**Titan Uranium Inc.**

# Submission to the NIRB
# Screening Part 2 Form
# Project Specific Information Requirements

## Thelon Project
## (Located Northwest of Baker Lake, Nunavut)

**N.T.S. Sheets 66 B-14, 66 B-15, 66 B-16, 66 G-1, 66 G-2, 66 G-8, and 66 H-5**

**Date Prepared:** **January 8, 2006**

**Prepared by:** **Paul R.J. Nicholls, P. Eng.**

# Part 1 Project Description
# A. General Information

## 1) Name and Location of Project

The Thelon Project is located approximately 150 kilometres northwest of the Hamlet of Baker Lake in N.T.S. Sheets 66B, 66G, and 66H and consists of seven mineral leases, one prospecting permit and fifty-one mineral claims.

## 2) Contact Information


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## 3) List of Act, Regulations, and Guidelines that Apply to Project Activities

Article 13 - Nunavut Land Claims Agreement
NWB - Water Licensing in Nunavut - Interim Procedures and Information Guide for Applicants
NWB - Interim Rules of Practice and Procedure for Public Hearings
NWTWB - Guidelines for the Discharge of Treated Municipal Wastewater in the NWT
NWTWB - Guidelines for Contingency Planning
DFO - Freshwater Intake End of Pipe Fish Screen Guideline
Fisheries Act - s.35
RWED - Environment Protection- Spill Contingency Regulations
Canadian Drinking Water Quality Guidelines
Public Health Act Camp Sanitation Regulations
Public Health Act Water Supply Regulations
Territorial Land Use Act and Regulations
Canada Mining Regulations

**4) List of Approvals, Permits and Licenses Required**

a) mineral rights: Department of Indian and Northern Affairs Canada
prospecting permit - 6660;
mineral leases 3253, 3254, 3255, 3256, 3259, 3260, 3262, 3264;
mineral claims: F49952 to F49955, F49958, F49966 to F49970, F49977 to F49991, F89343 to F89360, F88293, F8465

b) Land Use Permit: Department of Indian and Northern Affairs Canada (application submitted)

c) Water License: Nunavut Water Board (application submitted)

d) Land Use License III: Kivalliq Inuit Association (application submitted)

## B) Project Information

**5) History**

Mineral exploration for Uranium has been carried out in the area sporadically since 1969 by various companies.

The camp site was used previously by Westmin Resources limited in 1977, and during the period 1979 and 1984. Westmin closed the camp in 1984. In 1977 the camp was small and was removed after less than 100 man days. Between 1979 and 1984 the camp was utilized during the summer months to support a regional mineral exploration program. Titan Uranium Inc. has not visited the site to date, but will take photographs of the site prior to the camp being mobilized.

**6) Regional Location Map**

See Figures 1 and 2

**7) Maps of Project**

See 1:50,000 scale maps accompanying Land Use Permit Application

**8) Type of Mineral Resource**

Titan Uranium Inc. initiated the Thelon Project to explore for unconformity-vein type Uranium deposits in Nunavut. Geologically the project area is located at the unconformity between the Paleoproterozoic Amer Group of metasedimentary rocks and the overlying Mesoproterozoic sandstones of the Thelon Formation. Exploration in similar geological environments in Saskatchewan and Australia has resulted in the discovery of a significant number of deposits.

## 9) Project Purpose and Need

The purpose of the Thelon Project is to explore areas where previous exploration (1976 to 1984) by Western Mines Limited (Westmin Resources Limited) had located Uranium mineralization in the Amer Group metasedimentary rocks, defined several boulder trains of unconformity-type Uranium mineralization, and also defined boulder trains of sandstone hosted uranium mineralization. The diamond drilling will test the probable source areas of the boulder trains.

## 10) Alternatives

To explore the area for mineral resources there are few alternatives other than completing the physical work. Titan Uranium Inc. will comply with all government regulations and guidelines in order to complete the work in a manner that causes the least disturbance to the environment.

## 11) Type of Exploration Activity

The proposed program will consist primarily of diamond drilling, geological mapping, and prospecting. A limited amount of ground geophysical and geochemical surveys are planned at this time.

