



P.O. Box 119  
GJOA HAVEN, NU X0B 1J0

TEL: (867) 360-6338  
FAX: (867) 360-6369

NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI

---

---

# Nunavut Water Board Preliminary Guidelines for Applicant

## Cumberland Resources Ltd. – Meadowbank Project

Dated: 7 February 2007



P.O. Box 119

GJOA HAVEN, NU X0B 1J0

TEL: (867) 360-6338

FAX: (867) 360-6369

NUNAVUT WATER BOARD

NUNAVUT IMALIRIYIN KATIMAYINGI

## 1.0 Introduction

For the purpose of this document, the Proponent is Cumberland Resources Ltd.

The Nunavut Water Board (NWB) is an institution of public Government responsible for the regulation, use and management of water in the Nunavut Settlement Area. According to **Section 11** and **12** of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA) *no person shall use, or permit the use of, waters in Nunavut except in accordance with the conditions of a licence and except in accordance with the conditions of a licence, no person shall deposit or permit the deposit of waste in waters in Nunavut or in any other place in Nunavut under conditions in which the waste, or any other waste that results from the deposit of that waste, may enter waters in Nunavut.* In accordance with NWB's mandate, the Proponent filed an application for a water licence on **31 March 2003** for the use of water and disposal of waste into water for the proposed Meadowbank Project.

The application for water licence and other permits, authorizations, and/or licences triggered an environmental screening of the project by the Nunavut Impact Review Board (NIRB). Following screening and an **Article 12, Part 5** Review of Proponent's Environmental Impact Statement, the Minister of Indian and Northern Affairs agreed with the NIRB's recommendations in a letter dated **17 November, 2006**. In reviewing the application submitted by the Proponent the Board will consider **Sections 57** and **58** of the NWNSRTA which state the following:

**Section 57** *The Board may not issue a licence unless the applicant satisfies the Board that:*

- a) *any waste produced by the appurtenant undertaking will be treated and disposed of in a manner that is appropriate for the maintenance of the water quality standards and effluent standards that are prescribed by the regulations or, in the absence of such regulations, that the Board considers acceptable; and*
- b) *the financial responsibility of the applicant, taking into account the applicant's past performance, is adequate for*
  - i *the completion of the appurtenant undertaking,*
  - ii *such measures as may be required in mitigation of any adverse impact, and*
  - iii *the satisfactory maintenance and restoration of the site in the event of any future closing or abandonment of that undertaking.*



P.O. Box 119

GJOA HAVEN, NU X0B 1J0

TEL: (867) 360-6338

FAX: (867) 360-6369

NUNAVUT WATER BOARD

NUNAVUT IMALIRIYIN KATIMAYINGI

**Section 58** *The Board may not issue a licence unless the applicant, with respect to any person, other than an instream user, who would be entitled to use waters in precedence to the applicant under section 47,*

- a) *satisfies the Board that the use of waters or the deposit of waste would have no adverse effects on the use of waters by that person;*
- b) *satisfies the Board that any adverse effects caused by the use of waters or the deposit of waste would not be significant, and has paid or undertaken to pay the compensation that the Board considers appropriate to that person; or*
- c) *has entered into an agreement to compensate that person for any adverse effects.*

In accordance with the **NWNSRTA Section 48(3)** and **Part 13.8.1** of the *Nunavut Land Claims Agreement (NLCA)*, the NWB has decided to issue preliminary guidelines to the Proponent through this document. The guidelines are based on the NWB requirements outlined in the *NWNSRTA*, the *Northwest Territories Water Regulations* and engineering best practices and principles. The guidelines do not relieve the Proponent from confirming and following up on other information requirements which may be required. The Reader is to refer to **Part A: Section 3.0** for a list of additional documents, guidelines, legislation and standards that may be of use to the Proponent in preparing the supplemental information. The Proponent should understand that through **Sections 70 and 71** of the *NWNSRTA* the Board may develop conditions in a licence as per the following:

**Section 70** *(1) Subject to this Act and the regulations, the Board may include in a licence any conditions that it considers appropriate, including conditions relating to*

