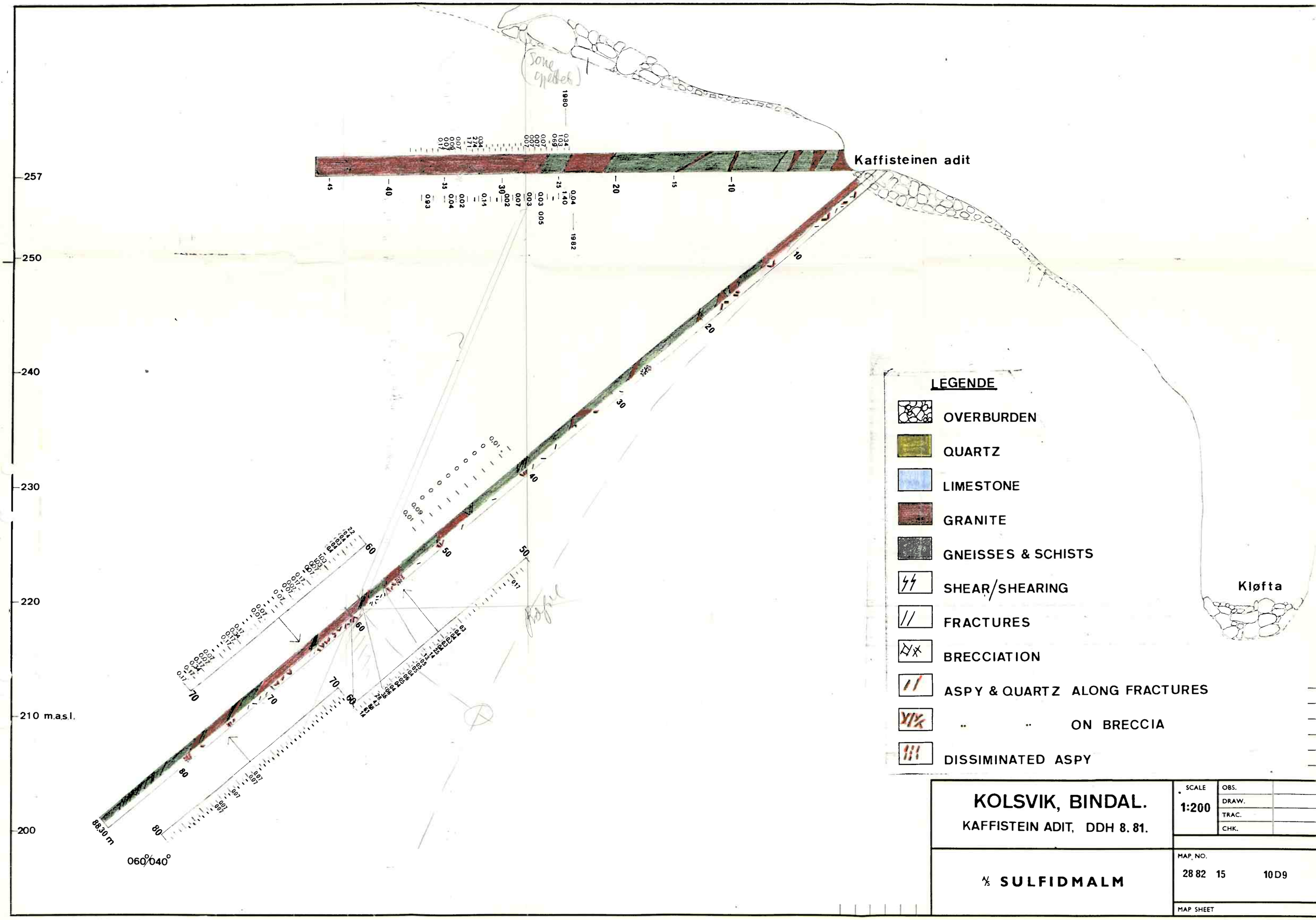
LOCATION: 254 m S 85 m E BEARING: 060° DIP: 40° HOLE NO: 8/81 SHEET NO: 3.

LOGGED BY: ØM STARTED: PROPERTY Kolsvik, Bindal

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
79.30	82.00		Foliated augen gneiss. Foliation varying from 5° till 30°. Quartz veins cutting foliation show weak brecciation, otherwise little deformation.
	88.30		Changing between fine grained dioritic gneisses and augen gneiss.
			82.00 - 84.00 Fine grained, biotite rich dioritic gneiss. Some quartz veins. Fracturing parallel core.
			84.00 - 84.25 Augen gneiss
			84.25 - 84.60 Fine grained dioritic gneiss.
			84.60 - 85.35 Augen gneiss. Well sheared last 30 cm. Fractures parallel core.
			85.35 - 85.60 Fine grained dioritic gneiss.
			85.60 - 86.00 Foliated augen/banded gneiss. Foliation 5°, and some fractures parallel core.
			86.00 - 86.50 Fine grained dioritic gneiss.
			86.50 - 88.30 Augen gneiss.
		88.30	End of hole.



KOLSVIK, BINDAL.

KAFFISTEIN ADIT, DDH 8.81.

⅛ SULFIDMALM

SCALE	1:200
OBS.	
DRAW.	
TRAC.	
CHK.	
MAP NO.	28 82 15 10D9
MAP SHEET	

A.s Tørrkopi. 2000 A 2. E 9 gl. 10-71. Sentrum Trykkeri.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 333 m S - 123 m E BEARING: 052° DIP: 34.9° HOLE NO. 9/81 SHEET NO. 1.

LOGGED BY: ØM STARTED: PROPERTY Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
0	1.80		Overburden
1.80	2.20		Granite, rich in biotite. Rather massive.
2.20	2.40		Fine grained dioritic gneiss.
2.40	14.45		Granite, rich in biotite. Some crushing at 3.30 contact.
14.45	18.30		Loss of core. 2
18.30	20.00		Granite
20.00	20.35		Loss of core.
20.35	21.30		Granite. 20.35 - 20.75 Some fracturing 20.75 - 21.30 Rather massive.
21.30	21.55		Loss of core.
21.55	22.10		Granite. Massive and rich in biotite.
22.10	22.55		Loss of core.
22.55	35.00		Granite 22.55 - 23.50 Some fracturing 23.50 - 27.75 Massive and dark granite. 27.75 - 30.00 Less dark minerals as previous section. Some weak brecciation and green epidote mineralization. 30.00 - 35.00 Massive granite, but varying biotite content, decreasing from ab. 33.00.
35.00	36.00		Loss of core 2
36.00	36.95		Massive granite
36.95	38.15		Loss of core ?
38.15	39.00		Massive granite.
39.00	40.15		Loss of core. 2
40.15	41.55		Granite. 40.15 - 40.20 Breccia texture in quartz rich granite. Aspy on the texture. 40.20 - 41.50 Aspy on fractures in grey granite. 41.50 - 41.55 Brecciated granite. Rich in quartz and Aspy.
41.55	42.00		Loss of core.
42.00	42.90		Granite. Varying breccia texture in quartz/fld rich granite. Aspy on breccia texture and fractures 90° core.
42.90	45.00		Loss of core 2
45.00	45.80		Brecciated granite 45.00 - 45.70 Weak brecciation and scattered Aspy mineralization 45.70 - 45.80 Aspy on breccia textures and fractures 70° core.

A/S SULFIDMALM

DIAMOND DRILL RECORD

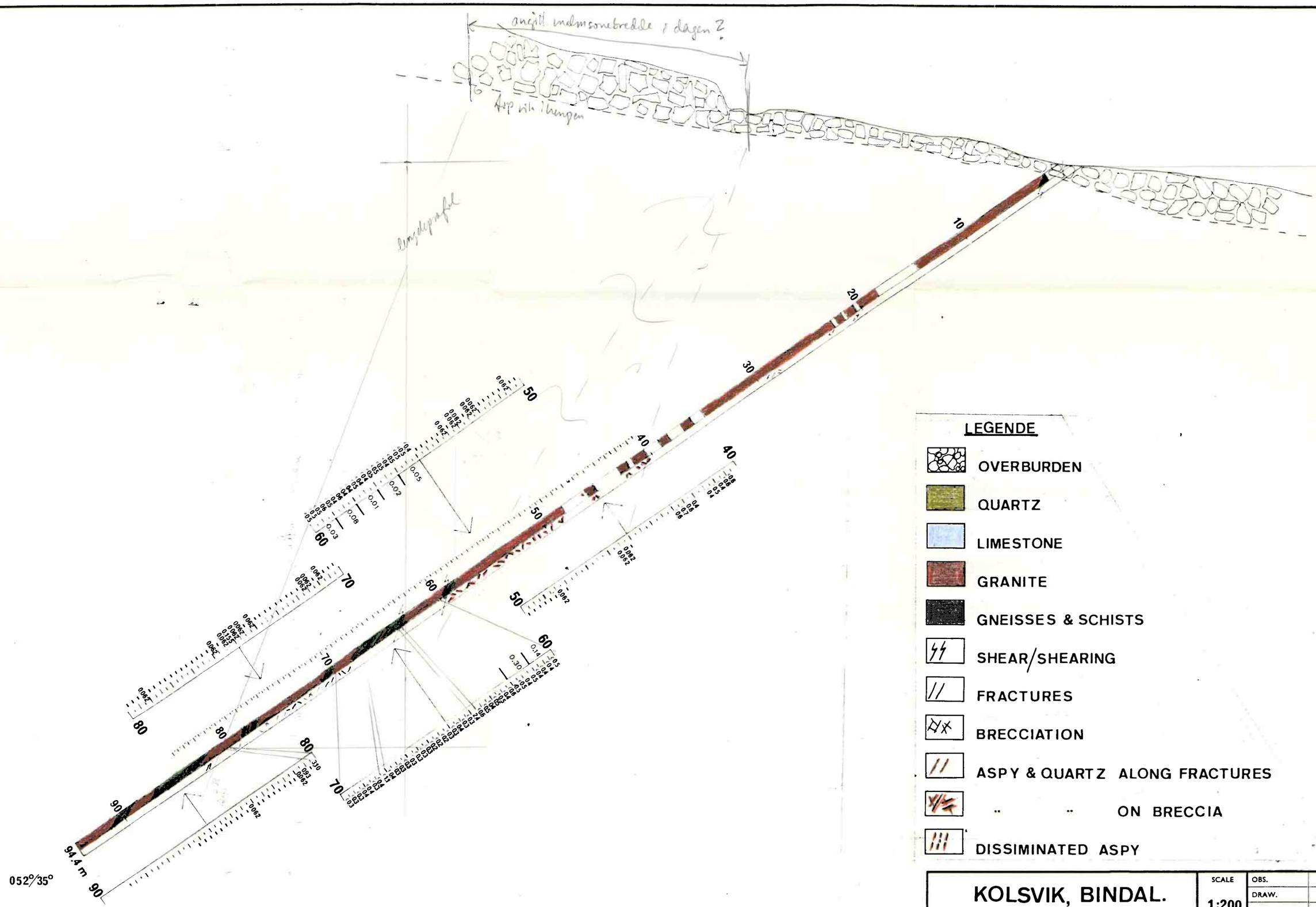
LOCATION: 333 m S - 123 m E BEARING: 052° DIP: 34.9° HOLE NO: 9/81 SHEET NO 2.

LOGGED BY: ØM STARTED: PROPERTY Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
45.80	48.00		Loss of core
48.00	59.10		Granite
			48.00 - 48.80 Biotite rich granite. Disseminated Aspy.
			48.80 - 51.60 Brecciated granite. Aspy on breccia texture and fractures.
			51.60 - 52.30 No breccia texture and Aspy.
			52.30 - 59.10 Good breccia texture and Aspy mineralization. Best mineralization on fractures 90° core.
59.10	60.15		Extremely sheared augen gneiss. (Maybe the F-1 fault ?)
60.15	64.00		Granite
			60.15 - 62.00 Brecciated granite with Aspy
		Zone ?	62.00 - 64.00 Brecciated granite, extremely rich in quartz. Aspy mineralization.
64.00	66.20		Foliated augen gneiss. Some fractures parallel/subparallel foliation. Highly sheared at upper contact.
66.20	66.40		Granite 64,8 footwall ? ras / hill
66.40	68.50		Foliated augen gneiss. Cut by quartz veining containing scattere Aspy. Shear near the lower contact.
68.50	71.10		Brecciated quartz rich granite. Good Aspy mineralization.
71.10	71.70		Sheared, fine grained dioritic gneiss.
71.70	78.10		Brecciated granite. Generally little or no Aspy mineralization, apart from 74.50 - 75.00 interval.
78.10	78.30		Fine grained dioritic gneiss.
78.30	78.60		Granite, rather massive.
78.60	79.10		Fine grained dioritic gneiss.
79.10	83.00		Granite showing varying brecciation and Aspy mineralization.
			79.10 - 80.00 Weak brecciation, no Aspy mineralization. Texture cut by quartz veining.
		Zone ?	80.00 - 81.00 Breccia texture with Aspy.
			81.00 - 82.70 Weak brecciation, scattered Aspy mineralization.
			82.70 - 83.00 Epidote and zenolite mineralization. Greenish colour.
83.00	87.50		Foliated dioritic gneiss. Foliation 20°.
87.50	90.50		Granite, rather massive. Some pyrite crystals.
90.50	91.35		Fine grained dioritic gneiss. Rich in pyrite. Cut by granite veining.
91.35	94.60		Granite. Rather massive. From 92.20 extremely rich in biotite.
		94.60	End of hole.



LEGENDE

- OVERBURDEN
- QUARTZ
- LIMESTONE
- GRANITE
- GNEISSES & SCHISTS
- SHEAR/SHEARING
- FRACTURES
- BRECCIATION
- ASPY & QUARTZ ALONG FRACTURES
- " " ON BRECCIA
- DISSIMINATED ASPY

KOLSVIK, BINDAL.

DDH 9

SCALE 1:200

OBS. | DRAW. | TRAC. | CHK.

MAP NO. 28 82 D12 10D6

⅛ SULFIDMALM

MAP SHEET

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 318 m S - 102 m E BEARING: 062° DIP: 36° HOLE NO: 10/81 SHEET NO: 1.

LOGGED BY: ØM STARTED: PROPERTY Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
0	3.95		Overburden
3.95	7.30		Foliated augen gneiss, rich in biotite. Foliation 35°.
7.30	7.60		Granite, rather massive.
7.60	12.10		Foliated augen gneiss. Foliation between 30° and 0°.
12.10	12.50		Granite. Contacts (35°) are cutting gneiss foliation.
12.50	14.05		Foliated augen gneiss. Foliation 25°.
14.05	15.50		Granite. Contacts (35°) are parallel gneiss foliation.
15.50	16.70		Foliated augen gneiss. Foliation between 15° and 25°.
16.70	19.60		Granite. More biotite near the lower contact.
19.60	20.20		Gneiss, more banded that previous sections.
20.20	26.30		Granite with quartz, some fractures.
26.30	31.00		Banded gneiss. Foliation 15°-45°. Some fractures parallel/sub-parallel foliation. Slickensides can be seen on some fracture surfaces.
31.00	31.45		Granite.
31.45	40.40		Foliated augen gneiss. Foliation 15°-45°. Gneisses cut by granite veining. From 37.00 some Aspy on late fractures.
40.40	41.30		Brecciated granite. Good Aspy mineralization. Dominating direction of mineralization is 50°.
41.30	43.00		Brecciated quartz. Epidotite on breccia texture.
43.00	47.10		Fine grained dioritic gneiss. Gneiss is fractured and rich in biotite. Foliation 45°-30°.
47.10	48.50		Brecciated granite. Pink alteration colour. Good Aspy mineralization between 48.00 - 48.30, especially on 65° fractures.
48.50	49.75		Foliated augen gneiss.
49.75	53.70		Granite. In places red alteration colour. From 51.00 two distinctive directions of fractures (both 45°) make a brecciated texture. Good Aspy on all fracture. Lower contact is highly fractured.
53.70	54.00		Highly sheared gneisses.
54.00	57.30		Brecciated quartz. Good Aspy mineralization. In places massive Aspy veining (thickness 5 cm).
57.30	82.60		Granite. Usually brecciated but varying Aspy mineralization. In places quartz rich. Occasionally deformed fragments of augen gneisses. Lower two meters green epidote & chlorite mineralization on breccia textures and little Aspy mineralization.
82.60	83.20		Highly fractured and foliated augen gneiss.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 318 m S - 102 m E ØM BEARING: 062° DIP: 36° HOLE NO: 10/81 SHEET NO: 2

LOGGED BY: STARTED: PROPERTY: Kolsvik, Bindal.

CASING: 32 mm FINISHED:

CORE SIZE: TESTS (CORRECTED):

From	To		Description
83.20	105.60		Granite. 83.20 - 88.00 Brecciated, quartz rich granite, rich in chlorite & epidote and just spots of Aspy. 88.00 - 90.00 Granite with sericite. Aspy on some fractures. 90.00 - 98.00 Dark granite (rich in biotite) showing foliation (foliation 30°) 98.00 - 100.00 Dominantly white in colour. 100.00 - 104.50 Granite, rich in quartz. Some spotted Aspy minera 104.50 - 105.60 Dark granite, cut by white granite veining.
105.60	106.35		Highly sheared, green looking augen/banded gneiss. Rich in epidot & chlorite.
106.35	112.50		Granite. 106.35 - 110.00 Dark granite cut by light granite veining. 110.00 - 112.50 Biotite rich granite showing weak foliation (foliation 35°).
112.50	112.70		Foliated dioritic gneiss.
112.70	144.00		Granite 112.70 - 115.10 Foliated dark granite 115.10 - 117.00 Light granite. Higher and lower contacts cut fol ation in darker granite. 117.00 - 144.00 Foliated dark granite. Foliation 40°-45°. At 119.00 - 119.10 Aspy on fractures cutting foliation.
	144.00		End of hole.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 318 m S 102 m E BEARING: 062° DIP: 55° HOLE NO: 11/81 SHEET NO: 1.

