GREENLAND MINEX News

GREENLAND MINERAL EXPLORATION NEWSLETTER

Greenland MINEX News No. 15 **November 1998**

Bureau of Minerals and Petroleum (BMP)

New Greenland governmental office

A new chapter in the administration and promotion of Greenland's economic resources has begun. The transfer of the responsibility for the mineral and petroleum resources from the Danish government in Copenhagen to the Greenlandic government in Nuuk has long been on the political agenda. It is now a reality.

On 1st July 1998, the Danish Mineral Resources Administration for Greenland, with offices in Copenhagen was abolished. It is replaced by the Bureau of Minerals and Petroleum (BMP) with headquarters in Greenland's capital Nuuk.

This change means that the political responsibility for all matters relating to the administration of Greenland's mineral and hydrocarbon resources (onshore and offshore), including the issuing of all licences relating to exploration and exploitation, lies with the BMP in Nuuk. The types of licences available to commercial companies, as well as their contents, remain unchanged, as do the judicial procedures of the granting of licences under the Act on Mineral Resources in Greenland. All licences continue to be granted by the Danish–Greenland Joint Committee on Mineral Resources in Greenland.

The close cooperation between the Greenland authorities (BMP) and institutions in the Danish Ministry of Environment and Energy will also continue, for example with the Geological Survey of Denmark and Greenland (GEUS), the Danish Energy Agency (DEA) and the National Environmental Research Institute (NERI).

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The new director

The first director of the BMP is Hans Kristian Schønwandt, a geologist by training,

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and with working experience in industry, university and in government. He is well known in mining circles associated with Greenland through his many years as head of the Department of Economic Geology at the Geological Survey of Greenland, and from 1995 at the Geological Survey of Denmark and Greenland (GEUS).

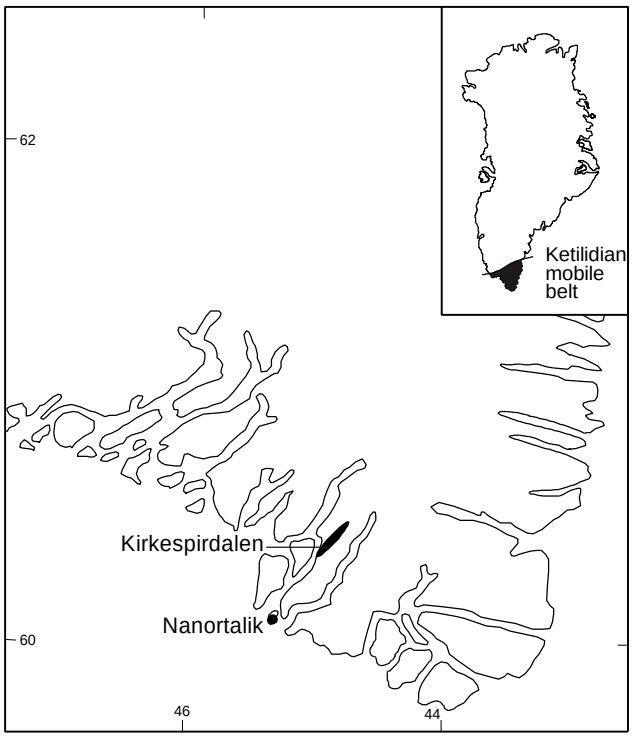
The Nalunaq gold deposit, South Greenland

Nunaoil–Mindex announce promising results from the 1998 season

Anomalous gold concentrations determined from geochemical work on surficial sediments, have been known since 1986 to characterise parts of the Palaeoproterozoic Ketilidian mobile belt in south-western Greenland. In 1992, Nunaoil A/S was able to identify one anomalous *in situ* source when the company pin-pointed in the Kirkespirdalen area, north-east of the town of Nanortalik, visible gold in a quartz vein within a greenstone sequence.

As reported in *Greenland MINEX News* (issue 2, January 1993), the discovery was called 'Nalunaq' a Greenlandic name chosen specifically to portray a "place that is difficult to find". But now, the prospects for placing Nalunaq permanently on the Greenland map seem promising. The drilling in 1993 by Nunaoil–Cyprus–Amax (13 holes totalling about 3 km of core) was followed by further detailed mapping and structural studies and a second drilling phase by Nunaoil in 1995 (8 holes and 850 m of core). An engineering study by the Swedish company Svedmine AB in 1997 suggested a drill-indicated resource of 300 000 tons with 20 g/t as a basis for mining; a prospect confirmed by the Canadian company H. A. Simons Mining Group. The Nalunaq occurrence is now equally owned by the Norwegian company Mindex ASA and Nunaoil. The results of the drilling that took place in 1998 (27 holes with over 5 km of core), as well as those from a 300 m long exploration adit, make the prospect very promising.

