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Tittel

Assessment of the Kolsvik gold prospect, Bindalen, Nordland

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F M Vokes	31/5 1986	NTH

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Råstofftype	**Emneord**	
Malm/metall	Au	

Sammendrag

Dette er en 3 siders kommentar av professor F M Vokes, på malmberegningene/anslagene i Sulfidmalm rapport 534-28-82: Investigation on the Kolsvik Gold Propertyin the Bindal area. Rapporten ligger vedlagt, men se også BV 548.

Assessment of the Kolsvik gold prospect, Bindalen, Nordland.

Following a telephonic request by Mr. Åke Andersson, Terra Mining AB, Bromma, I hereby beg to submit an assessment of the possible value represented by the Kolsvik gold prospect.

My assessment is based solely on a study of papers received from Terra Mining. I have never visited the Bindalen area and have thus no first-hand acquaintance with the deposit in question, nor with the mineralization type generally.

The two main sources of information were;
"Report on geological, diamond drilling and metallurgical investigations", by R. Sivertsen and Ø. Mjelde, dated September 1983 (submitted to the A/S Sulfidmalm-Superior Norge Joint Venture),
and,
"Investigations on the Kolsvik gold property, Bindalen, Nordland, Norway" by R. Sivertsen and Ø. Mjelde, dated 1984 (submitted to A/S Sulfidmalm).

The two reports cover very much the same ground, though each contains information not found in the other.

I interpreted my assignment as, mainly, to check and assess the figures and other data presented in the reports regarding grades and tonnages of mineralized ground, in order to arrive at a reasonable, minimum in situ value for the deposit.

Time did not permit a complete reassessment of these data, which in any case I had to take at their face value. I did, however, check through the data for most of the drill hole sections forming the basis of Sivertsen's and Mjelde's tonnage/grade calculations as well as those for certain of the adits.

My check calculations of grades and lengths are in general agreement with those of the authors as shown in their tabulations and on the various cross-sections of the deposit.

However the extremely erratic distribution of the gold in the cores and surface samples, and the consequent rapid variations of assay values along the sampled lengths makes extremely difficult, perhaps even meaningless, any calculation of average values, even over relatively short core lengths. This is of course, a point readily admitted by Sivertsen & Mjelde.

It is not always easy to see why these authors have assigned widths and continuity to the mineralized zones on the basis of the assay figures. I must conclude that geological considerations during core-logging have played a considerable role here.

However I have no disagreement in principle with their depiction of the zone.

Sivertsen & Mjelde's calculations relate to that part of the exposed and drilled mineralization at Kolsvik known as the F and C zones, covering an interpreted strike length of some 550 m (Sivertsen & Mjelde, 1984). In order to avoid discussions of actual continuity along this strike length, and since I am aiming at a minimum figure, I decided to restrict my assessment to the so-called C zone where coverage seems to be more complete. The actual quantity of mineralization involved in the Kolsvik zone is of course considerably in excess of this.

A strike length of 200 m in this C zone down to a conservative depth of 100 m represents some 540,000 tonnes of mineralized ground.

An assignment of grade to this ground is much less firmly based, due to the above mentioned erratic gold distribution. Sivertsen & Mjelde (1984, p.19) give a 'guestimate' of "the average value of all core samples in the potential zone" of 2 g/t.

I am unable to support this figure by any reasoned calculations, or to give a reasoned opinion as to how much higher the true average may be (I refer here to previous discussions of the so-called "nugget effect" at Kolsvik).

However using this, arguably minimum, figure of 2 g/t and with present the gold price, the C zone block as defined above would represent an in situ value of

at least 8 M Norwegian kroner.

I take no position on whether, and to what extent, this value could eventually be recovered from the ground, but my assessment would seem to indicate that in situ value of the Kolsvik prospect - as known at the time the reports were prepared - was in excess of the figure of NOK 5 M, which I understand is required to be shown.

Trondheim, 31.5.86

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FAGRAPPORT
TECHNICAL RAPPORT

A/S SULFIDMALM

Dato / Date	Rapport nr./ Report no.	Kartblad / Mapsheet	Prosjekt / Project
1984			

Prosjektleder / Project leader	Forfatter / Author
R. Sivertsen,	R. Sivertsen/ Ø. Mjelde

Tittel / Title

INVESTIGATIONS ON THE KOLSVIK GOLD PROPERTY, BINDAL, NORDLAND, NORWAY.

Resymé / Summary

Investigations on the Kolsvik gold property in 1981 have consisted of detailed mapping, sampling, drilling and metallurgical testing.

Gold mineralization is associated with quartz and arsenopyrite in faults, shears and joints along the granite/wallrock contact. Gold values have been obtained over a zone of some 800 m strike length with an elevation difference of some 180 m.

From the information available it is well established that a structurally controlled mineralized zone is trending from the F area to the Seksa area - a distance of some 550 m. Between F and C (400 m) areas mineralized structures both on surface and in drill holes are seen to have a fairly steep dip to the east and vary in width from 5 - 10 m. Gold values are erratic, but 50 - 100 kg samples running 8 - 12 g/t Au are encouraging. Based on informations from the work carried out the following points can be made.

1) A strike continuation of 550 m and a depth extention of 230 m is proven.

2) Based on minor structures and their frequences accompanying mineralizations as quarts, arsenopy, py a geological potentiale of 2 mill tonns are indicated.

Metallurgical tests on the mineralization both from F and C are positive.

Recovery	80 %	F - zone
"	93 %	C - zone

Gold values are also obtained to the north on the B-zone. The ground between Seksa and B is heavily scree covered and has to date not been investigated.

Andre relevante rapp.
Other relevant report

Kommentarer / Comments

Fordeling
Distribution

- Canada
- Nikkelverket
- Kristiansand
- Oslo

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 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.

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.

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

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 assocaited 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.

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 $\pm$ 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

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 µ m)	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 µ m diameter.

indikert minimumsdyp. : Hva er det ??

Indikere = tyder på ; (dvs. en usikkerhet foreligger)

"minimumsdyp" her bør mene noe man er sikker på.

{hvilket man ikke kan være}

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,= 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.

TOTAL ALLE NIVÅ
""""""""""""""""""""""""""""""""

1269877	tonn
483880	tonn
1753757	tonn

KOLSVIK BINDAL

PRELIMINARY MINERAL INVENTORY ESTIMATES.

Elevation	Hole. No.	Area	Height	Volume	Tonnes	g/t Au	Remarks	*) Br./L.
120	5/6 - 1	*) 360 m^2	20 m	7200 m^3	19440 t			40 × 9
	1 - (2)	36 m^2	20 m	720 m^3	1944 t			9 × 4
	(2)- 25	350 m^2	20 m	7000 m^3	18900 t			40 × 8,75
	25-23/24	587 m^2	20 m	11740 m^3	31698 t			40 × 14,6
	23/24 - 36	1863 m^2	20 m	37260 m^3	100602 t			190 × 9,8 m
	36 - F	379 m^2	20 m	7580 m^3	20466 t			50 × 7,6 m
		3575 m^2		71500 m^3	193050 t		Total	

Hole. No.	Area	Height	Volume	Tonnes	Remarks
25 - 23/24	154 m^2	20 m	3080 m^3	8316 t	
18 - 20	995 m^2	20 m	19900 m^3	53730 t	
36 - F	120 m^2	20 m	2400 m^3	6480 t	
	1269 m^2		25380 m^3	68526 t	Total

Area	Volume	Tonnes	Remarks
48,44 m^2	96880 m^3	261576 t	Total

KOLSVIK BINDAL

""""""""""""""""""""""""

PRELIMINARY MINERAL INVENTORY ESTIMATES

""

Elevation	Hole. No.	Area	Height	Volume	Tonnes	g/t Au	Remarks
140	5/6-1	299 m^2	20 m	5980 m^3	16146 t		
	1 - 2	50 m^2	20 m	1000 m^3	2700 t		
	2 - 25	330 m^2	20 m	6600 m^3	17820 t		
	25-15|16|17	164 m^2	20 m	3280 m^3	8856 t		
	15/16/17-23/24	428 m^2	20 m	8560 m^3	23112 t		
	23/24-36	1838 m^2	20 m	36760 m^3	99252 t		
	36 - F	363 m^2	20 m	7260 m^3	19602 t		
		3472 m^2		69440 m^3	187488 t		Total
	25-23/24	168 m^2	20 m	3360 m^3	9072 t		
	25 - 20	908 m^2	20 m	18160 m^3	49032 t		
	36 - F	144 m^2	20 m	2880 m^3	7776 t		
		1220 m^2		24400 m^3	65880 t		Total
		4692 m^2		93840 m^3	253368 t		Total nivå 140

""

KOLSVIK - BINDAL

PRELIMINARY MINERAL INVENTORY ESTIMATES

Elevation	Hole no.	Area	Height	Volume	Tonnes	g/t Au	Remarks
160	5/6 - 1	295 m^2	20 m	5900 m^3	15930 t		
	1 - 2	80 m^2	20 m	1600 m^3	4320 t		
	2 - 25	262 m^2	20 m	5240 m^3	14148 t		
	Ekstr.						
	18 - 25	104 m^2	20 m	2080 m^3	5616 t		
	25-15/16/17	192 m^2	20 m	3840 m^3	10368 t		
	15/16/17-						
	23/24	439 m^2	20 m	8780 m^3	23706 t		
	23/24-36	2071 m^2	20 m	41420 m^3	111834 t		
	36 - F	393 m^2	20 m	7860 m^3	21222 t		
		3836 m^2		76720 m^3	207144 t		Total
	25-23/24	224 m^2	20 m	4480 m^3	12096 t		
	25 - 20	896 m^2	20 m	17920 m^3	48384 t		
	36 - F	206 m^2	20 m	4120 m^3	11124 t		
		1326 m^2		26520 m^3	71604 t		Total
		5162 m^2		103240 m^3	278748 t		Total nivå