## 12) Activities Included In Project

a) Soil Sampling

Soil samples may be collected over small areas of Titan's mineral holdings. The samples will be collected using small diameter (approximately 2.5 cm) soil sampling auger from depths of approximately 30 cm. All sampling traverses will be carried out on foot and this sampling procedure will cause little disturbance to the environment.

b) Geological Mapping and Prospecting

Titan's mineral holdings will be covered by geological and prospecting traverses in order to define the bedrock geology and identify any uranium occurrences present in outcrop or as glacially transported boulders. All traverses will be conducted on foot using scintillometers to measure radioactivity and GPS receivers for location.

c) Geophysical Surveys

Limited ground geophysical surveys may be completed over selected portions of Titan's mineral holdings to locate the precise location of conductors defined by surveys completed by various other exploration companies in the past. In the southern part of the project area (N.T.S. Sheets 66B/14, and 15) geophysical surveys may be required to define the thickness of the Thelon Formation sandstones or to define the orientation of fractures in the sandstone. All geophysical surveys will be carried out utilizing portable equipment and the traverses will be completed on foot

d) Diamond Drilling

Diamond drilling to test previously defined exploration targets using a helicopter portable drill rig is planned for seven areas within Titan's mineral holdings. The drill will moved by helicopter to and from each site. The helicopter will also be utilized to move personnel to and from the drill and to transport the drill core to the camp for logging.

e) Camp

The proposed camp site is located in N.T.S. Sheet 66-G/1 (coordinates of 65°03'N and 98°21'30"W) approximately 150 kilometres northwest of Baker Lake on a flat sandy area approximately 75 metres from the shore of a lake. The proposed camp site is approximately 4 metres above the level of the lake.

The proposed camp will be designed for approximately 14 people and the camp population will fluctuate from approximately 4 up to the maximum depending on the stage of the program. The camp will function as the operational centre of the exploration program and the helicopter will be used to transport personnel and equipment to the various parts of the project area.

f) Fuel Transport and Storage

The fuel for the project will delivered by Turbine Otter from Baker Lake. The fuel cache will be located immediately southeast of the camp on a relatively flat, elevated area more than 100 meters from the high water mark of nearby ponds and lakes. The Jet-B, P-50, and unleaded gasoline are contained in 205 litre drums. Each drum will be inspected immediately upon delivery to the cache site to ensure that there has been no damage during transport.

g) Chemical Transport and Storage

Lubricants and drill additives will be stored in a floored tent. These materials will be transported to the site by charter aircraft from Baker Lake.

13) Department of Fisheries and Oceans (DFO) Operational Statement (OS) Activities

The following activities do not apply to the project: Bridge Maintenance, Clear Span Bridge, Culvert Maintenance, Ice Bridge, and Routine Maintenance Dredging.

14) Does not apply to the project.

15) Does not apply to the project.

## C) Geophysical

16) Only small limited ground Geophysical surveys will be completed. The exact locations are still being determined.

17) Does not apply to the project.

## D) Drilling

18) A total of 14 diamond drill holes (1930 metres) are planned to test targets defined by previous work. An additional 12 contingency holes have also been included in the budget to follow up on encouraging results. Some or possibly all of these contingency holes may not be completed.

19) To date the drilling contractor has not been selected so the exact drill additives are not known at this time. Titan Uranium Inc. will ensure that the additives are nontoxic and biodegradable and will update the Spill Response Plan with all appropriate MSDS sheets once the contractor has been selected.

20) All drill cuttings will be retained in a sump located a minimum of 35 meters from the normal high water mark of any water body. The sump will be back filled upon completion of the hole.

21) The drill water will be returned to the sump and a series of settling tanks prior to being reused for drilling. There should be minimal water loss except in cases of highly fractured rock beneath the permafrost layer.

22) The drill will be mobilized to the area by air and will be moved around the project area by helicopter.

23) The drill will be dismantled into its main components by the drilling contractor and packaged and secured along with its ancillary equipment and rods. The drill will be flown out by the drilling contractor. All drill sites will be inspected for soil contamination. Any remaining waste will be taken to camp to be burned if possible or to be flown out to an approved disposal location. Greywater and sludge sumps will be filled and leveled. As much as possible, drill sites will be restored immediately after the drill has been moved to the next site.

24) In general the exposure to radiation at this stage of exploration is not considered a great risk, however it is prudent to monitor the levels of radiation and radon gas at the areas where the drill core is being monitored. Titan will put into place monitoring procedures.

## E) Transport

25) The site will be accessed by air from Baker Lake. The fuel and material for camp construction will be moved to the site while the ice is on the lake and ski equipped fixed wing aircraft can be utilized. During the exploration program supplies will be shipped to and from the camp by helicopter and possibly by the turbine Otter from Baker Lake which is equipped with large tundra tires which cause minimal damage to the tundra.

26) A formal landing strip is not planned at this time.

