Impact Assessment Agency of Canada | Agence d'évaluation d'impact du Canada

Prairie and Northern Region
Canada Place
Suite 1145, 9700 Jasper Avenue
Edmonton, Alberta T5J 4C3

Région des Prairies et du Nord
Place Canada
Pièce 1145, 9700 rue Jasper
Edmonton (Alberta) T5J 4C3

August 30, 2021

Colin Webster
Vice President, Sustainability and External Affairs
Brookfield Place, 181 Bay Street, Suite 3910
Toronto, ON M5J 2T3

Sent via email: CWebster@alamosgold.com

SUBJECT: Technical Review of Round 1 Information Request Responses for the Lynn Lake Gold Project – Round 2, Package 1 Information Requests

Dear Colin Webster:

The Impact Assessment Agency of Canada (the Agency) with input from federal authorities, Indigenous groups, and the public, is conducting a technical review of the responses to Round 1 Information Requests (IRs) submitted by Alamos Gold Inc. on May 25, 2021, July 9, 2021, and August 5, 2021 for the Lynn Lake Gold Project (the Project).

Upon review of the information, the Agency determined that there are several areas where information is still required to determine whether the Project is likely to cause significant adverse environmental effects and to inform the Agency's preparation of the Environmental Assessment (EA) Report under the *Canadian Environmental Assessment Act, 2012* (CEAA 2012). Attached is the first package of Round 2 IRs. The Agency is providing this first package to enable Alamos Gold Inc. to continue gathering essential information in a timely manner. A second IR package will be provided to Alamos Gold Inc. to address the remaining information requirements.

All submissions with respect to the technical review of Alamos Gold Inc.'s Round 1 IR responses will be made publicly available on the Canadian Impact Assessment Registry (Reference #80140). Alamos Gold Inc. is encouraged to review all of the comments submitted as they include detailed information and advice to support Alamos Gold Inc. in responding to the Round 2 IRs.

When responding to Round 2 IRs, the Agency requests that Alamos Gold Inc.:

- consider the context and rationale for the required information for every question;

- present thorough discussions of any areas of uncertainty, applying a precautionary approach, given that some studies and plans may not be complete at this time;
- where uncertainty remains, provide clearly defined, detailed follow-up program measures, including proposed further mitigation measures; and
- present complete or summarized information and discussion within the IR responses, rather than limited responses to references to applicable reports.

In accordance with CEAA 2012, the time taken by Alamos Gold Inc. to provide the required information is not included in the legal timeframe within which the Minister of Environment and Climate Change must make their EA decision for the Project. Issuance of this IR Package pauses the timeline at day 142 of 365.

The Agency welcomes the opportunity to discuss the outcome of this review with Alamos Gold Inc. and provide further advice on how best to address the information required to move forward with the assessment process. If you have any questions, please contact me at chelsea.fedrau@iaac-aeic.gc.ca or 780-246-7126.

Sincerely,

<original signed by>

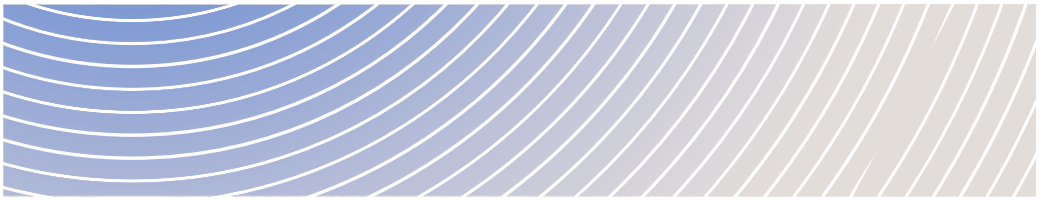
Chelsea Fedrau, Project Manager
Impact Assessment Agency of Canada
Prairie and Northern Region

Enclosures (1):

- Lynn Lake Gold Project - Technical Review - Round 2, Package 1 Information Requests

c.c.: Michael Raess, Senior Environmental and Community Relations Coordinator, Alamos Gold Inc.
Karen Mathers, Project Manager, Stantec Consulting Ltd.

Lynn Lake Gold Project



TECHNICAL REVIEW INFORMATION REQUESTS – ROUND 2, PACKAGE 1

August 30, 2021

Impact Assessment Agency of Canada | Agence d'évaluation d'impact du Canada

Canada

Table of Contents: Information Requests by Topic

List of Acronyms and Short Forms

Acronym or Abbreviation	Definition
AEMP	Aquatic Environmental Management Plan
Agency	Impact Assessment Agency of Canada
ARD	Acid Rock Drainage
CEAA 2012	*Canadian Environmental Assessment Act, 2012*
COPC	Contaminants of potential concern
CWQG-FAL	*Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life*
DFO	Fisheries and Oceans Canada
ECCC	Environment and Climate Change Canada
EIS	Environmental Impact Statement
EIS Guidelines	Environmental Impact Statement Guidelines
ESCP	Erosion and Sediment Control Plan
ETMA	East Tailings Management Area
HC	Health Canada
HHRA	Human Health Risk Assessment
HSI	Habitat suitability index
IR	Information Request
LAAs	Local Assessment Areas
MCCN	Mathias Colomb Cree Nation
MDMER	*Metal and Diamond Mining Effluent Regulations*
mg/L	Milligrams per litre
MI	Manitoba Infrastructure
ML	Metal leaching
MMF	Manitoba Metis Federation
MRSA	Mine Rock Storage Area
MWQSOG	*Manitoba Water Quality Standards, Objectives, and Guidelines*
PBCN	Peter Ballantyne Cree Nation
PDA	Project Development Area
POPCs	Parameter of potential concern
PR 391	Provincial Road 391
Project	Lynn Lake Gold Project
Proponent	Alamos Gold Inc.
RAA	Regional Assessment Area
SDFN	Sayisi Dene First Nation
SWMMP	Surface Water Management and Monitoring Plan
TMF	Tailings Management Facility
TSS	Total suspended solids
US EPA	United States Environmental Protection Agency
VC	Valued component

Information requests are detailed in the following format:

Reference IR#	Expert Dept. or Nation	EIS Guidelines Reference	EIS Reference	Context and Rationale	Information Requests
Topic or Valued Component (e.g. Project Overview; Environmental Assessment Methodology; Fish Habitat; etc.)					
Information Request (IR) Round 2: IAAC-R2-XX	Nation or Department Name e.g. Impact Assessment Agency of Canada	Reference the section(s) of the EIS Guidelines that relate to the comment, concern, or information request. e.g. EIS Part 2, Section 7.1.5 Fish and Fish Habitat	Reference the section(s) of the EIS that speaks to the comment, concern, or information request.	Identify what the EIS Guidelines require and/or the link to the *Canadian Environmental Assessment Act*, *2012* (section 5 or section 19). Briefly identify what the EIS presents and the information gap, inconsistency, or challenge. Explain why filling that information gap is necessary to understanding potential adverse effects to areas of federal jurisdiction or impacts to rights.	Describe the information required. Focus on the essential information, explanation, or justification required.