KOLSVIK - BINDAL

PRELIMINARY MINERAL INVENTORY ESTIMATES

Elevation	Hole no.	Area	Height	Volume	Tonnes	g/t Au	Remarks
180	5/6 - 1	258	20 m	5160	13932		
	1 - 2	100	20 m	2000	5400		
	2 - 25	266	20 m	5320	14364		
	25 - 15	300	20 m	6000	16200		
	15 - 23	416	20 m	8320	22464		
	23 - BR.	182	20 m	3640	9828		
	12/13	712	20 m	14240	38448		
	12/13-36	1188	20 m	23760	64152		
	36-10/11	216	20 m	4320	11664		
		357.5	20 m	7150	19305		215.757 t
	18-15/16 / 17	123 m²	20 m	2460 m³	6642 t		
	25 - 20	1039 m²	20 m	20780 m³	56106 t		
	36 - F	220 m²	20 m	4400 m³	11880		74.678 t

Total nivå 290.385

KOLSVIK - BINDAL

PRELIMINARY MINERAL INVENTORY ESTIMATES

Elevation	Hole no.	Area	Height	Volume	Tonnes	g/t Au	Remarks
200	C	200	15	3900	10530		
		81	20	1620	4374		
	Nebba 12/13	455	20	9100	24570		
	12/13-8	688,5	20	13770	37179		
	8 - 36	465,5	20	9310	25137		
	36-10/11	263,5	20	5270	14229		
	10/11 -	399	20	7980	21546		137.565
	C	700	15	10500	28350		
	36-10/11	25	20	500	1350		
	36-10/11	37,5	20	750	2025		
	10/11	220,5	20	4410	11907		
	10/11	13,0	20	260	720.-		44.334
Totalt 200							181.899

KOLSVIK - BINDAL

PRELIMINARY MINERAL INVENTORY ESTIMATES

Elevation	Hole no.	Area	Height	Volume	Tonnes	g/t Au	Remarks
240	12/13-8	664	20	13280	35856		
	8 - 10/11	755,3	20	15105	40783,5		
	10/11-3/4	166,3	20	3325	8977		
	3/4 -	245	20	4900	13230		98846
	8	200	20	4000	10800		
	36-10/11	105	20	2100	5670		
	36-10/11	70	20	1400	3780		
	10/11-3/4	45	20	900	2430		
	10/11-3/4	114	20	2280	6156		
	3/4	220	20	4410	11907		40743
Total 240							139589
220	12/13	258,5	20	5170	13959		
	12/13-8	607,5	20	12150	32805		
	8-10/11	720	20	14400	38880		
	10/11	399	20	7980	21546		107.190
	10/11	76	20	1400	3780		
		52,5	20	1050	2835		
	10/11-3/4	90	20	1800	4860		
	3/4	180	20	3600	9720		21195
Total 220							128.385

KOLSVIK - BINDAL

PRELIMINARY MINERAL INVENTORY ESTIMATES

Elevation	Hole no.	Area	Height	Volume	Tonnes	g/t Au	Remarks
300		165	20	3300	8910		
		210	20	4200	11340		
280		787.5	20	15750	42525		42525
	10/11	120	20	2400	6480		
	10/11-3/4	252	20	5040	13608		
	3/4	451,25	20	9025	24367		
							44455
Total 280							86980
	10/11	840	20	16800	45360		
	10/11-3/4	271	20	5415	14621		
	3/4	211.5	20	4230	11421		71402
260	8	125	20	2500	6750		
	36-10/11	70	20	1400	3780		
	36-10/11	115	20	2100	5670		
	10/11-3/4	140	20	2800	7560		
	10/11-3/4	37.5	20	750	2025		
	3/4	285	20	5700	15390		41175
							112577

Hva med m-angivelser i alle hull!

BESKRIVELSE AV MALMSONE I BH

BH 1: Sonen ligger i granitt. En del omvandling langs sprekker. Flere kvartsårer og -segresjoner.
Noe Aspy påvist.

Over: 48.85 - 55.80: Ekstremt skjært metas./kalk.
Under: 69.30 - 72.50: Godt skjært kontakt.

BH 2: Sonen er lagt i kvartsrik, omvandlet granitt. Noe kvartsårer og -segresjoner. Svak Aspymineralisering funnet.

Over: 33.70 - 33.45: Breksje/forkastningssone i metas.
Under: 37.30 - 53.00: Lite omvandlet granitt.

BH 3: Hovedsonen er definert av kvartsrik granitt.
Stedvis breksjert, dette øker nedover. Aspy på sprekker og i matriks.
Mot bunnen noe vekslende geologi, mindre deformasjon og Aspy.
Dette er kalt en flankesone som fortsetter hullet ut.

Over: Gneis med sterk deformasjon): forkastningssone.

BH 4: Hovedsonen i form av breksjering kan sees på overflaten noen meter langs sonens strøkretning . I borehull er sonen erodert bort.

Flankesonen er hovedsaklig granitt som inneholder Aspy på en del sprekker samt stedvis svak breksjering. I gneis finnes noen kvartsganger med Aspy.

Under: Gneis med lite oppsprekking.

BH 5: Det er vanskelig å lokalisere noen konkret forkastningssone p.g.a. mye kalk i borehullet.
Muligens går sonen gjennom noe omvandlet (svak rødfarget) granitt, men denne gir ingen verdier ved analyse.

Over: Foliert kalk
Under: Foliert kalk

BH 6: Gjelder samme problemer som for BH 5. Sonen er lagt til en breksjert/ godt foliert sone i gneis og kalk. Gir ikke utslag ved analysering.

Over: Avtagende deformasjon.
Under: En forholdsvis udeformert granitt.

BH 8: Sonen er lagt til et område hvor både gneis og granitt er sterkt deformert i form av sprekker, knusning og breksjering. En del Aspy i forbindelse med denne tektonikken. Også sett fritt gull i sonen.

Over: B.a. forholdsvis mer massiv, men noe Aspy.
Under: Ikke noen klart definert avslutning på sonen.
Fremdeles en del tektonikk og Aspy, men klart fall i analyseverdiene. Avslutningen på sonen er derfor en kombinasjon av geologi og analyse.

BH 9: I hovedsonen viser granitt sterk deformasjon i form av oppsprekking og breksjering og gneissonene alle sterk deformasjon, nærmest sleppesoner. Flankesonen på toppen er som hovedsonen, men med mindre deformasjon og Aspy.
NB! I flankesonen svært mye kjernetap.

Over: Forholdsvis massiv granitt
Under: Forholdsvis massiv gneis og granitt.

BH 10: Hovedsonen omfatter granitt og tildels ren kvarts som viser forholdsvis stor oppsprekking og breksjering.
I forbindelse med dette god Aspy mineralisering og spredt høye Au-analyser. Hovedsonen er vanskelig å begrense, derfor er lagt inn flankesoner både mot heng og ligg. Disse inneholder mindre Aspy og viser klart dårligere analyseverdier.

Over: Flankesonen er noe vanskelig å avgrense. Den viser vekslende geologi med deformert gneis og granitt.
Avslutningen er en kombinasjon av teksturer/Aspy/og analyseverdier.
Det finnes en del Aspy også utenfor flankesonen.

Under: Flankesonen med noe Aspy går forholdsvis raskt over i lite deformert granitt.

BH 11: Det meste av Aspy & Au mineraliseringen i hovedsonen er knyttet til en breksjert kvartsgang og kontaktsonen til en sterkt skjært gneis b.a.

Over: Ca. 10 m med svakt Aspy-mineralisert granitt før gnèisen viser ingen særlige deformasjonstegn. Dette er beskrevet som flankesone.

Under: Deformasjon og Aspy-innhold liten etter skjærsonen.

BH 12: Sonen ligger i gneis. Nærmere er den lokalisert ved sterkt deformert/ breksjert øyegneis med svak Aspy-mineralisering, men synlig fritt gull.

Over: Forholdsvis lite deformert gneis.
Under: Forholdsvis lite deformert gneis.

BH 13: Har valgt å definere mineraliseringen i form av to parallelle soner. Begge ligger i et område hvor forholdsvis tynne kvarts- og granittganger er noe deformert/breksjert og med Aspy i varièrende mengde.
I øverste sone sees fritt Au. Selve avgrensningen i relasjon til (eller delvis) analyseverdiene.

BH 14: Borehullet har ikke truffet sonen. ?

Hullet må ha passert gjennom strukturen, men strukturen er svak? og uten mineralisering! Mk

BH 15: Både hoved- og flankesonene over og under ligger i omvandlet, rød granitt. Dette avtar sterkt når man kommer under flankesonen.
Selve hovedsonen er "ekstrem" med flere kvartsganger med Aspy og flere steder med synlig fritt Au.

Over: Flankesonen begrenset av overdekke.
Under: Flankesonen går over til grå granitt og liten/lite Aspy-mineralisering.

