

P.O. Box 119 GJOA HAVEN, NU XOB 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	mendment
LICENCE NO: (for NWB use only)	
1. NAME AND MAILING ADDRESS OF APPLICANT/LICENSEE	2. ADDRESS OF CORPORATE OFFICE IN CANADA (if applicable)
Dr. <u>Karsten Piepjohn</u> <u>Federal Institute for Geosciences (BGR)</u> (planned departure for Nunavut, 18 <sup>th</sup> of June 2008)	Polar Continental Shelf Project (Resolute)  Mike Kristjanson  Phone: (613) 947 16 55  Fax:
Phone: <u>+49 511 643 32 36</u> Fax: <u>+49 511 643 36 63</u> e-mail: <u>Karsten.Piepjohn@bgr.de</u>	e-mail: mkristja@nrcan-rncan.gc.ca
3. LOCATION OF UNDERTAKING (description components of the Undertaking)	ibe and attach a topographical map, indicating the main
	•
camp at Stenkul Fiord: Latitude: (77°20'N) NTS Map Sheet No. 49D Scale: 1:250,000	<u>'W</u> )
Events". The major aim of CASE 11 is the gof North America, the structural evolution of Island and the comparison of the geological be divided in an aeromagnetic survey onshor geological field work between Wootton and August 2008). After termination of the field group of geologists and the pilot and an Inuk	ne long-term BGR-project "Circum-Arctic Structural geological architecture of the northern continental margin of the micro-plate "Pearya" at the north coast of Ellesmere history of Ellesmere Island and Svalbard. CASE 11 will re and offshore (mid of May to mid of June 2008) and Arthur Laing Peninsulas (mid of June to beginning of work at the north coast of Ellesmere Island, a small of field guide will work in the area between Vendom ern Ellesmere Island until mid og August 2008. (for

	TYPE OF PRIMARY UNDERTAKING (A supplement application for undertakings listed in "bold")	tary questionnaire <u>must</u> be submitted with the	
-	☐ Industrial ☐ Mining and Milling(includes exploration/drilling) ☐ Municipal (includes camps/lodges) ☐ Power	☐ Agricultural ☐ Conservation ☐ Recreational ☑ Miscellaneous (describe below):	
	Geological Research Expedition		

-	WATER HOE
6.	WATER USE  ☐ Flood control
ĺ	☐ To cross a watercourse ☐ To divert a watercourse
	To modify the bed or bank of a watercourse To alter the flow of, or store, water
	Other (describe):
	Carl Market Control (mark target variety variety ( 1 )
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 m <sup>3</sup> /day
Δ	William (Control of the Control of t
8.	WASTE (for each type of waste describe: composition, quantity (cubic metres per day), methods of treatment and disposal, etc.)
	⊠ Sewage □ Waste oil
	Sewage
	Hazardous Sludges
	Bulky Items/Scrap Metal 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.
	away from the next river of creek. The solid waste will be built, and the asiles will be returned to Resolute.
9.	OTHER PERSONS OR PROPERTIES AFFECTED BY THIS UNDERTAKING (give name, mailing
	address and location; attach if necessary)
Ou	attinirpaaq National Park, Parks Canada Agency
Jar	ne Chisholm
	rks Canada - Nunavut Field Unit
	9 Box 278, Iqaluit, NU Canada X0A 0H0
	(867) 975-4762 fax (867) 975-4753 mavutParks.Research@pc.gc.ca
•	Havait arksittosearonispo.go.ea
*	
	Land Use Permit DIAND
	(Nunavut Land Use Permit)
	Regional Inuit Association
	are involved (field guides, camp-manager)
	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, dat	e expected	
11.	INUIT WATER RIGH	TS		
		y substantially affect the quali hts of Inuit under Article 20 o		or flow of water flowing through Inuit ut 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 tal	ce the responsibility represente	d by expedi	ition leader.
Mike Ki phone (6	CONTRACTORS AND ontinental Shelf Project (R ristjanson (base manager R 513) 947 16 55 @nrcan-rncan.gc.ca		ne, address	and functions)
Geologi Geologi Geologi	cal Expedition CASE 4 (1) cal Expedition CASE 5 (1) cal Expedition CASE 6 (2) cal Expedition CASE 7 (2)	EN TO DATE (list and attact 998) to Judge Daily Promontor 999) to Judge Daily Promontor 000) to Judge Daily Promontor 001) to Yelverton Inlet (in coo 004) to southern Ellesmere Isla	ry (in coope ry (in coope ry (in coope peration wi	eration with GSC Calgary) Pration with GSC Calgary) Pration with GSC Calgary) The GSC Calgary)
14.	THE FOLLOWING DO REGULATORY PROC		LUDED W	TTH THE APPLICATION FOR THE
Supplen	nentary Questionnaire (wh	ere applicable: see section 5)	⊠ Yes	No If no, date expected
Inuktitu	t and/or Inuinnaqtun/Engli	sh Summary of Project	Yes	☐ No If no, date expected
Applica	tion fee of \$30.00 (Payee I	Receiver General for Canada)	Yes	No If no, date expected
	•	therwise indicated in Section 9	of the NW	T Waters Regulations; Payee Receiver
General	for Canada)		Yes	No If no, date expected
15.		HEDULE (unless otherwise in	dicated, the	NWB will consider the application for
	a five (5) year term)	one year or less (or)	☐ Multi	Year
		Start Date: Mai 1, 2008Com	pletion Date	e: August 31, 2008

