FOR FALCONBRIDGE NIKKELVERK A/S

A/S SULFIDMALM

PROJECT 905-17

RECONNAISSANCE GEOCHEMICAL SAMPLING IN MASI-AREA IN 1974.

BY

ERKKI KREIVI

Report No. 341/74/11

1. Introduction

This report is concerning about the reconnaissance till-sampling and about the sampling stream-sediments and lake-sediments in the summer-season in 1974. The area, which was covered, was a little larger in the northern part than the area, which was covered by NCV:s helicopter -geophysics in 1974. In this work we used 500 ms' linespacing and 100 ms' sample-interval. The profiles ran in EW-direction. Whenever we hit a stream or lake on a profile, we collected a sample of the sediments from the shore under the water-level.

During the season we collected 7600 samples on 660 line kilometres. The used base-camp was situating in Suolovuobme by Alta-Kautokeino highway, 51 kilometres south of Alta. For transportation we used motor-cross-mopeds to the profiles and back. The areas were devided to two mens blocks, so that each profile in a block was short enough for one man to collect samples on the whole profile in one day. One of the fellows drove his moped to the end of his profile and the other drove to the end of his profile on the other side of the block. In the evening they changed the mopeds and drove to the camp. In the whole programme we drove by our five mopeds about 7000 kms mainly on roadless swamps and forests. The furthermost areas were more than 30 kms from the camp. We found out that even then the work was faster and it was more convinient to sleep in the base-camp every night.

Samples were collected from C-layers about 40 cms deep in average. In the sampling we used a light Finnish postauger. The usual amount was 50-60 samples a day per one man, the maximum was 120 samples.

The samples were packed and sent to Vancouver for assaying for Ni, Cu, Co, Zn, Pb, Ag. Every fifth of the samples were analyzed spectrographically for 30 elements in Atomenergy in Norway and in Geologinen Tutkimuslaitos in Finland. Vhe results will be published in an own report.

The work was done in three and half months by 3 or 4 men in a time. The leader of the group was the writer, assistancing by:

Martti Puhakka	Reijo Pekkala
Terje Storvik	Jorma Passi
Jim Zwickey	Jouni Kyrö
Esa Korkala	Geir Blixgård
Paavo Korkala	Torgeir Lunde

2. Results

On the enclosed geochemical maps, the black circles mean a stream- or lake-sediment sample and the crosses till-sample-locations. Except several scattered high values of the assayed elements, we can pick up many larger anomaly units, which all are associated with EM-anomalies:

Area between Aksojavrre and Silesjavrre

The area is a wide one and seems to cover the highest EM-anomalous area. Anomalous elements are Ni, Cu, Co and Zn. One sample has high Pb-value too. The maximum values are (ppm):

Ni	Cu	Co	Zn	Pb
191	422	58	776	357

Several mineralized blocks and some mineralized outcrops were found in the area. Sulphides in them are mainly iron-sulphides.

Area 4 km N of Suolovuobme

The anomaly is very distinctive and uniform one with anomalous Ni, Cu, Co and Zn. The maximum values are:

Ni	Cu	Co	Zn
202	292	105	528

A mineralized outcrop with iron-sulphides was found in the area.

Area W-side of Silesjavrre

The anomalous samples of this area are collected from a stream. The anomalous elements are mainly Ni, Co and Zn. Some samples are anomalous also of copper.

Maximum values are:

Ni	Cu	Co	Zn
522	201	168	502

One and half kilometres to the south of that one stream-sediment sample has the values of:

Ni	Cu	Co	Zn
602	604	680	526

Area NE of Salgganjokka

The anomaly is obviously on the continuation of Salgganjokka-sulphide-rich horizon. The anomalous elements are Ni and Zn with some high Cu- and Co-values.

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The maximum values are:

Ni	Cu	Co	Zn
379	237	33	546

Two mineralized outcrops of iron-sulphides were found in the area.

Area between two Suolojavrres

The anomalous area is quite wide one. EM-anomalies here are very strong. The anomalous elements are Ni, Cu, Co, Ag and one value of Pb.

The maximum values are:

Ni	Cu	Co	Zn	Pb	Ag
215	437	107	125	83	0,4

Area SW of Aksojavrre

Zn and Pb anomaly.

The maximum values are:

Ni	Co	Zn	Pb
148	55	142	146

Area 4 kms W of Silesjavrre

This is pure Zn-anomalous area near Caledonian rocks. Helicopter EM-survey did not cover this part.

The maximum value is:

Zn
709

Area W of the southernmost Suolojavrre

These anomalies are the continuations of the anomalies between the two Suolojavrres. The area is anomalous of Ni, Cu, Co and Ag with some high Zn-values.

The maximum values are:

Ni	Cu	Co	Zn	Ag
251	342	93	103	0,4

Area one kilometre E of Salgganjavrre

The area is anomalous mainly of Ni, Co and Zn with one anomalous Cu-value.

The maximum values are:

Ni	Cu	Co	Zn
281	218	81	460

Area NE of Havggajavrre, 7 kms S of Salgganjavrre

The area is anomalous of Ni, Cu, Co and Zn. The anomaly seems to be very narrow, but 2 kms long.

The maximum values are:

Ni	Cu	Co	Zn
232	290	43	327

Very rusty moraine was found in this region.

Ingajokka-area, 4-5 kms W of Masi

The area is anomalous of Ni, Cu, Co, Zn and Ag. The anomalous values are spread in a wide area, but the highest values seem to concentrate near the stream called Njakkalavzejokka, the stream which is flowing in NS-direction in the area.

