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Råstofftype	**Emneord**	
Malm/metall	Au Cu Zn Pb	

Sammendrag

Work on the island of Ringvassøy in northern Norway was initiated by a regional stream sediment survey in 1982. The target was the location of gold bearing quartz veins and gold enriched massive sulphide horizons in a Precambrian volcanic enviroment.

The 1983 field program involved follow-up work on anomalous Au, Cu, Zn, Pb areas. Field work included VLF surveys, magnetometer, soil and rock sampling, and geological mapping. A crew of five worked from early July to mid October and established thirteen grids over better looking stream sediment anomalies.

Results were encouraging and additional follow-up by geophysical (IP, Cem) and geochemical means is recomended. Several drill targets for Au and Au, Cu mineralizationhave already been isolated, and other follow-op work on possible Au, PB, Zn mineralization will be put on a priority basis.

2 duplikat.

Kart finnes på BV 2958

RINGVASSØY PROJECT (N-82-3)

Folldal Verk A/S - Amoco Norway Oil Company

December 83

Submitted by:
Jim Cuttle.

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SUMMARY AND CONCLUSION

Work on the island of Ringvassøy in northen Norway (70°00' lat., 19°15' long) was initiated by a regional stream sediment survey in 1982. The target was the location of gold bearing quartz veins and gold enriched massive sulphide horizons in a Precambrian volcanic environment.

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Results were encouraging and additional follow-up by geophysical (I.P, Cem) and geochemical means is recommended. Several drill targets for Au and Au, Cu mineralization have already been isolated, and other follow-up work on possible Au, Pb, Zn mineralization will be put on a priority basis.

RECOMMENDATIONS

The following areas are considered for high priority grid follow-up work.

The Sørdalshøgda grid has excellent geochemical results for Au (2400ppb) and coincident Cu (560 ppm) over an anomalous area of approximately 300 meters by 300 meters. An I.P survey will help isolate the disseminated type of Au, Cu mineralization here, and locate potential drill sights. Lines 750 E, 900 E, and 1050 E should be extended to the south as this large anomaly is still open. Another anomalous zone starting on line 0 EW, just north of the base line, should be better isolated by extension of the base line 300 meters to the west with profiles run north to the edge of Sydvarangers claim group. Ground work should include mag, VLF, soils (25 meter spacing), and geological mapping.

The Høgda area has closely associated iron formation that has run anomalous gold values. The grid should be extended to the west and profiles (every 150 meters) should be run out to 500 S. There is an interesting gold geochem anomaly (approx 700 meters long and open to the west) with flanking mag and VLF cross-over that should be drill tested if additional field results are positive. This zone is located on the south end (200 S - 300 S) of profiles 450 W to 1050 W. A Cem survey may first help to isolate this zone better.

The Leirbogdalen area has shown anomalous gold horizons (up to 310 ppb) with flanking anomalous arsenic. Good VLF and weak mag usually flank these zones. Of interest is an anomaly located along line 0 EW at 500 N, 525 N. This zone should be surveyed to the west by Cem , VLF, mag, and soil sampling. If results are positive the zone should be drill tested.

A gold, lead, zinc anomaly (430 ppb Au, 270 ppm Pb, 1800 ppm Zn) was picked up by soils on the Russemoen grid. The zone runs for 200 meters and is open to the south west. A new grid here should be established running more paralell to the strike of the rocks. Soils, mag, and VLF should be conducted early in the season as to better isolate potential follow-up areas for an I.P survey and later drilling.

The Skognesfjellet grid should have follow-up done on a 300 meter gold anomaly open to the south by extending the baseline to the south by 450 meters with profiles heading up to 400 W. Soils, mag, and VLF should be run, and a couple of isolated lines of I.P conducted along lines 750 S and 900 S over the anomaly may better isolate perhaps a disseminated type of mineralization.

The Holmvasshøgda area has very high soils (up to 2300 ppb Au and 450 ppm Cu) associated with many small copper rich quartz boudins that are found throughout. Two main areas should receive more detail. Firstly, along line 600 W from 500 N to 800 N, and secondly on line 750 W from 300 S to 600 S. Detailed soils at every 25 meters along fill in lines, and

rock samples of quartz boudins should be taken to asses better the extent of Au, Cu mineralization. If indeed there is positive results of mineralization at depth an I.P.survey would best assess the potential of any anomalous zones.

Other areas of follow-up on a lower priority basis includes the following.

The area between the Leirbogdalen and Leirbogdalen East grids has high stream sediment gold values of 75 ppb and 1900 ppb. This area was not entirely covered during the 1983 program. A rock sample of a quartz vein in the same basic location geochemed 1500 ppb Au and 590 ppm Cu. A grid should be established over the area and the survey should include VLF, mag, and soil sampling every 25 meters.

Follow-up with rock samples and detailed geological mapping on both the Langryggen and Kable surrounding areas may help to isolate better the source of the gold anomalies. At Langryggen it is possible gold may be closely related to fault zones, while at Kable, gold seems more closely related to the quartz diorite intrusives found scattered throughout the area.

Two small anomalies found on Nattmålstinden (1050 E, 250 N) and on Saltindbukta (900S, 450 E) should be investigated with additional soils and VLF. This should require only one days field work with each grid.

For next years program it is recommended the following breakdown of work duties:

A) Drilling should start in mid to late August after results from follow-up work are totally received. Four holes are proposed to date, although this number may increase if the 1984 summer field work is positive.

1)	Sørdalshøgda	2 drill holes	300 meters
2)	Høgda	1 " hole	150 "
3)	Leirbogdalen	1 " "	150 "
		4 holes	600 meters

B) Geochemical program and follow-up with soil sampling will amount to approximately 750 soils with work done on the following grids.

1)	Leirbogdalen	110 soils	(Au, As, Cu, Zn, Pb)
2)	Leirbogdalen East	280 "	(Au, As, Cu, Zn, Pb)
3)	Skognesfjellet	60 "	(Au, Cu, Pb, Zn)
4)	Russemoen	80 "	(Au, Cu, Pb, Zn, Ag)
5)	Sørdalshøgda	100 "	(Au, Cu Pb, Zn, Sb, Ag)
6)	Høgda	80 "	(Au, Cu, Pb, Zn, Ag)
7)	Holmvasshøgda	40 "	(Au, Cu, Pb, Zn, Ag)
		750 soils	

Arsenic and antimony are costly to get geochemed and if one element is to be favoured over the other it is the antimony up on the Sørdalshøgda grid. The number of samples have been figured on a 25 meter sample spacing basis.

C) The geophysical program should include the following line kilometers on specific grids.

1)	Leirbogdalen	2.5	line kilometers	Cem
		4.5	" "	Mag and VLF
2)	Leirbogdalen East	7.0	" "	Mag and VLF
3)	Skognesfjellet	1.5	" "	Mag and VLF
		0.5	" "	I.P.
4)	Russemoen	1.8	" "	Mag and Vlf
		0.5	" "	I.P
5)	Sørdalshøgda	2.0	" "	Mag and VLF
		1.0	" "	I.P.
6)	Høgda	2.0	" "	Mag and VlF
		1.0	" "	Cem
7)	Holmvasshøgda	0.5	" "	I.P

Total line kilometers:	VLF and Mag	18.8
	Cem	3.5
	I.P	2.5
		24.8

D) Personnel should include four field assistants plus a company geologist. The breakdown of man days is as follows.