Information Requests Round 2, Package 1 (IAAC-R2-XX):

Reference IR#	Expert Dept. or Nation	EIS Guidelines Reference	EIS Reference	Context and Rationale	Information Requests
Mitigation Measures, Follow-up and Monitoring, and Adaptive Management					
IAAC-R2-01		1 Introduction	Appendix 20B, Table 20B Summary of Key Mitigation, Commitments and Follow-up and Monitoring	The Environmental Impact Statement (EIS) Guidelines require Alamos Gold Inc. (the Proponent) to include a list of key mitigation measures that the Proponent proposes to undertake in order to avoid or minimize any adverse environmental effects of the Lynn Lake Gold Project (the Project). In the EIS, the Proponent provides a *Summary of Key Mitigation, Commitments and Follow-up and Monitoring*. An updated table outlining key mitigation measures, commitments, and follow-up and monitoring measures committed to must be provided. This information is required to support the Impact Assessment Agency of Canada's (the Agency) understanding of potential Project effects to areas of federal jurisdiction as defined in section 5 of the *Canadian Environmental Assessment Act, 2012* (CEAA 2012).	a) Provide an updated table outlining key mitigation measures, commitments, and follow-up and monitoring measures committed to for the Project.
IAAC-R2-02	Environment and Climate Change Canada – Technical Review of Round 1, Package 1 Information Request Responses Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information	8.0 Follow-Up and Monitoring Programs 8.1. Follow-up program 8.2 Monitoring	23.5 Environmental Monitoring and Management Plans Federal IR Responses, Round 1, Package 1, Response to IAAC-39	The EIS Guidelines require the Proponent to describe follow-up and monitoring programs designed to verify the accuracy of the effects assessment and to determine the effectiveness of the measures implemented to mitigate the adverse effects of the Project. In its response to IAAC-39, the Proponent provided details of the following plans for the Project: • Emergency Response and Spill Prevention and Contingency Plan; • Mine Rock Management Plan; • Groundwater Management and Monitoring Plan; • Surface Water Management and Monitoring Plan; • Waste Management Plan; • Erosion and Sediment Control Plan; and • Environmental Effects Monitoring Plan. Insufficient information is provided to determine whether the proposed plans will be sufficient to verify the accuracy of the effects assessment and	a) Provide details of the Emergency Response and Spill Prevention and Contingency Plan, Mine Rock Management Plan, Groundwater Monitoring Plan, Surface Water Monitoring and Management Plan, Waste Management Plan, Erosion and Sediment Control Plan; and Environmental Effects Monitoring Plan for the Project, including: i. the parameters to be measured/monitored; ii. study design; iii. planned protocols; iv. monitoring locations; v. the schedule of monitoring activities; vi. contingency measures to be implemented; vii. the thresholds or triggers that will be used to determine when to implement contingency measures; and viii. plans for reporting the results of the follow-up and monitoring program to federal and provincial

	Request Responses Peter Ballantyne Cree Nation - Technical Review of the EIS and Round 1 Information Requests Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses			to determine the effectiveness of mitigation measures. Further details are required regarding the parameters to be measured/monitored, study design, planned protocols, monitoring locations, schedule of monitoring activities, contingency measures to be implemented, the thresholds or triggers that will be used to determine when to implement contingency measures, and plans for reporting the results of the follow-up and monitoring program to federal and provincial regulators and Indigenous peoples, including the timing and frequency of reports. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other areas federal jurisdiction listed under section 5 of CEAA 2012.	regulators and Indigenous peoples, including the timing and frequency of reports.
IAAC-R2-03	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses Peter Ballantyne Cree Nation - Technical Review of the	2.3 Engagement with Indigenous groups 4.2.2 Community knowledge and Aboriginal traditional knowledge 8 Follow-up and Monitoring Programs	Federal IR Responses, Round 1, Package 1 Federal IR Responses, Round 1, Package 2 Federal IR Responses, Round 1, Package 3	With respect to follow-up and monitoring programs, the EIS Guidelines require the Proponent to describe proposed engagement with Indigenous nations in the planning and implementation of follow-up and monitoring. The Proponent is also required to make reasonable efforts to integrate Aboriginal traditional knowledge into the assessment of environmental effects and provide evidence of all efforts. In response to several Round 1 Information Requests (IRs) on various topics, the Proponent indicates that monitoring plans and the Closure Plan for the Project will be developed prior to construction and that Indigenous nations will be engaged regarding the design and implementation of Project follow-up and monitoring programs, including the evaluation of program results. Indigenous nations express concerns that details of how the Proponent plans to provide an opportunity and support for Indigenous nations to participate in the development and implementation of the various monitoring programs have not been provided, including a description of how Indigenous traditional knowledge will be considered and integrated. The Manitoba Metis Federation (MMF) also notes that it is unclear how the Proponent will involve Indigenous nations in the	a) Provide details regarding Proponent plans to engage with all Indigenous nations in the development and implementation of follow-up and monitoring plans and the Closure Plan for the Project, including the form of engagement (e.g. document sharing, site visits, formation of working groups, etc.) and timing for engagement. b) Describe how the Proponent will ensure that comments, concerns, and traditional knowledge from Indigenous nations will be reflected and considered in the Project design, criteria developed, the Closure Plan, and follow-up and monitoring plans, including the selection of monitoring locations. c) Describe mechanisms that will be instituted to allow land users, including Indigenous peoples, to report any concerns with respect to the Project and its effects during all phases.

	EIS and Round 1 Information Requests Chemawawin Cree Nation - Technical Review of Round 1 Information Requests Sayisi Dene Frist Cree Nation - Technical Review of Round 1 Information Requests Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses			development and finalization of the Closure Plan for the Project to ensure that the Project site is returned to a safe and productive state post-closure that is supportive of traditional use and the exercise of rights. The Proponent also indicates throughout the EIS and in its responses to Round 1 IRs that Indigenous nations will continue to be engaged throughout the life of the Project on various topics including the development of criteria, such as water quality criteria, and Project design. It is unclear how the Proponent will ensure that comments, concerns, and traditional knowledge from Indigenous nations will be reflected in the Project design, criteria developed for the Project, and follow-up and monitoring plans. This information is required to support the Agency's understanding of potential Project effects to the environment on Indigenous peoples and potential impacts to rights. **See Annex I for related advice.**	
IAAC-R2-04	Impact Assessment Agency of Canada Environment and Climate Change Canada – Technical Review of	4.3 Study strategy and methodology 8 Follow-up and Monitoring Programs	Federal IR Responses, Round 1, Package 1 Federal IR Responses, Round 1, Package 2	The EIS Guidelines require the Proponent to describe changes to groundwater, surface water, and fish and fish habitat as a result of the Project, and, where there is uncertainty about effects outcomes, the Proponent is required to describe the follow-up and monitoring program that will be implemented, as well as adaptive management measures that will be applied. In response to several Round 1 IRs on various topics, the Proponent references adaptive management plans that will be developed prior to construction and that will define quantitative trigger and threshold	a) For each adaptive management plan referenced in the EIS and in the responses to Round 1 IRs, describe: i. the parameters to be included in the adaptive management plan (i.e. parameters to be monitored); ii. the thresholds or triggers that will be used to determine when to implement adaptive management measures. Where applicable, the quantitative value of thresholds or triggers should be provided; and

