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Rapportarkivet

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Tittel

Diamond Drilling in the South Pasvik property, Gjøkvann zone, Rømlingsås, Bjørntjern and Fiskevann.

Forfatter K Kjærsrud	Dato 13.11 1980	Bedrift Sulfidmalm a.s.
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Kommune Sør-Varanger	Fylke Finnmark	Bergdistrikt Troms og Finnmark	1: 50 000 kartblad 23332	1: 250 000 kartblad Kirkenes
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Fagområde Boring, geofysikk	Dokument type Rapport	Forekomster Rømlingsås Fiskevann
Råstofftype Malm/metall	Emneord Ni Cu	

Sammendrag

Rapporten inneholder borlogger med profiler sammensatt av bakkegeofysikk (mag og VLF-EM), kjernelogging og magnetisk susceptibilitetsmålinger av borkjernene. Tilsammen ble det boret 2284 m fordelt på 33 hull (Borhullene SP14-46 / 1980).

Dato/Date 13/1-80	Rapport Nr./Report No 509.30.81	Kartblad/Mapsheet 2333 II III	
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Forfatter
Author K. Kjærstrud

Tittel/Title

Diamond drilling in the South Pasvik property,
Gjøkvann zone, Rømlingås, Bjørntjern and Fiskevann.

Resyme/Summary

Based on the discovery of nickel and copper rich boulders in 1977, detailed ground geophysics, geological mapping and boulder tracing were done to follow up this discovery. A number of various types of ultramafic boulders were located, as well as a few ultramafic outcrops. The collected data strongly favoured the Gjøkvann zone as source area for interesting boulders. Four targets-areas were picked out, Blankvann area and Fiskevann area SE of the Tomamoen Fault and Gjøkvann-Rømlingås area and Bjørntjern area NW of the fault. The Blankvann area was drilled in 1979, the three other areas in 1980. Several ultramafic bodies were intersected where strong Mag-anomalies were present. But assays have given very low Ni/Cu values. VLF-anomalies were invariably represented by disseminated pyrrhotite, with very little chalcopyrite.

These results conclude that the Gjøkvann zone do not represent the source area for the actual boulders. Targets left are the Ellenvann zone, and the area underneath the extensive outwash plain at the mouth of the Rautakuru canyon. This deposit will be tested seismically in 1981, and efforts will be made to get a better understanding of the Quaternary geological features in the area.

Andre relevante rap
Other relevant reps

472.77.23
480.78.U.S.S.R.
483.78.23
494.78.23
502.79.30

Kommentarer/Comments

Fordeling
Distribution

☐ Canada
☐ Nikkelverket
☐ Kristiansand
☐ Oslo
☐
☐
☐

SUPERIOR/SULFIDMALM - SYDVARANGER JOINT VENTURE

A/S SULFIDMALM

Diamond drilling in the South Pasvik property,
Gjøkvann zone, Rømlingås, Bjørntjern and Fiskevann.

20/5 - 9/8 1980

by Kenneth Kjærslud

INTRODUCTION

The 1980 diamond drilling program in the South Pasvik Archean was concentrated in the Gjøkvann zone as a natural continuation of the 1979 drilling in the same area. In the period from 20/5 - 9/8, thirtythree drillholes totalling 2283 meters were drilled. The Trondheim company, Terranor, carried out the job with two Diamec 250 drilling machines mounted on sledges, and a Muskeg for transport and back up. From a technical point of view, the drilling went well and no major breaks occurred during the program.

Fig. 1. gives a general picture of the South Pasvik lithological pattern. The continuation of these zones across the Russian border is indisputable. Both geology and geophysics have outlined the Ellenvann and Gjøkvann Formations as the more obvious zones for further prospecting. Extensive boulder tracing, together with outcrops show that ultramafic lithologies discovered so far show a marked affinity to the Gjøkvann zone (see Enc. 1.) On the basis of these observations, follow up drilling was decided to be concentrated in this specific zone. In 1979, some 500 m were drilled in the Blankvann area (see rep. 502.30.80, Lieung/Nixon). The three main targets this summer were the Gjøkåsen-Rømlingåsen area, the Bjørntjern area and the Fiskevann area. After the 1977 discovery of the Ni-rich boulders in the first mentioned area, the question of source of these boulders was immediately risen. Strong argumentation for a rather short distance of transport for the main boulder trains in South Pasvik has been put forward, mainly based on the boulder size and topography. Main direction of ice-movement has, from striae, been estimated to approximately N 20 E. This direction of ice-movement coupled with the nickel-boulder distribution outlines both the Bjørntjern area and the Fiskevann area as interesting targets.

The entire area has been surveyed by ground VLF and Mag, and IP has also been carried out over selected areas. Max-min. was tested on four profiles this summer, but gave no more information than was already obtained by VLF. The magnetic back ground values are fairly low in the target areas, some 400-700 γ , so the main anomalous areas are easily picked out.

Outcrops are extremely scarce in this particular terraine where moraines, a large glacial outwash plain dominate together with several lakes and boggy areas. A few outcrops of ultrabasic rocks and the more common granitic gneiss are present however, and the general strike direction is N-S with a westerly dip of some 15-40°. This usually fits well with the interpretations of geophysical behaviour towards depth. Drillholes were under such circumstances put down with a dip of 60-75°E with only one exception. This was on profile drilling where we had difficulties deciding what was actually happening towards depth. Occasionally, the Mag anomalies gave no clear evidence of direction of dip, and vertical holes were put down in these cases, to be sure to intersect the cause of the anomaly.

The exact drillhole positions were thus decided solely on the geophysical information, supported by the results from the 1979 drilling. Mag anomalies were reckoned to be caused by high magnetite content in ultrabasic lithologies, with a possible similar mineralogy as the Ni-rich boulders. Retrograded peridotites and pyroxenites were intersected last year, but without any interesting ore-mineralization. The cause of the VLF anomalies were more uncertain but massive pyrrhotite was recorded from earlier drillholes. The most interesting targets were of course where Mag and VLF anomalies coincided.

1980 - results:

The three first drillholes, SP 14 - 15 - 16 were put down in the immediate vicinity of the northernmost Ni-boulders, to test if they could possibly represent an in situ position. As it turned out no ultramafic rocks were intersected in any of these holes. Disseminated and occasional narrow bands of massive pyrrhotite are present in both amphibolite and mica-schist. The amount is sufficient to cause the VLF-anomaly running along this area. 13 Ni-Cu assays from these holes gave values ranging from 0.01 - 0.03 % for both Ni and Cu.

SP 17 - 18 were drilled in approximately the same area as DDH 1 and DDH 2 in 1978. Metaperidotite was intersected in both holes, also as boulders in the overburden. The amount of magnetite is impossible to determine from a core sample, but the susceptibility meter measurements clearly showed the strong magnetic nature of the metaperidotites (see). No sulphides could be observed in the core specimens, and Ni-Cu assays ran very low, ranging from 0.12 - 0.14 % Ni and 0.01 - 0.03 % (see

The drillholes SP 19 - SP 27 were then aimed at targets a few hundred meters northwest in an area of extensively coinciding Mag - VLF anomalies. Based on the magnetic anomaly pattern, this area was believed to represent closure of a larger isoclinal synform. This structural interpretation was tested with Max.Min-profiles in an attempt to pick up continuous conducting marker horizons. Unfortunately, the results only seem to confirm the limited knowledge already obtained by VLF. It was only in SP 22 that the ultramafic lithology was present in any significant amount, with an approximately 40 m intersection of partly serpentized metaperidotite. It was not a continuous intersection, and some amphibolite together with the obvious lack of magnetite from 36-40 m down could mean that we are dealing with more than one event of ultramafic emplacement. Assays run 0.18% - 0.19% Ni with only 0.01% Cu.

In SP 25, the lithology from 93.40 - 99.00 m could represent a strongly altered pyroxenite. Scattered sulphide grains are seen, but assays only ran 0.05 % Ni and less than 0.01 % Cu. Also the readings on the susceptibility meter are only slightly exceeding those of the general gneissic lithologies. The rest of these 9 drill-holes presented very little of interest except for the inevitable pyrrhotite concentrations and occasional thin graphite-horizons (SP 26 - 27) which explain the VLF anomalies.

The next target area was the Mag-anomaly rich area around the Bjørntjern lake, with SP 39 - 40 - 41 situated west of this area and SP 33 - 34 - 35 - 46 situated east of the main central area. The three westernmost drillholes were testing a VLF-anomaly running for approximately 3.5 km along strike. Disseminated pyrrhotite and scattered grains of chalcopyrite account for the VLF anomaly. Assays show that the amphibole-mica rich gneisses carry no more than 0.02 - 0.03 % Ni and 0.02 - 0.04 % Cu where the concentration of sulphides reaches 10 - 30 % of the whole rock. Even more disappointing was the drilling of the magnetic anomalies in the central area. The good Mag-anomalies were shown to be caused by magnetite-bearing amphibolites and amphibolitic gneisses. No ultrabasic rocks were intersected at all.

SP 33 - 34 - 35 - 46 were drilled 0.5 - 1.0 km east of the central area, and both SP 34 and SP 35 gave substantial intersections of the highly magnetic metaperidotite. No sulphides were observed in the ultrabasic lithology, and assays ran 0.14 - 0.18 % Ni with 0.01 or less % Cu.

Drillholes Sp 37 - 44 - 45 were drilled even further east to fulfill the 1979 drill program in that area. SP 37 and SP 45, aimed at good Mag-anomalies both immediately hit ultrabasic rocks. The degree of serpentinization seems to be more pronounced in this area, and the introduction of talc and carbonate material strongly effect the more common homogenous appearance of the metaperidotites. A well developed schistosity is frequently present. These intersections could well represent several ultrabasic intrusive events with no serious changes in mineralogy.

But again assays ran as low as 0.12 - 0.18 % Ni with actually less than 0.01 % Cu, and well within the range of assays from the 1979 drilling (C. Coates, 1980).

Two holes, SP 42 - 43, were drilled in the Fiskevann area further south, testing both Mag and VLF anomalies. This is, by far, the best exposed area. Several outcrops of the granitic basement gneisses, including occasional amphibole-mica rich layers are observed. Drillcores only showed a few intersections of 10 - 20 cm thin sheets of ultramafic material. Magnetite is present though in some of the mafic layers as well as in the pegmatites. Disseminated sulphides, mainly pyrrhotite, are observed at several levels, but assays are down to 0.02 % Ni and 0.02 % Cu in the best mineralized horizons.

All drillcores were tested by susceptibility meter measurements as a supplement to core-logging and understanding of the different lithologies' geophysical properties.

STRUCTURAL OBSERVATIONS

Allarechen ore field: The nickel-copper ore field lies in the USSR approximately 50 km south east of the South-Pasvik region in Norway, and it is believed to represent the same lithological environment as is observed on the Norwegian side of the border (see rep. 480-78 USSR).

Amongst the gneiss and amphibolite fields, small ultramafic and basic intrusions have been distributed in small groups and singly, being dominantly associated to the zones of north-westerly striking regional faults. Fold structures also play an important role in the present distribution of the ore bearing intrusives. Sulphide mineralization do seem to be concentrated in synclinal fold hinges whereas the anticlinal fold hinges display a marked decrease in the amount of sulphides as well as thinning or wedging out of the intrusive itself. This secondary migration of ore bearing intrusives into low stress areas caused by superimposed tectonic activity could, if valid for the South Pasvik region, give some aid in establishing the structural pattern in

the target areas in this latter region.

The last two years drilling in South Pasvik has indeed revealed substantial lithological similarities to the Allarechen ore field. From the latter area, both ore-bearing and non ore-bearing intrusives have been demonstrated. The ore-bearing intrusives being somewhat smaller, and lower in MgO content than the non ore-bearing intrusives. So far, several non ore-bearing ultrabasic intrusives have been intersected in South Pasvik within the same lithologies as described from the Allarechen ore field (granitic gneisses, mica rich schists and amphibolites).

But the extreme lack of exposures and the fairly large distances between drillholes in South Pasvik do not invite to a detailed structural interpretation of this large area. Only limited knowledge can be obtained from four drilled profiles with three and up to five drillholes situated on 100-200 m long profiles. Minor folds are obvious in several of the drilled sections, but observations are too scattered to give reliable information on larger scale structures. The magnetic pattern coupled with the fairly constant regional dip and strike of planar structures indicate overturned isoclinal folds facing eastwards.

What is evident, is the extensive northeast running Tommamoen Fault. This fault is positively identified in the Rautakuru canyon within the national park. On the eastern side of the canyon, granitic gneisses with steeply dipping planar structures are dominating. The western side is mainly built up by banded gneisses with a few crosscutting diabase dikes. The complete nature of this fault has not yet been fully recovered. But it seems to be a marked horizontal displacement of the Gjøkvann-zone along this fault, which is reflected in the geophysical magnetic pattern. According to A. Spector (rep. 502.79.30) several northeast running faults are cross-cutting the strike of the magnetic beds which are running north. He also indicates that the magnetic beds display a vertical or westerly dipping attitude, an interpretation which has been proven correct during the last years drilling operations. The

significance of these faults are obvious, when according to the Russians, both ore-bearing and non ore-bearing ultramafic intrusives are only confined to areas with such a structural pattern within this lithological environment.

CONCLUSIONS

The last two years of intensive research in the South Pasvik region strongly indicate that the Gjøkvann zone does not represent the source area for the Ni-rich boulders. Assays are much too low, and probably only silicate-nickel is present. Remaining targets are the Ellenvann zone and perhaps the area underneath the large outwash plain at the mouth of the Rautakuru canyon. This latter prospect will be tested with seismic instruments the season 1981. But before a better Quaternary geological understanding of the region is achieved, no other work on larger scale will be done. Work to this effect is planned for 1981.

	Mag/VLF	Location	Overburden	E of h	Dip	Cause of anomaly
SP 14	VLF	12500N-5025W ✓	7.50 m	56.05	70°E	VLF caused by po-min at 7.50 - 10.40 m
SP 15	VLF	12500N-5125W ✓	9.00	61.40	70°E	VLF caused by po-min at 29.30 - 32.60 m
SP 16		12400N-4985W ✓	8.20	60.0	70°E	
SP 17	Mag	12000N-5350W ✓	7.20	50.0	<u>I</u>	Mag caused by ultra-bAsic rock at 25.65-36.50. <u>Magnetite</u> .
SP 18	Mag	12300N-5500W ✓	8.45	43.40	<u>I</u>	Mag caused by ultra-basic rocks at 8.45-28.00 m.
SP 19	Mag/VLF	12800N-5500W ✓	14.90	50.30	<u>I</u>	
SP 20	Mag	12615N-5715W ✓	10.00	82.25	70°E	Cause of mag.anomaly not intersected.
SP 21	VLF	13100N-5975W ✓	8.40	51.10	<u>I</u>	VLF caused by po-min at 8.40 and 13.65-13.8
SP 22	Mag.	12805N-5800W ✓	14.00	70.80	<u>I</u>	Mag. caused by ultra-basic bodies from 24.2-36.00 and 40.75-67.50 <u>Magnetite</u>
SP 23	Mag/VLF	5990W? 12800N-6010W ✓	10.00	74.80	50°E	VLF caused by several po-min. Mag.anomaly not intersected.
SP 24	VLF	12600N-5925W ✓	9.50	100.00	60°E	
SP 25		12800N-5860W ✓	10.50	99.40	75°W	
SP 26	VLF	12100N-6187W ✓	7.00	119.70	60°E	VLF caused by several po-min, also some graphite.
SP 27	VLF	12800N-5900W ✓	7.50	63.20	<u>I</u>	VLF caused by several po-min, also some graphite.
SP 28	VLF	11500N-6212W	7.40	99.35	70°E	VLF caused by po-min from 22.00-27.00
SP 29	Mag	11400N-6050W	14.00	79.50	65°E	Mag. probably caused by magnetite in amphibolite.

↓

	Mag/VLF	Location	Overburden	E of h	Dip	Cause of anomaly
30	Mag	11000N-6000W	7.70	53.20	^{40°} I	Mag partly caused by magnetite in amphibole rich gneiss.
31	VLF	11000N-6187W	18.00	96.90	65°E	VLF anomalies caused by po-min together with some graphite.
32	Mag/VLF	11015N-6050W	10.00	110.00	70°E	VLF caused by po-min. Mag caused by magnetite in amph.rich gneiss.
33	VLF	10900N-5462W	14.00	60.70	70°E	VLF caused by po-min and graphite at 21.35-21.65
34	Mag	10800N-5062W	12.00	47.40	I	Mag caused by magnetite in ultrabasic rock.
35	Mag	10900N-5137W	10.00	69.55	70°E	Mag caused by magnetite in ultrabasic rock.
36	Mag/VLF	10800N-4325W	7.50	70.00	I	VLF caused by several po-rich horizons + graphite.
37	Mag	11500N-4012W	9.00	58.10	I	Mag caused by magnetite in ultrabasic rock.
38	Mag	11400N-6012W	13.00	45.15	I	Mag caused by magnetite in amph.rich gneiss.
39		10300N-6937W	12.00	48.30	I	
40	VLF	10300N-6975W	16.00	51.10	75°E	VLF caused by po-min. at 31.25 - 31.60.
41	VLF	9300N-6787W	11.30	49.80	75°E	VLF caused by po-min. at 29.70-31.70.
42	Mag/VLF	7300N-6087W	3.50	60.00	I	
43	Mag	7700N-6200W	10.20	60.00	I	Mag caused by magnetite in amph-mica rich gneiss.
44	VLF	11400N-3310W	10.60	66.50	65°E	VLF caused by po-min. and graphite at 33.95-43.30.

	Mag/VLF	Location	Overburden	E of h	Dip	Cause of anomaly
P 45	Mag	11800N-3713W ✓	9.95	100.00	<u>I</u>	Mag caused by magnetite in ultrabasic rocks.
P 46	VLF	11400N-4910W ✓	9.00	75.40	65°E	VLF caused by several po-min horizons.
		overburden { SUM	335.30			
		AVERAGE:	10.16			
		Drilled meters		2283.45		
		Average:		69.20		
		Drill program:				
		started 20/5-80				
		finished 9/8-80				
						33 holes altogether

ASSAY RESULTS SOUTH PASVIK DRILLING 1980

Sample no.	% Ni	% Cu
Bh.14 13.0-14.0 m	0,01	0.01
" " 24.0-25.0	0,01	0,02
" " 30.0-31.0	0.01	0.01
" " 40.0-41.0	0.01	0.02
" 15 10.0-11.0	0.02	0.01
" " 19.0-20.0	0.01	0.01
" " 29.0-30.0	0.02	0.03
" " 30.0-34.0	0.01	0.01
" " 40.0-41.0	0.01	0.01
" 16 13.0-14.0	0.03	0.02
" " 14.0-15.0	0.03	0.02
" " 20.0-21.0	0.01	0.02
" " 32.0-33.0	0.01	0.02
" 17 30.0-31.0	0.14	0.01
" " 36.5-37.4	0.14	0.01
" " 24.5-25.5	0.05	0.03
" 18 9.0-10.0	0.14	0.01
" " 15.0-16.0	0.14	0.02
" " 28.0-29.0	0.12	0.02
" 21 9.00- 9.25	0.02	0.02
" 23 18.30-18.45	0.01	0.03
" " 20.20-20.45	0.01	0.01
" " 21.10-21.30	0.02	0.04
" " 43.60-43.85	0.02	0.03

ASSAY RESULTS SOUTH PASVIK DRILLING 1980

Sample no.	Drill meters	% Cu	% Ni	% Zn	% Pb
Bh. 25	97.0-98.0		0.05	0.01	
Bh. 28	22.0-23.0	0.01	0.02	0.02	0.02
" "	26.0-26.5	0.02	0.03	0.02	
" 30	20.0-21.0	0.01	0.03	0.02	
" 32	22.5-23.5	0.01	0.03	0.02	
" 34	15.0-16.0	0.01	0.18	0.01	
" 35	40.0-41.0		0.14	0.01	
" 36	14.0-15.0		0.02	0.02	
" 37	10.0-11.0		0.18	0.01	0.01
" "	21.5-22.5		0.18	0.01	
" "	40.0-41.0		0.18	0.01	
" 39	12.0-13.0	0.02	0.03	0.02	
" 41	31.2-31.7	0.04	0.02	0.02	
" 43	23.5-24.5	0.02	0.02	0.01	
" 44	34.0-35.0	0.03	0.02	0.01	
" 45	15.0-16.0	0.01	0.12	0.01	
" "	31.0-32.0		0.17	0.01	
" 46	19.5-20.5	0.01	0.02	0.03	

Open spaces mean that values higher than 0.01 have not been found in the samples.

				Cu %	Ni %	Zn %	Pb %
Bh	19	38.0	39.0	0.02	0.02	0.02	
	21	13.0	14.0	0.02	0.03	0.02	
	22	30.0	31.0	0.01	0.18	0.01	
	"	41.0	42.0	0.01	0.18	0.01	
	"	65.0	66.0	0.01	0.19	0.01	
	24	15.0	16.0	0.01	0.03	0.01	
	25	15.0	16.0	0.03	0.03	0.02	
	26	42.5	43.5	0.04	0.03	0.01	
	"	51.5	52.5	0.01	0.03	0.01	
	"	69.5	70.5	0.01	0.03	0.02	
	"	89.5	90.5	0.01	0.03	0.01	
	"	112.0	113.0	0.03	0.05	0.01	
	27	24.0	25.0	0.04	0.06	0.02	
	31	57.0	58.0	0.02	0.07	0.02	
	"	61.5	62.5	0.02	0.04	0.03	
	"	67.0	68.0	0.03	0.08	0.03	
	33	21.0	22.0	0.01	0.03	0.02	
	36	22.5	23.5	0.02	0.04	0.04	
	"	36.5	37.5	0.02	0.04	0.02	0.01
	41	31.0	32.0	0.02	0.04	0.01	
	42	29.0	30.0	0.01	0.02	0.01	

10/10 -80

Open spaces represent values less than 0.01 %

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12500N 5025W BEARING: E DIP: 70 HOLE NO: 14 SHEET NO: 1
LOGGED BY: K.K. STARTED: 21.6.80 PROPERTY: South Pasvik
CASING: FINISHED: 22.6.80
CORE SIZE: TESTS (CORRECTED):

Fróm	To	Description
		SUMMARY LOG
0	7.50	Overburden
7.50	10.40	Garnet bearing mica rich amphibolite. 7.50 - 7.53 massive po. po mineralization also in rest of section
10.40	11.50	Fine gr. amphibolite with qtz/feldspar bands.
11.50	19.45	Amphibolite with specks of po. Well banded with qtz/feldspar bands.
19.45	19.60	Pegmatite
19.60	40.00	Amphibole-mica feldspar gneiss - sporadic development of garnets. Grain size varies.
40.00	42.50	Finer grained greenstone lithology - mica and chlo- rite rich.
42.50	56.05	Light coloured quartz-feldspar gneiss with thin bands of more amphibolitic material.
		V.L.F. anomaly caused by po mineralization 7.50-10.40

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: _____ BEARING: _____ DIP: _____ HOLE NO: 14 SHEET NO: _____
 LOGGED BY: _____ STARTED: _____ PROPERTY SOUTH PASVIK
 CASING: _____ FINISHED: _____
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		CORE ANGLES
	10.45	11° 77'
	13.10	6° 84'
	15.50	1° 83'
	18.50	0° 80'
	20.40	3° 87'
	23.80	2° 78'
	28.85	3° 77'
	32.60	5° 75'
	38.60	1° 79'
	40.80	1° 73'
	44.95	1° 80'
	47.90	9° 81'
	50.65	5° 85'
	55.75	18° 72'

Magn. suscept.

1000 2000 3000 4000 5000 6000 7000 8000

Dept of hole

10m

20m

30m

40m

50m

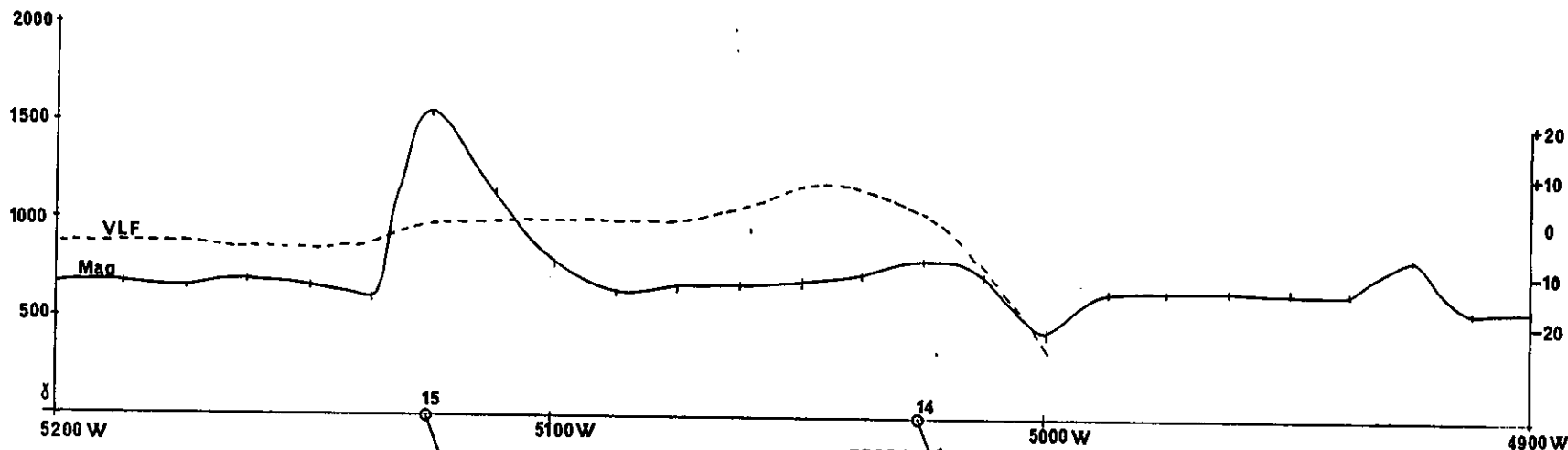
60m

DDH-14 South Pasvik
Magnetic susceptibility

SCALE	1-100	DATE	8-80
DRAW.		DATE	8-80
TRAC.	KG	DATE	9-80
CHK.			

MAP NO.

% SULFIDMALM



LEGEND

-  Granite-granitic gneiss.
-  Mica-amph/qtz-fsp gneiss.
-  Mica-amph schist.
-  Amphibolite/greenstone.
-  Meta-gabbro.
-  Peridotite.
-  Serpentinite.

END OF HOLE 81,4 m

END OF HOLE 56,05 m

DRILLHOLE 14,15,SOUTH PASVIK
 14, 70° E 15, 70° E
 12500N/5025W 12500N/5125W

1/3 SULFIDMALM

SCALE	OBS.	
1:100	DRAW. - 80	KK
	TRAC.	R.K.B.
	CHK.	

MAP NO.

MAP SHEET

A/s SULFIDMALM

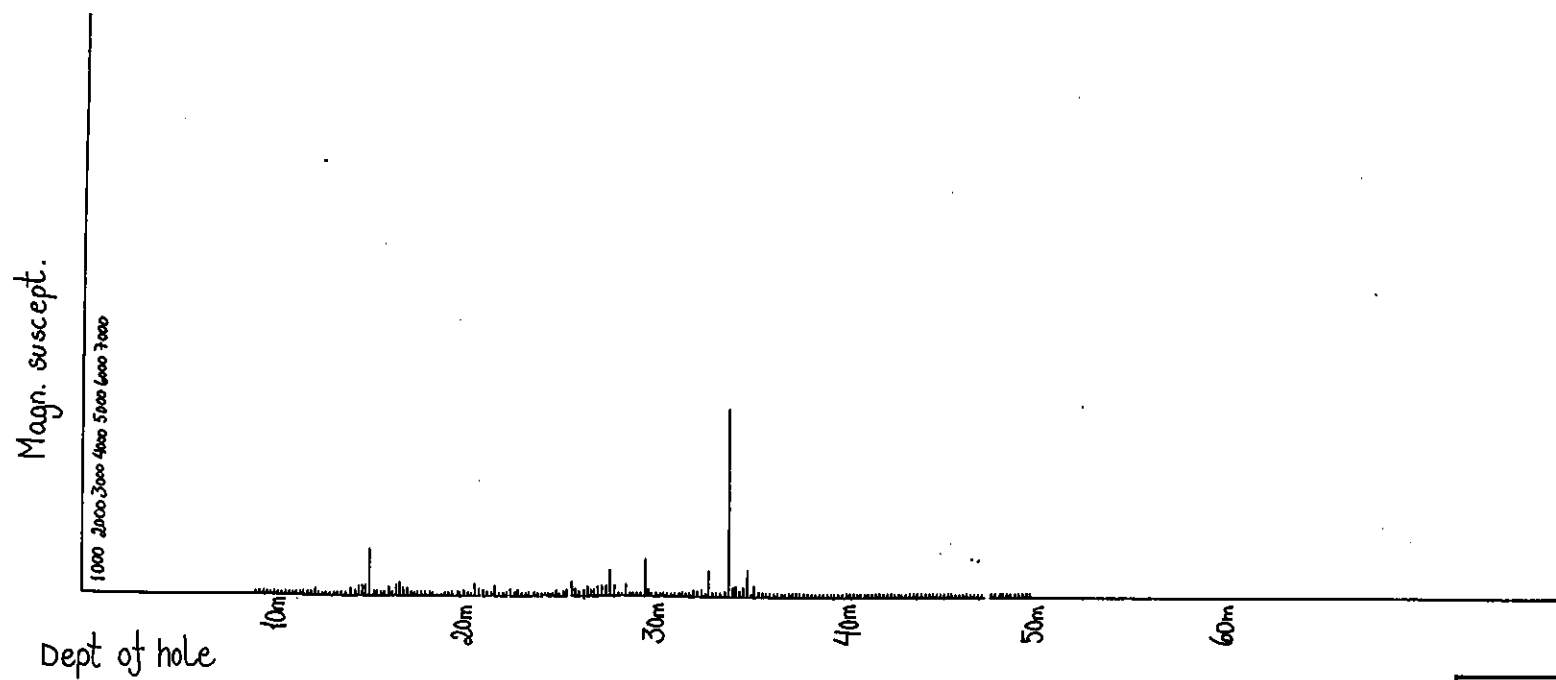
DIAMOND DRILL RECORD

LOCATION: 12500N 5125W BEARING: E DIP: 70° HOLE NO: 15 SHEET NO: I
 LOGGED BY: K.K. STARTED: 23.6.80 PROPERTY SOUTH PASVIK
 CASING: FINISHED: 25.6.80
 CORE SIZE: TESTS (CORRECTED):

From	To	Description
		SUMMARY LOG
0	9.00	Overburden
9.00	15.00	Garnet bearing amphibolitic lithology 11.05, 1/2 cm band of massive pyrrhotite in contact with an irregular pegmatite-vein.
15.00	17.70	Amphibolite, but with somewhat less darker minerals than the former mentioned lithology 17.50-17.60 Graphite/pyrite at joint.
17.70	29.30	Garnet/mica rich amphibolite
29.30	30.00	Mica schist, rich in quartz/feldspar. 29.30-29.32 Massive pyrrhotite band, and only specks of pyrrhotite in the rest of this zone. Graphite is observed at joints.
30.00	31.80	Mica schist with very sparse sulphide-mineralization
31.80	32.10	Mica rich lithology, with at least 15-20% pyrrhotite.
32.10	32.60	Single grains and a few stringers of pyrrhotite in mica schist.
32.60	35.20	Mica rich gneiss with feldspar/amphibole.
35.20	35.30	Pegmatite
35.30	52.60	Amphibolitic lithology, varying grainsize.
52.60	61.40	Qtz/feldspar gneiss, banding produced by mica.
		VLF anomaly caused by po-mineralization 29.30-32.60

DIAMOND DRILL RECORD

From	To	Description
		CORE ANGLES
	10.50	85°
	12.70	71°
	15.50	80°
	19.50	85°
	22.40	77°
	25.50	77°
	27.30	78°
	32.80	80°
	35.50	80°
	38.50	83°
	42.60	79°
	47.70	73°
	48.90	80°
	52.60	80°
	55.60	78°
	58.10	90°



DDH-15 South Pasvik Magnetic susceptibility	SCALE	OBL	8-80
	1-100	DRAW.	8-80
		TRAC. KG	9-80
		CHE.	
% SULFIDMALM	MAP NO.		