Work period: June 1 - October 15

4 field assistants	320 mandays
geologist	90 "
	410 mandays

INTRODUCTION

Geological follow-up work was conducted on the island of Ringvassøy, northern Norway, during the summer and fall months of 1983,and was done in response to anomalous Au, Cu, Zn, Pb, Co stream sediments isolated from the previous year survey. The project area shows promise for Cu, Zn massive sulphide mineralization as well as gold-quarts deposits in basically a Precambrian volcanic environment. This years work included geochemical soil sampling, rock sampling, VLF, mag, and geological mapping. Several anomalous horizons were indicated and will require additional geophysical and geochemical work with later drill testing.

LOCATION AND ACCESS

The Ringvassøy project area is located 35 km north of Tromsø in northern Norway and is found at approximately $70^{o}00'$ lat. and $19^{o}15'$ long. Most of the road systems are gravel such as the one stretching northwest through the project area from Hessfjord to Mikkelvik, although a well paved road from the ferry at Skulgammen to Hansnes runs along the south-east shore of the island. Regular half hour to hourly service by the ferry at Skulgammen is good but it operates generally from 6:00 AM to 10:00 PM seven days a week. The main service area for the island is Tromsø which is connected daily by flights from Trondheim and Oslo.

PREVIOUS HISTORY AND RECENT WORK

Much of the early prospecting on Ringvassøy was done either privately or by small exploration companies. Their concentration at the turn of the century was basically on sulphur,then to base metals,and only recently to gold.
Most of the known previous work has been concentrated around old Py, Po diggings. Rock sampling, EM and VLF surveys, tunneling, and diamond drilling were all performed, although

