



Water Resources Division
Resource Management Directorate
Nunavut Regional Office
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Your file - Votre référence
8BC-CLY----
Our file - Notre référence
GCDocs# 99543009

December 15, 2021

Richard Dwyer
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0
Sent via E-mail: licensing@nwb-oen.ca

**Re: Crown-Indigenous Relations and Northern Affairs Canada's (CIRNAC's) Review
of the Department of Fisheries and Oceans Canada (DFO) New Licence
Application for Clyde River Harbor Development Project, Type B Water Licence
No. 8BC-CLY----**

Dear Mr. Dwyer,

Thank you for the November 15, 2021 invitation to review the application for a new water licence, submitted by DFO, for Clyde River Harbour Development Project, Type B Water Licence No. 8BC-CLY----

Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the application pursuant to its mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*. Please find CIRNAC comments and recommendations in the attached Technical Memorandum.

If there are any questions or concerns, please contact me Lauren Perrin at (867) 975-4282 or lauren.perrin@rcaanc-cirnac.gc.ca; or Andrew Keim at (867) 975-4550 or andrew.keim@rcaanc-cirnac.gc.ca;

Sincerely,

Lauren Perrin,
Water Management Specialist



Technical Review Memorandum

Date: December 15, 2021

To: Richard Dwyer, Manager of Licensing, Nunavut Water Board

From: Lauren Perrin, Water Management Specialist, CIRNAC

Subject: Crown-Indigenous Relations and Northern Affairs Canada's (CIRNAC's) Review of the Department of Fisheries and Oceans Canada (DFO) New Licence Application for Clyde River Harbor Development Project, Type B Water Licence No. 8BC-CLY----

Region: Kitikmeot Kivalliq Qikiqtani

A. BACKGROUND

DFO is proposing a coastal infrastructure project that consists of both new construction and the modification of existing infrastructure at the community sealift beach in addition to the construction of a new small craft harbour in Clyde River, Nunavut.

As stated in section 1.2 of the Clyde River Project Proposal, “the footprint of the small craft harbour will fall partially within the upland, tidal zone, and seabed area along the shoreline of Patricia Bay to the southwest of the hamlet of Clyde River. The new small craft harbour is proposed to be located west side of the existing sea lift ramp and the quarry is located to the east of Clyde River”.

As contained in the Executive Summary, the project will involve the following:

- Replacement of two storm-water culverts located on the west and east sides of the small craft harbour construction site.
- Rock will be hauled from the Quarry via the existing road through the hamlet which crosses a river approximately 2 kilometers East of the Hamlet.
- Construction of a river crossing structure along the haul road at the river North of the quarry.
- Disposal of dredged materials from the harbour area on the land located on the west side of the Government of Nunavut Petroleum Products Division fuel storage facility.
- Temporary work camp.
- Blasting at the quarry.

No water use is planned for this project according to DFO.

CIRNAC provides the following comments and recommendations pertaining to the application package. A summary of the subjects of recommendations can be found in Table



1. Documents reviewed as part of this submission can be found in Table 2 of Section B. Detailed technical review comments can be found in Section C.

Table 1: Summary of Recommendations

Recommendation Number	Subject
R-01	Water Use
R-02	Culvert Effects on Water Quality
R-03	Dust Effects on Water Quality
R-04	Erosion and Sediment concerns
R-05	Spill Contingency Plan
R-06	Waste Management Plan
R-07	Abandonment and Restoration Plan

B. DOCUMENTS REVIEWED AND REFERENCED

The following table (Table 2) provides a list of the documents reviewed under the submission and reference during the review.

Table 2: Documents Reviewed and Referenced

Document Title	Author, File No., Rev., Date
211110 8BC-CLY---- Clyde River Harbour- Additional Option to River Crossing Report-IMLE	Canadrill-CBCL Joint Venture; September 9, 2021
211110 8BC-CLY---- Clyde River Harbour- CEMP- IMLE	Canadrill-CBCL Joint Venture; August 2021
211110 8BC-CLY---- Clyde River Harbour- Consultation 1-IMLE	Canadrill-CBCL Joint Venture; October 2020
211110 8BC-CLY---- Clyde River Harbour- Consultation 2-IMLE	Canadrill-CBCL Joint Venture; March 2021
211110 8BC-CLY---- Clyde River Harbour- Consultation 3-IMLE	Canadrill-CBCL Joint Venture; October 2021
211110 8BC-CLY---- Clyde River Harbour- Design Drawings and Plans-IMLE	Public Works and Government Services Canada, Canadrill-CBCL Joint Venture; August 2021
211110 8BC-CLY---- Clyde River Harbour- Environ and Socio-Ec Baseline-IMLE	Department of Fisheries and Oceans Canada and Advisian; January 14, 2020
211110 8BC-CLY---- Clyde River Harbour- Executive Summary-IMLE	Department of Fisheries and Oceans Canada; November 10, 2021
211110 8BC-CLY---- Clyde River Harbour- Fish and Fish Habitat Baseline Study-IMLE	Canadrill-CBCL Joint Venture; March 2021
211110 8BC-CLY---- Clyde River Harbour- Geological Assessment-IMLE	Department of Fisheries and Oceans Canada and Advisian; January 10, 2020
211110 8BC-CLY---- Clyde River Harbour NIRB- Notice of Release of SDR-OA1E-IMLE	Nunavut Impact Review Board 21YN032; October 18, 2021