- a) *the manner in which waters may be used;*
- b) *the financial responsibility of the applicant, taking into account the applicant's past performance, is adequate for the quantity, concentration and types of waste that may be deposited and the manner of depositing waste;*
- c) *the studies to be undertaken, works to be constructed, plans, including contingency plans, to be submitted, and monitoring programs to be undertaken; and*
- d) *any future closing or abandonment of the appurtenant undertaking.*

*(2) The monitoring programs referred to in paragraph (1)(c) may specify responsibilities of the applicant, the Nunavut Impact Review Board or Her Majesty in right of Canada.*

*(3) The Board shall, to the extent that it is authorized under this Act to do so, include in a licence the terms and conditions of any project certificate, referred to in section 12.5.12 or*



P.O. Box 119

GJOA HAVEN, NU X0B 1J0

TEL: (867) 360-6338

FAX: (867) 360-6369

NUNAVUT WATER BOARD

NUNAVUT IMALIRIYIN KATIMAYINGI

*12.6.17 of the Agreement, that is issued in respect of the use of waters or deposit of waste or the appurtenant undertaking to which that use or deposit relates.*

**Section 71** *In fixing the conditions of a licence, the Board shall make all reasonable efforts to minimize*

- a) any adverse effects of the licenced use of waters or deposit of waste on aquatic ecosystems and on the persons who are entitled to be paid compensation under section 58 or 60;*
- b) any interference by any person referred to in section 62 with the existing use of waters by the Inuit, whether that use is or is not licenced; and*
- c) any loss or damage described in section 63.*

With all of the above in mind, the Proponent shall use its judgment to determine what information is relevant to the scope of the Application, taking into account the information and studies concerning the use of waters or the deposit of waste that are required for the Board to evaluate the qualitative and quantitative effects of the use or the deposit on waters, in accordance with **Section 48(2)** of the Act.

## **2.0 Guidelines for the Provision of Supplemental Information**

The Proponent shall submit with the application a concise executive summary of the application and of any separate supporting document, report or study, in English, Inuktitut and Inuinnaqtun. A summary document should be presented which is to contain details of the information requested rather than general statements.

In complying with the NWB information guidelines, the Proponent, where practical, may combine components of the information requested above into more concise plans to provide clarity and eliminate duplication. If this practice is considered, then the Proponent shall clearly outline, through proper referencing and clear detailed statements, how the NWB shall consider the documents that have combined elements of information. Information management is the responsibility of the Proponent. The Proponent is to guide the NWB and regulatory bodies through its application in a fluid logical manner.

The Proponent is to recognize that the NWB water licence process is independent of NIRB's environmental assessment process. As such, the submitted application should appropriately guide the NWB and respective Regulators through NIRB materials that carry over and are to be considered in the water licence application. As such, where required the Proponent is encouraged to appropriately cross-reference any NIRB



P.O. Box 119

GJOA HAVEN, NU X0B 1J0

TEL: (867) 360-6338

FAX: (867) 360-6369

NUNAVUT WATER BOARD

NUNAVUT IMALIRIYIN KATIMAYINGI

submitted documents by including title, section, and page number along with any details of how the referenced information should be considered to provide adequate context to the NWB. In select cases, it may be appropriate to annex the said report within the document for completeness.

The NWB will not engage in an exhaustive process of conditionally approving technical reports through conditions set in a water licence. Thus it will be necessary to provide information related to design and management prior to water licence issuance. With this in mind the Proponent is encouraged to develop design and water management beyond the conceptual and intermediate phases before the submittal of a water licence application.

The Proponent is to understand that each piece of design or management correspondence shall act as a discrete stand-alone document that effectively discusses the specifics of a particular design or management plan that is signed for authorship, and where appropriate, sealed by a qualified professional. The Proponent is to provide a CV (curriculum vita) for each signing professional as well as any other representative that intends to participate at a Public Hearing in its water licence application.