Karsten Piepjohn

Dr

Mai 27, 2008

Name (Print)

Title (Print)

Signature

Date

For Nunavut Water Board office use only	#2####################################
APPLICATION FEE Amount: S Pay ID No.;	
WATER USE DEPOSIT Amount: \$ Pay ID No.:	

Non-Technical Project Proposal Summary: 20.03.2008

Project CASE 11-Pearva (2008)

Karsten Piepjohn, Federal Institute for Geosciences and Natural Resources (BGR), Germany

### What are we planning to do?

In summer 2008, the German Federal Institute for Geosciences and Natural Resources (BGR) is planning the geoscientific expedition "CASE11 Pearya" to the northernmost part of the Canadian Arctic ("Pearya") at the north coast of Ellesmere Island. The field work during CASE 11 will be divided in an airborne magnetic survey and helicopter-supported geological field work. The aeromagnetic survey will operate from 5<sup>th</sup> of May to 24<sup>th</sup> of June 2008 with 8 members. The geological work will be from 26<sup>th</sup> of June to 11<sup>th</sup> of August 2008 with 25 participants including scientists, logistic personal and Inuit guides. Not all scientists spend the entire period at the base camp. There will be frequent exchange of personal to reduce the number of people as much as possible.

### Where are we going to do it?

The study area is located between Wootton Peninsula in the west, Arthur Laing Peninsula in the east, the north coast of Ellesmere Island and the British Empire Range in the south. The geophysical survey will be carried out outside the northern part of the Quttinirpaaq National Park and will also include an up to 50 km wide strip off the north coast of Ellesmere Island.

Field work in the north will terminate on 1<sup>st</sup> of August; from 2<sup>nd</sup> to 11<sup>th</sup> of August 2008, a small group of 4 scientists, a pilot and an Inuit guide will carry out geological field work at Stenkul Fiord and Split Lake area in southern Ellesmere Island.

### How are we going to do it?

The base camp of CASE11 will be situated at the landing-strip at Taconite River (west of M'Clintock Inlet) just outside and west of the National Park boundary. A fuel depot of 80 drums at the landing-strip at Tanquary Fiord and another fuel depot of 100 drums at Eureka have been established in 2007.

Field work will be carried out from the base camp. Geologists will also set up temporary fly camps between Wootton and Arthur Laing peninsulas and in the area of Yelverton Pass. Transportation of fuel, equipment and expedition staff to Taconite River and back will be done by Twin Otter. No structures will be erected in the field except for the tents in the camps and small aeromagnetic reference stations at the base camp and on Ward Hunt Island. The field work will be supported by helicopter during the entire expedition. The helicopter will be used for the aeromagnetic survey as well as for the geological field work.

### Why is it important to do it?

Since the beginning of Earth's history, the development of our planet is dominated by change and evolution. Especially the continents and oceans changed and drifted taround the globe, and the recent geography of our world is just a snapshot of a long development: some 90 million years ago, there was no Arctic Ocean and no North Atlantic, and North America, Europe and Asia were joined within a large, ancient landmass called Laurasia. The major task of the BGR-project CASE (Circum-Arctic Structural Events) is the examination of the recent circum-Arctic continental margins and the processes who resulted in the break-up of Laurasia and finally in the formation of the Arctic Ocean.

