



Bergvesenet

Postboks 3021, 7002 Trondheim

Rapportarkivet

Bergvesenet rapport nr BV 3683	Intern Journal nr	Internt arkiv nr	Rapport lokalisering Trondheim	Gradering
Kommer fra ..arkiv	Ekstern rapport nr	Oversendt fra	Fortrolig pga	Fortrolig fra dato:
Tittel The Råna Nickel ore deposit (Bruvannsfeltet) near Narvik, Northern Norway				
Forfatter Bjørlykke, Harald		Dato 19.09 1956	Bedrift	
Kommune Ballangen	Fylke Nordland	Bergdistrikt Nordlandske	1: 50 000 kartblad 13311	1: 250 000 kartblad
Fagområde Geologi	Dokument type		Forekomster	
Råstofftype Malm/metall	Emneord Ni			
Sammendrag				

40.0/80

HB/EH 19/9.56.

The Råna Nickel ore deposits (Bruvannsfeltet) near Narvik, Northern Norway.

Situation.

The Råna Nickel deposits are situated in an area about 400 - 500 m above the sea level, about 2,5 km from the sea shore and the main road, about 35 km south of the town Narvik.

The distance from the Bjerknessen pyrite mine is about 6 km. The ore reserves of this mine are supposed to be exhausted in 4 years.

Geology.

The deposits occur in peridotite and belong to the magmatic type of the sulphidic nickel ores, which are well known from descriptions of Norwegian geologists especially J. H. L. Vogt.

The gabbroic rocks form an area of 67 sq.km., and are unbedded in kambre-silurian sediments altered to mica shists and marbles.

The Bruvann ore occurs in a pipe-shaped peridotite body surrounded by noritic rock, but also marginal deposits of nickel ore, similar to the Sudbury ore, occur at the border of the norite near the underlying sediment rocks.

The ore.

The ore consists of dissemination in the peridotite of sulphidic minerals, chiefly pyrrhotite and pentlandite with only small amounts of chalcopyrite. The sulphides are especially rich in nickel and carry about 11 % nickel in pure sulphides. Flotation tests have produced a sulphidic concentrate with up to 9 % Ni with about 25 copper to 100 nickel by weight.

In technical scale it should be possible to produce a concentrate with 7 - 8 % Ni.

The total nickel content of the ore hitherto analysed is rather low, up to 1,2 % Ni and with an average of 0,55 % Ni. Of this content, however, 0,1 % is bound in the olivin mineral, giving 0,45 % sulphidic nickel.

Previous prospecting and development work.

- 1918 Bjerkness mine. (Then a German-owned company).
 1937 Raffinierungsstab A/S, Trø, Sweden.
 1939 Nordisches Erzkonzentrat, (German) by Fangel & Co., Oslo.
 1940-45 Erzkonzentrationgesellschaft, Berlin, by Fangel & Co., Oslo.
 From 1952 by A/S Norsk Bergverk.

The most extensive investigations were carried out by the Germans during the last war. This work included diamond drilling and driving of a tunnel which penetrated the ore zone about 100 m below the outcrop. The tunnel and the crosscuts had a length of 693 m. In 1945 the German geologist Horvath calculated the reserves of proved ore in the deposit to 4 mill. tons averaging $0,5 = 0,55\%$ Ni.

The German investigations were chiefly restricted to the level of the tunnel. The ore area in this level has been given in the map 1.

The ore calculation given by Horvath is based on the theory that the ore bed continues upwards to the outcrop and downwards to the ± 100 level with the same horizontal ore area.

As the ore is built up of "Schistose" with very varying nickel content, the German ore reserve calculations can not be considered as proved ore, and Norsk Bergverk has therefore worked out a plan for further investigations of the ore body. In 1945 the Norwegian Geophysical Prospecting Institute (Geofysisk Institutt) carried out some electromagnetic investigations in the area, and was able to find very small indications of the known ore body. These indications contained material outside the zone of the previously known ore.

The first investigation work carried out by A/S Norsk Bergverk in 1951 included geological mapping of the area and some diamond drilling in order to investigate the geophysical indications outside the known ore and to calculate the dip of the ore body towards the depth.

7 diamond drill holes in a length of 1155 m were drilled.

The investigation of the geophysical indications by the diamond drill holes D₅ and D₆ gave a negative result.

Of other holes which were drilled near the foot wall of the ore in order to determine the dip of the ore body, only one hole C₃ drilled through the ore and assays of the drill cover from these holes showed from 101 - 127 m. an average of 0,63 % Ni, and farther from 127 - 150 an average of 0,56 % Ni.

The assays on nickel were carried out partly by our laboratory at Söve, and some control assays were made by Falconbridge Nikkelverk i Kristiansand..

Geological mapping of the area have been carried out in the summer months.

The further investigations planned by A/S Norsk Bergverk will be concentrated in the area from the tunnel level to 100 m. below this and are supposed to give a proven ore reserve of about 2 mill. tons.

A diamond drilling will be very difficult from the surface the plan includes the driving of a 155 m. 45° shaft down to level + 100 and diamond-drilling from crosscuts in this level. The ore body below this level will also be investigated by some diamond-drill holes and according to the results hethersto and the mode of formations of this ore it is probable that the content of nickel in the ore will increase with the depth.

The results of the investigations hethersto has been given in map 2, 9 vertical sections with the diamond drill holes and tables of the assays.

Harald Björlykke

Enclosed:

- 1 Map of the area
- 2 Map 1 of the ore area in the tunnel level
- 3 Map 2 of Diamond drill holes
- 4 9 vertical sections showing the diamond drill holes.