

June 5 to 6, 2024
Rankin Inlet, NU



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ECCC-TRC-04: Open Pits in Cryopeg

The Hydrogeology Modelling estimates the inflows to three open pits in cryopeg.

ECCC recommends that the Proponent:

- Confirm which pits are predicted to advance into cryopeg.
- Clarify the inconsistencies between the Meliadine Mine Water Balance and Water Quality Model, the Updated Summary of Hydrogeology Existing Conditions and the Updated Hydrogeology Modelling.

ECCC-TRC-04: Open Pits in Cryopeg

- Present predicted concentrations of parameters of concern, including total dissolved solids, for water inflowing to pits that advance into cryopeg.
- If the water quality has higher Total Dissolved Solids than other contact water stored in CP8, discuss how proposed water management will address any elevated concentrations of parameters of concern.

ECCC-TRC-07: Water quality screening criteria for parameters with toxicity modifying factors

ECCC recommends the Proponent:

- a. Report toxicity modifying factors (hardness, pH and dissolved organic carbon), or range of toxicity modifying factors, used for the water quality predictions of the Water Balance and Water Quality Model;
- b. Report calculated screening criteria, or range of calculated criteria, for cadmium, copper, manganese, nickel and zinc; and
- c. Include calculated screening criteria on graphs that display modelled water quality results, as suggested in ECCC #6.

ECCC-TRC-08: Water quality screening criteria for parameters without Canadian Council of Ministers for the Environment (CCME) guidelines

ECDC recommends the Proponent update the water quality screening criteria in both the Water Balance and Water Quality Model and Aquatic Effects Monitoring Plan Design Plan, to include Federal Environmental Quality Guidelines for cobalt, copper, strontium and vanadium.

ECCC-TRC-11: Predicted water quality exceedances at closure

ECCC recommends the Proponent:

- a. Provide water quality predictions during closure and post closure for SP6 in both table and graph format;
- b. Discuss management actions or mitigation measures that can be taken to prevent effects from water quality impacts for the protection of aquatic life in SP6, WES04 and Lake J1 (see ECCC comment #10); and

ECCC-TRC-11: Predicted water quality exceedances at closure

- c. If further data collection and model refinement is proposed for recommendation in part b., then develop a trigger for the re-evaluation of management practices that would allow sufficient time to implement actions that would prevent effects from water quality impacts in SP6, WES04 and Lake J1 in post-closure.

ECCC-TRC-12: Dewatering lakes and ponds

ECCC recommends the Proponent:

- a. Update the Water Management Plan to integrate details of pond dewatering, including, total suspended solids treatment for water from the lower 50% of ponds and lakes to be dewatered, predicted volumes, treatment capacity, and management of sludge/residue;

ECCC-TRC-12: Dewatering lakes and ponds

- b. Update the Freshet Management Plan to describe how water accumulating in all dewatered lakes and ponds will be managed during freshet including predicted water quality;
- c. Include dewatered ponds and lakes in “areas of risk during freshet”.

ECCC-TRC-13: Aquatic effects monitoring program monitoring peninsula lakes

ECCE recommends the Proponent retain monitoring of the D7 peninsula lake in the Aquatic Effects Monitoring Program Design Plan and propose alternative lakes for monitoring when lakes A8 and B7 will be dewatered, so that a robust monitoring program continues for the peninsula lakes.

ECCC-TRC-15: Aquatic effects monitoring program reference area

ECCC recommends the Proponent:

- a. consider including reference areas in a different watershed or upstream of potential mine influence in Meliadine Lake;
- b. demonstrate that the reference areas in Meliadine Lake will remain uninfluenced by the mine, and that parameters do not have increasing trends and

ECCC-TRC-15: Aquatic effects monitoring program reference area

- c. limit discussion of regional effects in future Aquatic Effects Monitoring Program annual reports to lakes that are demonstrated to be in the same ecoregion, with similar geology, distance from Hudson's Bay, weather, and water chemistries and concentrations.

ECCC-TRC-17: Parameter concentration normal ranges in Meliadine Lake

ECCC recommends the Proponent explain:

- a. the rationale or explanation for changing the dates/periods of data for calculating normal water quality ranges,
- b. why different dates/periods are now used for the reference and other areas, and
- c. how these new data dates/periods change the calculated normal.