LOGGED BY: ØM STARTED: PROPERTY Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
0	4.40		Overburden
4.40	26.90		Foliated augen gneiss. Foliation 10°-30°. Foliation cut by discordant granitic veins rich in pyrite.
			Fine grained, biotite rich dioritic gneiss. Pyrite mineralization. Lower and upper contacts are parallel foliation.
51.05	61.90		Granite. Some fractures, often filled with quartz and rich in musscovite, chlorite and epidote. From ab. 55.00 Aspy veining on fractures.
61.90	75.20		Foliated augen gneiss. Foliation ab. 25°. Weakly foliated.
79.20	82.60		Granite 79.20 - 80.70 Some fractures parallel/subparallel core. Disseminate Aspy. 80.70 - 82.60 Breccia texture in quartz-fld rich granite. Aspy mineralization seems to be concentrated on ≈ 22° direction
82.60	89.40		Foliated augen gneiss. Fractures at 82.60 contacts and at 85 and 86
89.40	101.50		Granite 89.40 - ab. 94.00 Rather massive granite. 94.00 - 97.00 Breccia texture and more quartz than previous section Aspy from 95.00 - 97.00 in well fractured zone.
101.50	102.75		Foliated augen gneiss. Foliation 8°. Some Aspy mineralization on crosscutting fractures.
102.75	108.35		Granite. Breccia texture and also foliated in more biotite rich zones. Dominating direction of fractures and mineralization is 65°.
108.35	117.50		Quartz. Breccia texture over the whole sequence, but varying Aspy mineralization. 108.35 - 110.00 Poor mineralization 110.00 - 112.50 Good mineralization, especially from 116.50 m. Lower ½ m nearly massive Aspy.
117.50	120.00		Extremely sheared and broken augen gneiss.
120.00	120.40		Brecciated granite. Rich in quartz and good Aspy mineralization.
120.40	120.80		Highly sheared augen gneiss. Disseminated Aspy mineralization.
120.80	121.50		Brecciated granite. No mineralization.
121.50	134.40		Foliated augen gneiss. Foliation 6° - 38°. Some thin shearzones. Most fractures subparallel core. Occasionally rich in py, but also traces of Aspy.
	135.05		

A/s SULFIDMALM

DIAMOND DRILL RECORD

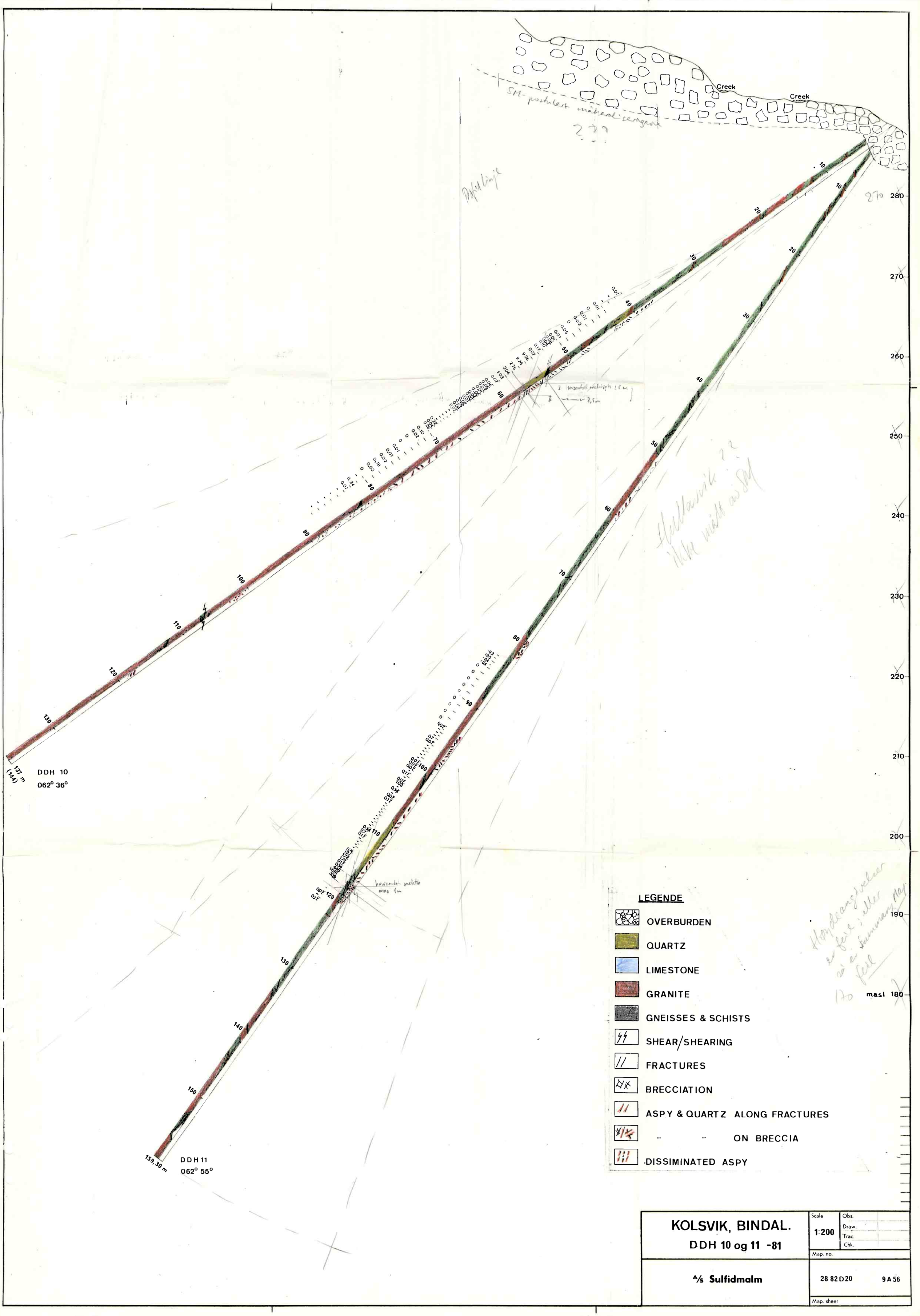
LOCATION: 318 m S 102 m E BEARING: 062° DIP: 55° HOLE NO: 11/81 SHEET NO: 2

LOGGED BY: ØM STARTED: PROPERTY Kolsvik, Bindal.

CASING: 32 mm FINISHED:

CORE SIZE: TESTS (CORRECTED):

From	To		Description
135.05	139.75		Granite containing fragments of gneisses. Aspy on fractures.
139.75	140.10		Foliated augen gneiss
140.10	141.30		White looking granite
141.30	145.05		Foliated augen gneiss. Foliation 20°-25°.
145.05	145.40		Granite, rich in quartz. Some Aspy.
145.40	147.10		Foliated augen gneiss. Foliation 28°. Aspy mineralization in some discordant fractures. Also some Aspy at lower contact.
147.10	152.00		Granite. Strong variation in quartz and biotite content. Brecciated and mineralized from 147.50-147.80. In lower part foliated granite.
152.00	154.05		Foliated augen gneiss
154.05	156.50		Granite. Rather massive.
156.50	156.90		Fine grained, foliated dioritic gneiss.
156.90	159.30		Massive granite.
		159.30	End of hole.



KOLSVIK, BINDAL.

DDH 10 og 11 -81

	Scale 1:200	Obs.	
		Draw.	
		Trac.	
		Chk.	
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A/s Sulfidmalm	28 82 D 20		9 A 56
	Map. sheet		

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 160 m S 57 m E BEARING: 072° DIP: 38° HOLE NO: 12/81 SHEET NO: 1

LOGGED BY: ØM STARTED: PROPERTY Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
0	5.00		Overburden
5.00	30.50		Granite. Strong variation in biotite content. Darker variants show weak foliation. Scattered Aspy mineralization, mostly isolated grai on late fractures.
			Quartz. at 30.50 - 30.80.
30.80	46.80		Gneisses. 30.80 - 37.50 Foliated augen gneiss, foliation 10°-25°, cut by quar /granite veining. Most veins parallel/subparallel foliation. Near 30.80 contact a lot of epidote mineralization. Traces of Aspy in quartzveins. 37.50 - 40.00 Foliated augen gneiss 40.00 - 42.30 Deformed and brecciated augen gneiss. Breccia textur best developed in quartz rich parts, but also quartz eyes show de-formation textures. Occasionally lesser shear/shearzones. Very little Aspy mineralization, but visible Au near 40.00 contact. 42.30 - 46.80 Foliated augen gneiss. Foliation 35°-50°.
46.30	47.00		Granite
47.00	52.70		Foliated augen gneiss, foliation 35°-50°.
52.70	54.60		Granite. Scattered Aspy, mostly related to late fracturing.
54.60	60.50		Dioritic gneiss. Gneisses are rich in biotite and show good foliati Some quartz/fld.-veins cutting the foliation.
60.50	60.80		Transition to augen gneiss at 60.0 m. Granite, rather rich in biotite.
60.80	72.90		Gneisses, mostly augen gneisses, but some horizons of fine grained biotite rich rocks. From 67.50 - 69.00 extremely sheared augen gneiss. foliation 25° - 35°. At 61.70 m granitic vein.
72.90	74.45		Granite. Rich in quartz and showing weak breccia texture. Some Aspy and quartz filling on 28° fractures.
74.45	85.10		Foliated augen gneiss, foliation 5° - 30°. Occasionally good chlorite & epidote mineralization, especially related to fractures. Near lower contact some skarn minerals. Strong shearing latest 0.65 m.
85.10	102.5		Granite. 85.10 - ab 88.00 Quartz rich granite showing breccia texture with Aspy. Aspy is not related to any special direction, but chlorite & epidote are concentrated on 57° - 62° fractures. Upper contact strongly sheared. 88.00 - 99.00 Brecciated granite containing some Aspy and chlorite & epidote mineralization. 99.00 - 102.50 Quartz rich granite with good brecciation and Aspy mineralization.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 160 m S 57 m E BEARING: 072° DIP: 38° HOLE NO: 12/81 SHEET NO: 2.

LOGGED BY: Ø.M. STARTED: PROPERTY Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
102.50	113.40		Gneisses, probably a metasedimentary sequence varying from augen gneisses till strongly sheared/deformed dioritic gneisses. Some breccia texture in augen gneisses near upper contact. From 112 m granitic veining, nearly parallel core.
113.40	119.30		Granite. Varying quartz content and always showing brecciation. Strong fracturing with 50°-60° as dominating direction, but in latest 1.5 m ≈ parallel. No Aspy mineralization on breccia textures.
119.30	121.50		Foliated dioritic gneiss. Foliation 28°.
121.50	121.80		Granite
121.80	123.30		Dioritic gneiss; no foliation.
123.30	124.45		Granite.
		124.45	End of hole.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 116 m S 57 m E BEARING: 072° DIP: 20° HOLE NO: 13/81 SHEET NO 1

LOGGED BY: Ø.M. STARTED: PROPERTY Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
0	6.00		Overburden
6.00	10.50		Granite rich in mica, specially biotite but also muscovite.
10.50	18.60		Gneisses. Strongly varying textures from fine grained till augen gneisses. All textures show foliation (60°-70°) Occasionally skarn mineralization. Also zones rich in epidote and chlorite.
18.60	18.80		Granite. Some scattered Aspy, usually together with py.
18.80	20.70		Foliated augen gneiss. Foliation 40°.
20.70	21.15		Granite. Aspy veining near upper contact.
21.15	25.70		Gneiss. Texturally strong variation (as previous section), but all variants show foliation (55°). Granite veining cut this foliation, and from 22.50 till 24.70 much diopside and garnet mineralization can be seen.
25.70	29.50		Granite. Rich in biotite and some disseminated Aspy, mostly near lower contact.
29.50	31.10		Dioritic gneiss. Fine grained, showing good foliation (40°) and containing py minerals.
31.10	33.65		Granite. Weakly brecciated but Aspy mineralization on breccia texture only from 33.40 m. Upper contact strongly deformed. Some Aspy on late fractures and visible Au on quartz vein at 32.60.
33.65	36.00		Foliated augen gneiss (Foliation 20°) Some Aspy over 10 cm near upper contact.
36.00	36.20		Granite. Weak breccia texture with scattered Aspy mineralization. Near lower contact, and parallel this, 1 cm Aspy.
36.20	36.65		Augen gneiss showing skarn mineralization.
36.65	36.80		Granite. Showing some disseminated Aspy.
36.80	48.70		Foliated augen gneiss, foliation 50° - 60°. From 37.75 extremely rich in quartz and showing brecciation texture without mineralization.
			At 38.60 shearing. Foliation 55°.
			At 40.9 - 41.5 quartz. Massive, coarse grained Aspy on fractures. Dominating direction ab. 20°. Mineralization seems to cut a weak breccia texture without mineralization. Also some py can be seen.
			From 41.0 - 48.7 a fine grained, biotite rich augen gneiss. Foliation 50° - 60°. Aspy mineralization on some fractures parallel/subparallel foliation. Also some granite veining cutting gneisses nearly parallel foliation.
48.70	52.95		Granite. Poor in mica, but rich in chlorite and epidote, giving a green colour. Only disseminated Aspy.
52.95	58.70		Gneisses. Dioritic texture and no foliation. Fracturing at lower contact.

A/S SULFIDMALM

DIAMOND DRILL RECORD

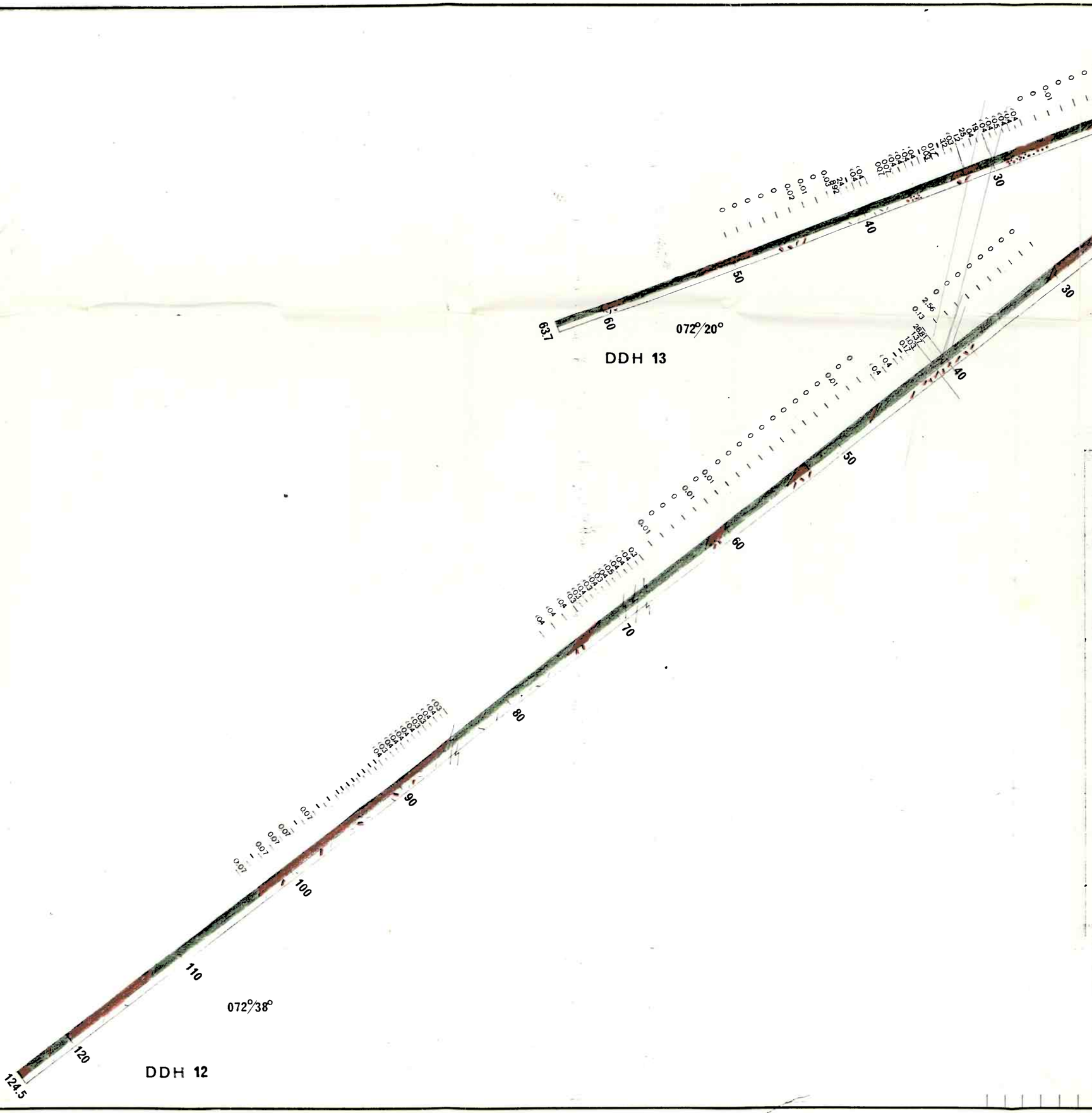
LOCATION: 160 m S 57 m E BEARING: 072° DIP: 20° HOLE NO: 13/81 SHEET NO. 2

LOGGED BY: Ø.M. STARTED: PROPERTY Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
58.70	60.30		Brecciated granite. Mostly epidote on breccia texture and some scattered Aspy on fractures.
60.30	63.70		Augen gneiss, occasionally sheared.
		63.70	End of hole.



LEGENDE

- OVERBURDEN
- QUARTZ
- LIMESTONE
- GRANITE
- GNEISSES & SCHISTS
- SHEAR/SHEARING
- FRACTURES
- BRECCIATION
- ASPY & QUARTZ ALONG FRACTURES
- " " ON BRECCIA
- DISSIMINATED ASPY

KOLSVIK, BINDAL.

DDH 12, 13, -81.

SCALE 1:200

OBS.
DRAW.
TRAC.
CHK.

⅛ SULFIDMALM

MAP NO. 28 82 D 13 10D7

MAP SHEET

A.s Tørrkopi. 2000. A 2. E 9 gl. 10-71. Sentrum Trykkeri.

