Effective June 16, 2006

P.O. Box 119
Gjoa Haven, NU X0B 1J0
Tel: (867) 360-6338
Fax: (867) 360-6369

kNK5 wmoEp5 vtmpq
NUNAVUT IMALIRIYIN KATIMAYINGI
NUNAVUT WATER BOARD
OFFICE DES EAUX DU NUNAVUT

WATER LICENCE
APPLICATION FORM

Application for: (check one)

☒ **New** ☐ **Renewal** ☐ **Amendment** ☐ **Assignment** ☐ **Cancellation**

LICENCE NO:
(for NWB use only)

1. NAME AND MAILING ADDRESS OF APPLICANT/LICENSEE

Dr. Karsten Piepjohn
Federal Institute for Geosciences (BGR)
(planned departure for Nunavut, 18th of June 2008)

Phone: +49 511 643 32 36
Fax: +49 511 643 36 63
e-mail: Karsten.Piepjohn@bgr.de

2. ADDRESS OF CORPORATE OFFICE IN CANADA (if applicable)

Polar Continental Shelf Project (Resolute)
Mike Kristjanson

Phone: (613) 947 16 55
Fax:
e-mail: mkristja@nrcan-rncan.gc.ca

3. LOCATION OF UNDERTAKING (describe and attach a topographical map, indicating the main components of the Undertaking)

base camp at Humphreys River at the north end of Vendom Fiord
Latitude: (78°3'0" N) Longitude: (82°15'0" W)
NTS Map Sheet No. 49E Scale: 1:250,000

The study area will cover the area between Strathcona Fiord and Vendom Fiord (NTS Map Sheets No.: 49E and 49D

4. DESCRIPTION OF UNDERTAKING (attach plans and drawings)

Project Title: CASE 12 Vendom Fiord

Project Description:
The study area is truncated by the large, NNE-SSW-trending Vendom Fiord Fault Zone (VFFZ) which is related to the opening of the Arctic Ocean and movements between Ellesmere Island and Greenland some 65 to 35 million years ago. Like the San Andreas Fault in California today, two different continental blocks moved relative towards each other in the Early Tertiary creating Earth quakes and volcanism.

The orientation of the faults (NNE-SSW and WNW-ESE) within the more than 50 kilometres wide fault zone indicates an overall right-lateral sense of movement along the VFFZ which is in a contradiction to the left-lateral movements along the Wegener Fault between Greenland and Ellesmere Island. The VFFZ separates the crystalline basement (Prince of Wales Icefield) in the east and the compressive portion of the Eurekan thrust belt in the west. Until now, the timing and the

influence of the different stages of the Eurekan deformation in the Early Tertiary is still a matter of debate. The discovery of an intra-Tertiary unconformity and of volcanic ashes in the Tertiary occurrences in Stenkul Fiord and at Split Lake gives the chance for dating the tectonic phases of the Eurekan deformation.

The planned investigations during CASE 12 Vendom Fiord will concentrate on: i) aeromagnetic airborne survey, ii) structural geology and iii) sedimentological and palaeobotanic observations.

Methology:
The geologists will work on:
- measuring the 3D-orientations of tectonic fabric elements of deformed rocks and along shear zones and fault zones;
- trying to find out cutting relationships and the temporal succession of deformation events;
- measuring sections for stratigraphical correlation and sedimentology;
- collecting samples for palaeobotanic, sedimentological and microscopical observations;

The data collection for the aeromagnetic survey will be done by a sensor which is towed on a 100-fee long cable below the helicopter. The magnetometer measures the natural ambient magnetic field and does not affect the environment (passive method). The survey will cover the ice-free areas of the Baskeruds Plains and the ice-covered mountains of the Prince of Wales Icefield. We hope that we can trace the structures and rock units from the ice-free areas to the areas in which the geology is hidden underneath the ice.

Data:
The Federal Institute for Geosciences and Natural Resources (BGR) is a public institution. After the measuring processes in the field, the analysis in the laboratories and the interpretation of the data, all data must be accessible for the public.

Reporting:
Usually, the field data, the analysis of the rocks and the interpretation of the field data, the geological results will be published in scientific journals. Results of geological mapping and the aeromagnetic survey will be published as maps. Furthermore, preliminary data will be published as reports to the Nunavut Research Institute and the Polar Continental Shelf Project.