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12400N 4985W BEARING: E DIP: 70° HOLE NO: 16 SHEET NO: I
 LOGGED BY: K.K. STARTED: 22.5.80 PROPERTY SOUTH PASVIK
 CASING: FINISHED: 24.5.80
 CORE SIZE: TESTS (CORRECTED):

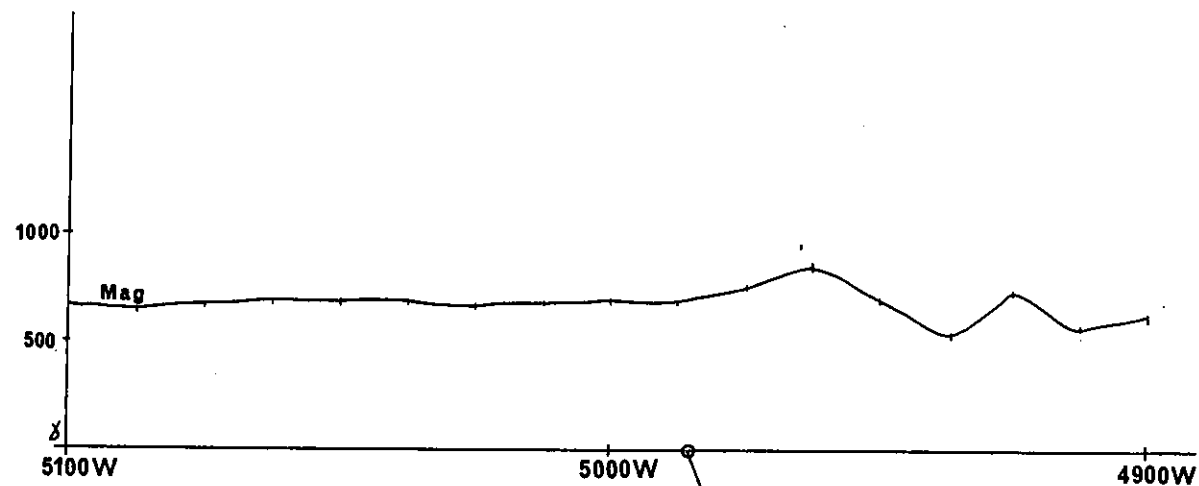
From	To	Description
SUMMARY LOG		
0	8.20	Overburden
8.20	13.60	Amphibolitic lithology, mica/garnet bearing. Veins of qtz/feldspar present, with specks of po and cpy. Fairly magnetic lithology.
13.60	13.70	Feldspar/mica schist. 1 cm band of massive po with some cpy.
13.70	14.40	Fine grained green amphibolite, slightly schistose. Magnetite-bearing.
14.40	15.85	Feldspar/qtz/mica gneiss. 14.40-15.20 15% sulphides, mainly po with some cpy.
15.85	29.70	Amphibolitic lithology, garnets not always present. Increasing feldspar content where no garnets are seen.
29.70	30.00	Pegmatite.
30.00	42.50	Amphibolitic lithology, the ratio amph/mica somewhat varying. 32.30 zone rich in magnetite.
42.50	60.00	Mainly qtz/feldspar gneiss with smaller amounts of mica. Very narrow bands of amphibolite and pegmatite occur quite frequently throughout this lithology.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: _____ BEARING: _____ DIP: _____ HOLE NO: 16 SHEET NO: _____
 LOGGED BY: _____ STARTED: _____ PROPERTY SOUTH PASVIK
 CASING: _____ FINISHED: _____
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		CORE ANGLES
	9.50	75°
	11.30	72°
	14.20	70°
	17.70	79°
	19.85	80°
	22.20	90°
	24.40	75°
	27.50	71°
	29.50	43°
	31.40	80°
	34.40	85°
	37.60	84°
	42.40	75°
	46.50	90°
	49.10	85°
	51.60	79°
	55.60	85°
	58.70	84°



LEGEND

-  Granite-granitic gneiss.
-  Mica-amph/qtz-fsp gneiss.
-  Mica-amph schist.
-  Amphibolite/greenstone.
-  Meta-gabbro.
-  Peridotite.
-  Serpentinite.



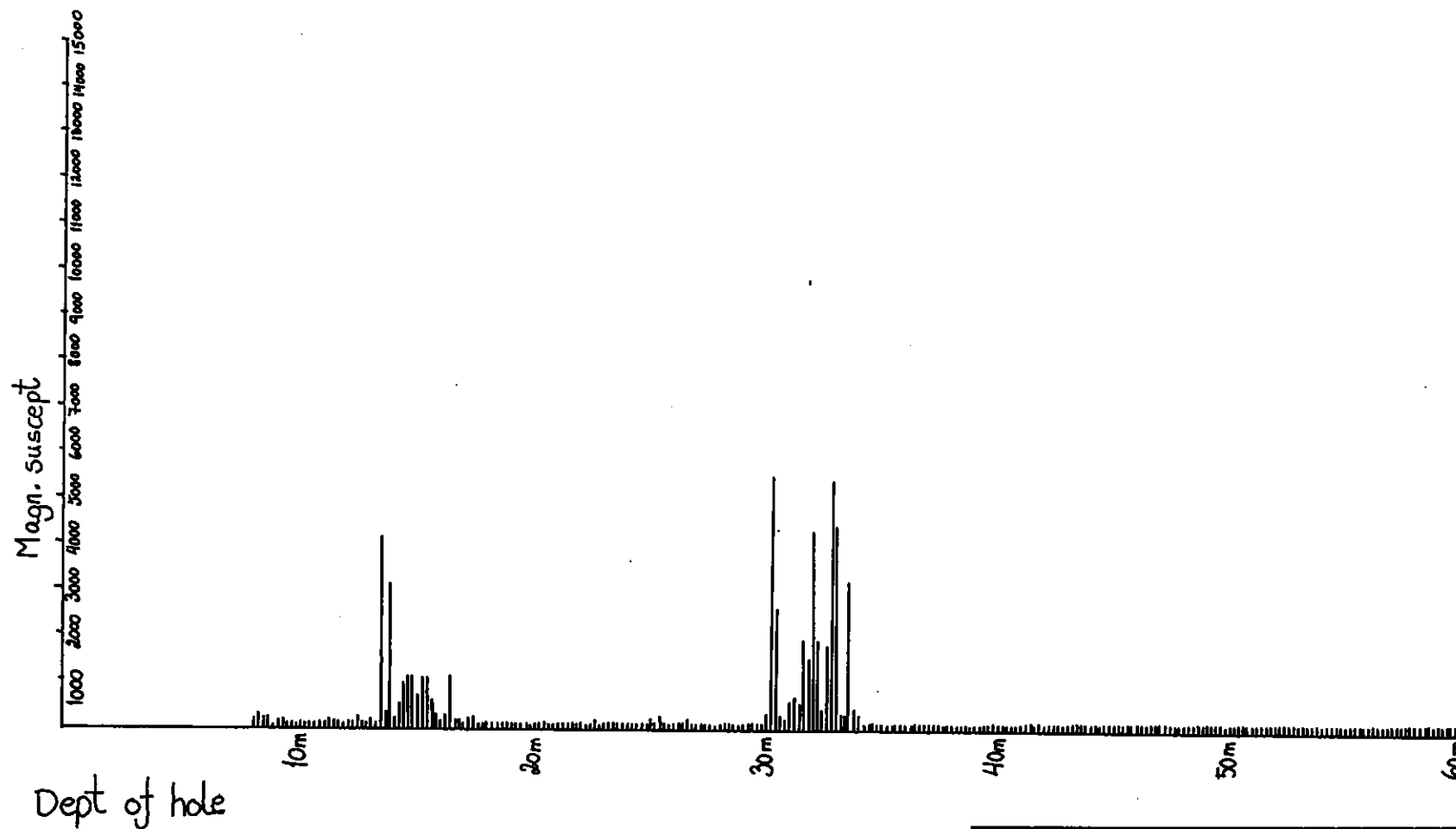
DRILLHOLE 16, SOUTH PASVIK
12900 N/4985 W 70° E

SCALE	1:100	OBS.	
DRAW. -80		TRAC.	K.K.
CHK.			A.K.B.

1/2 SULFIDMALM

MAP NO.

MAP SHEET



DDH-16 South Pasvik
Magnetic susceptibility

$\frac{1}{2}$ SULFIDMALM

SCALE	OBS.	8-80
1-100	DRAW.	8-80
	TRAC. KG	9-80
	CHK.	

MAP NO.

MAP SHEET

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12000N 5350W

BEARING: _____ DIP: _____ HOLE NO: 17 SHEET NO: I

LOGGED BY: K.K.

STARTED: 25.5.80 PROPERTY SOUTH PASVIK

CASING: _____

FINISHED: 27.5.80

CORE SIZE: _____

TESTS (CORRECTED): _____

From	To	Description
SUMMARY LOG		
0	7.20	Overburden
7.20	8.35	Greenstone mineralogy grading into an extreme mica-rich schist. Occasional grains of po.
8.35	13.60	Qtz/feldspar gneiss
13.60	14.70	Mica schist
14.70	15.00	"Pegmatitic" development of amphibole/feldspar
15.00	25.65	Amphibolite, mica rich. Feldspar often seen as un-oriented needles.
		25.20 - 25.30 10-15% sulphides, mainly po.
25.65	36.50	Ultrabasic rock, partly serpentinized. No visible sulphide-mineralization.
36.50	40.00	Transitional zone, the ratio amphibole/mica show extreme variations. 37.40 - 38.00 Ultrabasic rock.
40.00	41.00	Qtz/feldspar gneiss
41.00	41.90	Amphibole/mica schist, some sand layers.
41.90	50.00	Qtz/feldspar gneiss.
		Mag - most probably caused by the ultrabasic lithology from 25.65 - 36.50.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12500N 5125W BEARING: E DIP: 70° HOLE NO: 15 SHEET NO: I
LOGGED BY: K.K. STARTED: 23.6.80 PROPERTY: SOUTH PASVIK
CASING: FINISHED: 25.6.80
CORE SIZE: TESTS (CORRECTED):

From	To	Description
SUMMARY LOG		
0	9.00	Overburden
9.00	15.00	Garnet bearing amphibolitic lithology 11.05, ½ cm band of massive pyrrhotite in contact with an irregular pegmatite-vein.
15.00	17.70	Amphibolite, but with somewhat less darker minerals than the former mentioned lithology 17.50-17.60 Graphite/pyrite at joint.
17.70	29.30	Garnet/mica rich amphibolite
29.30	30.00	Mica schist, rich in quartz/feldspar. 29.30-29.32 Massive pyrrhotite band, and only specks of pyrrhotite in the rest of this zone. Graphite is observed at joints.
30.00	31.80	Mica schist with very sparse sulphide-mineralization
31.80	32.10	Mica rich lithology, with at least 15-20% pyrrhotite.
32.10	32.60	Single grains and a few stringers of pyrrhotite in mica schist.
32.60	35.20	Mica rich gneiss with feldspar/amphibole.
35.20	35.30	Pegmatite
35.30	52.60	Amphibolitic lithology, varying grainsize.
52.60	61.40	Qtz/feldspar gneiss, banding produced by mica. VLF anomaly caused by po-mineralization 29.30-32.60

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: _____ BEARING: _____ DIP: _____ HOLE NO: 15 SHEET NO: _____
 LOGGED BY: _____ STARTED: _____ PROPERTY SOUTH PASVIK
 CASING: _____ FINISHED: _____
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		CORE ANGLES
	10.50	85°
	12.70	71°
	15.50	80°
	19.50	85°
	22.40	77°
	25.50	77°
	27.30	78°
	32.80	80°
	35.50	80°
	38.50	83°
	42.60	79°
	47.70	73°
	48.90	80°
	52.60	80°
	55.60	78°
	58.10	90°

Magn. suscept.

1000 2000 3000 4000 5000 6000 7000

Dept of hole

10m

20m

30m

40m

50m

60m

DDH-15 South Pasvik
Magnetic susceptibility

SCALE	1-100	DES.	8-80
		DRAW.	8-80
		TRAC.	KG 9-80
		CHK.	

HAP NO.

% SULFIDMALM

HAP NO.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12400N 4985W BEARING: E DIP: 70° HOLE NO: 16 SHEET NO: I
LOGGED BY: K.K. STARTED: 22.5.80 PROPERTY SOUTH PASVIK
CASING: FINISHED: 24.5.80
CORE SIZE: TESTS (CORRECTED):

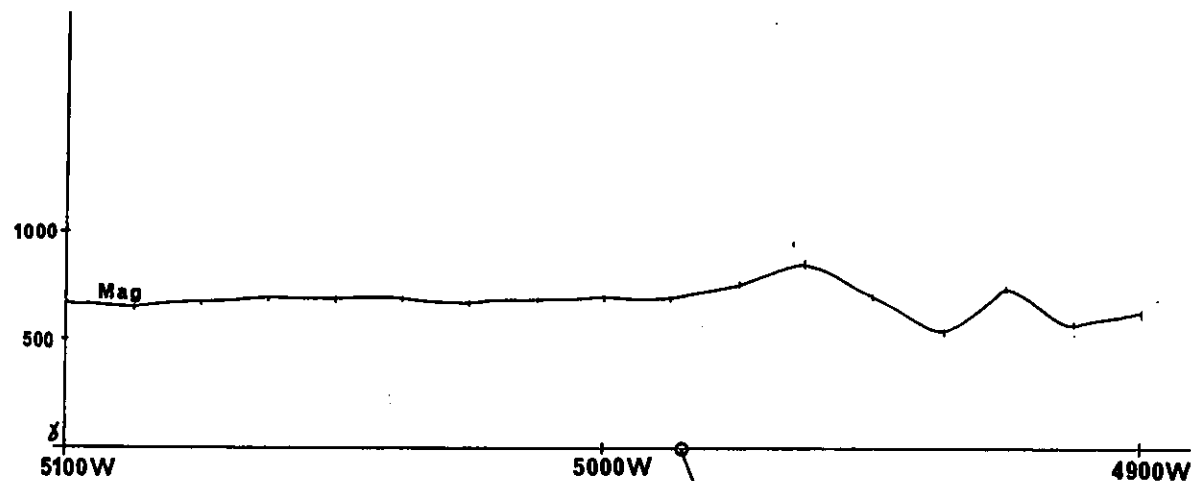
From	To	Description
		SUMMARY LOG
0	8.20	Overburden.
8.20	13.60	Amphibolitic lithology, mica/garnet bearing. Veins of qtz/feldspar present, with specks of po and cpy. Fairly magnetic lithology.
13.60	13.70	Feldspar/mica schist. 1 cm band of massive po with some cpy.
13.70	14.40	Fine grained green amphibolite, slightly schistose. Magnetite-bearing.
14.40	15.85	Feldspar/qtz/mica gneiss. 14.40-15.20 15% sulphides, mainly po with some cpy.
15.85	29.70	Amphibolitic lithology, garnets not always present. Increasing feldspar content where no garnets are seen.
29.70	30.00	Pegmatite.
30.00	42.50	Amphibolitic lithology, the ratio amph/mica somewhat varying. 32.30 zone rich in magnetite.
42.50	60.00	Mainly qtz/feldspar gneiss with smaller amounts of mica. Very narrow bands of amphibolite and pegmatite occur quite frequently throughout this lithology.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: _____ BEARING: _____ DIP: _____ HOLE NO: 16 SHEET NO: _____
 LOGGED BY: _____ STARTED: _____ PROPERTY SOUTH PASVIK
 CASING: _____ FINISHED: _____
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
CORE ANGLES		
	9.50	75°
	11.30	72°
	14.20	70°
	17.70	79°
	19.85	80°
	22.20	90°
	24.40	75°
	27.50	71°
	29.50	43°
	31.40	80°
	34.40	85°
	37.60	84°
	42.40	75°
	46.50	90°
	49.10	85°
	51.60	79°
	55.60	85°
	58.70	84°



LEGEND

-  Granite-granitic gneiss.
-  Mica-amph/qtz-fsp gneiss.
-  Mica-amph schist.
-  Amphibolite/greenstone.
-  Meta-gabbro.
-  Peridotite.
-  Serpentinite.

0 50 100m

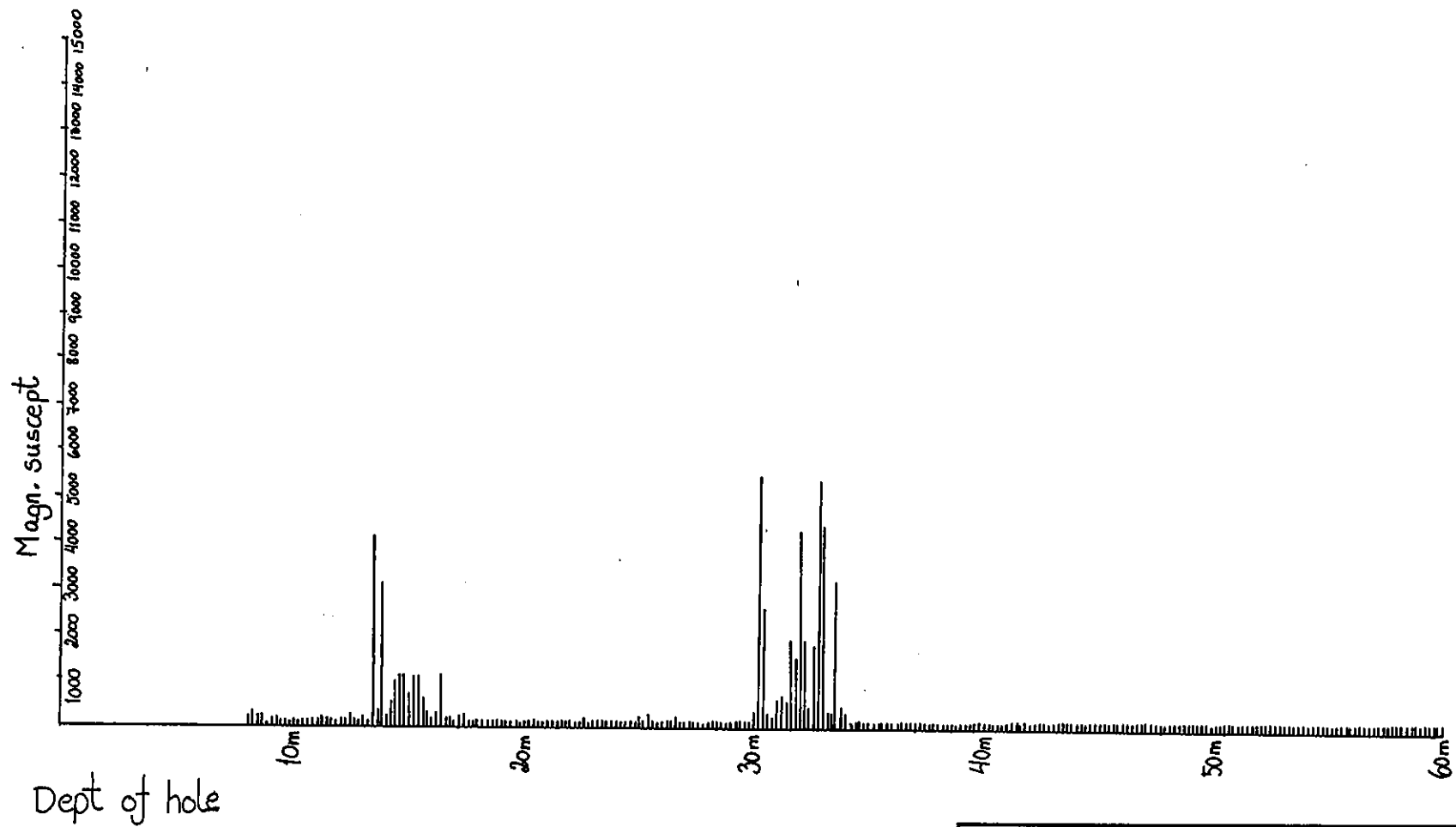
DRILLHOLE 16, SOUTH PASVIK
12900 N/4985 W 70° E

SCALE	OBS.	
1:100	DRAW. -80	K.K.
	TRAC.	A.K.B.
	CHK.	

MAP NO.

% SULFIDMALM

FEET



DDH-16 South Pasvik
Magnetic susceptibility

SCALE

OBS.

8-80

DRAW.

8-80

TRAC. KG

9-80

CHK.

MAP NO.

% SULFIDMALM

FEET

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12000N 5350W

BEARING: _____ DIP: _____ HOLE NO: 17 SHEET NO: I

LOGGED BY: K.K.

STARTED: 25.5.80 PROPERTY SOUTH PASVIK

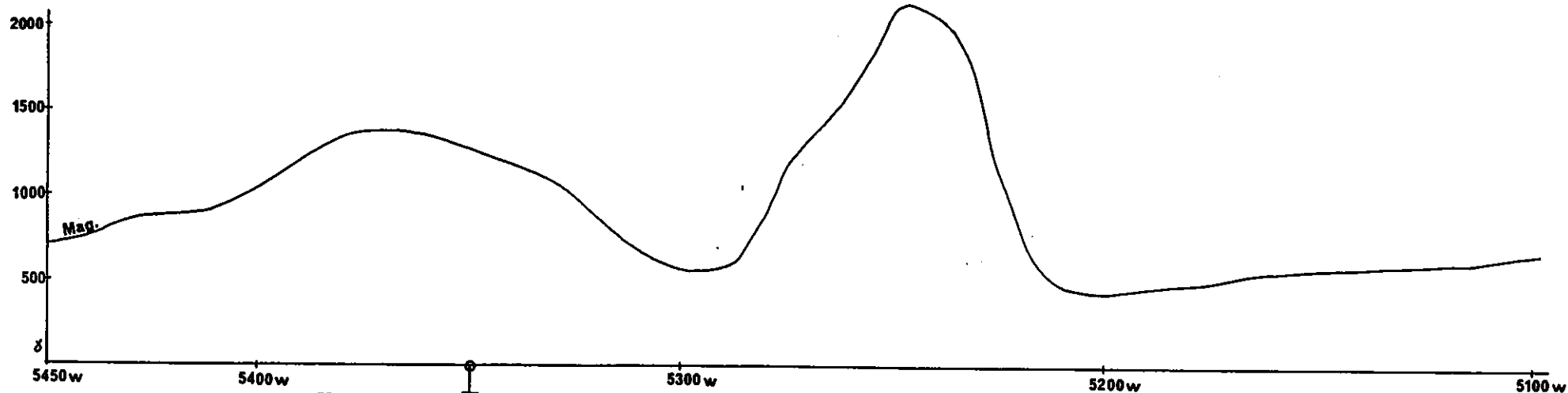
CASING: _____

FINISHED: 27.5.80

CORE SIZE: _____

TESTS (CORRECTED): _____

From	To	Description
SUMMARY LOG		
0	7.20	Overburden
7.20	8.35	Greenstone mineralogy grading into an extreme mica-rich schist. Occasional grains of po.
8.35	13.60	Qtz/feldspar gneiss
13.60	14.70	Mica schist
14.70	15.00	"Pegmatitic" development of amphibole/feldspar
15.00	25.65	Amphibolite, mica rich. Feldspar often seen as un-oriented needles. 25.20 - 25.30 10-15% sulphides, mainly po.
25.65	36.50	Ultrabasic rock, partly serpentized. No visible sulphide-mineralization.
36.50	40.00	Transitional zone, the ratio amphibole/mica show extreme variations. 37.40 - 38.00 Ultrabasic rock.
40.00	41.00	Qtz/feldspar gneiss
41.00	41.90	Amphibole/mica schist, some sand layers.
41.90	50.00	Qtz/feldspar gneiss.
Mag - most probably caused by the ultrabasic lithology from 25.65 - 36.50.		



LEGEND

-  Granite-granitic gneiss.
-  Mica-amph/qtz-fsp gneiss.
-  Mica-amph schist.
-  Amphibolite/greenstone.
-  Meta-gabbro.
-  Peridotite.
-  Serpentinite.

Mag suscept > 5000

END OF HOLE 50m

0 50 100m

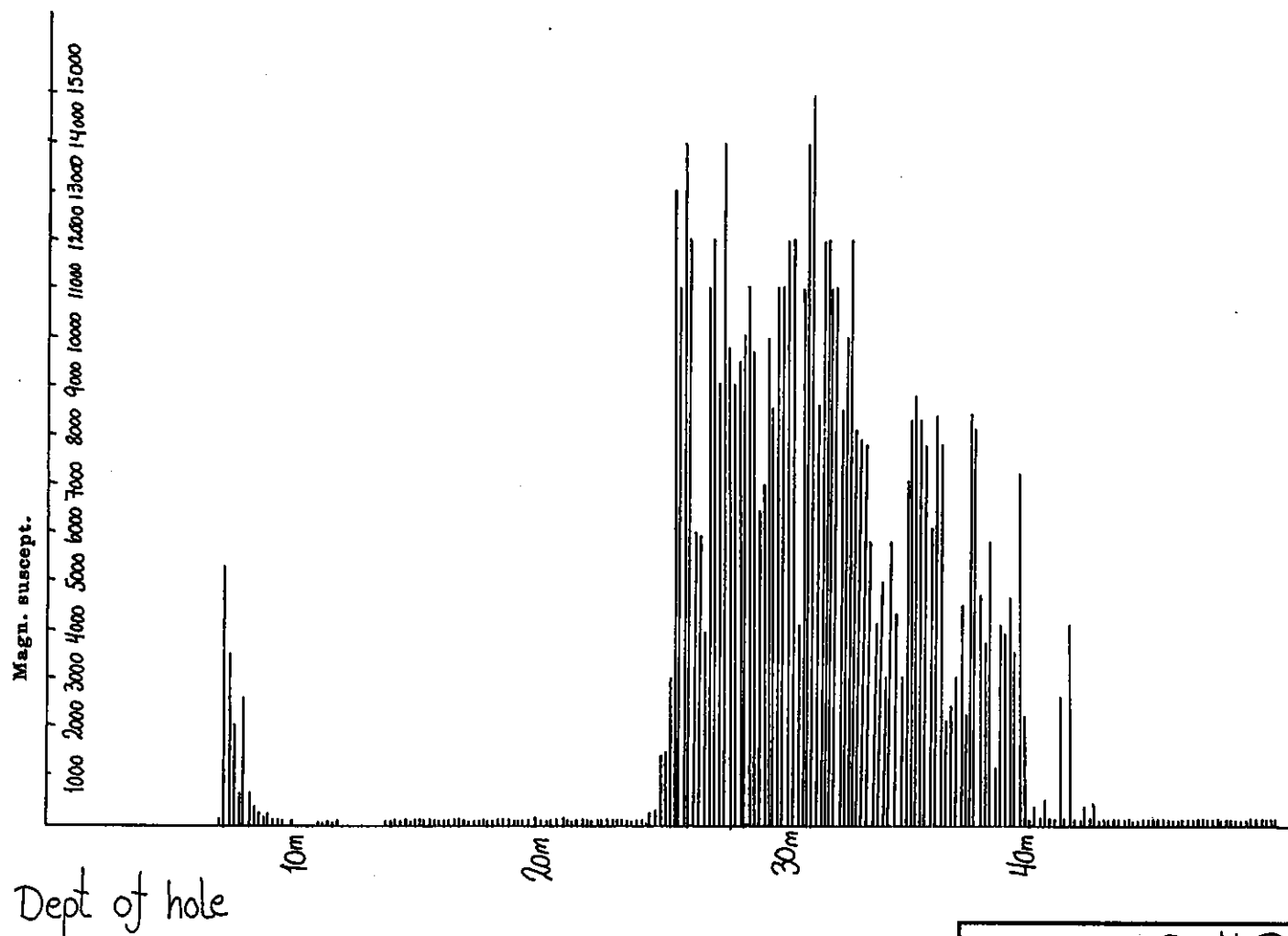
DRILLHOLE 17, SOUTH PASVIK
12000N/5350W

1/2 SULFIDMALM

SCALE	OBS.	
1:100	DRAW. -80	K.K.
	TRAC.	A.K.B.
	CHK.	

MAP NO.

M T



DDH-17 South Pasvik Magnetic susceptibility	SCALE	OBS.	8-80
	1-100	DRAW.	8-80
		TRAC. KG	9-80
		CHK.	
% SULFIDM'ALM		MAP NO.	

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12300N 5500W

BEARING: _____ DIP: _____ HOLE NO: 18 SHEET NO: I

LOGGED BY: K.K.

STARTED: 29.5.80 PROPERTY SOUTH PASVIK

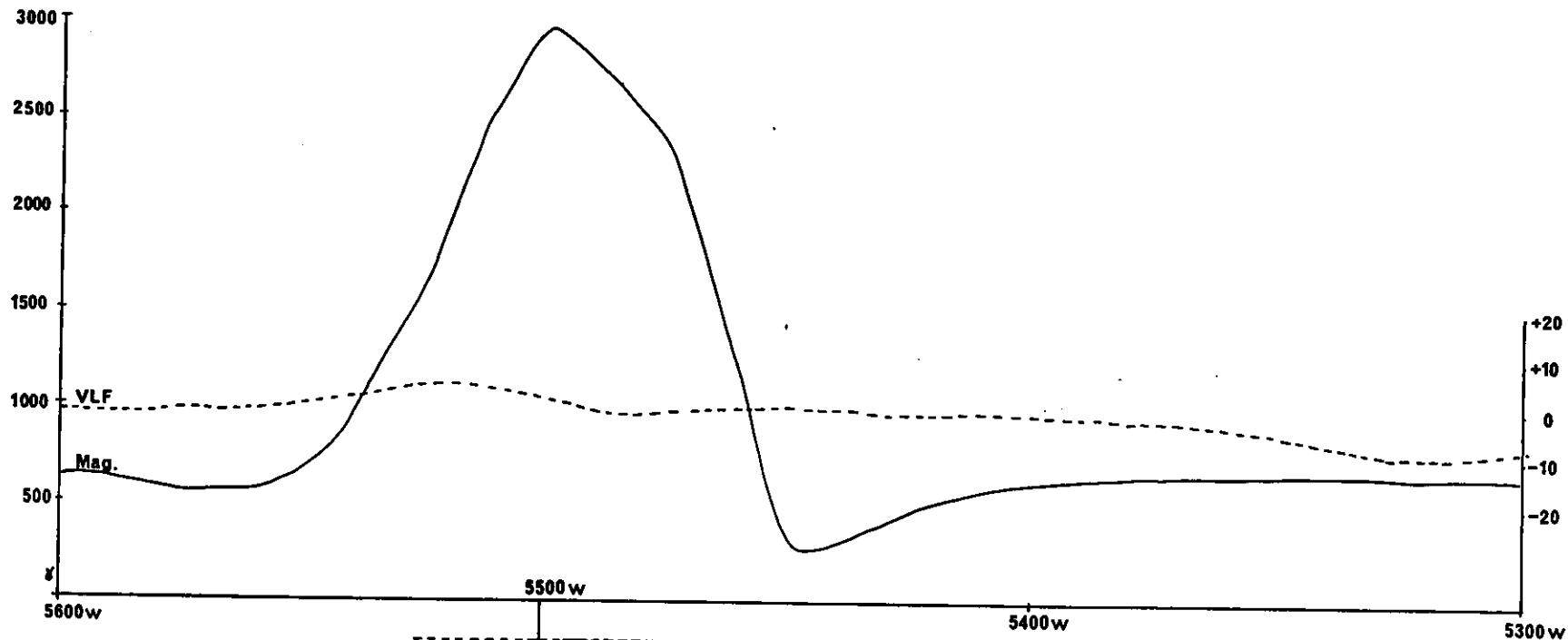
CASING: _____

FINISHED: 30.5.80

CORE SIZE: _____

TESTS (CORRECTED): _____

From	To	Description
SUMMARY LOG		
0	8.45	Overburden
8.45	22.50	Ultrabasic lithology dominating with a few narrow zones, approx. 10 cm, with extreme mica content.
22.50	24.00	Greenish transition zone, amphibole - mica and chlorite being the main components.
24.00	28.00	Ultrabasic rock.
28.00	30.00	Green lithology, more fine grained than the ultrabasic rock.
30.00	38.00	Qtz/feldspar gneiss
38.00	38.60	Amphibolite
38.60	43.30	Qtz/feldspar gneiss
		The drill-bit was stuck, and hole was ended with geologist's permission.
		Mag. - was caused by the two ultrabasic bodies.



