



NIRB Application for Screening #125790

Geological Mapping of Boundary Structures

Application Type: New

Project Type: Scientific Research

Application Date: 4/6/2023 1:43:07 PM

Period of operation: from 0001-01-01 to 0001-01-01

Proposed Authorization: from 0001-01-01 to 0001-01-01

Project Proponent: Daniele Regis
Geological Survey of Canada
601 Booth Street
Ottawa Ontario K1A 0E8
Canada
Phone Number:: 6134133720, Fax Number::

Activities

| Location | Activity Type | Land Status | Site history | Site archaeological or paleontological value | Proximity to the nearest communities and any protected areas |
|--|---------------|---------------------------|---|--|--|
| proposed study area, crew will be based in Rankin Inlet. See attached documents. | Researching | Inuit Owned Surface Lands | This project will apply innovative laboratory-based techniques to samples collected during targeted fieldwork 60-100 km north of Rankin Inlet (NU) along a newly recognized boundary structure (Raptor Shear zone). A team of 5 researchers will conduct sampling for two and a half weeks in July 2023. The crew will be set out by helicopter from Rankin Inlet and will conduct daily short hikes along the structure to collect fist-sized rock samples, take photos, and measurements. | N/A | The boundary structure of interest is located ca. 60-100 km N and NW of Rankin Inlet (which is the crew's base of operations). |

Community Involvement & Regional Benefits

| Community | Name | Organization | Date Contacted |
|--------------------|------------------|---|----------------|
| Baker Lake | Sheldon Dorey | Hamlet of Baker Lake | 2023-02-10 |
| Baker Lake | Richard Aksawnee | Hamlet of Baker Lake | 2023-02-10 |
| Baker Lake | Brian Pudnak | Baker Lake Hunters and Trappers Organization | 2023-02-10 |
| Chesterfield Inlet | John Ivey | Hamlet of Chesterfield Inlet | 2023-02-10 |
| Chesterfield Inlet | Tony Amauyak | Hamlet of Chesterfield Inlet | 2023-02-10 |
| Chesterfield Inlet | Harry Aggark | Aqigiq Hunters and Trappers Organization | 2023-02-10 |
| Rankin Inlet | Darren Flynn | Hamlet of Rankin Inlet | 2023-02-10 |
| Rankin Inlet | Harry Towtongie | Hamlet of Rankin Inlet | 2023-02-10 |
| Rankin Inlet | Andre Aokaut | Kangiqliniq Hunters and Trappers Organization | 2023-02-10 |

Authorizations

Indicate the areas in which the project is located:

Kivalliq

Authorizations

| Regulatory Authority | Authorization Description | Current Status | Date Issued / Applied | Expiry Date |
|----------------------------|---|-----------------|-----------------------|-------------|
| Nunavut Research Institute | We are currently working on the NRI permit and it will be submitted in parallel with NIRB and KIA | Not Yet Applied | | |
| Kivalliq Inuit Association | We are currently working on the KIA permit and it will be submitted in parallel with NIRB and NRI | Not Yet Applied | | |

Project transportation types

| Transportation Type | Proposed Use | Length of Use |
|---------------------|--|---------------|
| Air | Helicopter Bell 206 L3 or L4; 28 flying hours. We requested (PCSP) helicopter support based in Rankin Inlet for daytrips. Helicopter used to set out and pick up the bedrock mapping teams daily. The maximum distance of the outcrops from Rankin Inlet is approximately 60-100km | |

