

Environmental Protection Operations
Qimugjuk Building 969
P.O. Box 1870
Iqaluit, NU X0A 0H0
Tel: (867) 975-4631
Fax: (867) 975-4645

17 February 2011

EC file: 4704 004 041
NIRB file: 09UN052

Tara Arko
Assistant Technical Advisor
Nunavut Impact Review Board
29 Mitik, PO Box 1360
Cambridge Bay, NU X0B 0C0

Via email: info@nirb.ca

RE: Notice of a Part 4 Screening for Public Works and Government Services Canada's (PWGSC)'s "Disposal at Sea Permit" project proposal

Environment Canada (EC) has reviewed the information submitted with the above-mentioned project proposal to the Nunavut Impact Review Board (NIRB). The following specialist advice has been provided pursuant to the *Canadian Environmental Protection Act* (CEPA99), Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act*.

Public Works and Government Services Canada is applying for a Disposal at Sea Permit, on behalf of Fisheries and Oceans Canada, in order to dispose of dredged materials resulting from improvements to the Pangnirtung harbour. Work is proposed to occur over 12 weeks between early June and late October 2011 with the potential for work in 2012 if weather and ice delays occur.

Based on the information provided, EC provides the following comments for the NIRB's consideration:

General

- All mitigation measures identified by the proponent, and the additional measures suggested herein, should be strictly adhered to in conducting project activities. This will require awareness on the part of the proponents' representatives (including contractors) conducting operations in the field. EC recommends that all field operations staff be made aware of the proponents' commitments to these mitigation measures and provided with appropriate advice/training on how to implement these measures.
- In Box 17 of the application: The centre point of the disposal site is provided but the expected diameter of the proposed site is not consistent in the EIS document. Section 4.2 indicates that the site is ~110 000 square meters which corresponds to a radius of ~187 m but figure 5.14 suggests the radius would be substantially greater (~350 m) and the text of section 5.2.2.4.4 indicates a radius of about 250 m. What is the expected diameter of the site and how is it defined?
- In Box 37 of the application: As outlined in Schedule 6 of CEPA99, proponents are expected to assess alternatives to disposal at sea and to make all practical efforts to reduce the amount

of waste to be disposed of at sea. Was waste reduction considered in the design of the project? What reduction opportunities were examined and why were they rejected?

- In Section 4.2 of Appendix B: This section indicates that approximately 120 000 cubic metres (place measure) of material is to be dredged/disposed but section 5.2.2.4.1 (bullet 2) indicates that the estimated 120 000 cubic meters of dredged material includes a 30% bulking factor due to entrainment of sea water during dredging. Please clarify how much material is being dredged.
- Figure 5.12: The graph entitled "Long Term Concentration Plume evolution" on Figure 5.12 shows the concentration of the plume actually increasing with distance from the dump site. Please clarify if that is the case and, if it is, why it occurs.
- Section 5.2.2.1 and Section 6.0: The supplied information describes open-water current and tidal regimes which are important in understanding what can be expected during dredging and disposal operations and the temporal bounds for the review of residual effects are currently limited to "2 - 3 months after the last dump". Are currents at the sediment water interface on disposal site expected to change when the fjord is ice covered? Understanding under-ice currents is necessary to assess the impacts of the project and the long term stability of the site.
- Section 6.1.2.2: This section indicates that personnel "should" report and clean up spills. Spill reporting is not an optional activity; the proponent must commit to spill reporting and clean up as noted in NIRB Condition #15 found in Appendix 1 of Appendix A (Regulatory Review of Marine Environmental Assessment in Nunavut).
- Section 6.1.2.2: Bullet #8 indicates that an adequate supply of spill clean-up equipment should be maintained "on site" at all times. Given that the operation involves many vessels operating in different areas the proponent should ensure that all vessels have the appropriate equipment available.
- Section 9.0: As the NIRB Part 4 Screening of the disposal activity is currently in progress, it is premature to state that "the RAs have concluded that following the application of mitigation, the project is unlikely to result in significant adverse environmental impacts".