LEGEND

-  Granite-granitic gneiss.
-  Mica-amph/qtz-fsp gneiss.
-  Mica-amph schist.
-  Amphibolite/greenstone.
-  Meta-gabbro.
-  Peridotite.
-  Serpentinite.
-  Mag suscept > 5000

0 50 100 m

DRILLHOLE 18, SOUTH PASVIK

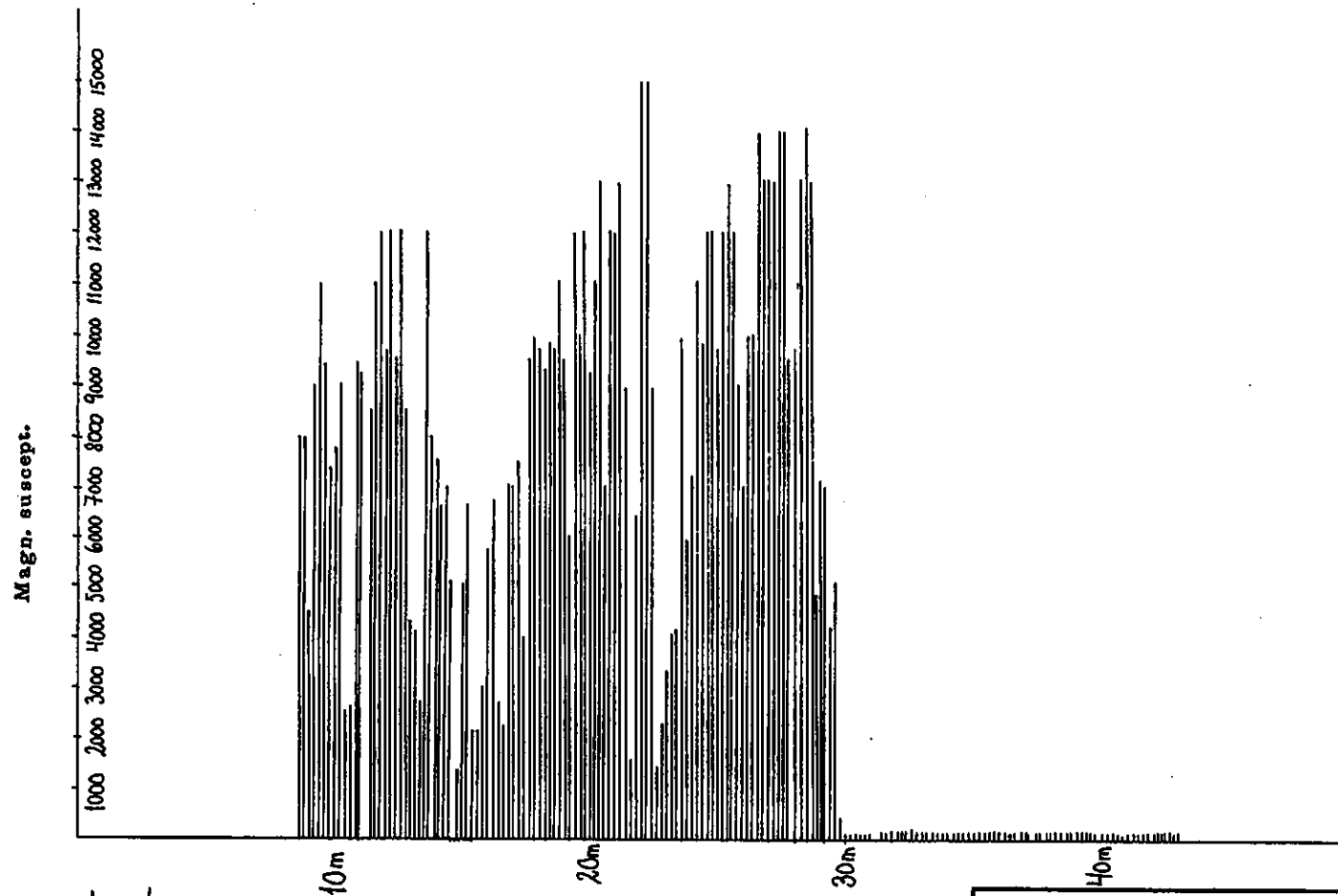
12300N/5500 W 

1/2 SULFIDMALM

SCALE 1:100	OBS.	
	DRAW. -80	KK
	TRAC.	A.K.B.
	CHK.	

MAP NO.

SHEET



Dept of hole

DDH-18 South Pasvik

Magnetic susceptibility

% SULFIDMALM

SCALE	OBS.	8-80
	DRAW.	8-80
	TRAC. KG	9-80
	CHK.	

MAP NO.

^A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12800N 5500W

BEARING: _____ DIP: _____ HOLE NO: 19 SHEET NO: I

LOGGED BY: K.K:

STARTED: 27.5.80

PROPERTY SOUTH PASVIK

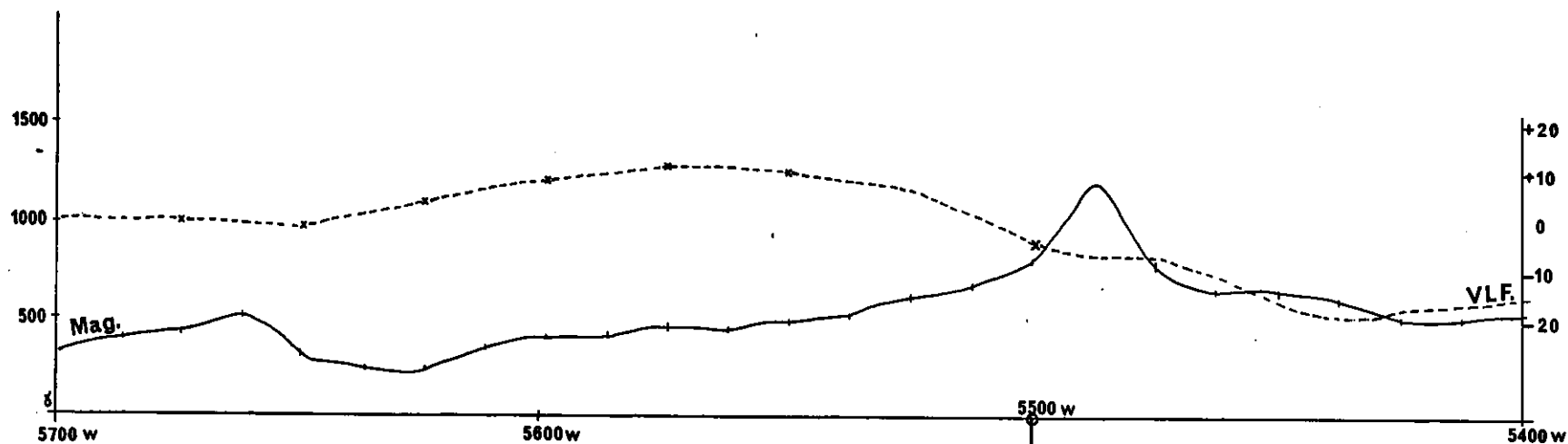
CASING:

FINISHED: 28.5.80

CORE SIZE:

TESTS (CORRECTED):

From	To	Description
		SUMMARY LOG
0	14.90	Overburden
14.90	21.00	Dark grey gneiss, garnet bearing. Mica content increasing downwards.
21.00	24.90	Main lithology resembling greenstone, some parts though extremely mica rich. Qtz/feldspar veins occur frequently.
24.90	50.30	Amphibolitic lithology dominating, with some variation in grain size. Garnets are present at some horizons 38.00 - 39.00. Occasional graphite-lamination with grains of po and cpy associated with it.



LEGEND

- Granite-granitic gneiss.
- Mica-amph/qtz-fsp gneiss.
- Mica-amph schist.
- Amphibolite/greenstone.
- Meta-gabbro.
- Peridotite.
- Serpentinite.



END OF HOLE 50,3m

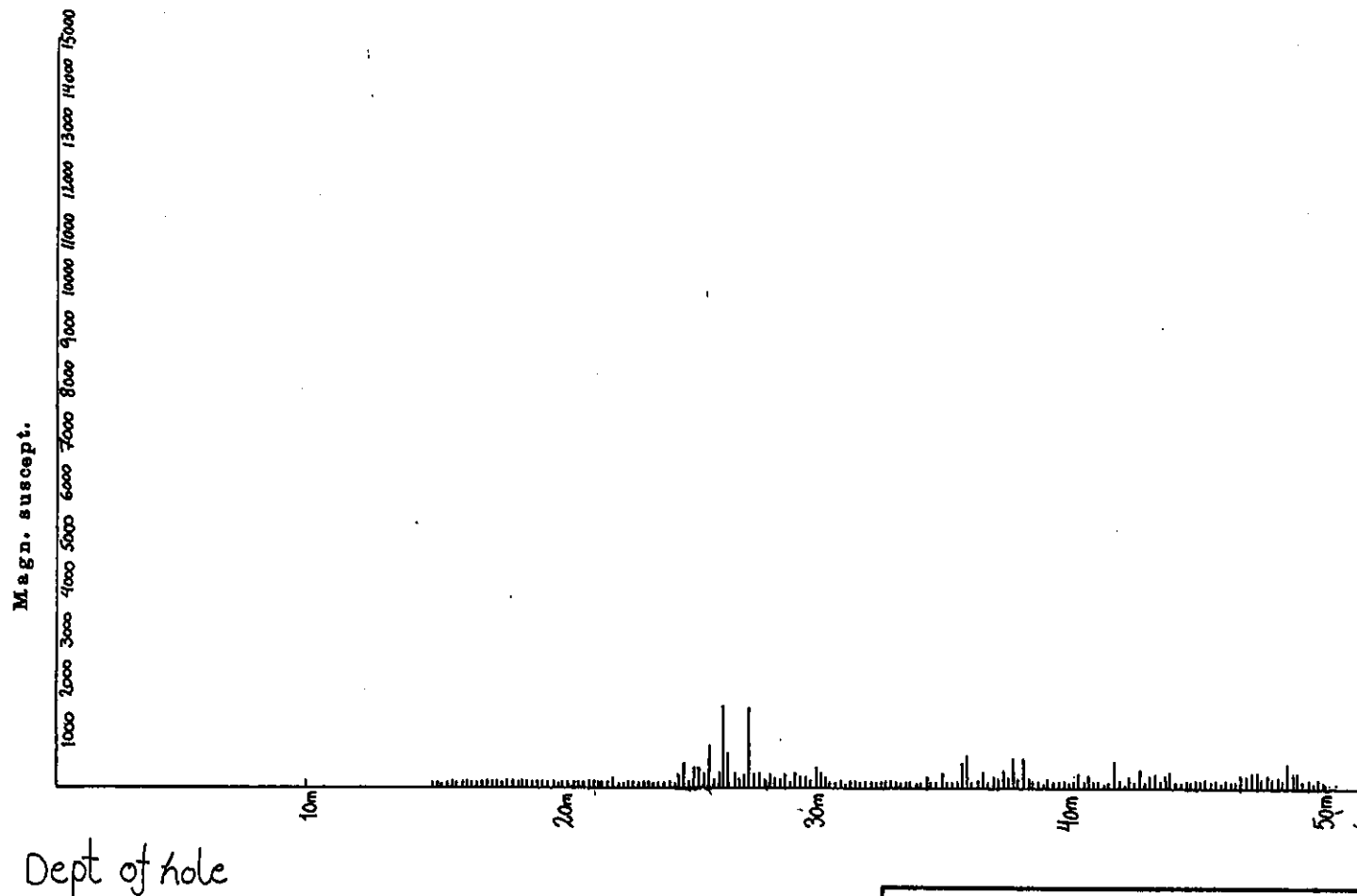
DRILLHOLE 19, SOUTH PASVIK
12800N/5500W

1/2 SULFIDMALM

SCALE	1:100	OBS.	
		DRAW.	K.K. 9-80
		TRAC.	A.K.B.
		CHK.	

MAP NO.

M T



DDH-19 South Pasvik

Magnetic susceptibility

% SULFIDMALM

SCALE

1-100

OBS.

8-80

DRAW.

8-80

TRAC. KG

9-80

CHK.

MAP NO.

FEET

DIAMOND DRILL RECORD

BEARING: E DIP: 70° HOLE NO: 20 SHEET NO. I

STARTED: 31.5.80 PROPERTY SOUTH PASVITK

PROPERTY SOUTH PASADENA
FINISHED: 14.6.80

TESTS (CORRECTED): _____

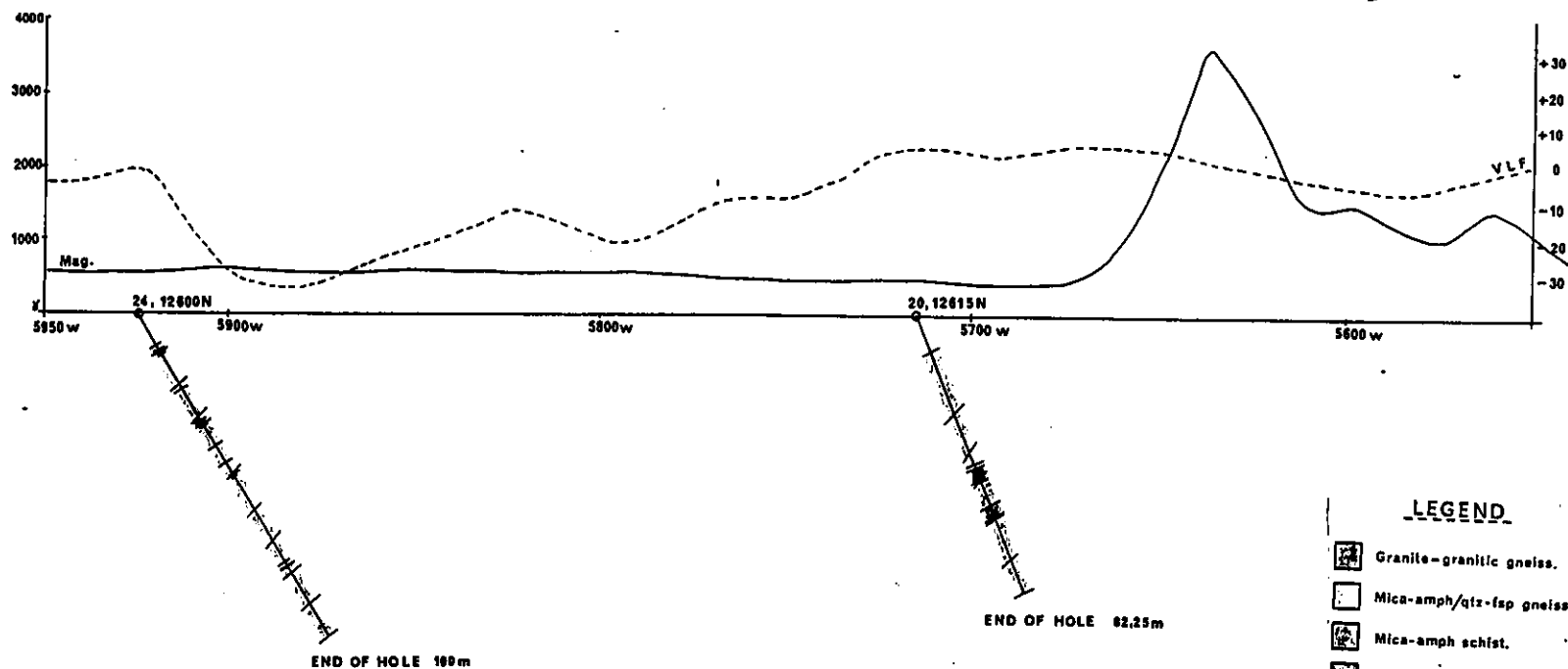
E. H. A.s 5000 S 73

^A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: _____ BEARING: _____ DIP: _____ HOLE NO: 20 SHEET NO: _____
 LOGGED BY: _____ STARTED: _____ PROPERTY SOUTH PASVIK
 CASING: _____ FINISHED: _____
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		CORE ANGLES
	27.55	63°
	32.20	55°
	35.60	54°
	39.50	54°
	41.40	65°
	46.50	55°
	49.05	62°
	53.50	68°
	56.40	60°
	58.30	78°
	62.40	70°
	65.05	90°
	68.05	74°
	70.90	70°



- LEGEND**
- Granite-granitic gneiss.
 - Mica-amph/Qtz-fsp gneiss.
 - Mica-amph schist.
 - Amphibolite/greenstone.
 - Meta-gabbro.
 - Peridotite.
 - Serpentinite.

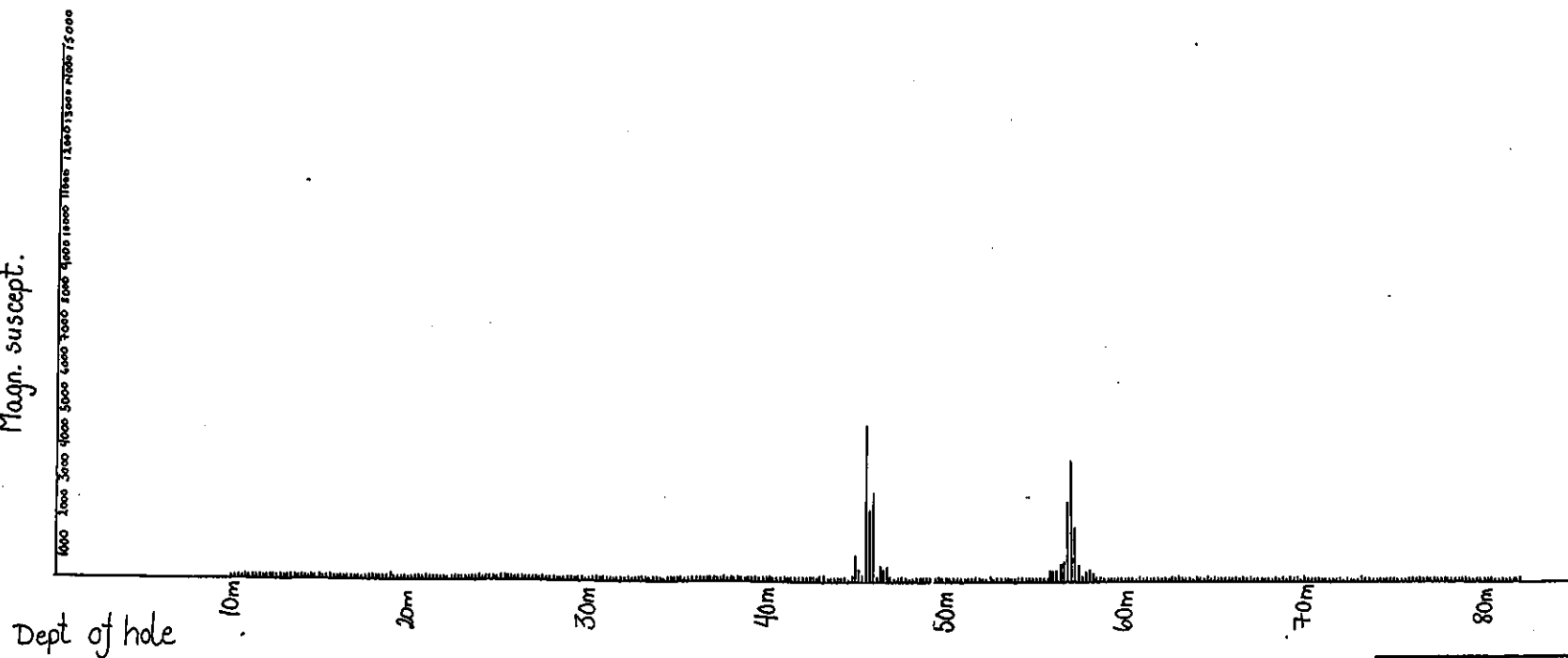
Drillhole 24, 20.
South Pasvik
 12600N 5925W 12615N 5715W

% SULFIDMALM

SCALE	OBS.	
1:100	DRAW. - 80	KK
	TRAC.	AKR
	CHL.	

MAP NO.

Magn. suscept.



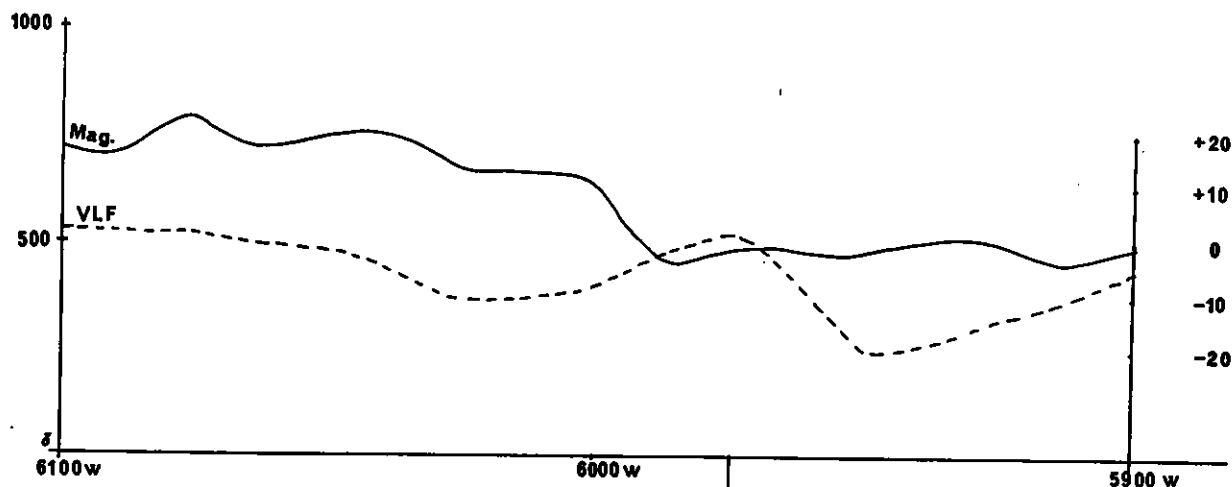
DDH-20 South Pasvik Magnetic susceptibility	SCALE	OBS.	8-80
		DRAW.	8-80
	1-100	TRAC. KG	9-80
		CHK.	
1/2 SULFIDMALM	MAP NO.		

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 13100N 5975W BEARING: _____ DIP: _____ HOLE NO: 21 SHEET NO: I
LOGGED BY: _____ STARTED: 28.5.80 PROPERTY SOUTH PASVIK
CASING: _____ FINISHED: 30.5.80
CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
SUMMARY LOG		
0	8.40	Overburden
8.40	10.85	Greenstone. Sulphides present as small aggregates and on joint surfaces, both po and cpy.
10.85	11.00	Qtz-vein, sulphide grains at the contacts.
11.00	14.70	Greenstone/amphibolite with feldspar-banding 13.65 - 13.80, 10% sulphides, po and cpy
14.70	28.40	Mainly Qtz/feldspar gneiss, with occasional amphibole rich layers ranging from 5-10 cm. 15.10 - 15.40 Loss of core.
28.40	29.60	Greenstone/amphibolite
29.60	33.10	Qtz/feldspar gneiss
33.10	34.00	Amphibolite/greenstone
34.00	34.15	Pegmatite
34.15	36.20	Amphibolite with small zones of mica enrichments.
36.20	45.40	Qtz/feldspar gneiss
45.40	47.75	Amphibolite
47.75	51.10	Qtz/feldspar gneiss
		V.L.F. caused by sulphide mineralization at 8.40-10.85 and 13.65 - 13.80.



LEGEND

-  Granite-granitic gneiss.
-  Mica-amph/qtz-fsp gneiss.
-  Mica-amph schist.
-  Amphibolite/greenstone.
-  Meta-gabbro.
-  Peridotite.
-  Serpentinite.

0 50 100 m

END OF HOLE 50,1m

DRILLHOLE 21, SOUTH PASVIK

13100N/5975 W 

1/2 SULFIDMALM

SCALE 1:100	OBS.	
	DRAW. -80	K.K.
	TRAC.	A.K.B.
	CHK.	
MAP NO.		
SHEET		

Magn. suscept.

Dept of hole

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000 15000

10m

20m

30m

40m

50m

60m

DDH-21 South Pasvik

Magnetic susceptibility

SCALE

1-100

OBS.

8-80

DRAW.

8-80

TRAC. KG

9-80

CHK.

1/2 SULFIDMALM

MAP NO.

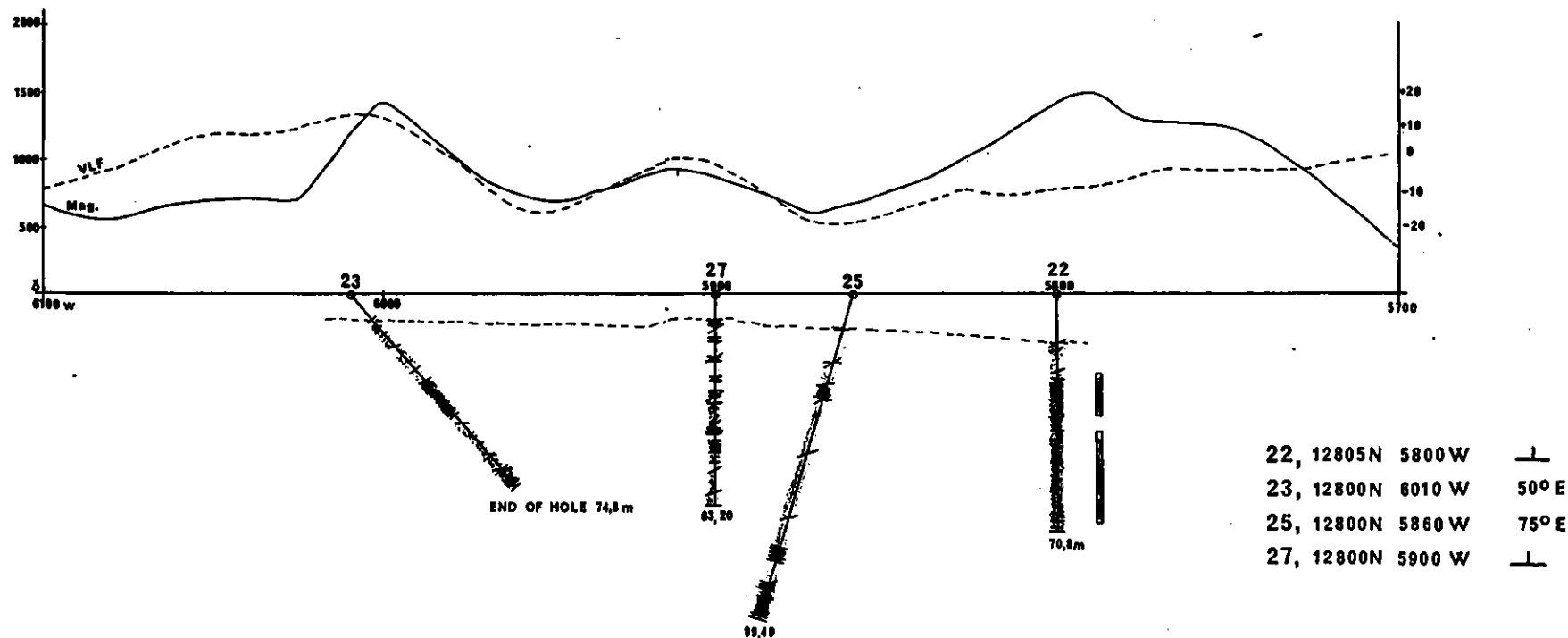
MAP SHEET

^A/_s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12805N 5800W BEARING: _____ DIP: _____ HOLE NO: 22 SHEET NO: I
 LOGGED BY: K.K. STARTED: 31.5.80 PROPERTY SOUTH PASVIK
 CASING: _____ FINISHED: 5.6.80
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
SUMMARY LOG		
0	14.00	Overburden
14.00	24.20	Qtz/feldspar gneiss.
	19.00 - 19.55	} Loss of core.
	19.85 - 20.00	
24.20	36.00	Metaperidotite, partly serpentized but rather massive.
36.00	37.80	Extremely tremolite-rich zone
37.80	40.10	Amphibolite with phlogopite concentrations.
40.10	40.45	Transitional ultrabasic rock.
40.45	40.75	Quartz vein.
40.75	67.50	Metaperidotite with an apparant increase in serpentinization downwards.
67.50	68.00	Green, more fine grained transition zone.
68.00	70.80	Qtz/feldspar gneiss.
MAG: caused by ultrabasic bodies from 24.20 - 36.00 and 40.75 - 67.50.		



LEGEND

- Granite-granitic gneiss.
- Mica-amph/qlz-fsp gneiss.
- Mica-amph schist.
- Amphibolite/greenstone.
- Meta-gabbro.
- Peridotite.
- Serpentinite.
- Mag suscept > 5000

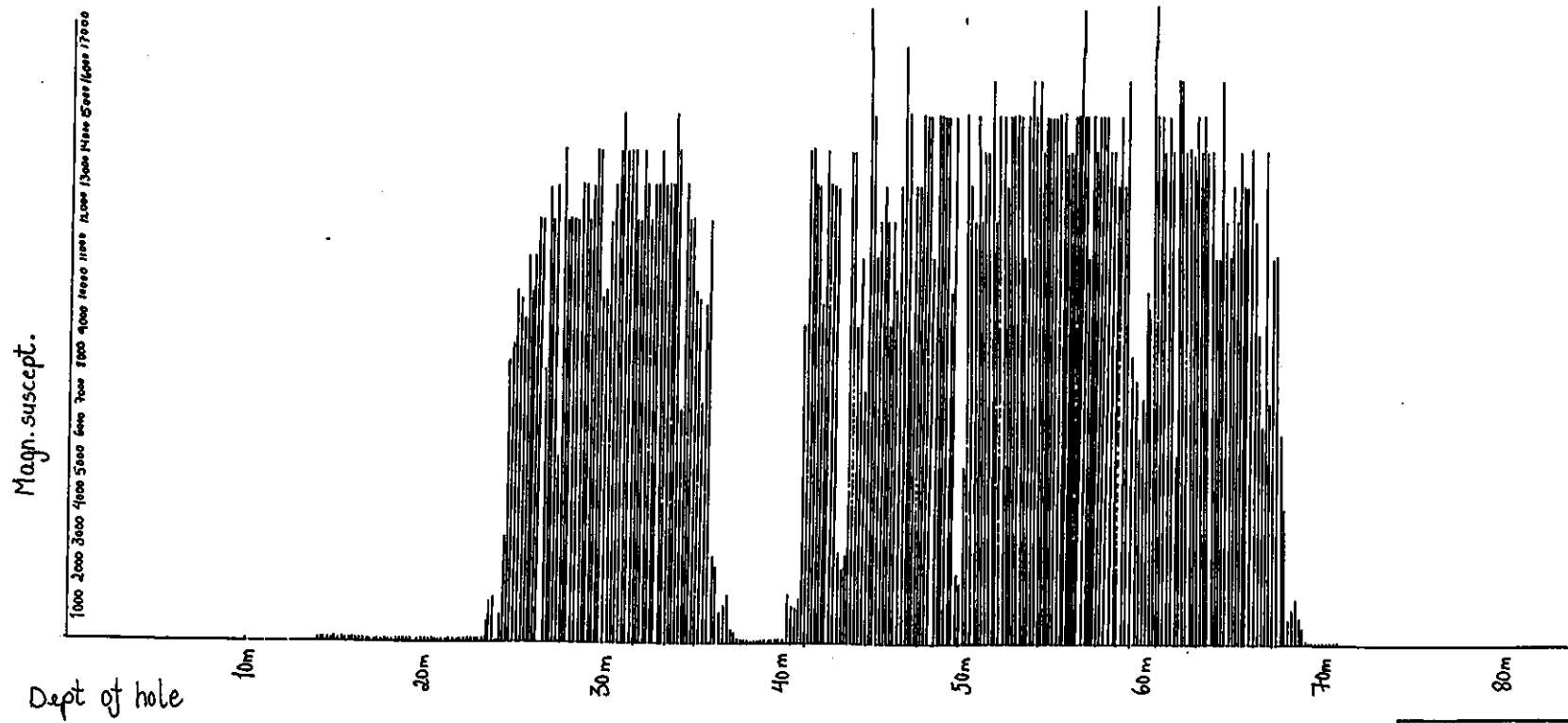
0 50 100m

Drillholes 22, 23
South Pasvik 25, 27.
Profile 12800 N

SCALE	ORL	
1:100	DRAW. - 88	K.K.
	TRAC.	A.K.B.
	CHK.	

