

GREENLAND

MINEX News

GREENLAND MINERAL EXPLORATION NEWSLETTER

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NunaMinerals A/S: a new Greenland minerals company

Established by the reorganisation of Nunaoil A/S

The governments of Denmark and Greenland agreed at the end of last year to a restructuring of Nunaoil A/S. The result is two companies, viz. Nunaoil A/S and NunaMinerals A/S, so designed to deal respectively with petroleum and mineral activities. Nunaoil A/S, had been set up in 1984 as a jointly-owned Danish–Greenlandic corporation in connection with petroleum exploration undertaken by Atlantic Richfield Corporation in Jameson Land, East Greenland. In the 90's the company's scope was broadened to include promotion and exploration for minerals as well as for hydrocarbons.

The reorganisation of Nunaoil A/S, means a radical change in the company's interests to involve hydrocarbon activities only. This stemmed from the Danish government's wish to withdraw from mineral activities by transferring them to its Greenland counterpart. Thus the new company NunaMinerals A/S is 100% owned by the Greenland government. The reorganisation is completed by the Danish government's transference of its remaining share in Nunaoil A/S to the 100% government-owned Dansk Olie og Naturgas A/S (DONG), a company that has played a promi-

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nent role in hydrocarbon activities in Denmark for many years. DONG's presence as a new shareholder is expected to strengthen Nunaoil's professional expertise.

Hans Duus Jørgensen (DONG) is the new Director of Nunaoil A/S, while the first Director of NunaMinerals A/S is Erik O. Andersen of Platinova A/S. Nunaoil and NunaMinerals are based in Nuuk, Greenland.

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The Nalunaq gold prospect in South Greenland, equally owned by the Norwegian company Mindex ASA and NunaMinerals A/S and operated through Nalunaq I/S, was fea-

tured in the last issue of *Greenland MINEX News* (November 1998). As part of the reorganisation of Nunaoil, the Danish government retains a profit interest in Nalunaq I/S.

Microdiamonds galore but persistence elusive gems sometime

Encouraging results from Dia Met–Cantex–Citation Resources

Greenland MINEX News has kept close track of the current phase of diamond exploration, from the fever created by the Lac de Gras discovery in neighbouring Canada in 1991, to the finding of the first *in situ* macrodiamond in Greenland that was reported on just a year ago.

Since the early 1970's microdiamonds of varying quality both alluvial and from kimberlite rock have been reported in West Greenland. Now, nearly three decades later, the hope for the discovery of the elusive and economically viable gem-quality macrodiamonds, remains high as exploration has reached the stage of drilling geophysically-defined targets.

More microdiamonds

Exploration for diamondiferous kimberlites is centred on the West Greenland Archaean block and in the last issue of this newsletter (November last year), a dozen companies were named as the main participants in work that involved ground surveys, geochemistry of stream sediments, drilling and the analysis of bulk kimberlite samples.

From the Sisimiut–Kangerlussuaq region comes encouraging news from Citation Resources Inc. The analysis of the first of a number of samples from kimberlite sills and dykes has yielded eleven clear microdiamonds, of which seven are of first quality.



The sample also contains abundant kimberlite indicator minerals of diamond inclusion compositions.

The Vancouver-based company is in a joint venture with Dia Met Minerals Ltd. and Cantex Mine Development Corp. on eight exploration licences covering an area of 8000 km². Ground geophysical surveys and core drilling continue in 1999.

Airborne geophysical surveys 1992–1998

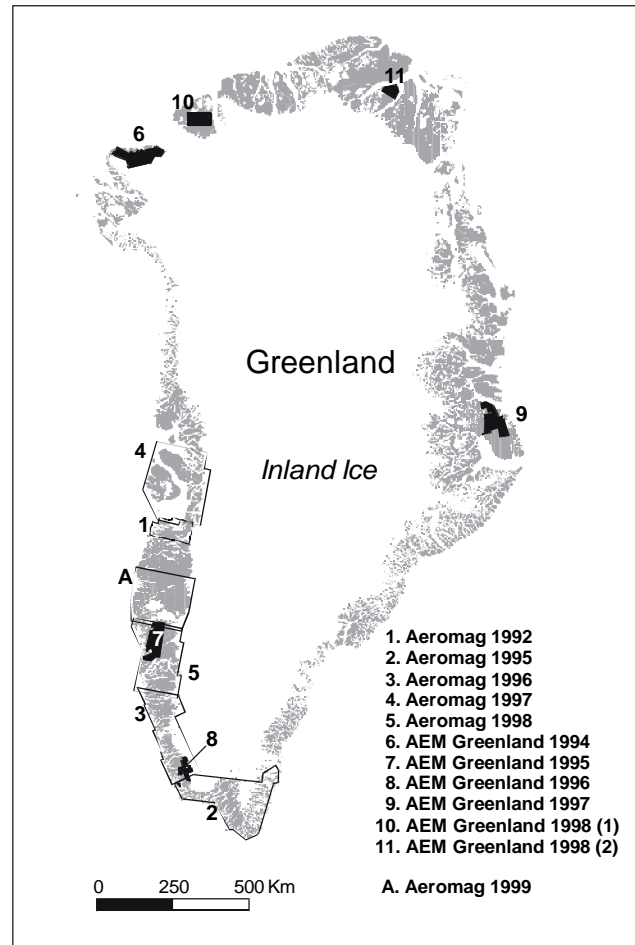
*an investment for the future
status and plans for 1999*

