Bergvesenet rapport nr	Intern Journal nr	Internt arkiv nr	Rapport lokalisering	Gradering
BV 456			Trondheim	**Fortrolig**
Kommer fra ..arkiv	**Ekstern rapport nr**	**Oversendt fra**	**Fortrolig pga**	**Fortrolig fra dato:**
Falconbridge	Sul 190-72-15	Sulfidmalm A/S	Utmål	

Tittel

A gravity survey of the Ertelien nickelferious norite area 1972

Forfatter	Dato	Bedrift
T Andresen	1972	Sulfidmalm A/S

Kommune	Fylke	Bergdistrikt	1: 50 000 kartblad	1: 250 000 kartblad
Ringerike	Buskerud	Østlandske	18153	Hamar

Fagområde	Dokument type	Forekomster
Geofysikk	Rapport	Ertelien
Råstofftype	**Emneord**	
Malm/metall	Ni Cu	

Sammendrag

FOR FALCONBRIDGE NIKKELVERK A/S

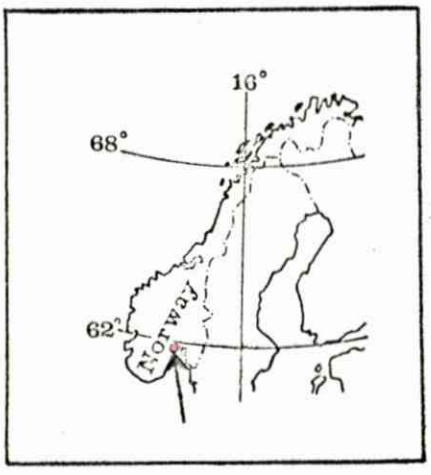
A/S SULFIDMALM

PROJECT 905-15

A GRAVITY SURVEY OF THE ERTELIEN NICKELFEROUS NORITE AREA 1972.

by

T. Andresen



A/S SULFIDMALM

INTER-OFFICE MEMORANDUM

Date: 2nd November, 1972

To: Falconbridge Nikkelverk A/S

cc: A. M. Clarke, D. R. Lochhead, R. Hovland

From: J. B. Gammon

Subject:

905-15 Norsk Hydro Joint Venture - Ringerike area.

Please find enclosed a translation of Andresen's progress report on geophysics over the Ertelien norite.

J. B. Gammon

MOTTATT 6. XI. 72			BESV.	ARK.
ADM. DIR.			FORSKN./UTV.	
TEKNISK DIR.			EL. LYSEAVD.	
PERSONALDIR.			M.L. AVD.	
ADM. SJEF			R. & SM. AVD.	
INNKJ. AVD.			EL.TEKN. AVD.	
REGNSK. AVD.			INSTR. AVD.	
INNKJ. AVD.			MEK. AVD.	
JET.			PROSJ. AVD	
ORD.				SVARDATO

Mixon.
Dette kan vel gi grunnlag for mye spekulasjoner.

Summary of progress on an evaluation of the Ertelien gravity anomaly.

This report contains the result of field work carried out in 1970, 1971 and 1972. The instrument that was used, was a Worden Master Gravimeter. The calculations concerning the result were carried out during the winter of 1971 and the spring of 1972. The regional gradient has been found by use of a graphical method. After evaluating the gravimetric data, I have worked out a preliminary residual map, which is attached to this report. The map is based on 60 evenly spaced data points. The terrain correction has been carried out using Hammer's method to zone J, ie. out to approx. 7200 metres. The model is based on the mothod of Talwani. The computerprogramme has been borrowed from the Jordskjelvstasjonen at Bergen.

It is apparent from the residual map that there is an anomaly north of the main mine area and one over the mine itself. I have interpreted this as two plugs, which have been intruded. The norite plug in the mine area is exposed, and here it is possible to see the contact between the norite and the surrounding gneisses. The anomaly north of this area, I have assumed to be caused by a norite plug, which does not reach the surface and is therefore not observable. I have no geological indications, which indicate this plug from the surface. The extent of the southernmost plug is somewhat larger than the outcrops of it at the surface. The assumed extent after the preliminary model measurements is somewhat to the south of Asterudtjern. The depth of the two plugs is calculated to approx. 400 metres according to the model. The depth must of necessity be a minimum of 400 metres since a shaft has been sunk to this depth in the norite.

With reference to the model described above, it should be remarked that an alternative interpretation is more possible based on the available geological and geophysical data. A large extent of gabbro plugs in the Valeren area together with the main depth that the calculated models gives, could indicate that the two intrusive plugs are projections up from a larger gabbro massive. Regional measurements by Ivar Ramberg support this theory. I am working now with the theory, and it means that one has to construct a new data programme in connection with this model.

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To date the model has been based on a one plug three layer model and on a two plug three layer model. It will now be necessary to take into consideration a gabbro massive under the two plugs. This further calculation based on data will be continued with to Christmas time. Hopefully by January the final model calculations should be completed.

