FOR FALCONBRIDGE NIKKELVERK A/S
A/S SULFIDMALM

Project 905-17

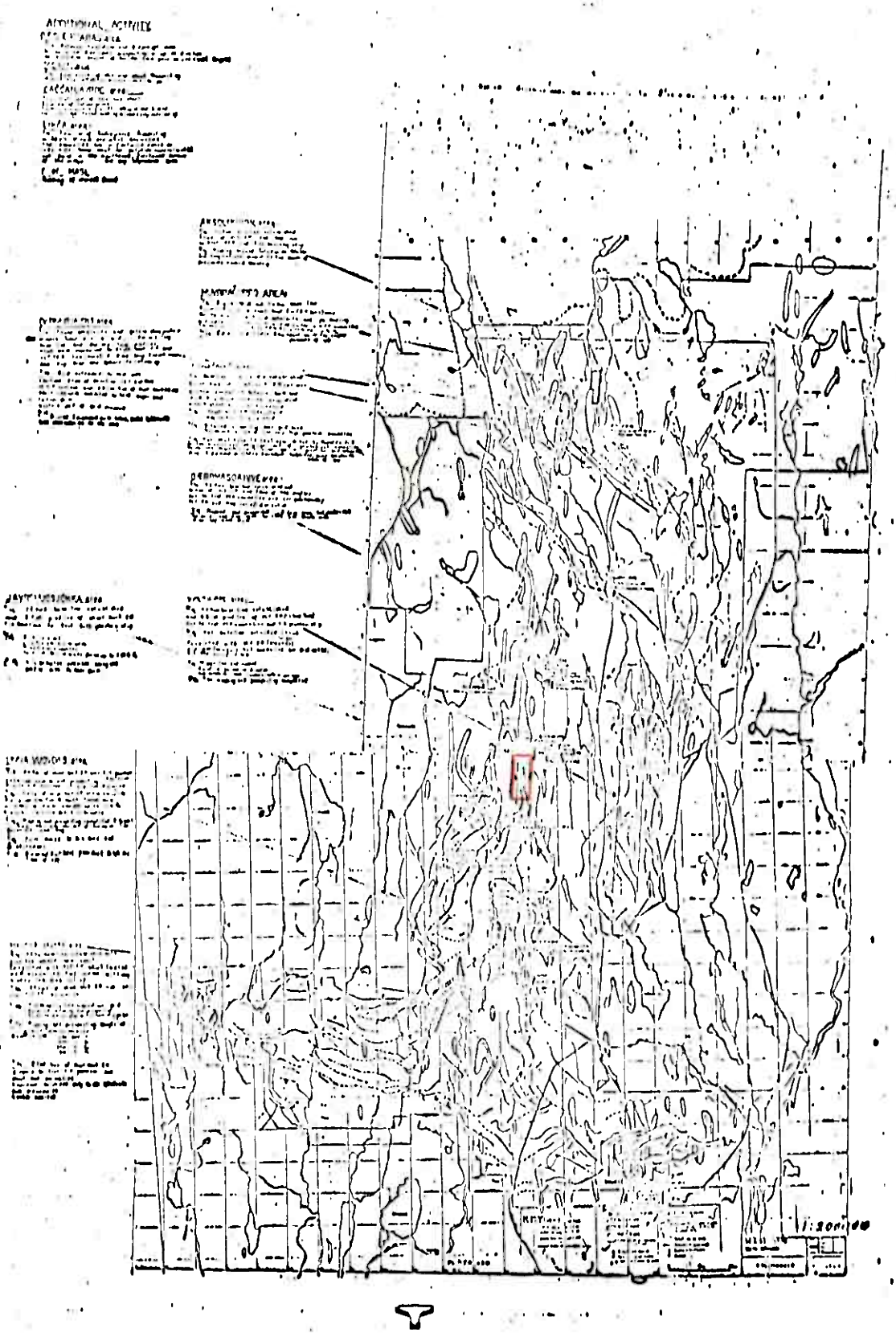
Ground surveys at Javrehuosjokka-S in 1976, Masi

