



March 20, 2008

NRCan File #NT-004

Leslie Payette
Manager, Environmental Administration
Nunavut Impact Review Board
Cambridge Bay, Nunavut

By email: lpayette@nirb.ca

Subject: Natural Resources Canada Information Requests on the Bathurst Inlet Port and Road Project

Dear Ms. Payette,

Thank you for your letter of February 19, 2008, requesting any information requests (IRs) from interested parties on the Bathurst Inlet Port and Road (BIPR) Draft Environmental Impact Statement (DEIS).

Natural Resources Canada (NRCan) has reviewed the DEIS within relevant areas of its mandate. Attached is the Department's IRs in a format that the Nunavut Impact Review Board has requested. They are broken down into 2 key areas: marine/coastal environments and processes, and explosives manufacture and storage.

We look forward to the timely responses by the proponent in order to facilitate an effective technical review.

If you have any questions concerning our IRs, please do not hesitate to contact me at (613) 995-3153.

Sincerely,

Andrew McAllister

Senior Environmental Assessment Officer
Science and Policy Integration

cc: Rob Johnstone, Minerals and Metals Sector, NRCan
 Margo Burgess, Earth Sciences Sector, NRCan



Environmental Assessment - Bathurst Inlet Port and Road Project, NU Draft Environmental Impact Statement (DEIS) Dec. 2007

1. MARINE/COASTAL ENVIRONMENT AND PROCESSES

Comments:

The Bathurst Inlet Port and Road project Draft Environmental Impact statement (DEIS) provides a very complete preliminary overview of physical conditions at the Port site. The report cover photo probably best illustrates the physical environment of the port site yet it was not used to describe the shores and coastal dynamics and other aspects.

The largest omissions deal with the coastal (backshore, foreshore and to a lesser amount the nearshore) environment, its character, dynamics and the marine processes which would affect the project and the impact of the project on shoreline stability.

The following Information Requests (IRs) deal largely with the identification of gaps in the baseline information. All of the IRs are directed to the proponent.

Information Request #1

Issue: Marine processes

Document Reference: Vol VI, E10, 3.4

Request

Please provide an analysis of storm surge potential i.e. extreme water levels and wave run-up at the port site - from planned 2008 deployment which should also confirm tidal regime.

Rationale

Water levels control the plane on which waves impact shoreline and port structures – these only have 1.5m of ship draft clearance.

At the port site detailed bathymetry, some boreholes and some oceanographic aspects such as sediment quality and fish habitat have been addressed. There is no rigorous analysis of oceanographic processes, e.g. waves, tides, surges and currents, and their impact on the project and the impact of the planned structures on those processes. The proponent appears to recognize this shortfall and is planning the deployment of oceanographic instruments at the site in 2008 which is encouraged. Tidal range is small and given the configuration of Bathurst Inlet the wave fetch is severely restricted except to the north and south. Better information on tides, waves and surges should be a priority and the data should be correlated with the meteorological data to determine correlations with oceanographic anomalies observed. Bathurst Inlet is fairly deep so surges may not be a major force nevertheless the port site is at the end of a long inlet which could accentuate water setup.

Information Request #2

Issue: Sea ice action

Document Reference: Vol. VI, E10, 3.32; Vol. 2 A-3, 4.4.2

Request

Potential ice pressures are provided. Will the extension of facilities offshore increase shore ice ride-up and ice piling on the facilities? Please explain.

Rationale

Sea ice scour and pressures onshore are greater at headlands and structures that extend offshore.

Information Request #3

Issue: Shoreline character and dynamics

Document Reference: Vol. VI, E3, 2.3; E7 3.8; E10, 3.5

Request

Please provide an analysis of proposed structures on shore dynamics particularly sediment accretion and erosion at and adjacent to the site.

Rationale

Shoreline character and stability changes alongshore.