BH 16: Hovedsonen er lagt til et område hvor granitten viser svak breksjestruktur med kvarts og Aspy på denne. Sonen er dratt ut (nedover) til også å omfatte granitt som har noen få kvartsganger med Aspy.
Flankesonen mot dypet er forholdsvis massiv,men er stedvis rødfarget og med spredt Aspy. Mot toppen samme forhold.

Over: Massiv gneis.
Under: Massiv og ingen mineralisering.

BH 17: Hovedsonen er lagt til området hvor det er noe rød granitt som er breksjert og viser en del Aspy, men er strekt ut til også å gjelde områder som bare har spredt Aspy på gjennomskjærende kvartsårer.
Flankesonen over omfatter granittsoner i gneis med spredt Aspy.

Over: Avgrenses oppover av met/kalk.
Under: Ingen avgrensning av flankesonen.

BH 18: Sonen består hovedsaklig av granitt, stedvis svakt rødfarget, og metasedimenter. Aspy hovedsaklig på sprekker og kvartsganger.

Over: Begrenset av overdekke.
Under: Hovedsaklig massiv granitt og nær ingen tegn til Aspy.

BH 19: Ikke truffet sonen, boret over.

BH 20: Ikke truffet sonen, boret over.

BH 21: Borehullet skjærer gjennom det som er tolket som en flankesone.
Dette er hovedsaklig granitt og gneis som viser sprekker/breksjering med hovedsaklig kloritt og epidot. Bare spredt Aspy og kvarts.

Over: Avgrenset av overdekke.
Under: Ingen mineralisering, men samme lave mineralisering på tektonikken.

BH 22: Tilnærmet hele hullet boret i sonen. B.a. varierer mellom rød-grå-hvit granitt i et uregulert mønster. Likevel er øverste del def. som hovedsone p.g.a. større opptreden av Aspy og kvartsganger.
Nederste del mindre frekvens av dette.

BH 23: På toppen av hullet en flankesone lik den som er beskrevet for BH 21.
Mot nedre del av denne blir granitten noe mer rød og deformasjon og hyppighet av Aspy øker. Mot bunn av hullet god Aspy-mineralisering (hovedsonen).

Over: Begrenset av overdekke.
Under: I bunn begrenset av Bogelvforkastningen som hovedsaklig går i kalk/kalkrike sedimenter.

BH 24: Det meste av hullet er i flankesonen, men likevel stor variasjon.
På toppen stort sett som flankesonen beskrevet i BH 23 og 21.
Lengre nede mer rødfarget og hyppigere Aspy på sprekker samt sprekker/breksjering med kloritt og epidot. Dette er tolket som om hullet går i liggen til hovedsonen, like under.
Stedvis også igjennom, her er det ofte mer kvarts.

Over: Avgrenset av overdekke.
Under: Sannsynligvis avgrenset av Bogdalforkastningen.
Sterkt deformert gneis og granitt med stort karbonatinnhold.

BH 25: Borehullet har to parallelle soner. Den øverste ligger i sin helhet i gneis og utgjøres av kvarts og noen granittårer som skjærer gjennom. Disse er svært ofte Aspy-mineraliserende. Stedvis i sonen er gneisen fragmentert med kvarts og Aspy som matriks. Den nederste sonen er hovedsaklig rød granitt, oppsprukket og breksjert med kvarts og Aspy på sprekker og som matriks.

Over: Også deformasjon, men lite eller ingen kvarts/Aspy.
Under: Bogdalforkastningen, hovedsaklig i kalk/kalkholdige b.a.

BH 26: Ikke truffet sonen.

BH 27: Hele borehullet i sonen. Mest mineralisering på toppen, men synlig gull to steder mellom 20 og 25 meter i nederste del av hullet. Hele sonen hovedsaklig i granitt.

BH 28: Borehullet tapt under transport, bare grovlogget.

BH 29: Ikke truffet sonen.

BH 30: Ikke truffet sonen.

BH 31: Vanskelig å ta ut og avgrense sonen. Mye er gjort ut fra overflateinformasjon. Sonen utgjøres av heller massiv granitt med noe Aspy assosiert med få sprekker. Ingen klar avgrensning, men på bunnen av hull nær fri for Aspy, samt mer gneis b.a.

BH 32: Samme forhold som er omtalt for BH 31. Noe mere kvarts på toppen.

BH 33: Hovedsonen viser spor av Aspy som dissimierte korn samt noen sprekkemineraliseringer i granitt.
Flankesonen viser bare spor av Aspy.

Over: Begrenset av overdekke.
Under: Deformert gneis og granitt uten mineralisering.

BH 34: Sonen er vanskelig å skille ut, men granitten i øverste del kan synes noe mer skjært. Jevnt over lite Aspy i hele hullet. Analyseverdier gir heller ingen definert sone.

BH 35: Granitten i sonen inneholder mer Aspy på sprekker enn nedover i hullet, men vanskelig å avgrense.

BH 36: Det er vanskelig med sikkerhet å plukke ut noe område som representerer sonen. Det finnes to muligheter. Mellom 50 - 60 og 210 - 240, hvor det er en viss deformasjon av granitt med breksjering og skjær med kvarts og Aspy. Muligens fritt Au i den nederste sonen.

KOLSVIK, BINDALEN. DIAMOND DRILL RECORD.

HOLE	CO-ORDINATES*	BEARING	DIP	LENGTH	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				
					41.0	50.00	9.00	<0.1				
					50.0	51.00	1.00	1.8				
					51.0	53.0	2.00	<0.1				

* Reference point 0|0 = Skaret

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

KOLSVIK, BINDALEN. DIAMOND DRILL RECORD.

HOLE	CO-ORDINATES [1]	BEARING	DIP	LENGTH [2]	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.											

[1] Reference point 0|0 = Skaret

KOLSVIK, 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				
					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

KOLSVIK, BINDÅLEN, DIAMOND DRILL RECORD

HOLE	CO-ORDINATES[1]	BEARING	DIP	LENGTH[2]	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~~ 78.	94.0	16.0	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					114.0	119.0	5.0	3.38
					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					38.0	41.5	3.5	5.22
					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								

[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	40.5	41.5	1.0	5.8	
					41.0	41.5	0.5	8.92					
					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

KOLSVIK, BINDALEN, DIAMOND DRILL RECORD

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					med cut value 30 gr
					31.25	31.50	0.25	0.3					
					31.30	31.75	0.25	<0.4					
					31.75	32.0	0.25	2.5					7.36 gr/to
					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					

All lenghtsin meters

HOLE	CO-ORDINATES[1]	BEARING	DIP	LENGTH[2]	ASSAYS ppm 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				
					23.0	23.25	0.25	<0.3				
					23.25	23.50	0.25	1.2				
					23.50	32.0	8.5	<0.3				
					32.0	32.50	0.5	1.4				
					32.50	34.0	1.5	<0.3				
					34.0	34.5	0.5	5.1				
					34.5	35.0	0.5	2.9				
					35.0	35.5	0.5	1.72	34.0	36.5	2.5	2.25
					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				
					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				
					44.0	51.0	7.0	<0.7				
					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				

[1] Reference point 0|0 = Skaret

[2] All lengths in meters

g.

KOLSVIK, BINDALEN. DIAMOND DRILL RECORD.

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	7.26				
					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*	BEARING	DIP	LENGTH#	ASSAYS ppm Au FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au
18.	62 S 7,5 E	295°	45°	97.0 m	16.4	22.00	5.4	0.6				
					22.00	23.00	1.00	3.22				
					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				
					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 7,5 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.	101,5 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				

* 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
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	0.16				
					37.0	38.0	1.0	0.01				

KOLSVIK, BINDALEN. DIAMOND DRILL RECORD.

HOLE	CO-ORDINATES[1]	BEARING	DIP	LENGTH[2]	ASSAYS ppm Au FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au
23	1015 S 27W	095°	60°	133m	10.00	32.00	22.00	0.01				
					32.00	33.00	1.00	3.73				
					33.00	34.00	1.00	0.25				
					34.00	38.00	4.00	0.02				
					38.00	39.00	1.00	0.50				
					39.00	40.00	1.00	1.63				
					40.00	41.00	1.00	0.49				
					41.00	45.00	4.00	0.04				
					45.00	46.00	1.00	0.37				
					46.00	49.00	3.00	0.01				
					49.00	50.00	1.00	1.19				
					50.00	51.00	1.00	4.09				
					110.00	111.00	1.00	0.07				
					111.00	112.00	1.00	0.29				
					112.00	113.00	1.00	0.59				
					113.00	117.00	3.00	0.04				
					117.00	118.00	1.00	0.20				
					118.00	119.00	1.00	0.47				
					119.00	122.00	3.00	0.03				

[1] Reference point 0|0 = Skaret

[2] A

KOLSVIK, BINDALEN. DIAMOND DRILL RECORD.

HOLE	CO-ORDINATES[1]	BEARING	DIP	LENGTH[2]	ASSAYS ppm Au FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au
24	1015 S 27W	095°	65	140.7	9.00	11.00	2.00	0.04				
					11.00	12.00	1.00	0.26				
					12.00	19.00	7.00	0.01				
					19.00	20.00	1.00	1.28				
					20.00	26.00	6.00	0.02				
					26.00	27.00	1.00	0.83				
					27.00	45.00	18.00	0.03				
					45.00	46.00	1.00	1.41				
					46.00	54.00	8.00	0.05				
					54.00	55.00	1.00	1.39				
					55.00	91.00	36.00	0.03				
					91.00	92.00	1.00	2.03				
					92.00	104.00	12.00	0.06				
					104.00	105.00	1.00	3.23				
					105.00	106.00	1.00	3.16				
					106.00	107.00	1.00	2.89				
					107.00	110.00	3.00	0.06				
					110.00	111.00	1.00	0.60				
					111.00	112.00	1.00	4.87				
					112.00	113.00	1.oo	13.03				
					113.00	114.00	1.00	5.49				
					114.00	115.00	1.00	0.52				
					115.00	136.00	21.00	0.06				

[1] Reference point 0|0 = Skaret

[2] All in meters

LSVIK, BINDALEN. DIAMOND DRILL ECORD.

