Demande de la CNER faisant l'objet d'un examen préalable #125790
Geological Mapping of Boundary Structures

Type de demande :	New
Type de projet:	Scientific Research
Date de la demande :	4/6/2023 1:43:07 PM
Period of operation:	from 0001-01-01 to 0001-01-01
Autorisations proposées:	from 0001-01-01 to 0001-01-01
Promoteur du projet:	Daniele Regis Geological Survey of Canada 601 Booth Street Ottawa Ontario K1A 0E8 Canada Téléphone :: 6134133720, Télécopieur ::

DÉTAILS

Description non technique de la proposition de projet

Anglais: Metamorphic rocks are a common occurrence in Canada's North and form when a rock is exposed to high temperature and/or high pressure geological processes. Exposure to such conditions is often recorded as distinct modifications to the rock's minerals, structure and/or changes in major and trace element chemistry. Quantifying trace element and precious metal concentrations and understanding how these elements and metals move during metamorphism and deformation, is paramount to understanding ore-forming processes in Canada's North.This project will apply innovative laboratory-based techniques to samples collected during targeted fieldwork north of Rankin Inlet (NU) to study these processes. Within this region that forms the ancient core of North America, preliminary observations and data indicate the presence a new major structure – the Raptor shear zone – which is associated with known mineralization but could have significant mineral potential west of current exploration activity. In order to study the relationship between the metamorphic rocks and fluids, and ore formation, we propose an in-depth investigation of the evolution of this structure and its spatial and genetic relationship to mineralization and rocks in the region.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. The research undertaken will result in the creation of detailed geological maps of the bedrock exposed across the area. We are planning on hiring one summer field assistant during fieldwork in 2023 and aim to recruit a Northern student where possible. In addition to creating maps, our research will contribute to the development of geological models for the formation of ore systems in metamorphic rocks, and more in general it will contribute to an understanding of the geological history of the region, and how it relates to other parts of Nunavut. Findings from 2023 fieldwork will be communicated back to the communities impacted (Rankin Inlet and Chesterfield Inlet).