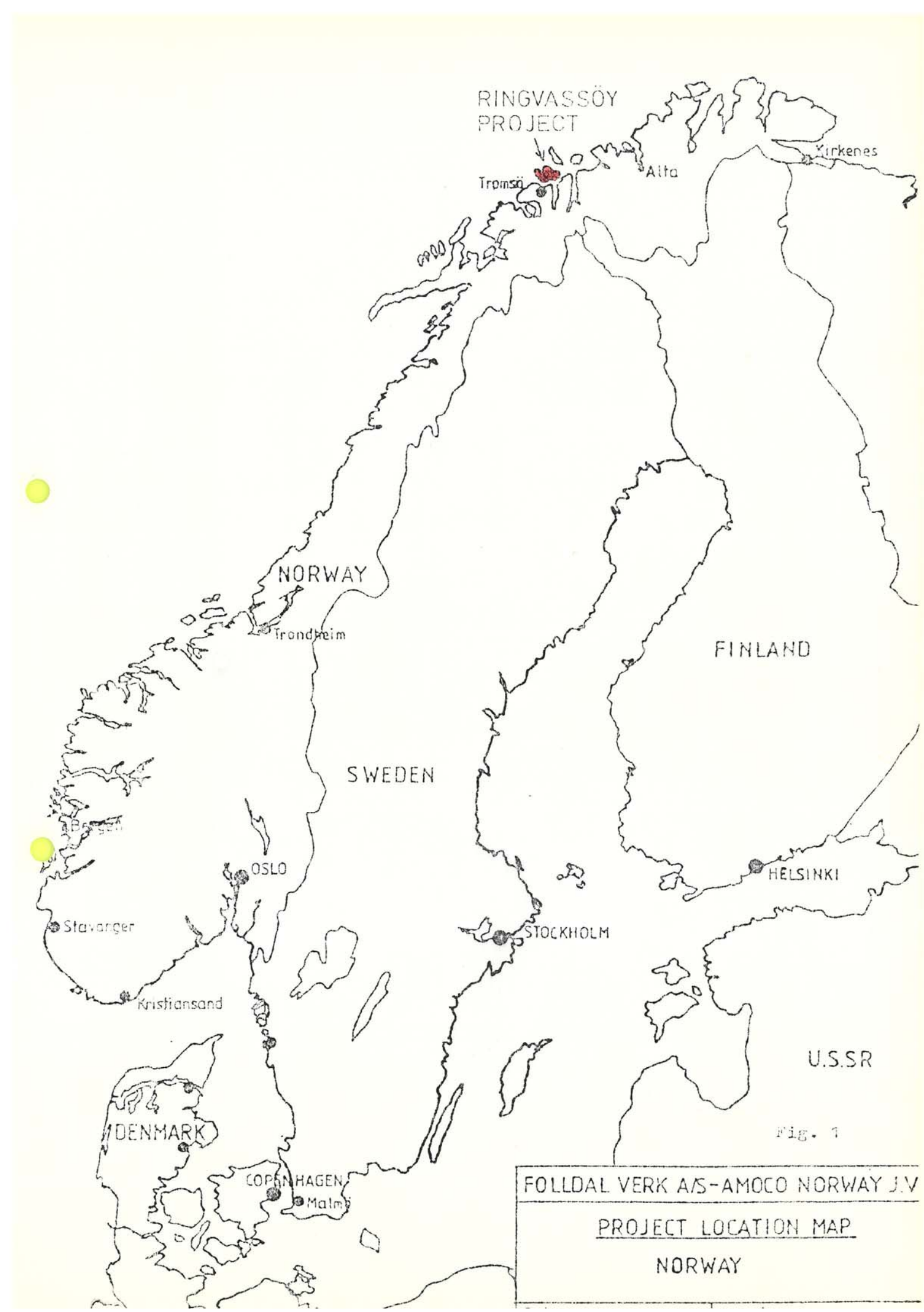


Fig. 1

FOLLDAL VERK A/S-AMOCO NORWAY J.V

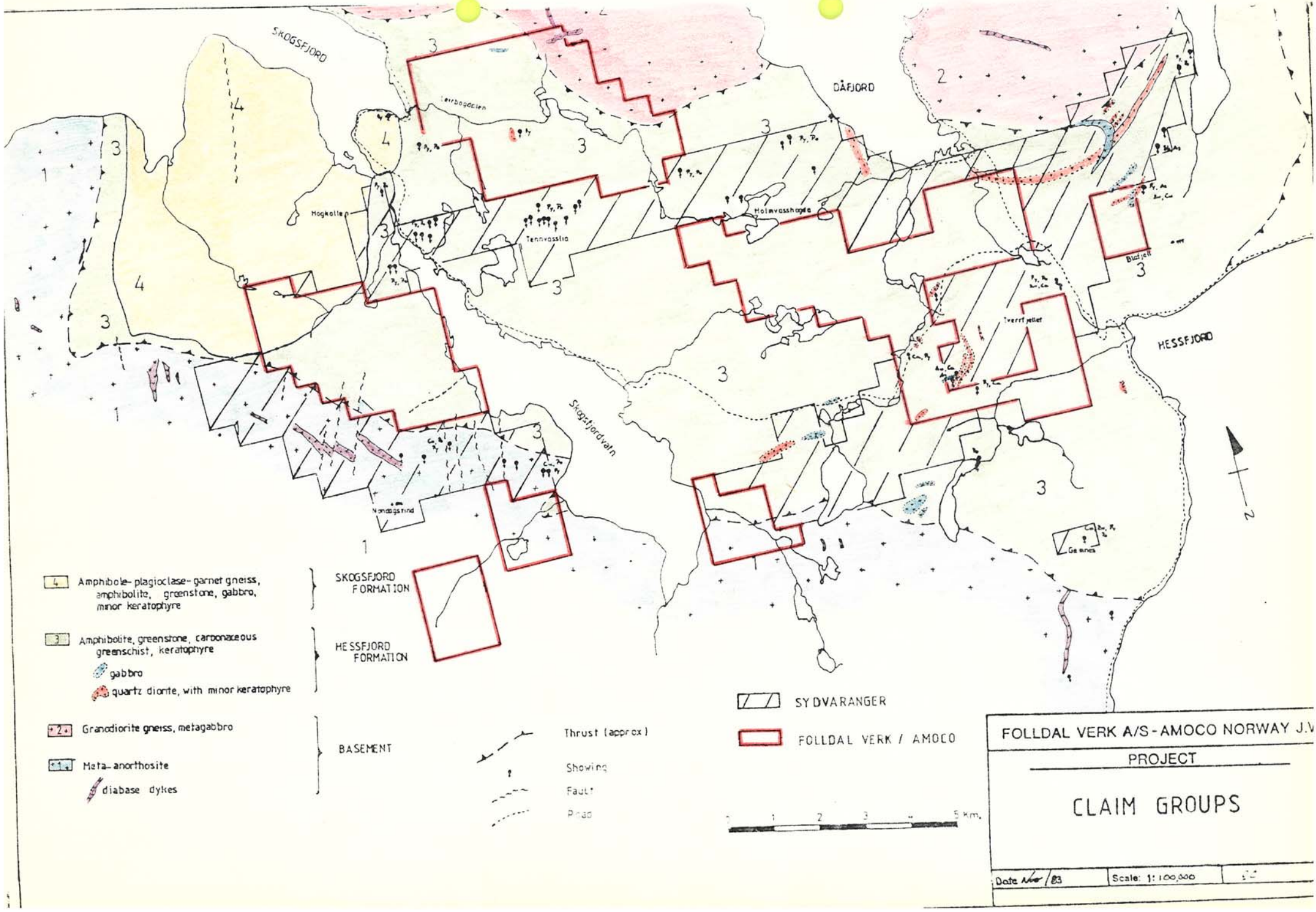
PROJECT LOCATION MAP

NORWAY

it is believed many of these surveys were done in a very rough manner. The Geological Survey of Norway (N.G.U.) has conducted work throughout the island from 1976 to 1980, including prospect evaluation, regional geochemical surveys, detailed geological mapping, and minor geophysical surveys. Recently theee studies have prompted new concentration Au, Cu, Zn mineralization by A/S Sulfidmalm, A/S Sydvaranger, and Folldal Verk A/S. Both Sulfidmalm and Sydvaranger have joined together in joint venture. Their search first began in 1982 when they staked many old showings throughout the island. They continued in 1983 to evaluate these old prospects, and at the same time conducted a regional stream sediment survey. Next years work will most probably involve a detailed follow-up program by these companies.

LAND STATUS

Presently Folldal Verk A/S has claim blocks in good standing on the island of Ringvassøy, 140 of which were recorded in the fall of 1983 and staked as a result of favourable areas from grid follow-up work during the 1983 summer program.
Our only competition is that of the Sydvaranger - Sulfidmalm joint verture. These exploration firms have staked large areas of land throughout the island although presently there has been only limited work done on these areas and it is thought they will hold on to their ground fo a few years to come.


SKOGSFJORD
DÅFJORD
HESSFJORD
Skogsfjordvatn
Høgkollen
Tennvasstia
Holmvasshøgda
Tverrfjellet
Blåfjell
Nordøgstind
Ge mines
4 Amphibole-plagioclase-garnet gneiss, amphibolite, greenstone, gabbro, minor keratophyre
SKOGSFJORD FORMATION
3 Amphibolite, greenstone, carbonaceous greenschist, keratophyre
gabbro
quartz diorite, with minor keratophyre
HESSFJORD FORMATION
2 Granodiorite gneiss, metagabbro
1 Meta-anorthosite
diabase dykes
BASEMENT
Thrust (approx)
Showing
Fault
Road
SYDVARANGER
FOLLDAL VERK / AMOCO
0 1 2 3 4 5 Km.
FOLLDAL VERK A/S - AMOCO NORWAY J.V
PROJECT
CLAIM GROUPS
Date Nov / 83
Scale: 1: 100,000

REGIONAL GEOLOGY

Much of the problem on the island of Ringvassøy is that alot of the volcanic belt has not been mappedon a detailed basis. The age of these particular rocks is still up for debate although recent concensus suggests they are Precambrian in age. Much of the mapping has been concentrated on specific areas of the island where mineralized zones are potentially high, such as gold rich horizons around Sørdalshøgda, and around known sulphide horizons of old showings such as Nonsdagsdalen, Tennvasslia, Gamnes and Skognes. It is personally throught that potential is high for new Au and Cu, Zn mineralization and concentration on detailed mapping would be an obvious asset for the location of new mineralized horizons.
The basic breakdown of the geological units is as follows.

Volcanic Rocks

1) SKOGSFJORD FORMATION

Quartz feldspar biotite gneiss, agglomerate, greenschist, and minor keratophyre.

2) HESSFJORD FORMATION

Amphibolite, calcareous greenschist, keratophyre, quartz diorite.
Minor quartz carbonate iron formation with associated graphitic schists, phyllites, and quartzites.

Basement Rocks

3) MIKKELVIK GROUP

Qtz biotite gneiss (granodiorite), quartz diorite, metagabbro.

4) SIMAVIK GROUP

Anorthosite, diabase and gabbroic dykes, migmatite, and gabbro.