MAP NO.

% SULFIDMALM



DDH-22 South Pasvik Magnetic susceptibility	SCALE	1-100
	DES.	8-80
	DRAW.	8-80
	TRAC. KG	9-80
1/2 SULEIDMALM	CHK.	
	MAP NO.	

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12.800N 6010W BEARING: E DIP: 50° HOLE NO: 23 SHEET NO: I
LOGGED BY: K.K. STARTED: 7.6.80 PROPERTY SOUTH PASVIK
CASING: FINISHED: 12.6.80
CORE SIZE: TESTS (CORRECTED):

From	To	Description
SUMMARY LOG		
0	10.00	Overburden
10.00	18.10	Amphibolitic gneiss, lower part more finegrained. Amphibole-mica/quartz-feldspar interlayering. 17.60 1 cm graphite layer.
18.10	19.10	Coarse grained (amphibole) lithology, extremely garnet rich. An average of at least 10% sulphides is present here, both po and cpy.
19.10	34.20	Amphibolitic gneiss, frequently garnet bearing. 20.00 - 20.50 } Sulphide mineralization, both po and cp. 21.00 - 21.80 } Occurrence II foliation, around garnets and qtz/feldspar aggregates. 33.90 - 33.90 Graphite layer
34.20	42.55	Greener, more fine grained lithology with strong development of irregular feldspar veins.
42.55	44.60	Amphibolitic gneiss
44.60	46.00	Mica schist with large amphiboles, the latter give the lithology a "pegmatitic" appearance.
46.00	48.70	Fine grained, green lithology, with scattered grains of po and cpy.
48.70	50.00	Amphibolitic gneiss, with scattered po-cpy grains.
50.00	50.60	Green, coarse grained lithology, mainly built up by amphibole. Some po-cpy grains.

DIAMOND DRILL RECORD

From	To	Description
50.60	62.80	Amphibolitic gneiss. Decrease in grain-size is accompanied with a decrease in the importance in qtz/feldspar layers. 56.20-56.50, some 10% sulphides, both po and cpy. The same sulphides are often seen as single small aggregates and on joint planes.
62.80	68.90	Qtz/feldspar gneiss.
68.90	74.80	Amphibole and feldspar dominates this lithology, which shows no sulphide mineralization.
		V.L.F.: caused by the sulphide mineralizations.

DIAMOND DRILL RECORD

LOCATION: _____ BEARING: _____ DIP: _____ HOLE NO: 23 SHEET NO: _____
 LOGGED BY: _____ STARTED: _____ PROPERTY _____
 CASING: _____ FINISHED: _____
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		Core angles
	12.30	69°
	14.70	67°
	17.20	82°
	19.80	62°
	21.85	64°
	25.10	65°
	29.80	84°
	31.25	90°
	35.40	80°
	39.50	70°
	41.30	59°
	43.20	58°
	46.90	53°
	49.80	45°
	51.30	38°
	54.90	50°
	59.95	45°
	62.80	43°
	65.90	43°
	67.90	58°
	71.20	55°
	73.15	62°

Magn. suscept.

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000

Dept of hole

10m

20m

30m

40m

50m

60m

70m

80m

DDH-23 South Pasvik
Magnetic susceptibility

SCALE	1-100
OBS.	8-80
DRAW.	8-80
TRAC.	KG 9-80
CHK.	

% SULFIDMALM

MAP NO.	
MA	

DIAMOND DRILL RECORD

From	To	Description
		SUMMARY LOG.
0	9.50	Overburden
9.50	10.75	Coarse grained amphibole/feldspar lithology with scattered garnets. Some sulphides on joint surfaces.
10.75	23.30	Amphibole-mica/feldspar-quartz banded gneiss. 15.80 - 15.90 Graphite horizon.
23.30	33.80	Qtz/feldspar gneiss, varying amounts of amphibole.
33.80	34.35	Green amphibole-feldspar lithology.
34.35	46.90	Qtz/feldspar gneiss.
46.90	48.10	Mica-schist.
48.10	70.40	Qtz/fsp gneiss.
70.40	70.55	Mica-schist.
70.55	100.00	Qtz/fsp gneiss. some surfaces showing strong weathering.

E. H. A.s 5000 573

DIAMOND DRILL RECORD

From	To	Description
		Core angles
	10.95	90°
	13.55	85°
	15.50	80°
	19.40	72°
	20.60	78°
	24.65	80°
	27.20	74°
	31.10	72°
	37.90	78°
	39.80	85°
	40.95	81°
	44.70	78°
	48.20	70°
	50.90	80°
	55.25	90°
	59.75	72°
	62.65	82°
	66.80	65°
	69.20	77°
	70.55	69°
	74.75	80°
	80.05	81°
	85.95	70°
	89.95	80°
	92.90	84°
	95.80	82°
	99.80	81°

Magn. suscept.

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000

Dept of hole

10m

20m

30m

40m

50m

60m

70m

80m

90m

100m

DDH-24 South Pasvik

Magnetic susceptibility

% SULFIDMALM

SCALE	1-100
DATE	8-80
DRAWN	8-80
TRAC. KG	9-80
CHK.	

MAP NO.	
MA	2

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12800N 5860'' BEARING: " DIP: 75' HOLE NO: 25 SHEET NO: I
 LOGGED BY: K.K. STARTED: 13/6-80 PROPERTY: South Pasvik
 CASING: FINISHED:
 CORE SIZE: TESTS (CORRECTED):

From	To	Description
		SUMMARY LOG.
0	10.50	Overburden
10.50	21.60	Amphibole-mica/ quartz-feldspar gneiss. 14.75 - 14.90 Graphite horizon. 15.00 - 17.00 A few percent sulphides, py and cpy.
21.60	28.60	Qtz/feldspar gneiss.
28.60	31.85	Green, coarse grained amphibole/feldspar lithology.
31.85	32.90	Qtz/feldspar gneiss.
32.90	34.50	Green, coarse grained amphibole/feldspar lithology.
34.50	54.80	Qtz/feldspar gneiss.
54.80	55.60	Mica-schist.
55.60	77.00	Qtz-fsp gneiss, some surfaces suffering from strong weathering.
77.00	78.05	Dark mica-schist.
78.05	78.55	Coarse grained green mica-amph-chlorite lithology.
78.55	79.00	Dark mica schist.
79.00	89.90	Qtz/fsp gneiss.
89.90	90.70	Dark mafic-ultramafic rock, amphib-mica-garnets with very little fsp.
90.70	93.40	Granitic gneiss, getting pegmatitic towards the end.

^A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12800N 5860W BEARING: W DIP: 75⁺ HOLE NO: 25 SHEET NO: 11
 LOGGED BY: K.K. STARTED: 13.06.80 PROPERTY: South Pasvik
 CASING: FINISHED:
 CORE SIZE: TESTS (CORRECTED):

From	To	Description
93.40	99.00	Altered pyroxenite, now mainly consisting of amphibole and mica. Scattered sulphides in this zone.
99.00	99.40	Quartz vein.

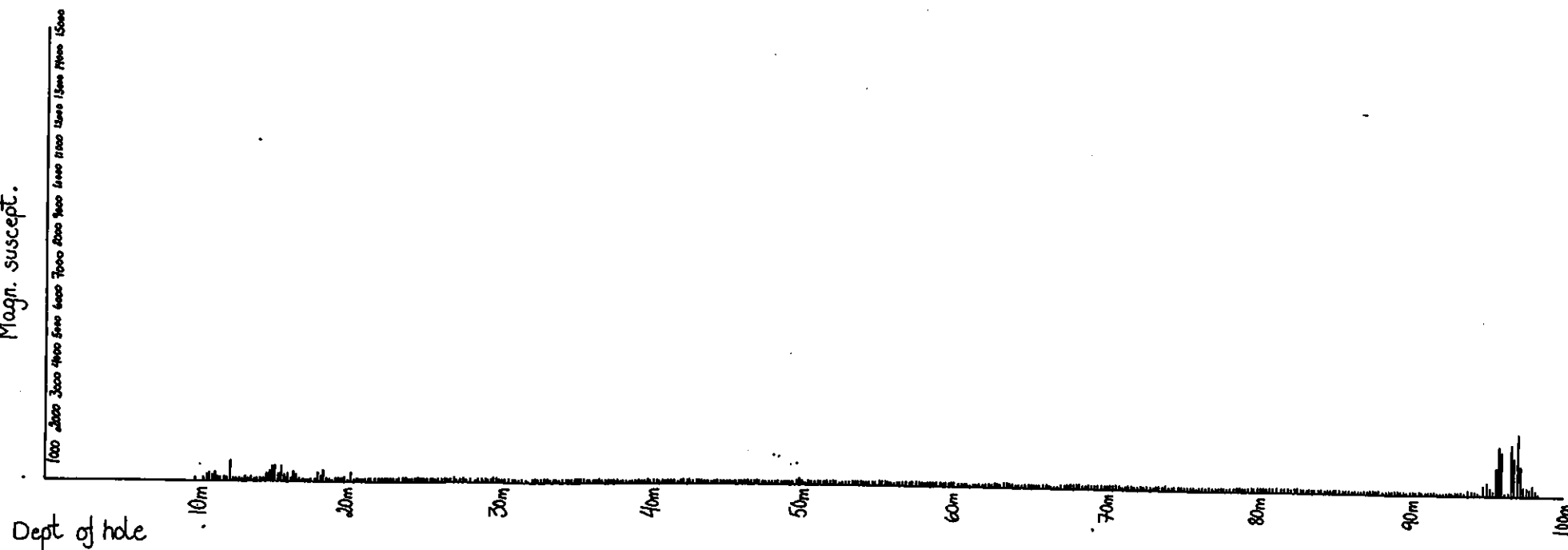
A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12800 N 5860 W BEARING: W DIP: 75° HOLE NO: 25 SHEET NO: III
 LOGGED BY: K.K. STARTED: 13/6-80 PROPERTY: South Pasvik
 CASING: FINISHED:
 CORE SIZE: TESTS (CORRECTED):

From	To	Description
		Core angles
	11.10	62°
	14.50	55°
	18.60	65°
	21.50	45°
	24.80	63°
	28.60	65°
	32.85	47°
	36.85	66°
	41.10	47°
	45.50	47°
	49.30	54°
	53.40	43°
	58.75	37°
	64.25	68°
	69.90	60°
	74.70	58°
	79.30	71°
	85.15	64°
	89.90	60°
	96.20	57°

Magn. suscept.



DDH-25 South Pasvik		SCALE	OBS.	8-80
Magnetic susceptibility		1-100	DRAW.	8-80
			TRAC. KG	9-80
			CHK.	
% SULFIDMALM		PLAT NO.		

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12100N 6187W BEARING: East DIP: 60° HOLE NO: 26 SHEET NO: I
 LOGGED BY: K.K. STARTED: PROPERTY South Pasvik
 CASING: FINISHED:
 CORE SIZE: TESTS (CORRECTED):

From	To	Description
SUMMARY LOG		
0	7.00	Overburden.
7.00	29.55	Qtz-fsp/amph-mica gneiss, well banded.
29.55	34.10	Same lithology, but garnet bearing.
34.10	43.45	Mica-fsp-qtz schist, no garnets.
		42.98 - 43.02 10% sulphides, mainly po, some cpy.
		Scattered sulphides on joint - surfaces.
43.45	44.00	Qtz-fsp-amph gneiss, garnet bearing.
44.00	47.20	Mica-fsp-qtz schist, only scattered po-flakes.
47.20	54.10	Amph-mica/Qtz-fsp schist, garnet bearing.
		51.75 } 0.5 cm. with massive po.
		52.25 }
		Scattered po on joint surfaces and in connection with calcite-veins.
54.10	73.90	Mica-fsp-qtz schist.
		69.85 - 71.10 approx. 5% sulphides, mainly as massive po, only very little cpy.
		Only scattered sulphides through the rest of this zone.
73.90	75.00	Amphibolitic lithology, some graphite horizons.
75.00	78.00	Amph-mica/fsp-qtz- schist.
		77.20 } 5 cm's thick graphite horizons.
		77.80 }
78.00	82.95	Mica-fsp-qtz schist.

^A/_s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12100N 6187W BEARING: East DIP: 60° HOLE NO: 26 SHEET NO: II
 LOGGED BY: K.K. STARTED: _____ PROPERTY South Pasvik
 CASING: _____ FINISHED: _____
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
82.95	83.50	Qtz-fsp-amph schist. Some massive po- clusters at 83.05.
83.50	90.10	Mica-amph /fsp-qtz schist with garnets. 86.60 - 86.80 5-10% sulphides, mainly po. 89.90 - 90.10 15-20% sulphides, massive po.
90.10	94.95	Mica-qtz-fsp schist.
94.95	97.95	Amph-mica/qtz-fsp schist. 95.25 - 95.60 20% sulphide, massive po. Scattered po. in the rest of the zone. 97.90 Graphite horizon.
97.95	102.30	Mica-fsp-qtz schist,
102.30	106.00	Amph/fsp-qtz schist, some po.
106.00	112.30	Amph-mica/fsp-qtz schist, richer in amph downwards.
112.30	112.45	Amphibolite with 20% po. Very thin graphite horizons.
112.45	118.00	Amph-qtz-fsp schist, some biotite.
118.00	119.70	Mica-fsp-qtz schist.

^A/_s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12100N 6187W

BEARING: East DIP: 60'

HOLE NO: 26 SHEET NO: III

LOGGED BY: K.K.

STARTED:

PROPERTY _____ South Pasvik

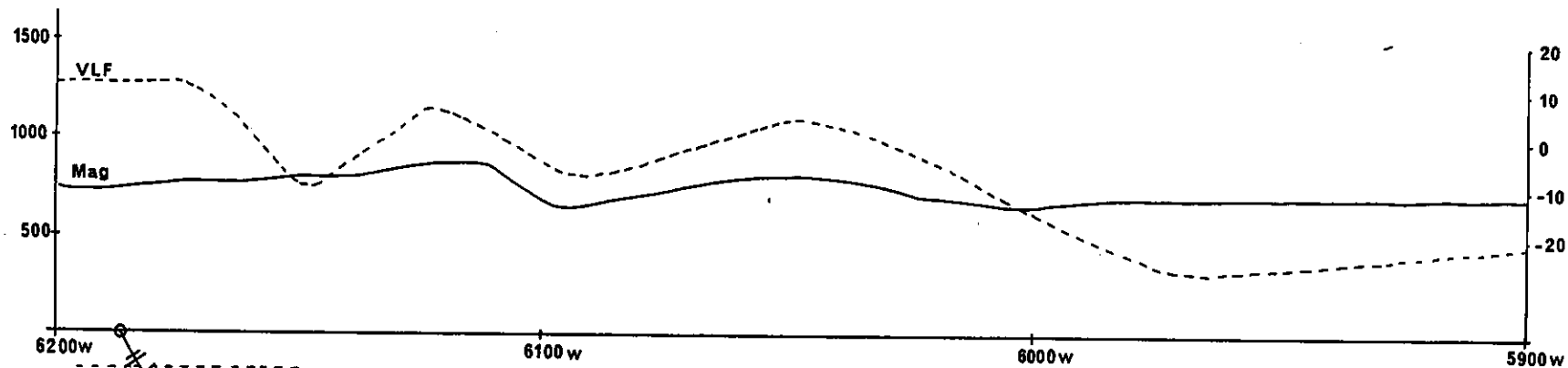
CASING:

FINISHED:

CORE SIZE:

TESTS (CORRECTED):

From	To	Description
		Core angles.
	7.40	74°
	10.50	72°
	14.50	71°
	18.50	69°
	20.80	65°
	24.95	80°
	28.90	67°
	32.50	79°
	34.35	84°
	39.60	68°
	41.90	81°
	44.90	85°
	48.65	82°
	51.75	78°
	54.75	85°
	59.90	89°
	61.70	86°
	66.85	74°
	69.90	79°
	71.75	81°
	75.60	72°
	79.55	70°
	80.90	72°
	85.85	82°
	89.90	59°
	90.20	67°
	95.10	66°
	98.40	66°
	101.55	73°
	108.60	58°
	111.25	65°
	114.15	67°
	118.50	67°



LEGEND

-  Granite-granitic gneiss.
-  Mica-amph/qtz-fsp gneiss.
-  Mica-amph schist.
-  Amphibolite/greenstone.
-  Meta-gabbro.
-  Peridotite.
-  Serpentinite.



END OF HOLE 119,70 m

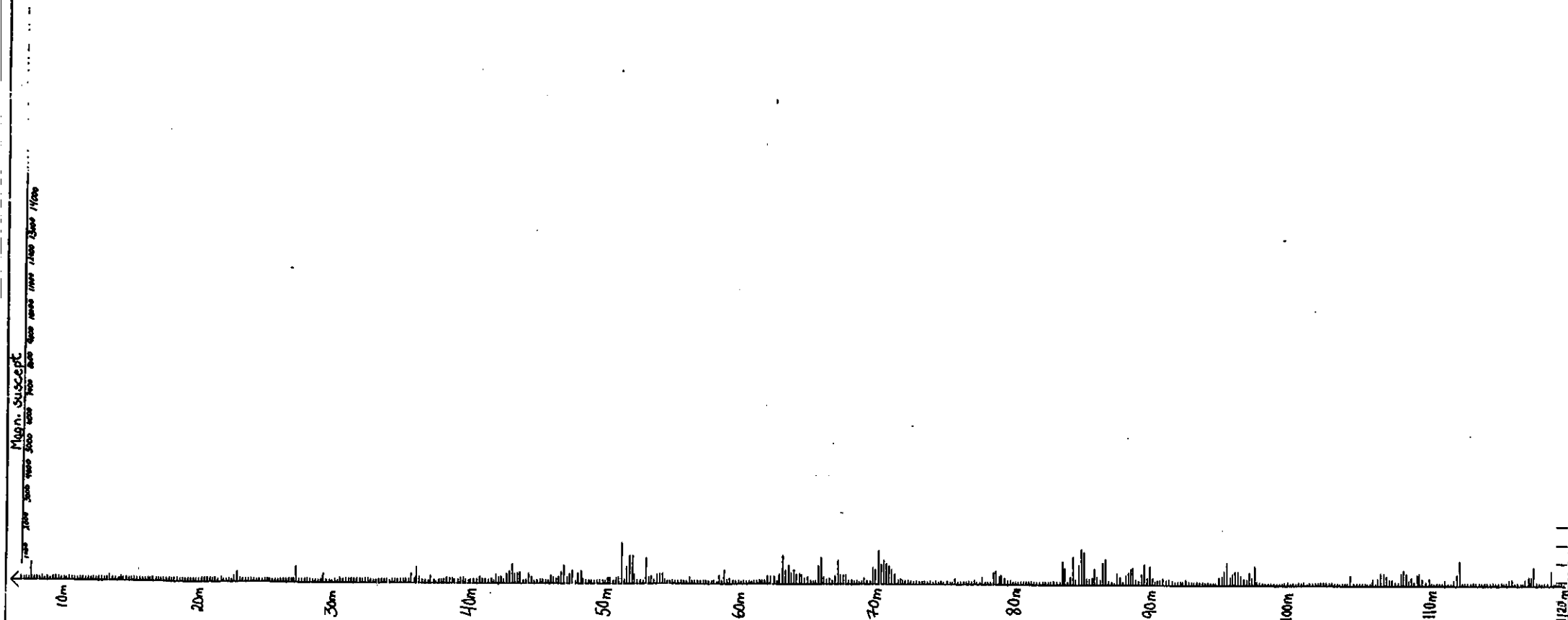
DRILLHOLE 26, SOUTH PASVIK

12100N/6187 W 60° E

1/2 SULFIDMALM

SCALE	OBS.	
1:100	DRAW. - 80	K.K.
	TRAC.	A.K.B.
	CHK.	

MAP NO.



DDH-26		SCALE	OBS.	8-80
Magnetic susceptibility		1-100	DRAW.	8-80
			TRAC. KG	9-80
% SULFIDMALM		MAP NO.		
		FMA		

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12800N 5900W BEARING: _____ DIP: _____ HOLE NO: 27 SHEET NO: I
 LOGGED BY: K.K. STARTED: _____ PROPERTY South Pasvik
 CASING: _____ FINISHED: _____
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		SUMMARY LOG
0	7.50	Overburden
7.50	8.00	Amphibolitic gneiss.
8.00	8.60	Ultrabasic appearance, with some phlogophite-concentrations. Some po on joint surfaces.
8.60	12.70	Amph-mica/qtz-fsp gneiss with garnets. Scattered po-grains.
12.70	13.70	Fine grained green lithology with at least 5% sulphides, mainly as massive po but also some cpy. 12.95 - 13.22 Graphite rich horizons.
13.70	18.00	Mica schist with narrow qtz-fsp banding. Very few sulphide grains.
18.00	18.90	Greyish-green amph-fsp-qtz lithology with randomly distributed epidote filled veins. Both po and cpy in connection with the veins.
18.90	24.00	Mica schist, some amph-fsp-qtz garnet. Po and cpy is common (1-3%) as single grains and as thin seams II foliation.
24.00	24.90	Amph-fsp lithology. 23.98 - 24.10 10% sulphides, both po and cpy. 24.10 - 24.90 2 - 5% sulphides.
24.90	28.60	Amph-mica/qtz-fsp gneiss, still some sulphides as single grains and II foliation.

^{A/s} SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 12800N 5900W

DIP:

HOLE NO: 27

SHEET NO: II

LOGGED BY: K.K.

STARTED:

PROPERTY South Pasvik

CASING:

FINISHED:

CORE SIZE:

TESTS (CORRECTED):

From	To	Description
28.60	30.75	Green amph-mica rich lithology, with garnets. 1 - 3% sulphides, po and cpy, on joint surfaces, II foliation and as single grains. 29.40 Graphite horizons.
30.75	32.10	Mica rich gneiss with Qtz-fsp banding. Only occasional po-grains.
32.10	39.60	Qtz-fsp gneiss, rather granitic.
39.60	41.65	Amph-fsp lithology, foliation created by mica.
41.65	43.50	Qtz-fsp gneiss.
43.50	47.20	Fsp-amph lithology, rather coarse grained in places. Some phlogopite.
47.20	55.20	Qtz-fsp gneiss with some mica and amphibole which give the foliation.

A/s SULFIDMALM

DIAMOND DRILL RECORD

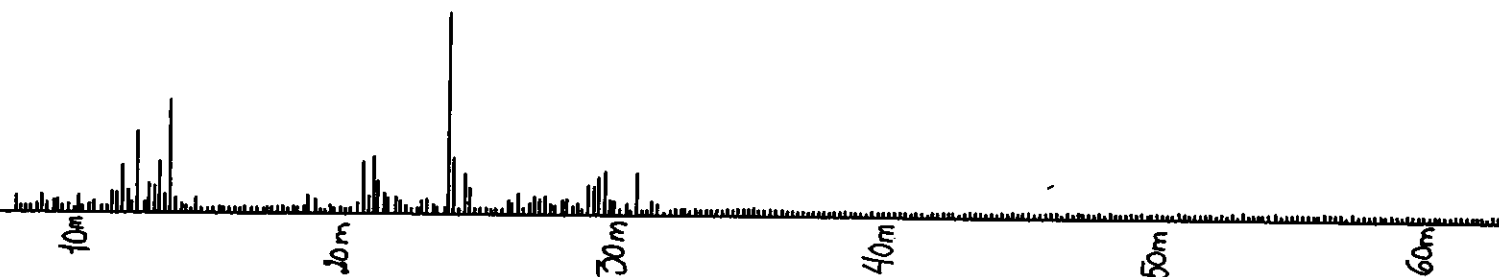
LOCATION: 12800N 5900W BEARING: _____ DIP: _____ HOLE NO: 27 SHEET NO: III
 LOGGED BY: K.K. STARTED: _____ PROPERTY South Pasvik
 CASING: _____ FINISHED: _____
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		Core angles.
	9.40	64'
	14.70	65'
	16.95	67'
	19.90	67'
	22.10	74'
	25.70	64'
	29.20	62'
	31.10	63'
	34.50	65'
	39.30	55'
	43.50	69'
	48.80	67'
	52.80	66'
	55.95	68'
	59.30	71'
	62.20	75'

Magn. suscept.

1000 2000 3000 4000

Dept of hole



DDH-27 South Pasvik
Magnetic susceptibility

SCALE	OBS.	8-80
1-100	DRAW.	8-80
	TRAC. KG	9-80
	CHK.	

% SULFID M'ALM

MAP NO.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11500N 6212W BEARING: East DIP: 70° HOLE NO: 28 SHEET NO: I
 LOGGED BY: K.K. STARTED: PROPERTY South Pasvik
 CASING: FINISHED:
 CORE SIZE: TESTS (CORRECTED):

From	To	Description
SUMMARY LOG.		
0	7.40	Overburden.
7.40	7.85	Mica-amph/qtz-fsp gneiss.
7.85	11.00	Amphibolitic gneiss with garnets.
11.00	22.00	Qtz-fsp/amph-mica gneiss, scattered sulphides.
22.00	23.90	Schistose micaceous lithology, lots of rather irregular fsp-crystals. 22.00 - 22.10 30% po with pods of cpy. Scattered po-cpy in the rest of this zone.
23.90	24.40	Amphibolite with garnets, with an average of 20% sulphides, mainly po and some cpy.
24.40	39.60	Amph-mica/otz-fsp gneiss. 25.10 - 26.52 5% sulphides, mainly po. 25.90 - 26.10 } 10 - 30% sulphides, mainly po, some 26.45 - 26.52 } cpy. Occasional po-cpy on joint surfaces and as single grains in the rest of this zone.
39.60	40.00	Amphibole rich lithology, scattered sulphides.
40.00	45.00	Qtz-fsp/amph-mica gneiss with a few garnets.
45.00	45.85	Amphibolite, stuffed with garnets, somewhat pegmatitic in development. 1 - 3% sulphides, mainly po.
45.85	46.30	Pegmatite.
46.30	48.40	Amphibolitic gneiss with lots of garnets. Scattered po-grains.

DIAMOND DRILL RECORD

From	To	Description
48.40	50.00	Amph-mica/qtz-fsp gneiss.
50.00	51.70	Amphibolitic gneiss, stuffed with garnets.
51.70	52.50	Qtz-fsp/amph-mica gneiss.
52.50	58.70	Amph-mica schist with garnets. Only a few scattered po-grains.
58.70	80.00	Qtz-fsp gneiss with mica-foliation. Small scale foldes are seen in this section.
80.00	99.35	Qtz-fsp/mica-amph gneiss.