	Round 1, Package 1 Information Request Responses Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Requests Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses Peter Ballantyne Cree Nation - Technical Review of the EIS and Round 1 Information Requests Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and		Federal IR Responses, Round 1, Package 3	concentrations for relevant parameters. Details have not been provided regarding what specific parameters will be measured, what thresholds will be used to determine when to implement adaptive management measures, or what those measures will be. Mathias Colomb Cree Nation (MCCN) notes concerns that it is unclear how the Proponent will involve and engage Indigenous nations in the development of adaptive management plans, including the development of threshold concentrations, monitoring plans, and adaptive management responses. This information is required to support the Agency's understanding of potential effects to areas of federal jurisdiction as defined in section 5 of CEAA 2012.	iii. the adaptive management measures that will be implemented, are being considered, or are standard industry practices. b) Discuss how each adaptive management plan referenced in a) would support timely identification and mitigation of Project-related changes to VCs. c) Describe how the Proponent plans to provide an opportunity for all Indigenous nations to be engaged in the development and implementation of adaptive management plans, including the development of threshold concentrations, monitoring plans, and adaptive management responses, including how Indigenous knowledge will be considered and incorporated into each plan.

	2 Information Request Responses				
Purpose of the Project					
IAAC-R2-05	Impact Assessment Agency of Canada	2.1 Purpose of the Project	24.0 Benefits of the Project Federal IR Responses, Round 1, Package 1, Response to IAAC-01	The EIS Guidelines require the Proponent to describe the predicted environmental, economic, and social benefits of the Project, which will be considered in assessing the justifiability of any significant adverse residual environmental effects identified. In its response to IAAC-01, the Proponent notes that the Project will result in positive environmental effects, as it will be located in brownfield areas that have been previously disturbed by historical mining activities and were not rehabilitated to modern day standards. It is unclear which VCs the positive environmental effects due to eventual reclamation of the Project will apply to, the magnitude and duration of the potential positive effects, or how the potential positive effects compare with any potential adverse effects to VCs identified (i.e. whether the effect will be net positive or negative). This information is required to support the Agency's understanding of the potential benefits of the Project, which will be considered in assessing the justifiability of any significant adverse environmental effects identified.	a) Clarify which VCs may experience potential positive environmental effects of the Project due to eventual reclamation of the Gordon and MacLellan sites, the nature of the potential effects, and the anticipated magnitude and duration of effects. i. Provide a comparison of the potential positive effects for each VC with the anticipated adverse effects identified and describe whether the Project is anticipated to result in net positive or net negative effects for each VC.
IAAC-R2-06	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses	2.1 Purpose of the Project	24.0 Benefits of the Project Federal IR Responses, Round 1, Package 1, Response to IAAC-01	The EIS Guidelines require the Proponent to describe the predicted environmental, economic, and social benefits of the Project, which will be considered in assessing the justifiability of any significant adverse residual environmental effects identified. The Proponent is also required to describe how changes to the environment caused by the project will affect the socio-economic conditions of Indigenous peoples. In its response to IAAC-01, the Proponent identifies the economic benefits of the Project in terms of private sector benefits, tax revenue benefits, and business benefits, and indicates that employment and income effects may not be equitably realized by all members of the population within the Local Assessment Areas (LAAs) (e.g. non-Indigenous males employed in construction and mining with trades training may realize a disparate share of total local employment). Indigenous nations express concerns that it is unclear to what extent the economic benefits of the Project, including	a) Describe the extent to which Indigenous peoples and/or Indigenous-owned businesses are anticipated to realize the economic benefits of the Project, including employment, income, and business benefits, and how the Proponent's hiring policies and procurement and contract awarding procedures may influence this. b) Describe the level of uncertainty with respect to the predictions of economic benefits of the Project. i. Describe the assumptions that were used to derive predictions regarding potential economic benefits of the Project and comment on how those assumptions may influence the uncertainty of predictions.

	Chemawawin Cree Nation - Technical Review of Round 1 Information Requests			employment, income, and business benefits, will be realized by Indigenous peoples and/or Indigenous-owned businesses. This information is required to support the Agency's understanding of potential Project effects to the socio-economic conditions of Indigenous peoples.	
Project Design					
IAAC-R2-07	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses	2.2 Alternative means of carrying out the project 3.1 Project components 6.6.2 Effects of the environment on the project 6.6.1 Effects of potential accidents or malfunctions 6.6.2 Effects of the environment on the project	2.9 Alternative Means for Carrying out the Project 22.5.1 Tailings Management Facility Malfunction 22.5.1.1 Project Design and Safety Measures to Reduce Environmental Effects 22.4.1 Tailings Management Facility Malfunction Federal IR Responses, Round 1, Package 1, Response to IAAC-06	The EIS Guidelines require the Proponent to consider potential environmental effects of alternative means of carrying out the Project and describe Project components, including water management facilities proposed to control, collect, and discharge surface drainage and groundwater seepage to the receiving environment. The Proponent is also required to describe how the failure of certain works caused by exceptional natural events could cause major effects and account for how local conditions and natural hazards, such as severe and/or extreme weather conditions and external events, could adversely affect the Project and, in turn, result in effects to the environment. In the EIS and its response to IAAC-06, the Proponent indicates that the Tailings Management Facility (TMF) will be equipped with an emergency spillway to allow for safe routing of precipitation to prevent dam overtopping, and that the accumulation of water in the TMF was modelled assuming average annual precipitation conditions over the life of the mine. No discharge from the TMF will be required during normal operation, however, should discharge from the TMF be required, it will be treated to meet applicable federal and provincial regulatory requirements prior to discharge to the environment. Information on the design of the emergency spillway, including its capacity and other features, has not been provided. It is also unclear what magnitude of precipitation event (e.g. 1:25 year, 1:100 year, etc.) would result in overtopping of the TMF and require usage of the emergency spillway, or the anticipated frequency with which the emergency spillway may need to be used. Further, should treatment of effluent discharges from the TMF not be possible (e.g. extreme weather events or if water volumes from precipitation far exceed the capacity of the TMF), it is unclear where water will be directed to from the emergency spillway, the potential receptors in that location, or what effects to VCs are anticipated due to the release of untreated effluent.	a) Provide information regarding the design of the emergency spillway, including its capacity, design schematics, and other relevant features, including how water will be retained in the spillway to allow treatment and testing prior to release. b) Describe the magnitude of precipitation events, storm events, and/or accident/malfunction scenarios that may result in overtopping of the TMF and require use of the emergency spillway. Based on this, predict the anticipated frequency of use of the emergency spillway. Ensure that any predicted changes to precipitation or storm patterns due to climate change are considered. c) Describe any effects to VCs as a result of release of treated effluent discharges from the emergency spillway to the environment, including effects related to changes in surface water quality and quantity. i. If the release of water from the emergency spillway may result in inundation of wetlands or other waterbodies, describe how this may influence mercury methylation (refer to IAAC-R2-17 for further details). d) Should treatment of effluent discharges from the TMF not be possible in an emergency or extreme precipitation/storm event scenario, describe: i. where effluent discharges from the TMF will be directed to from the emergency spillway and how discharges to the emergency spillway will be minimized; ii. the potential receptors and/or VCs in that area;

