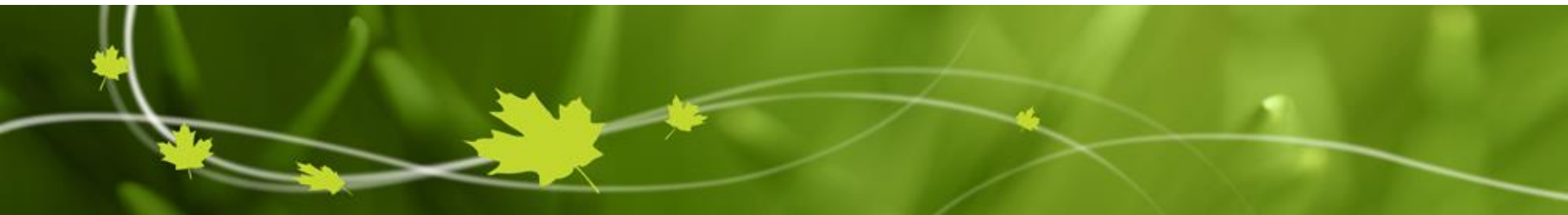




Environment and
Climate Change Canada

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Canada



Environment and Climate Change Canada's Presentation to the Nunavut Water Board Concerning the Sabina Gold & Silver Corp. Back River Gold Mine Project Type A Water Licence Final Hearing

**2AM-BRP-----
Nunavut Water Board Final Hearing**

Cambridge Bay, NU

August 8-9, 2018

Anne Wilson

Gabriel Bernard-Lacaille

Overview

- ECCC Mandate
- Relevant Acts and Legislation
- ECCC Recommendations



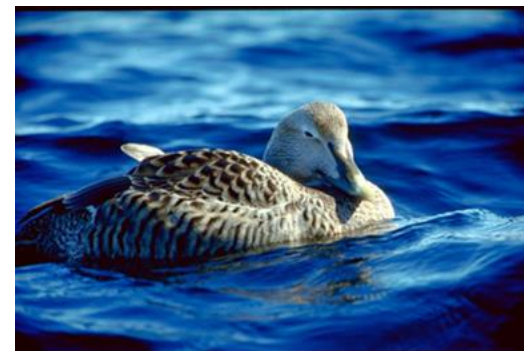
ECCC Mandate

- Preserve and enhance the quality of the natural environment
- Conserve Canada's renewable resources
- Conserve and protect Canada's water resources
- Forecast daily weather conditions and warnings
- Enforce rules relating to boundary waters
- Coordinate environmental policies and programs for the federal government



Relevant Acts and Regulations

- *Department of the Environment Act*
- *Canadian Environmental Protection Act*
- *Fisheries Act* – Pollution Prevention Provisions & Metal and Diamond Mining Effluent Regulations



Environment and Climate Change Canada's Participation

- Environment and Climate Change Canada provides scientific expertise within our mandate to the Nunavut Water Board
 - Freshwater Environment
 - Monitoring, Mitigation and Management Plans



Environment and Climate Change Canada's Participation continued

- Environment and Climate Change Canada has participated in all phases of this review process thus far.
- This presentation summarizes Environment and Climate Change Canada's recommendations.
- Environment and Climate Change Canada has reviewed the Proponent's responses.



Environment and Climate Change Canada's Resolved Issues

- During the Technical Review, the Department provided comments on
 - Mitigation for in-water works
 - Ore stockpile Metal Leaching and Acid Rock Drainage
 - Waste Rock Storage Freeze Back
 - Dissolved versus total fractions of metals
 - Seep Surveys
 - Post-Closure monitoring
 - Arsenic Site Specific Water Quality Objective
- These issues were resolved prior to and during the Technical Meeting held in Cambridge Bay on May 1-2, 2018.



ECCC#1 – Closure Objectives and Criteria : Receiving Water Quality

ECCC#1 –

- The Proponent proposes to meet Site Specific Water Quality Objectives or the *Metal and Diamond Mining Effluent Regulations* criteria at final discharge points during closure and proposes to defer discussions until a better understanding of water quality at the site is obtained.

ECCC#1 Recommendation

- ECCC recommends that the Proponent, in future iterations of the Interim Closure and Reclamation Plan, include explicit statements on receiving water quality objectives, as well as clarify discharge points and where objectives are to be met.



ECCC#2 – Saline Water Pond Closure Site Specific Water Quality Objective

- Due to chloride in sediment pore water at the bottom of the Saline Water Pond, chloride may be of concern when reconnecting Umwelt Lake to surface waters. The target chloride concentration proposed by the Proponent is 120 mg/L.

ECCC#2 Recommendation

- ECCC recommends that the Proponent include in their Saline Water Management Plan provisions for tracking sediment pore water chloride concentrations for the Saline Water Pond in order to ensure appropriate water quality for the reconnection of Umwelt Lake to surface waters.



ECCC#3 – Nitrite

- The Department had concerns with the predicted levels of nitrite in surface waters and seeks clarification on nitrite inputs to the water and load balance model.

ECCC#3 Recommendation

- ECCC recommends that the Proponent clarify nitrite inputs for rock sources and identify the reasons for reductions in predicted nitrite concentrations.



ECCC#4 – Aquatic Effects Management Plan

- The Proponent has made progress on the design of the Aquatics Effects Management Plan, in consultation with ECCC. ECCC notes that there is further work to be done with respect to the study design and characterization of natural variability, and acknowledges the Proponent's ongoing work in this regard with further monitoring in 2018.

ECCC#4 Recommendation

- ECCC recommends that an updated version of the Aquatics Effects Management Plan be submitted for approval following the issuance of a water licence and looks forward to ongoing work the Aquatics Effects Management Plan.



Thank you!

- ECCC would like to say thank you for the opportunity to participate in this water licencing process