## F) Camp Site

27) The proposed camp will consist of the following:

- 1 wood-floored 14' by 16' kitchen tent with hot and cold running water, refrigerator, stove
- 1 wood-floored 14' by 16' dry tent with hot and cold running water, refrigerator, shower(s), washer and dryer, hot water tank
- 6 wood-floored 12' by 14' sleep tents
- 1 wood-floored 12' by 14' office tent
- 1 wood-floored 12' by 14' tent for logging core
- 1 wood-framed toilet
- 1 generator shelter housing 10 kW generator
- 1 wood-floored 12' by 14' storage tent
- core storage racks

28) The proposed camp is temporary however it may be used for more than one season.

29) The maximum number of people at the camp will be approximately 20.

30) A 10 kilowatt diesel generator is proposed as the source of electrical power for the camp.

## G) Equipment

31) The main equipment that will be utilized in the project are:
a) helicopter - size not yet determined
b) helicopter portable diamond drill and water pump - approximately 3m by 3m
c) generator - approximately 1m by 2m
d) water pump for camp - small

32) Digital photos of equipment are not available at this time

33) The equipment will be moved by helicopter in the project area.

## H) Water

34) The water source for the camp will be the lake immediately north of the camp site. Water sources for the diamond drilling will lakes and or ponds close to the individual drill sites.

35) Water consumption for the camp is estimated to be 100 litres/person/day (maximum of 2000 litres per day), and to be 15,000 litres per day for the diamond drilling.

36) The intakes of the water pumps will be equipped with a screen, with a mesh size sufficiently fine so as to prevent any danger to fish, and the pumping rates will be sufficiently low so as to prevent the impingement of fish on the pump intake screen.

## I) Waste

37) a) Sewage will be managed by latrine sumps. The latrine sumps will be treated with lime and back-filled following use.
b) Camp greywater will be discharged into sumps located where direct flow into a body of water is not possible. Average daily discharge will be on the order of 2500 liters.
c) Combustible solid waste will be incinerated daily in a modified 45 gallon drum incinerator.
d) Noncombustible waste will be back-hauled to an approved Solid Waste Disposal Facility
e) Bulky and scrap metal items will be removed from site for proper disposal.
f) Waste oil not used for garbage incineration will be removed from site for proper disposal. All potential hazardous waste such as batteries, aerosol cans, paint cans, etc. are routinely collected and shipped for proper disposal.
g) Empty fuel drums will be returned to Baker Lake and later barged south for recycling.

## J) Fuel

38) The initial fuel haul for the 2006 program will include approximately 140 drums (205 litre) of JetB, 50 drums (205 litre) of P-50**,** 1 drum (205 litre) of unleaded gasoline and 4 (45 kg) cylinders of propane. There will be a separate floored tent for storage of lubricants and drill additives. The fuel cache will be located immediately southeast of the camp on a relatively flat, elevated area more than 100 meters from the high water mark of nearby ponds and lakes.

39) In the case of any leakage a containment berm using soil material or snow with a plastic tarp at the foot of the berm for easy capture of the spill will be built. Spill kits will he maintained. at the main fuel cache, the diamond drill site, and at the camp. These kits will contain sphagnum absorbents, absorbent pads, gloves, coveralls, and containers for the disposal of contaminated material.

40) The fuel will be transferred from the 205 litre drums to the equipment needing refueling using manual or battery powered pumps.

## K) Chemical and Hazardous Materials

41) The main chemicals present on the site will consist of drill additives which will be stored at the camp and at the drill. The quantities and types have not yet been determined.

42) In case of a spill sphagnum absorbents will be applied to soak up liquids, and plastic sheeting will placed over solid chemicals, such as dusts and powders, to prevent their disbursement by wind or investigation by birds or other mammals. Acids or caustics will be neutralized. Place spilled material and contaminated cleanup supplies in an empty refuge drum and seal for disposal**.**

43) The drill additives will be transferred according to the manufacturers guidelines and the operating procedures of the drill contractor.

## L) Explosives

44) No explosives will be present on the site.

## M) Public Involvement / Traditional Knowledge

45) Phil Olson (president of Titan Uranium Inc.) presented the proposed project to the Hamlet Council of Baker Lake on August 11, 2005 at a regularly scheduled council meeting.

Titan Uranium Inc. has also had discussions with several local businesses, the Beverly and Qamanirjuaq Caribou Management Board Map and is planning to participate in a local radio broadcast.

Titan Uranium Inc. believes that discussions and consultations with the public play an important role in directing the project.