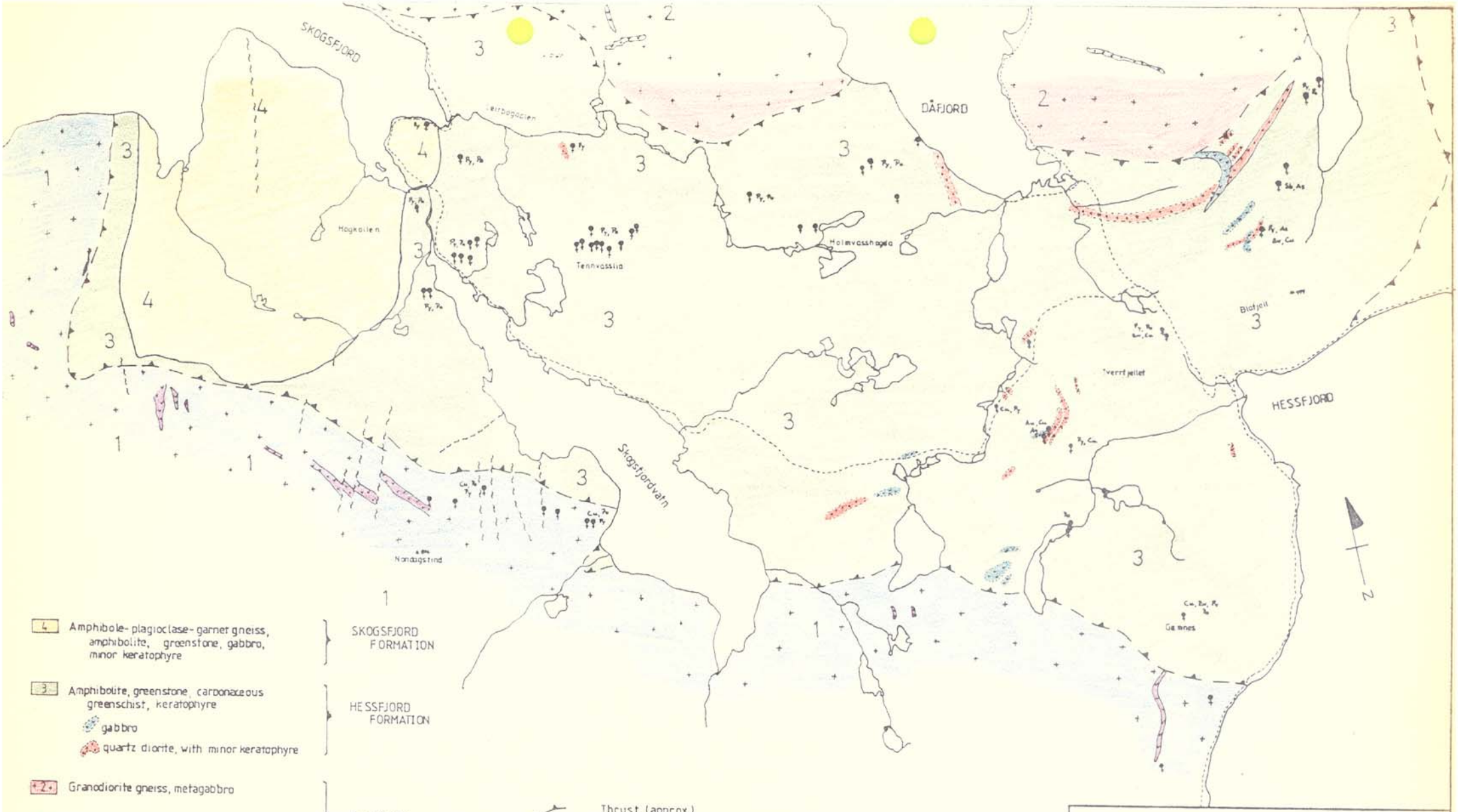
From the four groups previously mentioned, their environment or formation can be an important factor relating to types of mineralization found on the island.

BASEMENT ROCKS

Both the Simavik and Mikkelvik groups are of basic and acid plutonic rock types respectively.
The oldest, the Simavik groups, includes rock types with high percentages of feldspars, epidote and amphibole and are considered a meta-anorthositic complex. These basement rocks are found on the southern boundaries of the main volcanic belt. They have generally a north to north westerly strike and dips are vertical or steep to the east. Intrusive diabase and gabbroic dykes are commonly found striking in a north south direction related closely to old fracture zones.
The Mikkelvik group, located on the northern edge of the volcanic belt is basically a more differentiated plutonic version of the Simavik group. This includes rocks of generally granodiorite composition and because of high grade meramorphism they have become highly gneissic. This group includes similar gabbroic and diabasic dykes, that paralell those of the Simavik group.
The main mafic volcanic belt overlies basement rocks that become progressively acid rich to the north and the whole basement area may be thought as a large and differentiated plutonic intrusive body seperated by mafic volcanics.

VOLCANIC ROCKS

The Hessfjord Formation is basically a mafic volcanic environment. Mafic tuffs dominate most of the area although extensive areas of basalts and amphibolite are also found suggesting a submarine mafic environment. Felsic tuffs are very limited and are on the average only 10-15 m thick. Intrusive gabbro and related quartz diorite are found but seem to be limited to specific areas of the formation such as Sørdalshøgda and Blåfjell. Chemical sediments (vasskis) are usually magnetite rich with closely associated beds of graphite.
The Skogsfjord Formation includes rocks dominated by garnet rich quartz feldspar biotite gneiss with minor greenschist



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PROJECT

RINGVASSOY GEOLOGY

Date Nov / 83	Scale: 1:50.000	

and keratophyre. This group represents an end to major volcanic activity in the area.

CALEDONIDES

These rocks are found to boarder the eastern edge of Hessfjord Formation, and includes a variety of mica schists, graben schists, quartzites and minor limestones. Our work was kept away from this particular belt.

ORE OCCURRENCES

Types of mineralization on Ringvassøy can be divided into basically four different groups. They mostly lie either the Hessfjord Formation or are restricted to the shear zones along the basement/volcanic contact. The Skogsfjord Formation exhibits only minor occurrences of sulphides.

1) MASSIVE SULPHIDE HORIZONS, (Py, Po, ± Cpy, Sl, Mt).

These zones are found throughout the island. They are restricted generally to greenstone/keratophyre contact and these sulphides can reach up to 2.0 m in width. The main sulphides are pyrite and pyrrhotite with minor associated chalcopyrite and sphalerite. Examples are Tennvasslia, Båthaugen, Dåfjord, and Tverrfjellet areas.
Other massive sulphides horizons are located along the sheared basement/volcanic boundary especially noticeable to the west of Skogsfjordvatnet. These are copper rich (± Au) massive Py, Po horizons and can be found in close association with sedimentary basement sequences (quartzite, limestone) and intrusive meta-anorthosite. The zones are seen to be overlain by the possible thrusted main volcanic Hessfjord Formation. Examples here are the Skognes-Nonsdagsdalen area.

2) GOLD, COPPER, SILVER ASSOCIATION WITH QUARTZ DIORITE, (Au, Ag, Cpy, Mal, Py, Po).

Work done by the N.G.U. has been helpful in isolating this specific type of mineralization. Gold, copper horizons concentrated along the boundaries of intrusive quartz diorite can be seen along the top of Sørdalshøgda. The mineralized zone is rich in malachite and chalcopyrite, with lesser amounts of gold, silver, pyrite and pyrrhotite (?). The silver may be carried by tetrahedrite (?) although this still has to be varified directly. The boarders of these small lense like quartz diorite intrusives resemble small iron stained sugary quartz veins, and at times may become keratophyric. The quartz diorite has intruded mafic volcanics of the Hessfjord Formation. Detailed mapping for these intrusive bodies would be a definite advantage for continued prospecting for Au, Ag, Cu rich horizons.

3) COPPER RICH QUARTZ BOUDINS, (Cpy, Mal, ± Au).

These horizons are basically restricted to highly folded areas, similar to that of Holmvasshøgda. The boudins and veins (?) are small (up to 40-50 cm wide) although some may reach up to 2.0 meters across. The boudins are hosted by mafic tuffs, greenstone, and amphibolite of the Hessfjord Formation.

4) QUARTZ CARBONATE IRON FORMATION, (Cpy, Py, Po).

These zones are especially noticeable along the road cuts down to Dåfjord. They are quartz carbonate rich magnetite iron formation which include minor chalcopyrite with zones of disseminated pyrite and pyrrhotite. These horizons do not seem to seperate any distinct mafic/felsic cycles but instead are located in a totally mafic environment. Graphite concentration is high and geophysical equipment may serve well to isolate these zones if magnetite contents diminish. These zones are also located in the Hessfjord Formation.

FIELD SURVEY AND PROBLEMS

1) VLF.

This survey was carried out on all grids, basically to isolate any conductive horizons that may be represented by sulphide bearing zones. We used both Crone and Phoenix VLF. machines which had a variety of different useable stations that could be changed according to specific geological need. As the survey progressed it was found the Crone (Radem) VLF. showed much more consistency in results and could be used in not such a delicate manner as the Phoenix type. Problems did arise though and are as follows.