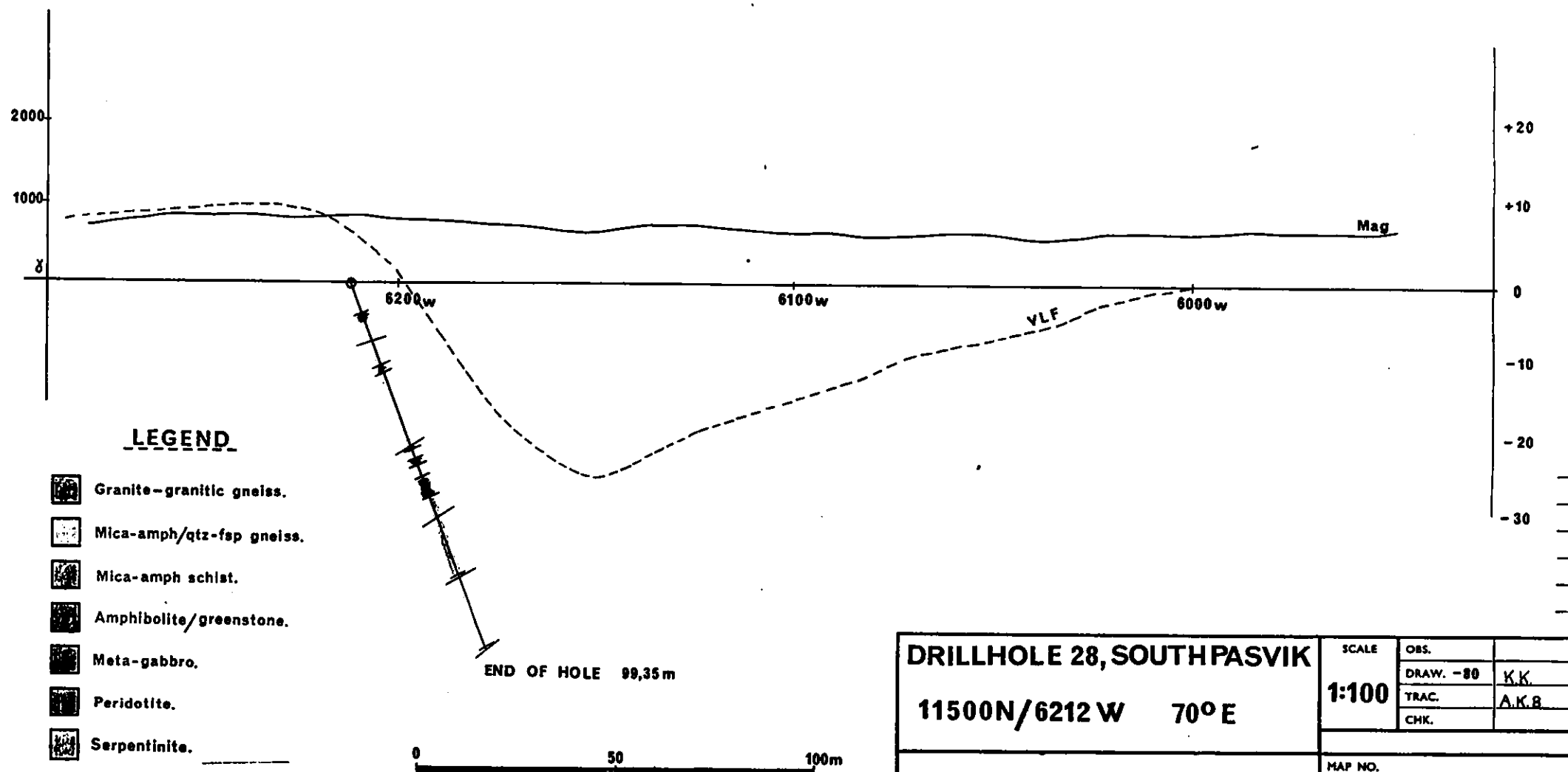
E. H. A.s 5000 5 73

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11500N 6212W BEARING: East DIP: 70° HOLE NO: 28 SHEET NO: III
 LOGGED BY: STARTED: PROPERTY
 CASING: FINISHED:
 CORE SIZE: TESTS (CORRECTED):

From	To	Description
		Core angles.
	8.80	81°
	12.50	87°
	15.30	90°
	18.90	74°
	23.10	68°
	27.35	69°
	31.30	73°
	35.40	78°
	39.05	77°
	42.20	83°
	45.50	78°
	49.80	85°
	54.90	80°
	57.75	63°
	63.20	77°
	67.90	77°
	75.20	66°
	78.30	78°
	81.20	81°
	87.80	70°
	91.70	70°
	95.80	72°
	98.80	73°

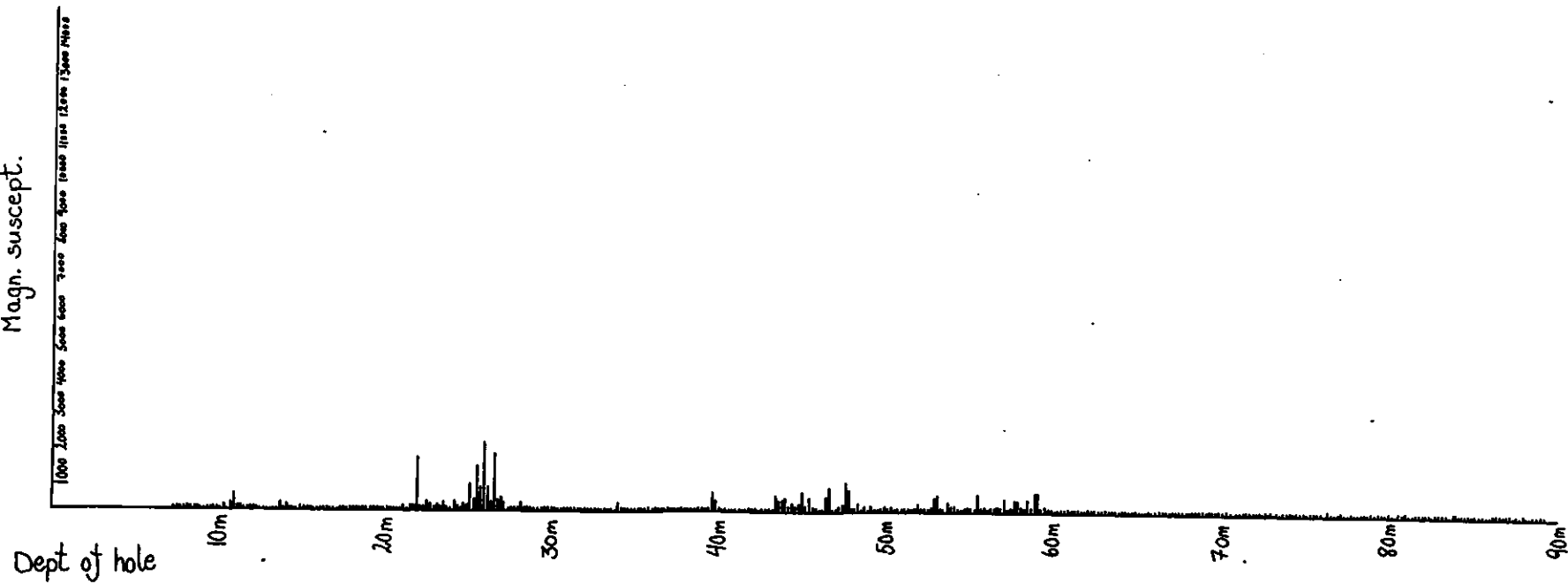


1/2 SULFIDMALM

OBS.	
DRAW. -80	K.K.
TRAC.	A.K.B.
CHK.	

EET

Magn. suscept.



DDH-28 South Pasvik Magnetic susceptibility	SCALE	ORL	8-80
	1-100	DRAW.	8-80
		TRAC	KG 9-80
		CYC.	
% SULFIDM ALM	MAP NO.		
	NA		

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11400N 6050W BEARING: East DIP: 65° HOLE NO: 29 SHEET NO: I
 LOGGED BY: K.K. STARTED: _____ PROPERTY South Pasvik
 CASING: _____ FINISHED: _____
 CORE SIZE: _____ TESTS (CORRECTED): _____

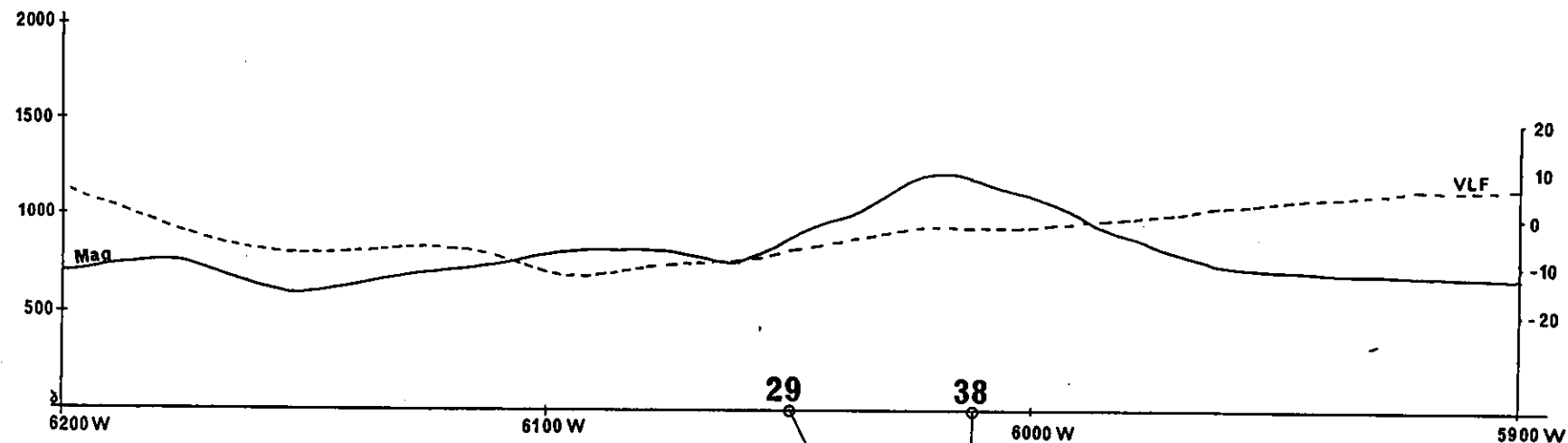
From	To	Description
		SUMMARY LOG:
0	14.00	Overburden.
14.00	16.70	Amph-mica/qtz-feldspar gneiss.
16.70	17.10	Pegmatite with red K-feldspar.
17.10	20.00	Amph-mica/qtz-feldspar gneiss.
20.00	27.80	Coarse grained amphibole gneiss with some K-feldspar.
27.80	29.65	Fine grained amphibolitic gneiss, with thinner bands of qtz-feldspar.
29.65	30.00	Lost core.
30.00	49.50	Coarse grained amphibolitic gneiss. qtz-feldspar banding. A few garnets.
		From 42.50, occasional horizons of pegmatitic development of amphibole and garnets, as well as coarse quartz aggregates.
49.50	49.80	Pegmatite, rich in K-feldspar.
49.80	51.10	Coarse grained amphibolitic gneiss, qtz-feldspar banding.
51.10	64.00	Amphibole-mica/qtz-feldspar gneiss, some garnets.
64.00	79.50	More fine grained, schistose mica rich lithology. with thinner bands of qtz-feldspar and amphibole. At 72.40 and 73.10 strong development of K-feldspar and epidote.

^{A/s} SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11400N 6050W BEARING: East DIP: 65° HOLE NO: 29 SHEET NO: II
LOGGED BY: K.K. STARTED: _____ PROPERTY: South Pasvik
CASING: _____ FINISHED: _____
CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		Core angles.
	14.60	80'
	19.80	90
	22.80	81'
	27.50	68"
	33.35	77'
	37.70	77'
	53.90	60'
	57.95	63'
	62.80	62"
	69.60	62"
	71.70	76"
	76.50	68"



LEGEND

-  Granite-granitic gneiss.
-  Mica-amph/qtz-fsp gneiss.
-  Mica-amph schist.
-  Amphibolite/greenstone.
-  Meta-gabbro.
-  Peridotite.
-  Serpentinite.

 Mag suscept > 5000

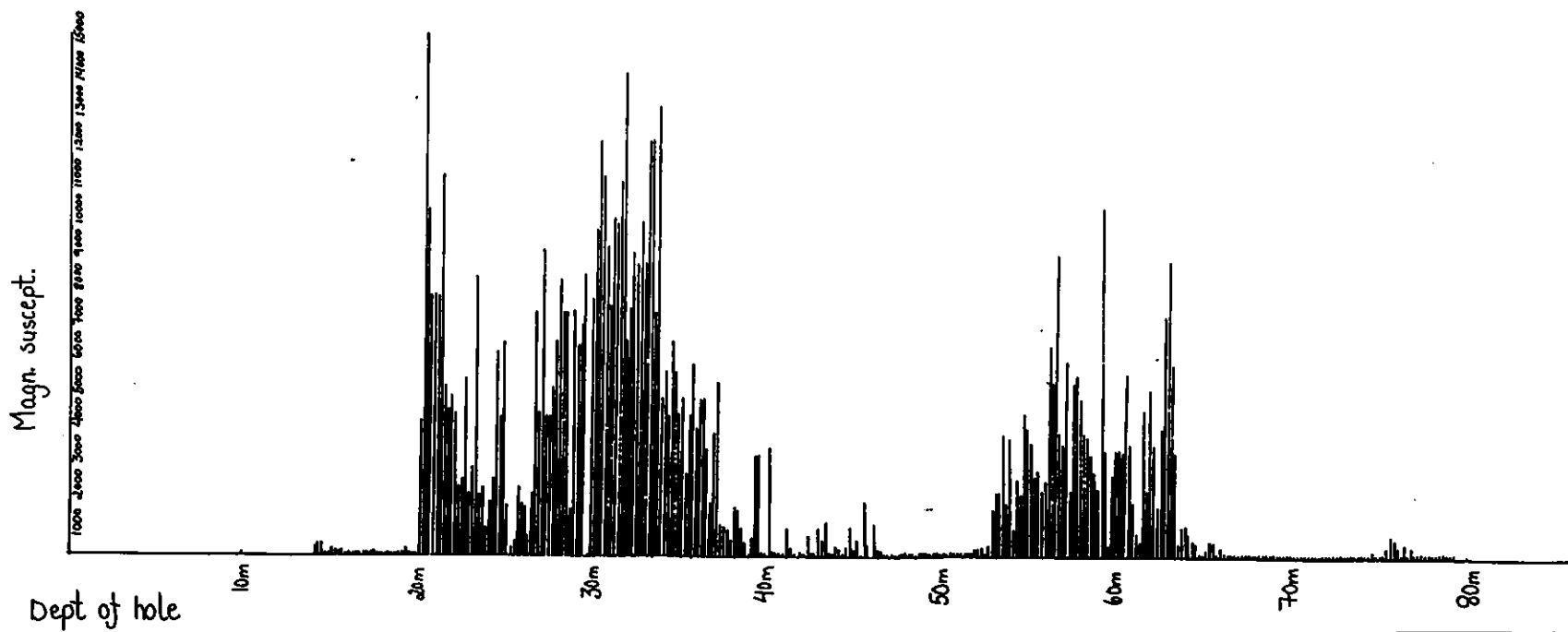
0 50 100m

Drillhole 29,38, South Pasvik
 65°E
 11400 N/6212W 11400 N/3310W

SCALE	1:100	OBS.	
		DRAW. ~ 80	K.K.
		TRAC.	A.K.B.
		CHK.	

MAP NO.

1/2 SULFIDMALM



DDH-29 South Pasvik	SCALE	DWG.	8-80
	1-100	DRAW.	8-80
		TRAC.	KG 9-80
		CHE.	
Magnetic susceptibility		MAP NO.	
% SULFIDMALM			

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11000N 6000W BEARING: _____ DIP: _____ HOLE NO: 30 SHEET NO: I
LOGGED BY: K.K. STARTED: 4/7-80 PROPERTY South Pasvik
CASING: _____ FINISHED: 5/7-80
CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
SUMMARY LOG.		
0	7.70	Overburden.
7.70	13.00	Amphibolite with large garnet porphyroblasts. Scattered poII foliation and along cross-cutting quartz veins.
13.00	17.00	Amphibole-mica gneiss with garnets. Scattered po-grains.
17.00	17.50	Amphibolite with garnets. A few po-grains.
17.50	24.50	Dark green amphibole rich lithology. lots of garnets. originally pyroxenite? Scattered po and cpy. as single grains and on joint surfaces.
24.50	39.00	Grey-green gneiss, banding produced by the alternating layers of qtz-feldspar/amph-mica.
39.00	40.00	Amphibolitic gneiss with garnets.
40.00	47.00	Alternating layers of amphibole-mica/feldspar quartz, the latter dominating.
47.00	53.20	In general amphibolitic lithology with garnets Occasional horizons with completely random development of garnets, amphibole and feldspar. Present is also a few late carbonate-filled joints. Scattered po-grains.

DIAMOND DRILL RECORD

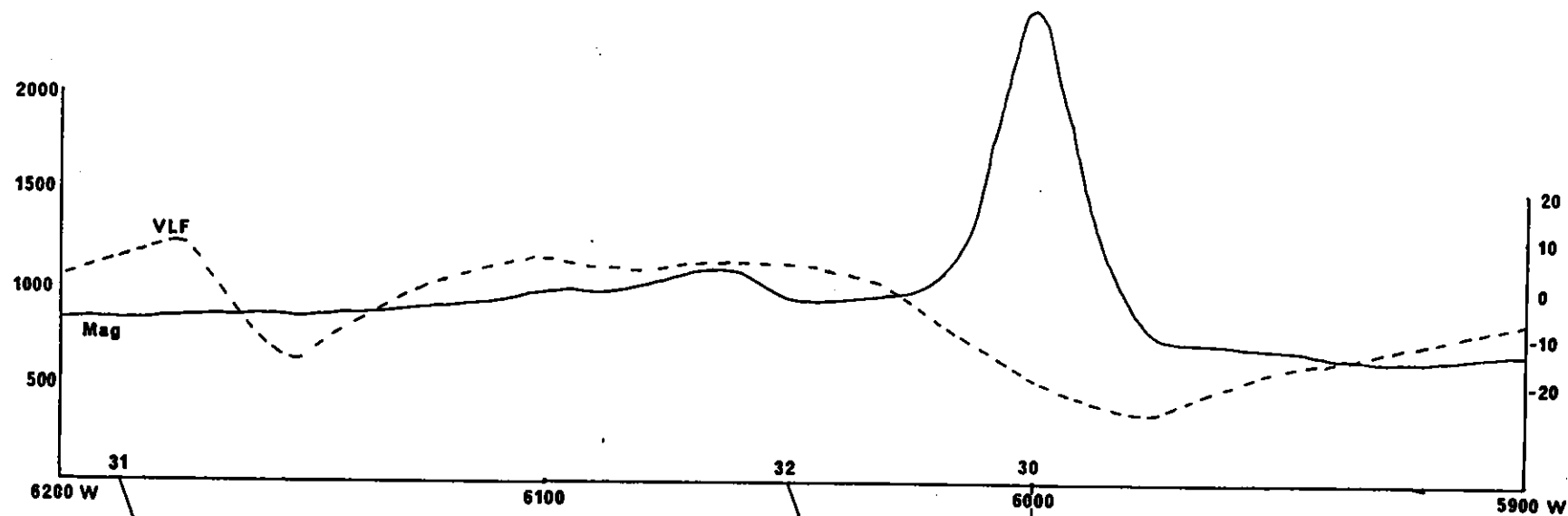
BEARING: DIP: HOLE NO: 30 SHEET NO: II

STARTED: 4/7, -80 PROPERTY South Pasvik

FINISHED: 5/7 -80

TESTS (CORRECTED):

E. H. A.s 5000 S 73



LEGEND

- Granite-granitic gneiss.
- Mica-amph/qtz-fsp gneiss.
- Mica-amph schist.
- Amphibolite/greenstone.
- Meta-gabbro.
- Peridotite.
- Serpentinite.
- Mag suscept > 5000

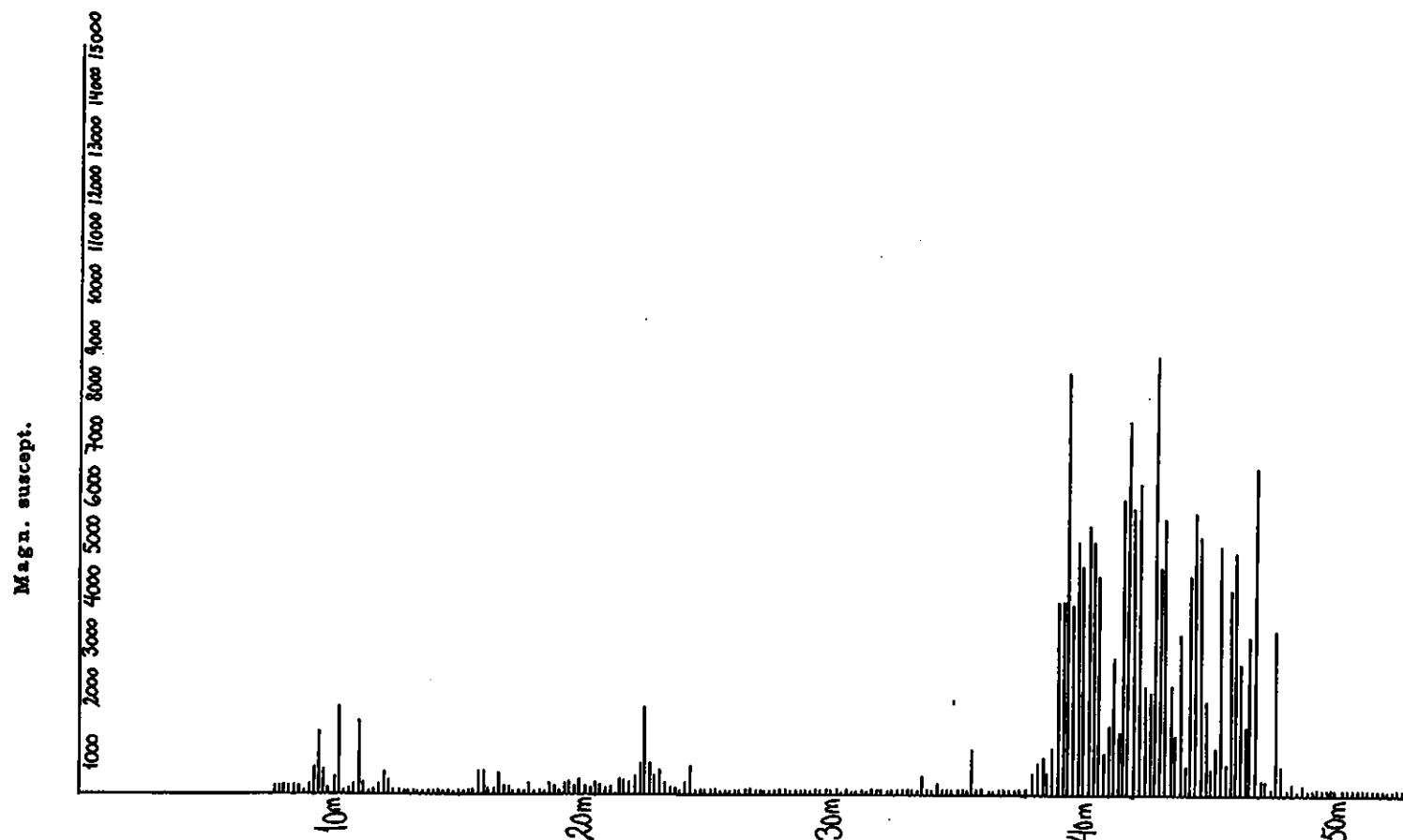


Drillholes 30,31,32. South Pasvik
 30:11000N/6000 $\perp$ 31:11000/6187W 65°E
 32:11015N/6050W 70°E

% SULFIDMALM

SCALE	OBS.	
1:100	DRAW. - 80	KK
	TRAC.	KK
	CHK.	

MAP NO.



DDH-30 South Pasvik Magnetic susceptibility	SCALE	OBS.	8-80
	1-100	DRAW.	8-80
		TRAC. KG	9-80
		CHK.	
% SULFIDMALM	MAP NO.		
	MAP SHEET		

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11000N 6187W BEARING: East DIP: 65° HOLE NO: 31 SHEET NO: I
 LOGGED BY: K.K. STARTED: 5/7-80 PROPERTY South Pasvik
 CASING: _____ FINISHED: 11/7-80
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		SUMMARY LOG.
0	18.00	Overburden.
18.00	22.80	Amphibolite with garnets. Scattered po-grains.
22.80	24.30	Amphibolitic gneiss, no garnets.
24.30	31.00	Amphibolite, garnet bearing. Scattered po-cpy grains.
31.00	38.00	Qtz-fsp/amph-mica gneiss, with 2 - 4% sulphides both po and cpy.
38.00	40.00	Mica schist.
40.00	40.90	Greyish-green lithology very rich in graphite horizon
40.90	47.40	Qtz-fsp/amph-mica gneiss with occasional garnets. 42.80 - 44.80 2 - 3% sulphides, both po and cpy. on joint surfaces and as single grains.
47.40	49.30	Greenschist with scattered po-grains.
49.30	49.70	Qtz-fsp/amph-mica gneiss, scattered garnets. 1 - 3% sulphides, mainly po and some cpy.
49.70	51.35	Amph-mica lithology, rather coarse grained. Only scattered sulphides.
51.35	56.00	Qtz-fsp/amph-mica gneiss, garnet bearing. Scattered po-grains.
56.00	64.50	Amph-mica dominated gneissic lithology, occasional irregular fsp-veining. 57.25 - 57.50 5 - 10% sulphides, mainly massive po.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 1100CN 6187W BEARING: East DIP: 65° HOLE NO: 31 SHEET NO: II
LOGGED BY: K.K. STARTED: 5/7-80 PROPERTY South Pasvik
CASING: FINISHED: 11/7-80
CORE SIZE: TESTS (CORRECTED):

From	To	Description
		61.80 - 62.00 } 30% sulphides, mainly
		62.56 - 62.60 } massive po, some cpy.
64.50	12.45	Amph-mica/qtz-fsp gneiss, garnet bearing.
		67.10 - 67.50 20 - 25 % sulphides, massive po.
		Only scattered po-grains in the rest of the zone.
74.50	84.00	Amphibolitic gneiss, stuffed with garnets.
		76.35 - 76.45 5% po, very little cpy.
84.00	88.00	Amphibolite, garnet bearing.
88.00	95.00	Amph-mica/qtz-fsp gneiss.
95.00	96.90	Finer grained gneiss, less qtz-fsp.
		93.65 - 93.70 5% po.

DIAMOND DRILL RECORD

From	To	Description
		Core angles
	22.90	84
	27.95	90
	32.55	79
	35.70	83
	39.10	70
	42.45	77
	45.75	76
	49.40	76
	52.70	85
	55.20	77
	59.50	79
	60.70	78
	65.80	82
	69.50	65
	72.40	90
	75.55	82
	78.75	74
	82.50	87
	89.20	84
	90.30	71
	95.60	74

Magn. suscept.

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000

Dept of hole

10m

20m

30m

40m

50m

60m

70m

80m

90m

100m

DDH-31 South Pasvik

Magnetic susceptibility

% SULFID MALM

SCALE	1-100	OSL	8-80
		DRAW.	8-80
		TRAC. KG	9-80
		CHK.	

PLAT NO.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11015N 6050W BEARING: East DIP: 70° HOLE NO: 32 SHEET NO: I
 LOGGED BY: K.K. STARTED: 6/7-80 PROPERTY: South Pasvik
 CASING: FINISHED: 8/7-80
 CORE SIZE: TESTS (CORRECTED):

From	To	Description
SUMMARY LOG.		
0	10.00	Overburden
10.00	13.10	Mainly green amphibole with mica or thin qtz-feldspar bands. Garnets in the greyish parts. Some sulphide-mineralization throughout this zone, both po, cov and pyrite cubes.
13.10	16.30	Amphibole gneiss with a higher ratio of qtz-feldspar bands than the former section. No visible garnets.
16.30	22.60	Amph-mica/qtz-feldspar gneiss with lots of garnets.
22.60	27.80	Green, extremely amphibole rich lithology which occasionally is dominated by big clusters of garnets. 22.60 - 22.64 Massive po. 5% sulphides down to 27.00, mainly po, some cov.
27.80	33.50	Amphibole-mica/qtz-feldspar gneiss. Occasional horizons with only amphibole and garnets.
33.50	40.00	Finer grained amph-mica-garnet lithology, schistose where mica dominates. Garnets tend to concentrate into clusters.
40.00	53.70	Qtz-feldspar banding far more important in a still amph-mica rich gneiss. Garnets are concentrated in amph-rich layers.
53.70	68.85	Slightly more coarse grained gneiss with a higher amphibole content. Garnets are common.
68.85	71.30	Amphibole dominated lithology, with mica and garnets as main secondary (constituents) components.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11015N BEARING: East DIP: 70° HOLE NO: 32 SHEET NO: II
LOGGED BY: STARTED: 6/7-80 PROPERTY South Pasvik
CASING: FINISHED: 8/7-80
CORE SIZE: TESTS (CORRECTED):

From	To	Description
71.30	84.20	Qtz-feldspar/amphibole-mica gneiss with occasional garnets throughout this zone.
84.20	89.00	Feldspar-amphibole lithology. (Gabbroic). Occasional mica rich layers.
89.00	110.00	Mainly qtz-fsp/amph-mica gneiss with occasional horizons of fsp-amph lithology.

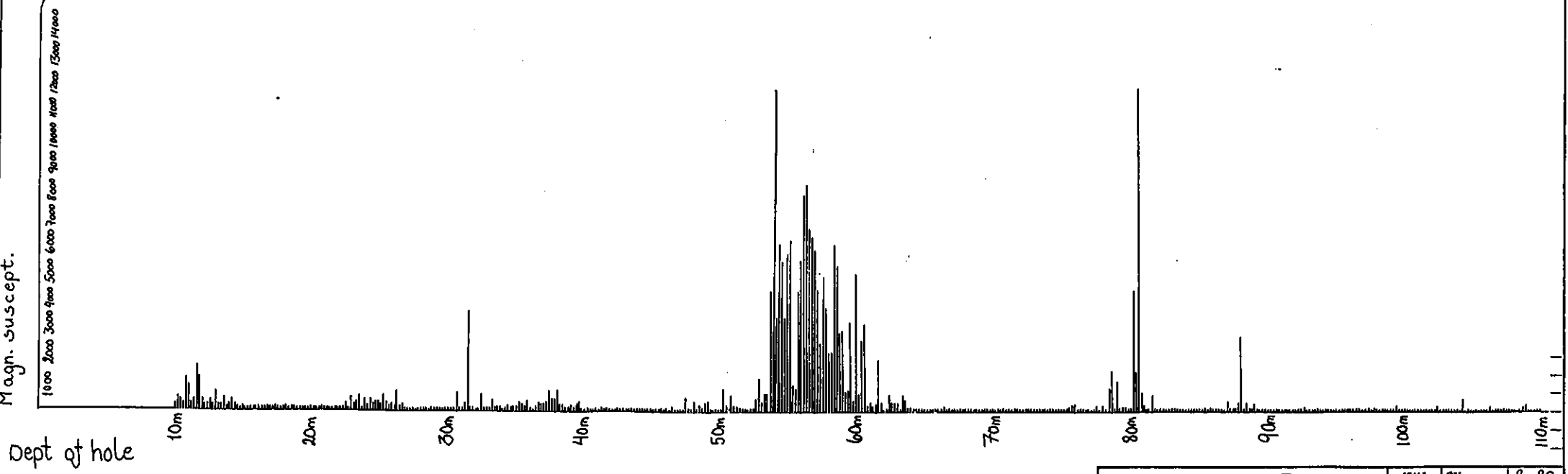
A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11015N 6050W BEARING: East DIP: 70° HOLE NO: 32 SHEET NO: III
 LOGGED BY: K.K. STARTED: 6/7-80 PROPERTY South Pasvik
 CASING: _____ FINISHED: 8/7-80
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		Core angles.
	11.50	85°
	14.60	84°
	17.50	74°
	21.70	83°
	26.90	75°
	30.50	74°
	34.85	83°
	39.20	82°
	44.55	83°
	48.40	83°
	53.20	85°
	58.05	84°
	63.90	84°
	69.00	80°
	74.20	81°
	79.10	80°
	84.95	87°
	89.90	90°
	95.90	82°
	99.90	75°
	103.25	87°
	107.10	80°
	109.55	84°

Magn. suscept.



Dept of hole

DDH-32 South Pasvik Magnetic susceptibility	SCALE	1-100
	OSL	8-80
	DRAW.	8-80
	TRAC. KG	9-80
		CHE.
HAF NO.		
½ SULFIDMALM		

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 10900N 5462W BEARING: East DIP: 70° HOLE NO: 33 SHEET NO: I
 LOGGED BY: K.K. STARTED: 9/7-80 PROPERTY: South Pasvik
 CASING: FINISHED: 11/7-80
 CORE SIZE: TESTS (CORRECTED):

From	To	Description
SUMMARY LOG.		
0	14.00	Overburden.
14.00	21.35	Qtz-fsp/amph-mica gneiss, a few garnets. Occasional po on joint surfaces and as single grains.
21.35	22.00	Same mineralogy, but more finegrained and schistose. Garnets are more common. 21.35 - 21.65 5% po, with graphite horizons.
22.00	36.80	Qtz-fsp/amph-mica gneiss, garnet bearing. 31.97 - 32.00 2 - 4% po and cpy. Scattered sulphides only through this section.
36.80	37.00	Amph-fsp breccia.
37.00	40.00	Qtz-fsp/amph-mica gneiss, garnet bearing.
40.00	43.20	Gabbroic development of amph-fsp, some mica building up a foliation.
43.20	44.40	Qtz-fsp/amph-mica gneiss.
44.40	47.00	Qtz-fsp gneiss.
47.00	47.60	Qtz-fsp/amph-mica gneiss.
47.60	60.70	Qtz-fsp gneiss, rather granitic. A weak foliation is developed by mica and some amphibole.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 10900N 5462W

BEARING: East DIP: 70° HOLE NO: 33 SHEET NO: II

LOGGED BY: K.K.