				This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by accidents and malfunctions.	iii. the anticipated effects to receptors and/or VCs in the area due to the release of untreated effluent; and iv. mitigation or contingency measures that will be implemented to reduce or eliminate anticipated effects to receptors and/or VCs. e) Should treatment of effluent under non-emergency scenarios not be effective, describe alternative measures to dispose of effluent discharge from the TMF.
IAAC-R2-08	Impact Assessment Agency of Canada Peter Ballantyne Cree Nation - Technical Review of the EIS and Round 1 Information Requests	3.1 Project components 4.1 Guidance 6.1.5 Groundwater and Surface Water	2.9 Alternative Means for Carrying out the Project 2.3 Project Activities and Components Maps 2-1 and 2-2 Appendix A, Attachment IAAC-14 Federal IR Responses, Round 1, Package 1, Response to IAAC-06	The EIS Guidelines require the Proponent to describe Project components, including water management facilities proposed to control, collect, and discharge surface drainage and groundwater seepage to the receiving environment. In its response to IAAC-06, the Proponent indicates that mine water, site runoff, seepage water, and contact water from the Gordon and MacLellan sites will be discharged to the western basin of Farley Lake and the Keewatin River, respectively, following storage in various settling and storage ponds for treatment and removal of suspended solids. Water from both sites will be transported via buried pipelines. Details regarding the infrastructure that will be used to transport, treat, and discharge water from the Gordon and MacLellan sites, including the location of this infrastructure, has not been provided. The Proponent also notes in response to IAAC-06 that during permitting, a mixing zone will be defined for the Keewatin River downstream of the stilling basin, the downstream extent of which will be where water quality will meet federal and/or provincial water quality guidelines for the protection of aquatic biota. Within the mixing zone, potential exceedances of federal and/or provincial guidelines are permissible if effluent is not acutely lethal to fish and aquatic biota. It is unclear whether the Proponent anticipates that water within the mixing will exceed federal and/or provincial guidelines and, if so, whether the quality of water will be safe for aquatic biota and fish. Further, Indigenous peoples may use the area of the mixing zone for traditional and cultural practices and/or the exercise of rights; even if water quality is within approved limits and safe for consumption and use, there may still be effects to Indigenous peoples	a) Provide maps and/or diagrams showing the location and spatial extent of the infrastructure and ponds that will be used to transport, treat, and discharge water from the Gordon and MacLellan sites. b) Provide maps and/or diagrams depicting the location and spatial extent of the mixing zone referenced in IAAC-06, if this information is available. If this information is not available, indicate when this information will be provided and how it will inform the environmental assessment. c) Clarify whether water within the mixing zone is anticipated to exceed federal and/or provincial water quality guidelines. i. If so, describe which parameters are expected to exceed guidelines, the magnitude of this exceedance, the expected duration of exceedance, and whether effluent is expected to be acutely lethal to aquatic biota and fish. Provide evidence to support these conclusions, which may include modelling results, literature sources, etc. ii. If effluent may be acutely lethal to fish and aquatic biota, describe alternate methods for disposal of effluents from the Gordon and MacLellan sites. d) Describe potential effects to Indigenous peoples, including traditional and cultural practices and the exercise of rights, due to real or perceived effects to surface water quality due to effluent discharges from the Project to Farley Lake,

				through avoidance of the area due to perceived effects to water quality from the Project. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by real or perceived Project effects to surface water quality.	the Keewatin River, and any other waterbody where Project effluent will be discharged.
IAAC-R2-09	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses	3.1 Project Components 3.2 Project Activities 2.2. Alternative means of carrying out the project 3.1. Designated project	Section 3.1.1 Haulage Capacity Considerations Appendix A, Map 6 6.4 Assessment of Residual Environmental Effects on Atmospheric Environment 6.4.1.2 Project Pathways Federal IR Responses, Round 1, Package 1, Response to IAAC-11	The EIS Guidelines require the Proponent to describe the activities that will be carried out during each phase of the Project, including sufficient information to predict environmental effects. The Proponent is also required to include a schedule, including time of year, frequency, and duration for all Project activities. In its response to IAAC-11, the Proponent provides tables outlining the predicted changes in traffic along two segments of Provincial Road 391 (PR 391) during Project construction, operation, and decommissioning/closure. The Proponent also notes that hauling traffic estimates are based on a conservative assumed haulage rate of 4,100 tonnes per day (seven truckloads per hour for 20 hours per day for ore transportation between the Gordon and MacLellan sites) during the first six years of mining operations. Clarity is required regarding the data presented in the Proponent's response, including whether the data presented in Tables 8 to 11 represents one way (only full trucks) or round trips (full and empty truck traffic) between the Gordon and MacLellan sites. Empty haul trucks returning to the Gordon site may also contribute to air and greenhouse gas (GHG) emissions, and to the traffic impacts on PR 391. In the *Lynn Lake Gold Project: Road Operation Traffic Study* report appended to the response to IAAC-11, the Proponent notes that the report has been updated. MCCN notes concerns that it is unclear whether the data presented in the report is the same data that was used to inform the assessment of effects of Project-related traffic to VCs presented in the EIS. If the data has been updated since submission of the EIS, revisions may be required to the assessment of effects to VCs. This information is required to support the Agency's understanding of potential effects to migratory birds, Indigenous peoples, and other VCs that may be affected by changes in air quality.	a) Describe whether the data presented in Tables 8 to 11 represents one way or round trips between the Gordon and MacLellan sites. i. If only one way trips were considered, provide updated tables that reflect round trips in vehicles per day, vehicles per hour, and loads per day. Provide revised estimates of haul traffic atmospheric emissions and revise the assessment of effects of Project-related truck traffic to VCs, to account for round trips and discuss how the conclusions presented with respect to the significance of effects to VCs may have changed. ii. If new or worsened effects to VCs are predicted, describe mitigation measures that will be implemented to address these effects. b) Clarify whether the data presented in the *Lynn Lake Gold Project: Road Operation Traffic Study* report is the same as the traffic data that was used to inform the assessment of effects of Project-related traffic to VCs presented in the EIS or whether the data has been updated since submission of the EIS. i. If the data has been updated, revise the assessment of effects of Project-related traffic to VCs to consider the updated data and discuss how the conclusions presented with respect to the significance of effects to VCs may have changed. ii. If new or worsened effects to VCs are predicted, describe mitigation measures that will be implemented to address these effects.