In Greenland the use of airborne geophysical surveys as a basic tool in mineral exploration came rather late compared to some countries. Despite this late start, data are now available from several regions through government-funded projects flown in six years, viz. 1992, and 1994–1998 (see map). The Danish and Greenland governments financed projects both individually and jointly, in some cases with participation of industry.

Modern airborne surveys started in the early 90's with project *Aeromag 1992* funded by the Danish government; a survey that produced high resolution magnetic data covering Ler-sletten (Naternaq) in central West Greenland. In 1994 electromagnetic methods were introduced when the Greenland government announced the funding of a 5-year airborne geophysics project with 5–6 million Danish kroner annually (\$ US 715 000); a project named *AEM Greenland 1994–1998*. As reported on by MINEX at the start of the programme, "the principal objectives of this initiative are to stimulate mining exploration activity in the short term and to provide data that will be of lasting value in the geological interpretation and modelling of selected regions". The final surveys in this project flown last summer are mentioned elsewhere in this newsletter.

300 000 line kilometres

The total output in the years 1992 to 1998 has been about 300 000 line kilometres of high resolution aeromagnetic data (project *Aeromag*) and 74 000 line kilometres of multi-parameter geophysical data (project *AEM Greenland 1994–1998*). In addition, radiometric data were acquired during the helicopter-borne 1996 AEM programme in southern



West Greenland. The surveys have covered parts of West, South, East and North Greenland over regions of contrasting topography and variable geology from the Archaean craton to basalts of the Tertiary igneous province. It is evident that high resolution geophysical surveys in Greenland can be performed without major logistical problems.

New plans

While *AEM Greenland 1994–98* has been successfully completed, airborne geophysical surveys over selected areas of Greenland will

continue as a standard facility for mineral exploration. Thus this year, the Greenland government will finance an aeromagnetic survey in southern West Greenland (*Aeromag 1999*) by extending to the north the region covered last year. The new region is located between 65°40' and 67°15'N (Maniitsoq to Sisimiut), with a coverage from the outer

coastline to the Inland Ice (for location, see map on page 3).

The region covers the northern part of the Archaean craton with the boundary to the Palaeoproterozoic Nagsugtoqidian Orogen; a region hosting a carbonatite complex and associated kimberlite intrusions.

AEM Greenland and Aeromag surveys 1998

New airborne geophysical data released March 1st

The progress and planning of airborne geophysical surveys have over the years secured fast column space in *Greenland MINEX News*. As in previous years, the release of data is scheduled for March 1st. On this date, all data from the 1998 surveys financed by the Bureau of Minerals and Petroleum, Nuuk, will be available for inspection in Nuuk as well as at the headquarters of the Geological Survey of Denmark and Greenland in Copenhagen, Denmark, while two weeks later, at the annual convention of the Prospectors and Developers Association in Toronto, Canada, a selection of the data will be presented.

The data released on March 1st come from three main regions, viz. two in North Greenland and one in southern West Greenland (see map on page 3). *AEM Greenland 1998* covered the two regions in the north, namely, parts of Washington Land and Daugaard-Jensen Land in the west and north-eastern J.C. Christensen Land to the east (Proterozoic and Lower Palaeozoic platform), while

the *Aeromag 1998* survey in West Greenland covered a region mainly north and east of the capital Nuuk (Archaean craton). The background and geological relevance of these high resolution surveys were briefly discussed in the previous issue of *Greenland MINEX News* (November 1998).

AEM Greenland 1998

This electromagnetic and magnetic survey resulting in 14 500 line kilometres was flown by Geoterrex-Dighem Ltd. of Canada. The release of the complete data sets for the two surveys, is accompanied by reports providing an introduction to the data as well as preliminary interpretations. Priority definitions of target areas for follow-up ground assessments are also given in the reports. For both regions known mineralisations in unmetamorphosed platform strata seem to be related to fault systems. The reports cited below are available from the Geological Survey of Denmark and Greenland in Copenhagen.