The maximum values are:

Ni	Cu	Co	Zn	Ag
563	1050	470	450	0,8

Several mineralized outcrops have been found in the area, mainly of iron-sulphides with traces of chalcopyrite.

3. Conclusions

Like it was mentioned before all these anomalies are associated with helicopter-EM-anomalies. Several of the scattered anomalous values are associated with them too, Because of the big line-spacing (500 ms) and big sample-interval (100 ms), it is worth to pick up also every scattered possible anomalous value and check the source of it. Because of the amount of anomalous values, it is not possible to check every of them in one season. We shall concentrate in the first hand to these, which have the highest values and which seem to build large units.

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A/S SULFIDMALM

INTER-OFFICE MEMORANDUM

Date: 2nd September, 1975

To: Falconbridge Nikkelverk A/S

cc: W. D. Harrison, H. T. Berry, R. B. Band, E. Kreivi

From: J. B. Gammon ✓

Subject:

905-17m. Till sampling Masi. Report No. 341/74/17.

Please find enclosed Kreivi's account of reconnaissance till sampling in the Masi region. Anomalous areas are being followed up as part of the 1975 summer programme.

MASI 17

Reconnaissance till sampling 1974

Samples location

% SULFIDMALM

	SCALE
ORI. EH/HP	74/74
DRAW HS	3/75
TRAC. HS	3/75
CHK. E.K.	5/75

MAP NO

3.41-74-17

MAP SHEET

NORD

Saiggomjavre

Sub oavvre

Stasjavre

Lavasj

Lomtsavgge

(Alttaelva)

21

22

MASI 17

Reconnaissance till-sampling 1974

sample locations

% SULFIDMALM

MAP NO.	341 - 74 - 17
MAP SHEET	
SCALE	1:20000
OBS. EK/ATP	7/9 - 74
DRAW.	
TRAC. HA	3 - 75
CHK. EK	5 - 75

Sodnajavrre

Ruoddojavrre

Saivvajavvre

Salgojavvre

Masijokka

Javrejokka

Suolojavrre

Kautokeinoelva

MASI 17

RECONNAISSANCE Till Sampling 1974

Ni Cu Co

¼ SULFIDMALM

MAP NO. 361 74 17

MAP SHEET 18 SE 18 SW

SCALE 1:10 000

CHAIN HÄFTE 8.-76

TRÄC HÄFTE 5.-76

CHK HÄFTE 8.-76

Probable 90-95%

Possible 95-98%

Ni ppm: 50-70 | 70-90 | 90-120 | > 120

Cu ppm: 90-120 | 120-170 | 170-300 | > 300

Co ppm: 19-25 | 25-37 | 37-70 | > 70

NORD

0 1 2 3 km

Saiggonjavrre

Ruoddolavrre

Suovajavrre

Soanajavrre

Kaulikenoaivi

Salvvajavrre

Masljokka

MASI 17

RECONNAISSANCE TILL SAMPLING 197?

Zn Pb, Ag

SULFIDMALM

SCALE 1:20.000

DRG. 1974 7 9 74

" MS 6 75

" " "

MAP NO. 3 V1 - 74 - 17

1834 II, 1831 I, 1934 III, 1933 IV

MAP SHEET

Salgganjavrre

Ruoddojavrre

Duoltbojavrre

Sodnjavrre

Salvvajavrre

Masijokka

	Ni	Cu	Co
	ppm	ppm	ppm
Possible 50-95 %	50 - 70	90-120	19-2
Probable 95-98 %	70 - 90	120-170	26-37
Anomalous 98-100 %	90-200	170-300	37-70
	≥ 200	>300	>70

MASI 17

Reconnaissance till-sampling 1974

Ni Cu Co

% SULFIDMALM

SCALE	OBS. EK	7-9/74
	DRAW. MS	8-75
	TRAC. MS	5-75
	CHK. EK	8-75

MAP NO. 341 - 74 - 17

MAP SHEET

Aksojavrre

Raisoljavret

Suotojavrre

Salgonjavrre

Lihtolajavrre

	Zn ppm	Pb ppm	Ag ppm ×10⁻⁴
Possible 90-95%	65-95	37-41	2
Probable 95-98%	95-127	41-48	3
Anomalous 98-100%	127-250	48-100	4-7
	>250	>100	>7

NORD

MASI 17

Reconnaissance till sampling 1974

Zn, Pb, Ag

¼ SULFIDMALM

SCALE 1:20000

OBS.	EE/MP	7-9-74
DRAW.	MS	5-75
TRAC.	"	5-75
CHK.	EK	5 75

MAP NO. 341-74-17

MAP SHEET B34 E N34 E

MASI 17

Reconnaissance till sampling 1974

Zn, Pb, Ag

SULFIDMALM

SCALE	1:20000	DRG.	EE/WD 7-74
DRAWN	MS 5-75		
TRAC.	" 5-75		
CHK.	EK 5-75		

MAP NO. 34J-7L-17

MAP SHEET 80.1 E NE1/4

Zn ppm: 90–95% Probable; 95–127; 127–250; 250–500; >500

Pb ppm: 65–95; 95–127; 127–250; 250–500; >500

Ag ppm 10^{-4}: 37–41; 41–48; 48–110; >110

Anomalous 10–90%

NORD

Stråsjövatn

Laitaure

Rotsidan

Ankarvare

Laitaure