



כ"ד ל"ב

**ᐱᕐᓴᕐᓴᕐᓴᕐᓴ:** With this project we aim to assess ship-based pollution in migratory bird habitat near Arviat and Pond Inlet. This includes examining how ship traffic contributes to oil pollution and emissions in areas used by seabirds, as well as ship based plastic pollution, including microplastics. While pollution in seabirds have been studied in Nunavut for over 40 years via the Northern Contaminants Program (NCP), there is lack of information on pollution of emerging concern such as oil pollution and microplastics. We hope that this study will start to explore these issues in two communities in Nunavut, Arviat and Pond Inlet. This project will be carried out with partners in Pond Inlet and Arviat as part of a recently funding project titled Inuit Qaujisarnirmut Pilirijjutit on Arctic Shipping Risks in Inuit Nunangat funded under the CINUK call for proposals led by ITK. Small teams of community members will deploy the sampling during the open water seasons in Arviat and Pond. There will be three sampling types. One set of passive air samplers will be deployed near where migratory birds breed in the areas. These are small dishes approximately 30cm in diameter that are left in the habitat for 60 days a retrieved. Second, an active high volume sampler will be used to test the output from ships when they are moored close to town. A total of 10 active samples will be collected from each site per year, and will involved samples when no ships are in town, and when ships are in town. The last sampling will involve using a manta net to sample for microplastics in the water column. This will be down 5 times a year at each site. The manta net filters the water while being pulled behind a small vessel. The filters are then collected and analysed, with no active water collection. As this project was extensively co-developed though regular consultation with international, national, and local Inuit community organizations in order to respond directly to urgent and locally identified research needs, it is anticipated that project will have substantial impact and wide-ranging outcomes. Results will support multiple levels of decision makers aiming to; a) minimise harmful impacts of shipping to Inuit livelihoods, culture, quality of life and the environment, b) promote the use of scientific evidence in policy decisions affecting shipping in the Arctic/Inuit homeland, and c) improve cooperation between maritime industries, communities and science. All data generated by this project will be a part of the Inuit Qaujisarnirmut Pilirijjutit on Arctic Shipping Risks in Inuit Nunangat team discussion. Community partners will co-collect, co-analyse and co-finalise all reports and data stewardship decisions. The results will be shared within Arviat and Pond Inlet as the project develops from 2022 to 2025, and as results are summarised the team will prepare plain language reports, radio interviews, Facebook posts and other material as needed for wide spread sharing.

[illegible]

Operations Phase: from 2022-07-01 to 2025-10-01

$$\Lambda \subset \mathbb{N} \triangleleft \mathbb{N} \xrightarrow{\gamma} \mathbb{N} \xrightarrow{\sigma} \mathbb{N} \xrightarrow{\gamma^b} \mathbb{N} \xrightarrow{\gamma^c}$$
[illegible][illegible]

ᐃᓇ ᑦᔭᕐ	ᐱᓄᑦ	ᐅᐳᕐ ᐱᓄᑦ ᐱᓄᑦ ᐱᓄᑦ	ᕐᔪᕐᔪᕐ ᐱᓄᑦ ᐱᓄᑦ ᐱᓄᑦ ᐱᓄᑦ ᐱᓄᑦ
ᑦᑦ ᐱᓄᑦ	Molleen	HTO	2021-11-23
ᑦᑦ ᐱᓄᑦ	Shelly Elverum	Ikaarvik	2021-12-01
ᑦᑦ ᐱᓄᑦ	Jamie Enook	ECCC	2021-11-01
ᑦᑦ ᐱᓄᑦ	Justin Milton	Ikaarvik	2021-12-01

ᓕᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐ ᓐᓂᓐᓂᓐᓂᓐ

ᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐ:

North Baffin

ᓕᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐ ᓐᓂᓐᓂᓐᓂᓐ

ᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ	ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ	ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ	ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ	ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ
ᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ	Applied for an NRI Research license	Applied, Decision Pending		
ᓂᓐᓂᓐᓂᓐ ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ	Application to access Inuit owned lands to place the passive sampling device	Not Yet Applied		

Project transportation types

Transportation Type	ᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐᓂᓐ	Length of Use
Water	small vessels from Pond Inlet, day trips	

Project accomodation types

ᓂᓐᓂᓐᓂᓐᓂᓐ

ᓂᓐᓂᓐᓂᓐ,

◁▷↳σ◁<sup>96</sup>▷<sup>96</sup>

Λ<sup>9</sup>D Δ<sup>6</sup>ΓΔ<sup>5</sup> ΔD<sup>5</sup>C DσD<sup>4</sup>ΥΔ<sup>5</sup> Δε<sup>5</sup>βP DΠΔ<sup>4</sup> ΓΔjCΔ<sup>4</sup>, Γ<sup>c</sup>ΔPΔ<sup>4</sup>, Ξ<sup>6</sup>ΛCΔ<sup>5</sup>, μεPΔ<sup>4</sup> ΔP<sup>6</sup>Γ<sup>c</sup>Δ

