CANADA-NUNAVUT GEOSCIENCE OFFICE
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BUREAU GÉOSCIENTIFIQUE CANADA-NUNAVUT
KANATAMI-NUNAVUMI GEOSCIENCE TITIGAKVIIT

Appendix A

Hall Peninsula Integrated Geoscience (HPIG) project

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1. Introduction

The Hall Peninsula Integrated Geoscience Project is being coordinated by the Canada-Nunavut Geoscience Office and will be delivered in collaboration with partners from the Geological Survey of Canada, universities, industry and Federal and Territorial governments. It will strive to use local Inuit-Owned businesses and hire Nunavummiut. Field work will be conducted during the summers of 2012-2013 with the possibility of an additional, less intensive, year in 2014 based from Iqaluit.

Large areas of Nunavut lack basic geoscience information – maps, data and modern geologic interpretations – required by resource companies to make efficient exploration and infrastructure development decisions. Hall Peninsula on southern Baffin Island represents one of these areas and was designated a mapping priority in the 2002 Nunavut Geological Needs Assessment.

The long-term outcome of this work is to reduce risks to exploration, resource development and land use planning on Hall Peninsula. It will provide framework geoscience information and address regional geological problems through bedrock, surficial and thematic studies. All information will be made publicly available using the latest in GIS and data dissemination technology.

2. Location of undertaking

The project will be conducted on all or parts of six NTS (scale 1:250 000) map sheets (see map 1). Specifically, these map sheets include 25 J, I, P and O and 26 A and B. The most intensive work will be conducted in map sheets 25O and 26B. Mapping will be conducted out of tent-based camps in map sheet 25 O (CNGO South Camp) in 2012 and map sheet 26 B (CNGO North Camp) in 2013. These camps will be located on Crown Land. Field work will be conducted approximately from June 20th to August 20th in 2012 and 2013. If an additional year happens in 2014, fieldwork will be based from Iqaluit.

Proposed 2012 camp location (CNGO South Camp) (see map 2):
UTM: 645579mE 7018263mN
DMS: 63°15'49.516"N 66°05'56.604"W
DD: 63.263754(N) -66.099056(W)
NTS Map Sheet No: 025O08 Scale: 1:50,000

Proposed 2013 camp location (CNGO North Camp) (see map 3):
UTM: 570990.10mE 7153337.46mN
DMS: 64°29'52.977"N 67°31'19.905"W
DD: 64.498049(N) -67.522196 (W)
NTS Map Sheet No: 026B05 Scale: 1:50,000

3. Description of undertaking

The proposed campsites are located on glaciofluvial terraces overlooking lakes (see maps 2 and 3). South Camp is located southeast of Iqaluit (~135 km) while North Camp is located northeast of Iqaluit (~95 km). Before field season, fuel and gear will be brought to the campsites by ski and/or wheel planes. We will be supplied (groceries, mail, etc…) approximately once every 14 days from Iqaluit by a Twin Otter aircraft equipped with tundra

wheels. We will have two helicopters in camp supporting up to 25 scientists and support staff. At the end of field season, everything will be brought back to Iqaluit by plane.

The main common tents are Weatherhaven models built with three layers, including insulation, covering an aluminum frames each outfitted with a diesel burning stove. The kitchen tent will consist of two 14'x16' tents arranged end-to-end. It will house the kitchen, dining facilities and food storage. Other communal Weatherhaven tents will include 2 office tents (end-to-end), a shower tent and a gear storage tent. Each person will have their own personal tent, which could be a Logan tent – double-walled canvas, single pole 10'x8' or another type of personal all-season tent. The pilots, engineer and cook will each have a 10'x12' gabled double walled canvas tents on an aluminum frame and outfitted with a diesel burning stove.

Kitchen equipment includes 3-4 propane-fired and/or electric refrigerators, 2 propane-fired stoves, an electric freezer, a professional mixer, pots/pans/dishes etc. Electricity to the kitchen and office tents will be provided by a 3500 or 5000 W diesel generator. Water for the kitchen and shower tents will be pumped from a local water source (nearby stream or lake) once or twice daily and stored in a 1000 L plastic container. We will use a gas pump equipped with a metal screen. On average, we expect to use between 500 L and 1000 L of potable water per day. Over the course of a 50-day field season the total amount is expected to be between 25m^3 to 50m^3. Greywater will be disposed of in pits that will be dug at least 35m from a water body and covered with fill on a regular basis. Similarly, pits for sewage disposal will be dug at least 50m from a water source and downstream/downslope from the potable water source.