A) Field strength showed extreme variation at times, which limited its use only to certain stations. The best station used on the Crone was Cutler Maine (CM). It showed consistent field strength when the station was transmitting. Others, for example, Hawaii (H) and Rugby (E), were very inconsistent in field strength from one hour to the next and at times the survey had to be postponed or discarded completely.

B) Sulphides zones were often found to be quartz rich, as is the case in Leirbogdalen, but these zones did not produce any destinct crossover. In this case field strength results could be used better to indicate possible mineralized Au, Py, Po horizons.

C) Because of the type of mineralization in certain areas, such as Holmvasshøgda, where copper and possible gold mineralization is coming from quartz veins and boudins these mineralized zones may well be missed by the VLF. survey even when station separation is 25 meters.

2)

MAGNETOMETER

Our mag survey was performed on all grids and helped mainly in the interpretation of geological structure, although it is helpful in the location of iron formation (Høgda) and selected pyrrhotite rich massive sulphids zones. One minor problem existed with magnetic storms, although when these days were suspect the results were redone and corrected.

3) GEOCHEMICAL SAMPLING

In all cases we were trying to locate "B" horizons during our survey. Overburden is commonly between 2-5 meters and includes a variety of glacial soils which at times prevented us to locate good "B" horizons silts. Problems and conclusions are as follows.

A) Anomalies may be hidden by the fact that only "A" horizons could be located in some cases. With this in mind, anomalous zones should show up with a lower threshold, as in the case with Leirbogdalen, Saltinbukta, and Holmvasshøgda.

B) Statistical treatment of gold and copper values from each grid should be treated seperately as there is extreme background variation from area to area. Slightly anomalous Au zones are good indicators of geology,if they have no other particular interest. For example, slightly above threshold values found on Leirbogdalen are coincident with felsic volcanic cycles, as is the case on Tverrfjellet and Blåfjell. Graphitic cycles are also anomalous in gold.

C) Anomalous values for each element are as follows. These results are taking into account 90 % of the soils taken throughout the area.

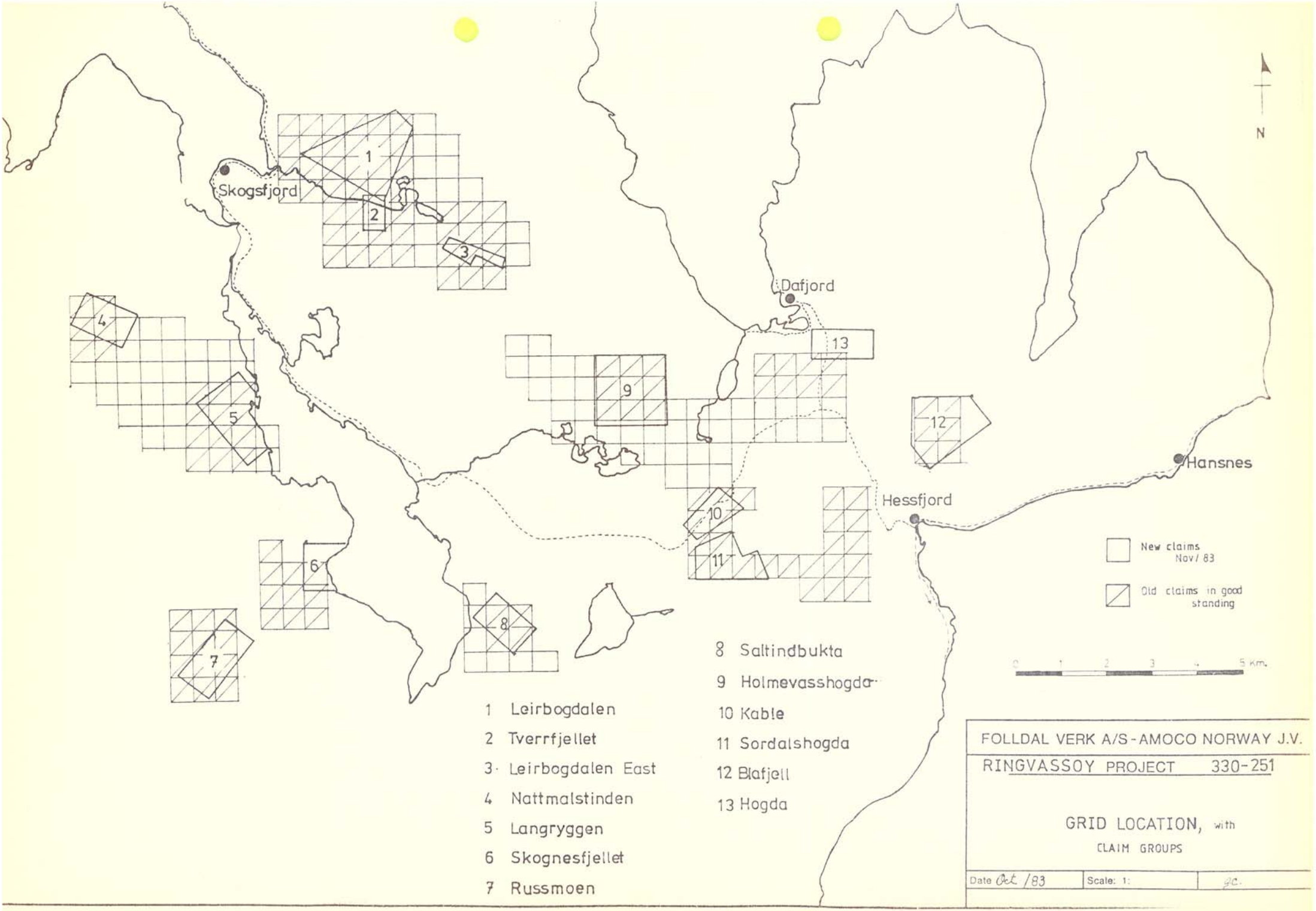
95 % confidence
N = 2121

Au = 40 ppb	Zn = 300 ppm	As = 60 ppm
Cu = 200 ppm	Pb = 20 ppm	Ag = >1.5 ppm

Because of the extreme background variation for gold throughout the area, each grid has been statistically treated seperately. The results can be found with the box of maps.

4) GEOLOGICAL MAPPING

Quartz veining, rocktype, faults, rust zones, alteration, and folding were recorded on each grid where possible, although good interpretation of the geology was not always positive because of overburden.


N
Skogsfjord
Dafjord
Hessfjord
Hansnes
1
2
3
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8
9
10
11
12
13
New claims Nov/ 83
Old claims in good standing
0 1 2 3 4 5 Km.
1 Leirbogdalen
2 Tverrfjellet
3 Leirbogdalen East
4 Nattmalstinden
5 Langryggen
6 Skognesfjellet
7 Russmoen
8 Saltindbukta
9 Holmevasshogda
10 Kable
11 Sordalshogda
12 Blafjell
13 Hogda
FOLLDAL VERK A/S - AMOCO NORWAY J.V.
RINGVASSOY PROJECT 330-251
GRID LOCATION, with CLAIM GROUPS
Date Oct /83
Scale: 1:
gc.

