



## **NIRB Application for Screening #125789**

### **Inuit Qaujisarnirmut Pilirijjutit on Arctic Shipping Risks in Inuit Nunangat**

**Application Type:** New

**Project Type:** Scientific Research

**Application Date:** 4/5/2023 11:32:42 AM

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

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

**Project Proponent:** Jackie Dawson  
University of Ottawa  
60 University Pvt.  
Ottawa Ontario K1N6N5  
Canada  
Phone Number:: 6135050303, Fax Number::

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Inuinnaqtun: Havaavut ihumagilluaqtait kangighigiami qajangnautingit hilaup aadlangurninnganit angiklijuumirninngalu agjariami tamainni Inuit Nunangat ilitarigiamilu qanuqtut munarigiami hapkuat ihumaaluutigijaujut ikajuqtuq Inuit inmikkut-naunaiqhimaajuq umiakkuurniq tariurmullu pijunnautinga. Havaavut tikinahuarutait ilaujut hapkununga:1.Ihivriurlugit kinguani uvalu hivunirmi umiakut aulaviit Nunavunmi;2.Tautuktilugu tadjia uvalu hivunirmi ataani imap nipiquqtujuq pidjutiqaqhutik umidjanit;3.Uuktuutit ikiarmit imarmunlu halumailrut umianin;4.Ihivriurlugit piniarungnaqhiuq Nunaqaqqaarhimajut huradjat naunaipkaijut umianit, unalu;5.Hanalutik ihumalungnarninginik nunaujat naunaipkutilu atuqujaujut.Maniqqami Havaangit: Pinaqtugut imakkut uuktuutinin ikihimajut umianut (Amundsen, Ocean Endeavour, Fram), aulaqtitilutik Nunavunmi imakkut hamanga Taaqhivaliavia-Apitiirvik, 2023, unalu 2024. Pinaqtugutlu imakkut uvalu nunavaluit uuktuutit naunaijaktakhat hinaani najugaani umiarjuakkut umiat aulaviit (humi ihuaqqat). Hinaani najugait ilaujut Dundas Harbour, Fort Ross, Uqhuqtuuq, Beechey Island, Qausuittuq, uvalu Iqaluktuutiami. Aulatitinaqtugut nunallaani-auladjutikhainik ihivriuqtaujujkanik ukuninga ikiarmit, imarmik, hiuravalungmik natqani, havaktauniaqtun hapkunanga Inuit Arviami, Mittimatalingmilu tatqiqhiutaini Imaruqtiirvia- Apitiirvia, 2023 ukiungani 2024. Pityuhit: Umiani, naunaijainiaqtugut tariumit imarmik kangiqhungmit uvani umiarmi halumaqtirlugulu kuvjaujakkut imaalu katitirlugitlu palastivaluit aallaniklu marluvalungmik hiuravalungmiklu. Ihuaqhainiaqtugut ikiarmit ihivriuqtaujujkanik uuktuutinin, humi titiraqhimaajut ikiani katitiqtauniaqtut halumaqhijutinun. Imarmik aturniaqtugut imarnik ihiviuktaujujkanik talvuuna eDNA pijukhanik ilitugijaujujkanik naliinik nirjutinik qafiutilanginik kuukakkut qunmut imaalu kuukakkut anmut agjautingit hinaanitunik najugainik. Hinaani najugainni, pinaqtugut hiuravalungmik, nunavalungmik ihivriuqtaujujkanik (100g) havigalngnut puurlugit imaalu piksaliurlugitlu kituliqaak palastinginik iqakuunik. Nunallaani-pihimaajut ihivriuqtaujujkanik Arviami Mittimatalingmilu ilaujut ihuaqharlugit ikiarmit ihivriuqtaujujkanik haniani nunallaanit, imarmi ihivriuqtaujujkanik palastiinun uvalu eDNA qajakkut uvalu Ungahiktukut Aulajut Akhaluutit (ROV) (Mittimatalik uvani 2023 ukiunganilu 2024, Arviat uvani 2024). Aktumaniit: Piqangittuq nahurijaujunik akturninginik avatiujumi, uumajulijijit, inungniit.Nampainik tutquumavinga Munarinirlu: Qaujihainikkut havaqatigiiktut malikpaktait tamaita maliqajakhangit naunaitkutikhanik munaqhijutikhanik tutquumavikhaniklu naunaiqtauhimajut uvani Tri-Katimajiit maliktakhangit imaalu Kanadami Inuit Qanuriliurutikhat Qaujihainirmut. Tamaita naunaipkutit ihivriuqtaujujkatlu