STARTED: 9/7-80 PROPERTY South Pasvik

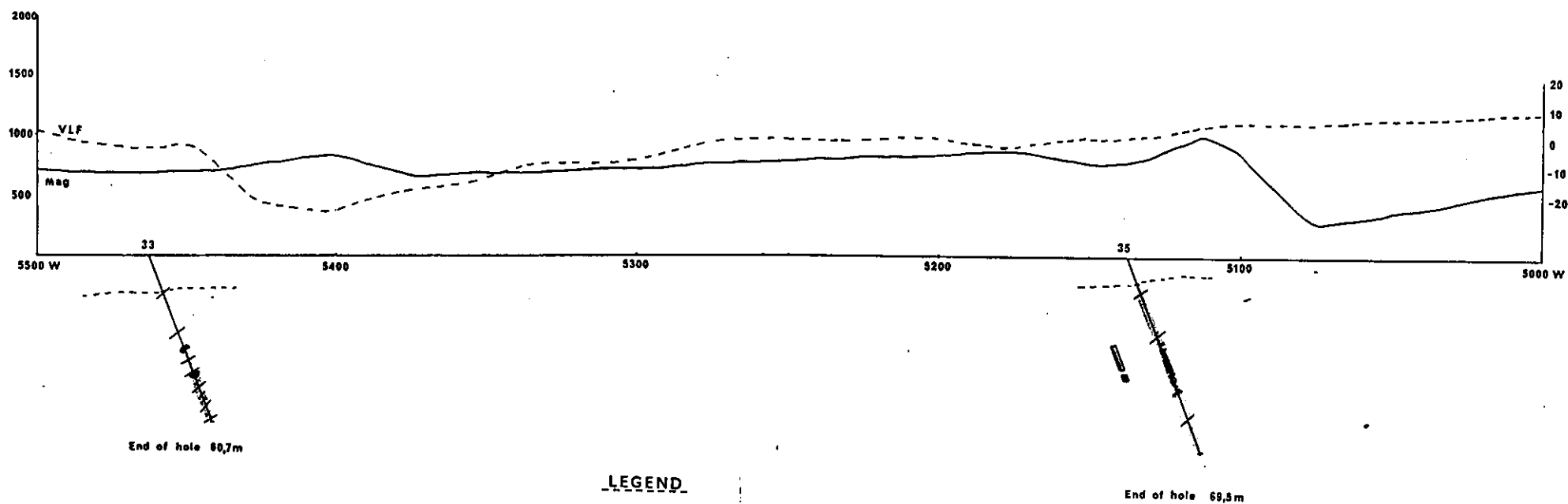
CASING:

FINISHED: 11/7-80

CORE SIZE:

TESTS (CORRECTED):

From	To	Description
		Core angles.
	14.40	72°
	17.55	81°
	20.50	83°
	23.50	80°
	28.40	76°
	31.40	88°
	37.75	81°
	43.65	80°
	49.50	70°
	54.10	60°
	59.10	80°



LEGEND

- Granite-granitic gneiss.
- Mica-amph/qtz-fsp gneiss.
- Mica-amph schist.
- Amphibolite/greenstone.
- Meta-gabbro.
- Peridotite.
- Serpentinite.
- Mag suscept > 5000

0 50 100m

Drillholes 33,35, South Pasvik
 33: 10900N/5462W 70°E
 35: 10900N/5137W 70°E

SCALE	DBL	
1:100	DRAW. -80	KK
	TRAC.	KK
	CHK.	

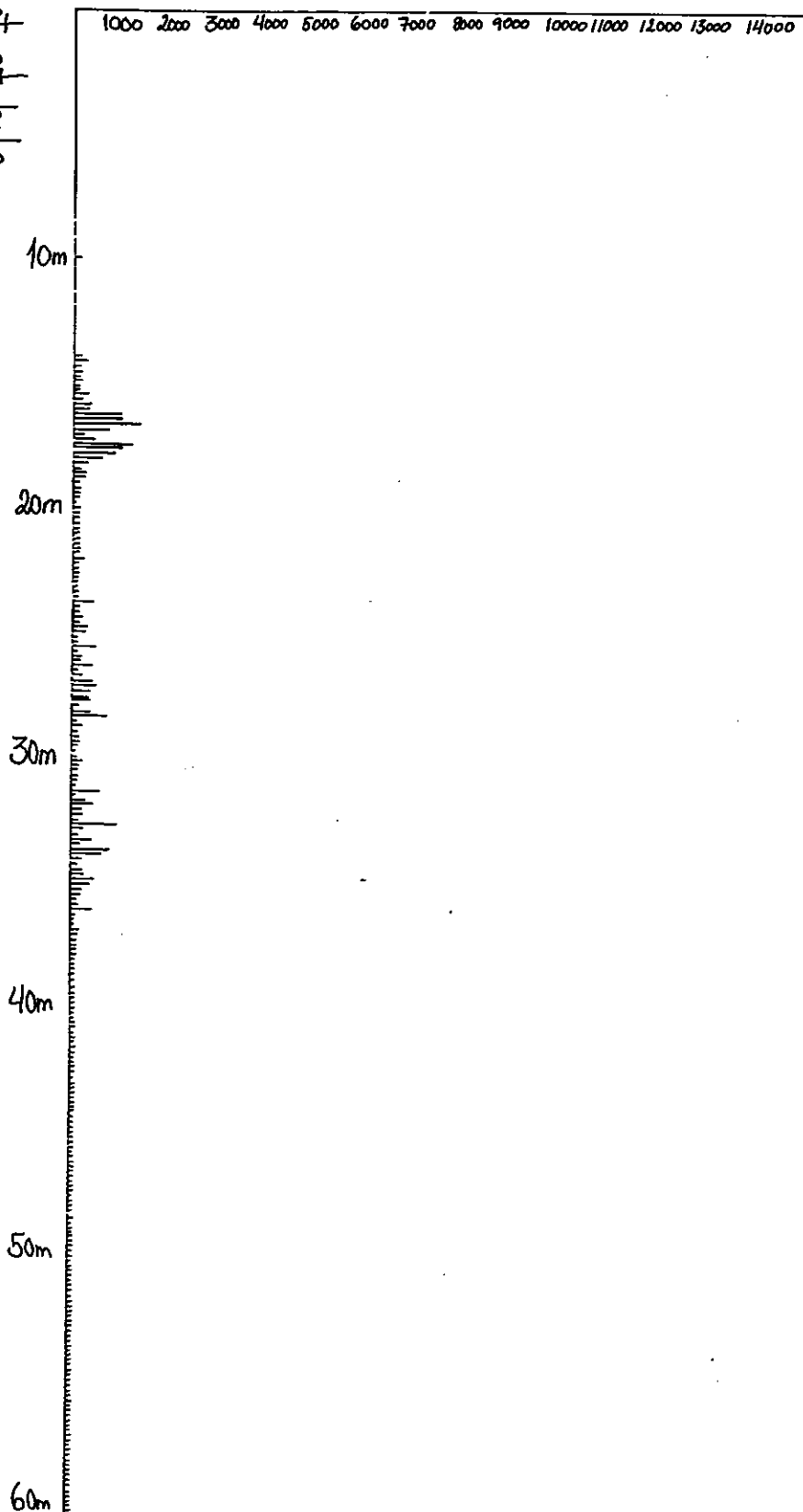
% SULFIDMALM

MAP NO.

SHEET

Magn. suscept.

Dept of hole



DDH-33 South Pasvik

Magnetic susceptibility

1/2 SULFIDMALM

SCALE	OBS.	8-80
1-100	DRAW.	8-80
	TRAC. K.G	9-80
	CHK.	

MAP NO.

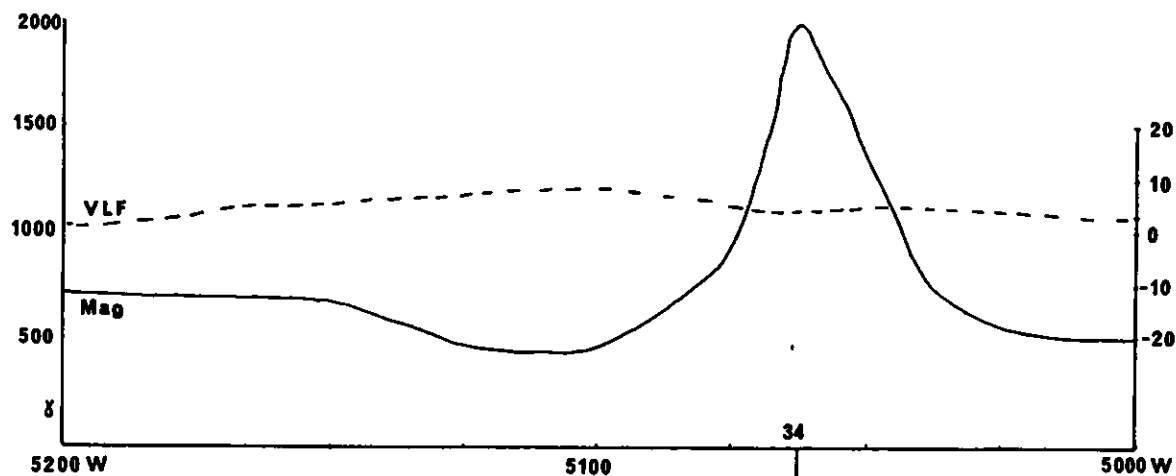
MAP SHEET

DIAMOND DRILL RECORD

From	To	Description
		SUMMARY LOG.
0	12.00	Overburden
12.00	20.50	Metaperidotite, in parts strongly serpentized. Some phlogopite.
20.50	20.75	Transition zone, basic but far more micaceous and lighter green color.
20.75	34.55	Qtz-fsp gneiss with varying amounts of mica and some amphibole. The gneiss is occasionally nearly pegmatitic with reddish fsp.
34.55	35.50	Amph-fsp lithology, well foliated. Probably some talc-chlorite on foliation surfaces.
35.50	47.40	Mainly Qtz-fsp gneiss with occasional horizons of schistose mica-amph lithology.

DIAMOND DRILL RECORD

From	To	Description
		Core angles.
	20.75	76
	24.60	80
	29.90	66
	31.80	85
	35.10	57
	39.60	65
	44.60	80
	47.35	70



LEGEND

-  Granite-granitic gneiss.
-  Mica-amph/qtz-fsp gneiss.
-  Mica-amph schist.
-  Amphibolite/greenstone.
-  Meta-gabbro.
-  Peridotite.
-  Serpentinite.

 Mag suscept > 5000



Drillhole 34, South Pasvik

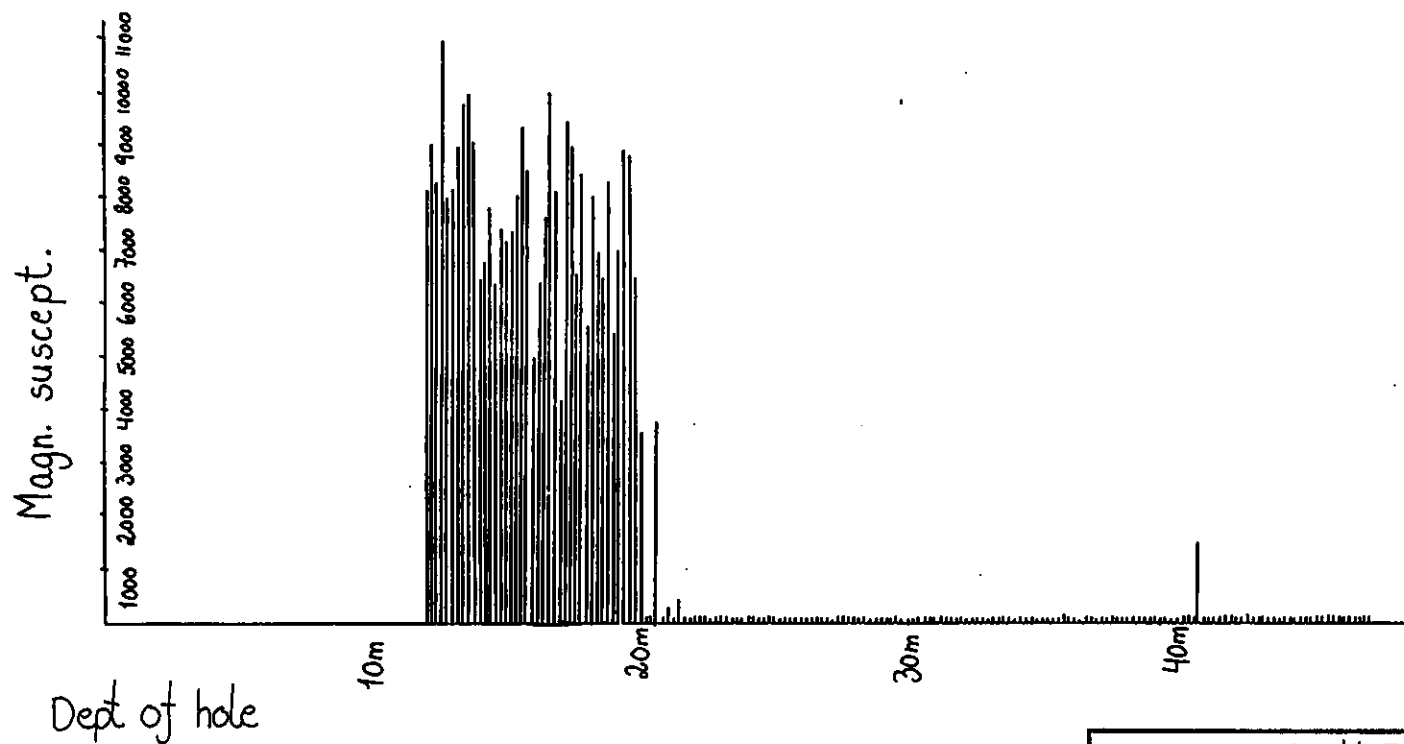
10800N/5062W ⊥

1/2 SULFIDMALM

SCALE	OBS.	
1:100	DRAW. -80	KK
	TRAC.	KK
	CHK.	

MAP NO.

PL



DDH-34 South Pasvik

Magnetic susceptibility

$\frac{1}{2}$ SULFIDMALM

SCALE	OBS.	8-80
1-100	DRAW.	8-80
	TRAC. KG	9-80
	CHK.	

MAP NO.

HEAVY T

DIAMOND DRILL RECORD

From	To	Description
		SUMMARY LOG.
0	10.00	Overburden.
10.00	11.00	Qtz-fsp gneiss, weak mica foliation.
11.00	11.75	Dark green basic lithology, decreasing amount of fsp downwards.
11.75	12.30	Qtz-fsp gneiss.
12.30	13.20	Dark green basic lithology.
13.20	13.85	Qtz-fsp gneiss.
13.85	14.90	Dark green lithology with narrow fsp-bands.
14.90	30.70	Qtz-fsp gneiss.
30.70	31.10	Completely broken up transition zone, with mica-serpentine.
31.10	46.40	Metaperidotite, partly serpentized.
46.40	46.85	Transition zone, mica and serpentine.
46.85	69.55	Mainly Qtz-fsp gneiss, but also frequent horizons of more schistose bands of mica-amphibole composition.

^A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 10900N 5137W BEARING: East DIP: 70° HOLE NO: 35 SHEET NO: II
LOGGED BY: K.K. STARTED: 11/7-80 PROPERTY: South Pasvik
CASING: FINISHED: 14/7-80
CORE SIZE: TESTS (CORRECTED):

From	To	Description
		Core angles.
	11.20	72°
	14.40	77°
	19.80	83°
	22.40	90°
	26.30	88°
	29.70	71°
	47.60	66°
	50.55	73°
	54.60	74°
	59.25	68°
	61.70	77°
	64.95	77°
	66.40	80°

Magn. suscept.

Dept of hole

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000 15000

10m

20m

30m

40m

50m

60m

70m

DDH-35 South Pasvik
Magnetic susceptibility

SCALE	OBS.	8-80
1-100	DRAW.	8-80
	TRAC. KG	9-80
	CHK.	

MAP NO.

1/2 SULFIDMALM

MAP SHEET

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 10800N 4325W BEARING: _____ DIP: _____ HOLE NO: 36 SHEET NO: I
 LOGGED BY: K.K. STARTED: 14/7-80 PROPERTY South Pasvik
 CASING: _____ FINISHED: 17/7-80
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
SUMMARY LOG.		
0	7.50	Overburden.
7.50	17.45	Mica-amph/qtz-fsp schist, garnet bearing. 14.55 - 14.65 } approx 10% sulphides, mainly po 14.80 - 14.90 } and some cpy.
17.45	19.10	Amphibole rich lithology with fsp-garnets as the main secondary components. 17.45 - 18.40 2 - 4% sulphides, mainly po as single grains, II foliation and in connection with Qtz-veining.
19.10	33.75	Mica-amph/qtz-fsp schist, garnet bearing. 21.10 2 mm. massive po. 22.70 - 22.80 10% sulphides, mainly po. Scattered sulphide grains and occasional 1/2 mm. sulphide rich laminae II foliation.
33.75	38.60	Amph-mica schist, garnet bearing. 36.95 - 37.00 5% sulphides, mainly po. 37.35 Graphite horizon.
38.60	40.85	Mica schist with garnets.
40.85	41.85	Extremely mica-amph-serpentine rich lithology, breaking up.
41.85	43.20	Amph-mica-garnet schist with some Qtz-fsp.
43.20	49.00	Coarse grained mica-fsp schist.
49.00	54.80	Qtz-fsp gneiss with schistose mica rich horizons.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 10800N 4325W BEARING: _____ DIP: _____ HOLE NO: 36 SHEET NO: II
LOGGED BY: A.K. STARTED: 14/7-80 PROPERTY South Pasvik
CASING: _____ FINISHED: 17/7-80
CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
54.80	60.00	Qtz-fsp gneiss, granitic.
60.00	65.10	Mica-schist with amph-qtz-fsp, rather coarse grained.
65.10	70.00	Qtz-fsp gneiss, granitic.

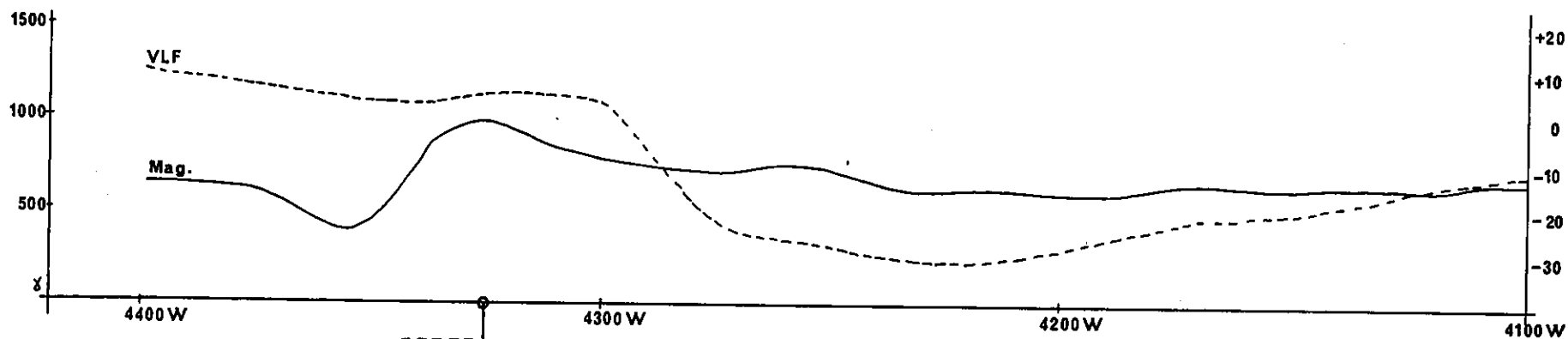
E. H. A. S 5000 57

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 10800N 4325W BEARING: _____ DIP: _____ HOLE NO: 36 SHEET NO: III
 LOGGED BY: K.K. STARTED: 14/7-80 PROPERTY: South Pasvik
 CASING: _____ FINISHED: 17/7-80
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		Core angles.
	9.90	70°
	12.60	65°
	16.50	70°
	20.10	65°
	24.40	70°
	28.35	65°
	30.40	78°
	35.40	81°
	39.40	70°
	40.50	61°
	45.10	77°
	49.20	69°
	50.25	64°
	54.40	68°
	60.10	66°
	65.85	81°



LEGEND

-  Granite-granitic gneiss.
-  Mica-amph/qtz-fsp gneiss.
-  Mica-amph schist.
-  Amphibolite/greenstone.
-  Meta-gabbro.
-  Peridotite.
-  Serpentinite.

END OF HOLE 70,0 m



Drillhole 36, South Pasvik
10800N 4325W

1/2 SULFIDMALM

SCALE	1:100	OBS.	
		DRAW. - 80	K.K.
		TAAC.	A.K.B.
		CHK.	

MAP NO.

EET

Magn. suscept.

Dept of hole

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000 15000

10m

20m

30m

40m

50m

60m

70m

DDH-36 South Pasvik
Magnetic susceptibility

$\frac{1}{2}$ SULFIDMALM

SCALE	OBS.	8-80
1-100	DRAW.	8-80
	TRAC. KG	9-80
	CHK.	

MAP NO.

MAP SHEET

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11500N 4012W BEARING: _____ DIP: _____ HOLE NO: 37 SHEET NO: I
 LOGGED BY: K.K. STARTED: 16/7-80 PROPERTY: South Pasvik
 CASING: _____ FINISHED: 18/7-80
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		SUMMARY LOG:
0	9.00	Overburden.
9.00	17.15	Metaperidotite, partly serpentized.
17.15	18.90	Serpentinite.
18.90	20.15	Strongly serpentized metaperidotite.
20.15	20.50	Serpentinite.
20.50	21.45	Strongly serpentized metaperidotite.
21.45	22.85	Serpentinite with talc and possible chlorite. Some reddish limonite. Cpy on joint surfaces.
22.85	28.80	Metaperidotite, partly serpentized.
28.80	29.50	Serpentinite with talc, chlorite, limonite. Also some carbonate-veining.
29.50	41.15	Metaperidotite partly serpentized. Occasional flakes of cpy on joint surfaces.
41.15	44.45	Serpentinite, with talc and chlorite, some carbonate-veining. Occasional cpy on joint surfaces.
44.45	47.30	Metaperidotite, partly serpentized.
47.30	47.50	Serpentinite.
47.50	47.80	Talc-fsp-gtz brecciae, angular fragments with some calcite, both as fragments and as matrix.

^{A/s} SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11500N 4012W BEARING: _____ DIP: _____ HOLE NO: 37 SHEET NO: II
LOGGED BY: K.K. STARTED: 16/7-80 PROPERTY South Pasvik
CASING: _____ FINISHED: 18/7-80
CORE SIZE: _____ TESTS (CORRECTED): _____

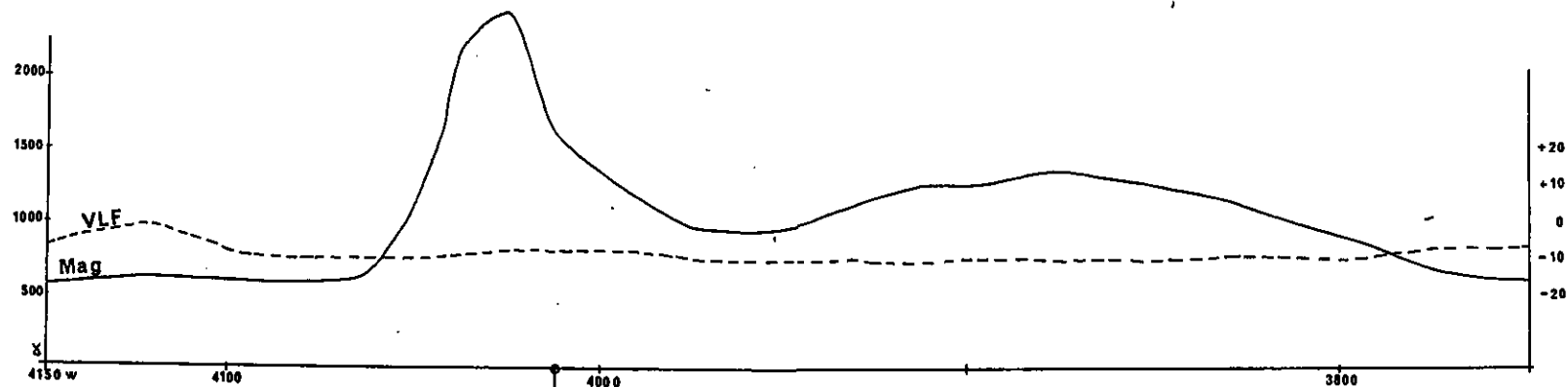
From	To	Description
47.80	50.40	Coarse Qtz-fsp gneiss, granitic.
50.40	56.15	Same gneiss, more finegrained.
56.15	56.85	Pegmatite, with K-fsp.
56.85	57.50	Mica-schist.
57.50	58.10	Qtz-fsp gneiss.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11500N 4012W BEARING: _____ DIP: _____ HOLE NO: 37 SHEET NO: III
LOGGED BY: K.K. STARTED: 16/7-80 PROPERTY: South Pasvik
CASING: _____ FINISHED: 15/7-80
CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		Core angles.
		50.80 68°
		55.55 61°
		57.60 67°



End of hole 58,10 m

LEGEND

- Granite-granitic gneiss.
- Mica-amph/Qtz-fsp gneiss.
- Mica-amph schist.
- Amphibolite/greenstone.
- Meta-gabbro.
- Peridotite.
- Serpentinite.
- Mag suscept > 5000

0 50 100m

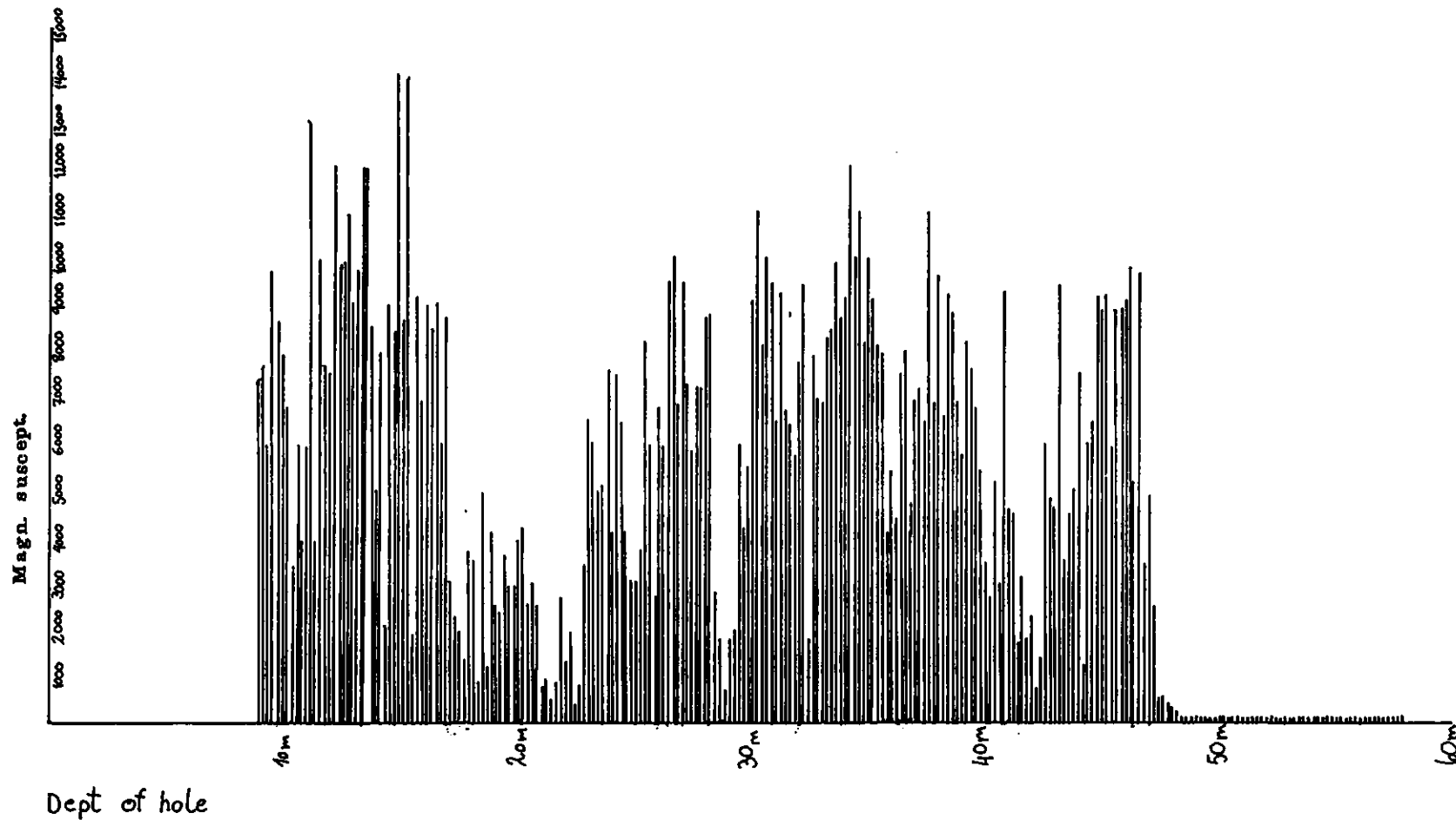
Drillhole 37

11500N 4012 W L

SCALE	OBS.	
1:100	DRAW. -80	KK
	TRAC.	AKB
	CHK.	

MAP NO.

% SULFIDMALM



DDH-37 South Pasvik

Magnetic susceptibility

$\frac{1}{2}$ SULFIDMALM

SCALE	OBS.	8-80
	DRAW.	8-80
	TRAC. KG	9-80
	CHK.	

MAP NO.

MAP SHEET

^A/s SULFIDMALM

DIAMOND DRILL RECORD

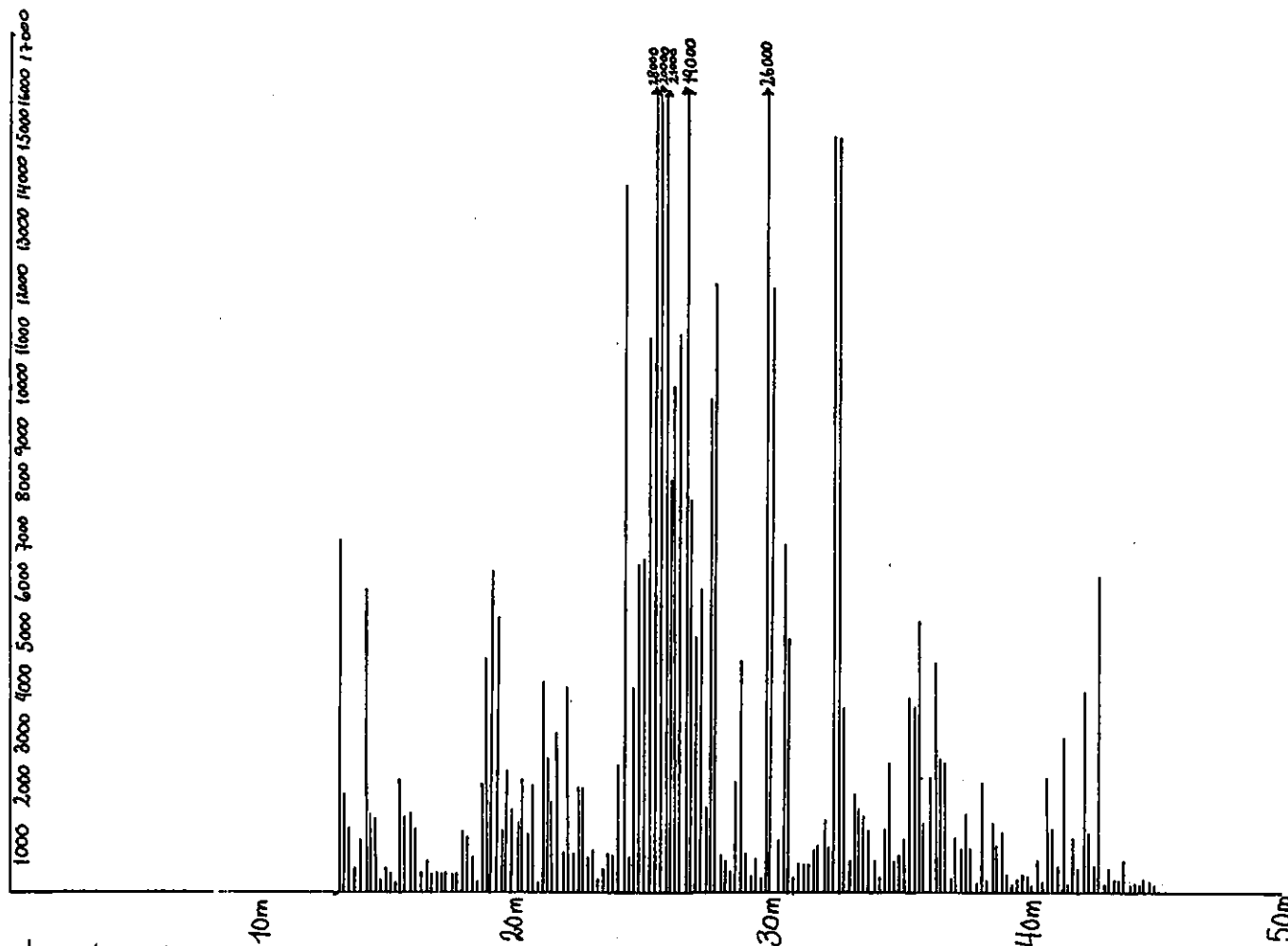
LOCATION: 11400N 6012W BEARING: _____ DIP: _____ HOLE NO: 38 SHEET NO: I
 LOGGED BY: K.K. STARTED: 19/7-80 PROPERTY South Pasvik
 CASING: _____ FINISHED: 22/7-80
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		SUMMARY LOG.
0	13.00	Overburden.
13.00	23.90	Amph-mica/qtz-fsp gneiss, locally cut by narrow calcite veins.
23.90	26.00	Qtz-fsp gneiss, mica-amph thin foliation.
26.00	28.70	Amph-mica/qtz-fsp gneiss.
28.70	29.00	Qtz-fsp pegmatite.
29.00	45.15	Amph-mica/qtz-fsp gneiss, small scale folding. Calcite veins carry some po.