Français: N/A

Inuktitut: ᐅᔭᖁᐃᑦ ᑕᐅᑦᑐᖏᑦ ᐊᓯᐊᖑᖅᓯᒪᔪᑦ ᑕᑯᓐᓇᖁᔪᒃᑐᑦ ᑲᓇᑕᐅᑉ ᐅᑭᐅᖅᑕᖅᑐᖓᓂ ᐆᓇᓗᐊᕐᓂᕐᒧᑦ ᑕᐅᑦᑐᖏᑦ ᐊᓯᐊᖑᖅᑎᑕᐅᓯᒪᔪᑦ. ᑕᐅᑦᑐᖏᑦ ᑎᑎᖁᓚᐅᓯᒪᕙᖕᒪᑕ ᐊᓯᐊᖑᖅᑕᐅᓯᒪᓂᖏᓐᓄᑦ ᐅᔭᖁᐃᑦ ᓄᓇᒻᒥ ᓇᓂᔭᐅᓯᖅᑐᑦ, ᐃᓕᕐᑯᓯᕐᑲᖅᑐᑦ ᐊᓯᐊᖑᖅᑕᐅᓯᒪᑉᓗᑎᒃ ᐊᖏᔪᒻᒥᒃ ᐊᒻᒪ ᐊᓯᖏᓐᓂ ᑕᐅᑦᑐᕐᑲᓕᖅᑎᑦᓯᕙᒃᑐᑦ. ᐅᓄᕐᓂᖏᑦ ᐅᔭᖁᐃᑦ ᐊᑭᑐᔫᑉᓗᑎᓪᓗ ᓇᓂᔭᒃᓴᐅᓂᖏᓐᓄᑦ ᑐᑭᓯᓐᓇᖅᑑᑉᓗᑎᒃ ᐱᕙᓪᓕᐊᓂᖏᓐᓂᒃ ᓴᐱᖑᖅᓯᒪᓂᖏ ᐊᓯᐊᖑᖅᑕᐅᓯᒪᓂᖏᓪᓗ, ᑐᑭᓯᓐᓇᖅᐸᖕᒪᑕ ᓴᐱᒃᓴᐅᓂᖏ ᓴᕿᐸᓕᐊᓯᕐᓂᖏᓐᓂᒃ ᑲᓇᑕᐅᑉ ᐅᑭᐅᖅᑕᖅᑐᖓᓂ .ᑖᒻᓇ ᐱᓕᕆᐊᖑᔪᖅ ᑐᖂᓚᕐᑲᕐᒪᑦ ᐊᓯᐊᓐᓂᒃ ᐱᓕᕆᐊᖑᑉᓗᓐᓂ ᖃᐅᔨᓴᕐᕕᖕᒥ ᑲᑎᖅᓯᓚᐅᓯᒪᔪᓂᑦ ᓇᓗᓇᐃᔭᓚᐅᓯᒪᑉᓗᑎᒃ ᓄᓇᒻᒥᑦ ᑲᖏᖠᓂᕐᒥ (ᓄᓇᕘᒥ) ᖃᐅᔨᓴᓚᐅᓂᐊᕐᓗᑎᒃ. ᐃᓗᐊᓐᓂ ᑭᕙᓪᓕᐅᑉ ᖃᖓᓂᑕᐅᔪᑦ ᓄᑕᐅᖏᓂᖏᑦ ᓄᐊᑦ ᐊᒥᐊᕆᑲᒻᒥ, ᑕᐅᑐᖏᓐᓂᒃ ᐊᒪ ᑎᑎᖁᖅᑕᐅᕙᓪᓕᐊᓂᖏᓐᓂᒃ ᓄᑖᒥᒃ ᐊᖏᔪᒻᒥᒃ ᐱᑕᖃᖁᓯᒋᓐᓈᓕᖅᐸᒃᐳᑦ – ᖁᐋᑉᑕ ᓄᓇᐅᑉ ᐊᑖᓐᓂ ᐅᔭᖁᒃ ᑕᑭᔪᖅ ᓇᓗᓇᕈᖕᓇᐃᕐᓗᓐᓂ – ᖃᐅᔨᒪᔭᐅᑉᓗᓐᓂ ᐊᓯᖏᓐᓂᒃ ᐅᔭᖁᖃᕐᓂᖏᑦ ᐊᑭᑐᔫᓕᖅᐸᖕᒪᑕ ᐱᑕᖃᖁᓯᒋᔭᐅᑉᓗᓐᓂ ᕿᓂᒐᒃᓴᐅᓕᕐᓂᖅᐸᑦ. ᖃᐅᔨᓴᕐᓂᐊᕐᓗᓐᓂ ᐃᓚᒌᒃᓂᖏᓐᓂᒃ ᐱᓕᕆᐊᖑᓐᓂᑯᑉ ᐅᔭᖁᐃᑦ ᐊᒻᒪ ᐃᒪᕐᑲᕐᓂᖓ, ᓴᐱᒃᓴᖑᖅᑎᑕᐅᕙᓪᓕᐊᓂᖓᓪᓗ ᐅᑭᐅᓐᓂᒃ ᐊᒥᓱᓐᓂᒃ ᓄᓇᐅᑉ ᐊᑖᓐᓂ, ᐃᓱᒪᓕᐅᖅᓯᒪᕗᒍᑦ ᖃᐅᔨᓴᕈᒪᑉᓗᒋᑦ ᐱᕙᓪᓕᐊᓂᖏᑦ ᑕᐸᑯᐊ ᐅᔭᖁᐃᑦ ᓄᓇᐅᑉ ᐊᑖᓐᓂ ᐊᓯᖏᓂᒃᓗ ᐃᓚᖃᕐᓂᖏᑦ ᓇᓂᔭᐅᓯᒪᔪᑦ ᐅᔭᖁᖑᖅᐸᓕᐊᓂᖏᑕ ᑭᕙᓪᓕᕐᒥ.ᖃᐅᔨᓴᖅᑎᐅᓂᐊᖅᑐᑦ 5−ᖑᓂᐊᕐᒪᑕ ᐅᔭᖁᖕᓂᒃ ᖃᓄᐃᑑᓂᖏᓐᓂᒃ ᖃᐅᔨᓴᕐᓂᐊᕐᓗᑎᒃ ᐱᓇᓱᐊᕈᓰᒃ ᒪᕉᒃ ᓇᐸᖓᓐᓂᓪᓗ ᔪᓚᐃ 2023. Hᐊᓕᑳᑉᑕᑯᑦ ᐃᖏᖁᓂᐊᖅᐳᑦ ᑲᖏᖠᓂᕐᒥᑦ ᐅᑉᓗᑕᒫᓪᓗ ᐊᑯᓂᐅᖏᑐᒥᒃ ᐃᖏᖁᓗᑎᒃ ᐃᓱᒪᒋᔭᐅᓯᒪᔫᑉ ᓇᓛᒍᑦ ᑲᑎᖅᓯᐃᓗᑎᒃ ᐊᖏᓗᐊᖏᑐᓐᓂᒃ ᐅᔭᖁᖕᓂ, ᐊᔨᓕᐅᕆᕙᓪᓗᑎᒃ ᐆᒃᑐᖁᖅᑕᕐᓗᑎᓪᓗ ᐊᖏᓂᖏᓐᓂᒃ. ᖃᐅᔨᓴᕐᓂᖅ ᓴᕿᑎᑦᓂᐊᕐᒪᑦ ᓄᓇᖑᐊᕐᓂᒃ ᓄᓇᐅᑉ ᐊᑖᓐᓂ ᐅᔭᖁᐃᑦ ᐃᖏᖁᓂᖏᓐᓂᒃ ᓄᓇᒻᒥ. ᐃᓱᒪᕗᒍᑦ ᐃᓚᖃᕈᒪᑉᓗᑕ ᐊᐅᔭᒻᒥ ᐃᑲᔪᖅᑎᒃᓴᒥᒃ ᓄᓇᒻᒥ ᖃᐅᔨᓴᕐᓂᕐᒥ 2023−ᒥ ᐊᒻᒪ ᐃᓄᐃᑦ ᓄᓇᖓᓐᓂᑦ ᐃᓕᓐᓂᐊᖅᑐᒻᒥᒃ ᐊᔪᕐᓇᖏᐸᑦ. ᐃᓚᑲᓂᖅᓯᒪᓗᓐᓂ ᓄᓇᖑᐊᓕᐅᕐᓂᖅ, ᖃᐅᔨᓴᖅᑏᑦ ᐃᑲᔪᕐᓂᐊᕐᒪᑕ ᐅᔭᖁᐃᑦ ᖃᐅᔨᓴᓚᐅᑕᓕᕐᓗᑎᒃ ᓴᐱᒃᓴᖃᕐᓂᖏᓐᓂᒃ ᐊᔨᖏᓂᒃᓗ ᑐᑭᓯᐅᒪᔪᑕᐅᓂᐊᕐᓗᑎᒃ ᖃᖓ ᐅᔭᖁᐃᑦ ᐱᕙᓪᓕᐊᓂᖏᓐᓂᒃ ᑭᕙᓪᓕᕐᒥ, ᖃᓄᕐᓗ ᐊᓯᖏᓐᓄᑦ ᐃᓚᐅᓕᕐᓂᖏᓐᓂᒃ ᓄᓇᕘᒥᓗᒃᑖᕐᓗ. ᖃᐅᔨᓴᕐᓂᑯᑦ 2023 ᐃᓗᐊᓐᓂ ᑐᓴᓚᐅᓂᐊᖅᐳᑦ ᓄᓇᓕᖕᒧᑦ ᐊᒃᑐᓚᐅᓯᒪᔪᒻᒧᑦ ᑲᖏᖠᓂᕐᒥ ᐃᒡᓗᓕᒑᕐᔪᒧᓪᓗ.