PERSONNEL	WORK PERIOD
Kjell Bjørnar Larsen Studentboligene Prestvann D 115 9000 Tromsø (Tlf. 083-80698)	July 4/83 - Sept 15/83
Bente Hagen P.O. Box. 21 9150 Stakkvik	July 4/83 - Aug 29/83
Nina Hansen Blåbærv. 17 9020 Tromsdalen (Tlf. 083-31731)	July 3/83 - Oct 1/83
Willy Johansen 9130 Hansnes (Tlf. 083-44000 line, 161)	July 4/83 - July 29/83
Bjørn Anders Lundechien Storskogåsen A-206 9000 Tromsø (Tlf. 083-82506)	Sept 5/83 - Oct 1/83

SUMMARY OF PROPERTY WORK

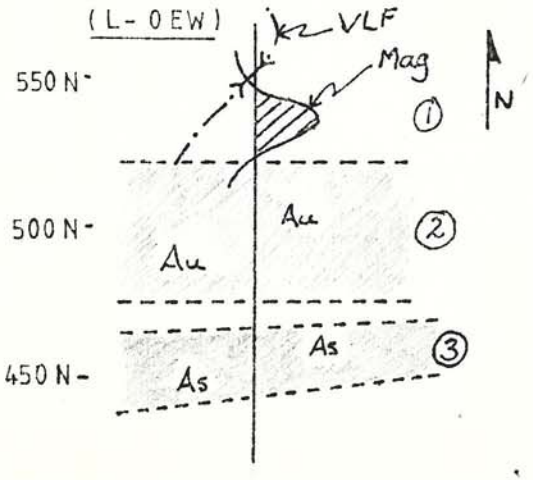
1) LEIRBOGDALEN (251-Lb) REBBENSØY # 1535 III (1:50 000)

The Leirbogdalen area, located approximately 1-2 kilometers up the Leirbogdalen valley, east of Skogsfjord, was found to be highly anomalous in gold as a result of stream sediment samples taken during the 1982 field program. Gold values all drain out of the north east side of the valley and range from 4-200 ppb.

The geology includes generally a mafic volcanic environment

(both flows and tuffs) with small felsic tuff horizons that are usually graphitic and sulphide rich. These are found banded throughout the whole mafic pile. The felsic horizons may pinch out at times and it is belived threshold values for gold (15 ppb) and perhaps arsenic (25 ppm) can be used to trace their actual extent. Float with 20 % - 80 % py are believed to either cap or be intermixed with these felsic sequences. No quartz veining was found on the grid although intrusive quartz feldspar porphyry dykes and fresh non sub-volcanic gabbro may be disguised by overburden (60 % of grid) and should not be discarded as possible sources of mineralization. From rock samples taken near or on good VLF aross-overs, anomalous gold samples were related to highly iron stained felsic tuff zones. Close by very siliceous graphitic zones also proved anomalous in gold.

VLF, Mag, geochem, and mapping surveys will help to isolate areas of continued interest. The base line should be extended down to the Leirbogdalen river and profils spaced 150 meters should be run from 200 S - 800 N. This will define a possible drill sight located at 500 N, 525 N on line 0 - E.W where gold values are 310 ppb and 180 ppb respectibly. There is coincident VLF field strength and cross-over with northerly flanking mag. This zone continues to the east 300 meters and is closely associated with anomalous arsenic. This particular area is better illustrated by diagram.



Strata dipping to the north steeply

Possible geological make-up.

1) Pyrrhotite rich graphitic seds.
2) Sulphide rich (Py) felsic tuff or flows, with associated gold.
3) Felsic tuff with massive pyrite and quartz matrix with arsenic.

Similar zones to this one previously mentioned are also found on L-600 E, 725 N, L-0EW, 75 S and possibly L-1800 E, 75 N.

Extension of lines 450 E, 600 E, 750 E and 900 E from 800 N to 1100 N will help isolate a gold anomaly open to the north. This area may have closely associated quartz feldspar porphyry dykes although overburden may prove a hinderence for their exact location. VLF, soils (25 meter spacing), mag, and mapping should all be done and rock samples of the intrusive along with any felsic and graphitic horizons should be performed.

2) SKOGNESFJELLET (251-SKO) RINGVASSØY # 1534 IV.

This area is located on the south west side of Skogsfjord-vatnet where Kårvikdalen meets the lake itself. Stream sediments show anomalous gold samples of 34 ppb and 190 ppb draining out of the main Kårvikdalen river and also out of the hillside directly north of the valley. Follow-up included VLF, Mag, soils, and geological mapping.
The grid is located on a possible shear zone between the volcanic belt and basement rocks. Amphibolite dykes are represented here by mag highs and are found to contain up to 3 % magnetite with traces of copper (Cpy). Low mag back-ground (52200 - 52300g) represents a feldspar rich basement (Meta-anorthosite). Interesting in this sequence of rocks are a series of quartzites, limestones, and mafic volcanics in close association with a quartz copper rich pyrrhotite showing. It is very possible this represents the contact zone of the basement and volcanic units, and a faulted contacted (thrust type) should not be discounted. We have yet to receive any results from rock samples taken from this digging, although further north along strike of the contact, N.G.U. has mapped several normal type fault zones with associated cataclastics.
The area of interest here has been out lined by a 300 meter long gold geochem anomaly from L-600 S to L-900 S at 200 W to 100 W respectively. This zone remains open to the south. Along L-750 S from 350 W to 300 W there also is highly anomalous gold values of 420 ppb and 380 ppb respectively.

No other elements are considered anomalous except from possible soil contamination from the old showing.
The VLF survey showed no coincident cross-overs or field strenght increase over the anomalous gold zones. It is suggested the grid be extended to the south to isolate the gold anomaly from stations 100 E to 400 W. Soils, VLF, and Mag should be run, and if soils continue to be anomalous, an I.P. survey map prove helpful to isolate the mineralized zone.

3) SØRDALSHØGDA (SØR-251) REINØY I (1:50 000)

This gold copper area is located five kilometers due south of Dåfjord and work on staked ground was the result of neighbouring high gold values from competitor ground.
The gold zones are located along quartz rich contact zones of intrusive quartz diorite and greenschist/greenstone. The following are geochemical results obtained by Krupp in 1974 while working on an old digging approximatly 500 meters north of the north end of L-750 W. Results were as follows:

Fv-4-1	0.09 ppm Au	(Greenstone)
Fv-4-2	1.5 ppm Au	(Contact)
Fv-4-3	2.3 ppm Au	(Quartz)
Fv-4-4	8.3 ppm Au	(Contact Keratophyre)?
Fv-4-5	0.05 ppm Au	(Keratophyre)?
	(UTM # 3775 E, 6082 N)	

These horizons are gold copper rich, along with traceable amounts of silver. Most of the area includes calcareous greenschist, mafic flows, and minor amounts of mafic pyroclastics. Small lenses of intrusive subvolcanic gabbros, quartz diorite, and basalt porphyries (variolitic type) are found. Large quartz boudins and veins can be seen striking generally in a north/south direction and dips of these veins are steep and variable. Small sections of keratophyre (?) are coincident with a gold anomaly just south of the base line from lines 600 W to 900 W.

Very encouraging results for soils isolated one large gold copper anomaly with values up to 2400 ppb Au and 560 ppm Cu. Copper values seem to flank one gold horizon located between L-600 W and L-900 W at 350 S. Silver and lead values also fluxuate along these anomalous horizons. The VLF survey showed no field response anywhere on the grid, although mag results indicated "hi's" and "low's" throughout. Interpretation of the mag could not be followed along strike with any consistency.
The area should be drill tested, although first detailed mapping and fill in lines with soils every 25 meters should be completed. Tetrahedrite was located in outcrop on the old digging to the north of our property and antimony may be a good indicator element for our gold horizons. The gold anomaly is open to the south and work should be extended along lines 750 E, 900 E, and 1050 E from 400 S to 700 S. Soils, mag, and VLF should be completed. An I.P. survey may prove useful over selected lines on this anomaly, where gold and copper are most likely to be found in disseminated form.