ilipqamajaujut unalu/uvaluuniit tutquqhimaniaqtut kiluutaqhimajuni igluqpangni angmaidjutiniklu munaridjutinik qaritaujat/tutquumavingitlu. Ihivriuqtaujukhanik (ikiarmit, imarmik, hiuravalungmik natqani) tutquqhimaniaqtut kiluutaqhimajuni igluqpangni hamani Ottawa Iqaluktuuttiamilu, UK.Nunavunmi nunaqaqtut ilaudjutaat: Nunavunmi nunaqaqtut ilauhimajut havaakhami aullaqtirninganit. Havaqatigijavut ukua Ikaarvik (Mittimatalik, Nunavut) ukualu Aqqiumavvik Katimajit (Arviat, Nunavut) havaklugit hivulliq havaakhamut tukhiutit uvalu ihivriurnikkut apiqhuutit. Uvani May, 2022 tamaita hivuraani havaqatigiiktunut ilaujut ajuiqhaqhimajut Inuit Qaujimagatuqaginit (IQ). Uvani Ubluiqtirviani, ukiuqtaqtumi havaqatigiiktunut ilaujut ajuiqhaqtut talvuuna qanuqtut katitirilutik amigaittunik naunaitkutikhanik atuqhugit imakkut hivajautit, imaalu, lidjiruvia, ajuiqharnirmik imarmik imaalu palastingnik ihivriuqtaujukhanik imaalu qaujihainirmik. Uvani 2023-24, upalungaiqtugut havaarijaagani aadjikkutaanik nunagijaujumi ilituqhaijinik ihivriuqtaujukhanik ajuiqhanirmik ajuiqhaqatigiikhutik.Qanuriniit Uqautiginikkut: Qanuriliningit naamainaqtut atuqtilugilu ajuiqhaviujut Arviani Mitimatalingmilu upalugaiqtaujut ukiungani 2025. Hapkuat hulipkaidjutikhat hivulliuqtauniaqtut Inuit Inulrammiinit. Qanuriliningit uqautauniarmijurlu Nunavumi ikajuqtiriinik atuqtilugu havaakhaq.

**Personnel**

Personnel on site: 14

Days on site: 21

Total Person days: 294

Operations Phase: from 2022-04-01 to 2025-03-31

## Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Arctic Bay (potential shore location)	Sampling sites	Municipal	N/A	N/A	We will be sampling the shoreline within or near the community depending on where the ship goes.
Gjoa Haven (potential shore location)	Sampling sites	Municipal	N/A	N/A	We will be sampling the shoreline within or near the community depending on where the ship goes.
Cambridge Bay (potential shore location)	Sampling sites	Municipal	N/A	N/A	We will be sampling the shoreline within or near the community depending on where the ship goes.
Resolute Bay (potential shore location)	Sampling sites	Municipal	N/A	N/A	We will be sampling the shoreline within or near the community depending on where the ship goes.
Dundas Harbour (potential shore location)	Sampling sites	Crown	N/A	N/A	N/A
King William Island (potential shore location)	Sampling sites	Crown	N/A	N/A	N/A
Fort Ross (potential shore location)	Sampling sites	Crown	N/A	N/A	N/A
Devon Island (potential shore location)	Sampling sites	Crown	N/A	N/A	N/A
Prince Leopold Island (potential shore location)	Sampling sites	Crown	N/A	N/A	N/A
Pond Inlet - community-based sampling	Sampling sites	Crown	N/A	N/A	We will be working with community members to locate sampling sites near the community on crown land, in a location that does not disrupt any local activities.
Arviat - community-based sampling	Sampling sites	Crown	N/A	N/A	We will be working with community members to locate sampling sites near

					the community on crown land, in a location that does not disrupt any local activities.
Kugluktuk (potential shore location)	Sampling sites	Municipal	N/A	N/A	We will be sampling the shoreline within or near the community depending on where the ship goes.
Grise Fiord (potential shore location)	Sampling sites	Municipal	N/A	N/A	We will be sampling the shoreline within or near the community depending on where the ship goes.
Smith Sound (potential shore location)	Sampling sites	Crown	N/A	N/A	N/A

### Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Pond Inlet	Eric Soloman	Ikaarvik	2021-07-27
Pond Inlet	Shelly Elverum	Ikaarvik	2021-07-27
Pond Inlet	Justin Milton	Ikaarvik	2021-07-27
Pond Inlet	Michael Milton	Ikaarvik	2023-02-24
Arviat	Kukik Baker	Aqqiumavvik Society	2021-07-27
Arviat	Shirley Tagalik	Aqqiumavvik Society	2021-07-27
Pond Inlet	Peter Inootik	N/A	2023-02-16
Pond Inlet	Jamie Enook	ECCC	2022-09-20
Arviat	Jimmy Muckpah	Aqqiumavvik Society	2023-02-10
Arviat	Zachariah Owingayak	Aqqiumavvik Society	2023-02-10