Inuinnaqtun: N/A

Personnel

Personnel on site: 5

Days on site: 17

Total Person days: 85

Operations Phase: from 2023-07-05 to 2023-07-22

Activités

Emplacement	Type d'activité	Statut des terres	Historique du site	Site à valeur archéologique ou paléontologique	Proximité des collectivités les plus proches et de toute zone protégée
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).

Engagement de la collectivité et avantages pour la région

Collectivité	Nom	Organisme	Date de la prise de contact
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

Autorisations

Indiquez les zones dans lesquelles le projet est situé:

Kivalliq

Autorisations

Organisme de régulation	Description des autorisations	État actuel	Date de l'émission/de la demande	Date d'échéance
Institut de recherche du Nunavut	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	Utilisation proposée	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

Collectivité

Utilisation de matériel

Équipement à utiliser (y compris les perceuses, les pompes, les aéronefs, les véhicules, etc.)

Type d'équipement	Quantité	Taille – Dimensions	Utilisation proposée
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

Décrivez l'utilisation du carburant et des marchandises dangereuses

Décrivez l'utilisation de carburant :	Type de carburant	Nombre de conteneurs	Capacité du conteneur	Quantité totale	Unités	Utilisation proposée
Information is not available						

Consommation d'eau

Quantité quotidienne (m3)	Méthodes de récupération de l'eau proposées	Emplacement de récupération de l'eau proposé
0	Tap water	Hotel room in Rankin Inlet

Déchets

Gestion des déchets

Activités du projet	Type des déchets	Quantité prévue	Méthode d'élimination	Procédures de traitement supplémentaires
Information is not available				

Répercussions environnementales :

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. Fore 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 de l'environnement existant : Environnement physique