ᐃᓕᓴᓴᓴ ᐱᓴᓴ ᐃᐃᓴᓴᓴ ᐃᓕᓴᓴ ᓕᓴᓴᓴᓴᓴᓴ	ᓕᓴᓴᓴᓴᓴ	ᐃᓕᓴᓴᓴᓴᓴ - ᓴᓴᓴᓴᓴᓴᓴ	ᓴᓴᓴᓴ ᐃᐃᓴᓴᓴᓴᓴᓴ
Manta trawl	1	30cmx40cm	The manta trawl is pulled behind a small boat for approximately 20 min to filter the water. All pieces collected in the net are then collected and sent for analysis.
Passive air samplers	6	30cmx30cm	Passive sampling refers to collecting contaminants from air on a trap that sits out in the open without any pumps pulling in the air. Passive samplers are a low-cost, low-maintenance way to monitor contaminants because they do not require power for pumps or a shed to house the instruments. They are unobtrusive and they make no noise, do not produce any emissions and they simply sit outside and trap contaminants from the air.
Sampling jars	10	10cmx10cm	Glass sampling jars will be used to collect sediments at the shoreline
Shoreline transects	10	10m	Transect tape and materials will be used to mark beaches and shorelines to count plastic pollution, and will be removed when the transects are completed (about 1 horur)

[illegible]

ገጽ ስም ገጽ ስም ስም ስም ገጽ ስም ስም ስም	ፍጥነት ስም ስም ስም ስም ፍጥነት ስም ስም ስም ስም	ፍጥነት ስም ስም ስም ስም ፍጥነት ስም ስም ስም ስም	ፍጥነት ስም ስም ስም ስም ፍጥነት ስም ስም ስም ስም	ፍጥነት ስም ስም ስም ስም ፍጥነት ስም ስም ስም ስም	ፍጥነት ስም ስም ስም ስም ፍጥነት ስም ስም ስም ስም	ፍጥነት ስም ስም ስም ስም ፍጥነት ስም ስም ስም ስም
Gasoline	fuel	3	5	15	Liters	Small boat engines for sampling

ፍጥነት ስም ስም ስም ስም

ፍጥነት ስም ስም ስም ስም ፍጥነት ስም ስም ስም ስም	ፍጥነት ስም ስም ስም ስም ፍጥነት ስም ስም ስም ስም	ፍጥነት ስም ስም ስም ስም ፍጥነት ስም ስም ስም ስም
0		



$\triangleleft^b C d^c$ 
$$\Delta^b C d_C \sim \sigma \Delta^a \sigma^a$$
[illegible]
$$4^{\circ} 07' 20'' \text{C} \quad 4^{\circ} 56' 00'' \text{C}$$

We do not expect any environmental impacts from this work, in fact, the goal of the work is to address potential environmental impacts from vessel traffic in the region. Our team will actively work in minimize any impacts on wildlife during the collection of samples.

# **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 11: Municipal Development

ᐱᓪᑲ ᐳᐅᐸ ᖃᓄᐱᕐᑐᓚᓂᐳᓴᐣ: ᓄᓄᐳᓚ ᖃᓄᐱᕐᑐᓴᐣ

[illegible]

ᐱᓪᓇ ᐱᑦᑎᐅᑦ ᑭᓄᐃᑦ)ᑦᑕᓕᓕᓂᓪᓴᑦ: ᐃᓄᑦᓕᓂᓪᓴᑦᐱᑦᑕᐱᑦᑕᓂᓪᓴᑦᐱᑦᑕᐱᑦᑕᓂᓪᓴᑦ

### Miscellaneous Project Information

$\alpha \rightarrow \Delta^{5b} CD \sigma^{5b} \Gamma^C$   $\Delta^{5b} CD \Gamma^C L \Gamma^C$   $\Delta^{5b} CD \sigma^{5b} \Gamma^C$   $\Delta^{5b} CD \Gamma^C L \Gamma^C$   $\Delta^{5b} CD \sigma^{5b} \Gamma^C$

## Cumulative Effects

We do not expect any cumulative effects from this work, and in fact we set out to study the cumulative effects from shipping.

## Impacts

$\omega_{\Delta} \approx \frac{1}{2} \left( \frac{\partial^2 E}{\partial \phi^2} \right)_{\phi=0}$

[illegible]
$$(P = \langle b \rangle \dot{a} \dot{p} \cap \dot{r}^a \dot{q}^b \rangle^c, N = \langle b \rangle \dot{p}^b \dot{r} \langle \dot{c} \dot{d} \dot{r}^a \dot{q}^b \rangle^c \langle \dot{c} \dot{d} \dot{r}^b \dot{r}^b \rangle^b \langle \dot{c} \dot{d} \dot{r}^a \dot{q}^b \rangle^c \rangle^c, M = \langle b \rangle \dot{p}^b \dot{r} \langle \dot{c} \dot{d} \dot{r}^a \dot{q}^b \rangle^c \langle \dot{c} \dot{d} \dot{r}^b \dot{r}^b \rangle^b \langle \dot{c} \dot{d} \dot{r}^a \dot{q}^b \rangle^c \rangle^c, U = \langle b \rangle \dot{p} \dot{r} \dot{r}^a \dot{q}^b \rangle^c \rangle^b)$$

1	polygon	Eclipse Sound
---	---------	---------------