The gold occurs in an up to 2 m wide, semi-continuous and subconcordant quartz vein near the contact between pillow lavas and a basaltic sill. The amphibolite-facies basic metavolcanics are thrusted over molasse-type metasediments and intruded by granites. Along the main thrust massive iron sulphide concentrations are present.



The gold-bearing quartz vein can be traced over an outcrop of 1.7 km. Surface channel samples yield a weighted average of 51 g/t over 0.46 m width. Of the holes drilled in 1998 in an area 400 × 600 m, one hole showed an intersection with 119 g/t over 2.8 m including a highest value of 1020 g/t over 30 cm.

According to Nunaoil chief geologist John Pedersen the underground exploration in 1998

was able to follow mineralisation with visible gold continuously for more than 200 m along strike and in dip direction through two short raises of 15 and 25 m. About 600 channel and chip samples were collected for grade estimation, as well as a 130 t bulk sample.

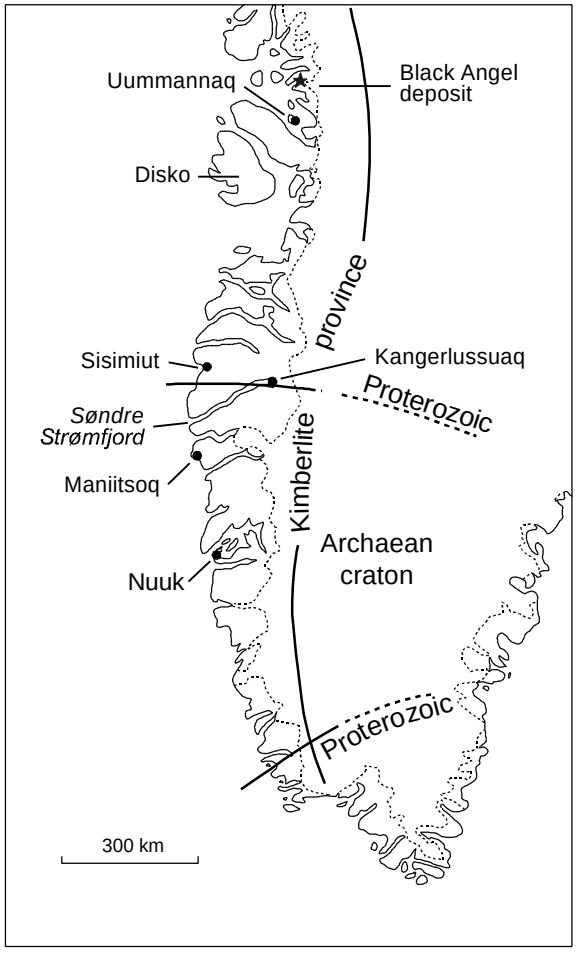
Diamond exploration continues in West Greenland

The 1998 surveys included drilling programmes

Greenland MINEX News has in the recent issues drawn attention to the growing interest for diamonds in and around the Archaean craton of south-western Greenland. Exploration continued in the spring and summer of 1998 with drilling and ground surveys and several companies are involved in analyses of bulk samples.

In the region outlined by Nuuk, Sisimiut and Kangerlussuaq (Søndre Strømfjord) there is a concentration of licences directed towards diamond exploration (see also the licence map on the last page of this newsletter). The following companies are involved: Aber Resources Ltd., Cantex Mine Development Corp., Citation Resources Inc., Conwall Consultants Ltd., Dia Met Minerals Ltd., Fjordland Minerals Ltd., Lexam Explorations Inc., Monopros Ltd. (a De Beers exploration company), Nunaoil A/S, Platinova A/S, Quadrant Resources Pty. Ltd. and Softrock Minerals Ltd.

In 1998, exploration attention has mainly centred on three programmes.



1. Investigations in a 12 336 km^2 area, concentrated on field checks of airborne geophysical targets. Citation Resources Inc. and Dia Met Minerals Ltd. have recently reported that 109 targets yielded 15 samples with outstanding quality diamond indicator minerals and a further 34 with intermediate quality minerals. The best indicator minerals included G10 garnets. Twenty-two kimberlite dykes, at least 26 sills and one kimberlite pipe measuring (10 × 7 m) were identified. Bulk samples are being processed for diamonds.