The chief geologist will handle most of the camp logistics including safety issues, camp maintenance, daily phone calls to our expeditor, and management of camp staff. Meaningful and engaging community collaboration will be a very important factor in the success of the project. Ongoing interaction with the City of Iqaluit, Hamlet of Pangnirtung, QIA, HTA's and Arctic College is expected. We plan on bringing these organizations to visit our camp, our geologists and learn about recent results. We will use local businesses and hire local residents as often as possible.

4. ***Quantity of water involved***

We estimate the total daily water use between 500 and 1000 L per day (0.5 to 1 m^3/day). Water will be used for personal use (drinking and washing).

Water returned to source

<0.5 m^3/day

5. ***Waste***

Sewage:

- The quantity of sewage for a maximum of 25 people in camp at any one time is estimated around 100 L per day (0.1 m^3/day).
- Holes will be dug in the ground (gravel outwash) at least 50m from the nearest water source and downstream from the main camp. Tents and wooden structures will be used as toilet facilities and the holes will be filled as necessary.

Greywater:

- Greywater will be produced from washing dishes, showering and washing clothes by hand. All detergents used will be environmentally friendly and biodegradable.
- The quantity of greywater for a maximum of 25 people in camp at any one time is estimated around 400 to 500 L per day (0.4 to 0.5 m^3/day).
- Holes will be dug in the gravel outwash plain next to the kitchen and shower tents and at least 35m from the nearest water source. These holes will be filled in as necessary.
- All sleeping tents will be at least 150m away from the kitchen and shower tents.

Other:

- Non-combustible waste will be shipped out of the camp and disposed of at the City of Iqaluit municipal waste facility. All local authorizing organizations will be consulted prior to the field work to ensure the municipal waste site can accommodate additional refuse.
- Combustible waste will be incinerated in empty metal fuel drums equipped with a portable industry standard incinerator and the ashes will be cooled and buried.
- We will consult the local community to determine the best method of disposing the empty fuel drums. At minimum, they will be removed from the camp site and left with the community. If they are not needed by the community we will transport them out of the community to an approved storage or disposal site.

6. ***Options***

Locations of the proposed camps have been selected using aerial photos and by visiting them in August 2011. The sites were chosen because of their proximity to water, the possibility of landing a twin Otter on tundra wheels and their general location in the study area. Alternative sites, with similar attributes, are quite scarce in the study area.

7. ***Predicted environmental impacts and proposed mitigation measures***

No long-term environmental impacts are expected. With the permission of INAC and the QIA, we will set up a temporary, low-impact basecamp for the duration of the mapping project. Two helicopters (Bell 206L) and one ATV will be the only vehicles stationed at the camp. A temporary airstrip will be established for a Twin Otter to deliver supplies and personnel every 14 days, approximately. The site will be thoroughly cleaned following demobilization and everything brought back to Iqaluit. All combustible garbage will be incinerated and the chilled ashes will be buried. Non-combustible garbage will be shipped to the municipal landfill site in Iqaluit. A fuel cache will be established at the camp which will store no more than 220 drums of aviation fuel, 3 drums of diesel and 1 drum of gasoline. The fuel will be stored in a self-supporting insta-berm and spill kits will be close by.

8. ***Water rights of existing and other users of water***

The project will not affect the quality, quantity, or flow of water in the area. No other water rights user is known for the proposed camp areas.