IAAC-R2-10	Impact Assessment Agency of Canada Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	3.1 Designated project 3.2.1 Changes to the environment 6.1.2 Geology and geochemistry 3.2.1 Site preparation and construction	2.3.2.2 Other Waste Storage and Management 2.4.1 Borrow Sources 5.2.5.4 Soils Federal IR Responses, Round 1, Package 1, Response to IAAC-13	The EIS Guidelines require the Proponent to describe borrow areas and borrow materials required for the Project (source and quantity) and any permanent and temporary linear infrastructure (roads). In its response to IAAC-13, the Proponent states that the proposed borrow source at the Gordon site is located on previously disturbed land immediately north of the Gordon site PDA. It is unclear whether activities and disturbance associated with the borrow source at the Gordon site, including for the borrow source itself and any associated linear infrastructure such as roads to access the source, were accounted for in calculations of the Project's disturbance footprint and assessment of potential effects to VCs. The Proponent notes that a contingency borrow source for the MacLellan site has been identified, the location of which is outside of the MacLellan site PDA. Clarity is required regarding the likelihood that this borrow source will be used, and the anticipated size of the footprint and potential effects to VCs associated with development and access to this borrow source. In its response to IAAC-13, the Proponent also notes that no proposed borrow material has been directly tested for acid rock drainage (ARD) and metal leaching (ML). However, the existing north mine rock pile borrow source at the Gordon site and in-pit borrow source at the MacLellan site have been generally characterized as non-potentially acid generating, and the proposed borrow sources will be tested for ARD/ML prior to construction. Information has not been provided regarding the measures that will be taken if borrow materials are found to be potentially acid generating or whether monitoring of borrow sources/borrow source materials will be conducted. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous nations, and other VCs that may be affected by changes to water quality.	a) Clarify whether activities and disturbance associated with the borrow source outside of the Gordon site PDA, including for the borrow source itself and any associated linear infrastructure, were accounted for in calculations of the Project's disturbance footprint and assessment of potential effects to VCs. i. If not, describe the area that will be disturbed by Project components and activities associated with use and development of the borrow source at the Gordon site, and revise the assessment of potential effects to all relevant VCs to consider any associated potential effects. ii. Describe mitigation measures that will be implemented to address any effects to VCs identified above. b) Describe the likelihood that development of the contingency borrow source outside of the MacLellan site PDA will be required as part of the Project. i. If this borrow source were to be developed, describe the additional disturbance footprint that would be required, including for the borrow source itself and any associated components (e.g. access roads) and activities, and potential effects to VCs. ii. Describe mitigation measures that will be implemented to address any effects to VCs identified. c) Clarify whether a contingency borrow source for the Gordon site may be required. If so, describe the likelihood that development of this borrow source will be required, the location of borrow source, the disturbance footprint, including for the borrow source itself and any associated components, potential effects to VCs, and mitigation measures to address any effects identified. d) Describe the measures that will be taken if borrow materials at the Gordon and MacLellan sites are found to be potentially acid generating, including where the Proponent

					will alternatively source borrow materials that are confirmed to be non-potentially acid generating. e) If materials are found to be non-potentially acid generating or if the Proponent chooses to use potentially acid generating borrow materials, describe monitoring of borrow sources and borrow source materials that will be conducted to confirm that ARD/ML is not occurring. Describe the adaptive management plan that will be employed. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans.
IAAC-R2-11	Impact Assessment Agency of Canada Environment and Climate Change Canada – Technical Review of Round 1, Package 1 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests	3.1 Project components	2.3 Project Activities and Components 9.4.1.3 Mitigation Federal IR Responses, Round 1, Package 1, Response to IAAC-14	The EIS Guidelines require the Proponent to describe components of the Project, including water management facilities proposed to control, collect, and discharge surface drainage and groundwater seepage to the receiving environment from all key components of the mine infrastructure (e.g. pit water and/or underground mine water, mine effluent). In its response to IAAC-14, the Proponent indicates that high intensity events with larger peak flow rates up to a 1:100 year precipitation event could be accommodated by the contact water collection ditches due to their design and the minimum 0.3 metre freeboard of the ditches. The Proponent also notes that higher velocity runoff associated with high intensity precipitation events could result in erosion of the ditches. It is unclear whether erosion associated with high intensity and/or high velocity precipitation events could reduce the capacity of the contact water collection ditches during such events, resulting in overtopping and/or release of contact water to the surrounding environment. It is also unclear what potential effects to the environment and to Indigenous peoples may occur in the event that contact water is released to the surrounding environment, including real or perceived effects to the practice of rights and/or the current use of lands and resources for traditional purposes. The Proponent also notes in its response to IAAC-14, that regular inspections should occur to confirm the contact water collection ditches are free of debris, ice jams, beaver dams, or other blockages. Details are not provided regarding how often inspections will be conducted, by whom, or the measures that will be undertaken should blockages of contact water collection ditches be identified.	a) Describe how erosion of contact water collection ditches during high velocity and/or high intensity precipitation events may affect the capacity of the ditches to accommodate flows from such events. i. Describe mitigation and contingency measures that will be implemented to prevent contact water from entering the environment during storm events and/or if one or more high velocity and/or high intensity storm events occur prior to the completion of maintenance of the ditches, particularly for collection ditches around waste rock stockpiles, the TMF, and other Project infrastructure or components subject to seepage and runoff. ii. Describe the potential environmental effects to valued components (VCs), including effects to Indigenous peoples and their rights, should contact water be released to the surrounding environment, including effects associated with real or perceived contamination of resources. b) Describe how often inspection of contact water collection ditches will be conducted and by whom. Should blockages of the contact water collection ditches, including debris, ice jams, beaver dams, or other, be identified during inspections, describe measures that will be taken to