Project accomodation types

Community

Material Use

Equipment to be used (including drills, pumps, aircraft, vehicles, etc)

| Equipment Type | Quantity | Size - Dimensions | Proposed Use |
|---------------------|----------|-------------------|---|
| Helicopter Bell 206 | 28 hrs | L3 or L4 | We will have helicopter support based in Rankin Inlet for daytrips, which will be used to set out and pick up the bedrock mapping teams daily. The maximum distance of the outcrops from Rankin Inlet is approximately 70-100km |
| GPS | 5 | N/A | for mapping purposes |
| Digital cameras | 5 | N/A | for mapping purposes |
| Rock hammers | 8 | N/A | for mapping purposes (collecting fist-sized samples) |
| Shotgun | 2 | N/A | 2 x Shotgun, 12 Ga, Folding Stock, for safety reasons, provided by PCSP |
| Cartridge | 12 | 12 gauge | 12 x Cartridge, 12 Gauge, Slug, for safety reasons, provided by PCSP |
| Bear Repellent | 6 | 225 gr | For safety reasons |

Detail Fuel and Hazardous Material Use

| Detail fuel material use: | Fuel Type | Number of containers | Container Capacity | Total Amount | Units | Proposed Use |
|------------------------------|-----------|----------------------|--------------------|--------------|-------|--------------|
| Information is not available | | | | | | |

Water Consumption

| Daily amount (m3) | Proposed water retrieval methods | Proposed water retrieval location |
|-------------------|----------------------------------|-----------------------------------|
| 0 | Tap water | Hotel room in Rankin Inlet |

Waste

Waste Management

| Project Activity | Type of Waste | Projected Amount Generated | Method of Disposal | Additional treatment procedures |
|------------------------------|---------------|----------------------------|--------------------|---------------------------------|
| Information is not available | | | | |

Environmental Impacts:

No permanent or long-term environmental impacts are expected from the proposed mapping activity. A helicopter (Bell 206 L3 or L4) to transport the crew to each exposure can land without any disruption to the tundra. Established airports will support the helicopter base and spill kits will be available. For more detail see attached document