By

E. Kreivi

K. Taipale

Report No. 408/76/17



Introduction (Fig.1)

The Javrehuosjokka-76 grid is like Unna Vuovdas grid a part of the 12 kms long main Salggangrid. It is situated at the northern end of a lake called Javrehuosjavrre. 1300 ms long baseline is running from the point 5000N/200W northwards, the linespacing of the 600 ms long profiles was 100 ms. The grid was laid out for testing, if there is any continuation to the geochemical anomalies on Javrehuosjokka-74 grid.

The grid area forms of a swampy, steep-sided river valley. Exposure is poor because of the swamps and drift.

The northernmost part of the grid was drilled in 1975 (diamond drill holes J-10 and J-11/1775 (Rep. 363/75/17). The grid area was mapped in detail and shallow till-samples were collected from all the profiles and two northernmost profiles were till-sampled by Partner-percussion drill. 5 profiles were measured by Shoot-Back-EM.

Geology by Kalle Taipale (Fig.2)

Petrography

1. Greywacke

Greywacke consists of amphibole, plagioclase, mica, chlorite and carbonate. It is rather foliated and medium grained. Carbonate occurs as thin veinlets and fracture fillings and it is probably of secondary origin, at least partly.

../2

2. Quartz banded iron ore

Oxide facies adjoining to sulphide facies is quite well exposed in this area. This rock type consists of quartzose rock intercalated with magnetic bands. Garnet seems to occur very abundantly in places. Quartz banded magnetite ore is without exeption very tightly minor folded.

3. Albite carbonate rock

This rock type occurs only in one outcrop on this area. It consists of albite and carbonate. The structural setting of albite-carbonate rock is obscure, whether it is stratiform or a cutting dyke. A metasomatic alteration of a volcanic rock could be possible.

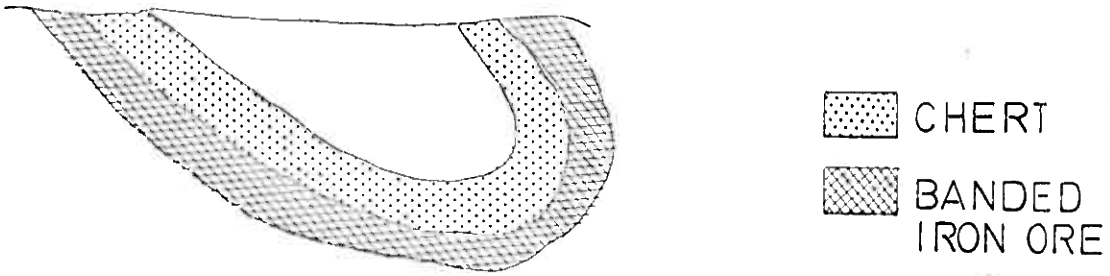
4. Greenstone, chert and graphite schist

These rock types have been described already in both Havggajavrre and Unna Vuovdas reports, and so they will not be described here anymore.

Structure

The relation of tectonic observations and the setting of rock types is a little peculiar. Both bedding and schistosity, often bedding plane schistosity, dip eastwards. On the western side of the area the order the rocks is following: banded iron ore, chert, and greenstone from W to E and on the eastern side the corresponding order is: greenstone, chert and banded iron ore.

This order could be explained with an asymmetrical fold like the drawing shows:



The contact zone of banded iron ore and greywacke in the northern part of the grid is mylonitized.

Block searching and till geochemistry

Block searching did not disclose anything special. Near the shoreline of lake Javrehuos was found a concentration of compact pyrrhotite boulders with some chalcopyrite. These boulders are very local indicating a sulphide/graphite bearing horizon being underneath.