Geoscientists of the BGR are working on the onshore geology in the circum-Arctic land masses where the rocks and their structures and deformations can be directly observed. Geologists try to find out the reason and the process for structural deformation of the rocks along the recent continental margins, for example, the western margin of the Barents Shelf and the northern margin of Greenland/Ellesmere Island. The observation of tectonic

structures like folds or thrusts enables the structural geologist to interpret the direction, the process and the intensity of a collision of ancient continents.

The northernmost part of Ellesmere Island consists of a small microcontinental plate which originally has not been part of the American continent. This fragment of a continent, called "Pearya", belonged most likely to the Eurasian continental plate in the ancient past: the early geological history of Pearya is completely different to the history of ancient North American/North Greenland (Franklinian Basin) but is similar to the evolution of the Barents Shelf (Svalbard). 350 million years ago, Pearya and Svalbard (as parts of Eurasia) approached und finally collided with the Greenland/North American continental plate forming together the large Laurasian continent. For 300 million years, Ellesmere Island, Pearya and Svalbard were together located in the centre of Laurasia. 50 million years ago, Laurasia broke up, the Arctic Ocean opened and Svalbard and North Greenland were separated. This situation makes Pearya to a key area to understanding the formation of the Arctic Ocean.

Until today, the land areas in the extreme north of Canada are very little explored. Additionally, the water-covered shelf areas north of the Canadian Arctic Archipelago are still unexplored. The knowledge of the structures and architecture of this passive continental margin is very important for the prognostication of the potentials of natural resources.

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Jane Chisholm
Ecosystem Scientist II – Nunavut Field Unit
Parks Canada
Box 278
Igaluit, NU X0A 0H0

Karsten Piepjohn Federal Institute for Geosciences and Natural Resources Stilleweg 2 D-30655 Hannover

Reg.: Letter confirming the plans for project CASE 11-Pearya (appl. #1310)

Dear Jane Chisholm,

Since my email of 28. 02. 2008 (and your response), we have to inform you about some changes concerning the personal and the schedule of CASE 11.

### New timing and schedule:

- (I) Due to the uncertain weather conditions especially in May and June, the time of the aeromagnetic survey is extended to ensure to finish the program in time. Thus, we are now planning to start the aeromagnetic survey already around 5<sup>th</sup> of May 2008. The aeromagnetic survey will end as planned around the 24.06.2008.
- (II) The geological field work will start as planned around the 24.06.2008. The work will be finished about the 02.08.2008. Then the base camp at Taconite River will be put down and cleared up, and equipment, personal and waste will be transported back to Resolute.
- (III) There is an amendment to CASE 11: we intend to carry out geological field work in the area of Stenkul Fiord and Split Lake area in southern Ellesmere Island. This will be in the period from approximately 02.08.2008 until 11.08.2008. 4 scientists, a pilot and an Inuit guide will be involved.

### Updated personal:

1) Benoit Beauchamps Geologists, University of Calgary, Canada 2) Nicola Boll Cook, Weilheim, Germany 3) Benjamin Bomfleur Geologist, University of Münster, Germany 4) Detlef Damaske Geophysicist, BGR Hannover, Germany 5) Oliver Deuker Television Hannover, Germany 6) Nina Ulrike Dörr Geologist, University of Bremen, Germany Martina Dolezych Geologist, Geological Museum Dresden, Germany 8) Solveig Estrada Geologist, BGR Hannover, Germany 9) Holger Forke Geologist, Natural Museum Berlin, Germany 10) Werner von Gosen Geologist, University of Erlangen, Germany 11) Friedhelm Henjes-Kunst Geologist, BGR Hannover, Germany 12) Malte Jochmann Geologist, SNSK Longyearbyen, Norway 13) Christoph Kasch Cook / Camp Manager, Berlin, Germany 14) Andreas Läufer Geologist, BGR Hannover, Germany 15) Frank Lisker Geologist, University of Bremen, Germany 16) William McClelland Geologist, University of Idaho, USA 17) Heinz-Dieter Möller Technician, BGR Hannover, Germany Television Hannover, Germany 18) Ulf Neumann 19) Gordon Oakey Geophysicist, GSC Halifax, Canada