Through the design of a full scale operational mine, it is intuitively understood that individual designs and management plans will interconnect with one another (i.e. Site water management is a function of the structures on site set to convey waters). The Proponent is to communicate the connectivity of discrete design and management plans through discussion in the discrete designs and management plans or through a separate document that details the macroscopic view of mine component interconnectivity. A statement should be included to further clarify interlinking and cross-referencing of sub-documents. For example, if a main summary document is used to guide the reader through the application, links to sub-documents along with cross-linking between sub-documents may be required. Cross-referencing to all sub-documents and reference materials should include title, section, and page number of the supporting document.

The NWB encourages and expects the Proponent to adhere to best engineering practices and sound construction methods when designing and managing infrastructure related to the use of waters or the deposition of wastes. The NWB encourages the use of ASTM standards when defining and developing project specifics in technical documents. Generally the following information should be presented, though not limited to, when submitting application designs and plans:

- i Design rational; design requirements, design criteria, design parameters, design standards/analysis/method;



P.O. Box 119

GJOA HAVEN, NU X0B 1J0

TEL: (867) 360-6338

FAX: (867) 360-6369

NUNAVUT WATER BOARD

NUNAVUT IMALIRIYIN KATIMAYINGI

---

- ii Design assumptions and the limitations associated with such design assumptions;
- iii The inclusion of clear, definable engineering qualifiers with all design drawings and reports;
- iv Site specific data and analysis to support the design and management decisions made;
- v Materials that appropriately delineate the particulars of a design or plan;
- vi Construction methods and procedures in how infrastructure will be put in place on-site.
- vii Instrumentation and monitoring requirements of the proposed designs and plans;
- viii Details on how facilities, structures, and plans will be operated, maintained and implemented;
- ix Details on chemicals or other hazardous or potentially hazardous materials that will be used and will be in contact with or may impact water either directly or indirectly;
- x Mitigation measures that will be implemented when working in close proximity to water;
- xi Appropriate referencing of other documents and annexed materials.

The Proponent should also consider that the concept of *Adaptive Management* includes the need to describe the methods used to assess the risks associated with uncertainty in design and management, and clearly outline the measures and quantifiable markers for when a final design decision will be made. The Proponent shall keep in mind that *Adaptive Management* is a flexible framework to implement final decisions through a mature intermediate design and not a “revolving door” design method that allows for multi-iterations to a preliminary design. A commitment to a final design needs to be made through the designs and plans submitted in the water licence application, or a clear defined criteria for which final design decisions will be made must be submitted when a final design can not be presented. Installing the strategy of *Adaptive Management* through the design and management of the Meadowbank Project can positively refine mine operations through the dynamics of scientific modeling, experimentation and monitoring to improve processes and lessen environmental impact. The NWB will consider the key decision points the Proponent will use to define the *Adaptive Management* framework they plan to implement through mining operations. Additionally, mitigation and contingency plans should also consider the concept of *Adaptive Management* to delineate when mitigation and contingency are to be implemented.

The NWB expects that plans and designs shall be presented where the use of water or deposit of waste will take place. The Proponent shall also consider that information must be presented where there is a potential impact through the deposition of waste, and describe the measures the applicant proposes to take to avoid or mitigate **any** adverse



P.O. Box 119  
GJOA HAVEN, NU X0B 1J0

TEL: (867) 360-6338  
FAX: (867) 360-6369

NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI

impact of the use of waters or the deposit of waste<sup>1</sup> ; This may include, but not be limited to, the design and management of the following:

- i. earthwork infrastructure;
- ii. water intake facilities and how water will be withdrawn;
- iii. interim and permanent waste rock facilities;
- iv. tailings containment area;
- v. landfills;
- vi. landfarms;
- vii. fuel and chemical storage facilities;
- viii. explosives management areas and facilities;
- ix. construction materials (i.e. quarried rock);
- x. hazardous waste facilities;
- xi. site water management facilities;
- xii. wastewater treatment facilities;
- xiii. ore stockpiles and recovery reject materials;
- xiv. dewatering programs;
- xv. hydrostatic testing programs;
- xvi. road, airstrip and ice road construction;
- xvii. water use;
- xviii. macroscopic site surface water and groundwater management;
- xix. spill contingency and emergency response;
- xx. interim and final abandonment and reclamation of the mine site;
- xxi. aquatic effects monitoring;
- xxii. general monitoring;
- xxiii. quality assurance and quality control;
- xxiv. geotechnical and structural monitoring;
- xxv. the collection of weather data for purposes of mine design;
- xxvi. metal leaching / acid rock drainage management;
- xxvii. permafrost protection.