2. From a much smaller area (1397 km^2), Citation Resources Inc. also report on an 18-hole drill programme carried out by Monopros Ltd. over geophysical targets.

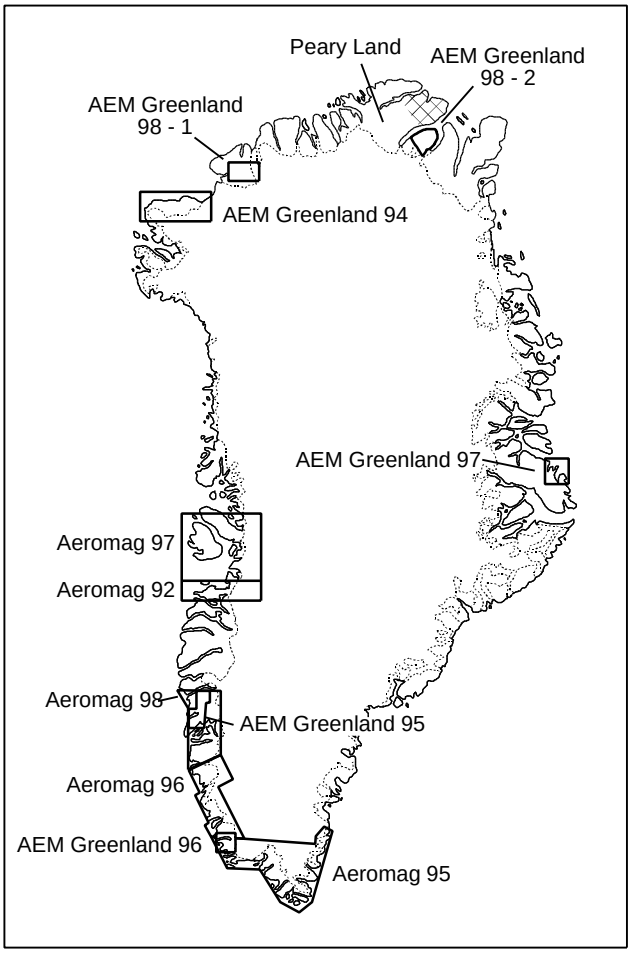
Fourteen of the holes intersected kimberlite in the form of narrow sheets or dykes; results of the core analyses at the De Beers laboratories are awaited with interest.

3. Aber Resources Ltd. report that some 600 samples were collected during 1998, and that a number of kimberlite dykes and boulders with encouraging indicator mineralogy are now being assessed.

Airborne geophysical surveys in 1998

Electromagnetic and magnetic data from North and West Greenland

During 1998, airborne geophysical data were acquired in several areas within the projects AEM Greenland 1998 and Aeromag 1998. Both projects are financed by the Government of Greenland and managed by the Geological Survey (GEUS). The projects are part of an extensive geophysical mapping programme initiated in 1992 with the aim of providing high quality geophysical information for both mineral exploration purposes and as the basis for regional interpretation of Greenland geology. Background information on the previous surveys in the two projects can be found in previous issues of *Greenland MINEX News*, for example no. 12 (July 1997) while information on the geology within the 1998 survey areas is presented in the last issue (no. 14, March 1998).



Aeromag 1998 (West Greenland)

During this programme about 70 000 line kilometres of high sensitivity, total field magnetic data were collected in southern West Greenland. The survey was carried out by Sander Geophysics Ltd. in the period April to July. The ground clearance was a 300 m gentle drape and a line separation of 500 m, with a 5000 m tie-line separation.

AEM Greenland 1998 (North Greenland)

A combined electromagnetic (GEOTEM) and magnetic fixed-wing survey was flown in two main areas, viz. Washington Land in the west and J.C. Christensen Land to the east. Some reconnaissance lines were flown farther north in eastern Peary Land. All surveys were carried out by Geoterrex Ltd. with a line spacing of 400 m with tie-line separation at

4000 m. Magnetic sensor altitude was about 75 m above ground. Approximately 9300 line kilometres were collected in Washington Land and 4500 line kilometres in J. C. Christensen Land.

The two areas surveyed differ from the previous airborne geophysical surveys by being entirely composed by homoclinal successions of unmetamorphosed and relatively undeformed Proterozoic to Lower Palaeozoic sedimentary rocks of the Franklinian Basin including some basaltic rocks in J. C. Christensen Land. Surveys from previous years have mainly focused on Precambrian metamorphic and igneous terranes, although AEM Greenland 1997 covered Upper Palaeozoic and Mesozoic sediments and Tertiary intrusives in East Greenland.