A/s SULFIDMALM

DIAMOND DRILL RECORD

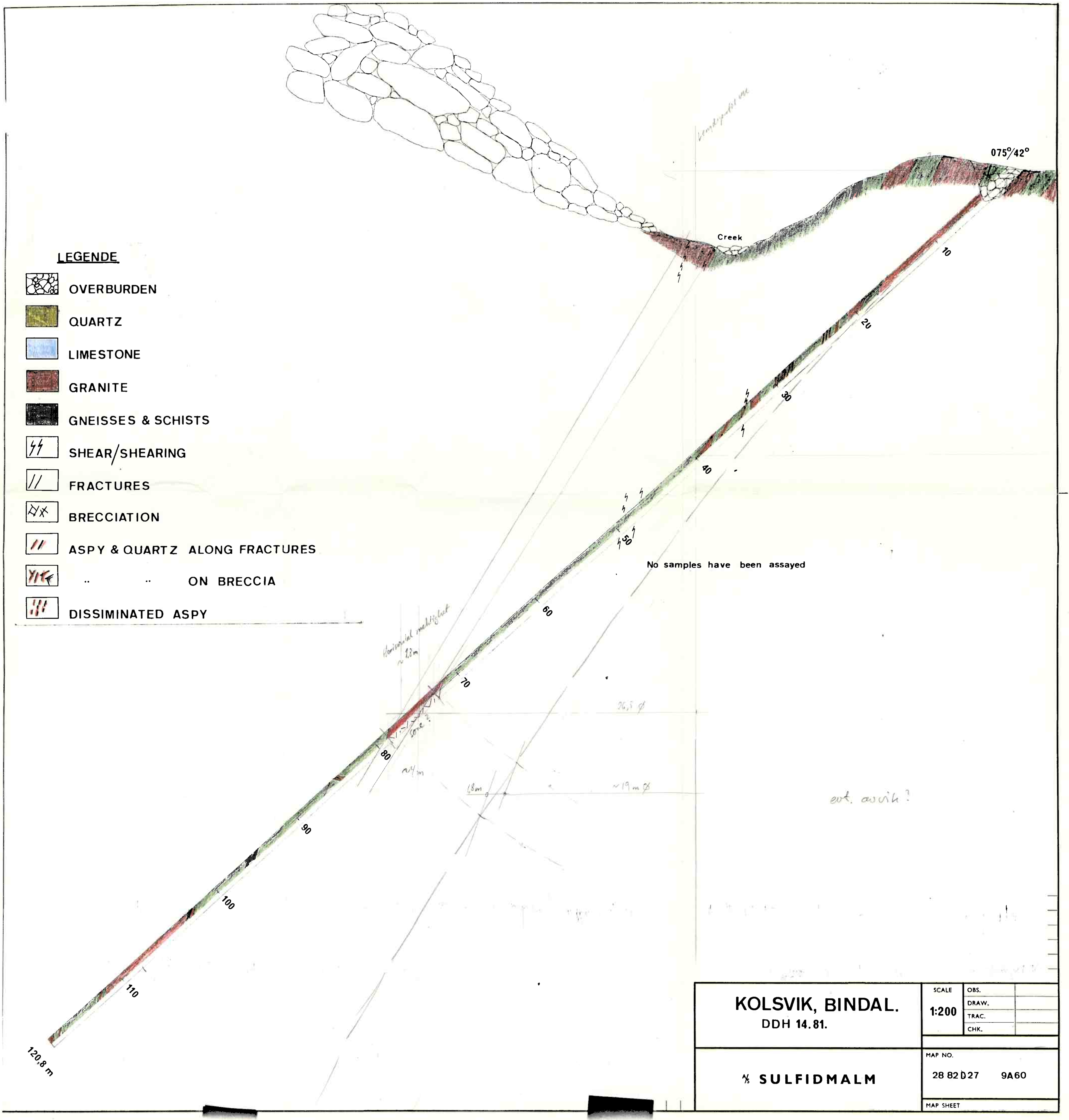
LOCATION: 377 m S - 185 m E BEARING: 075° DIP: 42° HOLE NO: 14/81 SHEET NO: 1

LOGGED BY: Ø.M. STARTED: PROPERTY Kolsvik, Bindal

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
0	4.00		Overburden
4.00	17.60		Granite. Massive granite with some variable biotite content.
17.60	19.55		Mica schist. Fine grained and rich in biotite. Granite veining is cutting a weak foliation (55°)
19.55	21.00		Granite. Some alteration (zeolitization) along fractures.
21.00	29.70		Gneiss. Mostly fine grained showing a weak biotite foliation, but occasionally augen gneiss. Foliation 45°-55°. Between 22.30 - 24.25 and 28.30 - 29.70 granitic veins and cutting gneiss.
29.70	30.35		Granite.
30.35	32.20		Gneiss. Foliation 18°. Some py can be seen.
32.20	33.25		Granite.
33.25	34.35		Augen gneiss, showing foliation (10°). Some granite veining, nearly parallel ore. Lower contact, from 34.00, is crushed.
34.35	34.75	zone?	Granite. Breccia texture containing epidote and chlorite.
34.75	37.30		Foliated dioritic gneiss (foliation 37°) cut by granite veining.
37.30	37.80		Granite. Rich in biotite and showing foliation (35°).
37.80	38.25		Gneiss
38.25	40.20		Granite, rather massive.
40.20	72.75		Augen gneiss. Mostly changing between augen and banded textures, but occasionally also fine grained dioritic rocks. Foliation 15°-25°
72.75	78.95	zone?	Granite. Very rich in quartz, in places pure quartz. Usually brecci texture, but only scattered Aspy mineralization can be seen.
78.95	86.90		Augen gneiss. As previous section changing between augen - and bande textures. Foliation 10°-40°. From 84.10 - 84.50 cut by granite veining.
86.90	100.00		Gneiss, rich in biotite and showing weak foliation (foliation 20°-50°). Occasionally much chlorite and epidote. Upper 3 m cut by quartz veining. 95.40 - 95.60 granite 96.25 - 96.55 granite showing weak breccia texture. Traces of Aspy on a single fracture.
100.00	103.00		Gneiss.
103.00	103.45		Granite.
103.45	103.90		Gneiss.
103.90	114.00		Granite. Little biotite, giving a bright colour. From ab. 110 m fragments of augen gneiss.
114.00	114.80		Gneiss, showing foliation (47°)
114.80	115.20		Granite.
115.20	120.80		Gneiss, cut by granite veining. Foliation 45° and veining nearly parallel core.
		120.80	End of hole.



075°/42°
Creek
10
20
30
40
50
60
70
80
90
100
110
120,8 m
No samples have been assayed
LEGENDE
OVERBURDEN
QUARTZ
LIMESTONE
GRANITE
GNEISSES & SCHISTS
SHEAR/SHEARING
FRACTURES
BRECCIATION
ASPY & QUARTZ ALONG FRACTURES
.. .. ON BRECCIA
DISSIMINATED ASPY
KOLSVIK, BINDAL.
DDH 14.81.
SCALE 1:200
OBS.
DRAW.
TRAC.
CHK.
MAP NO.
28 82 D27 9A60
A/S SULFIDMALM
MAP SHEET

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 32 m S - 22 m E BEARING: 215° DIP: 44° HOLE NO: 15/81 SHEET NO: 1

LOGGED BY: Ø.M. STARTED: PROPERTY Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To	Description
0	18.60	Overburden
18.60	18.80	Granite. Pink colour. Some epidote and chlorite on fractures.
18.80	21.55	Foliated gneiss. Foliation 40° -60°. Some quartz and Aspy carbonate veining and scattered Aspy on quartz veins. Generally much py in the rock.
21.55	22.45	Granite, rich in biotite. Carbonate veining and red zeolitization on fractures.
22.45	22.80	Greenschist cut by quartz and granite veining, showing breccia texture. Texture rich in epidote, chlorite and py, but also Aspy is observed.
22.80	26.25	Granite. Red colour and breccia texture. Cut by quartz veining concentrated to 43° direction. Good Aspy mineralization on breccia texture. Visible Au at ab 26.10.
26.25	26.90	Greenschist. Rich in biotite but not showing any planar structure.
26.90	31.10	Granite. As previous section. Red in colour, brecciated and cut by quartz veining. Good Aspy mineralization and visible Au at ab 29
31.10	32.05	Quartz. Pure quartz showing deformation structures, but no mineralization.
32.05	33.70	Granite. Red altered, brecciated and cut by quartz veining. Good Aspy mineralization and visible Au at 32.80.
33.70	33.85	Quartz. Deformation textures but no mineralization.
33.85	36.90	Granite. 33.85 - ab. 35.80: Brecciated red granite cut by quartz veining. Good Aspy mineralization on texture. From 33.85 till 33.95 scattered Au mineralization in sheared greenschist and granite. ab. 35.80 - 36.90: Red granite. Good Aspy mineralization, specially on fractures.
36.90	37.10	Quartz. Visible Au at upper contact.
37.10	49.70	Granite. 37.10 - ab. 38.40: Red altered granite, rich in quarts veining. Good Aspy mineralization. ab. 38.40 - 41.69: Decreasing red colour and quartz veining compared with previous sections. Some scattered Aspy minerals associated with fractures. 41.69 - 41.72: Quartz vein. Direction 43° and rich in Aspy. 41.72 - 49.70: Pink granite. Varying quartz veining. Only scattered Aspy mineralization, but widespread zeolitization.
49.70	50.12	Quartz. Scattered Aspy mineralization, specially near lower contact.
50.12	70.60	Granite. 50.12 - 62.70: Pink granite. Some carbonate veining and zeolitization fractures. 62.70 - 63.80: Fractures and brecciated purple granite, Much carbonate and zeolite minerals on fractures and breccia texture.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 32 m S - 22 m E BEARING: 215° DIP: 44° HOLE NO: 15/81 SHEET NO: 2.

LOGGED BY: Ø.M STARTED: PROPERTY Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
			63.80 - 70.60: Pink granite. Only traces of disseminated Aspy mineralization.
70.60	71.60		Gneiss showing biotite foliation. Contains some py.
71.60	72.90		Granite. Purple colour and fracture fillings are mostly carbonate and zeolite minerals but also some quartz.
72.90	75.80		Foliated gneiss (foliation 70°). Granite veining is cutting and this is cut by later quartz veins.
75.80	86.80		Granite. Mostly pink coloured but also more grey variants.
86.80	93.45		Fine grained, biotite rich gneiss. Foliation (76°) is cut by some granite veining.
		93.45	End of hole.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 32 m S - 22 m E BEARING: 215° DIP: 65° HOLE NO: 16/81 SHEET NO: 1.

LOGGED BY: Ø.M. STARTED: PROPERTY Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
0	19.30		Overburden
19.30	22.60		Gneiss. Mostly massive, but weak foliation (73°) near lower contact. Some py.
22.60	65.30		Granite.
			22.60 - 25.00: Pink granite with breccia texture in more quartz-rich parts. Some Aspy on breccia texture but also some disseminated grains.
			25.00 - 30.00: Grey granite, rather massive but some fractures and quartzveining are cutting with ab 70° angle. At lower part some Aspy on fractures.
			30.00 - 36.00: Brecciated granite. Quartz and Aspy on the texture. From 31.70 - 31.80 crosscutting quartz vein. From 35.00 1 m with red coloured zeolitization.
			36.00 - 40.00: Massive granite. Red alteration first 1 m. Only traces of Aspy. Some fracturing nearly vertical cor
			40.00 - 45.00: Massive granite. From 40.22 till 40.30 Aspy mineralization on quartz vein. Some Aspy on fractures first 2 m. Also some quartz veining and chlorite filling in fractures.
			45.00 - 50.00 Zeolite mineralization gives a pink colour. No mineralization but some quartz veining. Some fracture zones can be seen.
			50.00 - 65.30 Rather massive granite, mostly with pink colour. Some Aspy mineralization on quartz veins and fractures first 2.5 meters.
65.30	70.30		Foliated gneiss. Foliation 70°.
			66.60 - 69.90 Granite. Grey and massive.
70.30	71.10		Mica schist showing biotite foliation.
71.10	85.50		Granite. Rich in biotite giving a dark colour. Weak brecciation near lower contact.
85.50	89.95		Foliated gneiss. Foliation 75°.
		89.95	End of hole.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 32 m S - 22 m E BEARING: 215° DIP: 80° HOLE NO: 17/81 SHEET NO: 1

LOGGED BY: Ø.M. STARTED: 15/9 -81 PROPERTY Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
0	12.70		Overburden
12.70	20.00		Carbonate breccia containing fragments of granite and dioritic rocks. Some py in the dioritic fragments. Occasionally weak foliation (50°) and shearzones.
20.00	24.60		Gneiss. Foliation 65° -80°. Occasionally well sheared, specially between 21.50 and 22.00 and near lower contact
24.60	26.45		Granite 24.60 - 25.20 Fracture zone, containing Aspy on 90° fractures. 25.20 - 26.45 Granite showing weak brecciation and disseminated As
26.45	26.55		Mica schist. Foliation 55°, some Aspy, specially along contacts.
26.55	27.05		Granite, rather massive.
27.05	27.40		Mica schist. Foliation 80°.
27.40	30.50		Granite. 27.40 - 30.00 Varying quartz content, and occasionally brecciation and fracturing. Aspy on some fractures. 30.00 - 30.50 Breccia texture with scattered Aspy mineralization.
30.50	31.80		Foliated biotite rich dioritic gneiss. Foliation 50°. At 31.60 cu by quartz vein (direction 30°) containing Aspy and py.
31.80	71.50		Granite. 31.80 - 34.30: Quartz rich granite. First 1 m, much brecciation ar quartz veining. Aspy on breccia texture and quartz veins. In lower part Aspy on fractures. 34.30 - 40.50 Massive grey granite. 40.50 - 42.20: Brecciated pink granite. Good Aspy mineralization, specially concentrated to 50° fractures. 42.20 - 43.70: Massive grey granite. 43.70 - 48.00: Mostly brecciated quartz rich granite, occasionally granite cut by quartz veining (dominating direction 80°). Both breccia texture and veining contain goo Aspy mineralization.. 48.00 - 71.50 Mostly massive grey granite Aspy mineralization onl seen on thin crosscutting quartz veins (at 53.15 - 53.25, 59.75 - 59.77, 59.90 - 59.91, 63.40 - 63.41, 68.25 - 68.26.
71.50	72.35		Fine grained, biotite rich gneiss, foliation 70°. Cut by quartz and granite veining, concordant foliation.
72.35	77.60		Granite. Massive granite, occasionally zeolitization and epidote & chlorite on fractures.
77.60	78.00		Foliated biotite rich gneiss.
78.00	80.60		Massive grey granite.
		80.60	End of hole.

A/S SULFIDMALM

DIAMOND DRILL RECORD

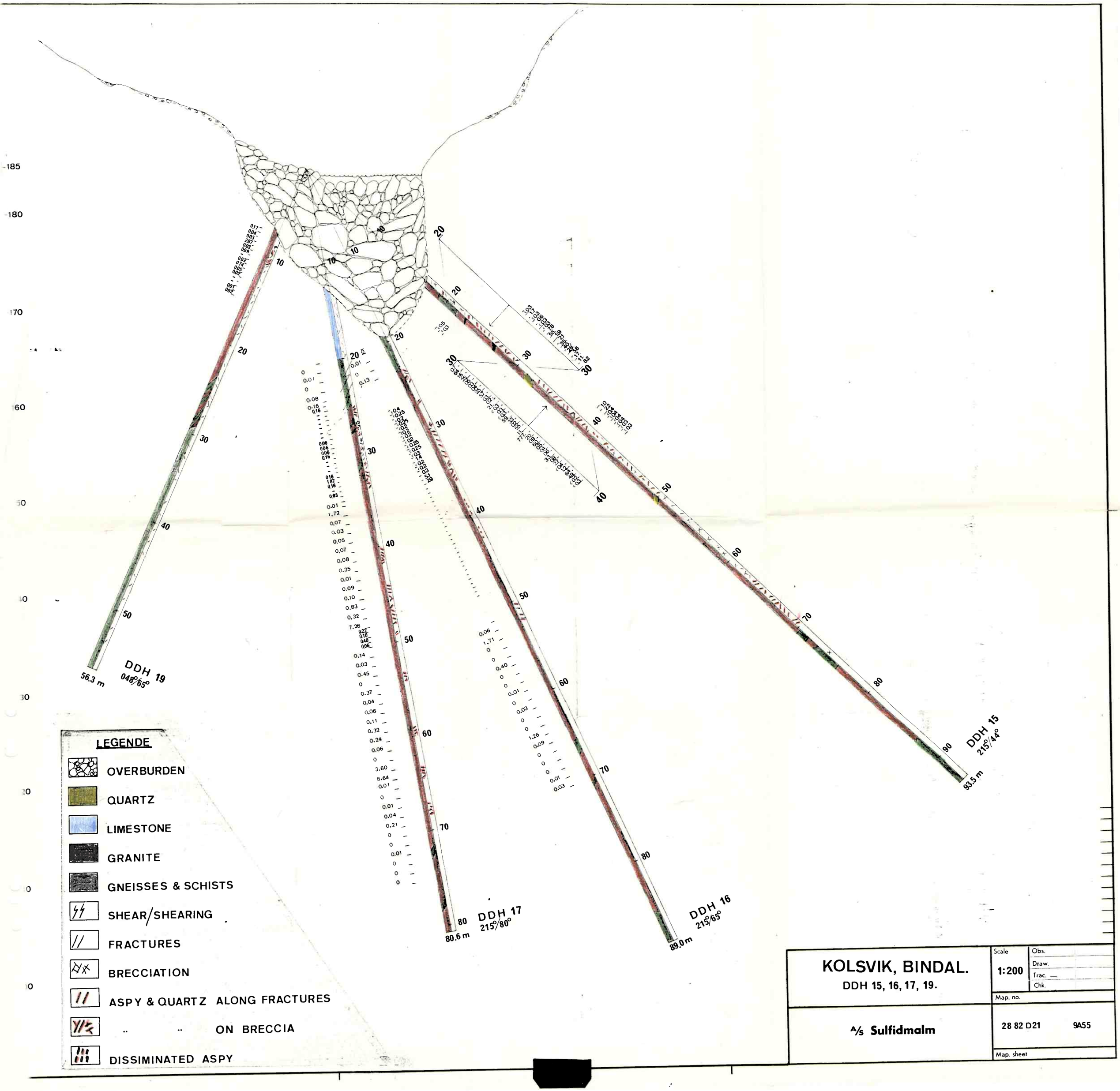
LOCATION 32 m S - 22 m E BEARING: 048° DIP: 66° HOLE NO 19/81 SHEET NO 1

LOGGED BY: Ø.M. STARTED: PROPERTY Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE 32 mm TESTS (CORRECTED):

From	To		Description
0	7.50		Overburden
7.50	23.05		Granite. Varying between yellow and pink colours, due to alteration of feldspars. Plenty of carbonate veining and fractures filled with carbonate and zeolite minerals. Some spots of Aspy can be seen first 5 meters. Occasionally totally fractured; especially in following intervals: 8.30-9.10, 9.90 - 10.00, 10.50 - 10.90, 12.20 - 13.00, 13.45 - 15.40.
[illegible]	24.45		Mica schist. Foliation 20°. The sequence contains plenty of carbonate. Also some crosscutting carbonate veining. Most fractures parallel foliation but some have 70° direction. Some skarn mineralization, particularly near upper contact.
[illegible]	24.90		Granite. As previous section cut by carbonate veining.
24.90	25.20		Mica schist. Foliation 40°.
25.20	25.70		Granite. As previous sections cut by carbonate veining. Great variation in directions of fractures (20°, 40°, 70° and 90°).
26.70	27.00		Mica schist, foliation 50°. Highly sheared. Some epidote on fracture surfaces.
27.00	29.00		Granite, pink in colour. Plenty of carbonate and zeolite filled fractures.
29.00	56.30		Mica schist, extremely rich in carbonate. Crosscutting granite veining is usual. Skarn mineralization near upper contact and related to granitic veins. Most fractures parallel foliation (15°-40°), and occasionally zones of high shearing (Following intervals: 32.20-32.50, 40.50-40.80, 41.50-41.80, 42.40-42.70, 44.15-45.70, 52.30-52.50).
		56.30	End of hole.