				Peter Ballantyne Cree Nation (PBCN) notes that their members have experienced and observed changes to environmental norms in the area of the Project due to climate change. It is unclear whether climate change and potential changes to precipitation patterns and the frequency and severity of storm events were considered in the design of the contact water collection ditches. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, wildlife, including species of cultural importance, and Indigenous peoples should the potential exist for contact water to be released to the surrounding environment.	remove or mitigate blockages and associated timing. c) Describe whether, and if so how, climate change and potential changes to precipitation patterns and the frequency and severity of storm events have been considered in the design of the contact water collection ditches. i. If climate change was not considered in the design of contact water collection ditches, conduct an analysis to determine whether the contact water collection ditches, as currently designed, will have sufficient capacity to accommodate flows associated with any anticipated changes to precipitation patterns and the frequency and severity of storm events.
IAAC-R2-12	Impact Assessment Agency of Canada Environment and Climate Change Canada – Technical Review of Round 1, Package 1 Information Request Responses Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information	3.1 Project components 3.2 Project activities 6.1.2 Geology and geochemistry	2.3.1.1 Resource Extraction and Storage 5.2.6 Geochemistry Federal IR Responses, Round 1, Package 1, Response to IAAC-15	The EIS Guidelines require the Proponent to describe the Project by presenting Project components and characteristics that will assist in understanding the environmental effects of the Project, including ore storage and stock pile footprints, locations, volumes, development plans, and design criteria. In its response to IAAC-15, the Proponent notes that lining of ore stockpiles is not required as the majority of subsurface flow from the ore stockpile areas is directed to the pit lakes. The Proponent also notes how runoff and seepage from ore stockpiles will be collected in ditches and directed to the collection ponds during operation. No details are provided regarding how runoff and seepage will be collected from the ore stockpiles and prevented from infiltrating into the soil and migrating to groundwater sources, particularly when liners are not anticipated to be used. Further, while the majority of subsurface flow may be directed to collection ponds, it is unclear where the remaining subsurface flow is directed and potential receptors that may exist in those areas. It is also unclear how the Proponent plans to monitor the quality of seepage from ore stockpiles that may infiltrate into the soil and groundwater sources, so ensure that contamination of groundwater, including any drinking water sources, is not occurring. The Proponent also notes in its response to IAAC-15 that ARD and ML are unlikely to occur given that the storage times anticipated for ore stockpiles	a) Describe whether contaminants other than those associated with ARD and ML may be present in runoff and seepage from ore stockpiles. If so, describe which contaminants may be present and their anticipated concentrations. b) Clarify how runoff and seepage from ore stockpiles will be collected and diverted to collection ditches, and how infiltration of runoff and seepage into soil and groundwater will be prevented given that a liner will not be used beneath the ore stockpiles. i. If infiltration of seepage and runoff from ore stockpiles cannot be prevented, describe how the quality of seepage and runoff from ore stockpiles will be monitored to ensure that contamination of groundwater, including any drinking water sources, is not occurring. c) While the majority of subsurface flow is directed to the pit lakes, describe where the remaining subsurface flow paths lead and what potential receptors may exist in those areas. i. Provide an analysis of potential effects to receptors from the transport of contaminants in remaining subsurface flow paths.

	Request Responses			are substantially less than ARD onset time. However, it is unclear whether other contaminants may be present in runoff and seepage from ore stockpiles. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, wildlife, including species of cultural importance, and Indigenous peoples. **See Annex I for related advice.**	ii. Identify mitigation measures to address potential effects to these receptors.
IAAC-R2-13	Impact Assessment Agency of Canada	3.1 Project components 6.1.5 Groundwater and Surface Water 6.5 Significance of residual effects	2.8.2.1 Contact Water Federal IR Responses, Round 1, Package 1, Response to IAAC-16	The EIS Guidelines require the Proponent to provide information on Project components, including associated and ancillary works, that will assist in understanding potential environmental effects, including a description of the water management facilities and water treatment requirements. In its response to IAAC-16, the Proponent notes that while effluent quality modeling for both mine sites indicates that water treatment is not required to meet the federal *Metal and Diamond Mining Effluent Regulations* (MDMER) effluent limits or Manitoba short-term water quality guidelines, effluent monitoring will be conducted during operations, including effluent characterization, water quality monitoring, and effluent toxicity testing. The Proponent also notes that, should monitoring data indicate that effluent quality exceeds provincial or federal effluent limits, additional mitigation or remedial actions will be taken, such as treatment of effluent. Details are not provided regarding potential treatment methods or the predicted efficacy of these treatment methods, should monitoring of effluent quality indicate exceedances of federal or provincial effluent limits. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, wildlife, including species of cultural importance, and Indigenous peoples.	a) Describe the effluent treatment method(s) that have been selected or are being considered should effluent quality monitoring indicate exceedances of federal or provincial effluent limits. i. Describe the predicted efficacy of these treatment methods. b) Should effluent treatment be unsuccessful and discharge to the environment not be possible, describe alternative methods that will be used or considered for treatment or disposal of effluent.
IAAC-R2-14	Impact Assessment Agency of Canada Transport Canada – Technical Review of	3.2 Project Activities 6.3.4 Indigenous peoples	2.3.2.4 Water Development and Control (MacLellan site) Federal IR Responses, Round 1, Package 1,	The EIS Guidelines require the Proponent to describe Project activities in sufficient detail, including the activity's magnitude and scale, to predict the Project's anticipated environmental effects. The Proponent is also required to describe how changes to the environment caused by the Project may affect the current use of lands and resources for traditional purposes by Indigenous peoples, including navigation. In its response to IAAC-17, the Proponent indicates that East Pond, located on the MacLellan site, is expected to be passively dewatered to allow	a) Provide details regarding the planned process for dewatering of East Pond, including where water from the Pond will be diverted to and a detailed definition of the process of "passive dewatering", including information on timing (i.e. time of year, duration, etc.). i. Describe the potential environmental effects to VCs associated with dewatering of East Pond, including effects to the receiving environment where water from the Pond will be diverted.

	Round 1, Package 1 Information Request Responses		Response to IAAC-17	construction of the open pit. The Proponent also notes that, while this pond is not a listed Scheduled waterbody under the *Canadian Navigable Waters Act*, it could be considered navigable by canoe or kayak. As dewatering of East Pond may affect navigation, including navigation by Indigenous peoples, details regarding dewatering activities, including specific details of the planned process of dewatering, are required to assess the nature and degree of the Project's potential effects to navigation within the Regional Assessment Area (RAA). This information is required to support the Agency's understanding of potential Project effects to the current use of lands and resources for traditional purposes by Indigenous peoples and impacts to the rights of Indigenous peoples.	b) Describe whether East Pond is used by Indigenous peoples for navigation to support the current use of lands and resources for traditional purposes and/or the exercise of their rights. c) If East Pond is used for navigation or if there is uncertainty regarding whether or not East Pond is used for navigation, describe potential effects to the current use of lands and resources for traditional purposes by Indigenous peoples and potential impacts to the rights of Indigenous peoples due to dewatering of East Pond.
Surface Water and Groundwater					
IAAC-R2-15	Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Request Responses	3.2 Project Activities 6.2.2 Changes to groundwater and surface water 10.4.1.4 Project Residual Effects	10.4.1.4 Project Residual Effects 23.5.15 Fish Habitat Offsetting Plan Federal IR Responses, Round 1, Package 1, Response to IAAC-17	The EIS Guidelines require the Proponent to describe Project activities in sufficient detail to predict the Project's anticipated environmental effects. The Proponent is also required to describe any changes to hydrological and hydrometric conditions associated with the Project. In its response to IAAC-17 and in the EIS, the Proponent indicates that the Wendy and East pits located on the Gordon site will be dewatered during construction to enable mining of the new open pit. It is unclear where water from Wendy and East pits will be diverted to and whether Gordon Lake will receive water during the pit dewatering phase. As Gordon Lake is a fish-bearing waterbody and used for traditional purposes and the exercise of rights by Indigenous peoples, any changes to water quality and flow within Gordon Lake could affect these VCs. In the EIS, the Proponent also indicates that a diversion channel exists between Gordon and Farley Lakes, which may be replaced by a new diversion channel to offset the harmful alteration, disruption, or destruction of fish habitat from Project activities. Should water from dewatering of the Wendy and East pits be diverted to Gordon Lake, it is unclear what effects this additional water may have on flow rates within the new diversion channel or Farley Lake. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, the current use of lands and resources for	a) Confirm whether Gordon Lake or any other fish-bearing waterbody or waterbody used by Indigenous peoples for traditional purposes or the exercise of their rights will receive water from the Wendy and East pits during the pit dewatering phase. i. If so, describe potential effects to fish and fish habitat and Indigenous peoples, including the current use of lands and resources for traditional purposes and the rights of Indigenous peoples, as a result of changes to water quality, and water quantity and flow within Gordon Lake and/or other applicable waterbodies. b) If Gordon Lake will receive water from dewatering of the Wendy and East pits, describe any effects on flows within the existing and/or new diversion channel and Farley Lake, particularly high flow scenarios applicable to dewatering. The following factors should be reflected in the response: i. what phase of the diversion channel realignment will overlap with pit dewatering; ii. the flood rating of the existing diversion channel; iii. whether the anticipated increase in flows can be accommodated in the existing or new channel; and