20) Karsten Piepjohn
Dienstgebäude
Alfred-Bentz-Haus
Ställeweg 2
30855 Hannover
Buslinie 127 ode
bis Haltestelle P

Verkehrsanbindung Stadtbahnfinie 3 bis Lahe (Endpunkt), Buslinie 127 oder 133 bis Haltestelle Pappelwiese Telefon E (05 11) 6 43 - 0 L Internet http://www.bgr.de

Telefax (05 11) 6 43 - 23 04

Geologist, BGR Hannover, Germany

Bundeskasse Hannover Landeszentralbank Hannover (BLZ 250 000 00) Konto-Nr. 25 001 000

Geologist, BGR Hannover, Germany 21) Lutz Reinhardt 22) Christian Scheibner Geologist, University of Bremen, Germany 23) Bernd Schreckenberger Geophysicist, BGR Hannover, Germany 24) Cornelia Spiegel Geologist, University of Bremen, Germany 25) Michael Trapp Television Kiel, Germany 26) Lars Wehrmann Television Kiel, Germany 27) to be appointed Assistent for Benoit Beauchamps 28) to be appointed Helicopter pilot 29) to be appointed Helicopter engineer 30) to be appointed Inuk field guide 1 Inuk field guide 2 31) to be appointed 32) to be appointed Inuk field guide 3 33) to be appointed Inuk field guide 4 34) to be appointed Inuk field guide 5

Not all scientists need to spend the entire period at the base camp. There will be frequent exchange of personal to reduce the number of people in the base camp as much as possible.

### To recapture what we have done so far:

Since summer 2007, we were able to establish two depots of fuel – 100 drums of fuel are located in Eureka, 80 drums are located in Tanquary Fiord.

Besides the permit by the National Parks Canada, we have received the confirmation of the PCSP to support our project (07.03.1008, project 706-08), and the screening decision by the Nunavut Impact review Board (10.08.2007, project 07YN052). On 28.02.2008, we have submitted the applications to the Nunavut Research Institute (electronically) and Nunavut Planning Commission by fax. Until now, we have not received any response thus we assume that the application process is on its way.

I will be out of office between Easter and the 08.04.2008. If you have any suggestions or question, especially concerning the translation of the text into Inuktituk, or if you need information please contact:

Detlef Damaske (<u>Detlef.Damaske@bgr.de</u>) or Solveig Estrada (<u>Solveig.Estrada@bgr.de</u>)