It is understood that the Meadowbank Project may not include all of the design, construction, monitoring, and management plans listed above and that other designs and management plans may be required to be submitted by the Proponent. The NWB is available to assist and provide additional guidance on each design and management plan through future interactions with the Proponent. The Proponent shall understand that there

<sup>1</sup> NWNSRTA Section 48(3)(c)



P.O. Box 119

GJOA HAVEN, NU X0B 1J0

TEL: (867) 360-6338

FAX: (867) 360-6369

NUNAVUT WATER BOARD

NUNAVUT IMALIRIYIN KATIMAYINGI

---

will be a requirement to provide appropriately qualified as-built construction drawings once structures have been constructed and are in operation.

A summary table of all monitoring commitments is to be provided that details all Surveillance Network Program (SNP) locations. The table should include, but not limited to, parameter(s), location, frequency, and mining phase, along with, cross-referencing to sub-document where detailed information was provided. Where appropriate, a map detailing location of monitoring is to be provided within the application.

The application is to include a summary table of expected quality and quantity of waters in all sumps, SNP, and discharge points, along with i) if applicable, adaptive management criteria to benchmark if mitigation/contingency are to be implemented, ii) if applicable, water quality criteria, and iii) management action.

The Proponent is to detail what information will be included in annual reports along with a proposed layout of information that will be submitted to the NWB within the application.

The commitments made by the Proponent during the NIRB process are to be clearly outlined through the application materials submitted. A NIRB project certificate conformity table for conditions pertaining to the water licence is to be provided. NIRB and other regulatory bodies will be consulted to ensure that all commitments have been appropriately addressed through the water licence application.

The Proponent is to submit a water licence application report that communicates structure design and management plans that use waters or may impact waters through the deposition of wastes. The Proponent is encouraged to develop design and management discussion through a clear methodical layout that is logical in nature. Additional information may be required from the Proponent following an initial assessment of the application by the NWB. The NWB will assist the Proponent in completing water licence application materials and recommends that the Proponent communicates with the NWB if uncertainty exists when preparing water licence application materials.

The Proponent is to file, through cover letter correspondence, a *declaration of application completeness* authored and signed by the Chief Executive Officer indicating that the application submitted is considered complete and the guidelines issued have been consulted.

The NWB will not process an application that it deems to be incomplete and/or when supporting documents have not been submitted. The NWB will give the required hearing notice of no less than sixty-days after it deems the application to be complete. The





P.O. Box 119  
GJOA HAVEN, NU X0B 1J0

TEL: (867) 360-6338  
FAX: (867) 360-6369

NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI

---

Proponent shall understand that the water licence application must be a stand-alone document.

The NWB understands that the Proponent has communicated with and will provide each organization included on the NWB's distribution list with the application and determine the number of copies and the format (electronic and/or hard copies) each interested organization requires to complete their respective reviews.

### **3.0 Additional Documents to Assist the Applicant**

For the development of supplemental information the Proponent should be guided by, and is directed to, the following standards/guidelines/legislation that includes, but is not limited to:

- AWWA (American Water Works Association) - Standard Methods for the Examination of Water and Wastewater.
- CCME (Canadian Council of Ministers of the Environment) – *Environmental Code of Practice for Above Ground and Underground Storage Tanks Systems containing Petroleum Product and Allied Petroleum Products (2003)*;
- CCME – *Canadian Environmental Quality Guidelines*
- CCME – *Canadian-Wide Standards for Petroleum Hydrocarbons in Soil*
- DFO (Department of Fisheries and Oceans) – *Decision Framework for the Determination and Authorization of Harmful Alteration, Disruption or Destruction of Fish Habitat*;
- DFO – *Freshwater Intake End-of-Pipe Fish Screen Guide*;
- DFO – *Guidelines for the Use of Explosives In or Near Canadian Fisheries Water*;
- DFO – *Policy on the Management of Fish Habitat and Habitat Conservation and Protection Guidelines*;
- DFO – *Policy for Management of Fish Habitat*;
- EC (Environment Canada) – *Guidelines for the Preparation of Hazardous Material Spill Contingency Plans*;
- EC – *MMER Environmental Effects Monitoring Program Protocol*;
- GN (Government Nunavut) – *Contaminated Site Remediation*;
- GN – *Environmental Guideline for Contingency Planning and Spill Reporting in Nunavut*;
- GN – *General Management of Hazardous Waste in Nunavut*;
- GN – *Occupational Health & Safety Guidelines*;
- GN – *Spill Contingency Planning and Reporting Regulations*;