# Part 2 Description of the Existing Environment

1a) Physical Environment

The Thelon Project is located approximately 150 kilometres northwest of the hamlet of Baker Lake in Nunavut Territory and the area of the proposed 2006 work program is located more than 40 kilometres west of the Thelon Game Sanctuary (Figures 1 and 2). Baker Lake is located on tidewater making it accessible by oceangoing barge for approximately six weeks each year. The project area is completely within the sub-Arctic barren lands approximately 400 kilometres north of the tree line. The tundra is flat to gently rolling with topographic relief ranging between 150 and 300 metres above sea level. In the project area the summer field season is limited to the period from late May to late September due to the Arctic climate. The larger lakes become ice free by the middle of July. Drainage in the northern part of the area flows north to the Arctic Ocean via the Back River, and the drainage in the southern portion of the area is to Hudson Bay via the Thelon River.

Geologically (Figure 3) the Thelon Project area is underlain by Archean, Paleoproterozoic, and Mesoproterozoic rocks of the western Churchill structural province of the Canadian Shield. Archean basement rocks including augen gneisses, intrusive rocks, with some volcanic, sedimentary and chemical sedimentary units are unconformably overlain by Paleoproterozoic metasedimentary rocks of the Amer Group. The unconformity is locally marked by conglomerates and/or a green quartz sericite rich rock interpreted to be a paleosol . The Amer Group consists orthoquartzite, black argillite, dolomite, siltstone, feldspathic sandstone units. Following a period of weathering the sandstones, and conglomeratic sandstones of the Thelon Formation were deposited unconformably on the Amer Group of metasedimentary rocks. The trace of the Mesoproterozoic unconformity has been mapped in N.T.S. sheets 66 - G/1 and G/2 with the preserved thickness of the Thelon Formation increasing to greater than 650 metres in N.T.S. sheet 66 - B/13. The Thelon Formation and older units have been intruded by diabase dykes.

During the Pleistocene the area was covered by the continental ice sheet. As the project area lies to the north of the Keewatin ice divide ice movement was to the north west. Measurements of glacial striae and the orientation of drumlinoid features indicate ice transport directions ranging from 330 to 347° azimuth in the northern portion of the area to between 300 to 310° azimuth in southwestern part. Glacial deposits cover approximately 90 to 95% of the area. Several eskers are located within the project area (Figure 4).

The area is underlain by continuous permafrost. Diamond drilling completed in 1980 indicates that the zone of permafrost extends to a depth of approximately 300 metres.

1b) Biological Environment

The project area is located in the Southern Arctic Ecozone and the vegetation consists mainly of grasses, moss, lichen, low growing shrubs , and a variety of small plants.

Wildlife that can be present in the area include Caribou, Arctic Fox, Arctic Ground Squirrel, Arctic Wolf, Grizzly Bear, Wolverine, Arctic Hare, and Lemming. The Caribou migrate north from the treeline into the area in the spring. The project is located in an area where the caribou have calved in the past. Data published currently indicates that the calving areas of the Beverly Caribou Herd are located to the north and west of the project area (Figure 5). According to the Nunavut Wild Species 2000 report the current status of the Wolf and Wolverine is considered sensitive.

Flocks of migrating ducks, loons, geese, and swans pass through the area during the spring and fall. Willow Ptarmigan, Rough-legged Hawk, Lapland Longspur, Gulls, Arctic Terns and other birds are common in the summer.

1c) Socioeconomic Environment

The project area is located to the north of the Thelon River which provided access to the area in the past. At the present time there is little land and resource use activities in the project area.

## Part 3 Identification of Impacts

1) See attached Table

2) There are not any long term environmental impacts that have been identified with the current program in the project area. Minor disturbances to the surface may be caused by the drilling and the camp but these can and will be remedied during and /or shortly after the program is finished. All geological, prospecting, and geophysical work will be conducted on foot which will cause a minimal impact.

3) In the short term the socioeconomic impacts should be positive with local services, supplies, and personnel being used whenever possible. The long-term impacts are not known as they are dependent on the results of the exploration.