9. ***Inuit water rights***

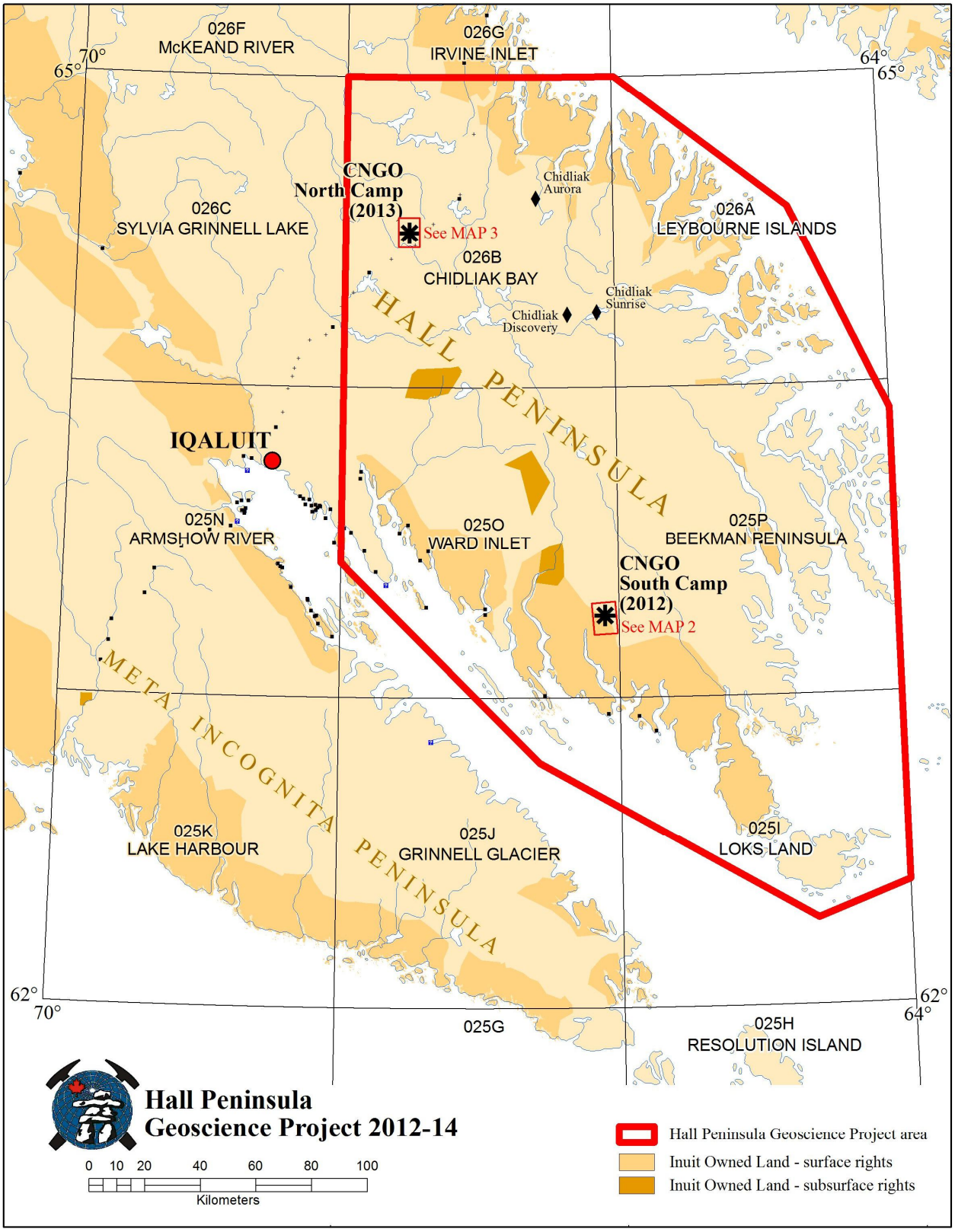
The project will not substantially affect the quality, quantity, or flow of water flowing through Inuit Owned Lands.

