ANNEX 1: Advice to the Agency

Table 1: Please use the table below to provide advice for the Agency's consideration in its recommendation to the Minister of Environment and Climate Change and preparation of draft conditions

Questions	Responses/Comments
• Has the proponent described all project components and activities in sufficient detail to understand all relevant project-environment interactions? If not, identify what additional information is needed.	Yes.
• Were the study areas sufficient to predict potential effects from all relevant project-environment interactions, and to consider the effects within a local and regional context? • Is the baseline information sufficient to characterize the existing environment, predict potential effects and obtain monitoring objectives? If not, identify what additional information is needed.	Yes, the local and regional assessment areas are sufficient.
Alternatives Assessment	
• Has the proponent adequately described the criteria it used to determine the technically and economically feasible alternative means? • Has the proponent listed the potential effects to valued components (VCs) within your mandate that could be affected by the technically and economically feasible alternative means? • Has the proponent adequately described why it chose each preferred alternative means? • Are there other alternative means that could have been presented? If so, please describe.	Yes.
Environmental Effects Assessment	
• Has the proponent clearly described all relevant pathways of effects to be taken into account under section 5 of CEAA 2012? • Has the proponent identified all potential effects to VCs, including species at risk, within your mandate? • Were all potential receptors considered?	Yes.
• Were the methodologies used by the proponent appropriate to collect baseline data and predict effects, why or why not? • Has the proponent explicitly addressed the degree of scientific uncertainty related to the data and methods used within the assessment? If there are unaccounted for scientific uncertainties, describe them and indicate the options for increasing certainty in the predictions?	ECCC has suggested some additional analysis to reduce uncertainty in some of the IRs below.

Questions	Responses/Comments
• Are the predicted effects described in objective and reasonable terms (e.g. beneficial or adverse, temporary or permanent, reversible or irreversible)?	Yes.
• Has the proponent adequately assessed the potential cumulative environmental effects, including using appropriate temporal and spatial boundaries , examining physical activities that have been and will be carried out, and proposing mitigation and follow-up program requirements? Provide rationale.	Yes
• Has the proponent adequately described the potential for environmental effects caused by accidents and malfunctions, including the types of accidents and malfunctions, their likelihood and severity and the associated potential environmental effects? If not, identify what additional information is needed.	Yes
• Are you satisfied with the proponent's assessment of effects of the environment on the Project? • Has the proponent characterized the likelihood and severity appropriately? Provide rationale.	Yes. Climate change is incorporated by using precipitation estimates from RCP4.5 and range of probable flows from project components are shown based on Monte Carlo simulation.
• Has the proponent sufficiently described and characterized the project activities and components as they relate to federal decisions within your mandate? If not, identify what additional information is needed. • Are changes to the environment, as they relate to federal decisions within your mandate, sufficiently described? If not, identify what additional information is needed.	Yes.
Mitigation	
• Has the degree of uncertainty regarding the effectiveness of the proposed mitigation measures been described? If not, identify what information is needed. • Is it clear how each proposed mitigation measure links to each potential pathway of effect?	Yes
• Would you propose different or additional mitigation measures? If so, provide a description of the mitigation measure(s), with rationale.	Potential mitigation measures identified below.
• Which of the proposed mitigation measures and/or project design elements do you consider to be necessary to reduce the likelihood of significant adverse environmental effects? Provide rationale.	NA
Residual Adverse Environmental Effects	

Questions	Responses/Comments
• Are the identification and documentation of residual environmental effects described by the proponent adequate? If not, what are the aspects for which there is uncertainty and, where possible, indicate how these residual effects can be best described. If there is uncertainty, what are the options for increasing certainty?	ECCC has suggested further analysis in the IRs which can reduce the uncertainty.
• Did the proponent provide a sufficiently precise, ideally quantitative, description of the residual environmental effects related to your mandate? Identify any areas that are insufficient.	With the exception of the suggested analysis which can reduce uncertainty.
Determination of Significance	
• Are the conclusions on significance in the EIS supported by the analysis that is provided? • Are the proponent's proposed criteria for assessing significance appropriate? This includes how the criteria were characterized, ranked, and weighted. Provide rationale. Where the proponent has **not** used one of the Agency's recommended key criteria (magnitude, geographic extent, duration, frequency, reversibility, and social/ecological context), has a rationale been provided?	Yes
• Were appropriate methodologies used in developing the conclusions on significance?	Yes
• Do you agree with the proponent's analysis and conclusions on significance? Provide rationale.	
Monitoring and Follow-up	
• Does the proposed monitoring and follow-up program verify the predictions of the environmental assessment as they relate to section 5? Please explain additional monitoring or follow-up needed to address uncertainty in the effects assessment.	Yes
• Does the proposed monitoring and follow-up program verify the effectiveness of proposed mitigations as they relate to section 5? Please explain additional monitoring or follow-up needed to address uncertainty in the proposed mitigation.	Yes
• Is the objective of the follow-up program clear and measurable? • Does the follow-up program include sufficient detail, and technical merit, for the Agency to achieve the stated objective through a condition (e.g. sufficient baseline dataset, monitoring plans, acceptable thresholds of change, contingency procedures)?	Yes
• Are you aware of any federal or provincial authorizations or regulations that will achieve the same follow-up program objective(s)? If so, how do these achieve the objective(s)?	No
Additional comments, views, advice	
• Provide any other comments.	