In addition to the two major surveys, a reconnaissance flight was carried out in eastern Peary Land, where 485 km were flown. However, rough topography in this area does introduce some difficulties with the application of the electromagnetic method due to variable ground clearance of the sensors.

Results available 1st March

Release of digital data and maps from the 1998 projects is planned for 1st March 1999. Selected data will be presented at the annual convention of the Prospectors & Developers Association at Toronto in mid-March.

For information on the airborne geophysical surveys Aeromag and AEM Greenland (1992-1998), please contact the Department of Economic Geology, Geological Survey of Denmark and Greenland or Bureau of Minerals and Petroleum, at the addresses on the front of this newsletter.

Mineral exploration in the Uummannaq region, West Greenland

Elevated zinc and gold values: reports available

Reports are now available announcing the results of a mineral exploration programme by the Bureau of Minerals and Petroleum and the Geological Survey in a 10 000 km^2 area in the Uummannaq region of central West Greenland (see map page 3). The surveyed area is underlain by a thick Palaeoproterozoic supracrustal unit, the Karrat Group, which hosts massive suphide deposits of which the now exhausted Black Angel mine is the most well known. This deposit hosted a total of 13.6 million tonnes sulphides grading 12.3% Zn and 4.0% Pb.

The programme involved systematic stream sediment sampling in the region between 70°30′ and 72°30′N, with mineral prospecting of selected localities. Stream sediments, as well as rock samples, show elevated zinc and gold values. The reports now available point to a potential for stratabound zinc and epigenetic gold.

Reports available from the Geological Survey of Denmark and Greenland

Geochemical mapping of the Uummannaq region (70°30′N to 72°30′N, 50° to 56°W), central West Greenland by Agnete Steenfelt, Else Dam & Johannes Kyed. Danmarks og Grønlands Geologiske Undersøgelse Rapport 1998/40, 25 pp. + 41 maps.

Karrat 97: mineral exploration in the Uummannaq area, central West Greenland by Bjørn Thomassen & Mogens Lind. Danmarks og Grønlands Geologiske Undersøgelse Rapport 1998/62, 63 pp. + 1 map.

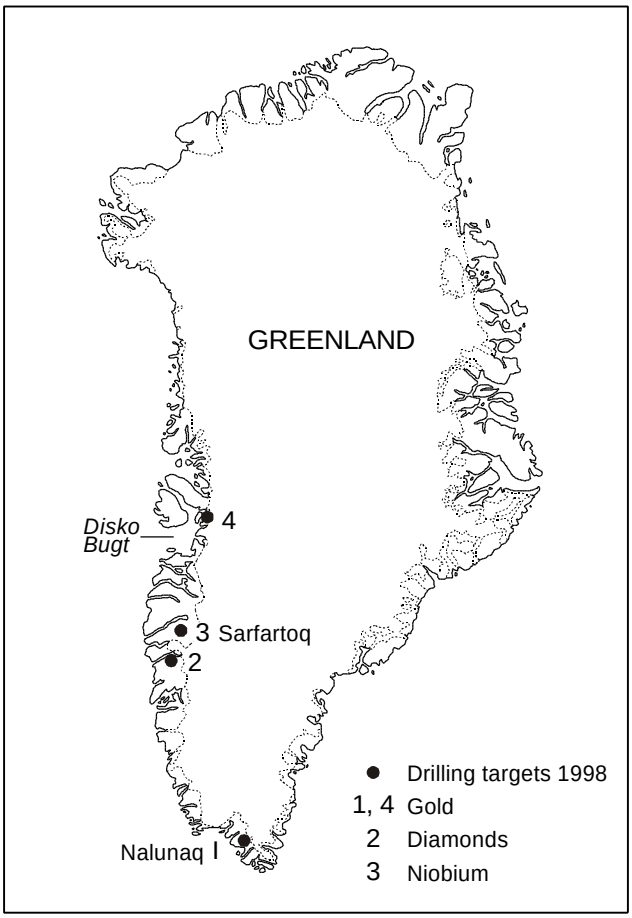
Commercial drilling programmes in 1998

South and West Greenland in focus

Commercial drilling was carried out in four regions of Greenland in 1998. Two of these programmes are mentioned elsewhere in this newsletter, viz. in connection with the search for diamond-bearing kimberlites in southern West Greenland (see page 3) and in the Nalunaq gold prospect in South Greenland (see page 2). The two other progammes are mentioned below.