See attached file

Description de l'environnement existant : Environnement biologique

See attached file

Description de l'environnement existant : Environnement socio-économique

See attached file

Miscellaneous Project Information

See attached file

Identification des répercussions et mesures d'atténuation proposées

See attached file

Répercussions cumulatives

See attached file

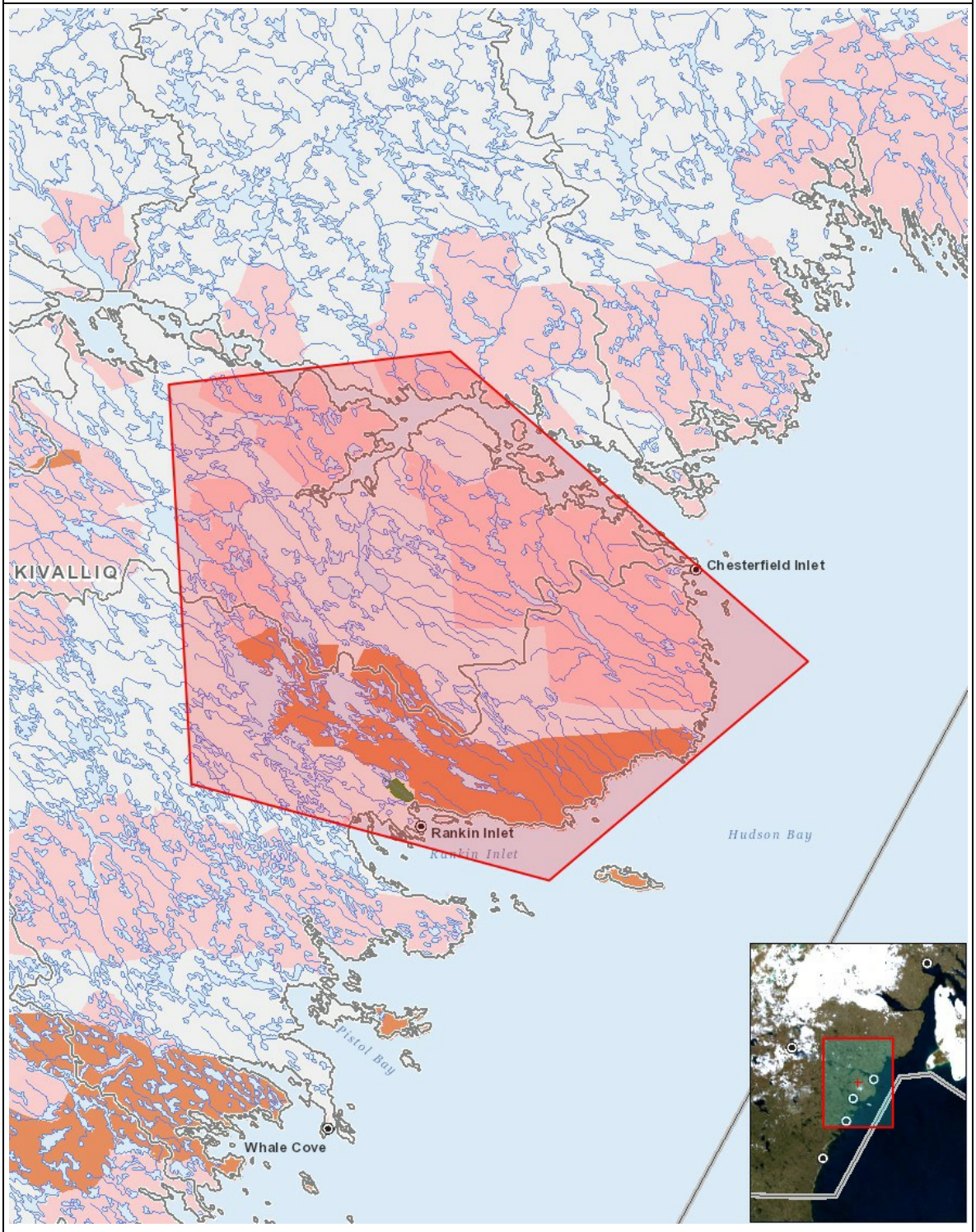
Impacts

Identification des répercussions environnementales

	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																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-
Exploitation																									
Researching		-	-	-	-	-	-	-	M	-	-	-	M		M	M	M	-	-		-	P	P	-	-
Désaffectation																									
-		-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

(P = Positive, N = Négative et non gérable, M = Négative et gérable, U = Inconnue)

Site du projet



Liste des géométries de projet

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