Wildlife and Species at Risk

- Section 6 (a) of the *Migratory Birds Regulations* states that no one shall disturb or destroy the nests or eggs of migratory birds. Although this disposal at sea project will take place during the migratory bird breeding season, the project does not overlap with any key marine habitat sites identified for migratory birds in Nunavut. The proponent states that dredging and disposal activities may interfere with migratory birds that nest nearby or use the fjord for resting/staging areas. To mitigate these potential effects they propose that concentrations of seabirds, waterfowl, or shorebirds will not be approached and that the contractor will be made aware of the possible presence of migratory birds such as eiders and gulls occurring at the project site and will ensure that work crews and equipment do not approach these species. A recent study by Diemer et al. (2010)¹ recorded relatively high numbers of Iceland or Glaucous Gulls in the Pangnirtung Fjord and smaller number of Eider ducks and Northern Fulmar. The proponents should consider halting operations if large concentrations of birds are encountered along the designated navigational channels between the dredging site and the dumping site, and should wait until birds have moved out of the area to resume operations. The project is unlikely to disturb or destroy nests or eggs of migratory birds given that operations are mainly marine-based.
- Section 5.1 of the *Migratory Birds Convention Act* prohibits persons from depositing substances harmful to migratory birds in waters or areas frequented by migratory birds or in a place from which the substance may enter such waters or such an area.
- Marine birds are vulnerable to oil spills and to pollution of their feeding areas. Environment Canada recommends that the proponent consider what steps would be taken to protect wildlife (including marine birds) in the event of a spill. This information could be incorporated into an existing emergency response and/or spill response plan. This could

include specific measures to keep wildlife out of a contaminated area, equipment available to do this, what measures would be taken if animals do come in contact with the spill, and when such procedures should be used. Having this information outlined not only benefits wildlife, but also gives clear direction to the field crew on what to do in a spill situation if wildlife is nearby.

- The following comments are pursuant to the *Species at Risk Act* (SARA), which came into full effect on June 1, 2004. Section 79 (2) of SARA, states that during an assessment of effects of a project, the adverse effects of the project on listed wildlife species and its critical habitat must be identified, that measures are taken to avoid or lessen those effects, and that the effects need to be monitored. This section applies to all species listed on Schedule 1 of SARA. However, as a matter of best practice, Environment Canada suggests that species on other Schedules of SARA and under consideration for listing on SARA, including those designated as at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), be considered during an environmental assessment in a similar manner. The Table below lists species that may be encountered in the project area that have been assessed by COSEWIC as well as their current listing on Schedules 1-3 of SARA (and designation if different from that of COSEWIC). Project impacts could include species disturbance.

Terrestrial Species at Risk ¹	COSEWIC Designation	Schedule of SARA	Government Organization with Primary Management Responsibility ²
Harlequin Duck (Eastern population)	Special Concern	Schedule 1	EC
Peregrine Falcon	Special Concern (<i>anatum-tundrius</i> complex ³)	Schedule 3 – Special Concern (<i>tundrius</i>)	Government of Nunavut
Polar Bear	Special Concern	Pending	Government of Nunavut
Wolverine (Western population)	Special Concern	Pending	Government of Nunavut

¹ The Department of Fisheries and Oceans has responsibility for aquatic species.

² Environment Canada (EC) has a national role to play in the conservation and recovery of Species at Risk in Canada, as well as responsibility for management of birds described in the Migratory Birds Convention Act (MBCA). Day-to-day management of terrestrial species not covered in the MBCA is the responsibility of the Territorial Government. Populations that exist in National Parks are also managed under the authority of the Parks Canada Agency.

³ The *anatum* subspecies of Peregrine Falcon is listed on Schedule 1 of SARA as threatened. The *anatum* and *tundrius* subspecies of Peregrine Falcon were reassessed by COSEWIC in 2007 and combined into one subpopulation complex. This subpopulation complex was listed by COSEWIC as Special Concern.