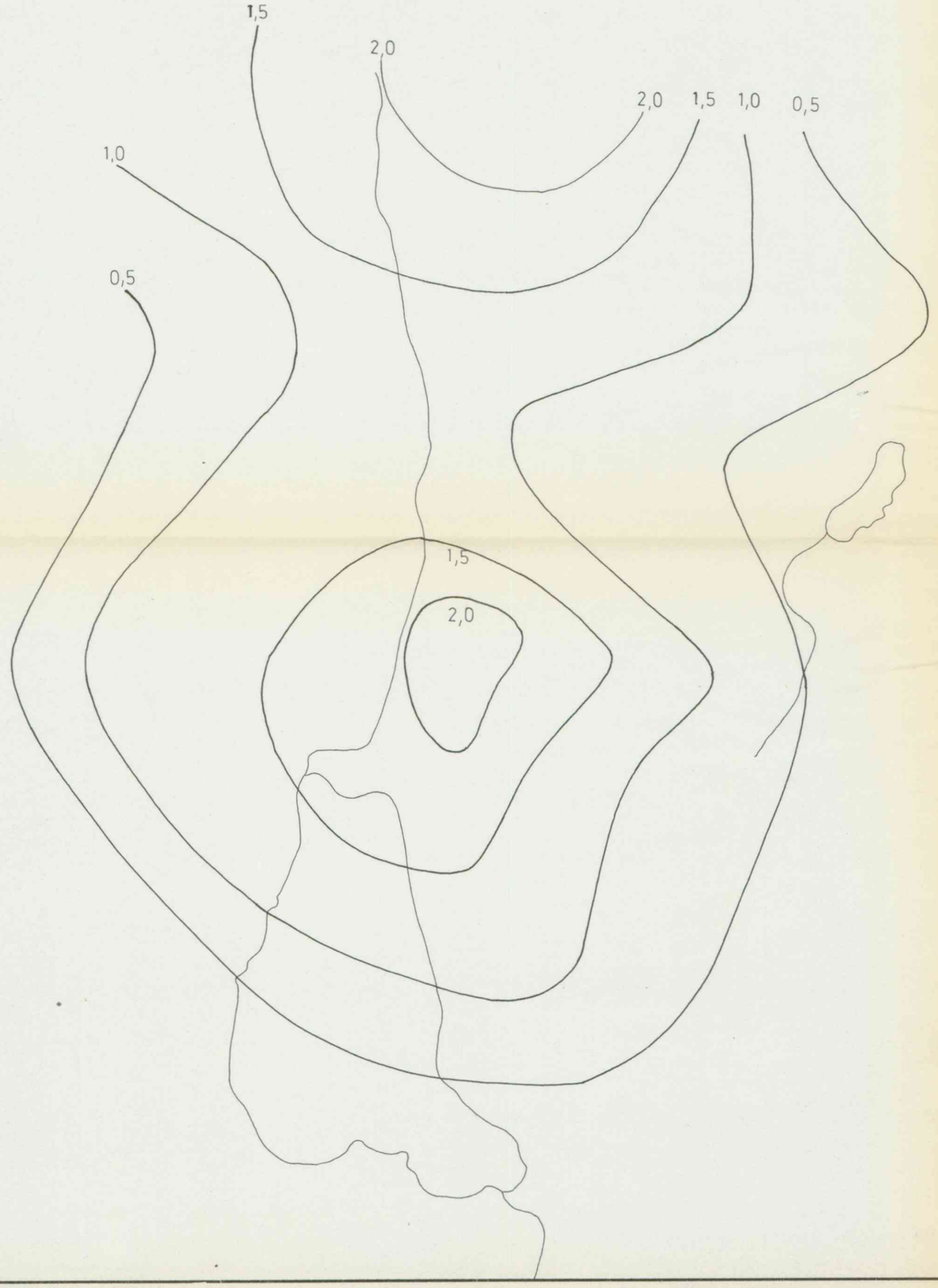
The largest uncertainty concerning the measurement lies in finding the regional gradient. According to Ivar Ramberg, the Ertelien area lies in a large regional anomaly. This regional anomaly distorts the picture of the local anomalies. Together with Ramberg I have drawn the conclusion that the regional anomaly is based on the earlier mentioned gabbro massive in depth, which after all probability sends up a whole series of satellite intrusives.

The results of the calculations of the material this summer showed that in all probability there exists a hitherto unknown intrusive plug at depth, and it will thus be necessary to take some additional regional measurements. These will be carried out in the summer and have not been included in the material considered to date.

The size and shape of the intrusive plug must be expected to change somewhat when additional information is obtained on the extent of the regional gradient. The order of magnitude of the anomaly should nevertheless be clear at approx. 2.5 milligal.

When one compares the geophysical data with the possibilities I mentioned in an earlier report, that the plug has a greater extent to the south, there seems to be an agreement. The extent however is not much further south than the south end of Åsterudtjern.

By choosing a strike direction for the regional gradient, it has been possible to make variations in the size of the anomaly. These vary from 2.5 milligals when the strike has a north south direction to a little bit over 2 milligals for a north easterly strike direction. The north easterly strike direction has been used in the construction of the attached map as being the most possible.



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Contour interval 0,5 milligal.

Gravity Survey of the ERTELI Norite. Residual anomaly map	SCALE 1:5000	OBS. TA	1971
		DRAW. TA	1972
		TRAC. BL	1972
		CHK. JBG	1972
⅛ SULFIDMALM	MAP NO.		
	MAP SHEET		

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