4) RUSSEMOEN (RUS -251) RINGVASSØY #1534 IV

Russmoen is located 2.5 kilometers up the Kårvikdalen valley at the south west end of Skogsfjordvatnet. A gold, lead, zinc anomaly was isolated from the previous years stream sediment survey and additional work this year included VLF, mag, soil sampling, and geological mapping.
Basement rocks can be seen throughout the grid area. They include a majority of anorthositic (?) rocks with minor small zones of chloritic schist, keratophyre, and amphibolite. Banded and sulphide (Py) rich cherts were found as float but not located in outcrop. The area is generally undeformed although towards the south end of the grid beds can be seen to be highly folded to the point where they paralell the profiles.
Both mag and VLF surveys were disappointing although the soils did isolate a Au, Pb, Zn anomaly along lines 150 N

and 500 N at 300 W and 400 W respectively. Values for lead range from 78 ppm to 270 ppm, zinc from 500 ppm to 1800 ppm, and gold 430 ppb.
A new grid should be established over this anomalous zone, with the base line trending slightly west of north. It should cross the creek and head up to 600 meters to the north. Profiles should be up to 400 meters in total length, and VLF, mag, and soil surveys (geochem for Au,Cu, Pb,Zn, Ag) should be performed.

5) HOLMVASSHØGDA (HOL-251) REINØY #1534 I (1:50 000)

This area is located approximately 2.5 kilometers west south west of the small community of Dåfjord. Anomalous stream sediment samples for Au, Cu, Pb,Zn resulted in VLF, mag, and geochemical follow-up during the 1983 field season.
Geologically speaking, the area is considered a mafic volcanic environment of basalts, greenschist and greenstone with locally very small lenses of keratophyre that pinch out along strike. These felsic horizons are usually stained by iron and include minor graphite. Small quartz boudins, usually copper rich (Mal, Cpy) have resulted most probably from the area being intensely folded. Width of these boudins vary from 10 cm to 50 cm, some reaching up to 2.0 meters. Strike lengths vary although some are up to 100 meters long that may pinch and fatten intermittenly.
Results from this area have all been received, although we still await values for gold and copper from rock samples.
The VLF survey did isolate minor cross-overs but these areas were not coincident with any of the anomalous geochemical zones. The mag survey may be used as a mapping tool, and in this case has isolated a more mafic rich horizon on all the lines north of the base line. Geochemical results were positive and indicated anomalous Au and Cu areas. Two interesting areas are as follows: L-600 W, 500 N to 800 N includes gold values ranging from 72 ppb to 2300 ppb in soils. Along L-750 W, 300 S to 600 S gold values range from 37 ppb to 840 ppb with coincident copper up to 450 ppm. Rock samples and soils have been taken from these zones and further work should

proceed if the results are positive. It is interesting to note that A/S Sydvaranger has ground boardering our profiles in the north and they have concentrated alot of field work on this boarder zone. We have soil geochem of up to 2300 ppb Au near this area.

6) HØGDA (HØG-251) REINØY #1534 I (1:50 000)

The Høgda grid lies 1.0 kilometers south along the road out of Dåfjord and was followed up because of good iron formation exposure along the road cut and also because of closely associated gold in stream sediment samples (34 and 120 ppb Au).

The geology includes a largely mafic environment with small graph tic rich lenses of keratophyre and possibly quartz diorite. To the north east end of the grid quartz feldspar intrusive, syenite, and schisty versions of these rocks occur. This area is not thought to be related to the basement rocks, although no definite proof of this was found. Quartz carbonate magnetite iron formation is found along the road cut which included small felsic flow rocks, amphibolite, cherty beds, and rich graphite horizons intermixed with the banded magnetite beds. The area is not highly deformed, and no quartz veining was evident.

VLF and mag identified two main conductive zones, one running almost paralell to the base line and the other along 300 S from lines 450 W to 1050 W. Very high field strength was recorded here along with minor amounts of graphite located at L-750 W, 300 S. Interesting though is a good gold anomaly (up to 320 ppb) flanking the northern boundary and continuing longer to the east. There is anomalous copper espaeially on the south end of L-750 W. Rock samples from the iron formation at L-800 W, 100 S, ran up to 350 ppb Au, while selected quartz veins samples at L-935 W, 175 S ran as high as 2400 ppm Cu and 54 ppb Au. The conductive horizons are well flanked by mag in most cases.

The anomalous zone located along the south end of profiles 450 W to 1050 W seems the most interesting. Continuation of the

survey should involve lengthening profiles 450 W to 1050 W to 500 S and extending the base line from 1050 W out to 1500 W. Profiles in this area should also be run out 500 S. It is highly possible we are dealing with another horizon of iron formation and the mag survey should be done on a 10 meter spacing. The gold horizon should be checked by soils especially between L-750 W and 900 W where results were either negative or not obtained.
If results are positive the zone should be drill tested.

7) KABLE (KAB-251) REINØY #1534 (1:50 000)

Interest in this area was basically to cover ground surrounding a know gold area on Sørdalshøgda. This grid is located between two areas of staked ground.
Unfortunately little is known of the geology; it was snow covered at time of work although the few outcrops that were located showed a mafic volcanic environment with major amounts of calcareous greenschist and tuff. Minor subvolcanic gabbros are present with small quartz diorite sills. Quartz veining was seen and did include minor chalcopyrite. We await the analysis of these rock samples.
Geochemical results isolated three main anomalous gold zones, two of which do not seem to follow along strike of the rocks. These two, located firstly on L-300 E and 450 E north of the base line(up to 78 ppb) and secondly between lines 900 E and 1200 E north of the base (up to 440 ppb Au) may be intrusive related. These two zones are open to the north and east respectably. The third gold anomaly (up to 230 ppb Au) is just south of the base line from lines 950 E to 1200 E and seems to follow along the strike of the rocks. This zone is also open to the east. No other elements are anomalous with the gold except for some minor and isolated kicks of copper and silver.
The V'F survey was effected by power lines in the northern section of the grid and to the south of the base line there was no interesting correlation with anomalous geochemical zones. The mag survey although, was again very erratic, generally over the gold zones and could be similarly compared

to that found up at Sørdalshøgda.
The anomalous zones especially on line 1200 E at 400 N should be isolated better by extension of the base line to the east by 300 M. Profiles should be run from 300 S to 600 N. mag, VLF and soils should all be covered on these areas. Interesting is a gold anomaly isolated on L-600 E at 600 N on the Sørdalshøgda grid (can be seen on the Kable geochemical sheet) that ran 540 ppb Au. This may coincide with a small gold zone on the south end of L-450 E on the Kable grid. The two grids should be joined. Geological mapping may also prove valuable in isolating the source of these anomalies.

The following areas are considered to be a lower priority basis, although mineralization potential should not be discarded completely.