Airborne electromagnetic and magnetic survey in Washington Land and Daugaard-Jensen Land, western North Greenland. Results from project AEM Greenland 1998 by T.M. Rasmussen. Danmarks og Grønlands Geologiske Undersøgelse Rapport 1999/10.

Airborne electromagnetic and magnetic survey of north-eastern J.C. Christensen Land, eastern North Greenland. Results from project AEM Greenland 1998 by T.M. Rasmussen. Danmarks og Grønlands Geologiske Undersøgelse Rapport 1999/11.

Aeromag 1998

This survey in southern West Greenland was flown by Sander Geophysics Ltd. of Canada. About 70 000 line km of high-sensitivity total magnetic data were acquired over the Archaean shield. The survey area covers several known mineral occurrences including the

Isua greenstone belt with its iron ore deposits and gold mineralisation, and part of the West Greenland kimberlite province.

A report introducing the data and providing preliminary interpretations, will be issued by the Geological Survey of Denmark and Greenland later this year.

Greenland's national mineral hunt (*Ujarassiorit*) in its 11th year

Ujarassiorit 1997 and 1998 results and awards

The domestic mineral hunt programme, *Ujarassiorit*, has been running for a decade. The Greenlandic name *Ujarassiorit*, that means "go out and look for rocks", reflects the long-term wish of the Greenland government to involve its residents in the geology and mineral potential of the country. The programme is organised by the Bureau of Minerals and Petroleum in Nuuk as a yearly competition. All permanent residents are invited to collect and submit rock samples that on face value seem interesting from an economic point of view. Prizes are given to those samples that show promising mineral potential in relation to their location, in other words samples collected at known mineral deposits are not honoured.

The broader perspective behind *Ujarassiorit* is the government's policy to define the country's economic mineral potential; public awareness of this potential is important for future exploration and mining ventures.

1998 awards

The 1998 rock collection comprised 650 samples; about 20 were chosen for chemical analysis. The first prize of 25 000 DDK was given to the sender of sulphide-bearing quartzite collected from the Palaeoproterozoic metasediments of Kobberrminebugt in South



Greenland, that returned 213 ppm Ag, 299 ppm Bi and 5539 ppm Pb (see map, page 2).

The next two prizes (15 000 DDK each) were awarded for gold-bearing samples from the Uummannaq and Nuuk districts of West Greenland. The last prizes (total 20 000 DDK) were given to eight collectors of samples with anomalous Cu, Ni, Pb, Au and U.

Report available

A report dealing with *Ujarassiorit 1997* (cited on next page) is available from the Geological Survey of Denmark and Greenland in Copenhagen and from the Bureau of Minerals and Petroleum in Nuuk, at the addresses on the front of this newsletter.

Ujarassiorit 1997: public mineral hunt programme in Greenland by M. Roos. Danmarks og Grønlands Geologiske Undersøgelse Rapport **1997/72**, 9 pp + appendices.

Price: 150.00 DDK

The report briefly describes the prize-winning samples from the 1997 competition. Out of the 980 rocks samples that were sent in, 26% were analysed. The report contains locality maps of anomalous samples and lists all chemical analyses.

Recent Survey open-file reports

Mineral resources of North and East Greenland in focus

Two reports dealing with the mineral resources and geoscientific data in North-West, North and East Greenland are among the recent open-file reports released by the Geological Survey of Denmark and Greenland.

North-West Greenland

GIS compilation of geoscience data: an ArcView GIS version of previously published thematic maps from Inglefield Land, North-West Greenland by F. Schjøth & L. Thorning. Danmarks og Grønlands Geologiske Undersøgelse Rapport **1998/107**, 59 pp. + CD-ROM.

Price: 300.00 DDK

This report contains a CD-ROM with a digital version of 51 thematic maps from Inglefield Land published in 1996 in traditional paper form. Inglefield Land is known for magnetic and electromagnetic anomalies, gossans and for promising massive sulphide potential. The maps cover the following themes: topography, satellite image, bedrock geology, airborne magnetics and electromagnetics, gravimetry, gamma-radiation, mineral occurrences, and stream sediment and soil geochemistry.

The maps and the digital data are made available here as an ArcView GIS project file. The printed part of the report contains background information and technical specifications. An Acrobat Reader version of the report and the maps published in 1996 is included on the CD-ROM.

North and East Greenland

Mineral resources of the sedimentary basins of North and East Greenland - final report by H. Foug, S.M. Jensen, K. Kragh, B.R. Langdahl & M. Pedersen. Danmarks og Grønlands Geologiske Undersøgelse Rapport **1999/4**, 99 pp.