KOLSVIK, BINDAL.

DDH 15, 16, 17, 19.

Scale 1:200	Obs. / Draw. / Trac. — / Chk.
Map. no.	
A/S Sulfidmalm	28 82 D21 9A55
Map. sheet	

295°/45°

180

170

160

150

140

130

120

110 m.a.s.l.

20

30

40

50

60

70

80

90

97.0 m

DDH 18

LEGENDE

- OVERBURDEN
- QUARTZ
- LIMESTONE
- GRANITE
- GNEISSES & SCHISTS
- SHEAR/SHEARING
- FRACTURES
- BRECCIATION
- ASPY & QUARTZ ALONG FRACTURES
- " " ON BRECCIA
- DISSIMINATED ASPY

KOLSVIK, BINDAL.

DDH 18.81.

⅛ SULFIDMALM

SCALE	OBS.	
1:200	DRAW.	
	TRAC.	
	CHK.	

MAP NO. 28 82 D14 10D8

MAP SHEET

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 32 m S - 22 m E BEARING: 295° DIP: 45° HOLE NO: 18/81 SHEET NO: 1

LOGGED BY: Ø.M STARTED: PROPERTY Kolsvik, Bindal.

CASING: 32 mm FINISHED:

CORE SIZE: TESTS (CORRECTED):

From	To		Description
0	16.60		Overburden
16.60	16.85		Mica schist. Mica carbonate veining, parallel foliation (25°). These are cut by 1 cm thick Aspy vein parallel core.
16.85	18.75		Granite, cut by carbonate veining.
18.75	19.10		Mica schist rich in carbonate. Foliation 60°. 1.5 cm thick Aspy vein at lower contact.
19.10	21.70		Granite. Mostly light coloured but occasionally pink. Scattered Aspy mineralization on some fractures.
21.70	26.70		Mica schist. Foliation 50°-70° Plenty of carbonate material both as horizons in gneiss and cross cutting veins. Most fractures parallel foliation.
26.70	27.10		Granite.
27.10	27.65		Mica schist. Foliation 65°.
27.65	34.40		Granite.
			27.65 - 31.40: Rather massive granite showing pink colour. Most fractures are filled with carbonate and zeolite minerals, but lower 1 m also traces of Aspy.
			31.40 - 32.00: Brecciated granite. Mineralization mainly py but also some Aspy.
			32.00 - 34.40: Massive granite.
34.40	35.00		Quartz. Disseminated Aspy can be seen.
35.00	35.60		Granite. Upper contact very diffusable.
35.60	35.70		Quartz.
35.70	37.40		Massive granite.
37.40	42.20		Mica schist. Foliation 40°. Plenty of carbonate.
42.20	49.90		Granite, mostly light coloured. Some fracturing which are filled with carbonate and zeolite minerals.
49.90	50.20		Quartz. Aspy can be seen on 40° fractures.
50.20	97.00		Granite. Varying colour from light grey till pink. Some fracturing and zeolitization. No mineralization is seen.
		97.00	End of hole.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 101 m S - 45 m E BEARING: 087° DIP: 45° HOLE NO: 20/81 SHEET NO: 1
LOGGED BY: Ø.M. STARTED: PROPERTY Kolsvik, Bindal.
CASING: FINISHED:
CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
0	3.75		Overburden
3.75	4.90		Granite. Pink colour near upper contact.
4.90	5.00		Foliated mica schist showing shearing near contacts.
5.00	6.80		Granite. Rather massive, but some fractures with direction 30° and 6
6.80	7.30		Mica schist. Foliation 35°.
7.30	8.90		Granite. Near upper contact shearing and weak foliation. In this area some quartz veining and Aspy.
8.90	9.70		Mica schist. Weak foliation but highly sheared at lower contact.
9.70	28.30		Granite. 9.70-11.00: Grey granite. Scattered Aspy on some fractures. 11.00-15.10: Some alteration, mostly as zeolite, muscovite, chlori epidote. 15.10-15.40: Sheared and brecciated quartz rich granite. Spots of Aspy. 15.40-16.10: Rather massive with few fractures. 16.10-16.40: Fractured and brecciated granite. Spots of Aspy. 16.40-17.50: Massive granite. 17.50-18.00: Pink coloured granite. Disseminated Aspy and as scattered grains on some fractures. 18.00-21.30: Quartz rich granite. Spots of Aspy. Lower o.20 m fra tured. 21.30-24.00: Medium-grained, rather massive. Upper 0.2 m fractured 24.00-26.00: Quartz rich granite with spots of Aspy. 26.00-28.30: Occasionally green coloured due to epidote & chlorite some fractures.
28.30	33.20		Foliated dioritic gneiss. Foliation 0°-15°. Most fractures 40°-50° but some parallel core.
33.20	50.70		Granite. 33.20-38.00: Granite with scattered Aspy on some 45° fractures. 38.00-42.40: Massive, but traces of Aspy on fractures from 41.80. 42.00-47.70: Well fractured quartz rich granite. No mineralizatio 47.70-50.70: Good brecciation with Aspy. Late quartz veining cuts breccia texture.
50.70	58.80		Deformed and sheared dioritic rocks. From 55.40 till 56.30 extreme sheared. May represent a greater fault zone. Direction 10°.
58.80	66.30		Granite. 58.80-62.00: Brecciated granite. 62.00-66.30: Rather massive. Scattered Aspy on some fractures. Direction 50°.
66.30	67.00		Fine grained, biotite rich dioritic gneiss. Foliation 55°.
67.00	70.95		Granite. Rather massive, with few fractures (direction 60°-70°).
70.95	76.25		Fine grained dioritic gneiss. Foliation 50°. Some crosscutting granitic veins.
76.25	77.50		Granite.

A/S SULFIDMALM

DIAMOND DRILL RECORD

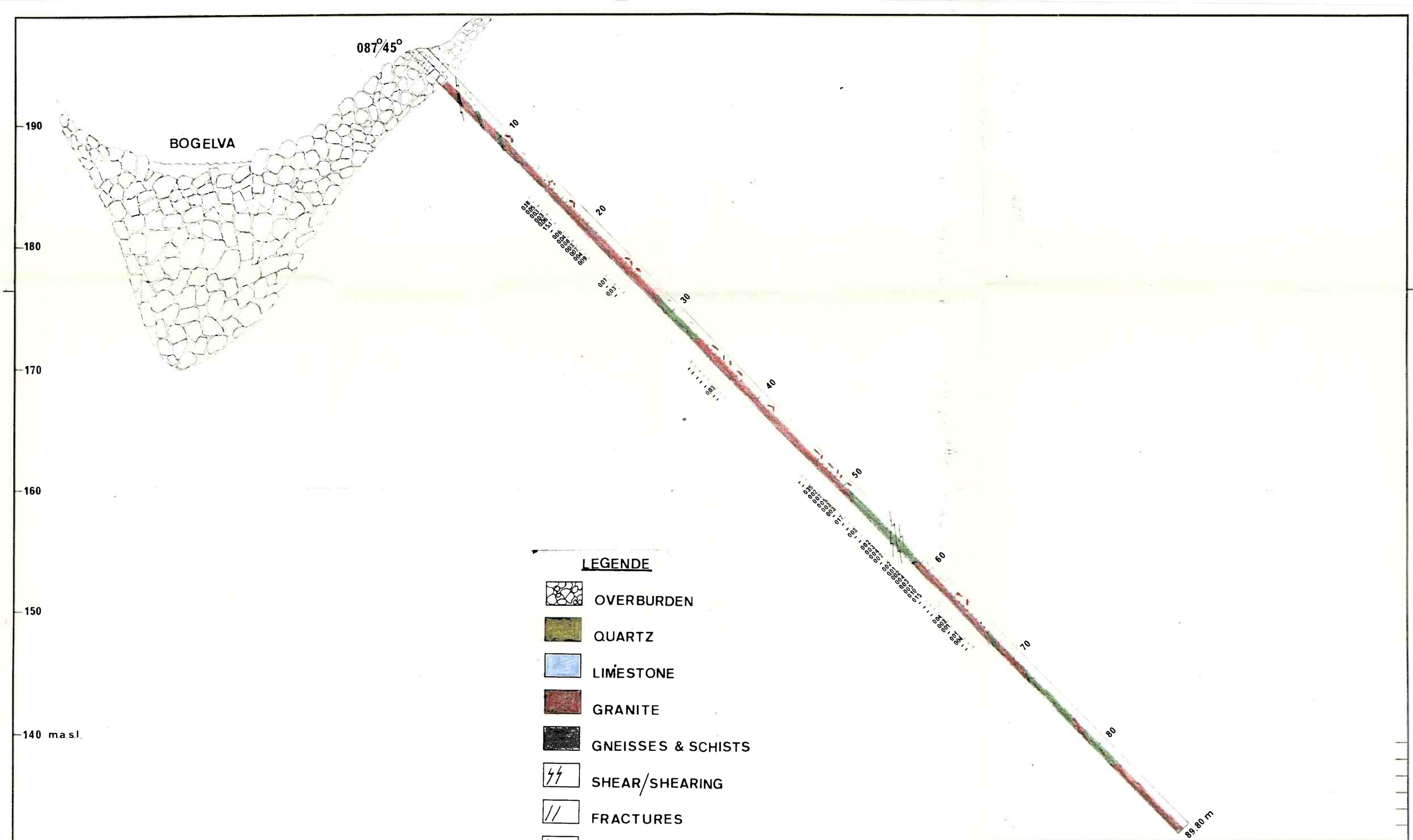
LOCATION: 101 m S - 45 m E BEARING: 087° DIP: 45° HOLE NO: 20/81 SHEET NO: 2.

LOGGED BY: Ø.M. STARTED: PROPERTY Kolsvik, Bindal.

CASING: FINISHED:

CORE SIZE: 32 mm TESTS (CORRECTED):

From	To		Description
77.50	82.25		Dioritic rocks without any planar structure.
82.25	89.80		Granite. Rather massive with some fractures. No mineralizaiton.
		89.80	End of hole.



LEGENDE

- OVERBURDEN
- QUARTZ
- LIMESTONE
- GRANITE
- GNEISSES & SCHISTS
- SHEAR/SHEARING
- FRACTURES
- BRECCIATION
- ASPY & QUARTZ ALONG FRACTURES
- " " ON BRECCIA
- DISSIMINATED ASPY

KOLSVIK, BINDAL.

DDH 20.81.

SCALE 1:200

OBS. | DRAW. | TRAC. | CHK.

⅛ SULFIDMALM

MAP NO. 28 82 D16 10 D10

MAP SHEET

A.s Tørrkopi. 2000. A 2. E 9 gl. 10-71. Sentrum Trykkeri.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: ..... DIP: 90° HOLE NO: 21/82 SHEET NO: 1

LOGGED BY: ØM RS STARTED: 25.05.82 PROPERTY Kolsvik, Bindal

CASING: 2.0 m FINISHED: 30.05.82

CORE SIZE: 32 mm TESTS (CORRECTED): .....

From	To		Description
0	2.00		OVERBURDEN
2.00	6.30		Medium grained DIORITE cut by granite veins At 2.3: 10 cm granite, contact angle 55° At 4.2: 5 cm granite, - " - - " - 55° At 4.5: 2 cm granite, - " - - " - 55° At 5.1: 10 cm granite, - " - - " - 45°
6.30	7.20		Medium grained GRANITE
7.20	7.70		Medium grained DIORITE Contact angle at 7.7 = 45°
7.70	15.50		Medium grained white GRANITE. Chlorite and zeolites developed along fractures and joints. Chlorite strongly developed especially between 10 and 11 m. At 15 m: Biotite foliation 50° At 15.50 m: Contact angle 50°
15.50	16.05		Fine grained DIORITE cut by some thin granitic veins Foliation 50° At 16.05: contact angle 50°
16.05	79.40		GRANITE 16.05 - 16 50: Medium grained biotite rich granite with no foliation. 16.50 - 18.60: Muscovite developed on fractures: core angle 20° 18.60 - 67.35 Pink granite At 19.00 30 cm quartz. Fractures 20° At 19.65 Aspy along joint. Core angle 85° 20.00 - 24.00 Very broken granite. Mica developed on fractures. Dominating fractures/joints 45° & 70° core angle. 27.00 - 27.50 Aspy related to quartz 28.50 Zeolites on 20° and 55° fractures 29.70 Quartz segregations At 30.10 Aspy and py on 55° fracture. 31.90 - 32.00 Quartz veins 33.70 - 33.90 Breccia texture with quartz At 34.50 Quartz veins. Core angle 60° At 35.10 Quartz veins, mainly on 45° fracture At 35.50 - 35.90 Brecciated granite At 41.60 Quartz segregations At 54.70 2 cm massive Aspy containing some py. 65° core angle. 60.00 - 67.35 Chlorite, epidote and chlorite along fractures, mainly 40°-45°.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: .....
LOGGED BY: ØM/RS
CASING: 2.0 m
CORE SIZE: 32 mm

BEARING: ..... DIP: 90° HOLE NO: 21/82 SHEET NO: 2
STARTED: 25.05.82
FINISHED: 30.05.82
PROPERTY Kolsvik, Bindal
TESTS (CORRECTED): .....

From	To		Description
			67.35 - 67.95 Grey coloured granite 67.95 - 79.00 Pink coloured granite 69.00-71.00 Breccia texture, but only chlorite and epidote on textures. Dominating fractures 40°-45°. At 70.85 2 cm quartz vein, 40° core angle. 78.20-79.00 Brecciation
79.00	79.40		Highly sheared DIORITIC rocks. Contacts 60°.
79.40	82.15		GRANITE 79.40 - 80.00 Brecciated quartz rich granite 80.00 - 82.15 Pink granite
82.15	85.50		DIORITE Some granite are cutting. Folitation (banding) 45°. At 85.50 contact 50°
85.50	94.10		Pink GRANITE with epidote and chlorite veining, especially between 85.50-90.00.
94.10	104.45		DIORITE At 94.10 contact angle 50° At 96.40 foliation 40° At 102.50 foliation 60°
104.45	109.00		Red altered GRANITE At 104.45 contact 60° Dominating fractures 65° and 20° + subparallel. Some epidote and chlorite mineralization. At 109.00 contact 75°
109.00	109.70		DIORITE At 109.50 foliation 50° At 109.70 contact 60°
109.70	112.00		GRANITE Dominantly red altered At 112.00 Contact 45°
112.00	113.90		DIORITE Foliation 65°. Dominating fractures 60°, some 30°.
113.90	120.65		GRANITE Pink colour. Plenty of zeolites along 20° fractures/joints. 115.30 - 115.80 well fractured. 120.65 contact 65°
120.65	121.00		Well fractured DIORITE
121.00	130.40		Red altered GRANITE. Zeolites and epidote on subparallel fractures and joints. Dominating fractures and joints 30° and 50°, 5 cm quartz near lower contact. At 130.40 contact 80°.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: ..... DIP: 90° HOLE NO: 21/82 SHEET NO: 3

LOGGED BY: ØM RS STARTED: 25.05.82 PROPERTY .....

CASING: 2.0 m FINISHED: 30.05.82 Kolsvik, Bindal

CORE SIZE: 32 mm TESTS (CORRECTED): .....

From	To		Description
130.40	136.00		Highly sheared DIORITIC rocks, nearly mica schist. 134.15 - 134.50 shear zone At 132.50 foliation 45°
136.00	138.00		Grey GRANITE. Quartz rich and showing breccia texture.
138.00	142.40		Brecciated DIORITE filled with quartz, epidote and chlorite 139.00 - 140.00 highly sheared (shear zone) 141.30 - 142.40 - " - - " - - " -
142.40	144.40		Brecciated and well fractured pink GRANITE. Dominating fractures 45°.
144.40	156.85		DIORITE cut by granitic veins At 148.50 foliation 75° At 152.00 foliation 75°
		156.85	End of hole

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: ..... DIP: 60° HOLE NO: 23/82 SHEET NO: 1

LOGGED BY: ØM RSi STARTED: 2.6.82 PROPERTY Kolsvik, Bindal

CASING: ..... FINISHED: 5.6.82 .....

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
0	10.0		Overburden
			Fine grained diorite
			10.30 - 10.70 Quartz and Aspy. At 10.30: core angle 50°. At 10.70: core angle 40°.
			14.70 - 14.80 Fracture with quartz
14.00	32.70		Granite
			14.00 - 29.30 With granite. Chlorite developed, especially along fractures.
			16.40-16.90 Fragments of diorite
			20.90-23.40 Quartz veining. Core angle 80°
			19.70-19.80 Scattered Aspy crystals
			29.30-32.70 Pink granite
32.70	34.60		Diorite
34.60	35.40		Pink granite
35.40	36.60		Diorite
			At 35.40: contact 20°
			At 36.60: contact 20°
36.60	83.50		Granite
			36.60 - 76.00 Pink granite
			39.00-40.00 Some quartz and Aspy mineralization
			40.00-40.20 Quartzvein with 1 cm Aspy. Core angle 50°
			At 42.50 Quartz/Aspy vein. Core angle 80°.
			47.00-47.20 Fracture zone. Quartz segregations occur frequently.
			49.70-49.80 Quartz vein with Aspy. Core angle 50°.
			49.00-51.10 Broken pink granite with quartz matrix and Aspy specks.
			At 52.50 Aspy vein. Core angle 80°
			52.00-53.00 Specks of Aspy
			54.00-55.00 Pink mineralization on 80° joints
			At 58.45 3 cm thick vein of Aspy, py and quartz. Core angle 45°.
			62.00-63.00 Quartz veining and quartzsegregations
			At 65.90 Aspy with 40° core angle cut by later fractures.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: ..... DIP: 60° HOLE NO: 23/82 SHEET NO: 2

LOGGED BY: ØM RSi STARTED: 2.6.82 PROPERTY .....

