



Water Resources Division  
Nunavut Regional Office  
Iqaluit, NU X0A 0H0

Your file - Votre référence  
2AM-WTP1826

September 14, 2018

Our file - Notre référence  
CIDM#1227280

Richard Dwyer  
Manager of Licensing  
Nunavut Water Board  
Gjoa Haven, NU X0B 1J0

Sent via email: [licensing@nwb-oen.ca](mailto:licensing@nwb-oen.ca)

**Re: Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)  
Technical Review Comments of the Design Report Waste Rock Storage  
Facility Dike – Whale Tail Project under Agnico Eagle Mines Limited's Type  
“A” Water Licence No. 2AM-WTP1826.**

Dear Mr. Dwyer,

Thank-you for the email notice, received on August 24, 2018, regarding the above mentioned Design Report Waste Rock Storage Facility Dike at Whale Tail Pit Project.

CIRNAC reviewed the proponent's design report. The results of our review are presented in the enclosed memorandum for the Nunavut Water Board's consideration. CIRNAC receives its mandated responsibilities from the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Indian Affairs and Northern Development Act*.

If you have any questions or require further information with respect to this matter, contact me at 867-975-3877 or [michelle.blade@canada.ca](mailto:michelle.blade@canada.ca), or Ian Parsons at 819-953-8988 or [ian.parsons@canada.ca](mailto:ian.parsons@canada.ca).

Regards,  
Michelle Blade  
Regional Coordinator, Water Resource Division

Cc. Spencer Dewar, Director, Resource Management Directorate – CIRNAC, NRO  
Justin Hack, Manager of Field Operations – CIRNAC, NRO



## **Memorandum**

To: Richard Dwyer, Manager of Licensing, NWB

From: Michelle Blade, Regional Coordinator, Water Resource Division – CIRNAC, NRO

Date: September 14, 2018

Re: CIRNAC's review of the proponent's Design Report Waste Rock Storage Facility Dike, Type "A" Water Licence No. 2AM-WTP1826, Whale Tail Project in response to NWB's email dated August 24, 2018.

Applicant: Agnico Eagle Mines Limited (AEM)  
Representatives: Jamie Quesnel and Manon Turmel  
Project: Whale Tail Pit Project  
Region: Kivalliq

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### **A. BACKGROUND**

On July 11, 2018, the Minister of Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) approved Agnico Eagle Mines Limited's Whale Tail Pit Project Type 'A' Water Licence No. 2AM-WTP1826 application. The Whale Tail Pit Project is a gold deposit located near Baker Lake, Nunavut.

### **B. RESULTS OF REVIEW**

The following is CIRNAC's technical review of the proponent's Design Report Waste Rock Storage Facility Dike at Whale Tail Pit Project, Type 'A' Water Licence No. 2AM-WTP1826.

#### **1 Snow Management Strategy**

##### **Comment:**

Section 4.1 Design basis refers to the snow management strategy, and the importance to remove snow above the thermal cover of the Fine Filter Amended with Bentonite (FFAB) component of the seepage barrier along the upstream toe of the dike. The details of the snow management strategy were not provided.

##### **Recommendation:**

**(R 1)** CIRNAC recommends the snow management strategy for the Waste Rock Storage Facility (WRSF) pond address where the snow within the WRSF pond will be removed to. Proactive measures to reduce snow deposition in the WRSF pond should also be identified in the snow management strategy such as deployment of snow fencing.



## 2 Water Management Strategy

### **Comment:**

Section 4.1 Design basis refers to the water management strategy. The WRSF pond water will be emptied at the end of each summer to promote frost penetration. Water is expected to accumulate in the downstream side of the dike ditch. The details of the water management strategy were not provided.

### **Recommendation:**

**(R 2)** CIRNAC recommends the water management strategy address how water from the watershed will be managed prior to and during construction, and the water erosion control measures that will be in place during construction. The water management strategy should also indicate where the dike ditch and pond water will be transferred to.

## 3 Fine Filter Amended with Bentonite (FFAB)

### **Comment:**

Section 4.2 FFAB construction states two compacted lifts of 30 and 50 centimetres (cm) each will be placed in the key trench. The purpose of the bentonite is to restrict water movement out of the pond area.

### **Recommendation:**

**(R 3)** CIRNAC recommends the height of the water column and an 80 cm thick FFAB layer would restrict water flow be provided, and that the value be compared to the maximum anticipated pond water column height.

## 4 Water Management During Construction

### **Comment:**

Section 4.4 water management during construction states “a detailed written procedure of water management during construction shall be submitted to Agnico Eagle’s Geotechnical Coordinator for approval prior the beginning of the Work”.

### **Recommendation:**

**(R 4)** CIRNAC recommends the detailed written procedure of water management during construction is also submitted to the Nunavut Water Board.

## 5 Seepage Performance

### **Comment:**

The design report extrapolates one thermal profile at Whale Tail Pit to the WSRF dike. Three other thermal profiles are available at the Whale Tail Pit project, but the thermal profiles were not provided. The design report indicated thermistor strings will be installed, but not the depths nor locations thermal monitoring will be most pertinent.

### **Recommendation:**



**(R 5)** CIRNAC recommends the thermal profiles from MD-02-2015, AMQ15-452 and AMQ17-1277A (with depths adjusted to a vertical profile) are also provided in the design report, along with a prediction on where thermal monitoring will be most critical in the dike design.

## **6 Stability Performance**

**Comment:**

It is unclear in section 6.4 how AEM will undertake the restoration of local toe slumps on ice-rich till.

**Recommendation:**

**(R 6)** CIRNAC recommends AEM specify the remediation approach anticipated as corrective action for of local toe slumps on ice-rich till.