Price: 160.00 DDK

This report summarises the main results and provides the basic data of a recently concluded, multidisciplinary research project dealing with various aspects of the mineral resource potential of the Lower Palaeozoic Franklinian Basin in North Greenland and the Upper Palaeozoic – Mesozoic Jameson Land Basin of central East Greenland. During the project a new carbonate-hosted Zn-Pb-Ag deposit was discovered in the Ordovician sequence of the western part of the Franklinian Basin in Washington Land (for locations, see map on page 2). Apart from this occurrence, ore geological studies focused on the Citronen Fjord Zn-Pb deposit in Peary Land, on regional lead isotope investigations in the Franklinian Basin and on genetic studies of Kupferschiefer-type mineralisation in Upper Permian black shales in Wegener Halvø East Greenland.

The report contains a comprehensive appendix of 60 pages that includes all the ore geological data obtained during the project (geochemistry, isotopes, fluid inclusion data and vitrinite reflectance).

Announcing a new edition of *Trade and Industry in Greenland*

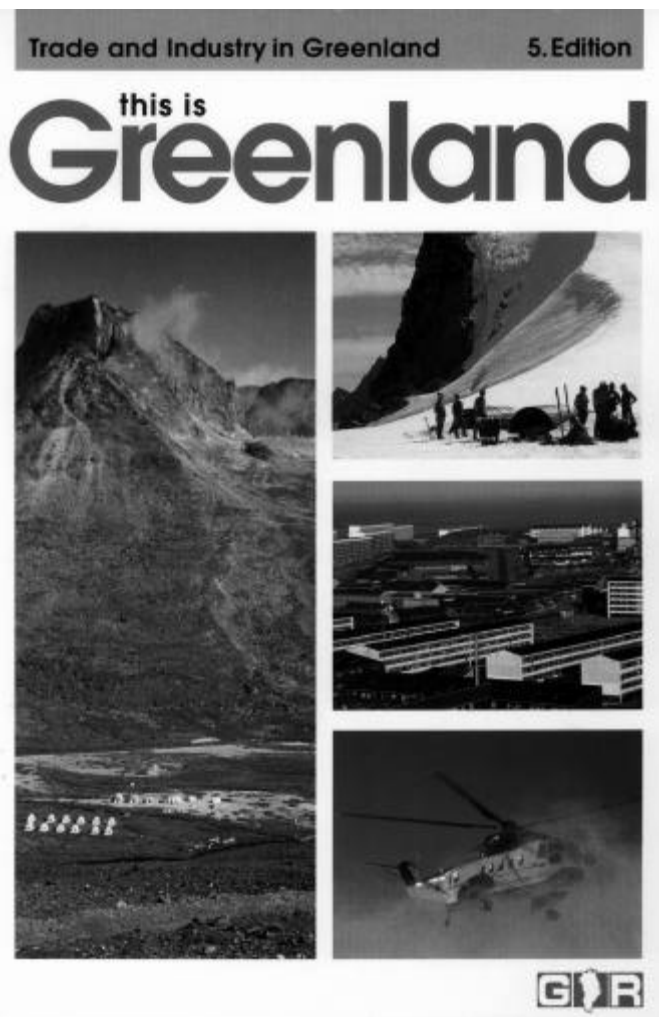
**a booklet series of practical information
a must for getting started in Greenland
a summary of geological information**

During the past several decades, Greenland has transformed itself in preparation for the many challenges of the 21st century. The close-knit hunting and fishing communities of earlier times have become open industrialized centres of commerce complete with modern infrastructure and services... These are the opening words of the Greenland Premier, Jonathan Motzfeldt, in the preface to the 5th edition of the series *Trade and Industry in Greenland*. This series provides concise and much-needed practical information to companies and individuals interested in aspects of commerce in Greenland. MINEX readers should be aware of the eight booklets that comprise the series, namely:

0. Introductory booklet (in colour): This is Greenland, 42 pages
1. Climate, maps and statistics, 12 pages
2. Geodata. Geological information, 20 pages
3. Transportation and communication, 8 pages
4. Setting up in Greenland (rules), 16 pages
5. Taxation (individuals and companies), 20 pages
6. Building and construction, 16 pages
7. Tourism, 8 pages

Price: Introductory booklet, 75 DKK; set 1–7, 75 DDK.

Trade and Industry in Greenland is published by Greenland Resources A/S, a governmental company concerned with development and promotion in many commercial sectors, including minerals and petroleum. The coloured introductory booklet (front cover illustrated here) contains addresses of key governmental and private agencies that can be contacted for more information.



Trade and Industry in Greenland can be obtained from:

Greenland: Atuagkat, P.O. Box 1009, DK-3900 Nuuk; tel. +299 321337.

Denmark: Grønlændernes Hus, Løvstræde 6, DK-1152 Copenhagen K; tel. +45 33911212.