ANNEX 2: Information requirements directed to the proponent

Table 2: Please use the table below to provide your department's comments and suggestions for information that should be required from the proponent to ensure the information in the EIS is scientifically and technically accurate and is sufficient to make a determination of significance on environmental effects.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
ECCC-01-MSC-1	5(1)(a)(i) Fish and Fish Habitat 5(1)(a)(ii) Aquatic Species		Attachment 3-C of Baseline Study Appendix 3: Water Resources [BSA.3]: Section 3.2.2	Estimation of the mean annual flow (MAF) and monthly mean flows (MMF) is critical for water quality and low flow assessments. The proponent uses a Regional Flow Frequency Analysis (RFFA), developed by NFLD gov., which publishes four sets of equations based on drainage area, Lake Area Factor (LAF), and Lake and Swamp Factor (LSF) to estimate the MAF and MMF in four homogeneous regions. However, the original (1999) and updated (2014) RFFA reports note that the edges of the four identified homogeneous regions are approximate. The project is located at the edge of the NE region, within a few kms of the NW and SW regions. Additionally, the Water Survey of Canada (WSC) stations used to develop the NE region equations are all much further from the project location than the nearest WSC stations in the NW and SW regions. The	(A) Update the estimates resulting from the RFFA (particularly the MAF and MMF) using the equations for the NW or SW which are much closer to the Project site than those used, or Provide additional rationale for using the NE region RFFA. Consider using the streamflow field data to validate this choice.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				proponent only presents MAF and MMF estimates using the NE region equations.	
ECCC-02-MSC-2	5(1)(a)(i) Fish and Fish Habitat 5(1)(a)(ii) Aquatic Species		Attachment 3-C of Baseline Study Appendix 3: Water Resources [BSA.3]: Section 3.3.1 and 4.2.2.1	Continuous level data was collected at the project location for up to 7 years (2012-2019) and transformed to continuous streamflow data via an acceptable rating curve. However, this data does not appear to be used to validate any of the baseline estimates. *approx. 1 year of data at station HS2 is anomalously high (suspected beaver dam).	Use the continuous level data to validate the baseline water balance, baseflow index estimates, or RFFA.
ECCC-03-MSC-3	5(1)(a)(i) Fish and Fish Habitat 5(1)(a)(ii) Aquatic Species		Chapter 7 of EIS, section 7.5.1.3 and Table 7.36 (p. 105)	Table 7.36 and section 7.5.1.3 of the EIS assess the project effects on the watershed environmental flows by comparing to the expected mean annual flow (MAF). The estimates of 50% MAF for the summer environmental flows and 33% MAF for the winter environmental flows, taken from Zadeh (2012), are appropriate estimates for baseline natural conditions. However, these baseline values must be compared to expected low flows in the summer and winter months, respectively, as the expected MAF does not	Compare the value of the baseline environmental flows to the expected project flows from the associated months (winter: October to March and summer: April to September) for all watersheds.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				adequately capture the potential for low flows in a non-natural system.	
ECCC-04-MSC-4	5(1)(a)(i) Fish and Fish Habitat 5(1)(a)(ii) Aquatic Species		Chapter 7 of EIS, section 7.5.1.3 and 7.5.1.4 (p.111)	Water will be pumped from Valentine Lake to help fill Marathon Pit at closure over approx. 8 years. The proponent presents this pumping as a significant project effect in the following text: *"For Valentine Lake, the proposed pumping rate corresponds to 21% of expected MAF. […] The closure MAF is projected to be 59% and 164% greater than the pre-development summer and winter environmental flows, respectively."* The proponent assesses the project effects on the Valentine Lake environmental flows by comparing to the expected mean annual flow (MAF). The expected MAF does not adequately describe the potential for project effects on low flows (see previous IR, ECCC-MSC-3). Further in the same document, the proponent states that the effects to Valentine Lake at the edge of the Local Assessment	(A) Provide further explanation for the apparent discrepancy between these two statements. (B) Compare the value of the baseline environmental flows to the expected flows from the associated months (winter: October to March and summer: April to September) for Valentine Lake. (C) Assess whether the pumping of Valentine Lake during the closure phase has the potential to affect the lake level, particularly during low water periods.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				Area (LAA) is under 10% (section 7.5.1.4).	
ECCC-05-EDD	5(1)(a)(iii) Migratory birds 5(1)(c)(iii) Current Use of Lands and Resources for traditional purposes	7.6.1. Effects of potential accidents or malfunctions	21.5.3 Fuel and Hazardous Materials Spill. Page 162, section 21.5.3.4 Environmental Effects Assessment.	Sodium cyanide is a reagent used in the cyanidation phase. The EIS notes that sodium is a relatively environmentally benign product, and therefore, only cyanide was modelled for a potential hazardous spill. A two-dimensional (2D) hydrodynamic model was used to represent the fate and behavior of cyanide in the Red Indian Lake and the results are presented in figure 21-3 and 21-4. There are no discussions on the potential of cyanide to enter the atmosphere from the lake waters. According to the International Cyanide Management Code, at a pH of 7, which is generally the pH found in lakes, 99 percent of cyanide is hydrogen cyanide. Hydrogen cyanide is a toxic and flammable gas that is barely lighter than air (relative density of 0.967) and can enter the atmosphere and be transported away from the emission source.	Confirm the environmental behaviour, fate and effects of not only cyanide ion in water but of hydrogen cyanide in air and the surrounding environment.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
ECCC-06-CRD	5(1)(a)(i) Fish and Fish Habitat 5(1)(a)(ii) Aquatic Species		21.4.1.4 Watercourse Crossing Failure; 21.5.4.2 Project Design and Safety Measures to Reduce Environmental Effects	In Chapter 22, the proponent indicates that climate and climate change can have impacts on the project with potential to cause adverse effects to the environment through accidents or malfunctions. As such, the proponent provides projections of future changes in a number of climate change related parameters over the lifetime of the project (section 22.3.1). It is not clear, however, what climate change information and methods have been used to consider climate change in the design applications described. In the quotes below, the proponent indicates that climate change will be (or is) considered in project design. ***21.4.1.4 Watercourse Crossing Failure (p.21.9; emphasis added)*** *Failure of a watercourse crossing could result from a precipitation or snowmelt event that exceeds the design capacity, causing the loss of channel form due to erosion, or damage to other watercourse crossings*	Provide clarification of the climate change information and methods used to apply the climate projections to relevant project design considerations.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				downstream. Failure of drainage culverts included along Project roads could result in an impediment to fish movement and sedimentation to downstream waterbodies. This would result in potential adverse effects on surface water resources and fish and fish habitat. Culverts will be inspected periodically for stability and to remove accumulated material and debris. ***With watercourse crossings designed to address the appropriate design precipitation events including climate change parameters****, regular maintenance and monitoring, and timely and effective response to watercourse crossing failures, the potential for effects will be reduced. In the unexpected event there is an extreme condition leading to flooding or culvert damage, repairs will be quickly undertaken, and flows restored. Given the implementation of proposed mitigation measures, negligible residual adverse effects on VCs are*	

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				anticipated, and therefore no further effects assessment is required. ***21.5.4.2 Project Design and Safety Measures to Reduce Environmental Effects (p.21.42; emphasis added)*** *"Design parameters for water management infrastructure includes a 15 m setback from fish-bearing waterbodies;* ***consideration of climate change-associated precipitation events and associated flow****; and maintaining flow to fish-bearing waterbodies where feasible (draining mine site components to pre-development catchment areas, where practicable).* *Contact runoff from the piles will be managed by perimeter ditches and treated for sediment prior to release to the environment. Sedimentation pond embankments are designed to reduce seepage and will be constructed out of locally sourced, low permeability glacial till. Erosion protection*	