HOLE	CO-ORDINATES	BEARING	DIP	LENGTH	ASSAYS ppm Au FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au	
25	615 S 43W		60°	116.00m	15.00	19.00	4.00	0					
					19.00	20.00	1.00	0.61					
					20.00	29.00	9.00	0.05					
					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					
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	
					100.00	104.00	4.00	0.06					

KOLSVIK, BINDALEN. DIAMOND DRILL RECORD.

HOLE	CO-ORDINATES	BEARING	DIP	LENGTH	ASSAYS ppm Au FROM	TO	LENGTH	Au	FROM	TO	LENGTH	Au
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				
					5.0	6.0	1.0	0.44	0.0	10.0	10.0	1.63
					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
					27.0	28.0	1.0	0.18				

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	
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	2.0	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

[1] Reference point 0|0 = Skaret

[2] All lengths in meters

SVIK, BINDALEN. DIAMOND DRILL RECORD.

HOLE	CO-ORDINATES [1]	BEARING	DIP	LENGTH [2]	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

TEGNFORKLARING

GRANITT

GNEISER

KVARTS

KALK

SPREKKER

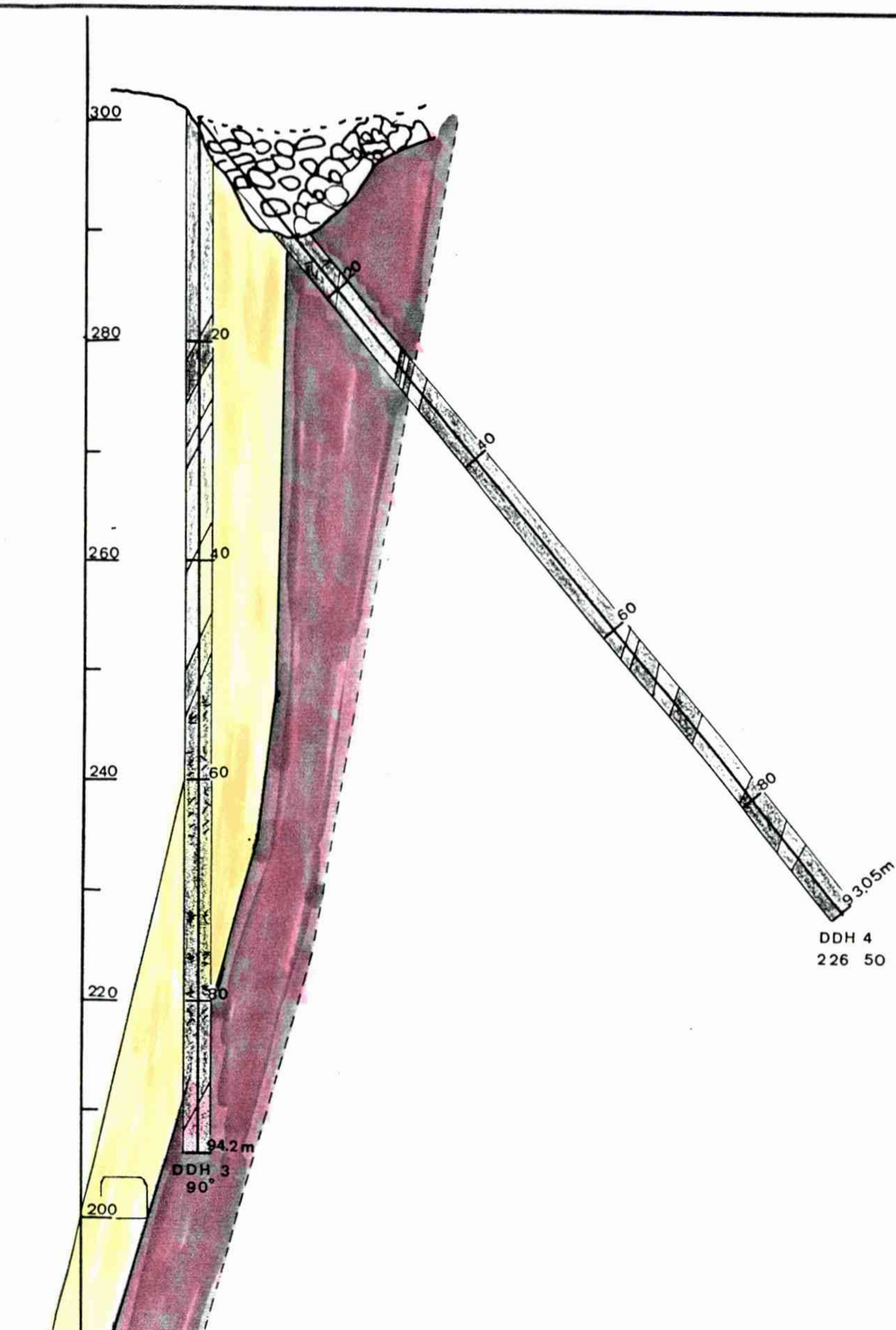
FORKASTNINGER/SKJÆRSONER

ARSENKIS

HOVEDSONE

FLANKESONE

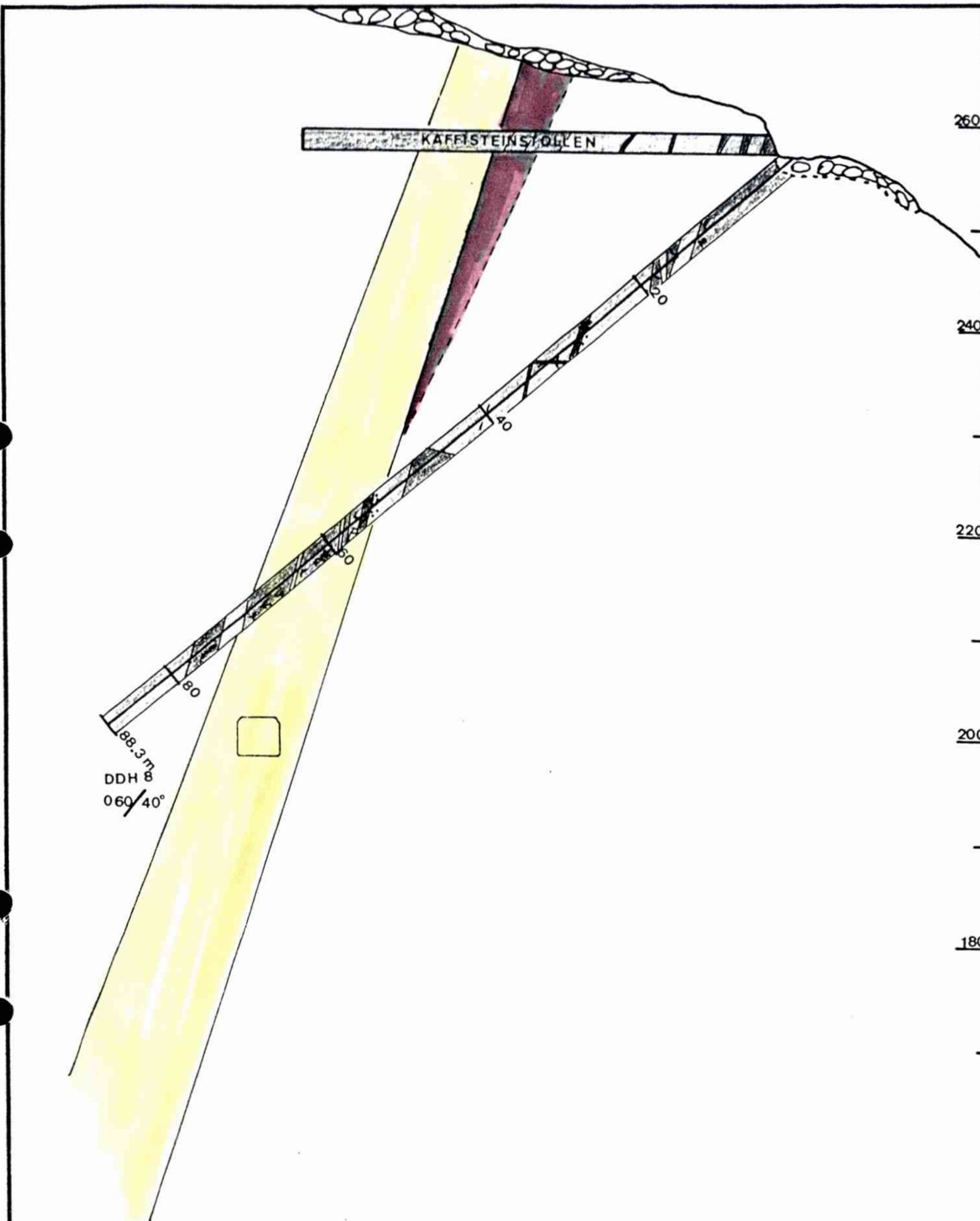
PLANLAGT STOLL



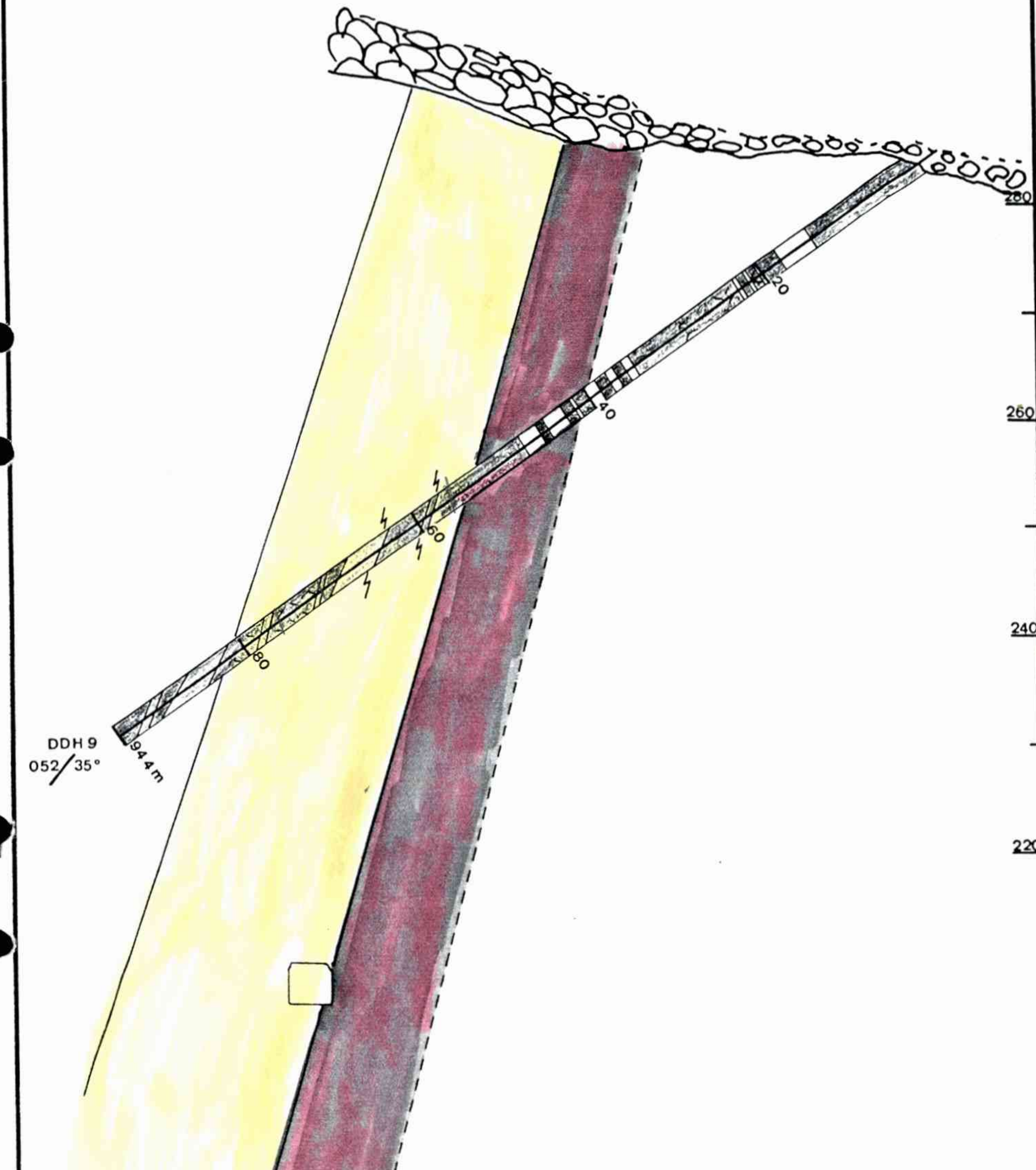
A/S SULFIDMALM

KOLSVIK BINDAL
DDH 3-4

SCALE 1:500	DRAWN
DATE	TRACED LN-2-84



A/S SULFIDMALM	
KOLSVIK, BINDAL DDH 8	
SCALE 1:500	DRAWN
DATE	TRACED LN·2-84



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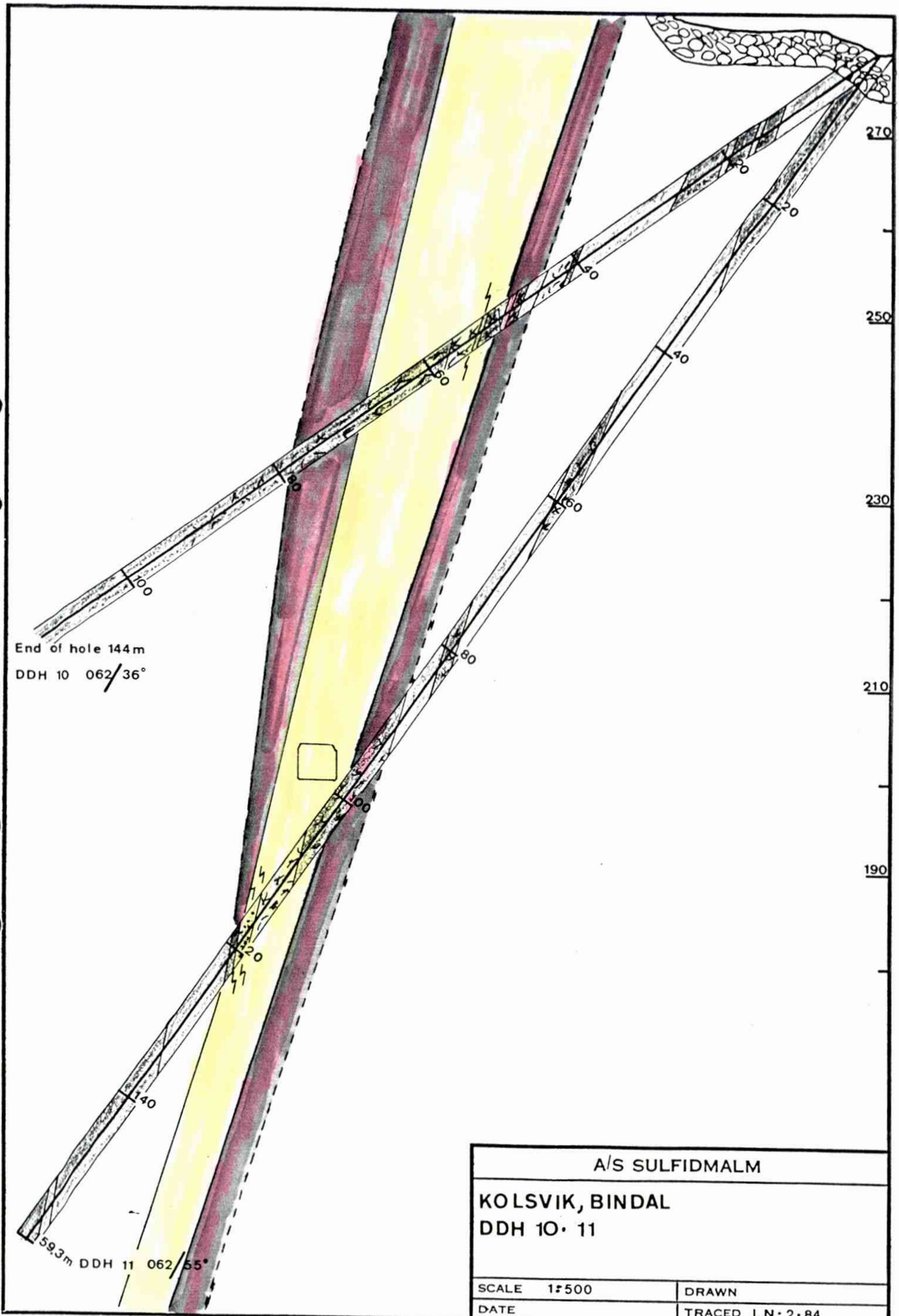
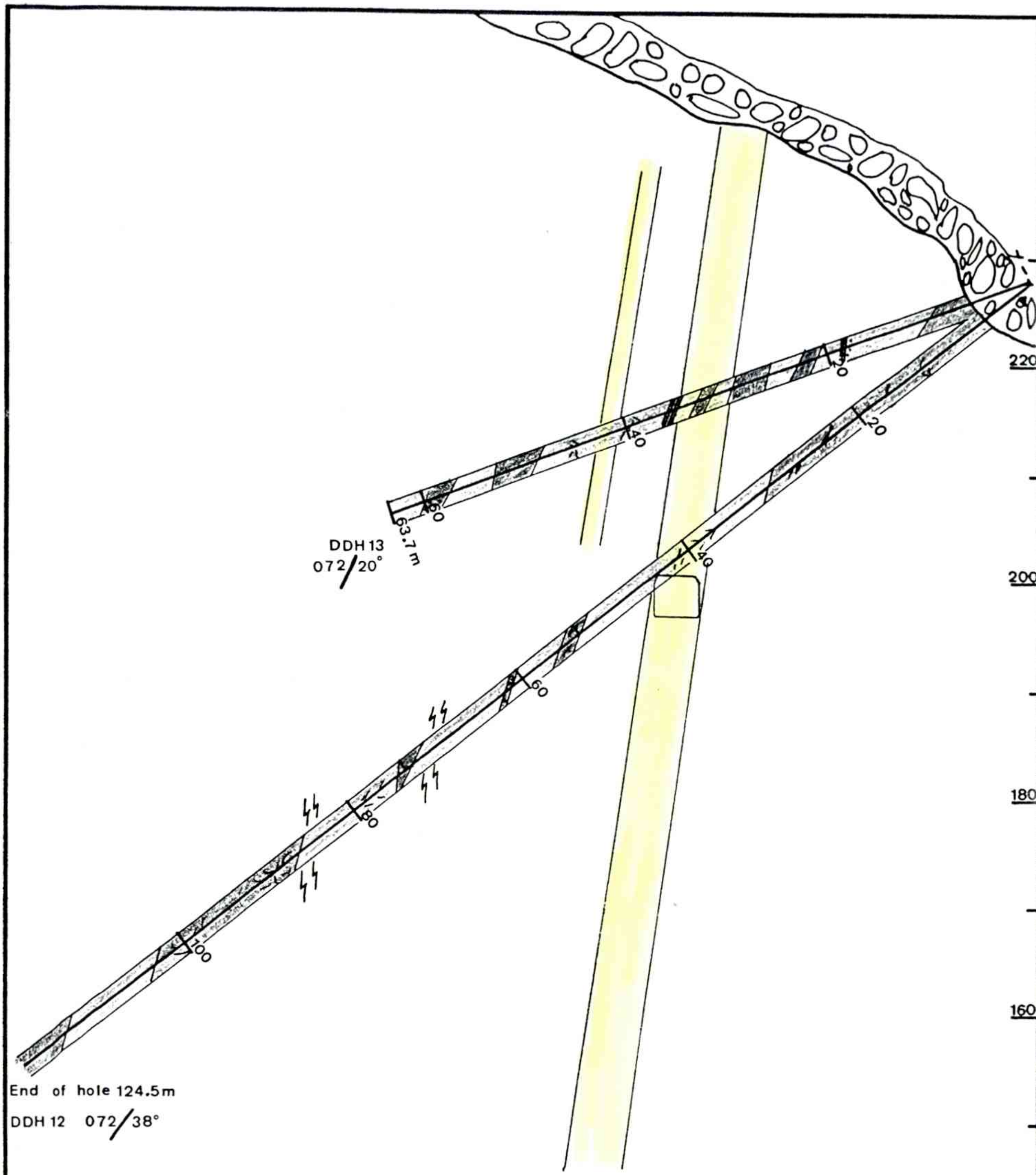
KOLSVIK, BINDAL DDH 9	
SCALE 1:500	DRAWN
DATE	TRACED LN·2·84