CASING: ..... FINISHED: 5.6.82 Kolsvik, Bindal

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
			At 66.00 Aspy specks
			At 66.70 Aspy vein with 40° core angle
			At 67.28 Strongly mylotinized quartz. Core angle 80°
			67.00-68.00 Foliation in granite 80°
			73.00-74.00 Aspy specks
			74.55-74.75 Strongly deformed and mylotinized quartz vein with some Aspy.
			75.00-76.00 ½ cm Aspy veins at 75.10 and 75.25
			76.00 - 81.00 Grey granite
			At 76.10 Spots of Aspy
			78.00-79.00 Late fractures, 35°-40° crosscut Aspy spots. Well mineralized.
			79.40-79.60 Good quartz and Aspy mineralization
			At 79.90 Quartz vein. Core angle 40°
			81.00 - 83.50 Pink granite
			81.80-82.20 Quartz and Aspy on vein with 0° core angle. This is cut by later unmineralized fractures.
83.50	84.00		Diorite with zeolites on 20° fractures
84.00	93.40		Brecciated pink and grey granite. Also brecciated quartz rich fragments. Matrix of Aspy and quartz. Extremely good Aspy mineralization.
93.40	94.80		Limestone
94.80	122.90		Granite
			94.30 - ab 110 Mainly grey granite with chlorite, biotite and epidote mineralization on breccia texture.
			96.40 - 98.00 Aspy on breccia texture
			98.00 - 102.75 Scattered Aspy mineralization
			102.75 - 103.75 Massive Aspy mineralization on breccia texture.
			105.00 - 110.00 Scattered Aspy in granite and on fractures
			Ab 110. - 116. Well fractured grey granite. Dominating fractures 30° core angle. Most fractures fill with micas.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: ..... DIP: 60° HOLE NO: 23/82 SHEET NO: 3

LOGGED BY: ØM RSi STARTED: 2.6.82 PROPERTY .....

CASING: ..... FINISHED: 5.6.82 Kolsvik, Bindal

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
			116.00 - 122.90 Red-altered well fractured granite. Fractures filled with micas. From 122 carbonate veining.
122.90	128.80		Limestone Highly deformed (breccia texture) limestone or carbonate rich sediments.
128.80	130.95		Granite Highly deformed red altered granite, rich in zeolites and carbonate rich veining.
130.95	133.00		Limestone Highly deformed (breccia texture) limestone or carbonate rich sediments.
	133.00		End of hole

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: EAST DIP: 65° HOLE NO: 24 SHEET NO: 1

LOGGED BY: ..... STARTED: 5.6.82 PROPERTY .....

CASING: ..... FINISHED: 9.6 82 Kolsvik, Bindal.

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
0	10.0	0 - 8.50	Overburden
		8.50 - 9.35	Diorite, rich in pyrite, no foliation. Aspy near lower contact, especially on 55° fracture.
		9.35 - 10.0	Granite. Biotite rich. Grey colour at 9.80 - 9.82. Quartz vein (60°)
10.0	20.0	10.0 - 13.90	Granite, contact at 13.90 = 45°
			10.0 - 10.55 Granite rich in biotite, musk at fractures.
			10.55 - 13.15 White. quartz rich granite. Some grains of ASPY and other sulphides are seen between 11.20 and 11.50 in brecciated quartz.
			13.15 - 13.90 Grey granite showing a weak foliation, 50°
		13.90 - 16.20	Diorite, contact at 16.20 = 30°
			Granite veining is cutting with 20-30° angles.
		16.20 - 20.00	Granite, milky colour. Little biotite, occasionally green colour due to chlorite & epidote. Zeolites on 30° fractures. Also some muskovite.
20.0	30.0	20.00 - 30.00	Granite.
			20.00 - 24.60 Milky granite like 16.20 - 20.00 area. Lower contact 50°.
			24.60 - 25.80 Grey colour. Rather massive and biotite rich. Some alteration along fractures.
			25.80 - 30.00 Mostly pink colour.
			At 25.60: ½ cm Aspy along 40° fracture.
			At 28.10 Aspy disseminated and at 50° fractured.
			28.50 - 29.00 Some Aspy and quartz at 50°
			At 29.50 - 29.52 Quartz ∠ 40°
30.0	40.0	30.00 - 40.00	Granite
			30.00 - 32.20 Grey, massive and medium grained granite.
			32.20 - 35.20 Pink granite
			32.32 - 32.40 Quartz with some Aspy. Contacts 50°.
			32.70 1 cm quartz and Aspy.
			33.40 - 33.42 Quartz. Contacts 65°. Only little Aspy near contacts.
			34.05 ½ cm quartz with Aspy. ∠ 65°
			34.60 Aspy along 65° fracture. Strong alteration
			35.20 - 39.50 Grey coloured granite
			35.25 Aspy along contacts of 1 cm 60° quartz vein.
			36.25 Biotite foliation 50°
			37.30 2 cm 70° quartz

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: EAST DIP: 65° HOLE NO: 24 SHEET NO: 2

LOGGED BY: ØM STARTED: 5.6.82 PROPERTY Kolsvik

CASING: ..... FINISHED: 9.6.82

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
			37.50 Quartz and Aspy along 60° fracture 38.50 - 38.53 Quartz and Aspy (½ cm) with 60° direction 39.85 Aspy along 80° fracture
40.00	50.00		40.00 - 50.00 Granite, changing from grey, massive and medium grained to pink altered. Occasionally rich in quartz 43.50 Some Aspy crystals 44.90 2 cm Quartz, ∠ 50°. Some musk along contacts. 45.10 Aspy along 80° quartz vein 45.30 - 45.80 Good quartz content and bands of Aspy, most of them 60°-70°. Visible (one samll grain) gold ab. 45.50
x NB!	Au.		
50.00	60.00		50.00 - 60.00 Mostly red-altered granite 50.40 - 50.50 Some 1 cm quartz veins ∠ 60° 55.35 Aspy along ∠60° fracture. 55.94 1 cm Aspy ∠60°. 56.30-56.40 Good pyr. mineralization along fractures in granite. Only little Aspy.
60.00	70.00		60.00 - 70.00 Granite, grey and pink altered medium grained and biotite rich. 60.50 1 cm quartz ∠ 60° 63.70 Musk, and pyr. along 55° fracture. Only some Aspy grains are seen. 63.30 2 cm quartz and good Aspy mineralization also pyr. is seen. Ab. 64.40 clots of Aspy and mica. 66.30 Aspy on ∠50° fracture. 69.30 1 cm Aspy. Direction ∠50°
70.00	80.00		70.00 - 79.30 Granite, pink altered, medium grained with some biotite. 71.30 ½ cm Aspy along ∠ 75° fracture. 72.90 Aspy along 60° fracture 74.30 1 cm quartz-vein (∠70°) Only traces of Aspy along fracture contacts. 76.0-80.0 Plenty of quartz veining. Direction about 60° thickness about ½ cm but little or no Aspy mineralization. 79.30 - 80.0 Diorite. Upper contact diffus.
80.0	90.0		80.00 - 81.0 Diorite. Lower contact ab. 20°. 81.00 - 90.0 Granite 81.00 - ab 87.0 Pink altered granite 71.30 Some quartz veining (∠55°) 87.0 - 90.0 Grey colour.

A/s SULFIDMALM

DIAMOND DRILL RECORD

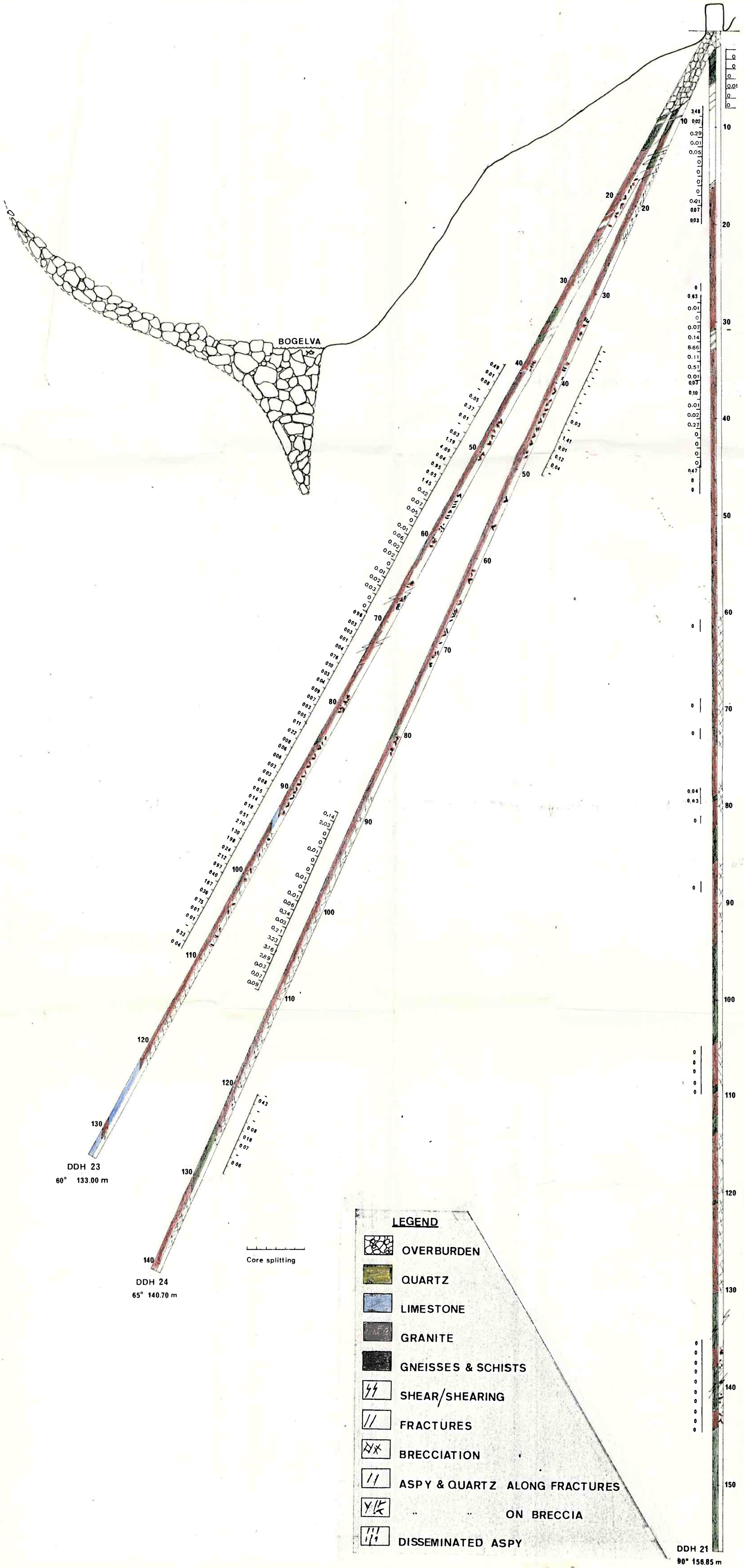
LOCATION: ..... BEARING: EAST DIP: 65 HOLE NO: 24 SHEET NO: 3

LOGGED BY: ØM STARTED: 5.6.82 PROPERTY .....

CASING: ..... FINISHED: 9.6.82 Kolsvik

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
			80.0 - 81.0 Diorite. lower contact ab. 20°.
			81.0 - 90.0 Granite 81.0 - ab 87.0 Pink altered granite 71.30 Some quartz veining (∠ 55°) 87.0 - 90.0 Grey colour.
90.0	100.0		90.0 - 100.0 Granite 90.0-96.0 Grey granite. Occasionally quartz-rich. Plenty of chlorite-epidote filled fractures. These are (seem) to be) cutting quartz veins which contain Sdpy (at 90.75-91.0). Also seen muskovite rich granite. 96.0-100.0 Pink granite. Well fractured. but only filled with chlorite & epidote. 99.3-100.0 HIghly altered and crushed granite with zeolites and carbonate.
100.0	110.0		100.0 - 110.0 Granite Highly deformed and altered granite, showing a breccia texture filled with chlorite & epidote, zeolites and carbonate, occasionally is seen some Aspy minerals, but this is rare.
110.0	120.0		110.0 - 120.0 Granite Deformed and altered as described from 110-120 but less zeolite mineralization 119.9 Aspy on quartz vein.
120.0	130.0		120.0 - 125.45 Granite. Mostly grey but occasionally pink-altered. Little biotite. 120.40 Quartz and pyr. & Aspy along 40 fracture in highly red-altered gr. 120.80 1½ cm quartz vein (∠55°) with pyr.& Aspy. 122.20 Quartz & Aspy along 20° fracture. Cut by later fractures filled with micas giving core a "breccia texture". 123.0-125.45 Aspy along various fracture directions and always cut by later mica filled fractures giving a breccia texture 122.45 - 130.0 Augen gneiss, rich in mica c: biotite and chlorite Highly deformed and crosscut by granite.
130.0	140.0		130.0 - 132.1 Highly deformed augen gneiss like that described from 125.45 - 130.00 Lower contact at 132.1 35° 132.1 - 140.0 Granite. Red altered and rich in zeolite and carbonate along fractures. Rather highly deformed breccia texture. No visible Aspy mineral.
140.0	150.0		140.0 - 140.7 Granite. Like 132.1 - 140. 140.7 End of hole.



LEGEND

- OVERBURDEN
- QUARTZ
- LIMESTONE
- GRANITE
- GNEISSES & SCHISTS
- SHEAR/SHEARING
- FRACTURES
- BRECCIATION
- ASPY & QUARTZ ALONG FRACTURES
- " " ON BRECCIA
- DISSEMINATED ASPY

KOLSVIK, BINDAL.

DDH 21, 23, 24. -81.

Scale 1:200	Obs. / Draw. / Trac. / Chk.
Map. no.	28 82 D 19 9A57
A/s Sulfidmalm	Map. sheet

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: West DIP: 45° HOLE NO: 22 SHEET NO: 1

LOGGED BY: R. Si STARTED: ..... PROPERTY .....

CASING: 0 FINISHED: ..... Boliden, Kolsvik

CORE SIZE: 32 m TESTS (CORRECTED): Bindal

From	To		Description
0	38.0		Fine to medium grained granite. The colour vary from pink to grey-white in an irregular pattern. Minor quartz veins and quartz segregations are frequently occurring both in the pink and grey granite. Late fractures with zeolite minerals are common around 20 - 25 m, often parallel to subparallel core-string. Quartzveins ± Aspy 7.5 - 7.6 m core angle 90° 8.3 m 2 cm 60° 11.6 80 - 90° 13.3 2 cm 60° 14.3 5 cm 70° 15.1 4 cm 45° Aspy 21.8 2 cm 40° 23.5 1 cm 55° Aspy At 14 m diorite 40 cm End of hole.
	38.0		

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: ..... DIP: 90° HOLE NO: 27 SHEET NO: 1

LOGGED BY: Ø M STARTED: ..... PROPERTY Kolsvik

CASING: ..... FINISHED: 29.6.82. Bindal

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
0	13.65		GRANITE 0.00 - 10.0 HIghly sheared granite with plenty of quartz- and Aspy veining + dots of Aspy. From ab 4.50 decreasing Aspy veining. At 0.05 m: ½ cm Aspy. Core angle 80° At 0.50 m: 5 cm quartz with Aspy. 0.80 - 0.90 m: Nearly massive Aspy in quartz 1.0 - 4.50 m: Plenty of Aspy veining on 70°-80° fractures and joints. Aspy frequently associated with other sulphides. From 3.05 to 3.10 massive Aspy (core angle 85°). At 3.55 traces of visible gold. 4.0-10.0: Grey, quartzrich granite with dots of Aspy and some Aspy veins at steep angles. 10.00 - 13.65: ONly traces of Aspy as scattered dots. Highly fractured from ab. 12.30 m, in this zone also some red alteration At 13.75: contact 60°.
13.65	14.40		DIORITE Fine grained, highly foliated and sheared dioritic rocks containing some pyrite. Foliation ab. 60° At 14.40: contact highly sheared.
14.40	39.40		GRANITE 14.40 - 20.00: Rather massive, fine grained and grey granite Only scattered aggregates of Aspy minerals, many of them on fractures. 20.00 - 39.40: Granite varying between grey and pink altered. Rather massive and fine grained. Usually no or little Aspy mineralization, but occasionally good. At 21.65: Visible Au At 23.30: 3 cm Quartz with Aspy. Core angle 25° At 25.75: 3 cm quartz with Aspy. Core angle 25°. Visible . At 27.30: 3 cm quartz. Core angle 30° 27.65 - 28.0: Quartz with some pyrite 29.00 -30.0: Zeolitization and red-alteration in highly sheared rocks. 32.00: 1 cm massive Aspy. Core angle 45°.
	39.40		END OF HOLE

← EAST

WEST →

Bogelva

BOLIDEN

DDH 27 90°

DDH 22 45°

39.4m

38m

190

180

170

160

150

140

m.a.s.l. 130

LEGEND

- OVERBURDEN
- QUARTZ
- LIMESTONE
- GRANITE
- GNEISSES & SCHISTS
- SHEAR/SHEARING
- FRACTURES
- BRECCIATION
- ASPY & QUARTZ ALONG FRACTURES
- .. .. ON BRECCIA
- DISSEMINATED ASPY

KOLSVIK, BINDAL.

BOLIDEN ADIT. DDH 22,27.

SCALE 1:200

OBS. | DRAW. | TRAC. | CHK.