The almost only geochemical Cu-anomalies came out at the northern end of the grid, where sampling took place with the Partner-sampler deeper than the ordinary sampling. Judging by these few examples the deep sampling seems to give better results than the ordinary sampling, at least in this special case, when the overburden was thick at the bottom of a river valley.

../4

Geophysics (Fig.3)

A Shoot-Back-survey with 50 ms coil-separation was done on five profiles: 5500N, 6000N, 6100N, 6200N and 6300N.

On every profile the curve is quite similar to each other starting about from 0-level at 150E, sinking very deep, until an amplitude value of 120 at around 150W. From this point the curve is slightly raising up again. The whole thing means that a conductive layer starts from the surface at around 150E and dips westwards and climbs up again after 400W. Some interferences are around 100W and still stronger around 300W.

Geochemistry (Fig.4)

The till-samples were collected with hand auger mostly from C-layers 50-60 ms deep with 25 ms sample-interval from the whole grid-area. Two profiles, 6200N and 6300N, were sampled by Partner-percussion drill. Because the area is very blocky it was found too difficult and too slow to use Partner in the whole grid. Also stream- and lake shore-sediment-samples were collected. Atom Energy Laboratory assayed the samples for Ni, Cu, Co, Zn and Ag.

the anomalous assays are very scattered in the whole area except on the profile 6300N, where the samples were collected from deeper layers (max 1.2 m) with Partner-drill. On that profile we got two distinctive anomalous areas between 400W-350W and 250W-0. In the first area Ni, Co and Zn are anomalous and in the second area Cu, Ni and Co.

The highest values in the whole area are:

Ni	390 ppm	at	6300N/375W
Cu	1220 ppm	at	6300N/100W
Co	325 ppm	at	6300N/100W
Zn	310 ppm	at	6300N/400W

The first anomaly is near a mineralized exposure and EM-anomaly on acid volcanic rock. The second anomaly lies on a rusty stream-valley, where it was found several, usually weathered exposures of po (+py)- mineralization which minor chalcopyrite brecciating graphite-bearing acid volcanics.

Conclusions

The field work in 1976 suggested that there is a possible syn-form, where the northernmost edge is in the Javrehuosjokka-74 grid (Rep. 336/74 and 363/75. At the base there seems to be mica-schists on which is the bed of quartz-banded ironformation and, in the the middle, a series of basic and acid volcanics. The acid volcanics are often graphitic rich and brecciated by iron-sulphides, mainly pyrrhotite with minor chalcopyrite. The geochemical and EM-anomalies are probably caused by weathered and po-mineralized graphitic beds.

The best analyzes in the hand specimens gave:

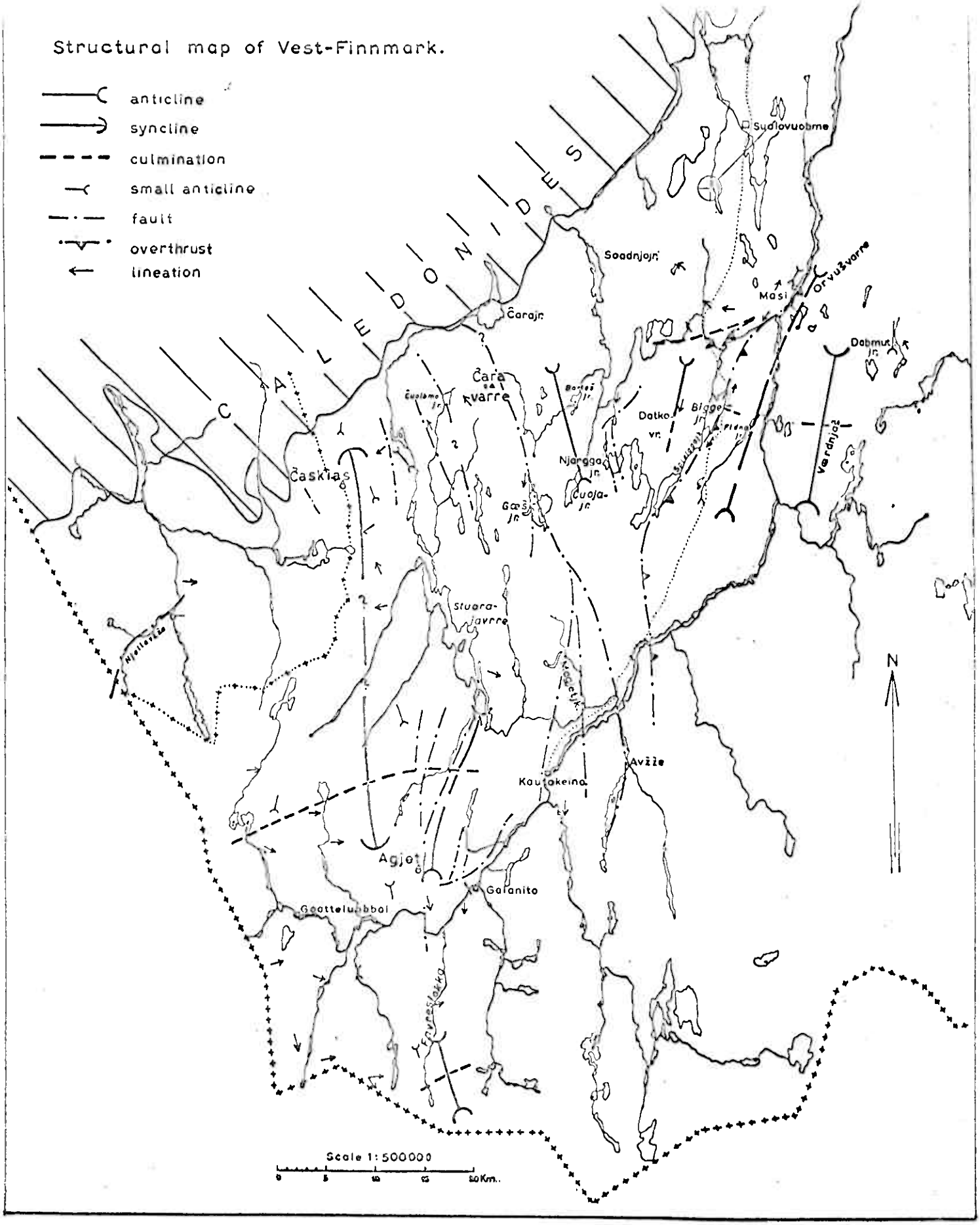
0.65% Cu in 128/KT/76

Labb nr. Masi 17/76 | Dato 5/7 1976 | Insendt av: E. Kleiv.

Nr.	Prøve-nr.	Lokalitet	Prøvetype	Beskr.	Ni	Cu	Bemerkn.
1	26/KT	Vann Vand.	grab		0,18	1,10	
	29/KT	— · —	— · —		0,02	0,58	
2	31/KT	— · —	— —		0,20	0,14	
3	45/KT	— · —	— · —		0,04	0,76	
4	47/KT	— · —	— · · —		0,14	0,82	
5	59a/KT	— · —	— · · —		0,01	0,88	
6	145/KT	— · —	— · —		0,08	0,38	
7	150b/KT	— · —	— · · —		0,09	1,00	
8	151c/KT	— · · —	— · —		0,12	0,24	
9	161/KT	— · · —	— · —		0,12	0,40	
10	162/KT	— · —	— · —		0,02	1,10	
11	137/KT	— · —	— · —		0,04	0,50	
12	151a/KT	— · —	— · —		0,01	0,60	
13	128/KT	Jan Mayen	— · · —		0,03	0,65	

Forbindelser:

Shipment no. 17/1


Structural map of Vest-Finnmark.
anticline
syncline
culmination
small anticline
fault
overthrust
lineation
CALEDONIDES
Sudlovuobme
Soadnjoj
Masi
Orvuzvarre
Carajr
Cara
Cuolbmo jr.
Bottes jr.
Datko vr.
Biggej
Dabmut jr.
Njargga jr.
Cuoja jr.
Gæs jr.
Vardnjoj
Caskias
Stuora-javre
Njallotsa
Kautokeino
Avzie
Agjot
Galanito
Goattelubbal
Scale 1:500000
0 5 10 15 20 Km.
N

GEOLOGY

Skilleblad nr. 1067

R.A.