A/S SULFIDMALM

KOLSVIK, BINDAL
DDH 10 · 11

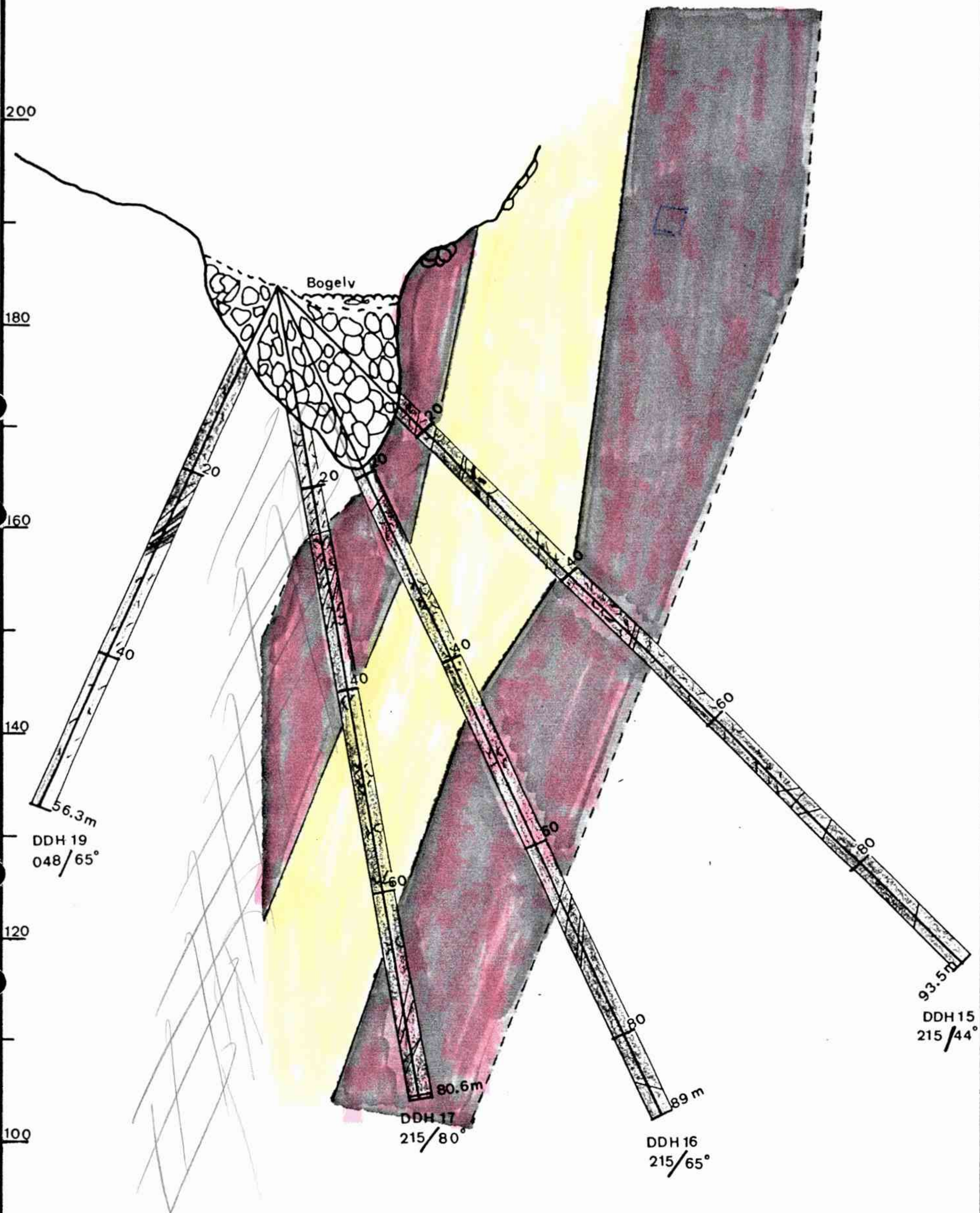
SCALE 1:500	DRAWN
DATE	TRACED LN · 2 · 84



