

▷ᐆᓚ▷ᑎᓄ: 778-839-2372, ᐱᔭᐱᓂᓄᓄ:

**፪፻፳፰ ሕዓት ለሥራ ጥሩ ምርቶችን ይፀናል**

▷Δ&NDC: Le ministre des Transports et de l'Infrastructure du Nunavut (TIN) a obtenu un financement du Conseil de la radiodiffusion et des télécommunications canadiennes (CRTC) pour soutenir la construction d'un câble de fibre optique de 1 066 km dans le sud du Nunavut. Le projet Kivalliq-Baffin Connector (le projet KBC) reliera quatre communautés du Nunavut à l'internet haute vitesse : Iqaluit, Kimmirut et Kinngait, situées sur la côte sud de l'île de Baffin (région de Qikiqtani), ainsi que Salliq (Coral Harbour), sur l'île Southampton (région de Kivalliq). Le projet KBC sera raccordé à une unité de dérivation (Branching Unit- BU) existante à Salluit (Nunavik), construite dans le cadre du projet de réseau de fibre optique sous-marin de l'Est de l'Arctique (EAUFON) du Gouvernement régional de Kativik. Trois des communautés du Nunavut seront desservies par une approche maritime (Kimmirut, Kinngait, Salliq [Coral Harbour]), tandis que l'approche pour Iqaluit se fera soit par la pose d'un câble terrestre à partir de Kimmirut, soit par une approche maritime. Dynamic Ocean Consulting Ltd (Dynamic Ocean) a été retenue par le ministère des TIN comme spécialiste en réglementation pour soutenir l'obtention des permis nécessaires au projet KBC. La présente description du projet concerne spécifiquement le programme de soutien en ingénierie pour le forage directionnel horizontal (FDH), requis à chacun des points d'accès marins. Worley Canada Services Ltd., opérant sous le nom de Worley Consulting, a été retenue par le ministère TIN comme la firme d'ingénierie responsable de fournir l'expertise géophysique et géologique pour appuyer ce programme. Les enquêtes réalisées dans le cadre du programme de soutien en ingénierie pour le FDH comprendront des levés géophysiques, topographiques, géotechniques, et potentiellement biologiques, tel que décrit ci-dessous. Ces travaux auront lieu à la fois sur terre et dans l'environnement marin, dans les zones concernées par le FDH: Géotechnique (forage de sondes, thermistances) Géophysique (bathymétrie multifaisceaux (MBES), sonar à balayage latéral (SSS), magnétomètre, profileur de sub-surface (SBP), analyse multi-canaux des ondes de surface (MASW), réfraction sismique, tomographie de résistivité électrique (ERT), enregistreur optique de paroi (OTV) et/ou enregistreur acoustique (ATV)) Levés topographiques (LiDAR, ortho-imagerie) Étude biologique (vidéo sous-marine) (potentielle) Les études mentionnées ci-dessus

Δ<sub>μ</sub><sup>b</sup>Π<sub>ν</sub><sup>c</sup>:

Inuinnaqtun: N/A

Operations Phase: from 2025-08-10 to 2026-10-21

Λ Γ Δ Ε Ζ Η Θ Ι Κ Λ Μ Ν Ξ Ο Π Ρ Σ Τ Υ Φ Χ Ψ Ω

| Inuktitut                             | Eskimo-Aleut Languages                       | Crown Land | Northern Lands Department | Federal Government / Environment Canada | Environment Canada / Northern Affairs                                                                                                                                                             |
|---------------------------------------|----------------------------------------------|------------|---------------------------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Kinngait HDD Study Area               | Scientific/International Polar Year Research | Crown      | N/A                       | N/A                                     | Kinngait is within the Western Hudson Strait Ecologically and Biologically Significant Area (EBSA). See Figure 1-1 of the NIRB Application Letter for locations of community and protected areas. |
| KBC Project Cable Route               | Scientific/International Polar Year Research | Marine     | N/A                       | N/A                                     | The KBC Project marine route has been provided for project background context.                                                                                                                    |
| Coral Harbour (Salliq) HDD Study Area | Scientific/International Polar Year Research | Crown      | N/A                       | N/A                                     | Coral Harbour (Salliq) is within the Southampton Area of Interest. See Figure 1-1 of the NIRB Application Letter for locations of community and protected areas.                                  |
| Kimmirut HDD Study Area               | Scientific/International Polar Year Research | Crown      | N/A                       | N/A                                     | Kimmirut is within the Western Hudson Strait Ecologically and Biologically Significant Area (EBSA). See Figure 1-1 of the NIRB                                                                    |