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

400 W 300 W 200 W 100 W 0 100E 200 E

6300 N
6200 N
6100 N
6000 N
5900 N
5800 N
5700 N
5600 N
5500 N
5400 N
5300 N

N mag

KEY

- SHOOTBACK AMPLITUDE
- 3 ACID VOLCANICS, CHERT
- 9 GRAPHITIC SCHIST
- 10 ALBITE-CARBONATEROCK
- GREEN SCHIST, -STONE
- 15 MICA SCHIST, GREYWACKE
- 5 SULPHIDES IN BEDROCK
- SULPHIDES IN BLOCK
- N N N SHEARZONE MYLONITE
- R GOSSAN
- C VLF CROSS OVER
- QUARTZ BANDED MAGNETI ORE

JAVREHUOSJOKKA MASI 1776
GEOLOGY

⅛ SULFIDMALM

SCALE 1:2000

OBS KT JUNE
DRAW KT JULY
TRAC KA. 3 –
CHK.

MAP NO. 408/76/17

MAP SHEET

Fig. 2 Sheet 1.

GEOLOGY

JAVREHUOSJOKKA MASI, 1776

GEOPHYSICS

300W 200W 100W 0 100E 200E 300E

5500N

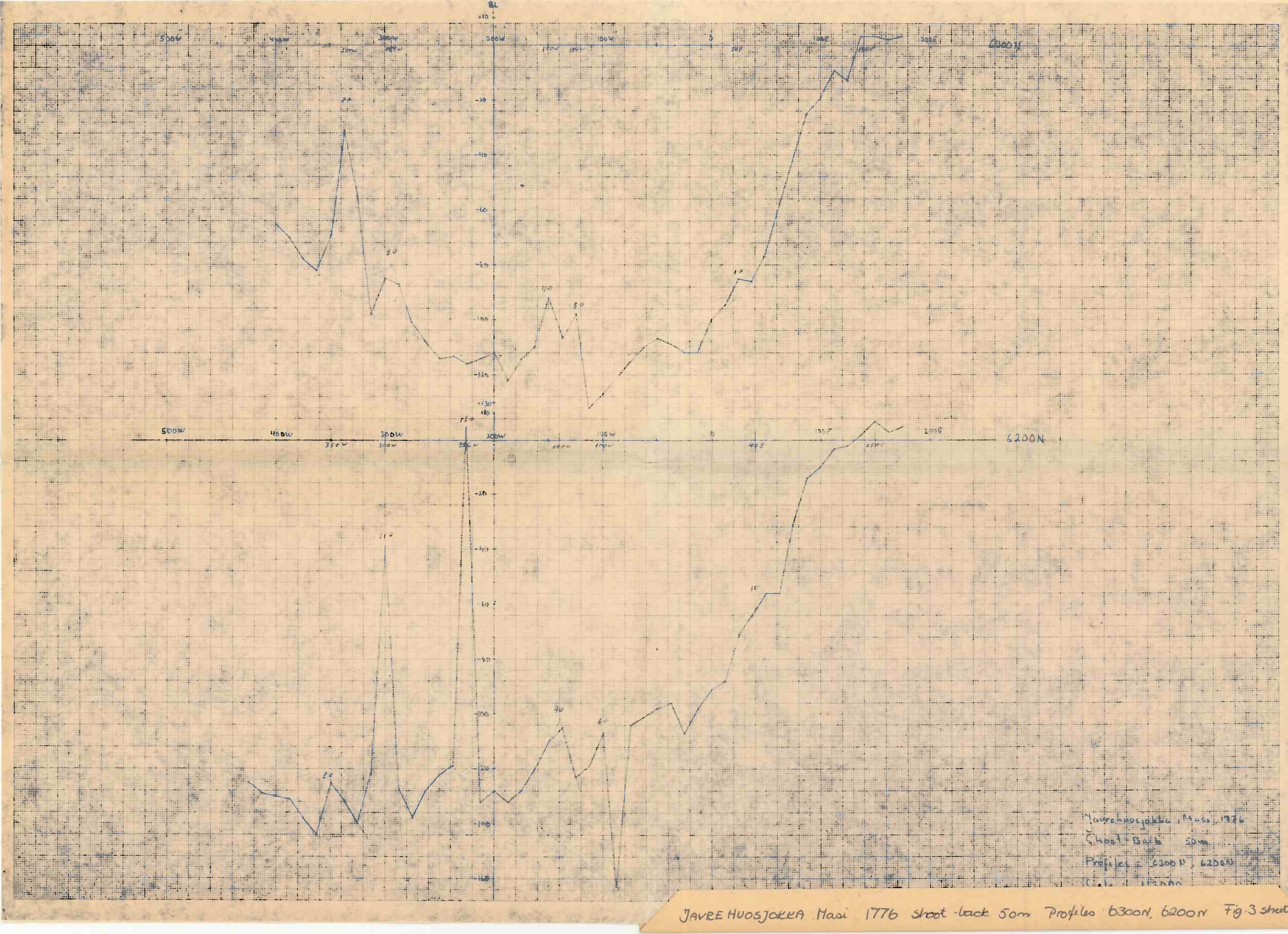
-20 -40 -60 -80 -100 -120 -140

JAVREHUOSJOKKA, Masi 1776 shoot-back 50m Profile 5500N

Fig. 3 sheet 1

Javrehuosjokka, Masi 1776
Shoot-back 50m
Profiles: 6100N, 6000N
Scale 1:2500

JAVRE HUOSJOKKA, Masi 1776 shoot-back 50m Profiles: 6100N, 6000N Fig. 3 Sheet 2