				traditional purposes by Indigenous peoples, and impacts to the rights of Indigenous peoples.	iv. whether the risk of erosion and sedimentation downstream has been incorporated into the design of the new channel.
IAAC-R2-16	Impact Assessment Agency of Canada Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Requests Mathias Colomb Cree Nation - Technical Review of Round 1, Package 1 Information Requests Peter Ballantyne Cree Nation - Technical Review of the EIS and Round 1 Information Requests	6.2.2 Changes to groundwater and surface water 8.0 Follow-Up and Monitoring Programs	8.4.2.2 Mitigation 8.9 Follow-up and Monitoring 9.9 Follow-up and Monitoring 23.5 Environmental Monitoring and Management Plans Federal IR Responses, Round 1, Package 1, Response to IAAC-25	The EIS Guidelines require the Proponent to predict changes to surface water quality and quantity associated with the Project, including from any mine effluent releases or surface runoff and changes to hydrological or hydrometric conditions. In its response to IAAC-25, the Proponent notes that water from interceptor wells will be monitored and treated prior to release to the environment, including Farley and Gordon Lakes, in order to comply with federal and provincial water quality guidelines. Should treatment not be possible or ineffective at reducing contaminant levels to acceptable levels, it is unclear what contingency measures will be implemented to further treat or dispose of water from interceptor wells that cannot be released to the environment. The Proponent also states that in addition to federal and provincial water quality guidelines, water quality benchmarks will be developed for Gordon and Farley Lakes as baseline concentrations of some water quality parameters are elevated and because guideline exceedances do not necessarily result in acute or chronic toxicity to the fish and aquatic biota present. MCCN expresses concerns with this approach as it is contrary to the precautionary principle and does not seem to consider other uses of water within Gordon and Farley Lakes beyond by fish and aquatic biota (i.e. Indigenous uses). Clarity is required regarding how water quality benchmarks for Gordon and Farley Lakes will be developed and whether Indigenous uses of the Lakes were considered. The Proponent also notes that Indigenous nations will be engaged regarding the design and implementation of Project follow-up and monitoring programs, including the evaluation of program results. The Proponent then goes on to describe an environmental monitoring committee that was developed with Marcel Colomb Cree Nation as part of Project exploration activities and how this committee or a similar committee may be engaged as part of follow-up and monitoring for the Project. It is unclear whether all Indigenous nations being engaged as part of the environmental assessment for the Project, in addition to Marcel	a) Should treatment of water from interceptor wells not be possible or ineffective at reducing contaminant levels to acceptable levels for release to the environment, describe contingency measures that will be implemented to further treat or dispose of water. Include a definition of what would be considered "ineffective" treatment. b) Clarify which water quality parameters are currently elevated in Gordon and Farley Lakes and describe how water quality benchmarks for Gordon and Farley Lakes will be developed, including what factors will be considered in the development of these benchmarks and how the Proponent will ensure that they are protective of fish, aquatic biota, and Indigenous peoples. i. Describe how Indigenous peoples will be involved in the development of water quality benchmarks for Gordon and Farley Lakes to ensure that they are protective of Indigenous peoples and how they may use the Lakes (e.g. fishing, drinking water, recreational use, etc.). c) Clarify whether all Indigenous nations being engaged as part of the environmental assessment for the Project will be invited to participate on the environmental monitoring committee, should one be created as part of the Project. If not, provide a clear rationale as to why all Indigenous nations will not be invited to participate.

				Colomb Cree Nation, will be invited to participate on this environmental monitoring committee. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water. **See Annex I for related advice.**	
IAAC-R2-17	Impact Assessment Agency of Canada Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Requests Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information	6.2.2 Changes to groundwater and surface water 8.0 Follow-Up and Monitoring Programs	8.9 Follow-up and Monitoring 9.9 Follow-up and Monitoring 23.5 Environmental Monitoring and Management Plans Federal IR Responses, Round 1, Package 1, Response to IAAC-25 Federal IR Responses, Round 1, Package 1, Response to IAAC-48	The EIS Guidelines require the Proponent to predict changes to surface water quality and quantity associated with the Project, including from any mine effluent releases or surface runoff and changes to hydrological or hydrometric conditions. In its response to IAAC-25, the Proponent states that "the Project will not result in any periodic or continuous flooding of any stream, wetland, or lake that would potentially promote the methylation of inorganic mercury from upland areas". However, the *Farley Creek Hydraulic Habitat Model and Assessment of Predicted Results to Fish and Fish Habitat* provided as part of the Proponent's response to IAAC-48 (Attachment IAAC-48, Table 1.1) indicates there will be temporary flooding of Farley Creek between the years -2 (construction) to year 5 (operation). Clarification is needed regarding this discrepancy. The Proponent also states in response to IAAC-25 that mercury will be monitored as part of the Aquatic Effects Monitoring Plan that will be developed prior to Project construction. Details are not provided regarding this monitoring plan, such as the frequency of sampling, sampling locations, which components of the environment will be sampled (e.g. surface water, fish tissue), thresholds that may trigger adaptive management, or adaptive management measures that will be implemented in the event that defined thresholds are exceeded. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water. **See Annex I for related advice.**	a) Clarify whether flooding of any stream, wetland, or lake due to the Project would occur that would potentially promote the methylation of inorganic mercury. Discuss whether mercury methylation may occur as a result of any Project components designed to store and/or convey water (e.g. contact water collection ditches, diversion channels, etc.). i. If the potential exists for mercury methylation to occur, describe potential effects to VCs, including fish and fish habitat, wildlife, and Indigenous peoples, and describe mitigation measures that will be implemented to address any potential effects identified. b) Provide details of the Aquatic Effects Monitoring Plan as it relates to monitoring of mercury, including: i. the frequency of sampling; ii. sampling locations; iii. which components of the environment will be sampled (e.g. surface water, fish tissue) iv. thresholds that may trigger adaptive management; and v. adaptive management measures that will be implemented in the event that defined thresholds are exceeded.