Additional Information

SECTION A1: Project Info

SECTION A2: Allweather Road

SECTION A3: Winter Road

SECTION B1: Project Info

SECTION B2: Exploration Activity

SECTION B3: Geosciences

SECTION B4: Drilling

SECTION B5: Stripping

SECTION B6: Underground Activity

SECTION B7: Waste Rock

SECTION B8: Stockpiles

SECTION B9: Mine Development

SECTION B10: Geology

SECTION B11: Mine

SECTION B12: Mill

SECTION C1: Pits

SECTION D1: Facility

SECTION D2: Facility Construction

SECTION D3: Facility Operation

SECTION D4: Vessel Use

SECTION E1: Offshore Survey

SECTION E2: Nearshore Survey

SECTION E3: Vessel Use

SECTION F1: Site Cleanup

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

SECTION H2: Disposal At Sea

SECTION I1: Municipal Development

Description of Existing Environment: Physical Environment

See attached file

Description of Existing Environment: Biological Environment

See attached file

Description of Existing Environment: Socio-economic Environment

See attached file

Miscellaneous Project Information

See attached file

Identification of Impacts and Proposed Mitigation Measures

See attached file

Cumulative Effects

See attached file

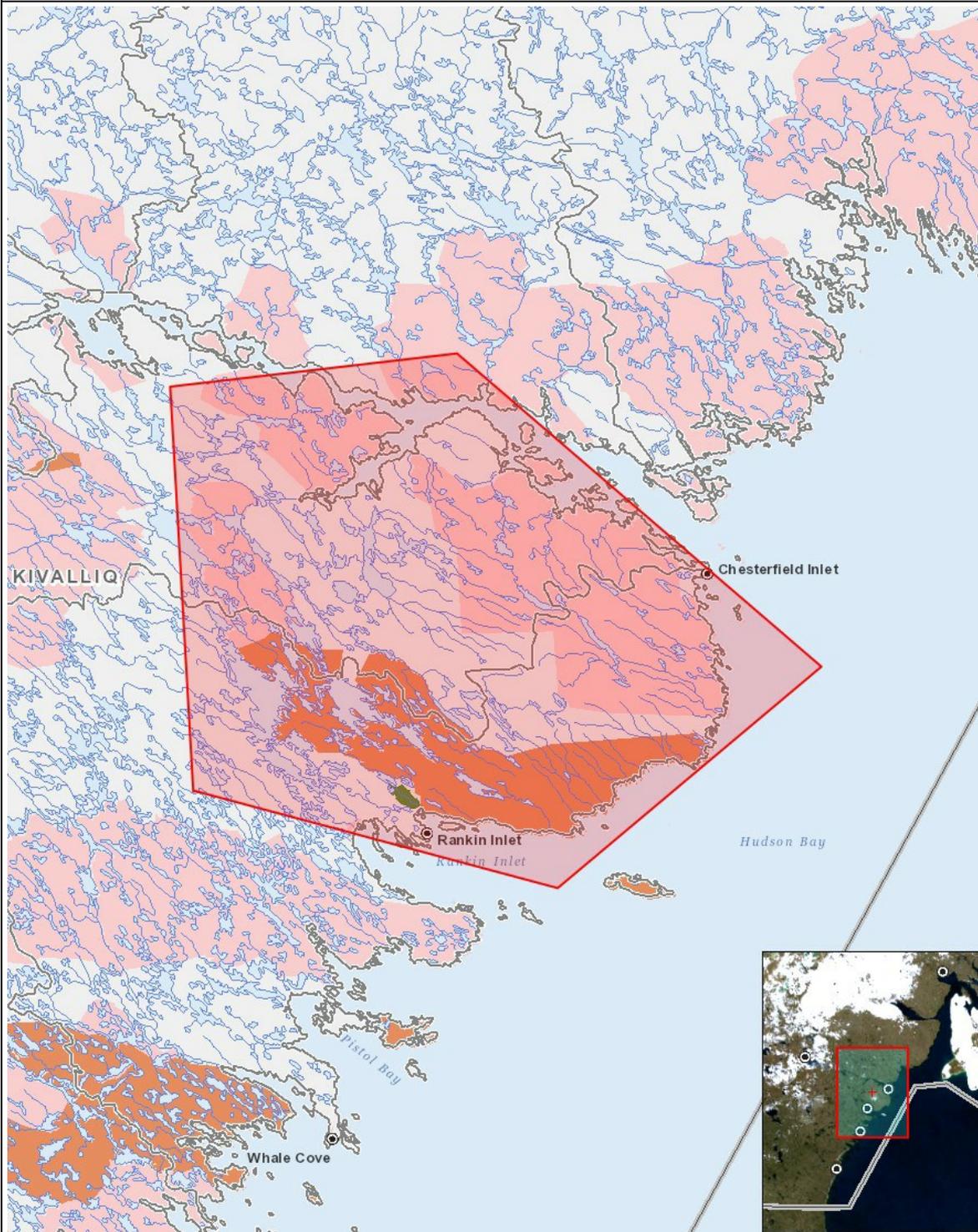
Impacts

Identification of Environmental Impacts

| | 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 | BIOLOGICAL | Vegetation | Wildlife, including habitat and migration patterns | Birds, including habitat and migration patterns | Aquatic species, incl. habitat and migration/spawning | Wildlife protected areas | SOCIO-ECONOMIC | Archaeological and cultural historic sites | Employment | Community wellness | Community infrastructure | Human health | |
|------------------------|----------|--------------------------------|------------------|------------|-----------------------|---------------|--------------------|---|-----------------------------|---------------------------|--------------------------------|-------------|--------------|------------|------------|--|---|---|--------------------------|----------------|--|------------|--------------------|--------------------------|--------------|---|
| Construction | | | | | | | | | | | | | | | | | | | | | | | | | | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Operation | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Researching | - | - | - | - | - | - | - | M | - | - | - | M | | M | M | M | - | - | | - | P | P | - | - | - | |
| Decommissioning | | | | | | | | | | | | | | | | | | | | | | | | | | |
| - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)

Project Location



List of Project Geometries

1 polygon proposed study area, crew will be based in Rankin Inlet. See attached documents.