10. ***Consultation***

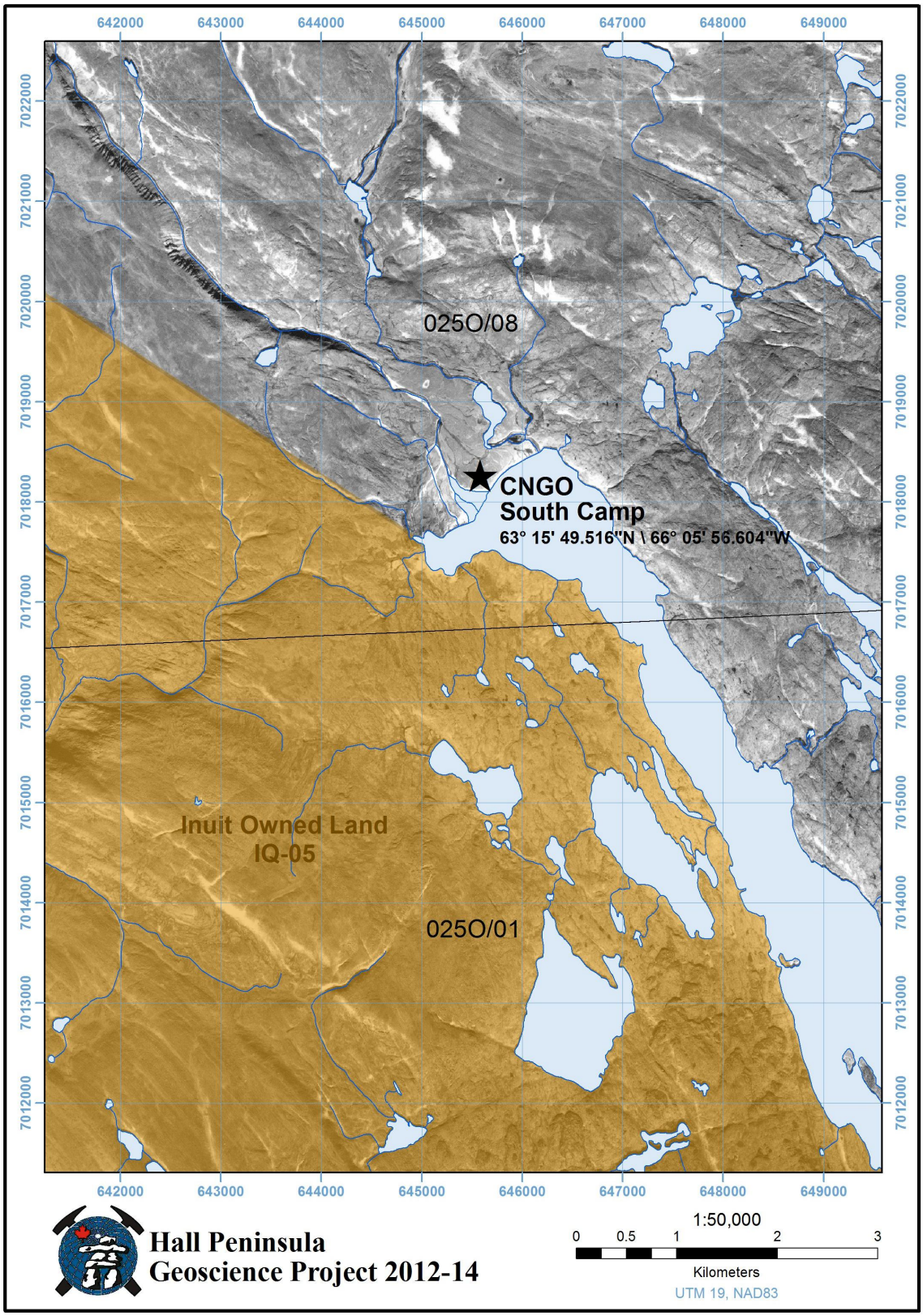
QIA and the City of Iqaluit personnel have already been consulted in October and November 2011 and so far no concerns have been raised. Iqaluit HTA, Hamlet of Pangnirtung and Pangnirtung HTA will also be consulted before January 2012 and we will continue to keep QIA and the City of Iqaluit inform.

11. ***Location maps***

MAP 1


026F
McKEAND RIVER
026G
IRVINE INLET
70°
65°
64°
65°
CNGO
North Camp
(2013)
See MAP 3
Chidliak
Aurora
026C
SYLVIA GRINNELL LAKE
026A
LEYBOURNE ISLANDS
026B
CHIDLIAK BAY
Chidliak
Sunrise
Chidliak
Discovery
HALL PENINSULA
IQALUIT
025N
ARMSHOW RIVER
025O
WARD INLET
025P
BEEKMAN PENINSULA
CNGO
South Camp
(2012)
See MAP 2
META INCOGNITA PENINSULA
025K
LAKE HARBOUR
025J
GRINNELL GLACIER
025I
LOKS LAND
62°
70°
025G
025H
RESOLUTION ISLAND
62°
64°
Hall Peninsula
Geoscience Project 2012-14
0 10 20 40 60 80 100
Kilometers
Hall Peninsula Geoscience Project area
Inuit Owned Land - surface rights
Inuit Owned Land - subsurface rights