ECCC-TRC-19: Closure criteria for surface water quality (Interim Closure and Reclamation Plan)

ECRC recommends the Proponent update the Interim Closure and Reclamation Plan to include preliminary water quality objectives for closure and post closure.

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ECCC-TRC-29: Deficiencies in original estimation of water availability

ECDC recommends that the proponent provide updated estimation of project effects based on current hydrology data and provide updated water monitoring data to validate conclusions provided in the 2014 FEIS.

ECCC-TRC-30: Hydrology Data Limitations

ECCE recommends that the proponent update water management models using more up to date data and provide appropriate discussions with regards to climate change and uncertainty. ECCE further recommends that a detailed adaptive management plan be included in the Water Licence amendment package.

ECCC-TRC-31: Post-closure groundwater-surface water interactions

ECCC recommends that the Proponent:

- a. provide an estimate of the effect of density-driven flows in the groundwater model to justify the exclusion of these flows from calculations;
- b. describe quality of groundwater predicted to discharge into pit lakes PUM02 and WN01 during post-closure;

ECCC-TRC-31: Post-closure groundwater-surface water interactions

- c. clarify how groundwater discharge to surface water during post-closure is integrated into the Water Balance and Water Quantity Model; and
- d. describe the impact of groundwater discharge on surface water quality.

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Climate Change Canada

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Annex I: Current Status of Environment and Climate Change Canada's Technical Review Comments

ECCC-TRC-01	Waste Rock Classification	Resolved
ECCC-TRC-02	ARD Testing	Resolved
ECCC-TRC-03	Water Transport from Discovery to Mine Site	Resolved
ECCC-TRC-04	Open Pits in Cryopeg	Unresolved
ECCC-TRC-05	Saline Water Stratified in Pits at Closure	Resolved
ECCC-TRC-06	Graphs of Water Quality Predictions	Resolved
ECCC-TRC-07	Water Quality Screening Criteria for Parameters with Toxicity Modifying Factors	Unresolved
ECCC-TRC-08	Water Quality Screening Criteria for Parameters without CCME Guidelines	Unresolved
ECCC-TRC-09	Water Quality Screening Criteria for Sulphate	Resolved
ECCC-TRC-10	Water Quality Closure Criteria for SP6 and CP8 (Water Balance and Water Quality Model)	Resolved

Annex I: Current Status of Environment and Climate Change Canada's Technical Review Comments

ECCC-TRC-11	Predicted Water Quality Exceedances at Closure	Unresolved
ECCC-TRC-12	Dewatering Lakes and Ponds	Unresolved
ECCC-TRC-13	Aquatic Effects Monitoring Program Monitoring Peninsula Lakes	Unresolved
ECCC-TRC-14	Benthic Community Measurement Endpoint	Resolved
ECCC-TRC-15	Aquatic Effects Monitoring Program Reference Area	Unresolved
ECCC-TRC-16	Stickleback Study	Resolved
ECCC-TRC-17	Parameter Concentration Normal Ranges in Meliadine Lake	Unresolved
ECCC-TRC-18	Comparison Between Observations and FEIS Predictions	Resolved
ECCC-TRC-19	Closure Criteria for Surface Water Quality (Interim Closure and Reclamation Plan)	Unresolved
ECCC-TRC-20	Inconsistent Water Management Systems Description	Unresolved
ECCC-TRC-21	Saline Effluent Treatment Plant Wastes	Unresolved

Annex I: Current Status of Environment and Climate Change Canada's Technical Review Comments

ECCC-TRC-22	Discovery Waste Rock Storage Facility	Unresolved
ECCC-TRC-23	Number of Incinerators	Resolved
ECCC-TRC-24	Climate Change	Resolved
ECCC-TRC-25	Response Procedure Guides	Resolved
ECCC-TRC-26	Species at Risk	Resolved
ECCC-TRC-27	Project Activities in Migratory Bird Habitat	Resolved
ECCC-TRC-28	Wildlife Monitoring	Resolved
ECCC-TRC-29	Deficiencies in Original Estimation of Water Availability	Unresolved
ECCC-TRC-30	Hydrology Data Limitations	Unresolved
ECCC-TRC-31	Post-closure Groundwater-Surface Water Interactions	Unresolved