1. Drilling by Nunaoil A/S in the Archaean supracrustal rocks in the Disko Bugt region (see map opposite), amounted to 8 holes with a total core length of 1.9 km. The target mineral was gold.

2. Drilling by Texas Energy Corporation N.L. and New Millennium Resources N.L. in the Sarfartoq carbonatite complex, south of Søndre Strømfjord in West Greenland resulted in a total core return of approximately 800 m. The target is a niobium prospect previously investigated by Hecla Mining Company in 1989 that included 570 m of core drilling from 13 holes. Hecla then considered the estimated resource of 25 000 t using a 10% Nb_2O_5 cut-off grade as marginal.



New product: CD-ROM thematic maps

Inglefield Land, North-West Greenland

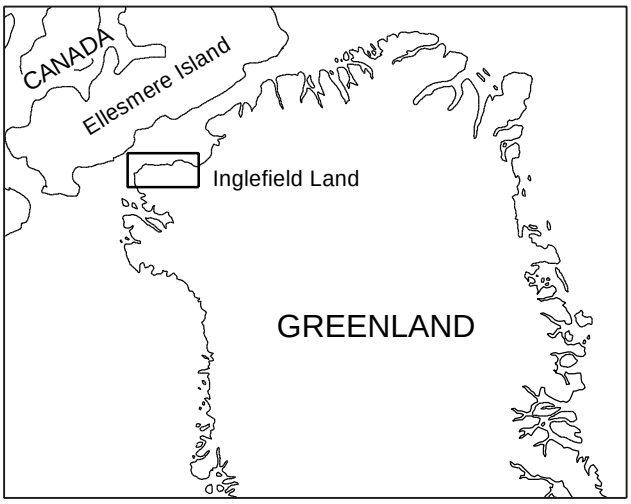
Inglefield Land in North-West Greenland has been in focus in recent years through exploration for kimberlites and massive sulphides; see past issues of *Greenland MINEX News*, for example issue 8, June 1995. Commercial activity by RTZ Mining and Exploration Ltd., Platinova A/S and Nunaoil A/S was triggered by electromagnetic and high sensitivity aeromagnetic data acquired as part of the AEM Greenland project (see page 4 of this newsletter).

Geological, geophysical and geochemical

data from Inglefield Land will be available in December this year as a CD-ROM. Previously, a report and 51 thematic maps were available in traditional printed form as *Thematic Map Series Grønlands Geologiske Undersøgelse* 96/1.

The maps and the digital data are now available as an ArcView GIS project file; the digital GIS data are provided as shape files, grid files and image files with associated data files. Positioning is either geographic decimal degrees or in UTM co-ordinates Zone 20.

The CD-ROM is for users having an ArcView software licence (version 2.1a or 3.0); it should be noted that the freeware ESRI ArcExplorer (version 1.1.2) is not a suitable viewer for the digital GIS data, due to lack of projection facilities in the programme. An Acrobat Reader version of the Thematic Map Series (96/1, see above) is also included on the CD-ROM.



Interested customers should contact the Geological Survey at the Copenhagen address on the front of this newsletter for further information about this issue and other CD-ROM products.