A/S SULFIDMALM

KOLSVIK, BINDAL
DDH 12·13

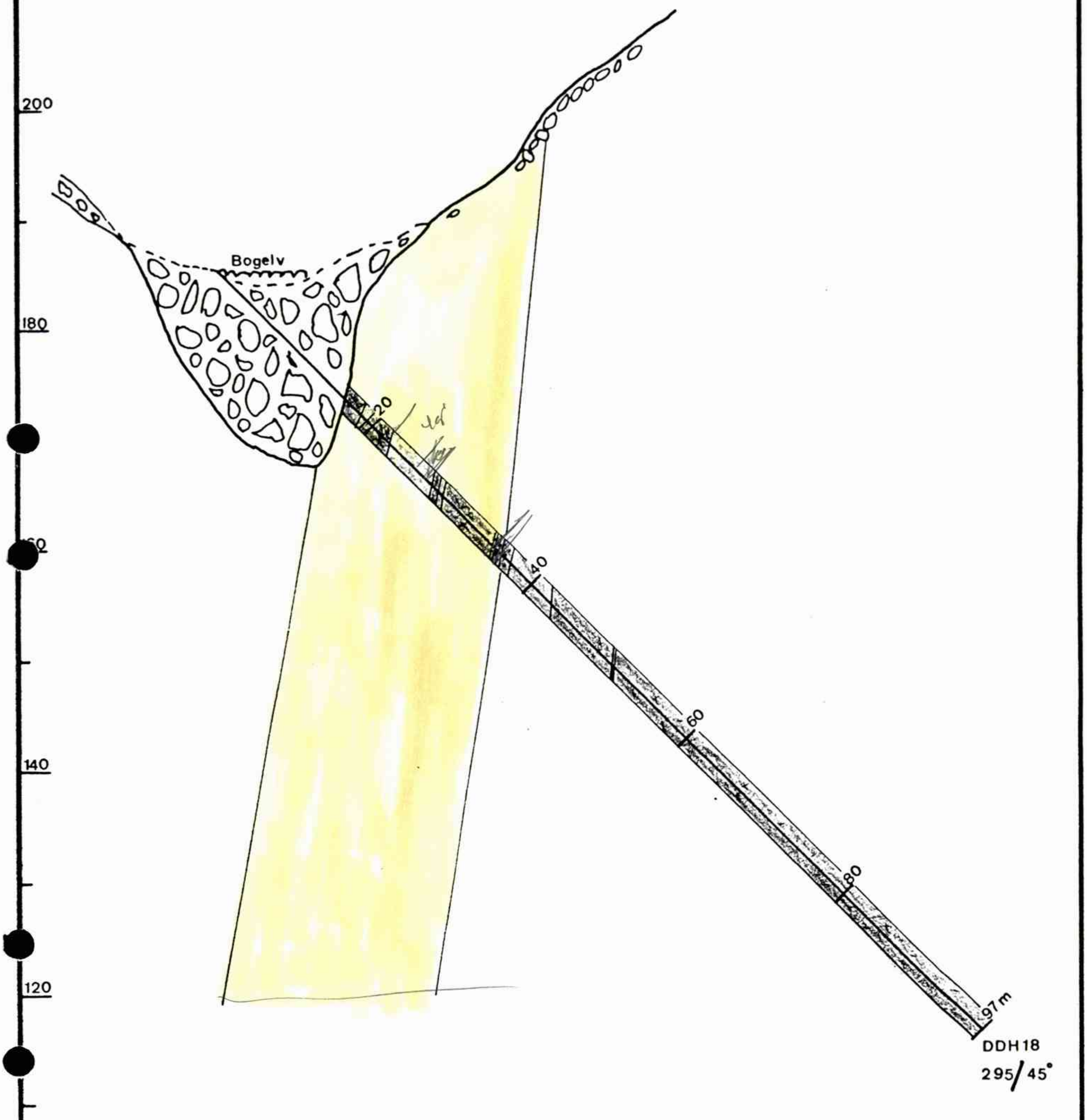
SCALE 1:500	DRAWN
DATE	TRACED LN · 2·84



A/S SULFIDMALM

KOLSVIK BINDAL
DDH·15·16·17·19

SCALE 1:500	DRAWN
DATE	TRACED LN · 2·84



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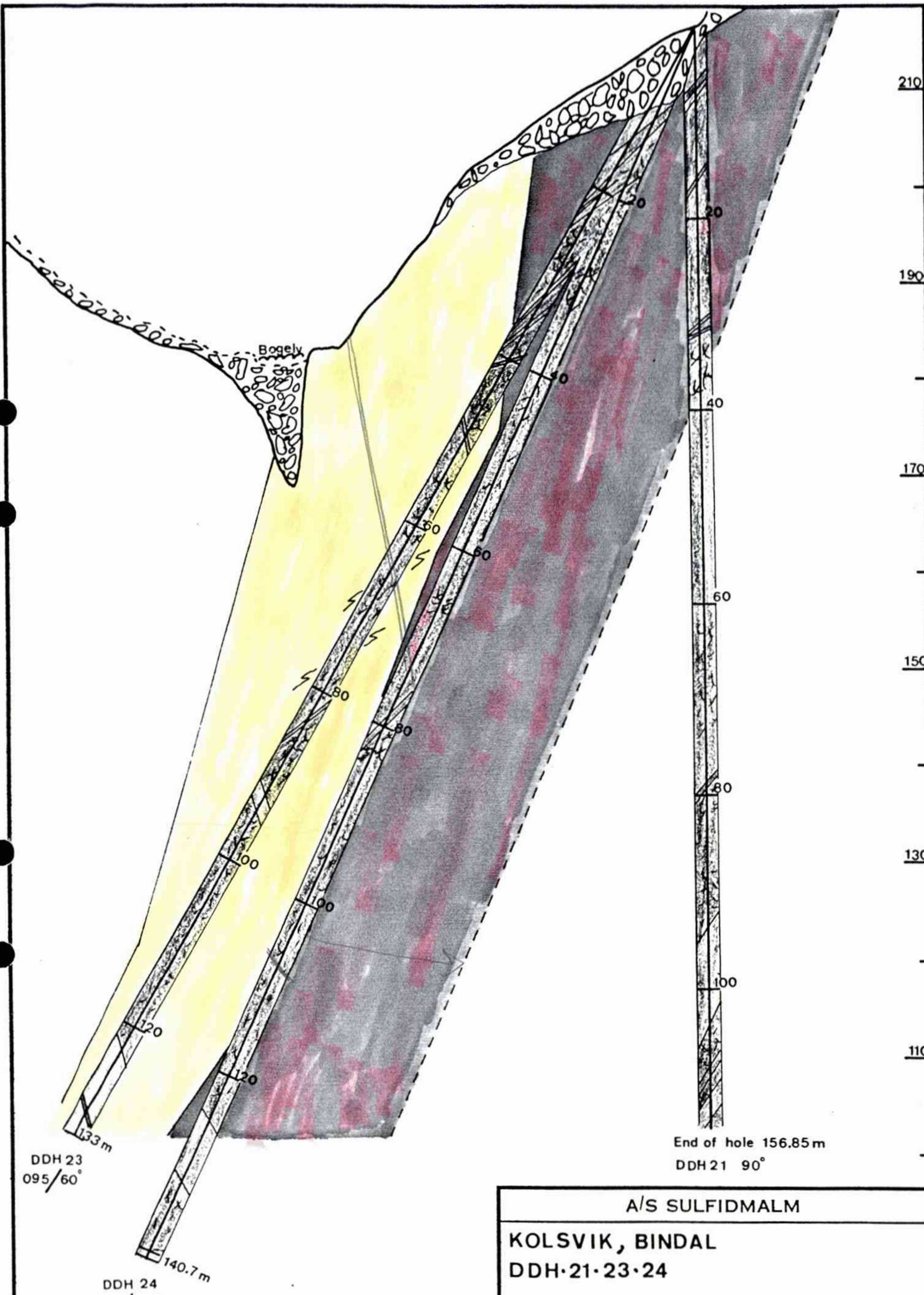
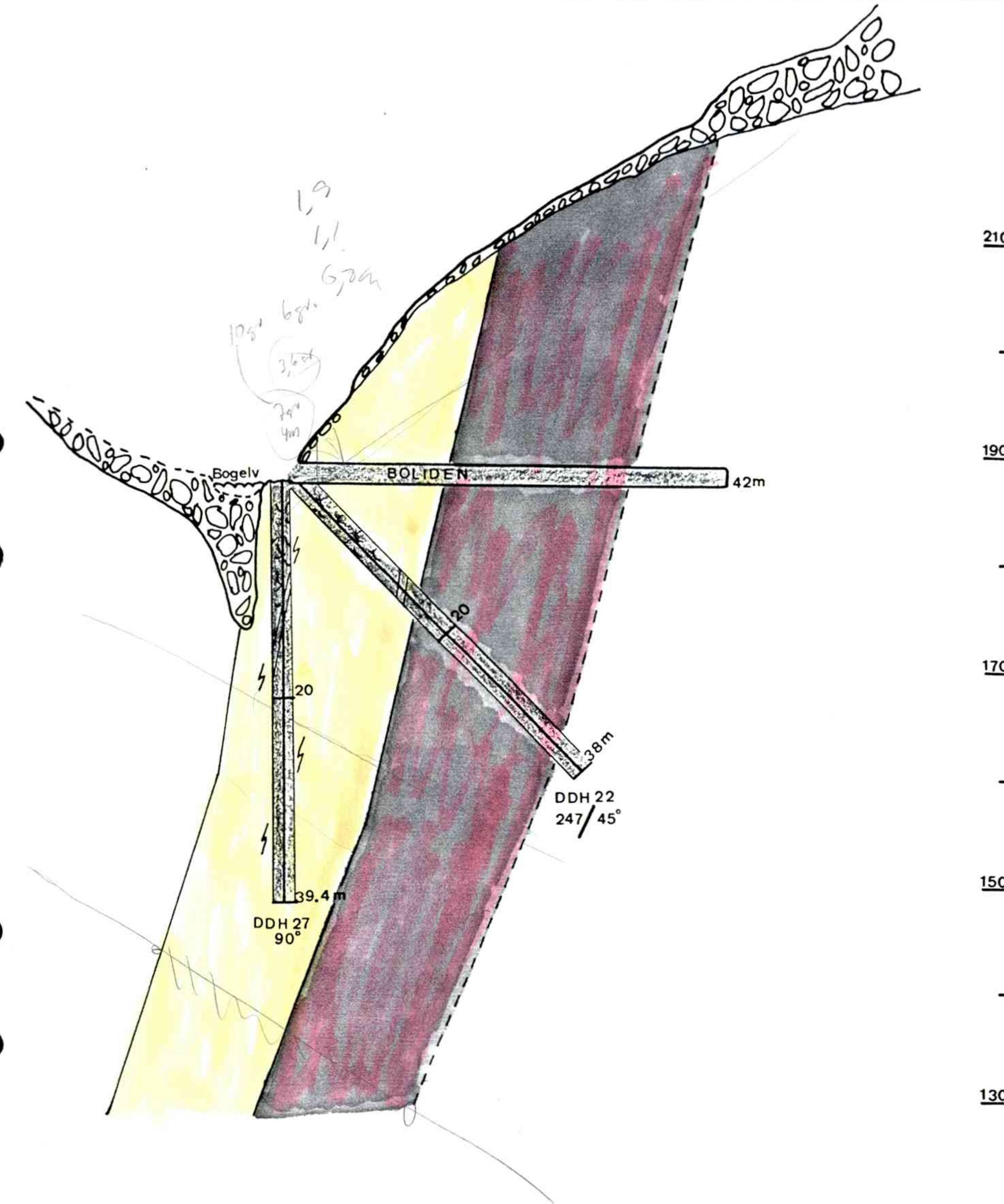
KOLSVIK, BINDAL DDH-18	
SCALE 1:500	DRAWN
DATE	TRACED LN-2-84