## Part 4 Mitigation of Impacts

1) Not applicable

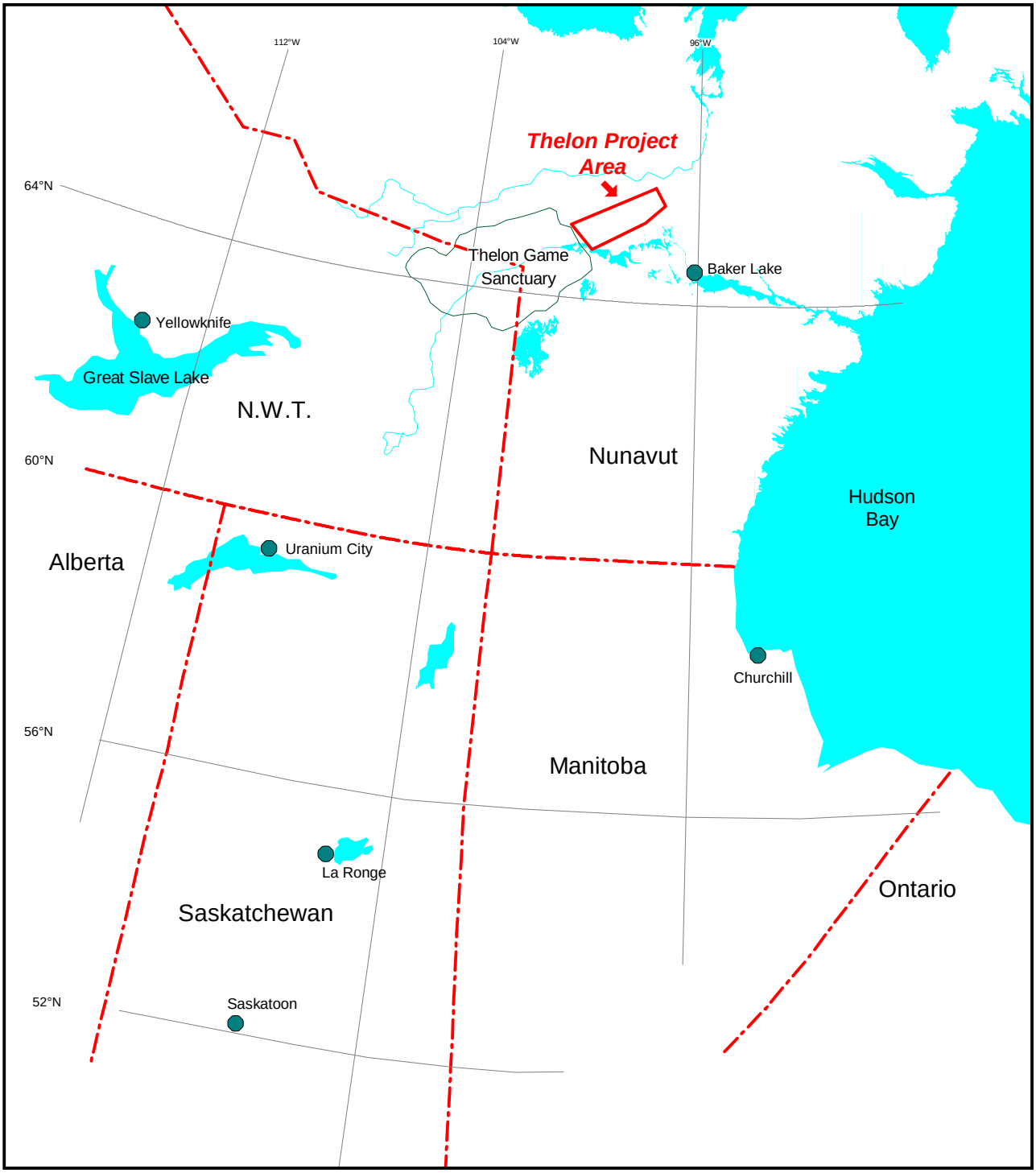
## Part 5 Cumulative Effects

1) As Titan's exploration is in the preliminary stages it is difficult to discuss the cumulative effects. The size and scope of the project will be determined by the results of exploration.