|                          |                                              |       |     |     |                                                                                                                            |
|--------------------------|----------------------------------------------|-------|-----|-----|----------------------------------------------------------------------------------------------------------------------------|
|                          |                                              |       |     |     | Application Letter for locations of community and protected areas.                                                         |
| Iqaluit - HDD Study Area | Scientific/International Polar Year Research | Crown | N/A | N/A | Iqaluit is in Frobisher Bay. See Figure 1-1 of the NIRB Application Letter for locations of community and protected areas. |

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| <b>ᓄᓇᓕᓂᓐ</b> | <b>ᓇᓕᓂᓐ</b>                              | <b>ᓇᓕᓂᓐᓇᓂᓐ</b>                           | <b>ᓇᓕᓂᓐ ᓇᓕᓂᓐᓇᓂᓐ</b> |
|--------------|------------------------------------------|------------------------------------------|---------------------|
| ᓇᓕᓂᓐ         | Hamlet of Kimmirut                       | Hamlet of Kimmirut                       | 2025-06-18          |
| ᓇᓕᓂᓐ         | Mayukalik Hunters & Trappers Association | Mayukalik Hunters & Trappers Association | 2025-06-18          |
| ᓇᓕᓂᓐ         | Hamlet of Kinngait                       | Hamlet of Kinngait                       | 2025-06-18          |
| ᓇᓕᓂᓐ         | Aiviq Hunters & Trappers Association     | Aiviq Hunters & Trappers Association     | 2025-06-18          |
| ᓇᓕᓂᓐ         | Hamlet of Coral Harbour (Salliq)         | Hamlet of Coral Harbour (Salliq)         | 2025-06-18          |
| ᓇᓕᓂᓐ         | Aiviit Hunters & Trappers Organization   | Aiviit Hunters & Trappers Organization   | 2025-06-18          |

| <b>ᓴᐱᕋᑦ ᓄᐃᕈᑦ<br/>ᐸᓇᑉᑐᒃᔪᓂᑦ ᓴᓴᓂᑦ<br/>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ<br/>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ<br/>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ</b> | <b>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ<br/>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ<br/>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ<br/>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ<br/>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ</b>                                            | <b>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ</b> | <b>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ /<br/>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ</b> | <b>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ</b> |
|------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|------------------|----------------------------------|------------------|
| ᐸᓄᑦᑭᑦᓴᑦᓂᑦ<br>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ                                                       | Water License, to be submitted if water withdrawal from freshwater courses is required (not expected at this time). | Not Yet Applied  |                                  |                  |
| ᐸᓄᑦᑭᑦᓴᑦᓂᑦ,<br>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ                                                      | Land Use Permit-Kinngait, Lands department will be engaged to determined if required.                               | Not Yet Applied  |                                  |                  |
| ᐸᓄᑦᑭᑦᓴᑦᓂᑦ,<br>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ                                                      | Land Use Permit-Kimmirut, Lands department will be engaged to determined if required.                               | Not Yet Applied  |                                  |                  |
| ᐸᓄᑦᑭᑦᓴᑦᓂᑦ<br>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ                                                       | Right of Way-Kimmirut, pending submission.                                                                          | Not Yet Applied  |                                  |                  |
| Crown-Indigenous Relations and Northern Affairs Canada                       | Land Use Permit-Kinngait, pending submission.                                                                       | Not Yet Applied  |                                  |                  |
| Crown-Indigenous Relations and Northern Affairs Canada                       | Land Use Permit-Coral Harbour (Salliq), pending submission.                                                         | Not Yet Applied  |                                  |                  |
| Crown-Indigenous Relations and Northern Affairs Canada                       | Land Use Permit-Kimmirut, pending submission.                                                                       | Not Yet Applied  |                                  |                  |
| Crown-Indigenous Relations and Northern Affairs Canada                       | Land Use Permit-Iqaluit, pending submission.                                                                        | Not Yet Applied  |                                  |                  |
| ᐸᓄᑦᑭᑦᓴᑦᓂᑦ<br>ᐸᓄᑦᑭᑦᓴᑦᓂᑦ                                                       | Scientific Research License, pending submission.                                                                    | Not Yet Applied  |                                  |                  |