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				will be provided through riprap lining of the embankment and spillway and a scour pad at the toe of slope of spillways. A geotextile or granular soil filter layer will be placed between materials to reduce the opportunity for piping. ***The design of the sedimentation ponds accounts for climate change****, ice thickness during the winter, operating water levels, inactive storage to promote settling, and freeboard requirements."*	
ECCC-07-CWS-01	Migratory Birds	Section 2.2	Section 2.11	Alternative lighting design and/or measures are a potential mitigation measure to reduce potential impacts of light attraction on migratory birds and species at risk.	Include Project Lighting in the "Alternative Means of Carrying out the Project" Section 2.11.
ECCC-08-CWS-02	Migratory Birds	Section 7.1.7	Section 10.2	The EIS does not show the distribution of most avifauna field survey locations in relation to current habitats in the project assessment area and proposed project infrastructure, nor are detailed results of bird surveys provided.	Provide a detailed description of all avifauna surveys that have been conducted for the Project to date, including maps showing each survey location (e.g. each point count location) in relation to

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				It appears that no bird surveys have yet been conducted along the access road, and the proponent only proposes such surveys as part of the project follow-up program, despite the fact that access road upgrades are proposed for this project.	proposed infrastructure and current habitat types. Provide tables presenting detailed survey results (i.e. data provided for each survey location (i.e. for each point count point) for each survey date). Data should include species, number of individuals, sex and age (adult, juvenile) if known. Conditions (e.g. wind) that may have influenced survey results should be identified.
ECCC-09-CWS-03	Migratory Birds *Species at Risk Act* Section 79	Section 7.1.7 Section 7.1.8 Section 7.3.2 Section 7.3.3	Section 10.2 Section 10.3 Section 10.4 Section 10.5	Under ss. 79(2) of the *Species at Risk Act* (SARA), the Canadian Environmental Assessment Agency (the Agency) must ensure that an assessment of environmental effects is conducted, must identify adverse effects on all listed species, which include species of Special Concern and the critical habitat of Extirpated, Endangered and Threatened	(a) Wetland associated migratory bird SAR Clarify why avoidance is not possible in instances where habitat for landbird species at risk is not avoided.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				species; and if the project is carried out, ensure that measures are taken to avoid or lessen those effects and to monitor them. These measures must • be consistent with best available information including any Recovery Strategy, Action Plan or Management Plan in a final or proposed version; and • respect the terms and conditions of the SARA regarding protection of individuals, residences, and critical habitat of Extirpated, Endangered, or Threatened species. For species which are not yet listed under SARA, but are listed under provincial legislation only or that have been assessed and designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), it is best practice to consider these species in EA as though they were listed under SARA. Proponents are expected to provide adequate information in order for the Agency to fulfill	Confirm plans to implement conservation allowances in cases where loss of wetland habitat for landbird species at risk is unavoidable. (b) Migratory bird SAR potentially attracted to the project area by habitat alterations Develop a migratory bird monitoring program throughout the lifespan of the Project to verify attraction and use of the project area by migratory bird SAR, including modified habitats and infrastructure. Provide detailed beneficial management practices and mitigation measures that will be implemented to reduce the potential for migratory birds

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				their obligations under S.79 of SARA. For species-specific technical information for terrestrial SAR not protected under the *Migratory Birds Convention Act* (MBCA), ECCC recommends that the proponent consult the Newfoundland and Labrador Department of Fisheries, Forestry and Agriculture. (a) Wetland-associated migratory bird Species at Risk (SAR) Olive-sided Flycatchers were observed in the Project area during 2011 and 2019 breeding bird surveys. In 2019, 6 individuals were associated with the wetland complex in the area of the Northern Waste Rock Pile. For those wetlands that cannot be avoided and for those where direct and indirect effects cannot be entirely minimized, conservation allowances for affected wetland habitat for landbird SAR would be an important element to consider to satisfy the requirement to minimize effects to wetland-	and species at risk to nest in the Project Area. Provide additional information on the measures to be implemented in the event that a migratory bird or SAR is found nesting in modified habitats or on project infrastructure in the Project Area.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				associated landbird SAR in the project area as per S. 79 of SARA. (b) Migratory bird SAR potentially attracted to the project area by habitat alterations Habitat alterations related to mine construction and operation may result in the creation of habitat for migratory bird SAR. Landbird SAR may nest in the Project Area, including on project infrastructure. The proponent should implement a migratory bird monitoring program throughout the lifespan of the Project to observe migratory bird SAR use of the Project Area. The proponent should implement beneficial management practices and mitigation measures to reduce the potential for migratory birds and species at risk to nest in the Project Area. Additional information on these mitigation measures, including the process to be following in the event that a migratory bird or SAR is found	

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				to be nesting in the Project Area, is required. Common Nighthawk was observed incidentally during 2011 field surveys. Common Nighthawk potential breeding in central Newfoundland would be a significant discovery, as there are no known records for breeding for this species on the island of Newfoundland. Common Nighthawk breed in open habitats, and have been known to use gravel surfaces for breeding. Bank Swallow was reported on the edge of the Local Assessment Area, near Buchans. Bank Swallows are known to be attracted to industrial sites such as pits and quarries, where they build nest burrows in stockpiled product or banks.	
ECCC-10-CWS-04	Migratory Birds	Section 7.1.7 Section 7.3.2	Section 10.4 Section 10.5	Proponents must comply with the *Migratory Birds Convention Act* and associated regulations for all project-related activities and during all project phases, and are expected to take appropriate measures to ensure	Describe the potential effects to migratory birds and species at risk that could result from potential interactions with the tailings management

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				that they avoid the disturbance or harm of migratory birds. The potential risks to migratory birds using the tailings and/or polishing ponds are not clearly articulated. In Section 10.5.2.2, the Proponent states that "*A change in mortality risk may result from possible ingestion and/or absorption of water in the tailings and/or polishing ponds, with potential exceedances in POPC as outlined under the Metal and Diamond Mining Effluent Regulations, specifically for total cyanide, unionized ammonia (product of cyanide decomposition) and Copper (added as catalysis during cyanide destruction or leached from the ore. Wildlife, including avifauna, have been reported drinking from ponds associated with tailings management facilities (Eisler and Wiemeyer 2004; Donato et al. 2007) and could also be exposed by ingesting aquatic flora and fauna within the TMF*." But rather than proactively deterring migratory birds from using these features, the proponent proposes to monitor avifauna use of these Project	facilities and settling ponds. Outline plans/measures to deter migratory birds and species at risk from tailings management facilities and settling ponds, including beneficial management practices and/or the development of an avifauna management and monitoring plan. This plan should be sent to ECCC-CWS for review prior to its implementation. Describe potential uncertainties related to the use of proposed mitigation measures, and discuss proposed adaptive management measures to be implemented in a timely manner in the event that adverse effects to migratory birds are expected.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				features implement adaptive management measures (e.g., deterrents and/or exclusionary measures) “as required”. Section 5.1 of the MBCA indicates that it is unlawful to deposit a substance that is harmful to migratory birds, or permit such a substance to be deposited, in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area. ECCC recommends that the proponent: • Monitor the use of open ponds by migratory birds, as well as monitor the presence of substances in the open ponds or associated water bodies that area harmful to migratory birds; and • Implement measures to prevent contact of migratory birds with the harmful substances, to ensure compliance with the MBCA if birds are detected on ponds or other water bodies that contain	