DIAMOND DRILL RECORD

From	To	Description
		Core angles..
	13.80	57°
	17.80	68°
	19.85	70°
	22.35	64°
	26.80	58°
	29.75	64°
	31.70	67°
	35.35	66°
	39.40	67°
	42.60	69°
	45.10	59°

Magn. suscept.



Dept of hole

DDH-38 South Pasvik
Magnetic susceptibility

SCALE	OBS.	8-80
	DRAW.	8-80
	TRAC. ICG	9-80
	CHK.	

MAP NO.

% SULFIDMALM

FEET

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 10300N 6937W

BEARING: DIP: HOLE NO: 39 SHEET NO. I

LOGGED BY: K.K.

STARTED: 18/7-80 PROPERTY South Pasvik

CASING:

FINISHED: 19/7-80

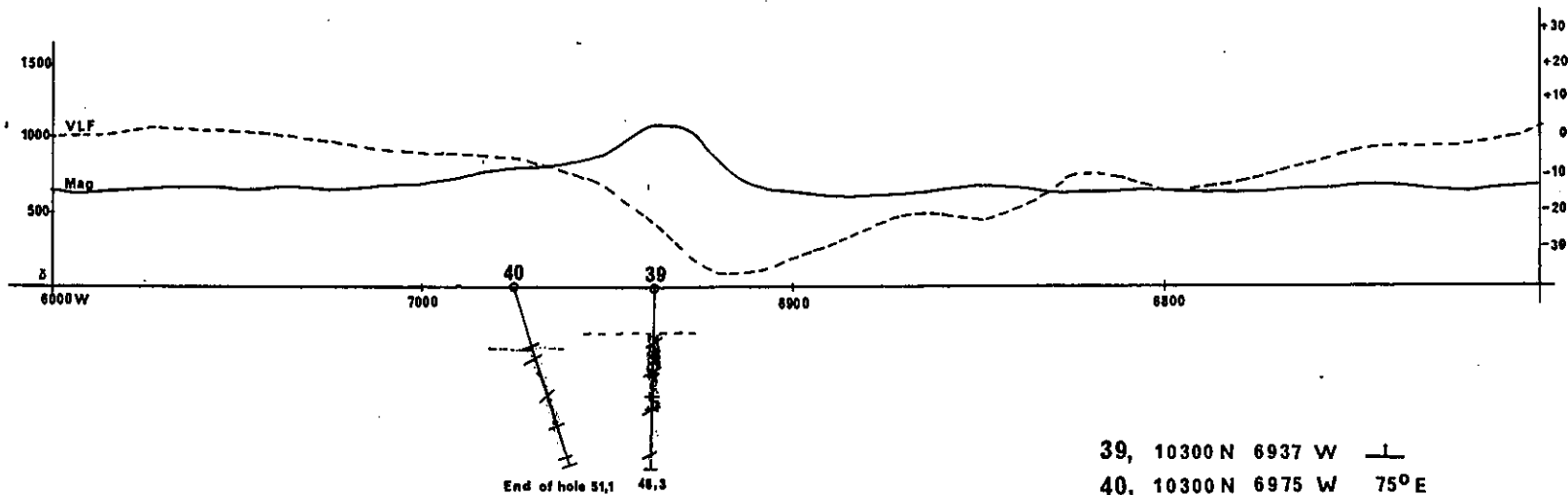
CORE SIZE:

TESTS (CORRECTED):

From	To	Description
		SUMMARY LOG.
0	12.00	Overburden.
12.00	23.00	Amphibolitic lithology, mica rich with small garnets.
		12.00 - 12.15 10% sulphides, mainly po
		12.90 - 13.15 with some cpy.
		12.00 - 13.15 Also scattered sulphides in the rest of this zone. Occasional graphite horizons and some magnetite.
23.00	29.50	Mica-fsp-qtz gneiss, well foliated.
29.50	33.15	Green partly coarse grained mica-anph-fsp (K-fsp) lithology, seems to be some serpentine-talc as well.
33.15	48.30	Mica-fsp-qtz gneiss, well banded. Red K-fsp common. Occasional pegmatitic development.

DIAMOND DRILL RECORD

From	To	Description
		Core angles
	13.60	65°
	15.50	57°
	19.50	55°
	20.40	64°
	24.65	61°
	29.55	64°
	33.80	64°
	38.70	62°
	42.55	63°
	46.30	60°

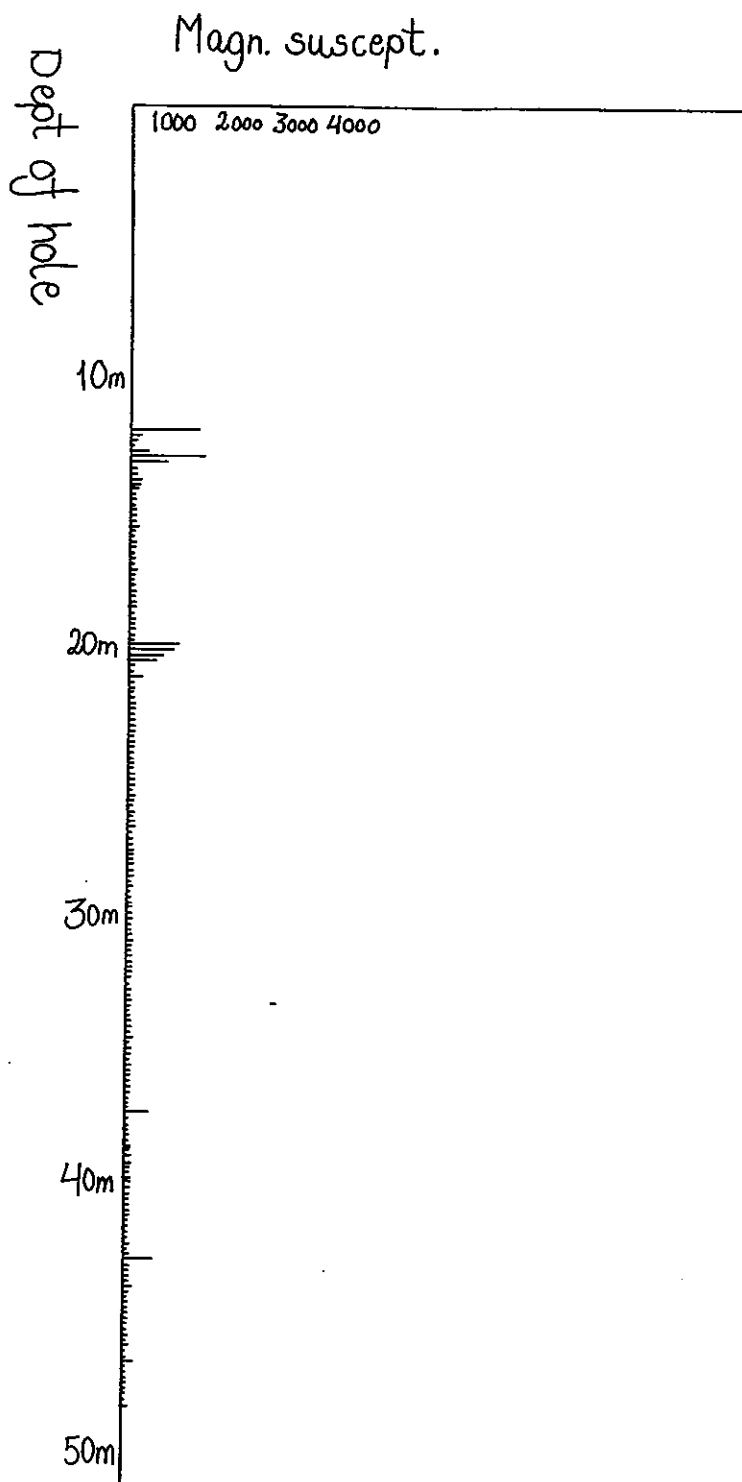


LEGEND

- Granite-granitic gneiss.
- Mica-amph/Qtz-fsp gneiss.
- Mica-amph schist.
- Amphibolite/greenstone.
- Meta-gabbro.
- Peridotite.
- Serpentinite.

0 50 100 m

Drillhole 39,40. South Pasvik	SCALE	1:100	DRW. - 80	KK
			TRAC.	AKB
			CHK.	
	PIAF NO.			
% SULFIDMALM				



DDH-39 South Pasvik Magnetic susceptibility	SCALE	OBS.	8-80
	1-100	DRAW.	8-80
		TRAC. K.G	9-80
		CHK.	
$\frac{1}{2}$ SULFIDMALM		MAP NO.	
		MAP SHEET	

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 10300N 6975W BEARING: East DIP: 75° HOLE NO: 40 SHEET NO: I
LOGGED BY: K.K. STARTED: 19/7-80 PROPERTY South Pasvik
CASING: FINISHED:
CORE SIZE: TESTS (CORRECTED):

From	To	Description
		SUMMARY LOG.
0	16.00	Overburden
16.00	39.85	Finegrained amphibole-biotite-qtz feldspar schist with qtz/feldspar located to narrow bands. Finegrained magnetite is found throughout the zone with a few grains of py and cov. Garnets are common. 31.25 - 31.35: massive po. 31.35 - 31.60: 10%po.
39.85	50.20	Mica schist with variable amount of qtz and feldspar. Normally less than 50%. No visible sulphides, but magnetite is present.
50.20	51.10	Qtz-feldspar-mica schist. Minor amounts of magnetite.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 10300N 6975W

BEARING: East DIP: 75° HOLE NO: 40 SHEET NO: II

LOGGED BY: K.K.

STARTED: 19/7-80 PROPERTY South Pasvik

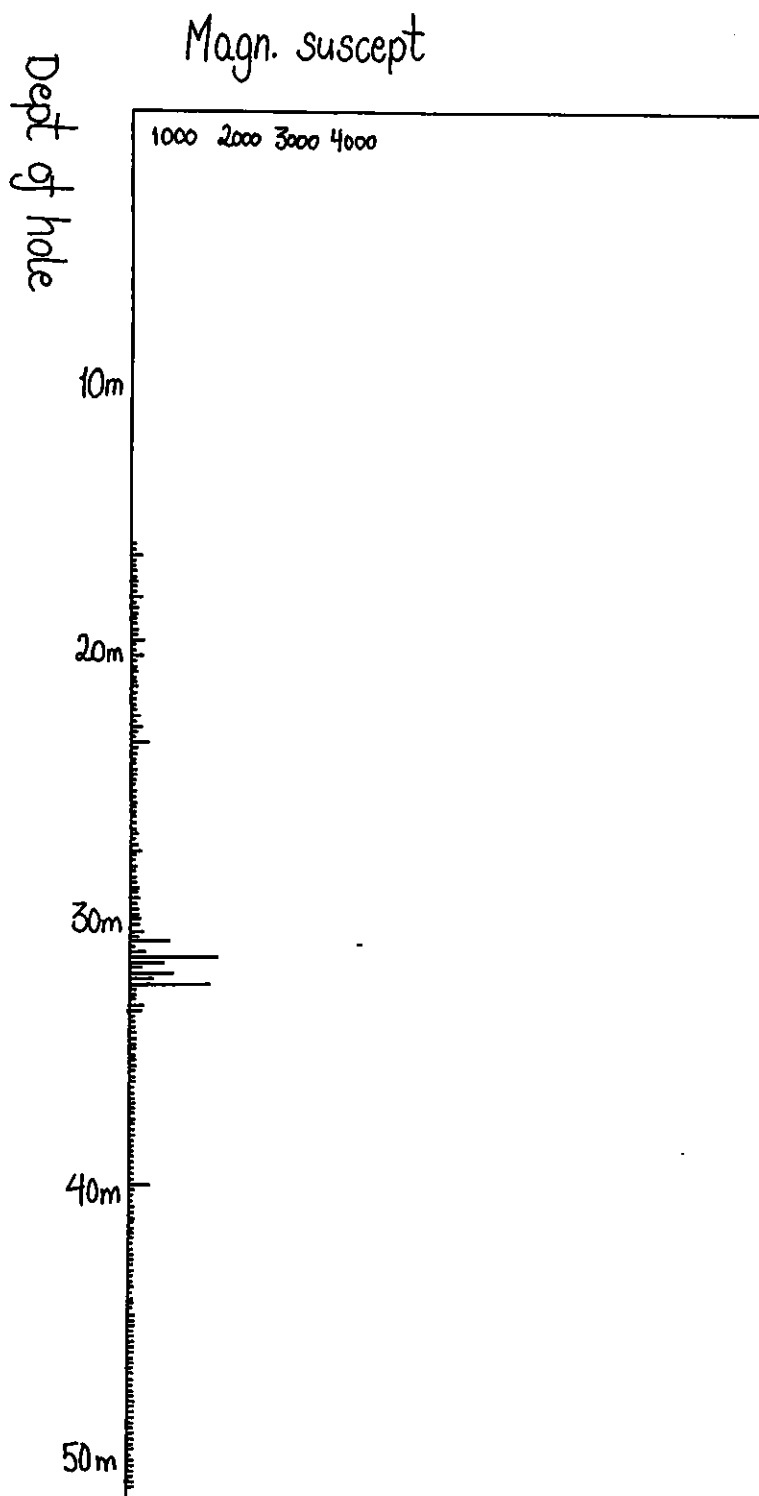
CASING:

FINISHED: _____

CORE SIZE: -----

TESTS (CORRECTED): _____

From	To	Description
		Core angles.
	16.30	71°
	19.10	75°
	22.65	74°
	25.10	74°
	28.30	76°
	31.05	67°
	34.35	77°
	38.35	71°
	40.50	72°
	44.60	84°
	49.40	75°
	50.55	55°



DDH-40 South Pasvik Magnetic susceptibility	SCALE 1-100	OBS.	8-80
		DRAW.	8-80
		TRAC. KG	9-80
		CHK.	
1/2 SULFIDMALM	MAP NO.		
	MAP SHEET		

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 9300 6787W BEARING: East DIP: 75 HOLE NO: 41 SHEET NO: I
LOGGED BY: K.K. STARTED: 22/7-80 PROPERTY South Pasvik
CASING: _____ FINISHED: 24/7-80 _____
CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		SUMMARY LOG.
0	11.30	Overburden
11.30	11.80	Fsp-qtz-amph-chlorite lithology, light grey
11.80	12.10	Coarse grained mica-fsp rock, green min. epidote?
12.10	44.00	Mica-amph/fsp-qtz gneiss with garnets. Occasionally somewhat more amphibolitic in connection with sulphide-mineralization. Some weathered carbonate as well. 29.70 - 30.65 An average of 5% sulphides, mostly po, some cpy. 31.20 - 31.70 5% sulphides, po and some cpy. Further down, scattered sulphides, mainly on joint surfaces.
44.00	49.80	Qtz-feldspar-biotite-amphibole schist/gneiss. some occurrence of red K-feldspar towards end.

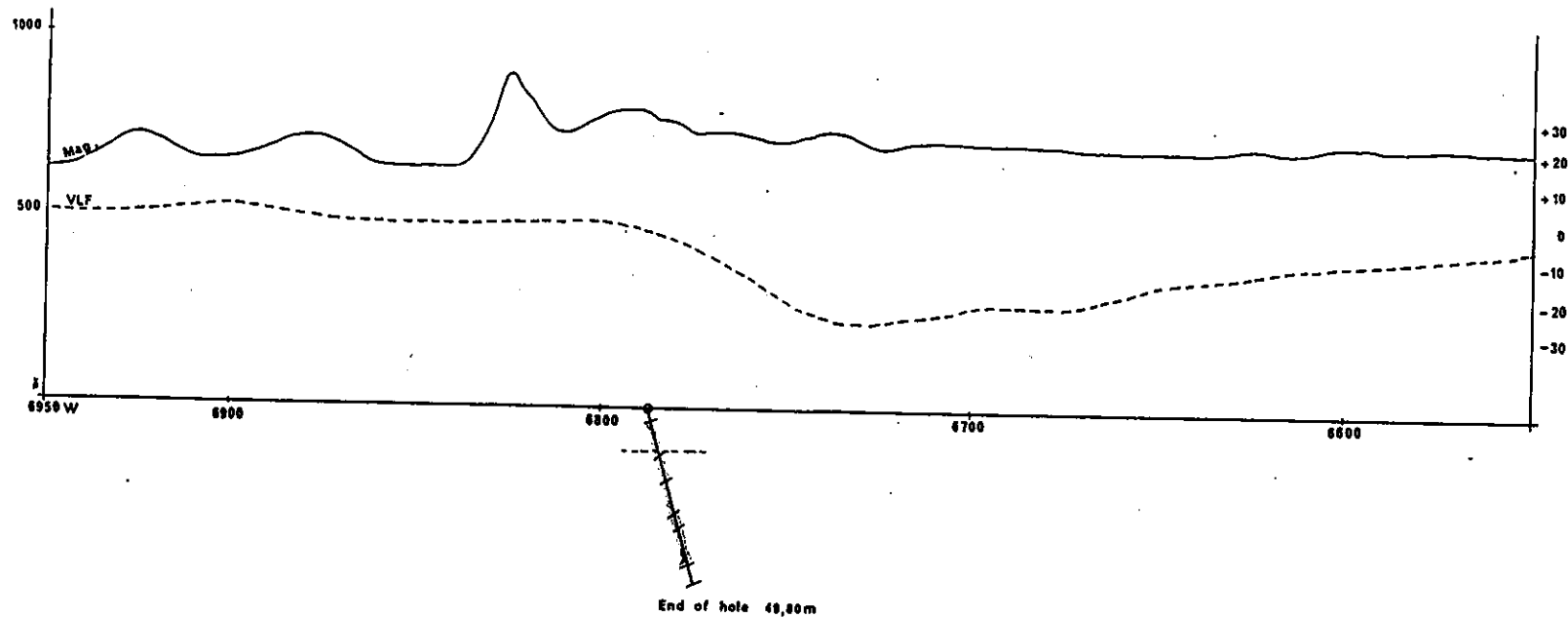
^A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 9300N 6727W BEARING: East DIP: 75 HOLE NO: 41 SHEET NO: II
 LOGGED BY: K.K. STARTED: 22/7-80 PROPERTY South Pasvik
 CASING: _____ FINISHED: 24/7-80 _____
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		Core angles.
	13.65	65°
	16.20	75°
	19.75	77°
	21.35	71°
	25.50	75°
	29.50	75°
	30.30	67°
	35.45	67°
	40.30	84°
	44.65	70°
	49.40	83°

E. H. A.s 5000573



LEGEND

-  Granite-granitic gneiss.
-  Mica-amph/qtz-fsp gneiss.
-  Mica-amph schist.
-  Amphibolite/greenstone.
-  Meta-gabbro.
-  Peridotite.
-  Serpentinite.

41, 9300 N 6787 W 75°E

0 50 100m

Drillhole 41,
South Pasvik

SCALE	OBS.	
1:100	DR. - 80	KK
	TRAC.	AKB
	CHK.	

MAP NO.

% SULFIDMALM

Magn. suscept.

Dept of hole

1000 2000 3000 4000

10m

20m

30m

40m

50m

DDH-41 South Pasvik

Magnetic susceptibility

1/2 SULFIDMALM

SCALE

1-100

OBS.

8-80

DRAW.

8-80

TRAC. KG

9-80

CHK.

MAP NO.

MAP SHEET

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 7300N 6087W BEARING: _____ DIP: _____ HOLE NO: 42 SHEET NO: I
LOGGED BY: K.K. STARTED: 26/7-80 PROPERTY South Pasvik
CASING: _____ FINISHED: 28/7-80
CORE SIZE: _____ TESTS (CORRECTED): _____

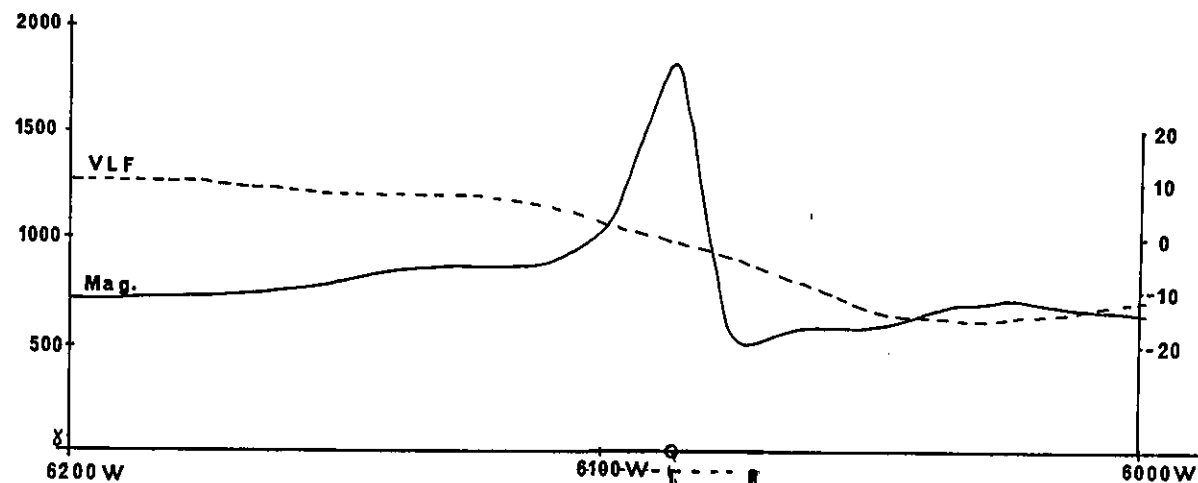
From	To	Description
		SUMMARY LOG.
0	3.50	Overburden
3.50	10.20	Amphibole-biotite-qtz/feldspar schist intruded by concordant qtz-feldspar-biotite pegm. Some garnets at end of zone. No orc.
10.20	14.80	Amphibole-biotite-garnet-qtz/feldspar schist no orc.
14.80	16.10	Qtz-feldspar-biotite schist with approx. 5% po. 14.90 - 15.00 Deformed ultrabasic 16.00 - 16.10 material.
16.10	30.80	Amphibole-biotite-garnet-qtz/feldspar schist. Py. present along joint surfaces and together with graphite at 23.00. Po related to thin sheets of ultrabasic comp. 29.00 - 29.50 biotite-rich zone with 5% po.
30.80	60.00	Qtz-feldspar-biotite gneiss/schist with scattered sulphides along joint surfaces. 32.90 - 34.55: Pegmatitic fabric with few matic minerals. 49.00 - 49.30: Thin basic sheet, no orc. 52.70 - 52.95: More basic zone with garnets, no orc.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 7300N 6087W BEARING: _____ DIP: _____ HOLE NO: 42 SHEET NO: II
 LOGGED BY: K.K. STARTED: 26/7-80 PROPERTY South Pasvik
 CASING: _____ FINISHED: 28/7-80
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		Core angles.
	4.55	66°
	7.60	57°
	10.65	55°
	14.65	62°
	17.70	68°
	20.80	42°
	24.85	51°
	28.35	52°
	31.55	70°
	36.80	68°
	39.50	62°
	41.55	59°
	44.40	62°
	47.45	52°
	50.90	60°
	54.75	59°
	58.80	58°



LEGEND

- Granite-granitic gneiss.
- Mica-amph/qtz-fsp gneiss.
- Mica-amph schist.
- Amphibolite/greenstone.
- Meta-gabbro.
- Peridotite.
- Serpentinite.

Mag suscept > 5000

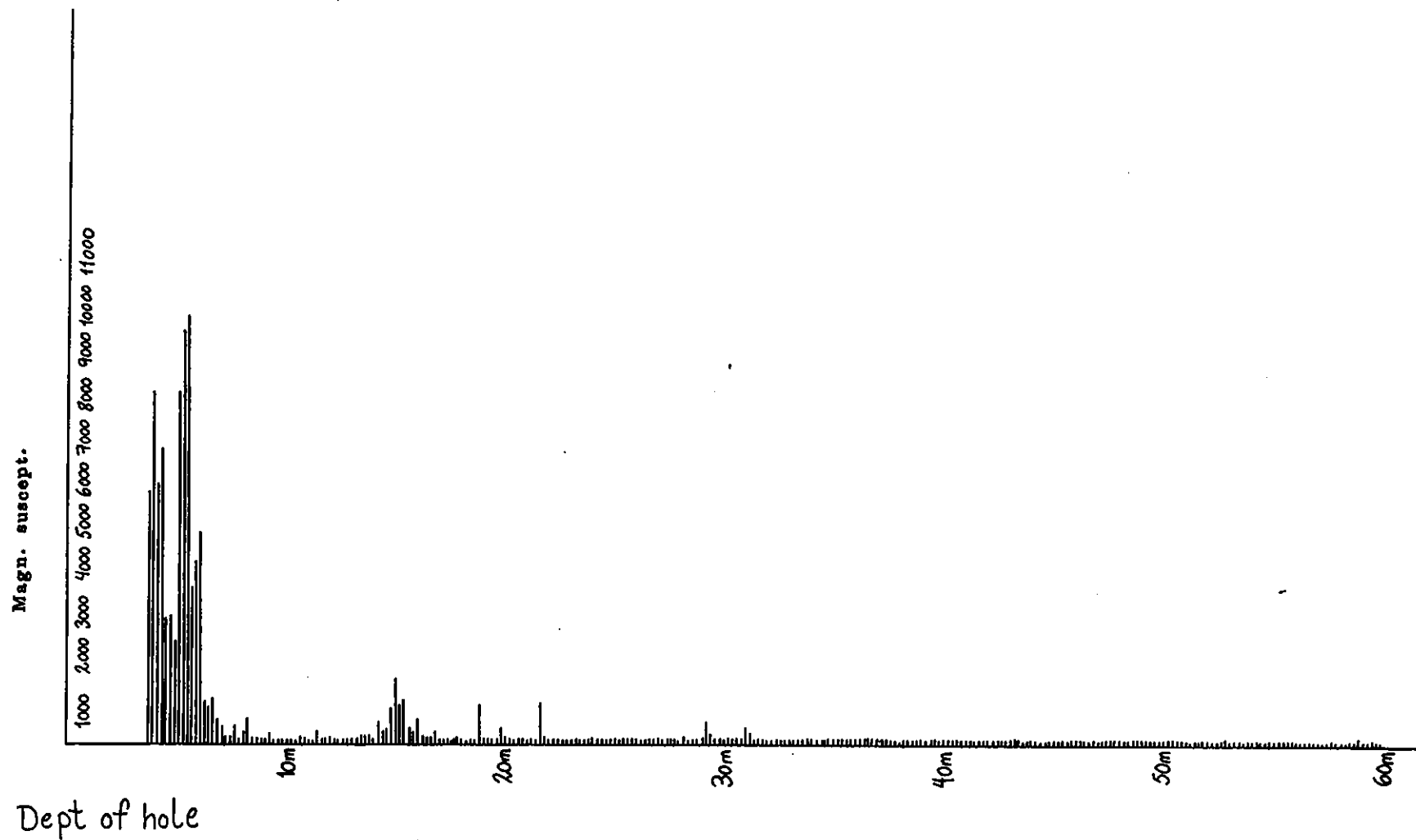
Drillhole 42, South Pasvik
7300N/6087W

1/2 SULFIDMALM

SCALE	OBS.	
1:100	DRAW. -80	K.K.
	TRAC.	A.K.B.
	CHK.	

MAP NO.

M. 1987



DDH-42 South Pasvik
Magnetic susceptibility

SCALE	OBS.	8-80
1-100	DRAW.	8-80
	TRAC. KG	9-80
	CHK.	

1/2 SULFIDMALM

MAP NO.

MAP SHEET

^{A/s} SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 7700N 6200W BEARING: _____ DIP: _____ HOLE NO: 43 SHEET NO: I
 LOGGED BY: K.K. STARTED: _____ PROPERTY: South Pasvik
 CASING: _____ FINISHED: 26/7-80
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		SUMMARY LOG.
0	10.20	Overburden.
10.20	22.30	Amphibole-biotite-qtz/feldspar schist. Locally cut by thin pegm. and veins of calcite 17.75: Impregnation of py. 19.20: Thin vein of ultramafic comp. and presence of coarse grained calcite. Towards end of zone, scattered pyrite.
22.30	30.25	Amphibole-biotite-garnet schist with bands of qtz and feldspar. 24.80 - 25.25: 5-10% po. 25.50: 1 mm. thick vein of po. Otherwise po at joint surfaces.
30.25	31.50	Qtz-feldspar pegm.
31.50	31.75	Amphibolite with scattered po.
31.75	31.90	Qtz-feldspar pegm.
31.90	51.20	Qtz-feldspar-amphibole-biotite schist/gneiss.
51.20	54.70	Qtz-feldspar-biotite-garnet schist.
54.70	54.80	Deformed ultrabasic sheet. No orc.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 7700N 6200W

BEARING: _____ DIP: _____ HOLE NO: 43 SHEET NO: II

LOGGED BY: K.K.