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|-------------------------------------|--------|-----------------------|------------------------------------------------------------------------------------------------------------------------------|
| Cone Penetration Tests              | 1      | 2.5 m x 1.5 m         | To support determination of simultaneous laying and burial of the cable.                                                     |
| Mounted drill (CME45/55)            | 1      | 2.5 m x 5.5 m x 3 m   | Geotechnical drill rig for onshore and marine boreholes.                                                                     |
| Multibeam Echosonar                 | 1      | 1 m x 50 cm           | Bathymetry with an approximately 200 m wide survey corridor along HDD alignment.                                             |
| Side Scan Sonar                     | 1      | 2 m x 50 cm           | Seabed type / conditions along and perpendicular to HDD alignment.                                                           |
| Electrodes and Cables               | 2      | 100 m x 5 cm          | Differentiate surficial geology above the bedrock.                                                                           |
| OTV / ATV Probe                     | 1      | 2 m x 5 cm            | Assess structural geology and groundwater conditions.                                                                        |
| Borehole Caliper                    | 1      | To be determined      | Records borehole diameter and combined with the OTV / ATV probe, assesses the structural geology and groundwater conditions. |
| Winch                               | 1      | To be determined      | Used to lower the OTV / ATV probe.                                                                                           |
| Magnetometer                        | 1      | 2 m x 50 cm           | Combined with SSS to assess seabed morphology and submerged objects.                                                         |
| Airgun                              | 1      | 90 cm x 9 m           | Seismic source for seismic refraction and Multi-channel Analysis of Surface Waves.                                           |
| Sub-bottom Profile                  | 1      | 1 m x 1 m             | Ground conditions below seabed with an approximately 200 m wide survey corridor along HDD alignment.                         |
| Sound Velocity Profiler             | 1      | 8 cm x 27 cm          | To measure the speed of sound at different water column depths.                                                              |
| Drone                               | 1      | To be determined      | Drone to conduct LiDAR and aerial surveys.                                                                                   |
| Remotely Operated Vehicle           | 1      | 72 cm x 24 cm x 44 cm | Visual observations of seabed conditions along and perpendicular to the HDD alignments.                                      |

|                    |   |                             |                                                                                         |
|--------------------|---|-----------------------------|-----------------------------------------------------------------------------------------|
| Drop Camera        | 1 | 2.5 m x 1.5 m               | Visual observations of seabed conditions along and perpendicular to the HDD alignments. |
| Hydrophone         | 1 | 530 mm long x 60mm diameter | Assess for noise (anthropogenic) and sound (marine mammals).                            |
| Thermistor Strings | 2 | 20 m x 5 cm                 | Measure ground temperature to understand depth of ground above permafrost.              |

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| የፍጥነት ምልክቶችን ለመለየት የሚያገለግሉ   | የፍጥነት ምልክቶችን ለመለየት የሚያገለግሉ | የፍጥነት ምልክቶችን ለመለየት የሚያገለግሉ | የፍጥነት ምልክቶችን ለመለየት የሚያገለግሉ | የፍጥነት ምልክቶችን ለመለየት የሚያገለግሉ | የፍጥነት ምልክቶችን ለመለየት የሚያገለግሉ | የፍጥነት ምልክቶችን ለመለየት የሚያገለግሉ |
|------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Information is not available |                            |                            |                            |                            |                            |                            |

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| የፍጥነት ምልክቶችን ለመለየት የሚያገለግሉ | የፍጥነት ምልክቶችን ለመለየት የሚያገለግሉ | የፍጥነት ምልክቶችን ለመለየት የሚያገለግሉ                                                                                                                                                                            |
|----------------------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3                          | Pumped by contractor.      | Fresh water will be obtained from the hamlets' water truck for onshore drilling. Each community will be engaged in advance to confirm. Ocean water will be pumped from the ocean for marine drilling. |

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|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------------------------------------------------------------------------------------------|------------------|
| Other                        | Other, Some non-combustible waste will be created from consumables during the Program (bottles, bags, gloves, etc.). The field crew will use existing facilities to process sewage and human waste. | Unknown at this time.      | The KBC HDD Engineering Support Program will utilize a "pack in, pack out" policy in terms of waste management. | N/A              |