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				substances harmful to migratory birds. • The proponent should evaluate the available suites of deterrents and hazing tools that could be useful for their project. The proponent should be aware of what methods would require a permit before use. Eisler, R., and Wiemeyer, S.N., 2004. Cyanide hazards to plants and animals from gold mining and related water issues. *Reviews of environmental contamination and toxicology.* **183:** 21-54. Donato, D.B., Nichols, O., Possingham, H., Moore, M., Ricci, P.F., and Noller, B.N. 2007. A critical review of the effects of gold cyanide-bearing tailings solutions on wildlife. *Environment International.* **33**(7): 974-984.	
ECCC-11-CWS-05	Migratory Birds	Section 7.1.7 Section 7.3.2	Section 10.4 Section 10.5 Section 10.9	Bird collisions at lit and floodlit structures are a potential issue for migratory birds. In Atlantic Canada, nocturnal migrants and night-flying birds are the birds most at risk of attraction to	Describe the beneficial management practices that will be implemented to avoid potential attraction of

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				lights and lit structures. Attraction to lights may result in disorientation or collision with lit structures or their support structures, or with other birds. Disoriented birds are prone to circling a light source and may deplete their energy reserves and either die of exhaustion or drop to the ground (or a hard surface) where they are at risk of depredation. Given that the project has a large artificial light footprint that is much higher than the baseline ambient conditions, ECCC recommends that the proponent be aware that birds may be attracted to the site and may be found injured or dead on site. Additionally, ECCC notes that the proponent should be cognizant of whether frequent bird interactions are occurring at the project site. If the proponent notices that birds are frequently found injured or dead at the site, ECCC-CWS recommends that the proponent contact ECCC-CWS to develop a site monitoring plan in an effort to address the issue.	migratory birds to project lighting. Follow-up monitoring to verify that efficacy of mitigation measures should be undertaken, and adaptive management measures implemented if needed Contact ECCC-CWS when birds are found injured or dead at the site. If frequent bird interactions are observed, ECCC requests that the proponent consult with ECCC-CWS to develop a Project-specific site monitoring plan in an effort to address the issue.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
ECCC-12-ES-01	Fish and Fish Habitat	Section 7.3.1 Fish and Fish Habitat	Chapter 4: Assessment of Effects to Surface Water Appendix 7C – Assimilative Capacity Assessment Report	Although not a separate VC, sediment quality is an important aspect of a healthy ecosystem especially in supporting fish health in the receiving environment. The proponent has conducted baseline sediment studies but has not modelled or predicted impacts to sediments nor is any monitoring program planned to evaluate sediment quality. While water quality modelling and monitoring programs give good information related to the health of the aquatic environment, continuous loadings of elevated COPCs may be deposited to sediments over time which may then act as an ongoing source of contamination in the benthic environment which can affect fish health. COPCs in sediments in streams and rivers can be remobilized over time or during high flow events to create risks to downstream aquatic receptors.	Evaluate sediment quality and potential risks to aquatic receptors as a result of sediment contamination and develop a monitoring program to evaluate changes in sediment quality.
ECCC-13-ES-02	Water Quality	Section 7.3.1 Fish and Fish Habitat	Appendix 7C – Assimilative Capacity Assessment Report (page 1.2)	The study quotes CCME (2003) which defines the mixing zone as, "*an area contiguous with a point source (effluent) where the effluent mixes with ambient*	Confirm that these 2 conditions cited in CCME (2003) have been/will be met in

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				water and where concentrations of some substances may not comply with water quality guidelines or objectives". The study concludes that in almost all cases where Final Discharge Points (FDPs) are located on small tributaries, the effluent mixing zone extends the length of the tributary and into the ultimate downstream lake / river receivers. The study continues to quote CCME (2003) by stating that "*Conditions within the mixing zone should not result in bioconcentration of POPC to levels that are harmful to organisms, aquatic-dependent wildlife, or human health. Also, accumulation of toxic substances in water or sediment to toxic levels should not occur in the mixing zone*." *Canadian Council of Ministers of the Environment (CCME). 2003. Canadian Water Quality Guidelines for the Protection of Aquatic Life: Guidance on the Site-Specific Application of water quality*	the mixing zones that have been defined. Provide supporting data/information that bioconcentration or accumulation of toxic substances are not expected to reach toxic or harmful levels in water or sediments within the mixing zones.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				guidelines in Canada: Procedures for deriving numerical water quality objectives. In: Canadian Environmental Quality Guidelines. Winnipeg	
ECCC-14-ES-03	Fish and Fish Habitat		Chapter 8, Fish and Fish Habitat, page 8.36	Probable Effect Levels (PELs) represents the lower limit of the range of chemical concentrations that is usually or always associated with adverse biological effects and are less conservative than Interim Sediment Quality Guidelines (ISQGs). The report compares sediment concentrations to PELs and not ISQGs, which would give a better sense of the existing conditions.	Compare sediment concentrations to the ISQGs.
ECCC-15-ES-04	Fish and Fish Habitat		APPENDIX 2A, Water Management Plan	The report states that "*Long-term CWQG-FAL are not applicable to discharges but were used to screen parameters of potential concern for receivers.*" CWQG-FAL may be more applicable for COPCs not listed in Schedule 4 of the MDMER and for mines that have acquired RCM status.	Explain how the potential effects associated with these parameters have been quantified.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				Some parameters are reported as being "stabilized in post-closure" above CWQG-FAL. On page 7.4 of APPENDIX 2A (Water Management Plan), in reference to the parameters generated from the water quality model, the report states that, for the Marathon Complex: "*These parameters decline during closure and stabilize in post closure with Cu, Hg, F, Ag, Cd, Mn, and Al remaining above CWQG-FAL*."; and, for the Leprechaun Complex: "*These parameters decline during closure and stabilize in post closure with Cu, Hg, Ag, and F remaining above CWQG-FAL*."	
ECCC-16-ES-05	Fish and Fish Habitat		Chapter 8: Fish and Fish Habitat Appendix 7C – Assimilative	Table 8.15 and Figure 8-12 shows areas of predicted fish habitat. The report indicates that these effects (areas of predicted fish habitat loss) will be addressed through a Fish	Clarify whether the Victoria River has been evaluated for potential habitat loss as it does not appear in the tabulation of