P.O. Box 119

GJOA HAVEN, NU X0B 1J0

TEL: (867) 360-6338

FAX: (867) 360-6369

NUNAVUT WATER BOARD

NUNAVUT IMALIRIYIN KATIMAYINGI

- GNWT/GN – *Spill Contingency Planning and Reporting Regulations*;
- GN – *Environmental Protection Act*;
- GNWT – *Ice Road Guidelines*;
- INAC (Indian and Northern Affairs Canada) – *A Policy Respecting the Prohibition of Bulk Water Removal from Major River Basins in Nunavut*;
- INAC – *Mine Site Reclamation Policy for Nunavut*;
- JC (Justice Canada) – *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;
- JC– *Territorial Lands Act*;
- JC – *Territorial Land Regulations*;
- JC – *Canadian Environmental Protection Act*
  - *Federal Registration of Storage Tank Systems for Petroleum Products and Allied Petroleum Products on federal Lands or Aboriginal Lands Regulation*
  - *Sulphur in Diesel Regulation*
  - *Fuels Information Regulation No. 1*
  - *Sulphur in Gasoline Regulation*
  - *Benzene in Gasoline Regulation*
  - *Interprovincial Movement of Hazardous Waste Regulation*
  - *Federal Halocarbon Regulation*
  - *National Pollutant Release Inventory*
  - *Environmental Emergencies Regulation*
- JC – *Fisheries Act*
  - *Metal Mining Effluent Regulations*
- JC – *Water Regulations (as attached to the Nunavut Waters and Nunavut Surface Right Tribunal Act) and other guidelines adopted by the NWB*;
- NWTWB – *Guidelines for Abandonment and Restoration Planning for Mines in the NWT*;
- ASTM - *Standards*
- The Mining Association of Canada “*A Guide to the Management of Tailings Facilities*” (1998);
- CDA – *Dam Safety Guidelines*
- TC – *Transportation of Dangerous Goods Act/Regulations*;
- Workplace Hazardous Materials Information System (WHMIS);

Copies of all guidelines referenced in this document may be available on the NWB ftp site or with Justice Canada for federal legislation and policies. The Proponent may have to contact the appropriate author of the above listed guidelines for a copy if needed.



P.O. Box 119  
GJOA HAVEN, NU X0B 1J0

TEL: (867) 360-6338  
FAX: (867) 360-6369

NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI

---

The Proponent is encouraged to consult with regulatory agencies on issues related with the above listed guidelines. When a guideline is used by the Proponent the NWB requests the use of well-developed statements within the body of a reports text to clearly reference where a guideline was used. Additionally, a summary table detailing what standards/guidelines was considered with reference to application section, title, and page number shall be included in the main application document. When developing discussion and the Proponent's case, the application is to point the NWB to the appropriate section of a regulatory guideline where additional information may be found. It is the Proponent's responsibility to ensure that all necessary standards and guidelines are considered in the water licence application.

DRAFT



P.O. Box 119  
GJOA HAVEN, NU X0B 1J0

TEL: (867) 360-6338  
FAX: (867) 360-6369

NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI

---

---

## ANNEX A

The NWB has prepared the attached Table of Contents (TOC) to guide the structure and format of the application. This TOC will act as a reference to where information, relevant to the water licence application, has been filed. Compliance to the TOC does not imply that all necessary materials to deem the application complete are submitted.

DRAFT