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Environmental impacts associated with the KBC HDD Engineering Support Program are expected to be minimal and mitigatable. Potential impacts to terrestrial and marine habitat and wildlife may occur; however, field personnel will be accompanied by local field assistants to confirm minimal disturbance. Temporary sediment suspension is likely to occur but ; however turbidity is not expected to result in exceedances of the federal Canadian Council of Ministers of the Environment (CCME) Water Quality Guidelines (WQG), and the footprint of the boreholes is not expected to be impactful to the seabed. For a detailed explanation of all mitigation measures proposed for the KBC HDD Engineering Support Program, please see section 5.3 of the attached Environmental Management Plan.

# **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

There will be a small vessel used for the marine based activities including offshore boreholes, and geophysical activities that will be done to assess the seabed subsurface.

## SECTION H2: Disposal At Sea

## SECTION I1: Municipal Development

[illegible]

Existing conditions of the surrounding physical environment was assessed through desktop review. Pertinent water bodies include the Hudson Bay, Hudson Strait and Frobisher Bay. The KBC HDD Engineering Support Program will take place in proximity to the Southampton Area of Interest, the Western Hudson Strait Ecologically and Biologically Significant Area, and the East Bay (Qaqsauqtuuq) and Harry Gibbons (Ikkattuaq) Migratory Bird Sanctuaries.

[illegible]

Existing conditions for fish and marine mammals was assessed through desktop review. The Hudson Strait waters are biologically important for a variety of marine mammals, including bowhead whales, narwhal, Atlantic walrus, and belugas. As summarized in the Recommended Nunavut Land Use Plan (RNLUP) effects to marine mammals are expected to be minimal, as there will be marine mammal observers on the vessel to document and observe species and behaviour of marine mammals. Certain activities as well will require management of exclusion zones.

[illegible]

Letters to communicate the KBC HDD Engineering Support Program activities have been sent to the Hamlet and the associated Hunters and Trappers Association or Organization of Coral Harbour (Salliq), Kimmirut, and Kinngait. The addition of the KBC HDD Engineering Support Program activities in Iqaluit is a more recent development and consultation with the Hamlet of Iqaluit and their Hunters and Trappers Association is in progress.

### Miscellaneous Project Information

N/A

[illegible]

Six main potential environmental effects have been identified for the KBC HDD Engineering Support Program. Potential effects are considered: a) disturbance or injury to fish and marine mammals due to underwater noise;; b) sediment and water quality degradation;; c) physical damage to marine organisms;; d) modifications and destruction to fish habitat;; e) important marine habitats; and f) waste production. A robust mitigation plan has been developed which and includes: having local field assistants visually inspect

for disturbance to terrestrial or marine life;; maintaining a small non-invasive research team that will only be present for a short-term;; and responding and reporting to spills in accordance to the Spill Contingency Planning and Reporting Regulations.

### **Cumulative Effects**

The KBC HDD Engineering Support Program is not expected to result in cumulative effects. The KBC HDD Engineering Support Program is short-term in nature and appropriate mitigation and monitoring measures will be in place to minimize the potential for negative effects to the marine environment.

## Impacts

$\mathbb{A}^{\mathfrak{b}} \mathbb{C} \triangleright \sigma^{\mathfrak{a}} \mathfrak{r}^{\mathfrak{c}} \triangleleft \mathfrak{e} \mathfrak{n} \mathfrak{r} \triangleright \mathbb{C} \dot{\sigma}^{\mathfrak{c}} \mathfrak{d}^{\mathfrak{c}} \triangleleft \mathfrak{b} \mathfrak{d}^{\mathfrak{b}} \mathbb{C} \triangleright \mathfrak{l} \mathfrak{r}^{\mathfrak{c}}$

| 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                                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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



#### List of Project Geometries

|   |          |                                       |
|---|----------|---------------------------------------|
| 1 | polygon  | Iqaluit - HDD Study Area              |
| 2 | polygon  | Kinngait HDD Study Area               |
| 3 | polygon  | Kimmirut HDD Study Area               |
| 4 | polygon  | Coral Harbour (Salliq) HDD Study Area |
| 5 | polyline | KBC Project Cable Route               |