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
			Capacity Assessment Report	Habitat Offsetting Plan for the Project. The proponent notes that streams experiencing indirect loss are anticipated to continue to support fisheries at a reduced level of productivity for the duration of the Project. These streams will likely be less productive and contain primary (e.g., periphyton) and secondary (e.g., benthic invertebrates) producers, representative of low flow headwater communities. The proponent has estimated the magnitude of adverse effects associated with direct and indirect loss of fish habitat to be moderate. The proponent also states that residual effects on the quality of fish habitat from Project effluents and discharges are anticipated to be negligible to low, as these will be authorized and in compliance with applicable regulatory requirements. (As an aside, It is not clear if the Victoria River has been evaluated for potential habitat loss). Separate from the exercise of evaluating fish habitat loss, the Assimilative Capacity study identifies areas of aquatic habitat (tributaries, rivers, lakes	waters bodies experiencing habitat loss in Table 8.15. Quantify the potential loss of productivity (in terms of specific effects, magnitude and duration) resulting from concentrations of parameters of potential concern exceeding CCME FAL in mixing zones been quantified.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				and reservoirs) where exceedances of CCME FAL criteria are expected (in the mixing zone) during operation and beyond closure where there may be a loss of productivity. Many of these areas may coincide with areas identified in the evaluation of fish habitat loss.	
ECCC-17-ES-06	Fish and Fish Habitat		Chapter 8: Fish and Fish Habitat Page 8.72	The report states that "*Pit lakes are expected to become stratified following closure, and waters in the bottom layers may become anoxic and may contain high concentrations of dissolved trace metals. If the pit lake turns over, the pit lake water that discharges may affect fish health and survival by reducing levels of dissolved oxygen and introducing elevated concentrations of metals (Jennings et al. 2008).*" It is unclear if the additional potential risk associated with pit lake turnover has been modelled or otherwise evaluated.	Provide risk assessment associated with pit lake turnover.
ECCC-18-ES-07A	Water Quality		Appendix 7C – Assimilative Capacity	During the post-closure period of the decommissioning, rehabilitation and closure phase,	As post-closure exceedances of Freshwater Aquatic

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
			Assessment Report page 6.2	some CWQG-FAL exceedances are predicted in the Victoria River and Victoria Lake Reservoir for aluminum, copper, zinc, and fluoride associated with the Marathon and Leprechaun waste rock piles. The report states that "*Mitigation measures should be considered, such as maintaining perimeter ditching during closure / post-closure to convey seepage to a passive wetland treatment system*".	Life guidelines are predicted, assess the magnitude and duration of potential effects resulting from these exceedances. Outline the mitigation options to explain how and to what extent these effects will be mitigated.
ECCC-19-ES-07B	Water Quality		Appendix 7A , page iii	The report states that "*In post closure, Cu is predicted to exceed the MDMER limit due to an elevated concentration of this metal in TMF toe seepage. Therefore, a mitigation such as passive treatment of seepage should be considered.*" The proponent should be aware that when/if the mine has achieved Recognized Closed Mine (RCM) status under the MDMER, any effluent from the facility will be subject to Section 36(3) of the Fisheries Act, which prohibits the deposit of deleterious substances into waters frequented by fish, or to any place, under any conditions,	Where effects are predicted, develop an evaluation of the performance of measures to prevent the deposit.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				where it may enter water frequented by fish. All reasonable efforts must be made to prevent such a deposit of deleterious substances.	
ECCC-20-ES-08			Baseline Study Appendix 3: Water Resources (BSA.3)	In addition to the extensive water quality dataset available from other sources, the proponent has added 1 water quality sampling location for each of the 3 ultimate receiving environments; (VICRV – Victoria River, VIC01 – Victoria Lake, VAL01 – Valentine Lake). Data from these 3 locations was available for a 4 month period in 2019 only. Given the importance of these 3 ultimate receiving environments during all phases of the project, we believe that the data collected at these locations is not adequate to characterize the background water quality conditions (including seasonal variations) in these areas.	Use other water quality datasets (in addition to those from the 1 water quality sampling location for each of the 3 ultimate receiving environments) to characterize the background water quality conditions (including seasonal variations) in these areas.
ECCC-21-ES-09	Water Quality			The proponent has stated that the Study Area for the 2019 field study includes the watersheds potentially affected by development of the Leprechaun, Sprite, Marathon, and Victory	Clarify whether the sediment of the Victoria River, which has been identified as one of the 3 ultimate receiving

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				Deposits. The following ponds and streams within the Study Area were sampled as part of the 2019 surveys. • Lakes - Victoria Lake and Valentine Lake • Ponds – VALP2, VICP2, VALP3, L1, M7, M2, V1 • Streams – Outlet of VALP2, Outlet of VICP2, Outlet of VALP3, C001, Outlet of M1, Outlet of M2, inlet and outlet of V1	environments, has been characterized in this background study.
ECCC-22-ES-10	Water Quality		Chapter 7, Surface Water Resources 7.5.2.4 Water Quantity and Water Quality Modelling Reports (7A and 7B)	The Summary of Residual Effects on Change in Surface Water Quality in Chapter 7 states that "*Effects will be continuous and both short term (large storms, one-off events) and long term (seepage from waste rock piles and TMF) in duration. Effects on water quality for most of the watercourses / waterbodies assessed are considered reversible as conditions will return to baseline conditions once Project discharges cease. Irreversible effects may occur as a result of seepage from mine infrastructure (TMF and waste rock piles)".* It is for this reason presumably that effects are labelled as both "I/R" (irreversible/reversible) in Table	List the watercourses predicted to have irreversible effects and describe the long term mitigation planned for each.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				7.50: Project Residual Effects on Surface Water. In the Water Quantity and Water Quality Modelling Reports (7A and 7B), there are a number of locations where the modelled parameters decline during closure and stabilize in post-closure above CWQG-FAL (presumably irreversible). These are represented graphically in Appendix E.	
ECCC-23-ES-11	Water Quality		App 2A, WATER MANAGEMENT PLAN	The report describes the following seepage scenarios associated with the TMF: At the TMF, the low permeability of the tailings, and the presence of a synthetic liner on the upstream side of the dam will limit seepage into the groundwater and lateral seepage from the TMF to the perimeter ditches. Seepage through the dam will be low relative to average daily discharge rates at the FDP. The presence of the low permeability synthetic liner will minimize the passage of tailings water through the dam wall.	Confirm that all seepage is captured and accounted for in the water quality model.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				Shallow seepage from the south of the tailings pond was assumed to run into the polishing pond, and seepage along the remaining perimeter of the dam is collected in ditches and recycled back into the tailings pond. Some groundwater is predicted to seep from the TMF and travel to the Victoria River and tributaries. Some seepage through and under the dams at the TMF can be anticipated. It is expected that the majority of the seepage from the dams can be collected in ditches and conveyed to small sumps and, if necessary, pumped back into the TMF. The remainder would be lost to the groundwater flow regime.	
ECCC-24-ES-12	ARD/ML		Baseline Study Appendix 5: Acid Rock Drainage / Metal Leaching (ARD/ML)	The report states that "*Tailings from Leprechaun deposits, are expected to be non-PAG and have excess of NP. This excess of NP can be used to offset ARD potential of tailings from Marathon if ores from Marathon and Leprechaun deposit are processed at the same time and mixed. Therefore, the mixed tailings are not expected to*	With regard to plans to manage ARD for this project, confirm that mitigative measures (e.g. blending to maintain Neutralization Potential Ratios) to avoid ARD generation will be employed when waste rock is