## Authorizations

Indicate the areas in which the project is located:

Transboundary  
Kitikmeot  
Kivalliq  
North Baffin

### Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Qikiqtani Inuit Association	QIA Land Use Exemption Certificate– QX-2210 (Jennifer Provencher)	Active	2022-06-01	2025-12-31
Government of Nunavut, Nunavut Research Institute	NRI Scientific Research License – 03 014 22R-M (Jennifer Provencher). Renewal pending.	Active	2022-06-01	2022-12-31
Government of Nunavut, Nunavut Research Institute	NRI Scientific Research License	Applied, Decision Pending		

### Project transportation types

Transportation Type	Proposed Use	Length of Use
Water	Ship and local boats	

### Project accomodation types

Other,

## Material Use

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

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Air sampling array	4	<1m	Optical particle counters, air filtration units and depositional dust gauges to quantify the concentration and size distribution of particulates and allowing for the assessment of black carbon concentration.
Water filters	4	0.5m	Customised filtration system which sample a ship's uncontaminated sea water supply (ambient near-surface waters pumped through the hull). The filtration system has an inline flow meter to record the volume of water filtered and three sequential filters (i.e., mesh size 300, 100 and 50 microns).
Manta net	2	2m x 0.6m	Sampling using manta nets to identify and quantify the concentration of anthropogenic particulates and microplastics in surface waters.
Niskin water sampler	4	0.6m	Collect small water samples (50mL) for environmental DNA(eDNA) meta-barcoding.
Remotely Operated Vehicle (ROV)	2	0.5m x 0.4m	Take surface water samples using syringe sampler and take underwater photographs vessel hulls to determine the extent of biofouling.

## 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		

# Waste

## Waste Management

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

### Environmental Impacts:

Waste: We expect waste to be minimal, limited to small amounts of garbage from sampling equipment. Sampling equipment will be unpacked in the South to reduce waste brought to Nunavut. Any waste produced while sampling will be packed out and transported South for disposal. Wildlife disturbance: All sampling activities will be accompanied by local residents and/or vessel operators trained in the local marine and terrestrial wildlife, in order to reduce any potential disturbances. Environmental disturbance: All research staff are trained in sampling protocols in order to minimize any potential disturbance to the environment. Physical samples taken will be small, and we will not be taking more than is needed for laboratory analysis. Local residents: Our research is being conducted in partnership with local organizations and relies on IQ in order to be of maximum benefit to local residents. Before any research activities are undertaken, we will consult with our Inuit partners, local hunters, and local residents to ensure our activities will not disrupt any traditional practices (e.g. hunting activities).

# **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**

### **Description of Existing Environment: Biological Environment**

### **Description of Existing Environment: Socio-economic Environment**

### **Miscellaneous Project Information**

### **Identification of Impacts and Proposed Mitigation Measures**

Waste: We expect waste to be minimal, limited to small amounts of garbage from sampling equipment. Sampling equipment will be unpacked in the South to reduce waste brought to Nunavut. Any waste produced while sampling will be packed out and transported South for disposal. Wildlife disturbance: All sampling activities will be accompanied by local residents and/or vessel operators trained in the local marine and terrestrial wildlife, in order to reduce any potential disturbances. Environmental disturbance: All research staff are trained in sampling protocols in order to minimize any potential disturbance to the environment. Physical samples taken will be small, and we will not be taking more than is needed for laboratory analysis. Local residents: Our research is being conducted in partnership with local organizations and relies on IQ in order to be of maximum benefit to local residents. Before any research activities are undertaken, we will consult with our Inuit partners, local hunters, and local residents to ensure our activities will not disrupt any traditional practices (e.g. hunting activities).

### **Cumulative Effects**

# 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
<b>Construction</b>																										
-		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-
<b>Operation</b>																										
Sampling sites		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	P	P	-	-
<b>Decommissioning</b>																										
-		-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-		-	-	-	-	-

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

## Project Location



## List of Project Geometries

1	polyline	Potential ship route
2	polyline	Potential ship route
3	polyline	Potential ship route
4	point	Pond Inlet - community-based sampling
5	point	Arviat - community-based sampling
6	point	Dundas Harbour (potential shore location)
7	point	King William Island (potential shore location)
8	point	Arctic Bay (potential shore location)
9	point	Gjoa Haven (potential shore location)
10	point	Cambridge Bay (potential shore location)

11	point	Fort Ross (potential shore location)
12	point	Resolute Bay (potential shore location)
13	point	Devon Island (potential shore location)
14	point	Prince Leopold Island (potential shore location)
15	point	Kugluktuk (potential shore location)
16	point	Grise Fiord (potential shore location)
17	point	Smith Sound (potential shore location)