Document Title	Author, File No., Rev., Date
211110 8BC-CLY---- Clyde River Harbour NIRB-Screening Decision Report-OT7E-IMLE	Nunavut Impact Review Board 21YN032; October 18, 2021
211110 8BC-CLY---- Clyde River Harbour- Project Proposal-IMLE	Canadrill-CBCL Joint Venture; August 2021
211110 8BC-CLY---- Clyde River Harbour- River Crossing Options Report-IMLE	Canadrill-CBCL Joint Venture; August 2021
211110 8BC-CLY---- Clyde River Harbour- Water Licence Application Form-IMLE	Nunavut Water Board; November 10, 2021
211110 8BC-CLY---- Clyde River Harbour- WaterWorks-SIG-IMLE	Department of Fisheries and Oceans Canada; November 10, 2021

C. RESULTS OF REVIEW

1. Water Use

Comment:

DFO states in paragraph 4 of the executive summary that, “No water taking is planned for this project”. Similarly, DFO states in section 12 of the Water Licence Application Form that, water use will be confined to “diverting a water course and to cross a watercourse”.

CIRNAC notes that DFO intends to use water for camp and construction purposes, however DFO’s statement in paragraph 5 of the Executive Summary states that *“Water used at the camp and for the construction site will be from the municipal water supply”*.

DFO notes in section 7.1.1 of the Project Proposal that; *“Dust that is created during construction activities will be managed by applying calcium chloride or water, which are acceptable means of dust suppression for municipalities in Nunavut”*.

CIRNAC is concerned that the proposed water use activities could exceed the Type B water licence requirement for daily water consumptions permitted for the municipality of Clyde River by the Nunavut Water Board (NWB). Also, CIRNAC is concerned that DFO did not indicate where the water for dust suppression activities would be obtained.

Currently, Clyde River Water Licence 3BM-CLY1924 permits daily water use up to 299 m³. CIRNAC is requesting DFO to provide daily water use estimates for the proposed Clyde River Harbour Development project to include estimates of water for the camp and any other purposes.

Recommendation:

(R-01) CIRNAC recommends that DFO provide the following:

- a) Daily estimate of water use for the camp during the construction phase of the project.



- b) Daily estimate of water use during the operational phase of the project.
- c) Information on the source and projected volumes of water used for dust suppression activities.
- d) Update section 12 of water licence application form to indicate that water would be obtained for camp purposes i.e. check box 1 that states "*To obtain water for camp/municipal purposes*".

2. Culvert Effects on Water Quality

Comment:

In Section 7.3.1, Surface Water Resources, of the Project Proposal it states that "*The installation of culverts at the river crossing may raise the water level above the exposed rock level on the riverbank during very high flow events.*" It is also noted in the same section (7.3.1) that this could lead to an increase in erosion along the river. While it is noted that they plan to remove the culverts each construction season to mitigate the potential effects of flooding and riverbank erosion there is no mention of mitigation measures in place while the culverts are installed.

As well, DFO stated in section 17, paragraph 5 of the Water Licence Application form that, "*Construction and removal of the temporary river crossing may temporarily affect water quality in the freshwater river*". CIRNAC is concerned that the severity of this expected water quality impact is unknown.

Recommendation:

(R-02) CIRNAC recommends that DFO provide a water quality monitoring plan and details on proposed methodology to be employed to mitigate potential water quality impacts from the culvert construction on Clyde River. This should include year around mitigation and monitoring measures, as required.

3. Dust Effects on Water Quality

Comment:

In section 7.1.1 of the Project Proposal, DFO noted that; "*Dust that is created during construction activities will be managed by applying calcium chloride or water, which are acceptable means of dust suppression for municipalities in Nunavut*". CIRNAC is concerned about the increased levels of dust generated from the quarry and blasting affecting water quality.

Recommendation:

(R-03) CIRNAC recommends that DFO provide a plan detailing the application process and methodology for use of Calcium chloride as dust suppression material (i.e. quantity and application schedule).



4. Erosion and Sediment concerns

Comment:

DFO states in section 17, paragraph 6 of the Water Licence Application form that, “*Blasting at the quarry has the potential to increase sediment loading in drainage from the quarry site to the river*”. Additionally, in the same section (7.2.2) the DFO states “*A sediment and erosion control plan will be implemented for the duration of the construction*”.

CIRNAC is concerned that this sediment build-up on the river bank as a result of quarry blasting activities could heavily impact the surface water flow rate of the river. CIRNAC is also concerned that the sediment build-up might increase the total dissolved solids (TDS) and total suspended solids (TSS) concentrations in the river which has the potential to affect downstream water quality.