% SULFIDMALM

MAP NO. 28 82D 24 10D 14

MAP SHEET

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: .....
BEARING: EAST DIP: 60° HOLE NO: 25 SHEET NO: 1
LOGGED BY: R Si
STARTED: 11.06.82 PROPERTY .....
CASING: 16 m
FINISHED: 18.06.82 Kolsvik
CORE SIZE: 32 mm
TESTS (CORRECTED): Bindal

From	To		Description
0	16.0		OVERBURDEN
16.0	47.3		Fine to medium grained diorite with some coarse meters, especially around m 19-20. Quartz veins occur frequently. Some containing Aspy. Quartz veins recorded: m 18.1 1 cm core angel 55° 18.5 1 cm - " - 50° 19.45 3 cm - " - 50° + Aspy 19.9 2 cm - " - 50° 21.7 10 cm - " - 20° 25.7 2 cm - " - 56° Py + Aspy 27.4 7 cm - " - 85° + Aspy 27.8 1 cm - " - 80° + Aspy 28.65 3 cm - " - 80° + Aspy 31.5 10 cm - " - 65° + Aspy 31.85 1 cm - " - 85° + Aspy 32.8 - 33.1 Containing Aspy and k.fsp. 33.5 10 cm core angel 52° 34.1 5 cm - " - 55° + Py + Aspy 39.4 - 39.85 - " - 55° + Aspy 46.7 2 cm - " - 70° + Aspy The diorite is often deformed, brecciated and sheared. Quartz is most often the matrix material, Aspy occurs as small grains. Granitic veins are often seen, in most cases parallel to sub-parallel to core string. The quartzveins are in all cases crosscutting the granitic veins. 39.4 - 42.8 Fragmented diorite with quartz and Aspy as matrix.
47.3	49.2		Fine grained GRANITE core angel contact upper 60° lower 25° Aspy and quartz at upper contact. 47.5 - 47.7 Strongly sheared granite, pink colour. Some arsenopyrite.
49.2	51.3		Medium grained GRANITE.
51.3	76.5		Fine to medium grained white granite, in places pink colouration, which is related to late shearing (Bogdalen fault) Shearing and brecciation are developed 54.6 - 54.7 shearing core angel 55° 55 - 58 breccia with chlorite matrix (fracture) 60 - 65 brecciated granite. Quartz occurs frequently as matrix, no Aspy seen. 64.95 - 65.1 Quartz vein.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: EAST DIP: 60° HOLE NO: 25 SHEET NO. 2

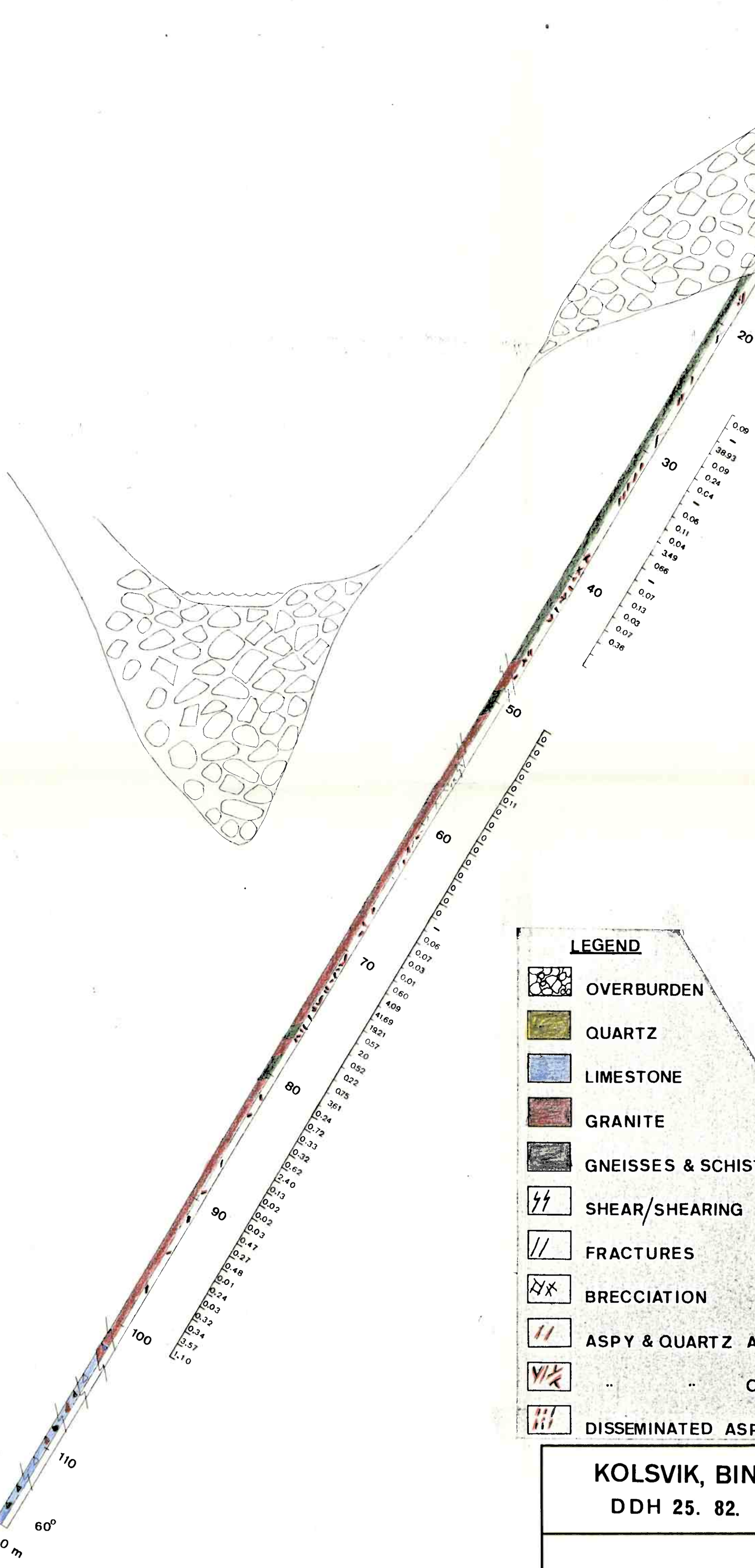
LOGGED BY: R Si STARTED: ..... PROPERTY .....

CASING: 16 m FINISHED: ..... Kolsvik

CORE SIZE: 32 mm TESTS (CORRECTED): ..... Bindal

From	To		Description
			66.1 - 76.5 Pink coloured granite with quartz veins Quartz veins 66.3 5 cm core angle 40° + Aspy 67.8 20 cm - " - 50° 68.6 10 cm
			70 - 76.5 Brecciated granite in places with a quartz Aspy matrix
76.5	77.5		Medium grained diorite which in places is brecciated
77.5	78.9		Pink, medium grained brecciated GRANITE. Irregular quartz veins and matrix are common.
78.9	80.7		Medium grained DIORITE
80.7	100.0		Pink medium grained brecciated granite. Quartz as matrix. Aspy occurs.
100.0	116.0		The Bogdalen fault with strong deformation. Both fragments of granite, limestone and diorite.
	116.0		End of hole.

WEST →



220
210
200
190
180
170
160
150
140
m.a.s.l. 130

LEGEND

- OVERBURDEN
- QUARTZ
- LIMESTONE
- GRANITE
- GNEISSES & SCHISTS
- SHEAR/SHEARING
- FRACTURES
- BRECCIATION
- ASPY & QUARTZ ALONG FRACTURES
- " " ON BRECCIA
- DISSEMINATED ASPY

KOLSVIK, BINDAL.

DDH 25. 82.

% SULFIDMALM

SCALE		
1:200	OBS.	
	DRAW.	
	TRAC.	
	CHK.	

MAP NO.

28 82 D22 10D12

MAP SHEET

NB ! Overburden = 7.70 m c: End of hole at 90.10 m

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: 255 E DIP: 31° HOLE NO: 26 SHEET NO. 1

LOGGED BY: Ø M STARTED: 22.6.82 PROPERTY Kolsvik

CASING: ..... FINISHED: 29.6.82 Bindal

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
0	8.70		Overburden
8.70	12.60		CARBONATE RICH SEDIMENTS Skarn mineralization with development of garnet and diopside. Less garnet from ab. 10 m. Skarn contains py. minerals. At 12.60: Contact 60°.
12.60	13.10		GRANITE Medium grained and grey coloured
13.10	13.95		CARBONATE RICH SEDIMENTS
13.95	15.40		GRANITE Quartz rich and occasionally well-fractured. Only scattered Aspy mineralization. 14.30: Aspy on 20° fracture 14.90: Scattered Aspy 15.20: Scattered Aspy
15.40	17.90		Foliated DIORITIC rocks, chich shows good foliation and containing some carbonate. Most fracture/joints parallel to foliation. 16.20: Foliation 55° 17.90: Contact 80°
17.90	18.45		GRANITE Medium grained grey granite with some red alteration along fracture/joints 18.45: Contact 80°
18.45	22.30		Foliated DIORITIC rocks with some carbonate veining 19.70: Foliation 60° 22.30: Contact 90°
22.30	23.80		GRANITE Medium grained and grey coloured. Some py but no Aspy 22.85: Py on 25° joint 23.80: Contact 65°
23.80	24.50		DIORITIC rocks with some skarn mineralization 24.50 Contact 65°
24.50	40.0		GRANITE Mostly grey coloured and medium grained, but nearly free from biotite. Scattered py in some biotite aggregates. Planty of crosscutting carbonate veining along joints. Aslo red alteration along these joints. Granite contains fragments of diorite. Directions of joints and/or carbonate veining are 50°-60°. 33.55 - 33.75 py-crystals 36.20: scattered Aspy mineralization

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: | BEARING: 255 E | DIP: 31° | HOLE NO: 26 | SHEET NO 2
LOGGED BY: Ø M | STARTED 22.6.82 | PROPERTY
CASING: | FINISHED: 29.6.82 | Kolsvik
CORE SIZE: | TESTS (CORRECTED): | Bindal

From	To		Description
40.00	40.15		DIORITE 40.15 contact 85°
40.15	40.30		GRANITE 40.30 contact 85°
40.30	40.60		DIORITE
40.60	42.70		GRANITE Medium grained and grey coloured. some zeolite mineralization also along joints 42.70 contact 30°
42.70	60.65		DIORITE Mostly finegrained and showing a weak planar structure. The diorite is cut by granite veins, varying in thickness from 5 cm to 15 cm. 47.50: Foliation 75° 60.65: Contact 60°
60.65	64.40		GRANITE Mostly grey, but also pink alteration 64.40 contact 45°
64.40	77.50		DIORITE Fine grained diorite, cut by carbonate and epidote veining. Also cut by some granitic veins which are often redaltered. Some py is seen, especially near granitic veins.
77.50	82.60		GRANITE Highly sheared quartz rich granite. Fractures filled with chlorite and epidote giving core a breccia texture. No mineralization is seen.
82.60	82.90		Highly sheared DIORITIC rocks. foliation/shearing 50°. Some crosscutting epidote veining
82.90	87.00		Highly sheared GRANITE with breccia texture. Dominating direction for epidote veining: 60°
87.00	89.30		Extremely sheared DIORITIC rocks, now nearly mica schist. Rock contain deformed quartz and granitic veins. Foliation/shearing 65° 89.30: contact 70°
89.30	91.10		GRANITE Only mica on fracture and joints
		91.10	END OF HOLE

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: 255°E DIP: 75° HOLE NO: 29 SHEET NO: 1

LOGGED BY: Ø.M. STARTED: 29.6.82 PROPERTY .....

CASING: ..... FINISHED: 1.7.82 Kolsvik, Bindal.

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
0	9.00		OVERBURDEN
9.00	11.60		CARBONATE RICH SEDIMENTS cut by carbonate veining. Garnet and epidote skarn is developed, diopside is dominating from ab. 10.00. The rock is py-rich, but also Aspy is seen. This is mainly associated with thin crosscutting quartz- and granitic veins, especially from 11.0 to 11.6, but also at 10.05. Aspy always seen mixed with py. Planar structure in sediments is 50°, and this is also dominating direction for crosscutting veins. 11.60 contact 55°
11.60	16.95		GRANITE Aspy often associated with py, is seen on fractures and quartz veins in grey granite (Seen at 13.40, 13.95, 14.55, 15.55, 16.95) At 16.95: contact 50°
16.95	23.40		Fine grained DIORITIC rocks. Usually well foliated. At 17.60 foliation 60° 18.30 - 19.10 Loss of core At 21.80 Foliation 35° At 22.00 Some Aspy associated with quartz. At 23.40 Contact 70°
23.40	23.70		Medium grained, grey and massive GRANITE At 23.70 Contact 70°
23.70	28.10		Fine grained DIORITE At 26.30 Foliation 40° At 28.10 Contact 85°
28.10	34.45		GRANITE Grey granite with little biotite. Some red alteration along joints/fractures. Some crosscutting quartz veins, but only muscovite along these. Aspy observed along one single joint at 32.65 (core angle 40° At 34.45 Contact 35°
34.45	35.30		Fine grained DIORITE. Foliation 70°. At 35.20 Aspy along a crosscutting granitic vein. At 35.30 Contact 60°
35.30	40.0		GRANITE. Grey coloured and medium grained. From ab. 28.00 coarser and containing less mica (biotite). Some crosscutting carbonate veins.
40.0	41.35		Foliated DIORITE. Direction 50°. At 41.35 Contact 50°

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: 255°E DIP: 75° HOLE NO: 29 SHEET NO: 2

LOGGED BY: Ø.M. STARTED: 29.6.82 PROPERTY .....

CASING: ..... FINISHED: 1.7.82 Kolsvik, Bindal.

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
41.35	42.90		Grey coloured GRANITE. Some carbonate-veining; zeolite mineralization near lower contact.
42.90	45.20		Fine grained DIORITE At 44.50: foliation 50°
		45.20	End of hole.

← East

West →

190

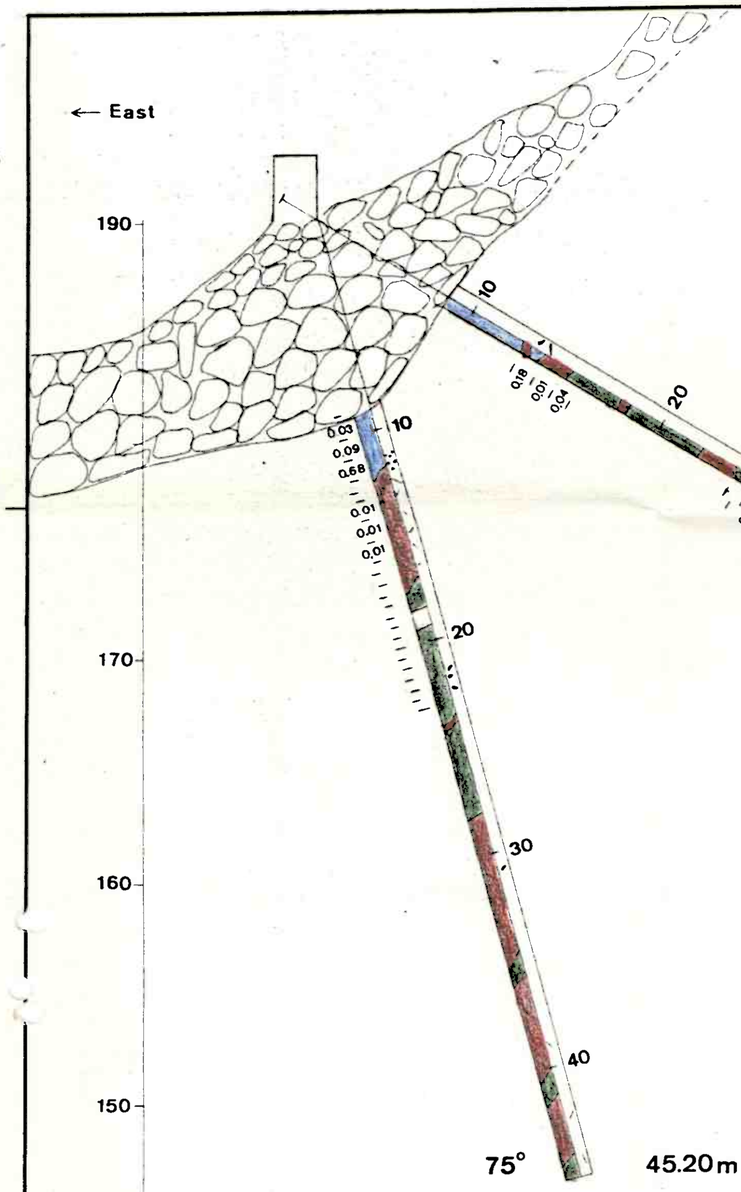
170

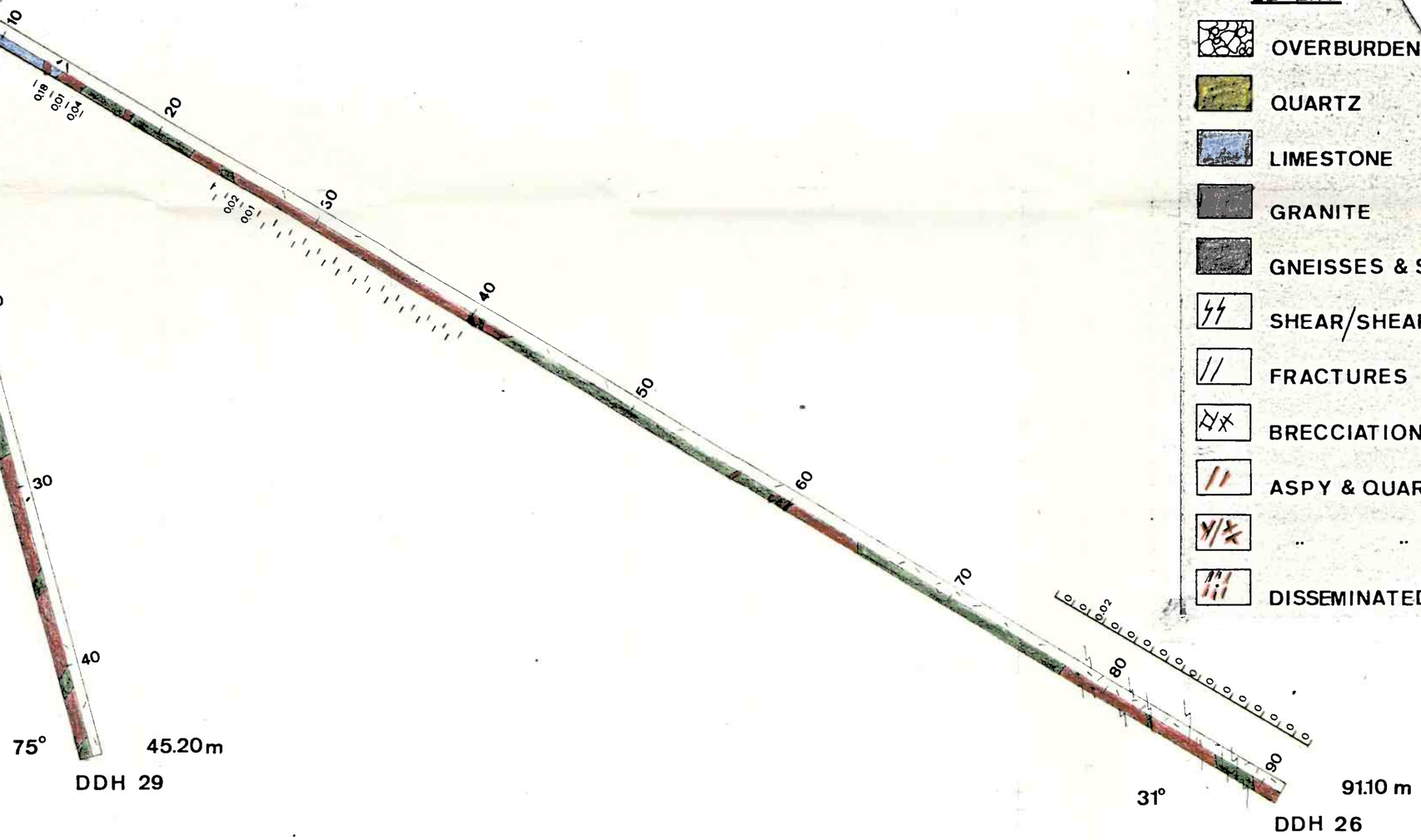
160

150

140

130





LEGEND

- OVERBURDEN
- QUARTZ
- LIMESTONE
- GRANITE
- GNEISSES & SCHISTS
- SHEAR/SHEARING
- FRACTURES
- BRECCIATION
- ASPY & QUARTZ ALONG FRACTURES
- " " ON BRECCIA
- DISSEMINATED ASPY

KOLSVIK, BINDAL.
DDH 26, 29. 82.