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				show ARD potential, unless Marathon ore is processed separately from Leprechaun ore and resulting solids are left exposed after the closure. *Approximately 14% of the waste rock from the Marathon pit is conservatively estimated to be PAG. Blending PAG and non-PAG rock with excess of neutralization potential and/or encapsulation of PAG waste by non-PAG rock is recommended to neutralize acidity potentially generated in PAG pockets.*"	used in onsite infrastructure (e.g. road beds).
ECCC-25-ES-13	PROJECT DESCRIPTION	3.2.3. Spatial and temporal boundaries	Chapter 2	Table 2.4 states that post closure monitoring will last 6-10 years. Appendix E of Appendix 7A (TIME SERIES FOR SELECTED PARAMETERS) shows modelling for a 100 year time frame.	Clarify the temporal boundaries for the project.
ECCC-26-MSC-met-1	5(1)(a)(i) Fish and Fish Habitat 5(1)(a)(ii) Aquatic Species	Part 2, section 6.6.1 Effects of potential accidents or malfunctions	21.5.1.2 and BSA 1. Attachment 1-A.. BSA 3. 3-C.	Section 21.5.1.2 gives a lower value for an extreme rain estimate than used elsewhere in the EIS. It states: "*The EDF is defined as the most severe flood (i.e., largest design runoff event) that can be stored and does not result in an unscheduled discharge of water to the environment (Golder 2020; BSA.1. Attachment 1-A). The*	Explain the rationale for using the 75 mm as the EDF value.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				100-year, 24-hour event (75 mm of rain) was selected as the EDF, which is on top of the 25-year return period wet hydrological conditions (Golder 2020b)." The above-mentioned 75 mm value is much lower than extreme values from IDF data presented elsewhere in the EIA, including 130 mm from Stephenville (Attachment 3-C of Baseline Study Appendix 3: Water Resources).	
ECCC-27-MSC-met-2	5(1)(a)(i) Fish and Fish Habitat 5(1)(a)(ii) Aquatic Species	Part 2, section 6.6.1 Effects of potential accidents or malfunctions	21.5.1.4 and BSA 1. Attachment 1-A.	Section 21.5.1.4. Two scenarios for the dam breach and inundation assessment involve flood-induced conditions of the TMF (tailing management facility) dams by piping and overtopping failure modes, with the probable maximum flood level, obtained by routing the probable maximum precipitation (PMP). BSA 1, 1-A, 4.2.2 Breach Outflow Modelling: "*24-hr Probable Maximum Precipitation (PMP) depth used for the Stephenville Environment and Climate Change Canada (ECCC) meteorological station*	Use update PMP estimates based on updated/longer periods of record, including for stations nearer the project site.

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				(ID: 8403800) is 309 mm (Golder 2020b)". That PMP value is based on relatively few years of older data. It is lower than updated PMP estimates available from the ECCC Engineering Climate Datasets (described in Annex C) at the same location and nearby the project area. This includes Stephenville: 377 mm, Burnt Pond: 354 mm, and Buchans: 450 mm.	
ECCC-28-MSC-met-3	5(1)(a)(i) Fish and Fish Habitat 5(1)(a)(ii) Aquatic Species		Section 22.3.1.1 Existing Conditions; Section 21.5.1.2	Section 21.5.1.2 "*The accumulation of water in the TMF has been modelled for the mean and 25-year wet annual precipitation conditions. Treatment and discharge will occur for eight months a year during operation (avoiding discharges during winter months). The TMF has been sized to store the excess water during the non-discharge period, including appropriate design precipitation events*." Modelling was done for the monthly data for the wettest year based on Buchans data, but individual months could be	• Carry out modelling based on return-period estimates of extreme monthly values (e.g. 30-day durations). • Consider effects of extreme rain events occurring at time of snow melt/run-off. • Indicate the expected frequency for use of the spillway to remove untreated excess water

ID	Project Effects Link to CEAA 2012	Reference to EIS guidelines	Reference to EIS	Context and Rationale	Specific Question/ Request for Information
				more extreme. E.g. based on Buchans long-duration IDF results, a 5-year (recurrence interval) 30-day duration extreme rainfall amount is 225 mm).	during extreme events.
ECCC-29-MSC-met-3	5(1)(a)(i) Fish and Fish Habitat 5(1)(a)(ii) Aquatic Species		Section 22.3.1.1 Existing Conditions; Ch. 5	Table 22.2 lists climate stations in the project area, and indicates period of record and existence of 1981-2010 climate normals. It gives distances from the station to the project site, but those distances appear to be relative to the start of the road that leads to the mine site. The Burnt Pond station is actually closer to the mine site. The Burnt Pond 1981-2010 climate normals indicate it has a wetter climate, with a mean annual precipitation of 1434 mm, about 200 mm greater than the Buchans location. The 1971-2000 normals show a similar difference.	Revise the distances in the table to reflect the distances to the mine site. Consider using Burnt Pond climate data in addition to the Buchans data to inform the description of climate used for the project (although care is advised as the data are less complete in the years after 1996).

ANNEX 3: Advice to the proponent

Table 3: Additional advice to the proponent, such as guidance or standard advice related to your departmental mandate

ID	Reference to EIS	Context and Rationale	Advice to the Proponent
ECCC-30-CWS-07	Applicable to all project-related activities and all project phases.	This is standard advice.	Migratory birds, their eggs, nests, and young are protected under the *Migratory Birds Convention Act* (MBCA). Migratory birds protected by the MBCA generally include all seabirds (except cormorants and pelicans), all waterfowl, all shorebirds, and most landbirds (birds with principally terrestrial life cycles). The list of species protected by the MBCA can be found at https://www.canada.ca/en/environment-climate-change/services/migratory-birds-legal-protection/convention-act.html. Bird species not listed may be protected under other legislation. Under Section 6 of the *Migratory Birds Regulations* (MBR), it is forbidden to disturb, destroy, or take a nest or egg of a migratory bird; or to be in possession of a live migratory bird, or its carcass, skin, nest or egg, except under authority of a permit. It is important to note that under the MBR, no permits can be issued for the harm or disturbance of migratory birds caused by development projects or other economic activities. Furthermore, Section 5.1 of the MBCA describes prohibitions related to depositing substances harmful to migratory birds: "5.1 (1) No person or vessel shall deposit a substance that is harmful to migratory birds, or permit such a substance to be deposited,