In section 7.2.1 of the Project Proposal under the Subsection Permafrost, DFO states that a geotechnical investigation determined the depth of permafrost to be 1.5 meters along the shoreline and that any negative effects can be mitigated. CIRNAC notes that DFO did not include any information on how they plan to mitigate any permafrost impacts.

Recommendation:

(R-04) CIRNAC recommends that DFO provide;

- a) Submission of a blasting plan and schedule that includes an erosion and sediment control plan to mitigate against quarry blasting impacts on Clyde River.
- b) Submit a plan for mitigating permafrost damage.

5. Spill Contingency Plan

Comment:

As reported in section 6.1 of the Construction Environmental Management Plan, “*The spill response plan will be prepared and implemented to provide guidance for Project*”. CIRNAC acknowledges that DFO provided in the referenced document, a list of actions to be taken in an unlikely spill event of fuel or hazardous material occurs.

Recommendation:

(R-05) CIRNAC recommends that DFO provide a comprehensive Spill Contingency Plan as part of the management plans for this project. That plan must include the proper protocols such as informing appropriate authorities of these events and mitigation plans, contact and reporting information to the Spill Line and sufficient detail for regulators to determine who is responsible for taking actions and when that may occur.



6. Waste Management Plan (WMP)

Comment:

DFO states in section 15 of the Water Licence Application Form the estimated quantities for the different wastes composition for the Clyde River Harbour Development project. Also in section 4.3.5 of the Project Proposal document, DFO outlined the estimates of waste production and disposal methods for the project. In these two documents, CIRNAC notes that DFO only provided the estimates (i.e. quantities of waste), but did not provide the frequency of how often the respective waste categories would be disposed of.

In the Water Licence Application Form, DFO provided a summary of the composition for the hazardous and solid wastes. CIRNAC observes that DFO did not provide any document detailing the procedure for the sorting (i.e. categorization) of the hazardous waste nor the solid waste.

CIRNAC acknowledges there exist limitations within the municipality of Clyde River and is recommending the measures below to ensure that the hazardous materials and waste is appropriately managed by the proponent and not adding extra responsibility onto the municipality.

Recommendation:

(R-06) CIRNAC recommends that DFO provide a comprehensive Hazardous and Waste Management Plan (WMP) to include;

- a) The frequency of transportation (i.e. monthly) for sewage and greywater to the municipality waste treatment facility.
- b) Procedures for solid waste classification and the frequency (i.e. monthly) disposal at the municipal landfill.
- c) Procedures for Sorting, Movement and transportation off site of hazardous waste to a facility licensed to treat such waste.

7. Abandonment and Restoration Plan (ARP) for Quarry Site

Comment:

In section 7.2.2, second paragraph of the Project Proposal, it states "There will be additional disturbance to soils and terrain due to an increase in size of the pit at the quarry and elevation changes at the small craft harbour site". CIRNAC is concerned that there is not enough information provided regarding the abandonment and restoration plan for the quarry site at the end of the construction phase of the project.



Recommendation:

(R-07) CIRNAC recommends that DFO provide an Abandonment and Restoration Plan (ARP) to the municipality of Clyde River to restore the activity sites back to municipality standards.

D. References

8BC-CLY---- Clyde River Harbour- Additional Option to River Crossing Report-IMLE; Canadrill-CBCL Joint Venture; September 9, 2021

8BC-CLY---- Clyde River Harbour- CEMP-IMLE; Canadrill-CBCL Joint Venture; August 2021

8BC-CLY---- Clyde River Harbour- Consultation 1-IMLE; Canadrill-CBCL Joint Venture; October 2020

8BC-CLY---- Clyde River Harbour- Consultation 2-IMLE; Canadrill-CBCL Joint Venture; March 2021

8BC-CLY---- Clyde River Harbour- Consultation 3-IMLE; Canadrill-CBCL Joint Venture; October 2021

8BC-CLY---- Clyde River Harbour- Design Drawings and Plans-IMLE; Public Works and Government Services Canada, Canadrill-CBCL Joint Venture; August 2021

8BC-CLY---- Clyde River Harbour- Environ and Socio-Ec Baseline-IMLE; Department of Fisheries and Oceans Canada and Advisian; January 14, 2020

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8BC-CLY---- Clyde River Harbour NIRB-Notice of Release of SDR-OA1E-IMLE; Nunavut Impact Review Board 21YN032; October 18, 2021

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8BC-CLY---- Clyde River Harbour- Project Proposal-IMLE; Canadrill-CBCL Joint Venture;
August 2021

8BC-CLY---- Clyde River Harbour- River Crossing Options Report-IMLE; Canadrill-CBCL
Joint Venture; August 2021

8BC-CLY---- Clyde River Harbour- Water Licence Application Form-IMLE; Nunavut Water
Board; November 10, 2021

8BC-CLY---- Clyde River Harbour- WaterWorks-SIG-IMLE; Department of Fisheries and
Oceans Canada; November 10, 2021

Department of Crown Indigenous Relations and Northern Affairs Act (2000)

Nunavut Waters and Nunavut Surface Rights Tribunal Acts (2016)