



NWB Tools

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Fwd: Information on CIRNACc Meeting July 26

Richard Dwyer <richard.dwyer@nwb-oen.ca>

Thu, Sep 27, 2018 at 1:08 PM

Draft To: Karén Kharatyan <karen.kharatyan@nwb-oen.ca>

----- Forwarded message -----

From: **Jamie Quesnel** <jamie.quesnel@agnicoeagle.com>

Date: Thu, Sep 27, 2018 at 12:42 PM

Subject: Information on CIRNACc Meeting July 26

To: karen.kharatyan@nwb-oen.ca <karen.kharatyan@nwb-oen.ca>

Cc: Dewar, Spencer (AADNC/AANDC) <spencer.dewar@canada.ca>, Blade, Michelle (AADNC/AANDC) <michelle.blade@canada.ca>, Ryan Vanengen <ryan.vanengen@agnicoeagle.com>, Michel Groleau <michel.groleau@agnicoeagle.com>

Hello Karen:

The studies described below (as per page 94 of the NWB Document) have been completed and results were presented to CIRNAC on July 26th during a meeting between Agnico Eagle, CIRNAC and Golder Associates at the office of Golder Associates in Ottawa. The study methods and study results were provided to CIRNAC ahead of the meeting via email in a file titled *Whale Tail_CIRNAC Meeting_20072018.pptx*. This presentation is also attached. The conclusion of each study is reiterated below.

- Hydrogeological characterization study to validate the hydraulic gradient and potential arsenic diffusion scenarios;
 - The hydrogeological regime in the pit lake has no significant effect on arsenic concentration in the pit lake water quality. The study indicates there are no effective hydrogeological mechanisms to transport arsenic into and out of the pit through groundwater.
- Pit wall Arsenic diffusion modelling; the calculated rate of diffusion is low;
 - No measurable effect on water quality is predicted from diffusion of arsenic from submerged pit walls.
- Evaluation of the evolution of permafrost under the flooded pit, in response to the creation of a pit lake;
 - The permafrost under the pit lake is predicted to thin out in time and to disappear completely in 300 years.
- Hydrodynamic modelling of flooded Whale Tail Pit Lake post closure and Hydrodynamic modelling of the WRSF contact water mixing into Mammoth Lake post closure with respect to Arsenic concentrations within the flooded Whale Tail Pit and Mammoth Lake.
 - The pit lake is expected to completely mix twice a year in the spring and fall while Mammoth Lake is predicted to remain fully mixed all year. The water quality in the fully flooded pit lake is predicted to meet the Site Specific Water Quality Objective for arsenic (As-SSWQO), the suggested oligotrophic level for phosphorous and receiving water quality criteria for all other constituents post-closure. Similarly for Mammoth Lake, all water quality criteria are predicted to be met post-closure throughout the lake with the exception of the immediate area of entry of waste rock storage facility (WRSF) contact water into Mammoth Lake: a temporary 5 to 60 meter plume of slightly higher than As-SSWQO water quality may exist if and when WRSF contact water seeps into Mammoth Lake.

The results of the above studies were used to improve the conceptual understanding of anticipated future conditions and the minor changes in the approved management plan have been considered in the updated Management Plans for water, waste and permafrost.

Let me know if you have any questions.

Thanks, Jamie



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