



# Bergvesenet

Postboks 3021, N-7441 Trondheim

## Rapportarkivet

|                        |                   |                  |                      |           |
|------------------------|-------------------|------------------|----------------------|-----------|
| Bergvesenet rapport nr | Intern Journal nr | Internt arkiv nr | Rapport lokalisering | Gradering |
| 5360                   |                   |                  |                      |           |

|                    |                    |               |               |                     |
|--------------------|--------------------|---------------|---------------|---------------------|
| Kommer fra ..arkiv | Ekstern rapport nr | Oversendt fra | Fortrolig pga | Fortrolig fra dato: |
| Falconbridge       |                    |               |               |                     |

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| Tittel           |
| THE HAALAND AREA |

|             |       |      |  |
|-------------|-------|------|--|
| Forfatter   | Dato  | Ar   | Bedrift (oppdragsgiver og/eller oppdragstaker) |
| Frank Nixon | 12.03 | 1969 | Sulfidmalm AS                                  |

|         |            |              |                    |                     |
|---------|------------|--------------|--------------------|---------------------|
| Kommune | Fylke      | Bergdistrikt | 1: 50 000 kartblad | 1: 250 000 kartblad |
| Iveland | Aust-Agder | Østlandske   | 15123              | Mandal              |

|  |               |   |
|--|---------------|---|
| Fagområde                                  | Dokument type | Forekomster (forekomst, gruvefelt, undersøkelsesfelt) |
| Geologi<br>Metallurgi<br>Kjemiske analyser |               | Håland  |

|               |             |
|---------------|-------------|
| Råstoffgruppe | Råstofftype |
| Malm/metall   | Ni<br>Cu    |

|   |
|---|
| Sammendrag, innholdsfortegnelse eller innholdsbeskrivelse |
|   |

## THE HAALAND AREA (F.N.)

The Haaland area is situated about 1 km to the ESE of the Mölland massif (compare Geol. Map Mölland Area, scale 1:5'000).

The area was mapped in scale 1:15'000 by the writer in 1967. Detailed geological mapping (1:5'000) by the writer and E.M. survey work by Overwien and party were carried out in 1968 (see E.M. Map of Ni Prospect near Haaland, scale 1:1'000).

Outcrops of ultrabasics in the Haaland area stretch in a N/S direction over a distance of about 180 m. The maximum width of these ultrabasics is about 50 m. Excellent exposures can be seen in cuttings of a new road to a pegmatite quarry.

Under the microscope, the ultrabasic rock proves to be relatively fresh although there is some serpentinization along fissures. The rock texture was xenomorphic granular and the minerals were 30% olivine, 40% hypersthene, 20% of a clinopyroxene ZAC = 38 - diopside? Sulphides, oxides and serpentine are present as minor constituents and a small amount of accessory amphibole is present. The rock is a harzburgite peridotite.

A small prospect pit and a small trench in the ultrabasics are almost completely overgrown and weathered. Mineralization occurs throughout the rock as an irregular impregnation, some parts being much more sulphide rich than others. Mineralization is also present in the form of joint and fracture fillings. Pyrite is the main mineral associated with the fractures, pyrrhotite is the main impregnation mineral.

Analyses were carried out in Kristiansand, but from an economic viewpoint they proved to be disappointing.

| Spec. No  | Ni   | Co    | Cu   | Fe   | S   | Date of anal. |
|-----------|------|-------|------|------|-----|---------------|
| 34A F11   | 0.09 |       | 0.04 | 8.0  |     | 22.6.67       |
| 34B F11   | 0.22 |       | 0.16 | 10.5 |     | 22.6.67       |
| 37 F11B   | 0.04 | <0.01 | 0.10 | 11.9 | 2.1 | 5.3.68        |
| 34 68 F11 | 0.17 | 0.015 | 0.20 | 13.5 | 3.9 | 28.9.68       |

Surrounding the ultrabasic body are fairly extensive outcrops of a meta-gabbroic rock with a pinkish-violet feldspar and generally containing a little magnetite. In places, the meta-gabbro has a trace of a foliation which is caused by an alternation (layering) of light and dark constituents. Under the microscope the following minerals are seen.

|                   | Est. % |
|-------------------|--------|
| Plagioclase An 55 | 50     |
| Hypersthene       | 25     |
| Clinopyroxene     | 12     |
| Hornblende        | 28     |
| Magnetite         | 3 - 4% |

Accessory minerals are quartz, apatite, and epidote. The rock has a fairly equigranular (primary?) texture. Reaction rims are present around some of the pyroxene grains, and the opaques are associated with amphibole along grain boundaries.

To the north of the ultrabasics, the rocks are less massive. Foliated, medium-grained amphibolites which, in places, pass over into hornblende and dioritic gneisses were mapped.

The dominant foliation in the area varies from  $170^{\circ}$  to  $200^{\circ}$ ; dips are steep or vertical. The following minor shears were noted:  $115/58$  SW,  $173/90$  and  $20/80$  E. Apart from these shears, a fairly large shear is presumed to parallel the trend of the ultrabasic body running in a N/S direction just to the east of the outcrop. Strong NW/SE jointing is evident in the area and in places cuts the ultrabasics.

12th March, 1969  
FN/hm