5. **TYPE OF PRIMARY UNDERTAKING** (A supplementary questionnaire must be submitted with the application for undertakings listed in "bold")

☐ **Industrial**	☐ Agricultural
☐ **Mining and Milling**(includes exploration/drilling)	☐ **Conservation**
☐ **Municipal** (includes camps/lodges)	☐ Recreational
☐ Power	☒ **Miscellaneous** (describe below):

Geological Research Expedition

See Schedule II of *Northwest Territories Waters Regulations* for Description of Undertakings

– Effective June 16, 2006

6. WATER USE

- ☒ To obtain water
- ☐ To cross a watercourse
- ☐ To modify the bed or bank of a watercourse
- ☐ Flood control
- ☐ To divert a watercourse
- ☐ To alter the flow of , or store, water
- ☐ Other (describe):

7. QUANTITY OF WATER INVOLVED (cubic metres per day including both quantity to be used and quality to be returned to source)

Water use
- ☒ 100m³/day or less
- ☐ Greater than 100m³/day; if greater, indicate quantities to be used for each purpose (camp, drilling, etc.)

the water will be used for camp-cooking and cleaning only.

Water returned to source
0,1 m³/day

8. WASTE (for each type of waste describe: composition, quantity (cubic metres per day), methods of treatment and disposal, etc.)

- ☒ Sewage
- ☒ Solid Waste
- ☐ Hazardous
- ☐ Bulky Items/Scrap Metal
- ☐ Waste oil
- ☒ Greywater
- ☐ Sludges
- ☐ Other describe):

For sewage and grey water, we expect not more than 0,1 m3 per day - will be deposited in sinkholes far away from the next river or creek. The solid waste will be burnt, and the ashes wil be returned to Resolute.

9. OTHER PERSONS OR PROPERTIES AFFECTED BY THIS UNDERTAKING (give name, mailing address and location; attach if necessary)

Land Use Permit

DIAND	☐ Yes	☒ No	If no, date expected Februar 1, 2011
Regional Inuit Association	☐ Yes	☒ No	If no, date expected Februar 1, 2011
Commissioner	☐ Yes	☒ No	If no, date expected ____

10. PREDICTED ENVIRONMENTAL IMPACTS OF UNDERTAKING AND PROPOSED MITIGATION MEASURES (direct, indirect, cumulative impacts, etc.)

NIRB Screening	☒ Yes	☐ No	If no, date expected Februar 1, 2011

Effective June 16, 2006

11. INUIT WATER RIGHTS

Will the project or activity substantially affect the quality, quantity, or flow of water flowing through Inuit Owned Lands and the rights of Inuit under Article 20 of the Nunavut Land Claims Agreement?

no, water will be used for cooking and cleaning only.

If yes, has the applicant entered into an agreement with the Designated Inuit organization to pay compensation for any loss or damage that may be caused by the alteration. If no compensation agreement has been made, how will compensation be determined?

In this case, BGR will take the responsibility represented by expedition leader.

12. CONTRACTORS AND SUB-CONTRACTORS (name, address and functions)

Polar Continental Shelf Project (Resolute)
Mike Kristjanson (base manager Resolute)
phone (613) 947 16 55
mkristja@nrcan-rncan.gc.ca

13. STUDIES UNDERTAKEN TO DATE (list and attach copies of studies, reports, research, etc.)

Geological Expedition CASE 4 (1998) to Judge Daily Promontory (in cooperation with GSC Calgary)
Geological Expedition CASE 5 (1999) to Judge Daily Promontory (in cooperation with GSC Calgary)
Geological Expedition CASE 6 (2000) to Judge Daily Promontory (in cooperation with GSC Calgary)
Geological Expedition CASE 7 (2001) to Yelverton Inlet (in cooperation with GSC Calgary)
Geological Expedition CASE 8 (2004) to southern Ellesmere Island (Vendom / Stenkul fiords)
Geological Expedition CASE 11 (2008) to northern Ellesmere Island (Taconite Inlet) and southern Ellesmere Island (Vendom / Stenkul fiords)

14. THE FOLLOWING DOCUMENTS MUST BE INCLUDED WITH THE APPLICATION FOR THE REGULATORY PROCESS TO BEGIN

Supplementary Questionnaire (where applicable: see section 5) ☒ Yes ☐ No If no, date expected ____

Inuktitut and/or Inuinnaqtun/English Summary of Project ☒ Yes ☐ No If no, date expected ____

Application fee of $30.00 (Payee Receiver General for Canada) ☐ Yes ☐ No If no, date expected ____

Water Use fee of $30.00 (unless otherwise indicated in Section 9 of the *NWT Waters Regulations;* Payee Receiver General for Canada)

☐ Yes ☐ No If no, date expected ____

15. PROPOSED TIME SCHEDULE (unless otherwise indicated, the NWB will consider the application for a five (5) year term)

☒ one year or less (or) ☐ Multi Year

Start Date: August 1, 2011 Completion Date: August 31, 2011

Karsten Piepjohn	Dr		2011/02/15
Name (Print)	Title (Print)	Signature	Date

For Nunavut Water Board office use only

Effective June 16, 2006

APPLICATION FEE	**Amount: $____**	**Pay ID No.: ____**
WATER USE DEPOSIT	**Amount: $____**	**Pay ID No.: ____**