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# **Agnico-Eagle Mines Ltd. Meadowbank Gold Project**

## **Nunavut Water Board Licence Application**

Indian and Northern Affairs Presentation  
Nunavut Water Board Final Hearing  
Baker Lake, Nunavut April 15-17, 2008

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# INAC's Role and Responsibilities

Responsibilities, mandate and obligations stem from the following legislation:

- *DIAND Act*
- *Nunavut Land Claims Agreement*
- *Territorial Lands Act and Regulations*
- *Nunavut Waters and Nunavut Surface Rights Tribunal Act*
- *Canadian Environmental Assessment Act*
- *Mine Site Reclamation Policy for Nunavut*



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# INAC's Intervention

- Broad Mandate
- NIRB Review of the Environmental Impact Statement
- Existing Licences
  - Road
  - Laydown area
  - Exploration Camp
- INAC Review was limited to INAC mandate



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## Project Components Reviewed by INAC

- Mining Project is on Inuit Owned Land
- All-season road is on Crown, IOL & Commissioner's /Municipal
- INAC's review is focused on:
  - geotechnical/permafrost stability of project structures,
  - water balance and water quality model,
  - geochemical monitoring,
  - Waste rock management,
  - Wastewater management,
  - Solid waste management, and
  - Closure and reclamation conditions



## **Geotechnical/Permafrost Stability of Waste, Water and Tailings Retention Structures**

INAC Recommends that the proponent provide:

- as-built topographic survey, together with thermal/deformation / seepage instrumentation monitoring results and comparison of these results with a predicted performance at time of licence issue
- regular reports from the proponent's site inspection program
- final design drawings for project structures especially for any designs changed in advance and during of construction
- additional geotechnical investigations and geothermal analysis of foundations conditions for retention structure where the loss of contained fluids/materials would enter water



# Water Balance, Water Quantity, and Water Quality Models

## Water Balance and Water Quality

- the proponent has a water balance/water quality model to manage the discharge of water within the tailings containment area.
- INAC recommends that the proponent:
  - collect and incorporate additional climate and hydrological data into the water balance/water quality model;
  - submit a water balance and water quality modelling report:
    - every three (3) months re-calibrated as necessary for the initial two (2) years of mine operation; and
    - annually every subsequent year of mine operation.



# Waste Rock Management

the proponent plans on:

- Depositing waste rock in several areas during pre-stripping the deposit, mine construction and operations (e.g., exposing the deposit, roads, building pads, waste rock facility and dikes/dams).
- Placing non-acid generating waste rock material as a cover over the waste rock facility and tailings storage facility.

INAC recommends that the proponent:

- identify all waste rock by general lithology and location relative to its placement to understand the type of waste rock and provide a basis for investigating the cause of any acid rock drainage.
- Determine the appropriate thickness to protect the environment by testing during operations and submit the results in an annual report to the NWB for review.
- These comments apply equally to the mine site and to all quarries associated with the mine.



# Geochemical Monitoring

INAC recommends that the proponent :

- provide a Geochemical Monitoring and Waste Rock Storage Report to the NWB on an annual basis.
- present and interpret data associated with tailings solids, tailings supernatant, cyanide leach residue, bleed from the cyanide destruction process, and waste rock.
- assess the quality and quantity of leachate produced within the project area and to determine its effects on the receiving environment





# Wastewater Management

- the proponent has identified plans to provide for sewage treatment and sludge disposal throughout the life of the plant from the construction stage through the operations and demolition stages.
- INAC recommends that the sewage treatment plant treatment capabilities be analyzed throughout operations to ensure that they are meeting effluent quality that meets the Industrial Waste Discharge criteria established in the Nunavut Department of Sustainable Development's Guidelines for Industrial Waste Discharge of 2002.



# Solid Waste Management

the proponent has provided plans for :

- A landfill, landfarm and incineration of wastes.
- The landfill would have capacity for pre-construction, construction, operation, and closure landfill needs.
- Incineration is for organic food waste and sewage sludge wastes.

INAC recommends that the proponent:

- Obtain permission from the Water Board in advance of deviating from waste stream provisions or processes for the ongoing monitoring of landfilled waste;
- Provide manufacturer test documentation for the incinerator together with detailed plans and construction specifications attesting to emission capabilities;
- Monitor liquid seepage, sump liquids, and ash and report on results annually.



# Combining of Licences

- The Nunavut Water Board may wish to include the activities and operations currently covered under two existing Type B Water Licenses into the Type A Water License Application process for the Meadowbank Gold Project.
- INAC would support a decision to incorporate current Type B licences for the project in the proposed Type A licence.



## Closure, Abandonment, Reclamation

- Since the Meadowbank Gold Project will have a relatively short life, INAC recommends that the proponent submit:
  - an Interim Mine Closure and Reclamation Plan not later than six (6) months after the start of mining; and
  - a Final Mine Closure and Reclamation Plan no later than twelve (12) months before the expected end of mining.



# Abandonment and Reclamation

- INAC's "Mine site Reclamation Policy for Nunavut" is focused on the protection of the natural environment and preparation for the possibility that the proponent may fail to close and reclaim a mine site.
- The policy helps the department advise parties and stakeholders on closure and reclamation and also helps the department to manage risks associated with reclamation.



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# Reclamation Costs

- INAC has estimated the potential Abandonment and Reclamation costs for the Meadowbank Project at the end of Year 1, the end of Year 5, and the end of mine life before closure begins.

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## Estimated Reclamation Costs for the Meadowbank Mine

Time Period	Total Reclamation Cost	Land-Related Reclamation Cost	Water Related Reclamation Cost
End of Year 1	\$16,218,000	\$8,593,000	\$7,625,000
End of Year 5	\$26,105,000	\$10,264,000	\$15,841,000
End of mine life	\$43,875,000	\$14,790,000	\$29,084,000

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## Security for Land and Water Related Reclamation Costs

- Total security = total outstanding costs for land and water reclamation activities
- Security for reclamation may be required by the KIA, the Federal Crown, and the Government of Nunavut, and/or the Hamlet of Baker Lake. All of these parties have land and/or water responsibilities and may need to seek reclamation security to manage the risk of possibly having to clean-up part of the mine site
- INAC currently carries security for the all-weather mine access road. INAC recommends that the Water Board require the proponent to provide reclamation security for all water-related reclamation costs as part of the proposed Class A licence.





# Security Recommendations

- INAC recommends that the Nunavut Water Board set water related security for the Meadowbank Gold at the following levels.
  - Initially at \$7,625,000
  - By the beginning of year 5 of the mine operation at \$15,841,000
  - By the 7<sup>th</sup> year or as the end of mine life approaches, partially based on Agnico-Eagle providing a final Abandonment and Reclamation Plan, at \$29,084,000
- As stated in the Water Regulations attached to the *Waters Act*, the company should approach the Minister through the Nunavut Regional Office of INAC on the form of security.



## Conclusions

- INAC has confidence in Agnico-Eagle Mines Ltd.'s planned operation and management of the Meadowbank Gold project
- Our recommendations are provided to address outstanding issues
- We thank the NWB for considering our intervention and presentation and look forward to a continued and productive working relationship with all parties



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Thank you

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