- Section 5.2.5.2 (Pg. 53, paragraph 3) of the Disposal at Sea application states that Harlequin Ducks are unlikely to occur in the Study Area; however, Mallory et al. (2008)² report that Harelquin Ducks breed on Baffin Island, and although the majority of observations are from the Kimmirut area, Harlequin Ducks have been observed as far north as Clyde River.
- If Species at Risk are encountered or affected, the primary mitigation measure should be avoidance. The proponent should avoid contact with or disturbance to each species, its habitat and/or its residence.
- Monitoring should be undertaken by the proponent to determine the effectiveness of mitigation and/or identify where further mitigation is required. As a minimum, this monitoring should include recording the locations and dates of any observations of Species at Risk, behaviour or actions taken by the animals when project activities were encountered, and any actions taken by the proponent to avoid contact or

disturbance to the species, its habitat, and/or its residence. This information should be submitted to the appropriate regulators and organizations with management responsibility for that species, as requested.

- For species primarily managed by the Territorial Government, the Territorial Government should be consulted to identify other appropriate mitigation and/or monitoring measures to minimize effects to these species from the project.
- Mitigation and monitoring measures must be taken in a way that is consistent with applicable recovery strategies and action/management plans.
- Harlequin Ducks spend most of the year in coastal marine environments, but they move inland each spring to breed along fast-flowing turbulent streams. Their nests are usually built on the ground along the stream banks. Harlequin Ducks are tolerant of moderate levels of disturbance, but they will abandon a site when the disturbance becomes chronic. Disturbance events can include boating and chronic human presence. If a Harlequin Duck nest or a hen with ducklings is encountered, the proponent should avoid activities in the area until nesting is complete and the brood has moved beyond the range of disturbance.
- Observations of Harlequin Ducks should be reported to the Canadian Wildlife Service of Environment Canada through the NWT/NU Bird Checklist program.
NWT/NU Bird Checklist Survey
Canadian Wildlife Service, Environment Canada
5019 - 52 Street, 4th Floor
P.O. Box 2310
Yellowknife NT, X1A 2P7
Phone: 867.669.4773
Email: NWTChecklist@ec.gc.ca
- Implementation of mitigation measures may help to reduce or eliminate some effects of the project on migratory birds and Species at Risk, but will not necessarily ensure that the proponent remains in compliance with the *Migratory Birds Convention Act*, *Migratory Birds Regulations*, and the *Species at Risk Act*. The proponent must ensure they remain in compliance during all phases and in all undertakings related to the project.

If there are any additional changes in the proposed project, EC should be notified, as further review may be necessary. Comments submitted in 2009 by M. Dahl on behalf of EC regarding screening 09UN052 would still apply to the project. Please do not hesitate to contact the undersigned with any questions or comments with regards to the foregoing at (867) 975-4631 or by email at Paula.C.Smith@ec.gc.ca.

Yours truly,



Paula C. Smith
Environmental Assessment Coordinator

cc: Carey Ogilvie (Head, Environmental Assessment-North, EPO, EC, Yellowknife, NT)
Ron Bujold (Environmental Assessment Technician, EPO, EC, Yellowknife, NT)
Allison Dunn (Sr. Environmental Assessment Coordinator, EPO, EC, Iqaluit, NU)
Mark Dahl (Ocean Disposal Specialist, EPO, EC, Winnipeg, MB)
James Hodson (Environmental Assessment Officer, CWS, EC, Yellowknife, NT)

¹ Diemer, K.M., Conroy, M.J., Ferguson, S.H., Hauser, D.D.W., Grgicak-Mannion, A., and Fisk, A.T. 2010. Marine mammal and seabird summer distribution and abundance in the fjords of northeast Cumberland Sound of Baffin Island, Nunavut, Canada. *Polar Biol.* DOI 10.1007/s00300-010-0857-1

² Mallory, M.L., Fontaine, A.J., Akearokl, J.A., Gilchrist, G. 2008. Harlequin Ducks in Nunavut. *Waterbirds* 31(sp2): 15-18.