The proposed port facilities cross the coastal zone from the land to the ocean making it a critical environment to understand. Yet apart from a description of fish habitat and an attempt at relating shore character to marine processes there is no detailed analysis of the physical beach and backshore character at and adjacent to the proposed port site. There is a more complete description of the physical nearshore conditions. From shoreline photos scattered through the volumes and the report cover there is evidence of backshore erosion, ice pits, what appears to be lag coarse deposits on the lower intertidal zone and larger wave-built swash ridges toward the upper beach. What is the sediment mobility and occurrence of these features, i.e. seasonal, decadal, storm driven? What is the beach and backshore stratigraphy? Is the coarse material observed across the lower intertidal zone only a veneer over finer material? Forelands and small spits at sites 1 and 3 and south of site 1 (Vol. 6 E3, Fig 2.2-1) indicate that sediment transport occurs and it is important for their continued building. There is evidence of sediment transport in both north and south directions whereas the reports suggest unidirectional transport. Impacts of the new wharf and jetty structures on local shoreline dynamics and stability are not provided and should be.



Information Request #4

Issue: Thermal condition of marine clays

Document Reference: Vol. II A-3 4.4-1

Request

Please provide further information on the thermal conditions and presence of frozen layers or pockets in the subsea clays where wharf sheet cells are to be established.

Rationale

Subsea permafrost or ice rich deposits could mislead mapping of solid foundations.

The nearshore environment was described in greater detail than the beach and backshore zones. Augering information provided a good first impression of nearshore stratigraphy. Only 3 of 6 auger attempts reached bedrock. No evidence about subsea permafrost was given but the thermal character of the thick clays should be understood before construction of the wharf.

Information Request #5

Issue: Sediment disposal

Document Reference: Vol. II, A-3,

Request

Soft clay material within the sheet pile cells will be excavated and replaced with crushed rock. Where will the fines be disposed?

Rationale

Disposal of marine sediment onshore/offshore.

Information Request #6

Issue: Shoreline mapping

Document Reference: Vol. VI, E6, 3.5.4, Fig 3.5-10

Request

Are there maps of shore types within the area of spill trajectory from the Port site to determine highest shoreline sensitivity areas for cleanup planning and operations? Please clarify/explain.

Rationale

Oils spill trajectories show spills from the Port site would intersect adjacent shores.



One of the major hazards to shipping is the convoluted passage and occurrence of shoals through Bathurst Inlet. An inventory of sensitive shore types within the Inlet is critical for planning response to any marine spill within the inlet.

Information Request #7

Issue: Shipping route bathymetry

Document Reference: Vol. II, a-3, pg 4-12

Request

Are the bathymetric surveys around Breakwater Islands and Quadyuk Island, Bathurst Inlet and the mapping of all shoals adequate for navigation by vessels proposed?

Rationale

There are two locations where shoal patches and winds present navigational hazards.

The port is well situated for proximity to mining sites, providing deeper water depths and terrain for the airstrip but it is at the end of a very complex shipping route. Are the bathymetric surveys sufficiently detailed within Bathurst Inlet and the other shallow waters south of Victoria Island e.g. Jenny Lind Island on route to Bathurst Inlet to provide adequate navigation for the proposed vessels?

2. EXPLOSIVES MANUFACTURE AND STORAGE

Information Request #8

Issue: Lack of information on explosives manufacture and storage

Document Reference: Vol. I, Vol. VIII

Request

Please provide details on the following:

- Specified location (i.e., detailed site plan) for the explosives factory, with distances to vulnerable features such as dwellings, roads, camps, railways, bodies of water, etc. Infrastructures should be identified and include: explosives and detonator magazines, fuel storage, ammonium nitrate storage, maintenance/wash area, process trucks and their parking area, any offices, warehouses, buildings, etc. The proponent needs to demonstrate that safety distances required by the Explosives Regulatory Division (ERD) of NRCAN have been considered and met.
- Fuel and ammonium nitrate storage plans. Storage of ammonium nitrate is to be in conformance with ERD guidelines.
- Liquid effluent disposal plans.
- Evaluation of worst case scenario (i.e. accidental explosion).
- Spill contingency plans.
- Any other magazines if required that may be located in quarries, etc.



Rationale

NRCan requires the above information in an EA in support of its subsequent licensing process.

Information Request #9

Issue: Lack of information on explosives storage during road operations

Document Reference: Vol. II, A-3,

Request

Please provide further detail on the planned use and storage of explosives during the operation of the road including permits required.

Rationale

The only apparent reference to explosives during the road operations is in Vol. II, Appendix A-5, Table 5.1.2 stating that magazines will be established in quarries.