MAP 2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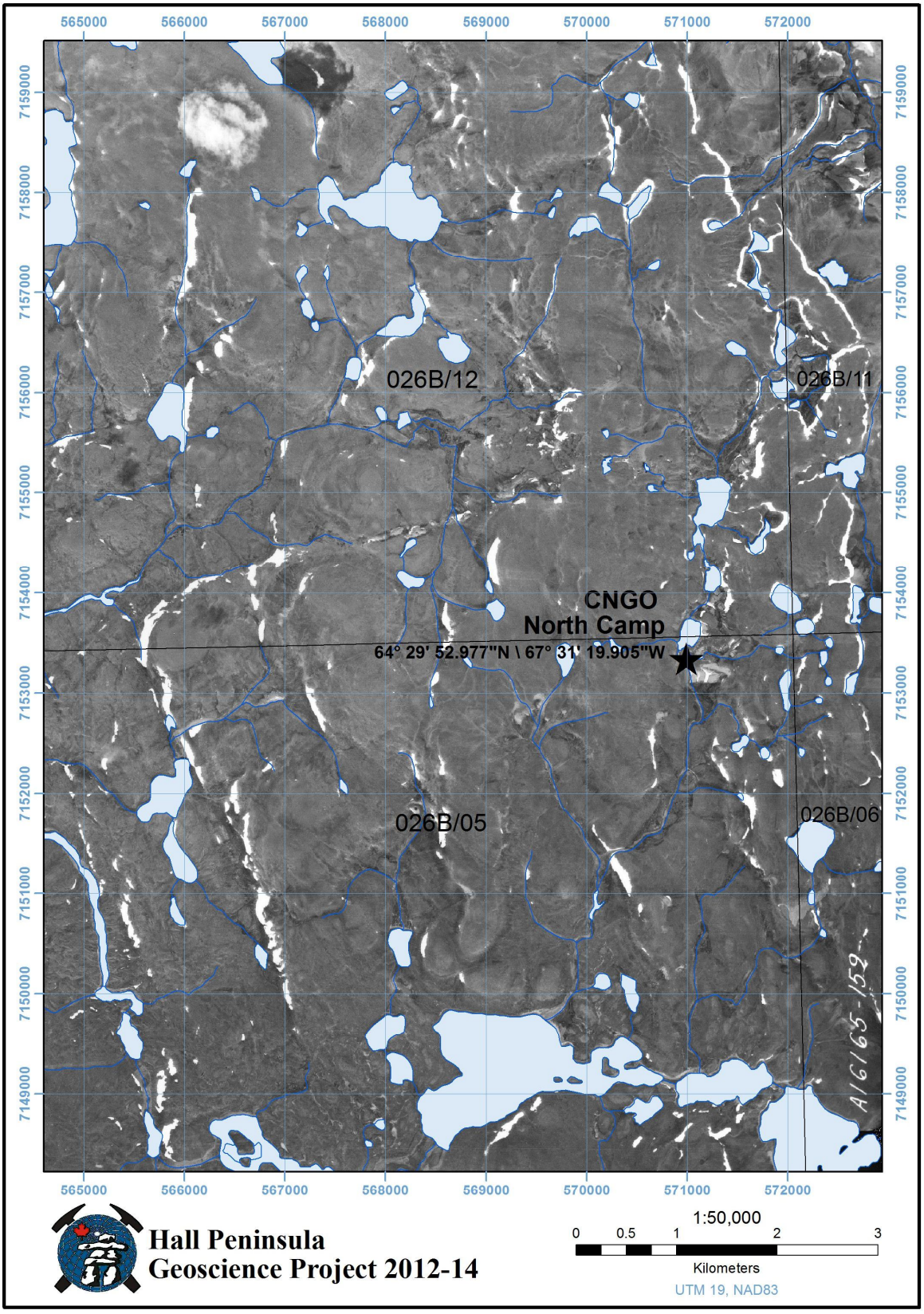
7016000
7015000
7014000
7013000
7012000
025O/08
CNGO
South Camp
63° 15' 49.516"N \ 66° 05' 56.604"W
Inuit Owned Land
IQ-05
025O/01
Hall Peninsula
Geoscience Project 2012-14
1:50,000
0 0.5 1 2 3
Kilometers
UTM 19, NAD83

MAP 3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7149000
026B/12
026B/11
CNGO
North Camp
64° 29' 52.977"N \ 67° 31' 19.905"W
026B/05
026B/06
A16165-159
Hall Peninsula
Geoscience Project 2012-14
1:50,000
0 0.5 1 2 3
Kilometers
UTM 19, NAD83