The Citronen Fjord massive sulphide deposit, North Greenland

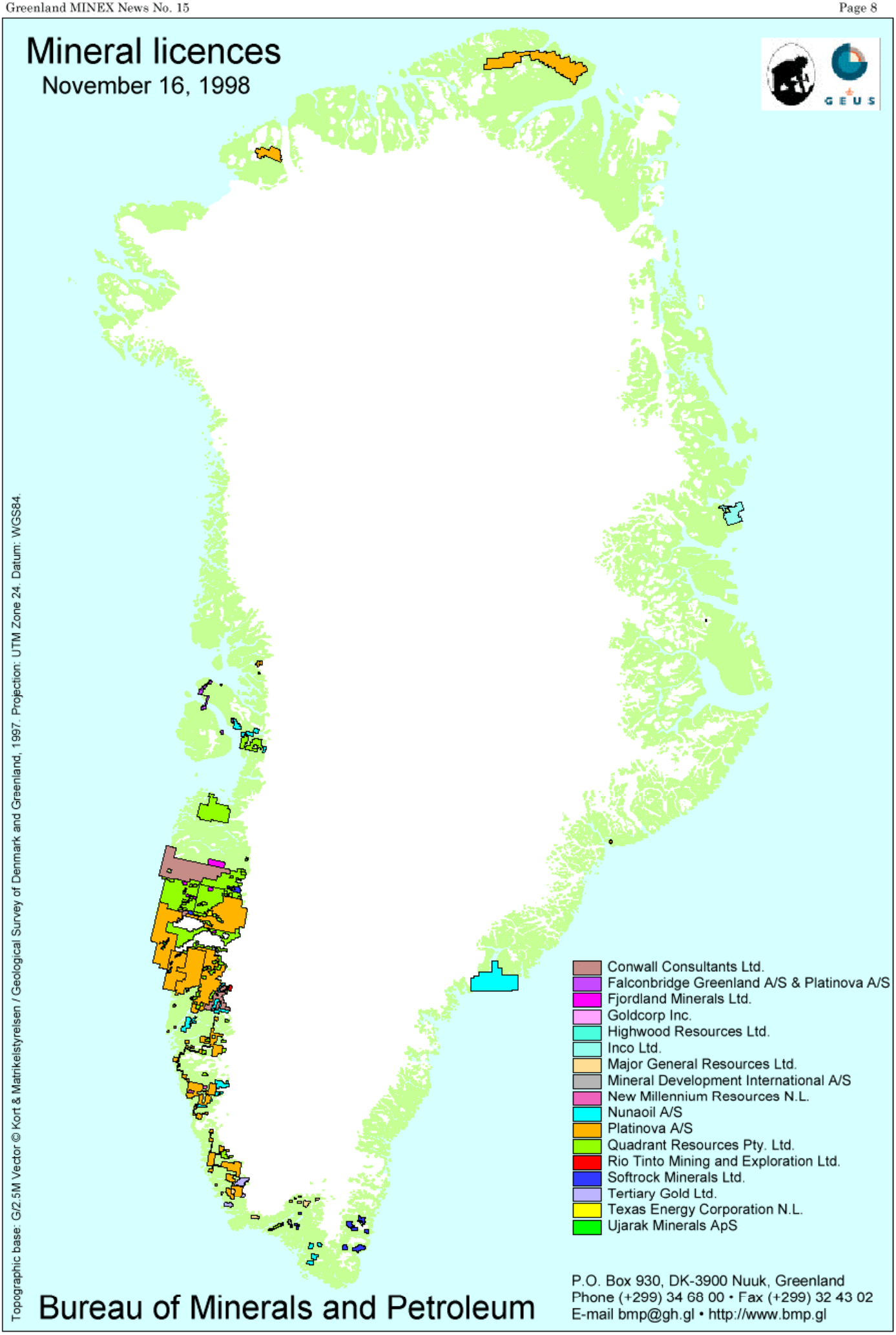
Publication now available

A publication is now available describing the Citronen Fjord massive sulphide deposit of North Greenland that is the world's most northerly known base metal deposit. The body, that has a total sulphide tonnage exceeding 350 million tons, has an overall resource estimated at 20 million tons of 7% zinc, with a higher grade core of 7 million tons containing 9% zinc and 1% lead. Platinova A/S has to-date carried out drilling over five seasons amounting to 32 km of core from 143 holes.

Survey Bulletin

The Citronen Fjord massive sulphide deposit, Peary Land, North Greenland: discovery, stratigraphy, mineralization and structural setting by Frank W. van der Stijl & Greg Z. Mosher. Geology of Greenland Survey Bulletin 179, 40 pp.,1998.

Available from the Geological Survey of Denmark and Greenland, Copenhagen. Price: 200 Danish kroner.


Mineral licences
November 16, 1998
GEUS
Conwall Consultants Ltd.
Falconbridge Greenland A/S & Platinova A/S
Fjordland Minerals Ltd.
Goldcorp Inc.
Highwood Resources Ltd.
Inco Ltd.
Major General Resources Ltd.
Mineral Development International A/S
New Millennium Resources N.L.
Nunaoil A/S
Platinova A/S
Quadrant Resources Pty. Ltd.
Rio Tinto Mining and Exploration Ltd.
Softrock Minerals Ltd.
Tertiary Gold Ltd.
Texas Energy Corporation N.L.
Ujarak Minerals ApS
Topographic base: G/2.5M Vector © Kort & Matrikelstyrelsen / Geological Survey of Denmark and Greenland, 1997. Projection: UTM Zone 24. Datum: WGS84.
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