Javrehuosjokka, Maasi, 1776
Shoot-back 50m
Profiles: 6300 N, 6200N
Scale 1:2000

JAVREHUOSJOKKA Maasi 1776 shoot-back 50m Profiles 6300N, 6200N Fig 3 sheet 3

GEOCHEMISTRY

A.s Fr. vogt 3000. A1. 8 gl. 1971. Sentrum Trykkeri.

J-11/1775

6300 N

6200 N

6100 N

6000 N

5900 N

5800 N

5700 N

5600 N

5500 N

5400 N

5300 N

5200 N

5100 N

5000 N

Lake

Till sample collected by hand auger

2379

Till sample collected by Partner-drill

2816

Stream sediment sample

2289

	Ni ppm	Cu ppm	Co ppm
Possible 90-95 %	50 - 70	90-120	19-25
Probable 95-98 %	70 - 90	120-170	25-37
Anomalous 98-100 %	90-200	170-300	37-70
	> 200	>300	>70

	Zn ppm	Pb ppm	Ag ppm x 10⁻¹
	65-95	37-41	2
	95-127	41-48	3
	127-250	48-100	4-7
	> 250	> 100	>7

Nmag

JAVREHUOSJOKKA, MASI 1776

TILL - SAMPLING

Samples' locations, Assays

200 E % SULFIDMALM

SCALE		
1:2000	OBS. MRAO	6-76
	DRAW. MP	6-76
	TRAC. MP	6-76
	CHK.	

MAP NO. 408/76/17

400 W 300 W 200 W 100 W 0 100 E

JAVREHUOSJOKKA, Masi 1776 Till-sampling Samples locations, Assays. Fig 4 sheet 1