**THE NUNAVUT IMPACT REVIEW BOARD**
**SCREENING PART 2 FORMS**

## TABLE 1 - IDENTIFICATION OF ENVIRONMENTAL IMPACTS

| | | ENVIRONMENTAL COMPONENTS | PHYSICAL | designated environmental areas | ground stability | permafrost | hydrology/ limnology | water quality | climate conditions | eskers and other unique or fragile landscapes | surface and bedrock geology | sediment and soil quality | tidal processes and bathymetry | air quality | noise levels | other VEC: | other VEC: | other VEC: | BIOLOGICAL | vegetation | wildlife, including habitat and migration patterns | birds, including habitat and migration patterns | aquatic species, incl. habitat and migration/spawnin | wildlife protected areas | other VEC: | other VEC: | other VEC: | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PROJECT ACTIVITIES** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CONSTRUCTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OPERATION | camp | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Fuel Storage | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Diamond Drilling | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | prospecting | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Geological Mapping | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Geochemical Survey | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Geophysical Survey | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Burning | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DECOMMISSIONING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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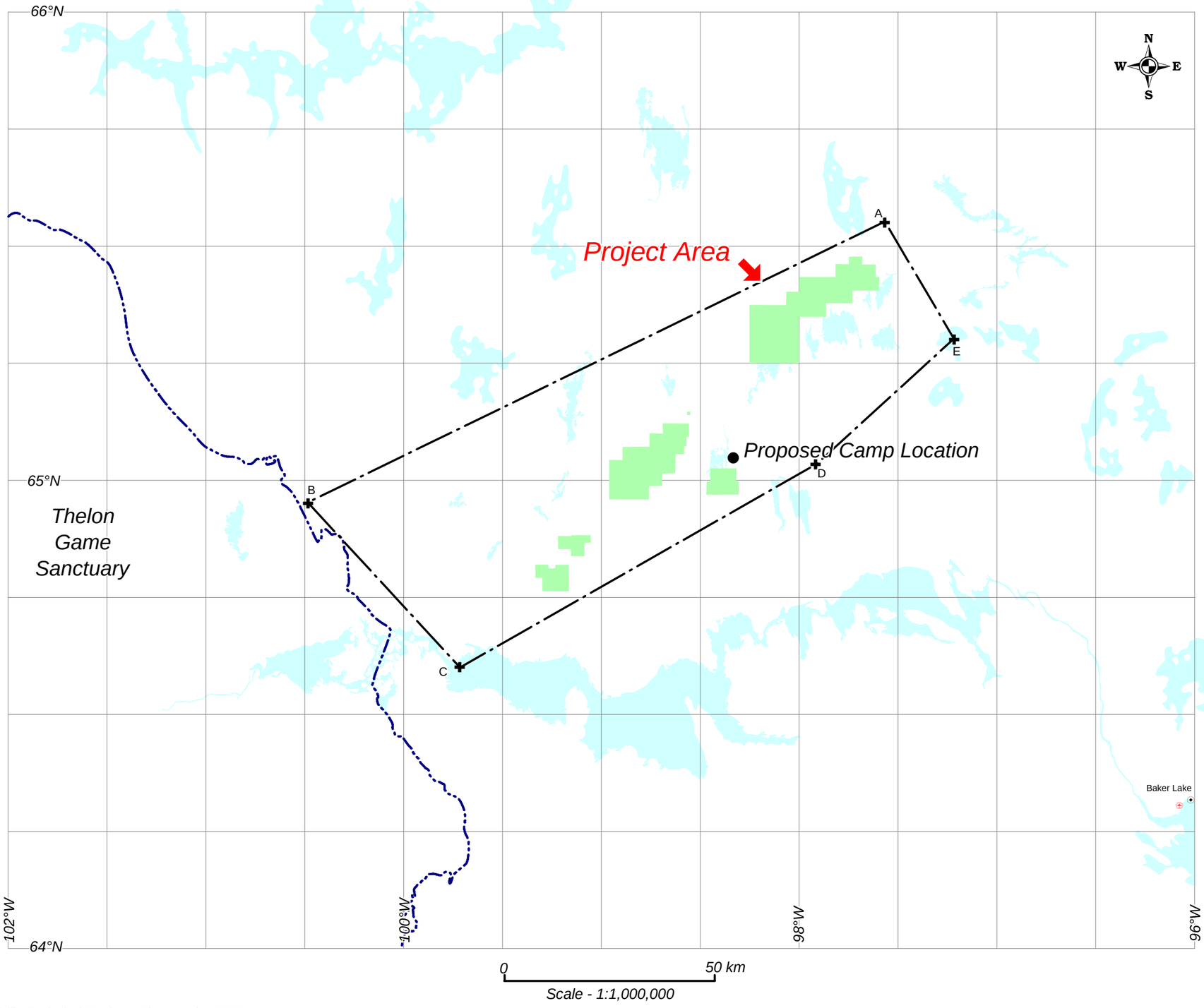
**Thelon Project**

# Regional Location

Stouffville Geological Services Ltd. September 2005

**Figure 1**




**Thelon Project**

Area of Mineral Exploration 2006

Project Boundary

A Boundary Points

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# Limits of 2006 Exploration