SCALE 1:200

OBS.
DRAW.
TRAC.
CHK.

⅛ SULFIDMALM

MAP NO. 28 82D25 10 D 15

MAP SHEET

A.s Tørrkopi. 2000. A 2. E 9 gi. 10-71. Sentrum Trykkeri.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: BOLIDEN BEARING: 253° DIP: 36° HOLE NO: 28|82 SHEET NO: I

LOGGED BY: STARTED: PROPERTY Kolsvik, Bindal

CASING: FINISHED:

CORE SIZE: TESTS (CORRECTED):

From	To		Description
0	1.0		OVERBURDEN
1.0	40.0		GRANITE Mainly pink granite, but some white and grey bands. Zeolite minerals developed along minor fractures. 1.0 - 4.0 Quartz veins with minor Aspy grains 10.0 - 11.0 Quartz segregations with some Py. 14.0 - 17.0 Quartz segregations with some Py and Aspy.
			40.00 End of hole
			NB! This is only a preliminary description. Samples were lost during helicopter transport and no detailed investigations are done.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: SEKSA BEARING: W DIP: 50° HOLE NO. 30 SHEET NO. 1

LOGGED BY: R Si STARTED: PROPERTY Kolsvik

CASING: 9.0 m FINISHED: Bindal

CORE SIZE: TESTS (CORRECTED):

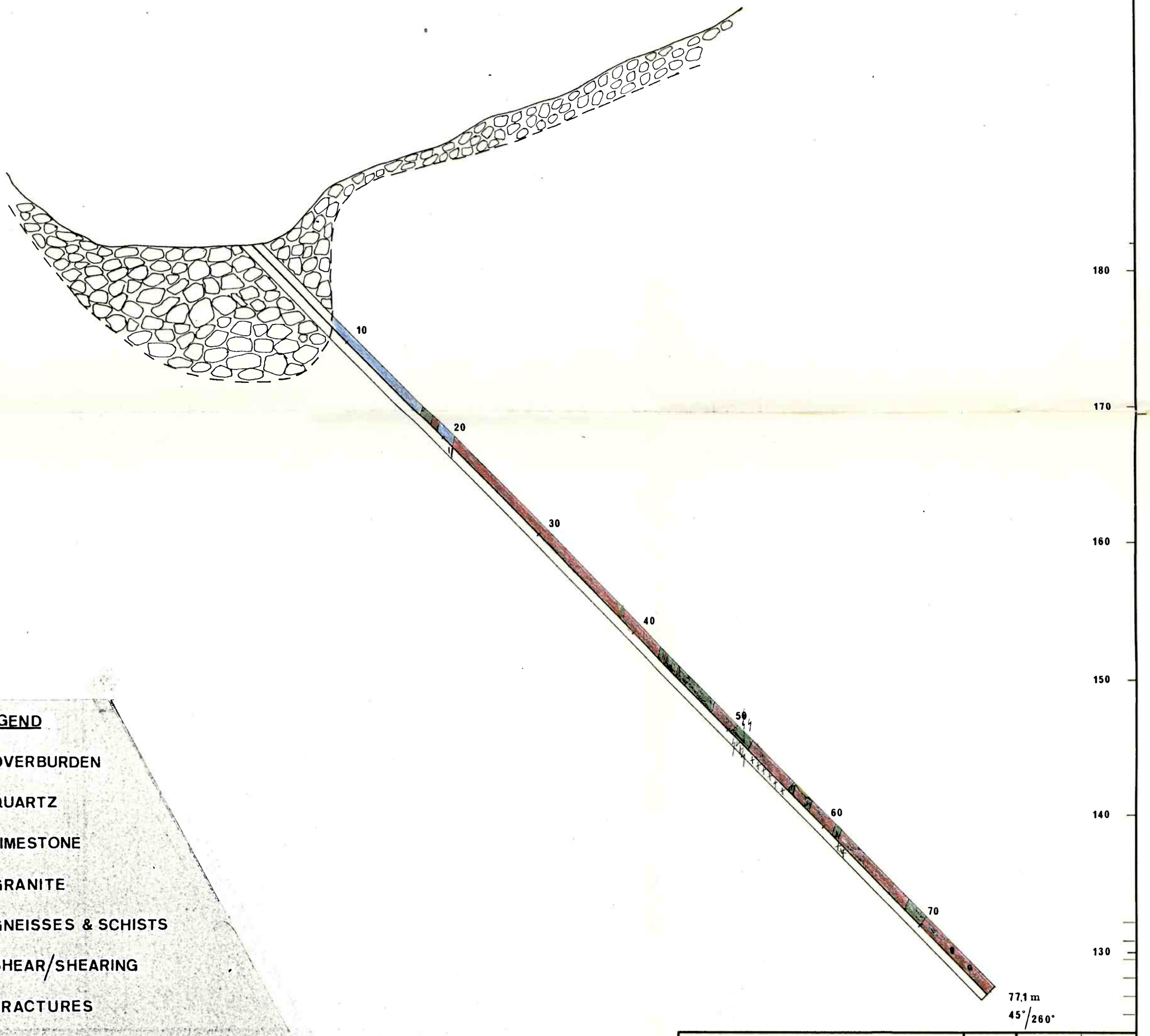
From	To		Description
0	8.5		Overburden
8.5	17.6		Limestone In places strongly deformed and broken. Development of skarn mineralogy in the lower contact area.
17.6	18.7		Mica schist. Core angel 46°
18.7	19.5		Granite. Medium grained with small py grains at lower contact. Mica schist occurs as fragments.
19.5	21.0		Limestone Development of skarn minerals mainly pyrox. and garnet. Py occur as minot grains.
21.0	42.4		Granite. Medium grained with a white to grey colour. In places a red colour is caused by late zeolitic veins. The main zeolithic veins are in most cases parallel core string but a 40–45° core angel is also very frequently occurring. From 30–40 m random orientation of the veins. 21 – 24 m Broken granite with Aspy and py. 38.7 m Quartz vein with Aspy 15°, 1 cm. 40.1 m Quartz vein with Aspy 25° 1–2 cm.
42.4	48.1		Diorite ? with secondary biotite Core angel Upper contact 55° Biotite foliatein 55° Granitic veins 43.3 70° 44.4 60°
48.1	50.5		Granite. Pink colour, medium grained. 50.5 – 50.5 Broken 48.4 zeolitic vein 40°
56.3	56.9		Mica schist as above
56.9	57.4		Granite. Coarse grained with a pink colour. Quartz veins parallel core string.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: SEKSA BEARING: W DIP: 50° HOLE NO: 30 SHEET NO 2
LOGGED BY: R Si STARTED: PROPERTY
CASING: 9.0 m FINISHED: Kolsvik
CORE SIZE: TESTS (CORRECTED): Bindal

From	To		Description
57.4	58.4		MICA SCHIST
58.4	60.9		GRANITE Medium grained with a grey colour.
60.9	61.3		MICA SCHIST
61.3	62.9		BRECCHIA Development of clay minerals
62.9	68.5		GRANITE Medium grained with grey colour
68.5	70.0		MICA SCHIST/MICA GNEISS
70.0	77.1		GRANITE Medium grained with grey colout 72.9 - 73.2 Mica schist fragment 75.4 - 75.6 - " - - " -
	77.1		END OF HOLE



LEGEND

- OVERBURDEN
- QUARTZ
- LIMESTONE
- GRANITE
- GNEISSES & SCHISTS
- SHEAR/SHEARING
- FRACTURES
- BRECCIATION
- ASPY & QUARTZ ALONG FRACTURES
- " " ON BRECCIA
- DISSEMINATED ASPY

KOLSVIK, BINDAL.

DDH 30

⅓ SULFIDMALM

SCALE		
1:200	OBS.	
	DRAW.	
	TRAC. TKJ	01-83
	CHK.	

MAP NO.

MAP SHEET

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: E 270° DIP: 80 HOLE NO: 31 SHEET NO: 1

LOGGED BY: ØM STARTED: 7.7.82 PROPERTY .....

CASING: ..... FINISHED: ..... Kolsvik, Bindal

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
0	10		0 - 1.45 Overburden
			1.45 - 3.05 Granite, mostly massive grey granite with some scattered dots of Aspy. From 2.60 - 3.80 some quartz and bands of Aspy.
			At 3.05 Contact 60°
			3.05 - 3.35 (Highly) foliated diorite, foliation 60°.
			At 3.35 Contact 60°
			3.35 - 4.50 Granite. From ab 4 m cut by thin quartz veins (2-3 mm thick and direction ab 70 - 80-90. Only dots of Aspy associated with these. Near 4.50 also Aspy veins.
			At 4.50 Contact 70°.
			4.50 - 4.70 Foliated diorite foliation 80°. At 4.70 contact 70°
			4.70 - 9.40 Granite 4.70 - 6.20 Little mica and cut by steep quartz veining. Only scattered Aspy on these. One Aspy vein at 5.03 at 80°. 6.20 - 7.30 Rather massive granite with scattered dots of Aspy. 7.30 - 9.40 Broken and highly deformed quartz rich granite with mylonite textures (At 7.60 - 7.80 and 9.10 - 9.30) + Musc. on these good Aspy mineralization. Otherwise only scattered Aspy. Planar structures in mylonitic zones are ab 60°. At 9.40 contact 60°
			9.40 - 10.00 Foliated, fine grained diorite Foliation 60° At 9.80 Aspy on one singe (½ cm) Concordant quartz vein.
			10.00 - 10.70 Diorite, less foliated than before, also coarser. Rich in pyrite 10.70 Contact 80°
			10.70 - 13.20 Granite. Rather massive medium grained. Scattered Aspy near lower contact. 13.20 Contact 20°.
			13.20 - 13.50 Diorite, foliation 35°. Contact 35°.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: 270° E DIP: 80° HOLE NO: 31 SHEET NO: 2

LOGGED BY: ØM STARTED: 7.7.82 PROPERTY .....

CASING: ..... FINISHED: ..... Kolsvik, Bindal.

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
			13.50 - 13.90 Musc. & chlorite rich granite
			13.90 - 15.40 Diorite, rather massive. Rich in py but some scattered Aspy seen at ab 15.00. 15.40 contact 75°.
			15.40 - 18.15 Granite. Some quartzveining and Aspy, py on these. Direction 70→90. Then rather massive but Aspy veining seen at 17.02 (½ cm quartz at 80°) and at 17.70 At 18.15 contact 55°
			18.15 - 18.50 Diorite. Unfoliated.
			18.50 - 20.00 Granite. Grey and containing fragments of diorite.
20.0	30.0		20.00 - 20.90 Granite like 18.50 - 20.00, but more biotite from 20.70.
			20.90 - 21.70 Biotite rich diorite. Weak foliation (70°) At 21.70 contact 55°
			21.70 - 21.95 Granite with py and Aspy along fractures. At 21.95 contact 65°.
			21.95 - 22.80 Diorite like 20.90 - 21.70. At 22.80 Contact 70°
			22.80 - 23.30 Granite: Some aggregates of py and Aspy in the middle of the zone. At 23.30: contact 50°.
			25.80 - 26.00 Granite. Massive Contact 26.00. 80°.
			26.00 - 27.80 Diorite like above At 27.80: Contact 75°.
			27.80 - 28.20 Rather massive granite. Seen some scattered py.
			28.20 - 28.40 Diorite
			28.40 - 28.70 Granite. Can be traces of Aspy along thin fractures. 27.70: Contact 55°.
			28.20 - 30.00 Diorite, like above.
30.0	40.0		30.00 - 30.95 Diorite. Foliation 50°. Cut by granitic veins at 50°. At 30.95: Contact 50°.
			30.95 - 32.40 Grey, little mica, and massive granite. 32.40 contact 90°.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: 270°E DIP: 80 HOLE NO: 31 SHEET NO: 3

LOGGED BY: ØM STARTED: 7.7.82 PROPERTY Kolsvik, Bindal

CASING: ..... FINISHED: .....

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
			32.40 - 35.30 Diorite. Doliation 65°. 35.30: Contact 60°
			35.30 - 36.80 Granite: Varying content of biotite. Foliated (60°) in biotite rich parts. Aspy seen along musc. filled fracture at ab 35.70 - 35.80. Fracture from 30° → parallel. At 36.30 contact 60°.
			36.80 - 37.20 Fine grained diorite. Foliation 70°.
			37.20 - 37.35 White granite
			37.35 - 40.00 Fine grained diorite Cut by thin quartz and granites at all directions.
40.0	50.0		40.00 - 40.70 Granite. Grey. Some musc. along fractures. 40.70 contact 30°.
			40.70 - 41.30 Diorite 41.30 contact 70°
			41.30 - 42.05 Grey granite. Miscovite along fractures 42.05: contact 40°
			42.05 - 42.80 Diorite, only weak foliation (50°) cut by some granitic veins (50°). At 42.80 contact 30°.
			42.80 - 44.55 Massive grey granite. Fracture zone at 43.15 to 43.25. Direction 25°. 44.55: contact ≈ ⊥
			44.55 - 45.00 Fine grained diorite 45.00: contact. contact 80°.
			45.00 - 49.15 Granite. Aspy on one single fracture. At 45.80 at 15° otherwise only muscovite and core totally fractured.
		49.15	End of hole.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: ..... BEARING: ..... DIP: 45° HOLE NO: 32 SHEET NO: 1

LOGGED BY: ..... STARTED: ..... PROPERTY .....

CASING: ..... FINISHED: ..... Kolsvik

CORE SIZE: ..... TESTS (CORRECTED): ..... Bindal

From	To		Description
0	4.0		Overburden
4.0	6.0		Medium grained. Grey granite. Shearing is developed at 5.4 - 5.5 45°. 6.0 - 6.5 Increasing quartz content.
6.5	6.6		Strongly sheared diorite 55°
6.6	6.95		Quartz vein with arsenopyrite stringers 55°
6.95	10.0		Medium grained grey granite. Quartz stringer along shear plane. In some cases Aspy. 50 - 55°. Joints are developed 11 55°. Zeolite.
10.0	13.65		Medium grained diorite. Which gradually change to med. grained granite around 11.o m. Aspy veins 11.6 - 12.0 40° Quartz segregations 12.4 - 12.7 m
13.65	15.9		In places strongly deformed diorite. Biotite.
15.9	16.05		Quartz Aspy vein 65°.
16.05	17.5		Grey granite. Aspy specks.
17.5	18.5		Deformed diorite. Mica schist Contact 75°. Quartz veins with Aspy + Py.
18.5			Med. grained grey granite. Streaked out and deformed. Aspy/quartz 19.05 - 19.1 80°.
20.0	25.0		Slightly deformed coarse grained retrograded. 33.7 - 34.1 Amf. porphyrites
25.0	27.7		Deformed diorite Aspy vein 2 cm 25.15 + Py 45° 1 cm 27.3 + Muscovite
27.7	33.5		Grey med. grained granite. Dioritic fragments 30.5 - 32.0 Fractures 15 - 20 Muscovite.
	33.5		End of hole.

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: B-zone BEARING: ..... DIP: 90° HOLE NO: 34 SHEET NO: 1

LOGGED BY: R Si STARTED: ..... PROPERTY .....

CASING: 4.5 m FINISHED: ..... Kolsvik, Bindal

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
0	4.0		OVERBURDEN
4.0	7.4		GRANITE
			Fine to medium grained with grey to white colour.
7.4	8.0		DIORITE ?
			In places rich in biotite
8.0	19.7		GRANITE
			Medium grained - white to grey
			9.35 Mylonite 5 cm zone 65° core angle + Po
			8.8 Small Aspy grains
			18.8 - " - - " -
			13.6 - " - - " -
19.7	21.6		DIORITE
			In places rich in biotite and sheared. Shearplanes: 30° core angle
			20.4 Aspy streaked out parallel shearplane
			21.5 - " - - " - - " -
21.6	23.0		GRANITE
			Sheared, in places Aspy grains, streaked out parallel shearplane.
23.0	23.6		DIORITE
23.6	30.0		GRANITE
			Fine to medium grained, white to grey.
			Some shearing.
			Core angle shearplane 35°.
			Randomly distributed Aspy veins in the core string - orientated parallel to 75° (core angle).
30.0	30.2		DIORITE
			Deformed Aspy at lower contact.
30.2	32.3		GRANITE
			Fine to medium grained with a grey colour.
			Aspy as specks randomly orientated.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: B-zone BEARING: ..... DIP: 90° HOLE NO: 34 SHEET NO: 2

LOGGED BY: R Si STARTED: ..... PROPERTY .....

CASING: 4.5 FINISHED: ..... Kolsvik, Bindal.