A/S SULFIDMALM

KOLSVIK, BINDAL
DDH·21·23·24

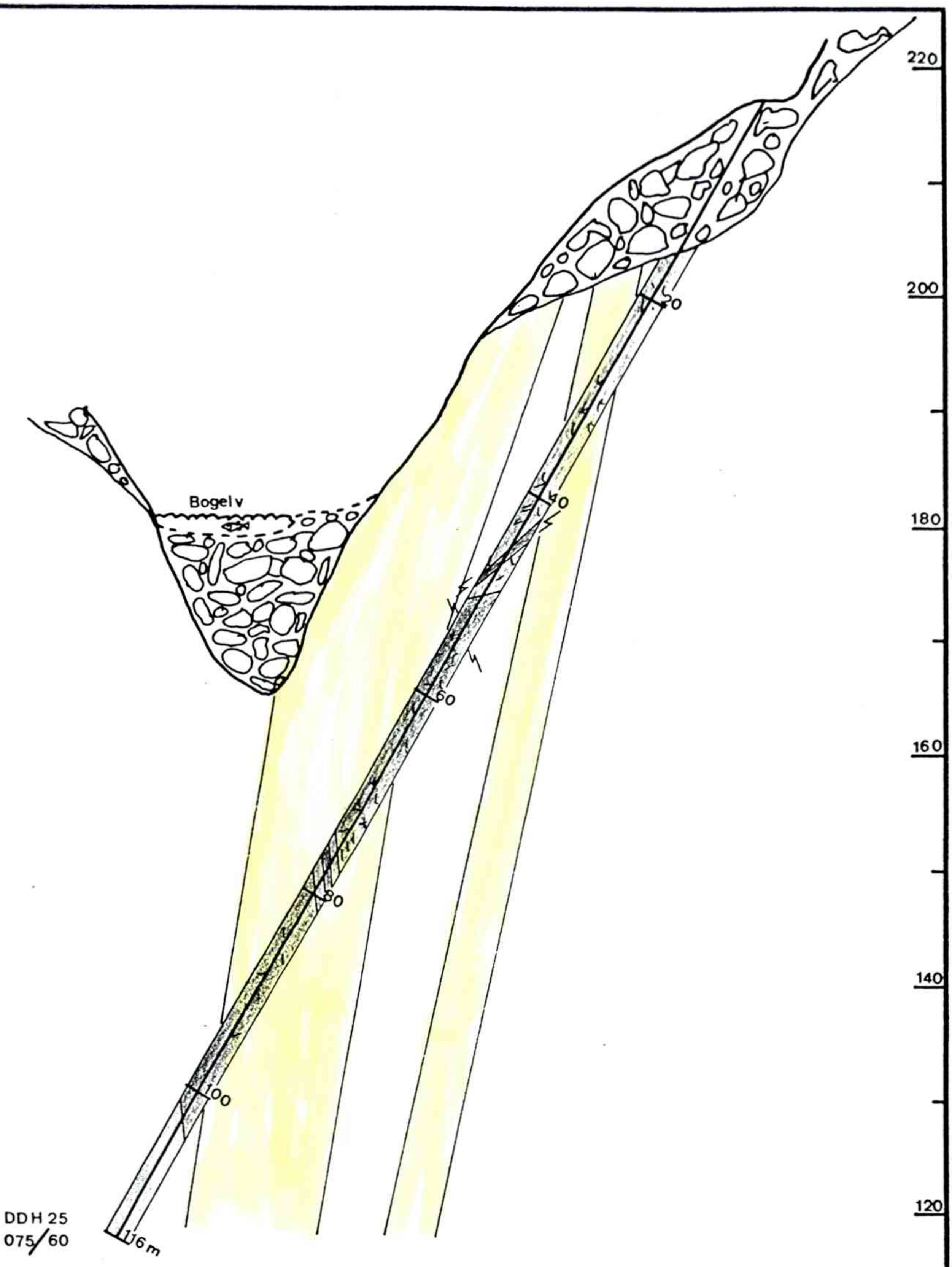
SCALE 1:500	DRAWN
DATE	TRACED LN · 2·84



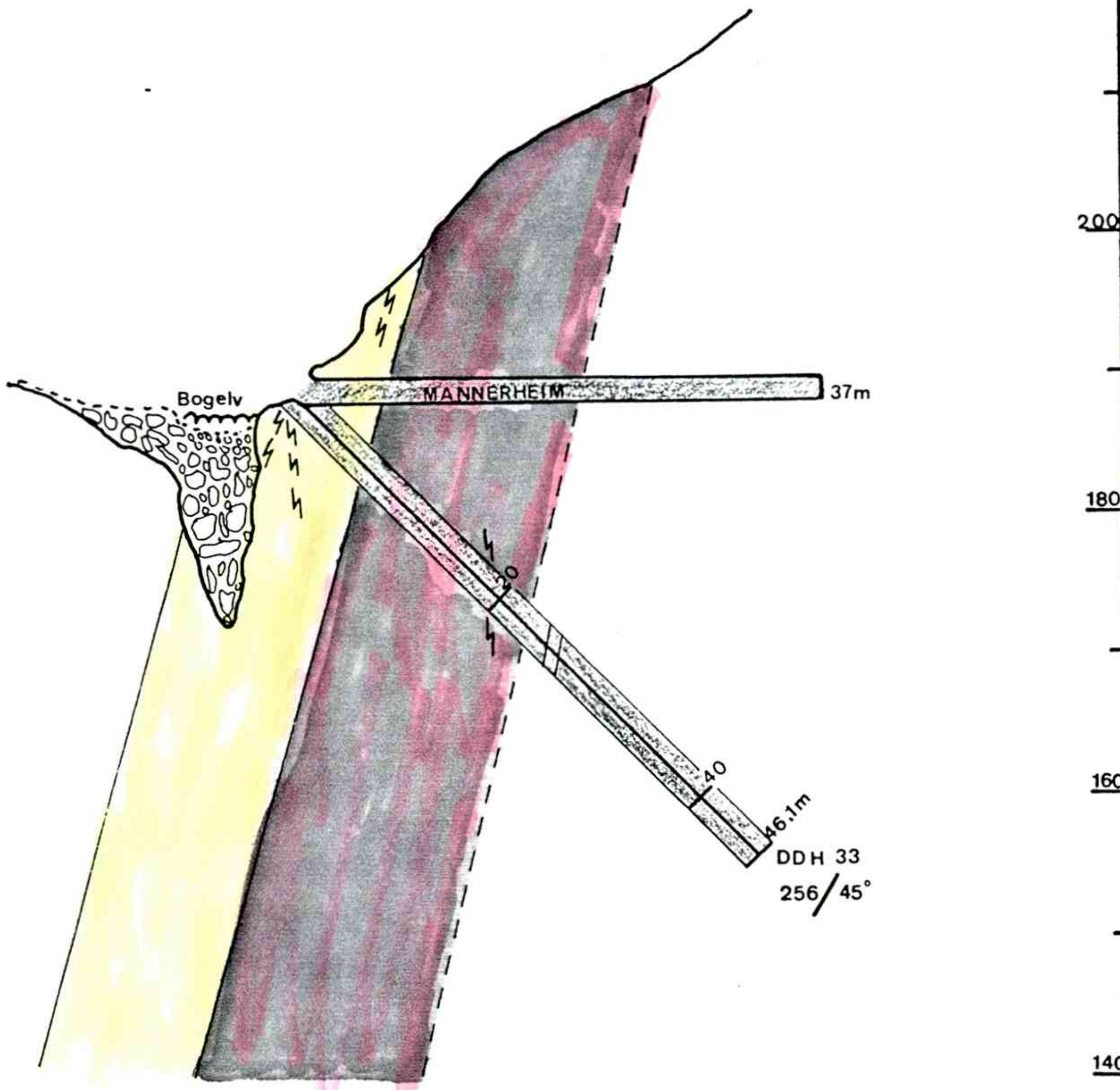
A/S SULFIDMALM

KOLSVIK, BINDAL
DDH·22·27

SCALE 1:500	DRAWN
DATE	TRACED LN· 2·84



A/S SULFIDMALM	
KOLSVIK, BINDAL DDH·25	
SCALE 1:500	DRAWN
DATE	TRACED LN·2·84



A/S SULFIDMALM

KOLSVIK BINDAL
DDH·33

SCALE 1:500	DRAWN
DATE	TRACED LN · 2·84

GRUNDLINJE
"KLØFTA"
VERTIKALSNITT A-B
Storstein-stoll 300 NIVÅ
270 NIVÅ
250 NIVÅ
230 NIVÅ
210 NIVÅ
190 NIVÅ
RAMPE Stigning 1:5
"NEBBA"
GRUNDLINJE
VEG TIL KOLSVIKBOGEN
BOGELVA
ALTERNATV AVBYGGINGSPLAN
F-MALMEN
SKALA
1:500
KOLSVIK MALMFELT
BINDALEN
840328
FANGEL IDE AS.

Lok.	Koord.	Høh.	Påbeg	Avsl.	TERRA MINING
Hull nr. / Side	Retn. / Fall.	Lengde	Diam	Logget av / Dato	Logg — Analyser.

Lithologi Textur Struktur	M	Relativ intensitet										Gull			Asp.	
		Qtz	Asp.	Py.	Sek	V.G.		Frakt Kjerne	Tap.	Prøve nr	Lengd	g/t	g/t 10 20 30	Gj.sn	%	% 5 10 15

LOK.		KOORD.		H.O.H.	PÅBEG.		AVSL.		TERRA MINING
HULL NR.	SIDE	RETN.	FALL	LENGDE	DIAM.	LOGGET AV		DATO	KJERNELOGG

Litologi. Tekstur. Struktur.	M	REL. INTENSITET QTZ	ASP.	PY.	SCH.	V.G.			FRAG	TAP	Splittes	Beskrivelse