ID	Reference to EIS	Context and Rationale	Advice to the Proponent
			in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area. (2) No person or vessel shall deposit a substance or permit a substance to be deposited in any place if the substance, in combination with one or more substances, result in a substance – in waters or an area frequented by migratory birds or in a place from which it may enter such waters or such an area – that is harmful to migratory birds." It is the responsibility of the proponent to ensure that activities are managed so as to ensure compliance with the MBCA and associated regulations. With regard to bird collisions at lit and floodlit structures or their support structures, or with other disoriented birds, ECCC generally recommends: • that Proponents avoid or restrict the time of operation of exterior decorative lights such as spotlights and floodlights whose function is to highlight features of buildings, or to illuminate an entire building. Especially on humid, foggy or rainy nights, their glow can draw birds from far away. ECCC generally advises that it is best for birds if these types of lights are turned off, at least during the migratory season, when the risk to birds is greatest and also during periods

ID	Reference to EIS	Context and Rationale	Advice to the Proponent
			when Leach's storm-petrels are dispersing from their colonies. • that lighting for the safety of the employees be shielded to shine down and only to where it is needed, without compromising safety. • that street and parking lot lighting be shielded so that little escapes into the sky and it falls where it is required. LED lighting fixtures are generally less prone to light trespass and it is generally recommended that these be considered. • that the minimum amount of pilot warning and obstruction avoidance lighting be used on tall structures (e.g. communication towers). The use of only strobe lights at night, at the minimum intensity and minimum number of flashes per minute (longest duration between flashes) allowable by Transport Canada, is generally recommended, as well as the use of the minimum number of lights possible. Avoidance of the use of solid-burning or slow pulsing warning lights at night is generally recommended. ECCC-CWS recommends that a site monitoring plan be developed for the migratory bird breeding season as well as the spring and fall migration periods and implemented while floodlights are being used during nighttime hours. A site monitoring plan could include protocols such as dusk and dawn site inspections to

ID	Reference to EIS	Context and Rationale	Advice to the Proponent
			look for migratory birds that may have landed on site, and/or inclusion of migratory bird searches into standard occupational health and safety daily inspections, etc. Should puffins and/or storm-petrels become stranded on the project site, both during construction and operations phases, the proponent is recommended to adhere to Procedures for handling and documenting stranded birds encountered on infrastructure offshore Atlantic Canada (attached; it should be noted that this reference document has been developed for offshore vessels, and may require modification for use on an onshore facility. ECCC-CWS should be notified if bird stranding incidents occur. Puffins should be treated in the same manner as storm-petrels). A bird handling permit will likely be required to implement the instructions in this reference document and the proponent must be advised that such a permit would have to be in place prior to the initiation of proposed activities. Please note that MBCA permit applications can be obtained from ECCC-CWS via email at Permi.atl@ec.gc.ca. If any migratory birds are found stranded on-site, the proponent should immediately contact ECCC-CWS for further instructions. The contact is Sabina Wilhelm (ECCC-CWS Marine Issues Biologist) at sabina.wilhelm@ec.gc.ca or 709-764-1957.

ID	Reference to EIS	Context and Rationale	Advice to the Proponent
ECCC-31-CWS-08	Section 2.4.1 Section 2.7.4 Section 10.4 Section 10.5	The proponent proposes to conduct “nest search surveys” or “nest sweeps” in the event that vegetation clearing is required during the general nesting period for birds in the project area.	Migratory bird nests can be found in a wide variety of habitats and locations. Depending on the species, nests may be found at many heights in trees, in tree cavities, in shrubs, on the ground (including in hayfields, crops and pastures), on cliffs, in burrows, in stockpiles of overburden from mines, in quarry banks, within wetlands, and on human-made structures such as bridges, ledges, and gutters. It is difficult to locate most nests. Nest sites are often hidden and adult birds avoid approaching their nests in a manner that would attract predators to their eggs or young. Moreover, the amount, and complexity of habitat to be searched often limits the success of surveys intended to locate all active nests. The nests of a few species are easier to locate, particularly those in isolated trees, on human-made structures and/or in colonies. To determine the likelihood that migratory birds, their nests or eggs are present in a particular location, use a scientifically sound approach that considers the available bird habitats, which migratory bird species are likely to be encountered in such habitats, and the time periods when they would likely be present. This will help you plan work activities to avoid having an impact on nesting birds. If further investigation is required to determine the presence of breeding birds, consider conducting an area search for evidence of nesting (e.g.,

ID	Reference to EIS	Context and Rationale	Advice to the Proponent
			presence of birds in breeding through observation of singing birds, alarm calls, distraction displays) using non-intrusive search methods to prevent disturbance to migratory birds. In the case of songbirds, for example, “point counts” (a technique to locate singing territorial males) may provide a good indication of the present of nests of these birds in an area. Please contact Environment and Climate Change Canada’s Canadian Wildlife Service office in your region for further technical information about investigation methods for non-song bird species (notably, waterfowl, waterbirds, and shorebirds). In most cases, nest search techniques are not recommended because, in most habitats, the ability to detect nests remains very low while the risk of disturbing active nests is high. Flushing birds increase the risk of predation of the eggs or young, or may cause the adults to abandon the nests or the eggs. Therefore, except when the nests searched are known to be easy to locate without disturbing them, active nest searches are generally not recommended; they have a low probability of locating all nests, and are likely to cause disturbance to nesting birds. In many circumstances, harm is likely to still occur during industrial or other activities even when active nest searches are conducted prior to these activities.

ID	Reference to EIS	Context and Rationale	Advice to the Proponent
			In some cases, nest surveys may be carried out successfully by skilled and experienced observers using appropriate methodology, and in the event that activities would take place in simple habitats (often in man-made settings) with only a few likely nesting spots or a small community of migratory birds. Examples of simple habitats include: • An urban park consisting mostly of lawns with a few isolated trees; • A vacant lot with few possible nest sites; • A previously cleared area where there is a lag between clearing and construction activities (and where ground nesters may have been attracted to nest in cleared areas or in stockpiles of soil, for instances); or • A structure such as a bridge, a beacon, a tower or a building (often chosen as a nesting spot by robins, swallows, phoebes, Common Nighthawk, gulls and others). Nest searches can also be considered when looking for: • Conspicuous nest structures (such as nests of Great Blue Herons, Bank Swallows, Chimney Swifts); • Cavity nesters in snags (such as woodpeckers, goldeneyes, nuthatches); or • Colonial-breeding species that can be located from a distance (such as a colony of terns or gulls).