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
32.3	34.7		MICA SCHIST
			Mainly biotite
34.7	35.0		GRANITE
			Small grains with Aspy
35.0	35.3		MICA SCHIST/RETROGRADED DIORITE ?
			Aspy on quartz vein at 35.1
35.3	37.4		GRANITE
			Fine to medium grained.
			Narrow Aspy veins at 35.4 and 35.5
37.4	39.5		MICA SCHIST/DEFORMED DIORITE
			Aspy on quartz vein.
39.5	44.9		GRANITE
			Fine to medium grained.
			Small Aspy grains seen.
			Meta sediment fragments at 41.4 and 42.4
			Shear zone at 39.6
			Aspy on fracture at 41.8
44.9	47.0		MICA SCHIST (DIORITE)
47.0	47.5		GRANITE
47.5	48.0		MICA SCHIST (META SED.)
48.0	48.5		GRANITE
			Aspy specks
48.5	49.2		MICA SCHIST
49.2	53.7		GRANITE
			Medium grained, white colour
			Aspy specks.
53.7	55.15		MICA SCHIST
			Strongly sheared
			53.9 - 54.4 Quartz vein with Aspy - 10°

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: B-zone BEARING: ..... DIP: 90° HOLE NO: 34 SHEET NO: 3

LOGGED BY: R.Si STARTED: ..... PROPERTY .....

CASING: ..... FINISHED: .....

CORE SIZE: ..... TESTS (CORRECTED): .....

From	To		Description
55.15	63.2		GRANITE Medium grained, grey colour Aspy grains, randomly distributed 60.1 Aspy vein 62.2 - " - 59.8 Py
63.2	67.3		MICA SCHIST Rich in garnets
67.3	70.6		GRANITE Fine grained
70.6	70.7		MICA SCHIST
70.7	70.9		GRANITE
70.9	71.6		MICA SCHIST (DIORITE DEFORMED ?)
71.6	71.9		GRANITE
71.9	72.5		MICA SCHIST AS ABOVE
72.5	73.1		GRANITE
	73.1		END OF HOLE

A/S SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: B-zone BEARING: East DIP: 65° HOLE NO: 35 SHEET NO: 1

LOGGED BY: R Si STARTED: PROPERTY

CASING: 1.SM FINISHED: Kolsvik

CORE SIZE: TESTS (CORRECTED): Bindal

From	To		Description
0	1.5		OVERBURDEN
1.5	6.5		GRANITE Medium grained - grey colour. Two sets of joints are developed. Core angle 80° joints with Aspy - " - 50°. joints no Aspy
6.5	6.9		MICA SCHIST Schistosity 45°
6.9	26.9		GRANITE Medium grained, grey colour 7 - 10 m development of joints with core ang. 80° Aspy 10.8 joint with Aspy 12.6 - " - " - " - Quartz 60° 13.2 - " - " - " - " 35° 16.2 - " - " - " - " 30° 16.9 - " - " - " - " 50° 17.4 - " - " - " - " 50° 18.5 Quartz vein, 1 cm, 60° 19.05 - " - 10 cm + Aspy 19.9 Fracture with Aspy 63° 20.8 - " - - " - 64° 23.0 Quartz vein 2 cm 30° 25.5 Fracture with Aspy, 70°
26.9	30.1		DIORITE Slightly deformed Lower contact 40° At contact some Py + Quartz.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: B-zone BEARING: East DIP: 65° HOLE NO: 35 SHEET NO: 2

LOGGED BY: R.Si STARTED: PROPERTY

CASING: FINISHED: Kolsvik

CORE SIZE: TESTS (CORRECTED): Bindal

From	To		Description
30.1	30.3		GRANITE
30.3	30.4		DIORITE Contact 30° Py
30.4	30.9		GRANITE Medium grained. Rich in quartz. Mica - mainly muscovite on fractures. Core angl. 20°, 35°. Aspy occurs on lower contact.
30.9	32.0		DIORITE Fractures parallel core contains zeolite minerals
32.0	34.0		GRANITE Medium grained with white to grey coulor Schisotsity developed - marked by muscovite - core angl.40°. Small Aspy grains at 33.7
34.0	37.15		DIORITE As above
37.15	40.0		GRANITE Medium grained with white colour. Some fractures developed 40°. 39.5 Quartz vein - 2 cm - 10°.
40.0	41.9		DIORITE As above
41.9	51.9		GRANITE Medium grained - grey colour Muscovite/chlorite. Developed on fractures core angl. 40° 37.5 Aspy-Quartz veins - 2 cm - 75°
51.9	56.0		DIORITE As above.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: B-zone BEARING: East DIP: 65° HOLE NO: 35 SHEET NO: 3

LOGGED BY: R.Si STARTED: PROPERTY

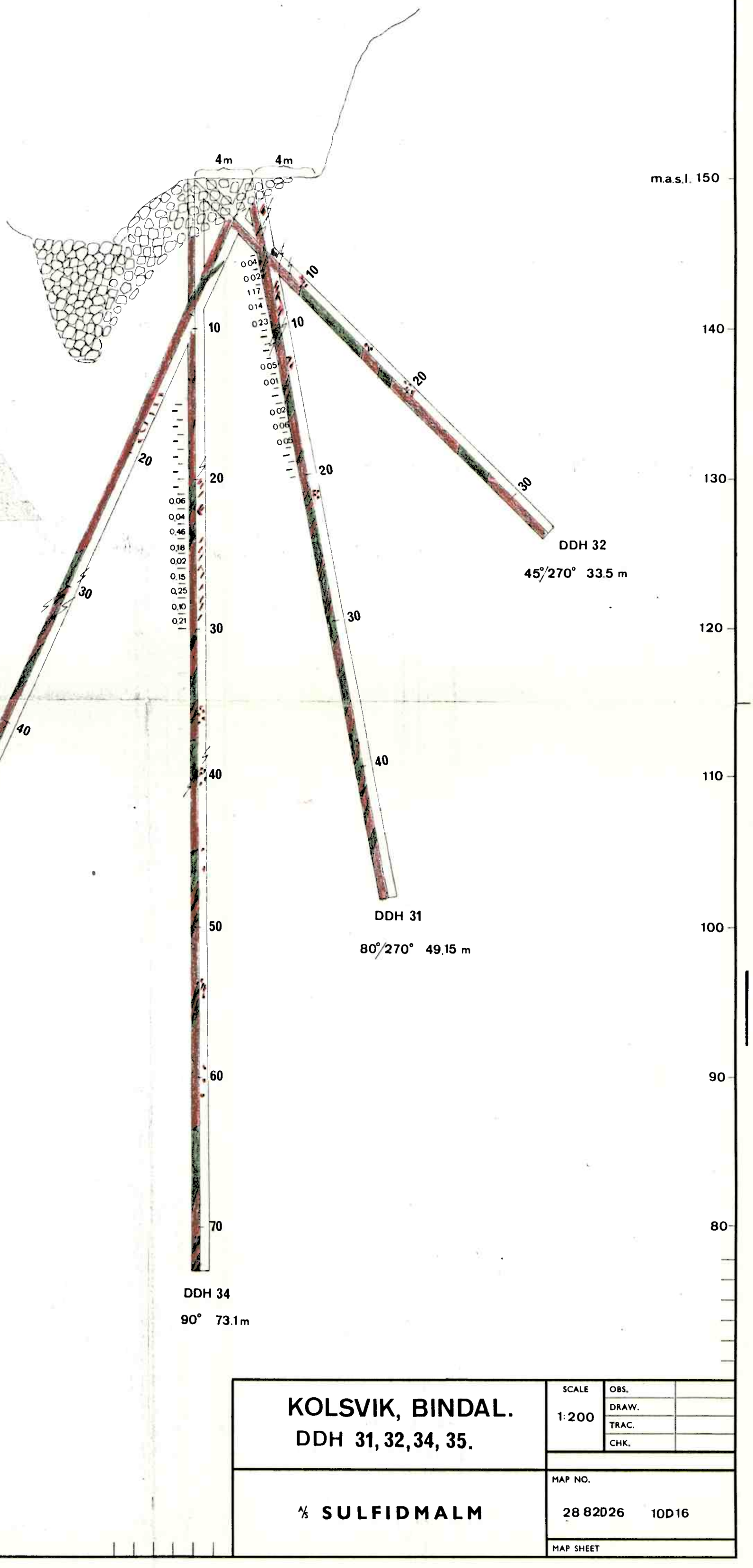
CASING: FINISHED: Kolsvik

CORE SIZE: TESTS (CORRECTED): Bindal

From	To		Description
56.0	60.1		GRANITE
			Medium grained granite.
			Muscovite on fractures 10°
			59.3 Quartz vein
60.1	62.15		DIORITE
			Foliated 40°
			Contains garnets
62.15	62.6		GRANITE
62.6	62.9		DIORITE
			As above
62.9	70.5		GRANITE
			Medium grained
			Muscovite on fractures
			65.7 Aspy on fracture - 55°
			67.2 Aspy specks
70.5	71.8		DIORITE
			Strongly deformed
			Rich in biotite
71.8	73.5		GRANITE
			Medium grained with muscovite and chlorite
82.2	82.7		DIORITE
82.7	83.9		GRANITE
83.9	84.5		DIORITE
84.5	86.3		GRANITE
86.3	88.0		DIORITE
			Foliated some py
88.0	95.6		GRANITE
			Medium grained
		95.6	End of hole

LEGEND

- OVERBURDEN
- QUARTZ
- LIMESTONE
- GRANITE
- GNEISSES & SCHISTS
- SHEAR/SHEARING
- FRACTURES
- BRECCIATION
- ASPY & QUARTZ ALONG FRACTURES
- " " ON BRECCIA
- DISSEMINATED ASPY



KOLSVIK, BINDAL.
DDH 31, 32, 34, 35.

SCALE 1:200

OBS.
DRAW.
TRAC.
CHK.

⅛ SULFIDMALM

MAP NO. 28 82D26 10D16

MAP SHEET

A/S SULFIDMALM

DIAMOND DRILL RECORD

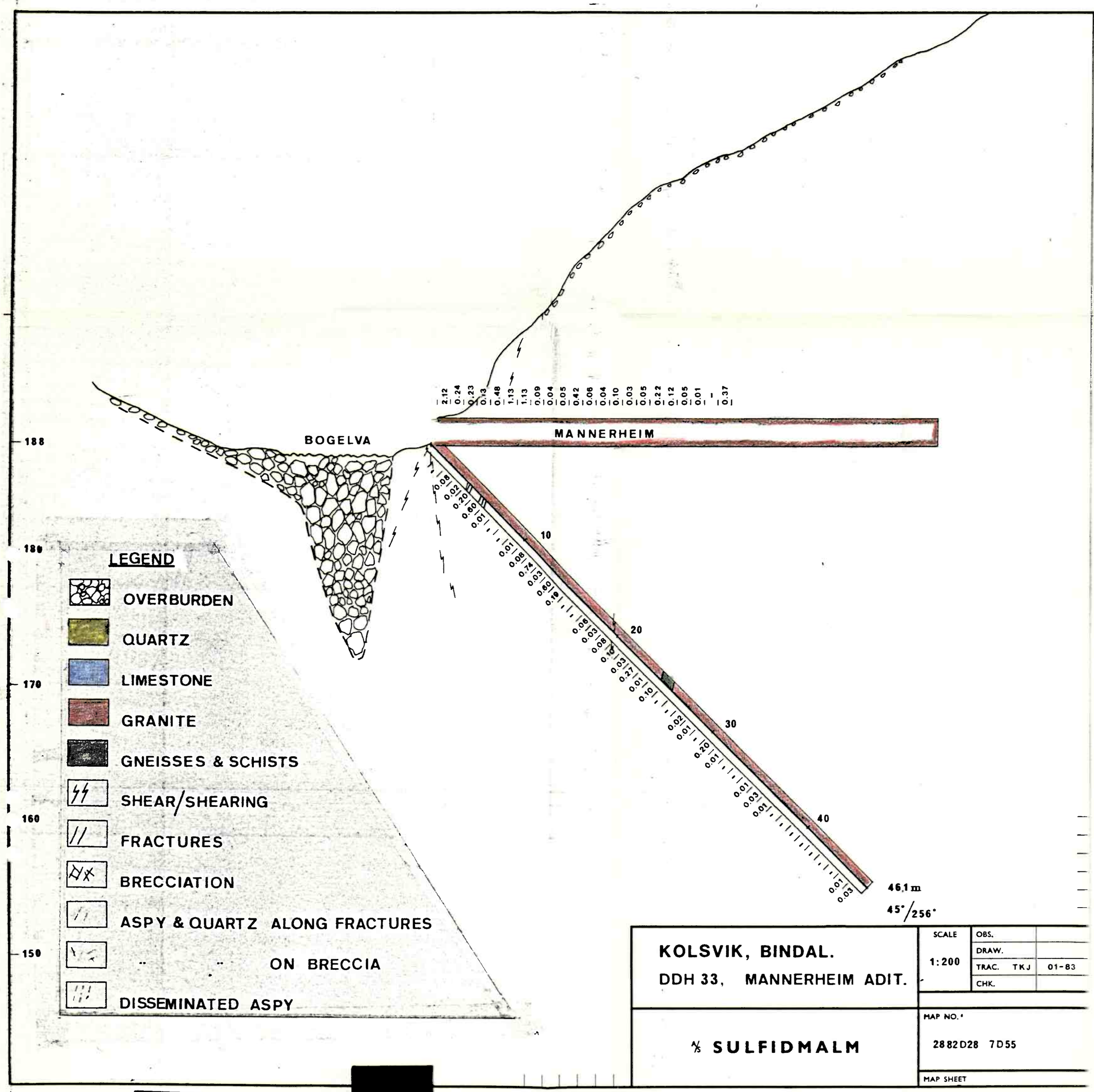
LOCATION: Kolsvik BEARING: 256° DIP: 45° HOLE NO: 33/82 SHEET NO: 1

LOGGED BY: ØM STARTED: PROPERTY

CASING: FINISHED: Kolsvik, Bindal

CORE SIZE: TESTS (CORRECTED):

From	To		Description
0	1.40		OVERBURDEN
1.40	24.45		GRANITE Fine and Medium grained. Mainly grey in colout, but by turns pale red colour. Traces of scattered disseminated Aspy minerals are observed. 4.00 - 4.40 : Quartz veining with some Aspy occasionally associated with Py. At 4.10 m, ½ cm Aspy-vein at 45° angle to core. 5.20 - 5.90 : Quartz veining with some Aspy. Locally some Py. 19.30 - 19.60 : Fracture zone with some zeolite mineralization.
24.45	25.60		MICA SCHIST Foliation 45° 24.45 : contact crushed 25.60 : contact 30°
25.60	46.10		GRANITE Fine and medium grained. Alternating between grey and red colour. Strong red alteration last ten meters with zeolite minerals along fractures.



KOLSVIK, BINDAL.

DDH 33, MANNERHEIM ADIT.

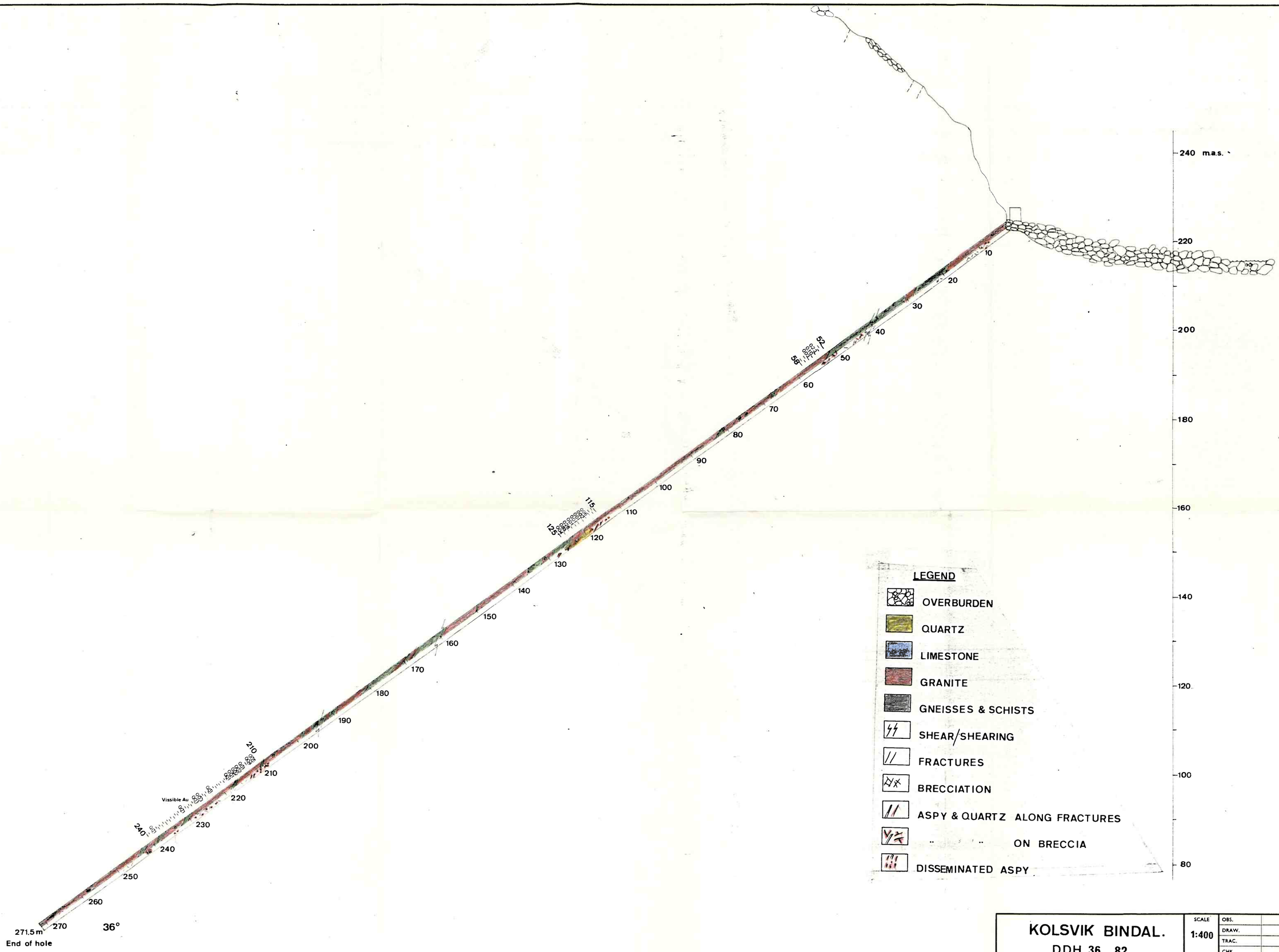
SCALE	OBS.	
1:200	DRAW.	
	TRAC. TKJ	01-83
	CHK.	

⅛ SULFIDMALM

MAP NO.

2882D28 7D55

MAP SHEET



KOLSVIK BINDAL. DDH 36. 82.	SCALE 1:400	OBS. / DRAW. / TRAC. / CHK.
⅛ SULFIDMALM	MAP NO. 28 82 D18 9A58	MAP SHEET