

▷ΔΛΠΩ◁: Le réchauffement du climat de l'Arctique cause une réduction annuelle de la banquise. Avec la diminution de la couverture de glace du Passage du Nord-Ouest, le trafic maritime est en augmentation. Malheureusement, l'accroissement du nombre de navires augmente le risque que de l'essence soit accidentellement libéré dans les environnements vulnérables de l'Arctique. Aux latitudes méridionales, des bactéries indigènes des milieux naturels sont capables de consommer l'essence de navire comme source de nourriture. Toutefois, le fait que les bactéries indigènes des plages de l'Arctique peuvent en faire de même en conditions froides reste inconnu. L'objectif de ce projet de recherche est de déterminer si les bactéries indigènes à l'Arctique ont la capacité de dégrader l'essence de navire sous les conditions naturelles de l'Arctique. Il est important de savoir cela afin de répondre de la meilleure façon possible pour réduire les impacts négatifs sur l'environnement, dans le cas où un déversement accidentel d'essence surviendrait dans l'Arctique. Le projet de recherche sera effectué à Resolute Bay et impliquera la collecte d'échantillon de sédiments de plage pour des analyses microbiennes et chimiques dans nos laboratoires de l'Université McGill, ainsi qu'une portion de travail de terrain de deux mois à l'été 2019. Après une consultation avec l'association locale des Chasseurs et Trappeurs, le travail de terrain a été planifié afin de

[illegible]

Post-Closure Phase: from to

$$\Lambda \subset \mathbb{N} \triangleleft \mathbb{N} \xrightarrow{\sigma} \sigma \triangleleft \mathbb{N}^b \supset \mathbb{C}$$

ᐱᑦ	ᖃᓄᐃᑦᕆᑦ ᐱᑦᐳᐊᖃᑦᓂᐊᖃᑦ	ᑭᑦᑯᑦ ᓄᐱᖅᑲᑦᓂ	ᑐᔨᑯᐱᓴᑦ ᓄᐱᑦ ᖃᓄᖃᑦ ᐊᑐᐱᑯᑯᑦᒪᓴᐊᖃᑦᓂᑦ	ᐃᑦᔨᑦᓂᑦᖃᑦᐱᑯᑯᑦᒪᓴᐊᑦ ᐃᓄᖃᑦ ᐱᔨᖃᑦᑯᑦᓂᑯᑦᓂᑯᑦ ᑯᐃᑦᒪᓂᑯᑦᒪᓴᐊᑦ	ᖃᓂᑦᓂᑦᑲᑦ ᓄᐱᑦᒪᓴᐊᑦ ᐊᐱᑯᑦ ᔨᓴᐱᑯᑦᐱᑯᑯᑦ ᓴᓄᑦ
Possible beach sites for microcosm deployment	Sampling sites	Municipal	n/a	n/a	All proposed sampling sites are within the community of Resolute Bay
PCSP Research facilities	Researching	Municipal	n/a	n/a	Located within Resolute Bay

መረጥፊ ለረዕይናቸው ምረቃ ለሌሎች ለረዕይናቸው ምረቃ ለሌሎች ለረዕይናቸው ምረቃ

ᓄᑦᕈᕐᓂᕋ	ᐊᑏᕐ	ᓃᐅᕐᐱᖃᑎᑏᕐᓂᕋ	ᖃᖃᓴᓴᐅ ᐅᐱᖃᑎᕋᐅᕋᐅᓴᐊᖃᕐᓂᕐ
ᖃᓃᕈᕈᐅᕐᓂᕋ ᖃᖃᓴᓴᐅ	Phillip Manik	Hunter and Trappers Association	2019-02-01
ᖃᓃᕈᕈᐅᕐᓂᕋ ᖃᖃᓴᓴᐅ	Uluriak Amarualik	Hunter and Trapper Association	2019-09-22
ᐅᖃᓃᐅᕐᓂᕋ	Jason Carpenter	Nunavut Arctic College	2019-03-28

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$a^{\dagger}r_1^a r_2^b \wedge c_{\alpha} d_{\beta} e^{\gamma} f^{\delta} g^{\epsilon} h^{\zeta} i^{\eta} j^{\theta}$ በበፍጋር:

North Baffin

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Project transportation types

Transportation Type	Route	Length of Use
Air	arriving in Resolute Bay with First Air	
Land	Transport around Resolute will be by truck or ATV	

Project accomodation types

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[illegible][illegible]

ΔL^{9b} ΔC^{9b} CΔ^{9b} ΔL^{9b} ΔC^{9b}

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1	Municipal sources	Water will be retrieved for personal use (drinking, showering) from the PCSP research facilities where we will be stationed.

$$\Delta^b C d \in \rho_\sigma \Delta^c \sigma^c$$

ᐱᓕᓂᑦᐸᓂᔭᐅᔪᒫᒪᔪᑲ ^c ᐱᓕᓂᑦᐸᓂᔭᐅᓂᑦᐸᓂᔭᓃᓄᓇᑲ ^b	ᓃᓄᓂᑦᐸᓂᔭᓃᓄᓇᑲ ^b ᑦᐸᓂᔭᓃᓄᓇᑲ ^b	ᓃᓄᓂᑦᐸᓂᔭᓃᓄᓇᑲ ^b ᓃᓄᓂᔭᐸᓂᔭᓃᓄᓇᑲ ^b	ᓃᓄᓂᔭᓃᓄᓇᑲ ^b ᑦᐸᓂᔭᓃᓄᓇᑲ ^b	ᓃᓄᓂᔭᓃᓄᓇᑲ ^b ᓃᓄᓂᔭᓃᓄᓇᑲ ^b
Researching	ᑦᐸᓂᔭᓃᓄᓇᑲ ^b	1 litre	1 litre of dichloromethane will be used to store samples for transport back to McGill University in Montreal. NO hazardous waste will be left behind in Resolute Bay.	none
Sampling sites	ᑦᐸᓂᔭᓃᓄᓇᑲ ^b	none	No hazardous waste will be produced at the sampling sites.	none required

$$\Delta^{\circ} \text{G}^{\circ} \text{ for } \text{C}_2\text{H}_2 + 2\text{H}_2 \rightarrow \text{C}_2\text{H}_6 \quad \Delta^{\circ} \text{G}^{\circ} \text{ for } \text{C}_2\text{H}_4 + \text{H}_2 \rightarrow \text{C}_2\text{H}_6$$

The sampling chambers (“microcosms”) deployed in the beaches will be removed after 6 weeks of incubation. The microcosms are self contained and do not release any hazardous substances or chemicals to the environment. Their presence on the beach will not impact migratory birds or marine mammals in any way. All chemicals for analysis will be used solely within the laboratories of the PCSP research facilities. We will be staying at the PCSP research facilities in Resolute Bay, and will not be camping on the land. We will travel only as far as is easily accessible from the Research facilities by truck or ATV, so our environmental impact in terms of transport will be minimal. Absolutely no waste will be left behind by the research team. Everything we transport to the site can easily be transported away again. There is no possibility of creating a hazardous spill, because no liquid chemicals will be brought to the sampling sites. All chemicals will be used only in the laboratory or the PCSP facilities. Microcosms will be prepared in the lab before transport to the incubation sites. No noise-making equipment will be used, and care will be taken to not interrupt any community 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 11: Municipal Development

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Miscellaneous Project Information

$a \rightarrow b \in C_D \sigma^{\circ} \Gamma^C$ $d(b) \in C_D \Gamma_L \Gamma^C$ $b \rightarrow c \in C_D \dot{\sigma}^{\circ} \Gamma^C$ $\langle c \rangle D \Gamma^L \Gamma^L \in C_D \sigma^{\circ} \Gamma^C$

Cumulative Effects

Impacts

$\omega \rightarrow \omega \Delta^{\epsilon_b} C D \sigma^{-\epsilon_r} C$ $A \rho \cap \Gamma D C \dot{\sigma}^C D^C$ $A^b D^{\epsilon_b} C D \rho L \rho^C$

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

1	polyline	Possible beach sites for microcosm deployment
2	polyline	Possible beach sites for microcosm deployment
3	point	PCSP Research facilities

- | | | |
|---|----------|---|
| 1 | polyline | Possible beach sites for microcosm deployment |
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| 3 | point | PCSP Research facilities |