**Figure 2**

Stouffville Geological Services Ltd. November 2005

66°N

65°N

64°N

102°W

100°W

98°W

96°W

N

W

E

S

A

B

C

D

E

Thelon Wildlife Sanctuary

Meadowbank Gold

Kiggavik Uranium Deposit

Baker Lake

0 50 km

Scale - 1:1,000,000

Geology after Hanmer et al, G.S.C. Open File 4236, 2002

Mineral Occurences from Tella, G.S.C. Open File 2969, 1994

## Legend

**Paleozoic**

- Limestone

**Proterozoic**

- Diabase
- Syenite, Tonalite Intrusives
- Granite Intrusives
- Thelon Formation (Barrensland Group)
- Wharton Group (volcanic rocks)
- Baker Lake Group (sedimentary rocks)
- Amer Group

**Proterozoic or Archean**

- Quartzites
- Undifferentiated Supracrustal Rocks
- Mafic Volcanics

**Archean**

- Granitic Rocks, Granites, and Granodiorites
- Gneiss

- Faults
- Project Boundary

**Mineral Occurrences**

- Gold Occurrences
- Paleoproterozoic Uranium Occurrences
- Radioactive Boulder Trains
- Unconformity-vein Type Uranium Occurrences

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# Regional Geology

**Figure 3**

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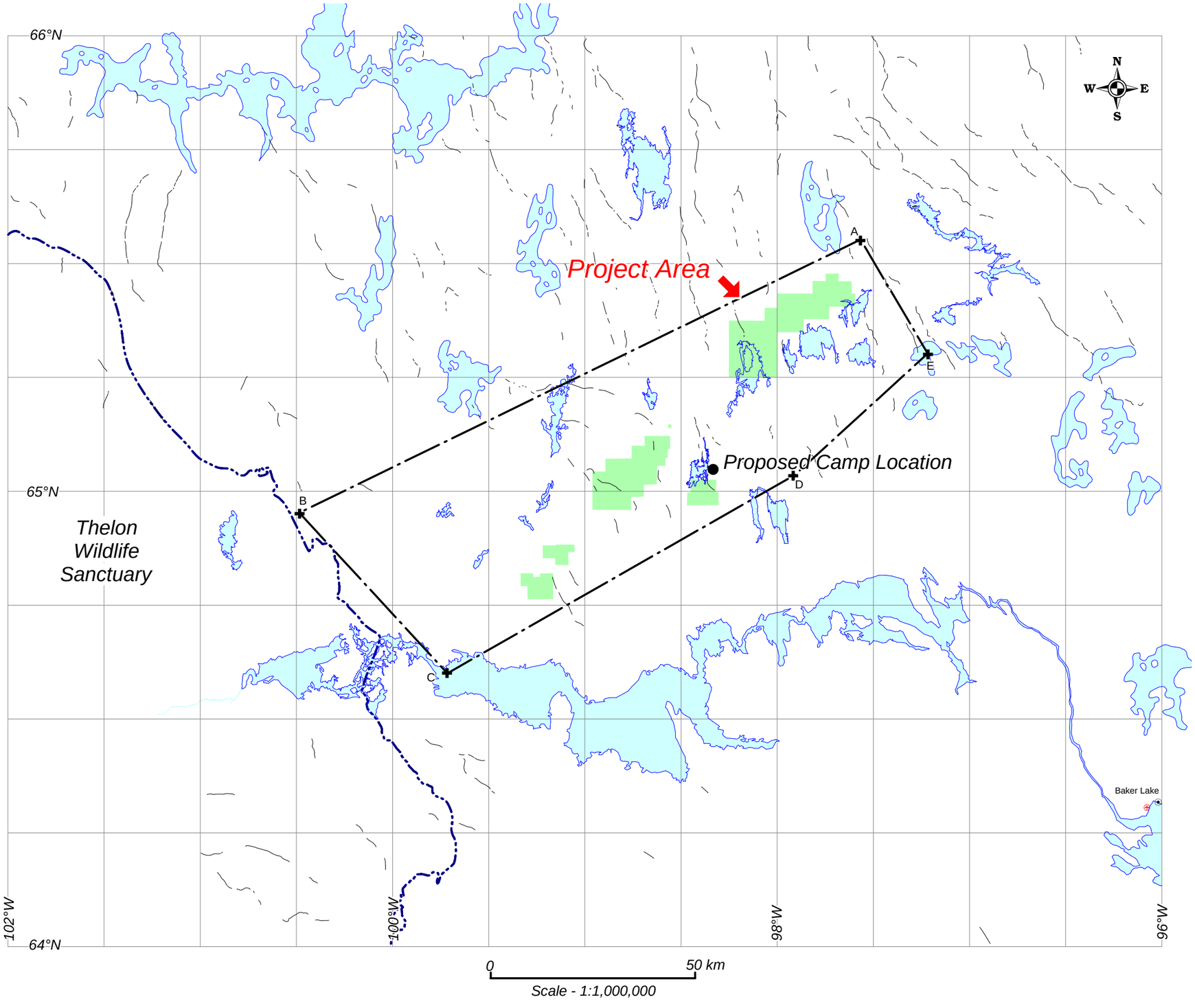


