



Crown-Indigenous Relations
and Northern Affairs Canada

Relations Couronne-Autochtones
et Affaires du Nord Canada

Water Resources Division
Resource Management Directorate
Nunavut Regional Office
P.O. Box 100
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Your file - Votre référence
2AM-WTP1830

July 13, 2020

Our file - Notre référence
CIDM#1286793

Richard Dwyer
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU, X0B 1J0
sent via email: licensing@nwb-oen.ca

**Re: Crown-Indigenous Relations and Northern Affairs Canada's comments on
Agnico Eagle Mines Limited's Whale Tail South Basin Treated Water Diffuser
Design Report for water licence #2AM-WTP1830 - Whale Tail Pit Project**

Dear Mr. Dwyer,

Thank you for your June 23, 2020 invitation for review comments on the above referenced report. The Water Resources Division of Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) examined the report and the results of our review are provided in the enclosed memorandum for the Nunavut Water Board's consideration.

Comments have been provided pursuant to CIRNAC's mandated responsibilities under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Department of Crown-Indigenous Relations and Northern Affairs Act*. If there are any questions or concerns, please contact Godwin Okonkwo at (867) 975-4550 or by e-mail at godwin.okonkwo@canada.ca.

Sincerely,

Sarah Forté
Water Management Specialist

Technical Review Memorandum

To: Richard Dwyer, Manager of Licensing, Nunavut Water Board

From: Sarah Forté, Water Management Specialist, Water Resources Division, CIRNAC

Date: July 13, 2020

Re: Crown-Indigenous Relations and Northern Affairs Canada's comments on Agnico Eagle Mines Limited's Whale Tail South Basin Treated Water Diffuser Design Report for water licence #2AM-WTP1830 - Whale Tail Pit Project

Region: ☐ Kitikmeot ☒ Kivalliq ☐ Qikiqtani

A. BACKGROUND

On June 23, 2020, the Nunavut Water Board provided notification of Agnico Eagle Mines Limited's submission of the Whale Tail South Basin Treated Water Diffuser Design Report. It is part of the requirements of their Type A water licence 2AM-WTP1830 amendment #1 for the Whale Tail Pit Project, situated approximately 125 km north of Baker Lake, in the Kivalliq region of Nunavut.

The project includes the IVR attenuation pond to collect site contact water, which is treated in the Amaruq arsenic water treatment plant. Currently treated effluent is discharged to Mammoth Lake. In order to direct the effluent of the arsenic water treatment plant to Whale Tail Lake South Basin, two diffusers will be installed in the lake, as detailed in the Design Report provided.

B. RESULTS OF REVIEW

On behalf of Crown-Indigenous Relations and Northern Affairs (CIRNAC) Water Resources, the following comments and recommendations are provided for the Board's consideration:

1. Diffuser performance under ice cover

Comment

The report contains conflicting information on whether the diffusers will be used during the winter. Section 1.1 states "... a diffuser is required when discharging treated water from the Amaruq Arsenic Water Treatment Plant (AsWTP) to Whale Tail Lake South Basin (WTS) during the summer months (i.e. open water season) and when required, during the winter." However section 2.2 specifies "No discharge of the stored water is expected during the winter months."

Should discharge occur during the winter, the diffuser's performance is not specified. The only information CIRNAC found was for open water conditions – in section 3.1 the report specifies “*The diffusers are designed to provide a minimum dilution factor of 16.7 for total phosphorus with a water depth of at least 7.3 m under open water conditions and a flow rate of 800 m³/h.*”

Recommendation

CIRNAC recommends the licensee clarify their plan with regards to possible use of the diffuser during winter. Should winter discharge be a possibility, they should further clarify what the dilution factor would be when Whale Tail South Basin is ice covered.

2. June discharge volumes

Comment

Two diffuser lines will be built, each designed for an 800 m³/h discharge flow. Section 2.2 specifies “*One of the two 14-in HDPE pipeline and diffuser shall be insulated and heat traced to allow for the rapid start-up of the AsWTP at the end of the winter/start of the spring freshet to allow the transfer of treated water to WTS.* The discharge flow to WTS during this period shall be up to 800 m³/h.”

This end of winter/start of spring discharge would likely occur in June, and Table 2-1 indicates the month with the highest monthly averaged discharge volume is also June. Specifically, the average discharge volume for June is estimated at 864 000 m³, which is equivalent to a pumping rate of 1200 m³/h over 30 24-hour days.

Depending on when the thaw occurs in June, it is not evident a single heat traced diffuser will have sufficient capacity to discharge the estimated volumes in the spring.

Recommendation

CIRNAC recommends the licensee clarify why they are only heat tracing a single diffuser when the second diffuser may not be usable at the time of year when it is most needed. They should also clarify how they plan to manage the treated effluent should they not be able to discharge all effluent due to diffuser capacity issues in the spring.

C. REFERENCE

Whale Tail Lake South Basin Treated Water Diffuser Design Report, SNC-Lavalin, June 15, 2020