1) BLÅFJELL (BLÅ-251) REINØY # 1534 I (1:50 000)

The grid area is located 2.5 kilometers north of Hessfjord on a plateau between Hårskollan and Blåfjell mountain. Interest in the area was justified by an old As, Zn (± Cu) digging at the north east end of the grid along with rock geochem results obtained by Rolf Krupp (1974) that geochemed 0.35 ppm Au. Geological mapping showed the area to be basically a bimodal volcanic sequence with mineralized zones (Zn, As) isolated by felsic/mafic contacts. Small amounts of copper are seen in quartz carbonate veins to the south of the base line that are hosted by calcareous greenschist although these occurrences are very small and limited. Concentrations of magnetite is very high along the lower contact of the keratophyre and the underlying mafic volcanic sequence, that may intermittenlly include graphitic zones. Basalt porphyry (variotitic type) is also found towards the top of the mafic sequence, while sub-volcanic gabbro can be seen to cross-cut the general strike north of the base line on L-150 W. These zones are not visibly associated with mineralization. Mag and VLF field strength isolated the felsic horizons in the north and found cross-overs related to graphite horizons. These can be seen on lines 900 W and 1050 W at 525 N and may be followed along the felsic contact with the aid of the geological map. Geochemical results did suggest the felsics to have a higher Au background (up to 94 ppb Au, average 10 ppb), although rock samples were generally negative and it is proposed the area be dropped.

2) NATTMÅLSTINDEN (NAT-251) RINGVASSØYA # 1534 IV (1:50 000)

The grid area is situated 3.0 kilometers west of the north end of Skogsfjordvatnet and was followed up as a result of anomalous sediment samples for gold and cobalt. (Au, 200 ppb, 60 ppb) (Co 78 ppm). The geology includes basically a north,

north-westerly striking group of amphibole-plagioclase gneiss, quartzites and amphibolties. Minor intrusive gabbros and quartz muscovite feldspar intrusive are seen, but are limited in extent. Minor quartz veining or boudins is seen to the south of the base line some of which include copper (Cpy).

Geochemical results from soils isolated small anomalous gold areas with no apparent VLF response or corresponding mag. Soil values ranged from background up to 35 ppb in these small zones. Of interest though are two areas, one of which can be seen on L-1050 E at 250 N where gold is up to 200 ppb with good VLF cross over, contourable field strength, and flanking mag hi's on the paralelling profiles. The other anomalous gold zone paralells roughly a quartz feldspar intrusive that strikes in a north south direction. Gold values of up to 60 ppb and 58 ppb on lines 750 E and 900 E respectibly outline the intrusive. A similar area with anomalous geochem (Au-25 ppb) between lines 300E and 450 E at 350 N also has weak field strength and cross-overs.

Continued work should include detailed geochemical sampling along the intrusive strike and also fill in lines beside the larger gold anomaly on line 1050 E. If the geochemical analysis is negative the area should be dropped.

3) SALTINDBUKTA (SAL-251) REINØY # 1534 I (1:50 000)

An anomalous gold stream sediment taken from the mouth of the Stabbelva river (140 ppb) and other values of 6 ppb up stream, resulted in grid follow-up work. VLF, mag, soils, and geological mapping were all performed. The area is located on the south east end of Skogsfjordvatnet and the grid covers basically an area of 10 kilometers up the Stabbelva river.

Outcrop was hard to locate, although the area consists of amphibolite, greenstone, greenschist, quartz diorite, and basement type meta-anorthosite. It is believed this grid is situated very close to the basement/volcanic interface.

Geochemical results for soils were very dissappointing although minor anomalous areas have selected highs of up to 42 ppb. No other elements were aboye their background. The VLF and mag survey did pull out one interesting thing. Good cross-overs and contourable field strength with flanking mag can be found on lines 900 S and 1050 S at 450 E. Along river exposures on L-1050 S at 325 E small amounts of copper rich quartz ankerite veining in greenstone/greenschist is seen. Results from these rock analysis have yet to be received. Interesting to note that just downstream 200 meters from L-1050 S is what seems to be minor placer diggings. The source of the VLF cross-overs should be defined more closely by prospective means, and if rock analysis of the quartz ankerite veins prove negative the area should be dropped.

4) TVERRFJELLET (TVE-251) REBBENESØY #1534 III (1.50 000)

A small grid of 750 meters in length was run over an old massive pyrite showing located 2.5 kilometers up the Leirbogdalen river valley. It was hoped this area may have been one of the sources of many anomalous stream sediment samples from the 1982 field program.
The old digging is dated back to the early 1900's where prime interest there lay in sulphur content of the sulphides. The digging exposes approxemately 1.75 meters of massive pyrite interlayered with minor sericitic phyllites and rhyolites. The massive sulphide zone is located closely to a mafic felsic volcanic contact which runs roughly just east of the base line. The sulphide zone either pinches out to the north and south or has been faulted.
The VLF did pick up strong response from the sulphide zone and it was outlined to be approximately 350 meters in length. No extreme mag could be recorder along this horizon. One interesting result was a field strength zone approximately 200 meters in length located above the main sulphide horozon. It lies in the mafic volcanics and no explaination for the results could be found. The soils were dissappointing except for one value of 160 ppb at L-300 N, 100 W. This

was possibly the result of sulphide contamination from the old digging. No other elments were found anomalous.
It is recommended the area be dropped.

5) LANGRYGGEN (LAN-251) RINGVASSØY # 1534 (1:50 000)

The Langryggen grid is located on the west side of Skogsfjord-vatnet and runs over anomalous gold creeks found during the 1982 stream sediment program. Results from these samples ranged from 83 ppb to 500 ppb (4 samples), all of which drain out of seperate creeks.
Rock types in the area are of mostly mafic composition (amphibolites, basalt, greenstone) with minor felsic dykes (?) and quartz boudins. The area is not highly folded although there has been mention of normal type faulting from work done by N.G.U. These faults have been located close to if not on the Langryggen grid but they could not be isolated during the 1983 field season.
Field results were discouraging. VLF showed only minor cross-overs, and the mag was generally very flat. Soils did isolate one gold horizon between lines 1050 W and 1350 W at approximately 400 E, although no coincident mag or VLF accompanied the zone. Rock samples in this area have been taken and we await geochemical results. Small and isolated gold kicks can be found on L-450 N, 50 W (200 ppb) and L-1650 W, B/L (130 ppb), although no other elements were anomalous on the grid survey.
It is recommended the area be dropped if rock samples prove negative.

6) LEIRBOGDALEN EAST #1, #2 (LBE-251) MAPS # 1534I, 1534 IV, 1535 II, 1535 III.

Two grids here are located 5.0 kilometers up the Leirbog-dalen valley and were run as a result of two good sediment samples (1900 ppb Au, 74 ppb Au). The grids were established over reddish oxidized areas in hope of finding a mineralized horizon.
The geology is comparible on both grids and includes a majority of greenstones, basalts, and amphibolites with minor

narrow lenses of rhyolites and keratophyre. These zones are usually of iron stained. Folding is noticeable on a large scale but is usually gentle.

Unfortunate results on all surveys (VLF, mag, soils) were encountered, although of interest is a copper zone on #1 grid. It was isolated on the north end of the grid just south of the baseline. This zone is coincident with a rock sample of 550 ppm Cu and 18 ppb Au. To the north of this area, off the grid, a pyrite rich quartz vein (boudin)? geochemed 1500 ppb Au, 590 ppm Cu, 71 ppm As. This location is close to the source of our anomalous stream sediment values. The grid here should be extended from the end (L-600N) of grid #1 up to cover the gold quartz vein area. Profiles should be run out and across the creek to the north east. Work on this new grid should first include VLF, mag, and soils and any samples of quartz veins should be located and run for gold and copper.