**Thelon Project**

- Area of Mineral Exploration 2006
- Project Boundary
- A — Boundary Points
- Eskers

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# Physical Environment

**Figure 4**

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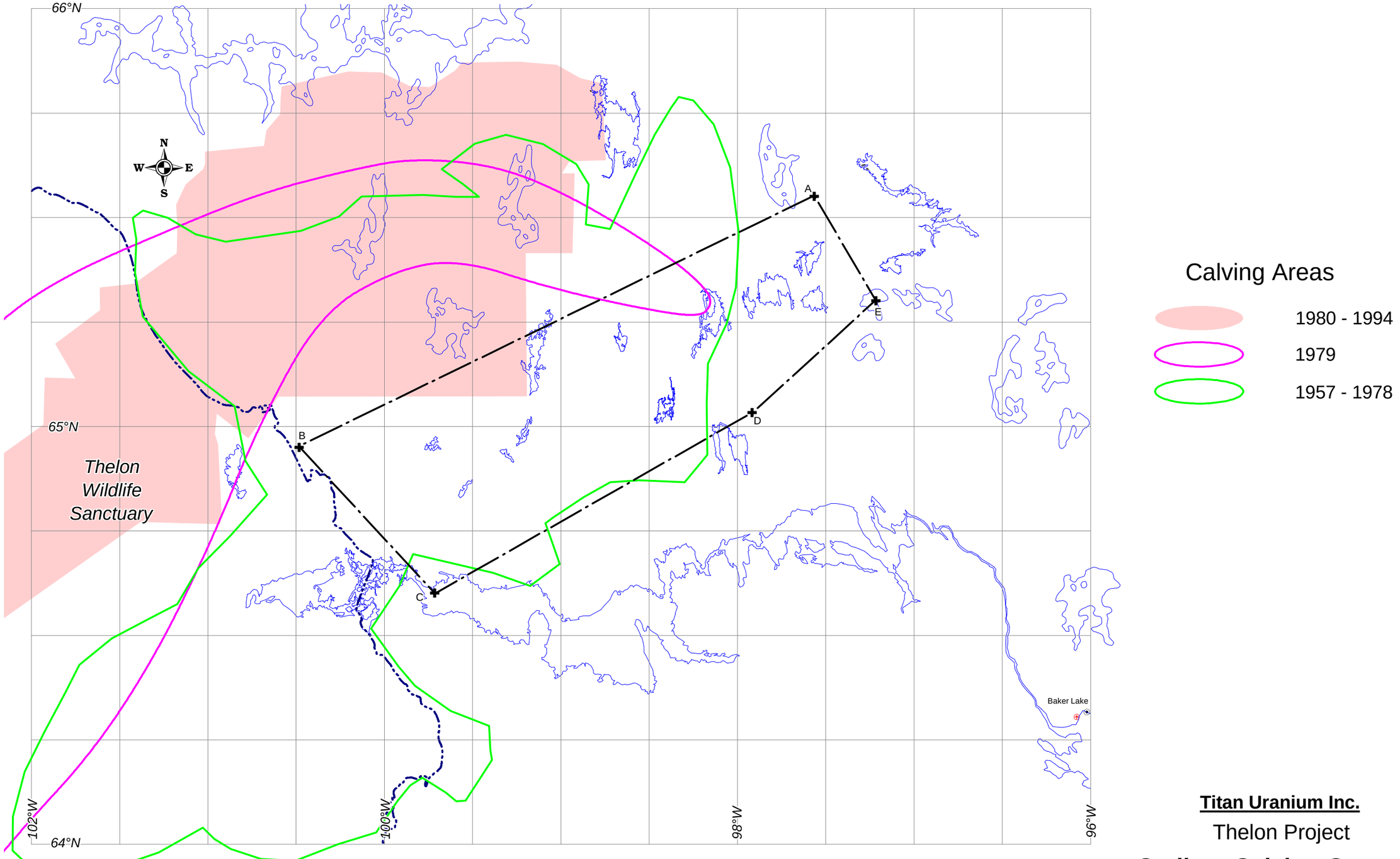


Calving Areas

- 1980 - 1994
- 1979
- 1957 - 1978

Data from the Beverly and Qamanirjuaq Caribou Management Board Map Atlas 2005

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# Caribou Calving Grounds

**Figure 5**