ID	Reference to EIS	Context and Rationale	Advice to the Proponent
ECCC-32-CWS-09	Section 21.5.1 Section 21.5.3	Section 21.5 describes scenarios and response measures to minimize impacts of these events. The proponent identifies approaches to minimize impacts of accidental events, including: i) preparation of site-specific accident prevention, emergency response and contingency plans with tactical plans, ii) adoption of an incident command system (ICS), and iii) the conduct of annual emergency response exercises under the ICS system. Where there is a likely risk of direct (injury or mortality) or indirect (effects on habitat) impacts to avifauna, Wildlife Response Plans should be considered as an aspect of contingency plans and incorporated within the ICS response system.	Wildlife Response Plans (WRP) and avifauna surveys should be incorporated into emergency response contingency plans for scenarios that may impact avifauna directly (injury or mortality) or indirectly (impacts to habitat). In particular, WRP and associated surveys should be considered for TMF Malfunctions (Section 21.5.1) and Fuel and Hazardous Materials Spills (Section 21.5.3), especially for worst-case scenarios described with impacts surface water (e.g. Victoria River, surrounding wetlands, and lakes). ECCC-CWS has guidance documents available to support emergency response contingency planning for wildlife: • Guidelines for effective wildlife response plans • Technical guidance and protocols for migratory bird surveys for emergency response Guidelines for the capture, transport, cleaning and rehabilitation of oiled wildlife.
ECCC-33-CWS-10	Section 10.4 Section 10.5	The Project will require the construction of transmission lines and telecommunications infrastructure. This is standard advice regarding transmission lines and telecommunication structures.	It is well documented that transmission lines and telecommunication infrastructure can provide a significant risk of bird mortality through both electrocution and bird strikes. Other concerns include the effects of electromagnetic radiation, habitat loss and habitat fragmentation on bird populations. There are several factors that determine the potential impact to birds, including transmission line siting, local topography, habitat, weather conditions, transmission pole design, and line

ID	Reference to EIS	Context and Rationale	Advice to the Proponent
			configuration, to name a few. In addition, different species groups can have differing sensitivities, and may be impacted during feeding, breeding, courtships or migration. Though the issues are complex, many can be mitigated through proper planning and project design. To reduce the risk of disturbance or harm to migratory birds related to the development of transmission and telecommunication infrastructure, ECCC-CWS recommends implementation of the following beneficial management practices: • An evaluation of the risk of collision by birds in the area (based on birds' use of the area surrounding the lines) should be completed; • Measures to avoid bird collisions and electrocution, including line placement and orientation, marking of lines (e.g. bird flight diverters), and design of structures (e.g. it is preferable to have a horizontal rather than vertical conductor configuration) should be considered during the transmission line design phase; • Markers (e.g. bird flight diverters) should be placed on the lines running across the project area to provide visual cues to birds and help reduce the incidence of bird strikes; • When selecting a Right of Way (RoW), the following measures should be considered:

ID	Reference to EIS	Context and Rationale	Advice to the Proponent
			○ Relocated RoW should be situated so as to be contiguous with existing RoWs, to the extent feasible. ○ The width/size of RoWs, temporary and permanent facilities, work areas, and access roads should be minimized, to the extent feasible. ○ Old-growth, mature, and interior forest habitat for migratory birds should be avoided. ○ Wetlands should be avoided. • A migratory bird monitoring plan should be developed to evaluate the effectiveness of these measures. • The proponent should contact ECCC-CWS for guidance, particularly if sensitive areas in the project area are detected through wetland inventories, and/or waterfowl or landbird surveys. ECCC-CWS can also provide guidance on the development of monitoring and/or management plans, as necessary
ECCC-34-ES-13	Chapter 2	In section 2.6, the proponent has outlined its obligations for Closure and Rehabilitation related to the Newfoundland and Labrador *Mining Act.* The proponent states that *"Marathon will be required to register closure of the mine as an undertaking subject to assessment under the NL Environmental Protection*	The proponent is reminded that there are also obligations under the MDMER if the proponent chooses to become a "recognized closed mine" (section 32). In general, effluent from Recognized Closed Mines may be subject to the General Prohibition of the deposit of deleterious substances of the Fisheries Act (Section

ID	Reference to EIS	Context and Rationale	Advice to the Proponent
		Act" followed by "an application to relinquish the property back to the Crown".	36(3)) rather that the MDMER effluent limits which could affect the design of project components.
ECCC-35-ES-14	Appendix 2A Water Management Plan	The proponent has stated that the proposed locations for water quality monitoring network are preliminary, and will be reviewed and modified as design proceeds in consultation with regulators, and in accordance with permits and approvals monitoring.	ECCC looks forward to future discussions on the details of monitoring network design (locations, parameters, frequency, etc) for surface water and groundwater quality monitoring programs at the construction, operational and closure stages of the project.
ECCC-36-ES-15	SUMMARY, Table E.1	The table states the requirements for MDMER schedule 2 amendments. "For projects requiring the use of natural water bodies frequented by fish for the disposal of mine waste, including tailings and waste rock and for the management of process water, the MDMER would need to be amended to add the affected water bodies to Schedule 2 to designate them as tailings impoundment areas."	It is the responsibility of the proponent to demonstrate that the overprinting of such areas by mine waste, including tailings and waste rock and for the management of process water, will not negatively affect any waters frequented by fish directly or indirectly.
ECCC-37-MSC-1A	Ch. 5, 7, 21, 22, BSA 1, BSA 3	There are no short-duration IDF (Intensity-Duration-Frequency) stations in the immediate vicinity of the project area, so the EIS relies on more remote IDF stations in particular Stephenville (with 100-yr return period (r.p,), 24-hr rainfall extreme of 130 mm). ECCC's Engineering Climate Services Unit (EGSU) (ec.scg-ecs.ec@canada.ca) has developed long-duration (one-day to 30-day) duration IDF extreme rainfall estimates based on long period of record daily data (adjusted for the fixed climate day). These include PMP	Consider using long-duration IDF results available from ECCC's climate website Engineering Climate Datasets page (https://climate.weather.gc.ca/prods_servs/engineering_e.html) (click on Intensity-Duration-Frequency (IDF) Files, then on the folder IDF_Additional_Additionnel), for stations near the project area, as a way to confirm or improve on results from further away. This would also allow use of multi-day duration estimates for modelling/design

ID	Reference to EIS	Context and Rationale	Advice to the Proponent
		(probable maximum precipitation) estimates. For example the 100-year r.p., 1-day extreme rainfall estimates based on data from Buchans and Burnt Pond are 137 mm and 128 mm, respectively.	where impacts from such events could be significant (eg such as Hurricane Igor, a 2-day extreme rain event). For example the 100-year r.p., 3-day rainfall estimates from Buchans, Burnt Pond, and Stephenville are 150, 170, and 148 mm, respectively, significantly higher than the 1-day duration estimates for the same return period.