I wish you a nice Easter. Viele liebe Grüße

Karsten Piepjohn

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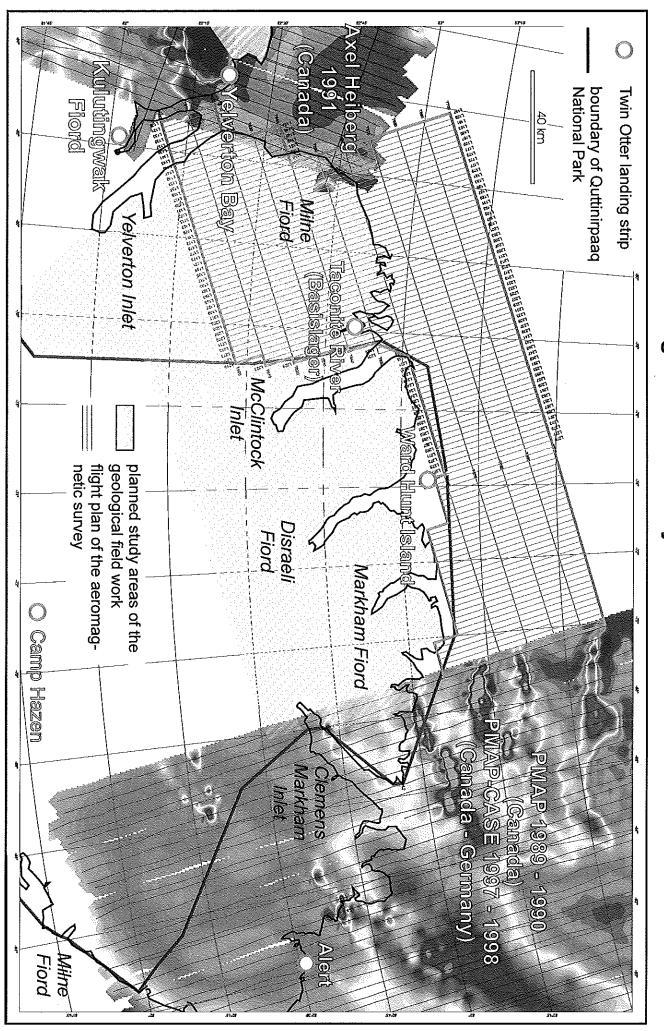
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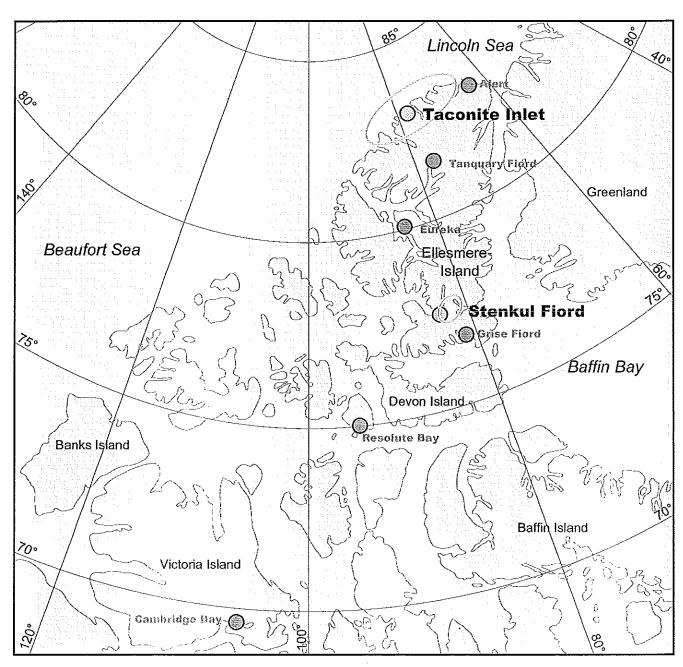
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# Planned study area of the aeromagnetic and geological field work during "CASE 11-Pearya" in summer 2008





Map with the location of the study areas of CASE 11-Pearya in northern Ellesmere Island (Taconite Inlet) in the Stenkul Fiord / Split Lake areas.

# SCHEDULE II

(Section 2)

# CLASSIFICATION OF UNDERTAKINGS

	Column I	Column II
lterr	Type of Undertaking	Description of Undertaking
1.	Industrial undertaking	Any industrial activity other than mining and milling, including manufacturing processes, hydrostatic testing, fluming, the exploration for, and production and transportation of oil and gas, cooling systems, food processing, tanneries, smelters, sawmills, pulp mills, metal finishing and tallings reprocessing
2.	Mining and milling undertaking	Operation of a mine within the meaning of the Canada Mining Regulations or the Territorial Coal Regulations, and any milling related thereto
3.	Municipal undertaking	Any activity
		(a) in a municipality, or in a settlement comprising a multiplicity of residential units, that uses only a municipal water and sewage system, including domestic, horticultural, fire protection, commercial or industrial activities, or
		(b) in a camp or lodge
4.	Power undertaking	Authorized hydro or geothermal electrical generation of
	(a) Class 0	150 or fewer kilowatts
	(b) Class 1	More than 150 kW but less than 5 000 kW
	(c) Class 2	5 000 or more kilowatts but less than 10 000 kW
	(d) Class 3	10 000 or more kilowatts but less than 20 000 kW
	(e) Class 4	20 000 or more kilowatts but less than 50 000 kW
	(f) Class 5	50 000 or more kilowatts but less than 100 000 kW
	(g) Class 6	100 000 or more kilowatts
5.	Agricultural undertaking	Nourishing crops or the providing of water for livestock
6.	Conservation undertaking	Construction of works for the preservation, protection or improvement of the existing natural environment
7.	Recreational undertaking	A commercial or public recreational development
8.	Miscellaneous undertaking	Any other undertaking <u>ree description of the expection profice une</u>