STARTED: _____ PROPERTY South Pasvik

CASING: _____

FINISHED: 26/7-80

CORE SIZE: _____

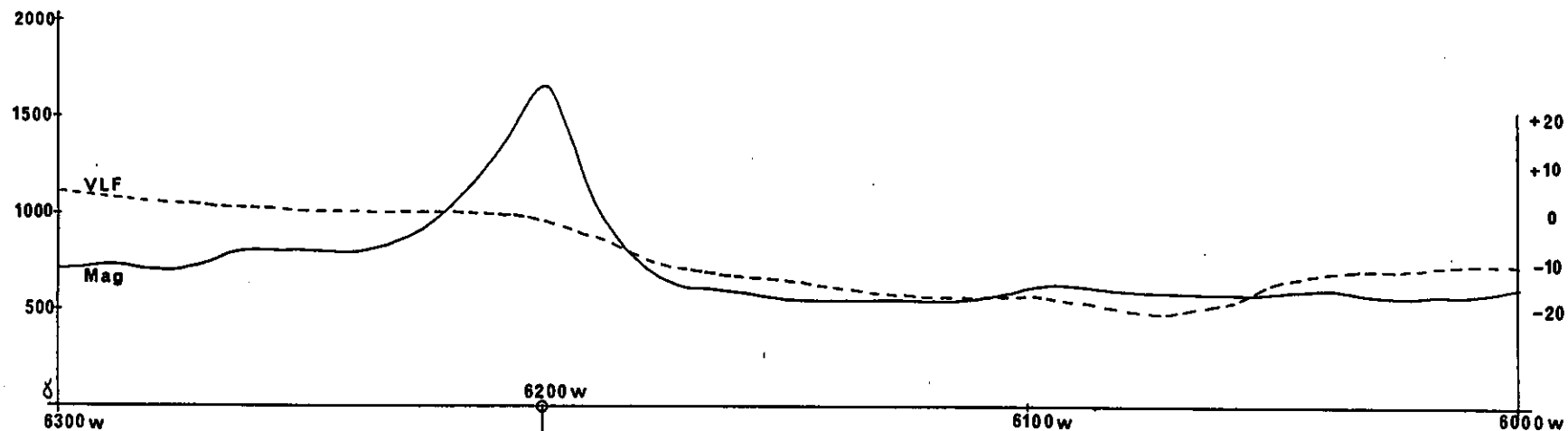
TESTS (CORRECTED): _____

From	To	Description
54.80	55.70	Qtz-feldspar-biotite-garnet schist.
55.70	56.20	Deformed ultrabasic sheet. No orc.
56.20	57.15	Qtz-feldspar-biotite schist.
57.15	57.65	Amphibole-garnet-qtz/feldspar schist.
57.65	60.00	Qtz-feldspar-biotite schist.

DIAMOND DRILL RECORD

LOCATION: 7700N 6200W BEARING: _____ DIP: _____ HOLE NO: 43 SHEET NO: III
LOGGED BY: K.K. STARTED: _____ PROPERTY South Pasvik
CASING: _____ FINISHED: 26/7-80
CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		Core angles.
		10.50 72°
		14.75 66°
		19.45 56°
		21.55 67°
		25.45 49°
		28.10 61°
		32.35 62°
		35.45 62°
		38.55 59°
		40.50 62°
		45.05 61°
		49.55 63°
		51.25 62°
		55.45 63°
		58.80 57°

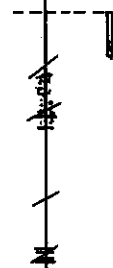


LEGEND

-  Granite-granitic gneiss.
-  Mica-amph/qtz-fsp gneiss.
-  Mica-amph schist.
-  Amphibolite/greenstone.
-  Meta-gabbro.
-  Peridotite.
-  Serpentine.

| Mag suscept > 5000

6200 w



END OF HOLE 60,0 m



Drillhole 43, South Pasvik
7700N/6200W 

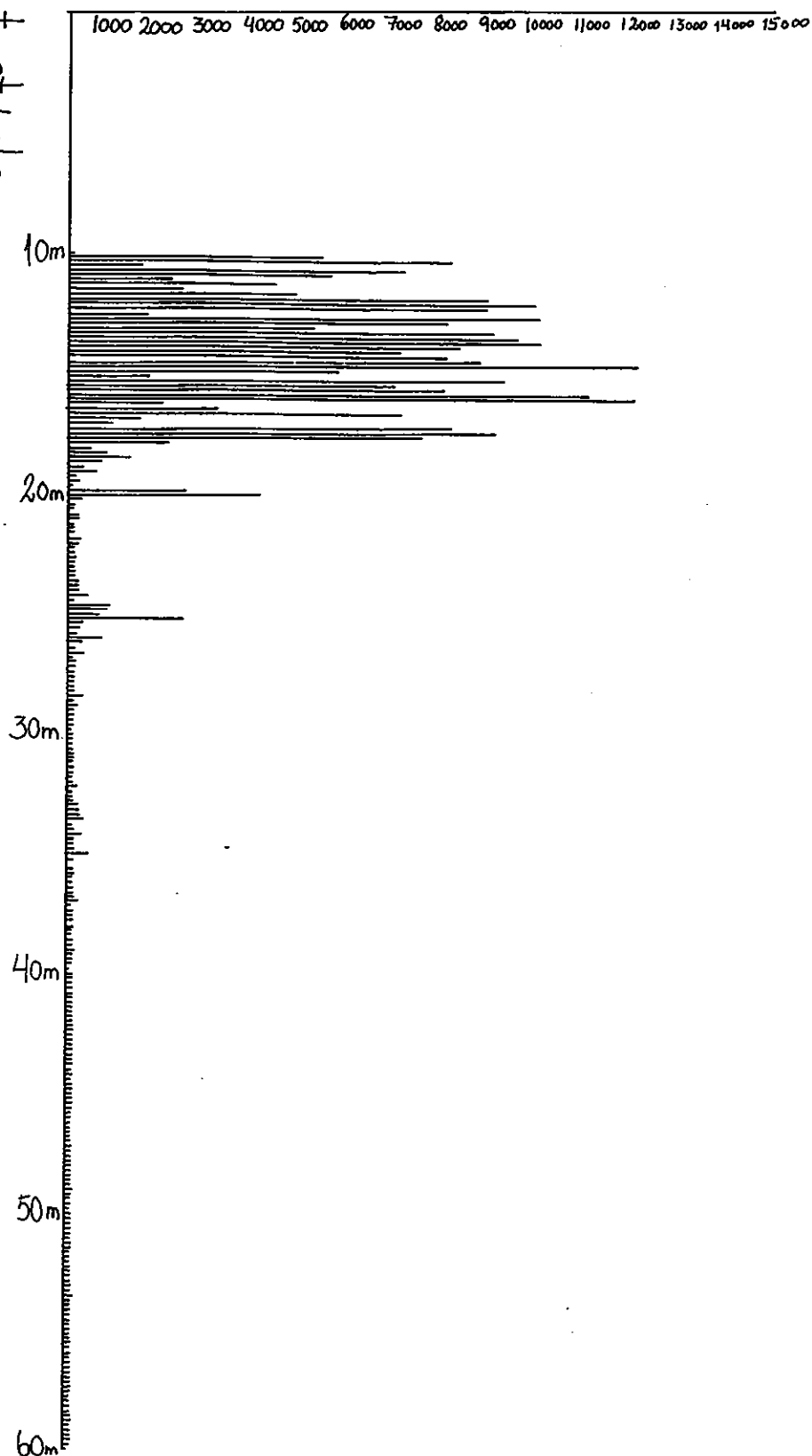
1/2 SULFIDMALM

SCALE	OBS.	
1:100	DRAW. -80	K.K.
	TRAC.	A.K.B.
	CHK.	

MAP NO.
MAP SHEET

Magn. suscept

Dept of hole



DDH-43 South Pasvik Magnetic susceptibility	SCALE	OBS.	8-80
	1-100	DRAW.	8-80
		TRAC. KG	9-80
		CHK.	
% SULFIDMALM	MAP NO.		
	MAP SHEET		

^A/_s SULFIDMALM

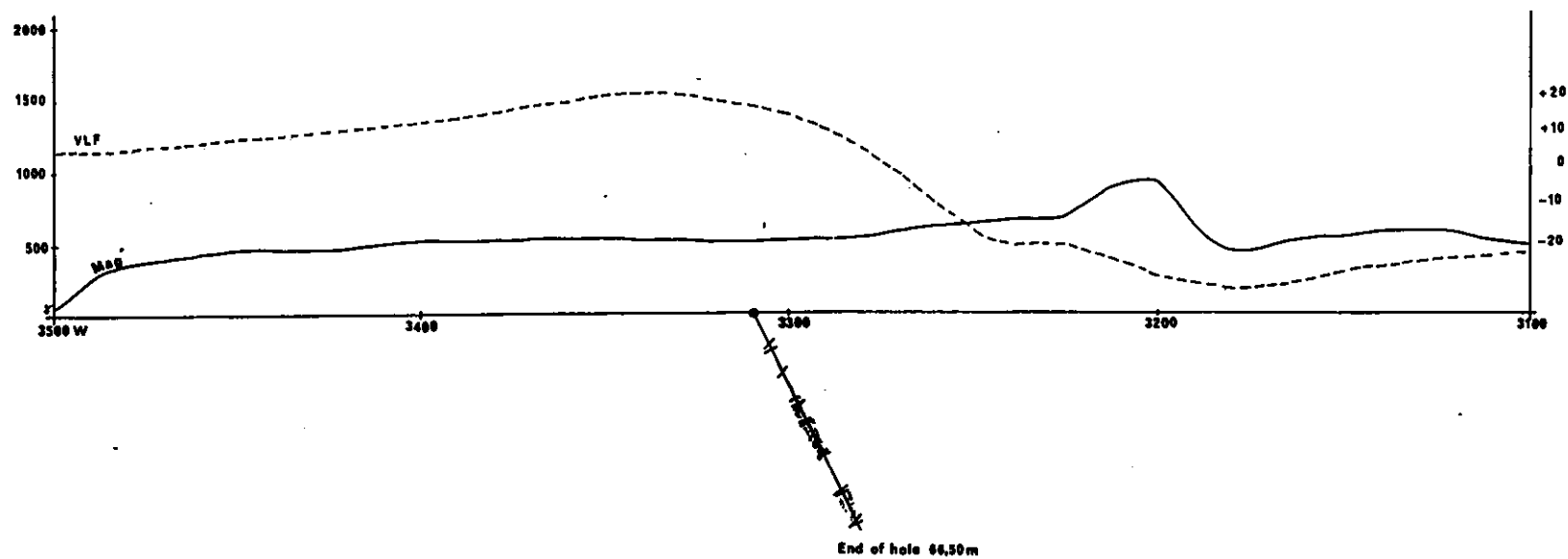
DIAMOND DRILL RECORD

LOCATION: 11400N 3310W BEARING: East DIP: 65° HOLE NO: 44 SHEET NO: I
 LOGGED BY: K.K. STARTED: _____ PROPERTY: South Pasvik
 CASING: _____ FINISHED: 3/8-80
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		SUMMARY LOG.
0	10.60	Overburden
10.60	25.60	Qtz-feldspar-mica amphibole gneiss. More biotite towards end of the zone. No ore.
25.60	27.40	Qtz-feldspar-biotite pegmatite.
27.40	33.50	Amphibole-biotite-qtz/feldspar-garnet schist. 31.45 - 33.50: Zone rich in calcite veins and pegmatites.
33.50	33.95	Qtz-feldspar pegmatite.
33.95	43.30	Amphibole-biotite-qtz/feldspar schist. 33.95 - 43.30: Zone with approx. 5% sulphides. Mostly veins, some impregnation. Sulphides common along joints from 33.95 - 36.25. Graphite at 35.85. Garnets are common.
43.30	43.50	Qtz-feldspar pegmatite.
43.50	55.60	Qtz-feldspar-amphibole-biotite schist/gneiss which seems to be transitional into the following zone.
55.60	66.50	Granitic gneiss with red K-feldspar.

DIAMOND DRILL RECORD

From	To	Description
		Core angles.
	11.80	65°
	15.65	84°
	19.50	63°
	21.45	66°
	22.20	64°
	28.50	70°
	30.50	73°
	34.55	64°
	39.75	63°
	41.50	59°
	44.20	69°
	48.70	74°
	50.20	70°
	55.70	76°
	59.40	77°
	61.65	71°
	65.70	66°



LEGEND

-  Granite-granitic gneiss.
-  Mica-amph/qtz-fsp gneiss.
-  Mica-amph schist.
-  Amphibolite/greenstone.
-  Meta-gabbro.
-  Peridotite.
-  Serpentine.

44, 11400 N 3310 W 65°E

0 50 100 m

Drillhole 44
South Pasvik

% SULFIDMALM

SCALE	DBL	
1:100	DRAW. -88	KK
	TRAC.	AKB
	CHL	

MAP NO.

Magn. suscept.

Dept of hole

1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 11000 12000 13000 14000 15000

10m

20m

30m

40m

50m

60m

70m

DDH-44 South Pasvik
Magnetic susceptibility

1/2 SULFIDMALM

SCALE

1-100

ORR.

8-80

DRAW.

8-80

TRAC. K G

9-80

CHK.

MAP NO.

MAP SHEET

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11800N 3713W BEARING: _____ DIP: _____ HOLE NO: 45 SHEET NO: I
LOGGED BY: K.K. STARTED: 3/8-80 PROPERTY South Pasvik
CASING: _____ FINISHED: _____
CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
		SUMMARY LOG.
0	9.95	Overburden.
9.95	11.25	Ultrabasic lithology: Talc/serpentine and amphibole. Magnetic.
11.25	11.70	Ultrabasic lithology: More talc, less amphibole. Not magnetic.
11.70	16.60	Ultrabasic lithology. Amphibole and talc/serpentine in varying amounts. Magnetivity is varying.
16.60	16.95	Ultrabasic lithology with talc/serpentine and biotite. Not magnetic.
16.95	18.35	Ultrabasic lithology with amphibole and talc/serpentine. Magnetivity is varying.
18.35	19.50	Coarse grained feldspar/ctz with some biotite-cubes. The zone is cut and in a way brecciated by thin veins of serpentine.
19.50	19.95	Serpentine with a thin zone (3cm.) more rich in calcite and biotite.
19.95	29.10	Ultrabasic lithology with amphibole and talc/serpentine. The last 70 cm. getting somewhat richer in serpentine/talc and calcite veins and thin leaves of sulphides can be seen on joints.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11800N 3713" BEARING: _____ DIP: _____ HOLE NO: 45 SHEET NO: II
 LOGGED BY: K.K. STARTED: 3/8-80 PROPERTY South Pasvik
 CASING: _____ FINISHED: _____
 CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
29.10	30.30	Qtz-feldspar pegmatite.
30.30	47.80	Ultrabasic lithology with amphibole and talc serpentine and is sometimes cut by thin calcite veins. 39.65 - 39.75: Serpentine together with a red soft mineral. The entire zone is magnetic. Sulphides are rare. Graphite in association with calcite vein at 45.90. 45.95 - 46.40: Zone composed of talc and biotite. 47.65 - 47.80: Zone only composed of talc.
47.80	53.80	Qtz-feldspar gneiss with mottled min. 5% The first meter is penetrated by thin veins of serpentine.
53.80	54.20	Biotite-serpentine schist.
54.20	55.75	Qtz-feldspar gneiss.
55.75	56.00	Dark band of biotite-qtz/feldspar lithology (schist).
56.00	57.35	Granitic gneiss.
57.35	57.45	Ultrabasic lithology nearly totally decomposed to a clayish material.
57.45	57.55	Granitic gneiss with some red K-feldspar.

A/s SULFIDMALM

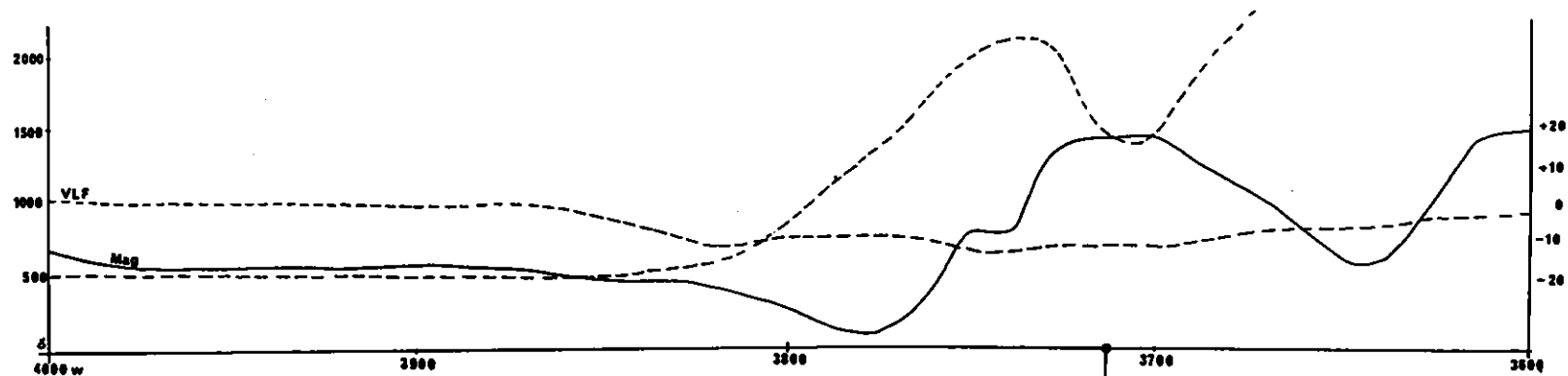
DIAMOND DRILL RECORD

LOCATION: 11800N 3713W BEARING: _____ DIP: _____ HOLE NO: 45 SHEET NO: III
LOGGED BY: K.K. STARTED: 3/8-80 PROPERTY South Pasvik
CASING: _____ FINISHED: _____
CORE SIZE: _____ TESTS (CORRECTED): _____

From	To	Description
57.55	59.90	Amphibole-biotite-qtz/feldspar schist. The zone is cut by thin veinlets of a red granitic composition which in turn is cut by veinlets of calcite carrying a few grains of cpy and po. Small vertical movements in terms of mm has occurred along the calcite veins.
59.90	63.70	Qtz-feldspar gneiss. 5% matics.
63.70	65.15	Amphibole-biotite-qtz/feldspar schist cut by calcite veinlets.
		64.70 - 64.80: Fine grained qtz/feldspar gneiss.
65.15	72.15	Qtz-feldspar gneiss 5% matics. (biotite, green amphibole)
72.15	72.60	Amphibole-talc/serpentine with scattered po.
72.60	72.90	Qtz-feldspar gneiss.
72.90	73.55	Amphibole-biotite-qtz/feldspar schist.
73.55	77.00	Qtz-feldspar gneiss.
77.00	77.15	Biotite- green mineral lithology.
77.15	100.00	Qtz-feldspar gneiss.
		82.80 - 82.95: Biotite-chlorite lithology.
		86.10 - 86.30: Amphibole-biotite-qtz/feldspar lithology.
		97.00 - 97.25: Amphibole-biotite-qtz-feldspar lithology.

DIAMOND DRILL RECORD

From	To	Description
		Core angles.
	16.90	65°
	49.40	76°
	51.90	68°
	56.85	55°
	59.85	63°
	62.50	60°
	65.60	66°
	69.65	68°
	71.95	90°
	74.65	72°
	78.70	78°
	81.90	66°
	84.70	68°
	89.75	74°
	91.20	69°
	95.50	58°
	99.90	67°



11800 N 3713 w

End of hole 100 m

0 50 100 m

LEGEND

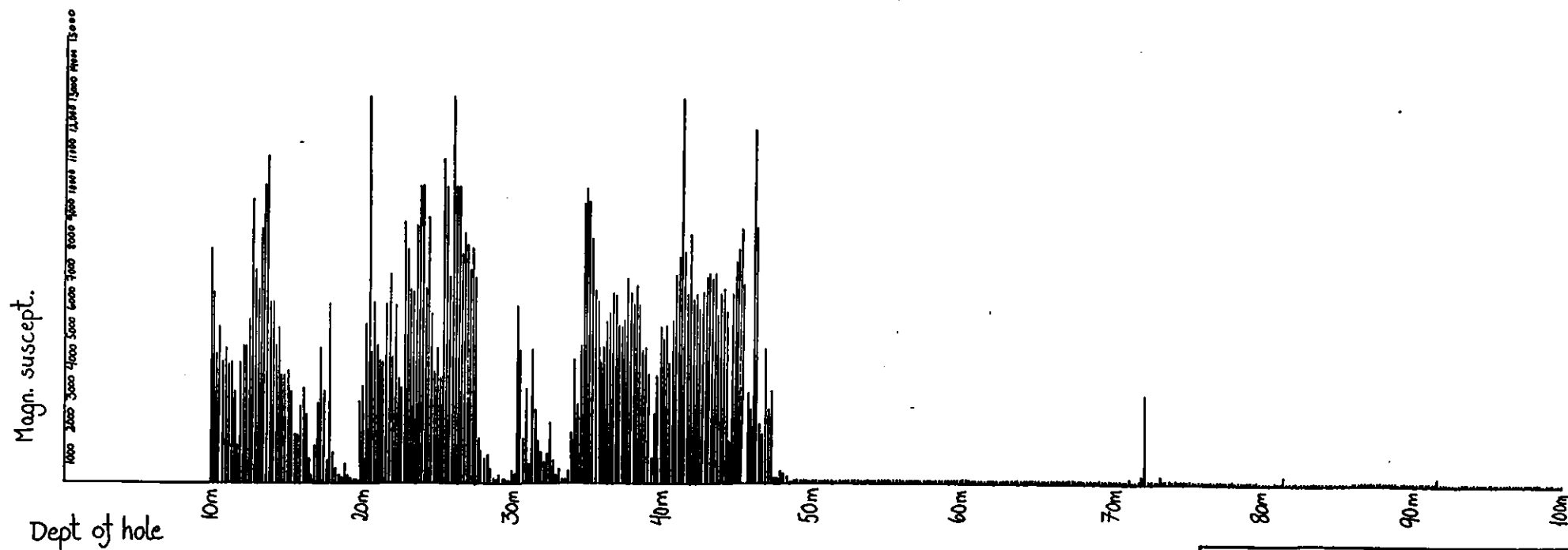
- Granite-granitic gneiss.
- Mica-amph/qlz-fsp gneiss.
- Mica-amph schist.
- Amphibolite/greenstone.
- Meta-gabbro.
- Peridotite.
- Serpentinite.
- Mag suscept > 5000

Drillhole 45
South Pasvik

SCALE	OSL	
1:100	DRAW.	K.K.
	TRAC.	A.K.B.
	CML	

HAF NO.

% SULFIDMALM



DDH-45 South Pasvik
Magnetic susceptibility

1/2 SULFIDMALM

SCALE 1-100	DES.	8-80
	DRAW.	8-80
	TRAC. KG	9-80
	CHK.	
MAP NO.		

^A/_s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11400N 4910W BEARING: East DIP: 65° HOLE NO: 46 SHEET NO: I
 LOGGED BY: K.K. STARTED: 7/8-80 PROPERTY: South Pasvik
 CASING: FINISHED: 9/8-80
 CORE SIZE: TESTS (CORRECTED):

From	To	Description
		SUMMARY LOG.
0	9.00	Overburden.
9.00	16.50	Biotite-qtz-feldspar schist.
16.50	19.55	Amphibole-biotite-qtz/feldspar schist. Some chlorite and garnets are present. Po at joint surfaces.
19.55	20.75	Amphibole-qtz/feldspar-graphite schist. Po occurs as veins and impregnations (5-10%). The zone ends in an 1 cm. thick po vein.
20.75	34.60	Amphibole-biotite-qtz/feldspar schist with garnets. Some po at joint surfaces. Small pegm. increases the amount of biotite. 28.15 - 28.55: Qtz-feldspar-biotite pegm. 34.05 - 34.35: approximate 5% po.
34.60	36.00	Biotite-chlorite schist.
36.00	37.35	Qtz-feldspar pegmatite.
37.35	37.50	Biotite schist.
37.50	38.60	Ultrabasic lithology: Biotite-chlorite/talc/serpentine..
38.60	38.70	Qtz-feldspar pegmatite.

A/s SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11400N 4910W BEARING: East DIP: 65' HOLE NO: 46 SHEET NO: II
LOGGED BY: K.K. STARTED: 7/8-80 PROPERTY: South Pasvik
CASING: FINISHED:
CORE SIZE: TESTS (CORRECTED):

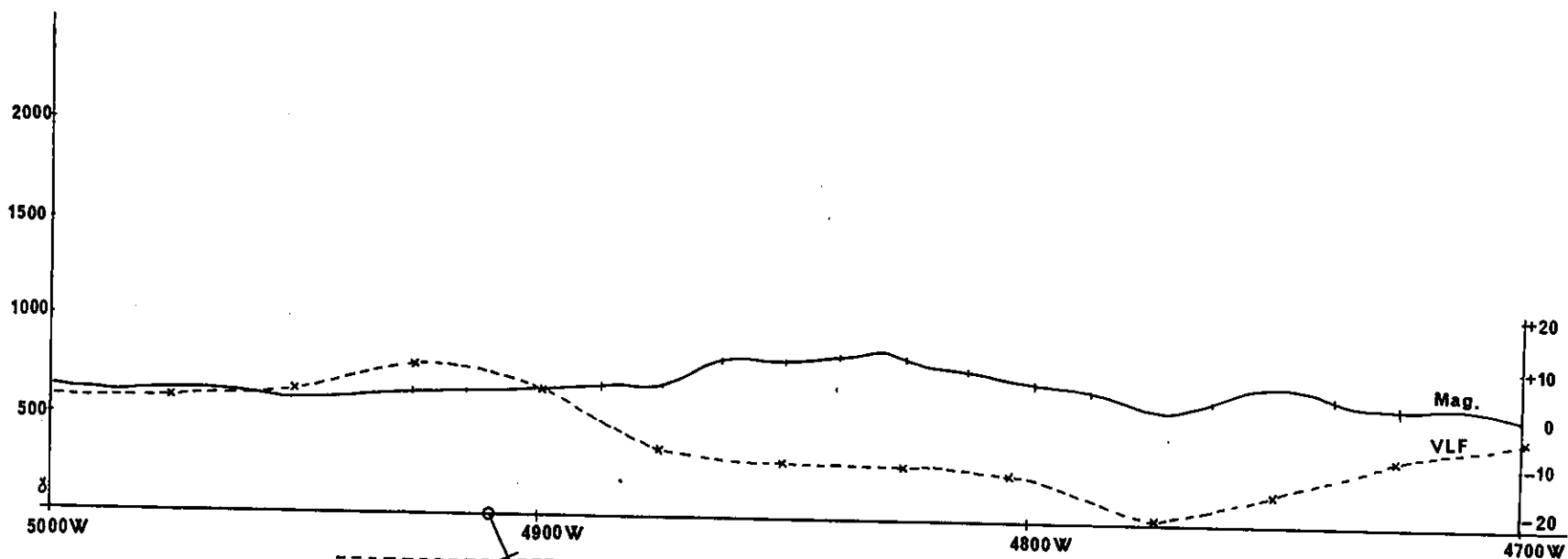
From	To	Description
38.70	51.70	Amphibole-biotite-qtz/feldspar schist. 41.85 - 42.20: 5-10% po as veins and impregnations. 48.55 - 48.70: 5-10% po as impregnations.
51.70	59.00	Similiar lithology as the previous, but the rock is getting more coarsegrained and the amount of qtz and feldspar increases. This is displayed by lighter bands rich in biotite and darker amphibolitic bands. The whole zone is cut by small pegmatites, and must be looked upon as a border zone between the upper amphibolites and the lower rocks of granitic composition.
59.00	59.75	Biotite-qtz-feldspar schist.
59.75	60.25	Amphibole-qtz/feldspar chlorite lithology.
60.25	64.90	Biotite-qtz-feldspar schist with scattered po.
64.90	68.20	Qtz-feldspar-biotite-amphibole gneiss with amphibolitic bands.
68.20	75.40	Qtz-feldspar gneiss with matics 5%. Red K-feldspar associated with red granitic/syenetic veins.

^{A/s} SULFIDMALM

DIAMOND DRILL RECORD

LOCATION: 11400N 4910W BEARING: East DIP: 65° HOLE NO: 46 SHEET NO: III
LOGGED BY: K.K. STARTED: 7/8-80 PROPERTY: South Pasvik
CASING: FINISHED: 9/8-80
CORE SIZE: TESTS (CORRECTED):

From	To	Description
		Core angles.
	11.35	56°
	15.70	62°
	18.60	72°
	21.90	71°
	24.80	85°
	28.95	84°
	30.60	82°
	34.40	77°
	39.40	71°
	41.70	90°
	45.95	81°
	49.60	77°
	51.55	76°
	55.90	74°
	59.85	73°
	61.50	74°
	65.60	80°
	68.60	65°
	72.90	57°
	75.15	53°



LEGEND

- Granite-granitic gneiss.
- Mica-amph/qtz-fsp gneiss.
- Mica-amph schist.
- Amphibolite/greenstone.
- Meta-gabbro.
- Peridotite.
- Serpentinite.

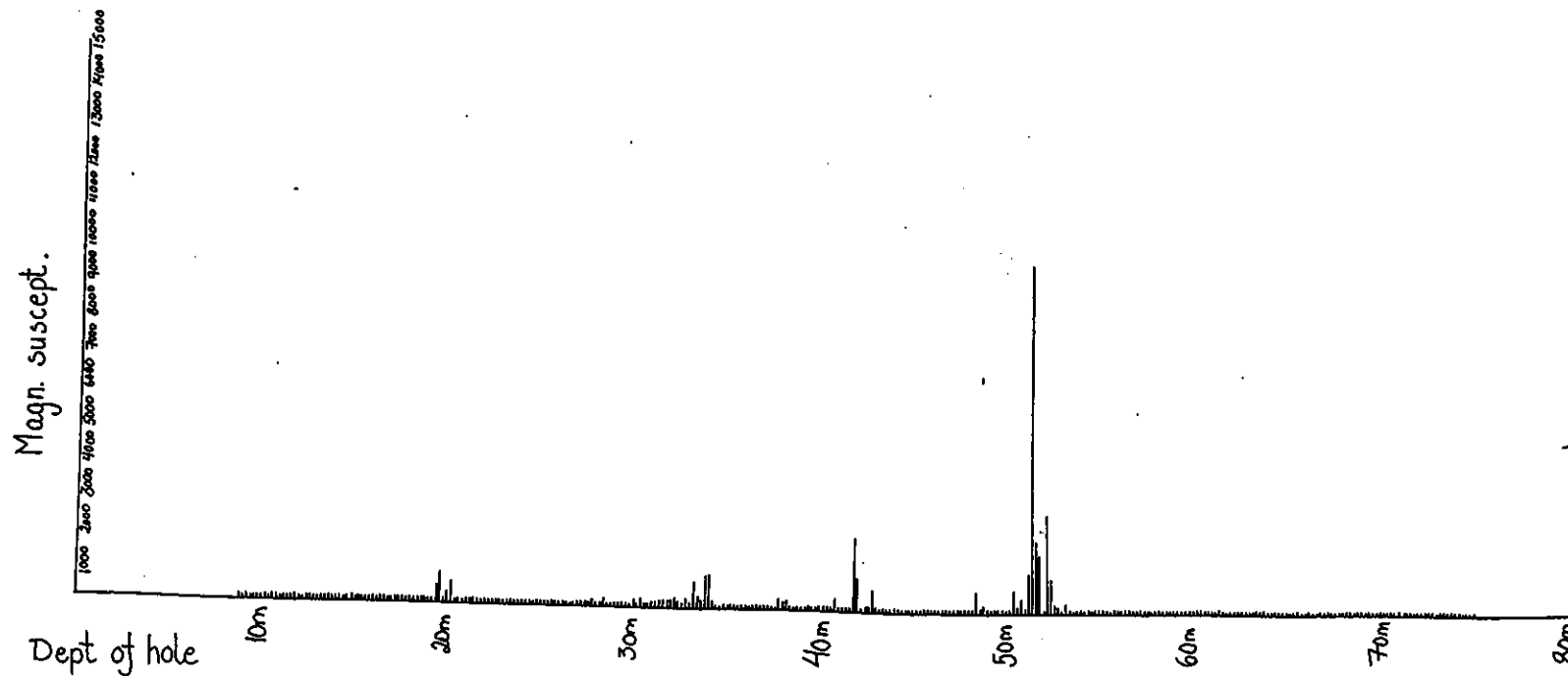
END OF HOLE 75.40m

DRILLHOLE 46, SOUTH PASVIK
11400N/4910W 65°E

SCALE	OBS.	
1:100	DRAW. -80	K.K.
	TRAC.	A.K.B.
	CHK.	

1/2 SULFIDMALM

MAP NO.



DDH-46 South Pasvik Magnetic susceptibility	SCALE	1-100
	OBS.	8-80
	DRAW.	8-80
	TRAC. KG	9-80
1/2 SULFIDMALM		CHK.
MAP NO.		