	Request Responses Peter Ballantyne Cree Nation - Technical Review of the EIS and Round 1 Information Requests				
IAAC-R2-18	Environment and Climate Change Canada – Technical Review of Round 1, Package 1 Information Request Responses	6.2.2 Changes to groundwater and surface water 8.0 Follow-Up and Monitoring Programs	10.4.2.4 Residual Effects Federal IR Responses, Round 1, Package 1, Response to IAAC-25	The EIS Guidelines require the Proponent to predict changes to surface water quality and quantity associated with the Project. In the EIS, the Proponent indicates that the water quality model for the MacLellan site accounted for contact water sources but did not incorporate discharges from the wastewater treatment plant, as design details had not been finalized at the time of submission. The Proponent also notes that the plant would be designed to meet federal and provincial effluent quality criteria. If the design of the wastewater treatment plant has been finalized since submission of the EIS, the water quality model must be updated to incorporate discharges from the wastewater treatment plant, unless the Proponent can demonstrate that treatment will render loadings from the wastewater treatment plant negligible. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	a) Clarify whether the design of the wastewater treatment plant has been finalized since submission of the EIS. i. If so, provide data that demonstrates that treatment of wastewater will render loadings from the wastewater treatment plant negligible. ii. If the data requested in a) i. cannot be provided, provide updated water quality modelling data that incorporates discharges from the wastewater treatment plant. b) If discharges from the wastewater treatment plant are not anticipated to meet federal and provincial effluent quality criteria based on the updated information requested in a), revise the effects assessments for all relevant VCs to reflect this new information.
IAAC-R2-19	Impact Assessment Agency of Canada Environment and Climate Change Canada – Technical Review of Round 1, Package 1	6.2.2 Changes to groundwater and surface water 6.4 Mitigation Measures	9.2.2.1 Surface Water Quantity 9.11.1 Surface Water Quantity Volume 4, Appendix G Hydrology Baseline Technical Data Report	The EIS Guidelines require the Proponent to describe potential effects of the Project to groundwater and surface water, including changes to hydrological and hydrometric conditions as a result of the Project. In the EIS, the Proponent commits to keeping freshwater intakes from the Keewatin River at 10% of instantaneous flows as a way to mitigate impacts on water quantity in the river. The Proponent also notes in its response to IAAC-28 that streamflow data under ice was not collected due to safety concerns. Environment and Climate Change Canada (ECCC) notes that during winter, ice forming on the water surface and sides of a river can change the relationship between flow and water level significantly. Due to this, ECCC identified concerns regarding the	a) Describe the potential strategies to overcome difficulties in estimating instantaneous flow when the Keewatin River is covered in ice, given the safety concerns limiting the ability of the Proponent to collect streamflow data under ice. i. Given that under ice streamflow data was not collected, describe the limitations of the hydrologic data presented in the EIS and any uncertainty associated with the conclusions drawn in the surface water effects assessment.

	Information Request Responses Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses		4.2.2.2.1 Station QM01 Federal IR Responses, Round 1, Package 1, Response to IAAC-28	setup and data collected from stream gauge station QM01 for the purpose of managing freshwater intakes during the winter season, including: (1) ice-related equipment issues that led to a 5 month data gap; and (2) inaccurate estimates, likely overestimates, of streamflow during ice cover due to a lack of direct measurements. Further, winter calibration measurements are unlikely to be collected in the future due to safety issues that are likely to persist each winter. MCCN expresses concerns regarding the lack of a description of the limitations of the hydrologic data, given the lack of streamflow data under ice and the resultant uncertainty associated with the conclusions drawn in the surface water effects assessment. Information is required to understand the potential difficulties in estimating instantaneous flow on the Keewatin River during winter, potential strategies to overcome these difficulties, and any uncertainty associated with conclusions presented in the surface water effects assessment due to a lack of under ice streamflow data. In its response to IAAC-28, the Proponent indicates that a hydrometric monitoring network will be established and maintained during the life of the Project to confirm the accuracy of the effects assessment, determine whether mitigation measures are effective, monitor whether the Project is complying with regulatory approvals, permits and authorizations, and inform the need for adaptive management. It is unclear what thresholds will be used to determine when to implement adaptive management measures or what those measures will be. MCCN expresses concerns regarding lack of information regarding timelines for the collection of baseline data from the hydrometric monitoring network prior to construction and the associated uncertainty of whether the hydrometric monitoring network proposed will provide meaningful baseline data prior to Project construction and operation. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	b) Describe alternative intake rules that may be established for winter, such as a static maximum intake based on the likely minimum flow (e.g. 7Q20). c) Provide a timeline for the establishment of the proposed hydrometric monitoring network relative to the Project phases, including a rationale for the selected time period. i. Describe how the data collected by this network will contribute to baseline hydrologic data and how this data will inform Project design and follow-up and monitoring activities. d) Describe the thresholds that will be used to determine when to implement adaptive management measures (i.e. the parameters that will be measured and what factors would trigger adaptive management), including how hydrometric monitoring data will be used to inform this. i. Describe the adaptive management measures that will be implemented or are being considered.

IAAC-R2-20	Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses	4.2.2 Community knowledge and Aboriginal traditional knowledge 6.2.2 Changes to groundwater and surface water 6.3.1 Fish and fish habitat 6.3.4 Indigenous peoples	9.4.1 Surface Water Quantity Federal IR Responses, Round 1, Package 1, Response to IAAC-29	The EIS Guidelines require the Proponent to describe potential effects of the Project to groundwater and surface water, including changes to hydrological and hydrometric conditions as a result of the Project, fish and fish habitat, and Indigenous peoples. The Proponent is also required to incorporate into the EIS the community knowledge and Aboriginal traditional knowledge to which it has access or that is acquired through public participation and engagement with Indigenous nations. In its response to IAAC-29, the Proponent states that "water withdrawals from the Keewatin River will not exceed 10% of instantaneous stream discharge" and that "withdrawals of less than 10% have a low probability of detectable impacts to ecosystems that support commercial, recreational, or Aboriginal fisheries". MCCN notes that it is unclear whether, and if so how, Indigenous knowledge, perspectives, and other cultural values associated with surface water in the Keewatin River were considered in reaching this conclusion. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples.	a) Clarify how Indigenous knowledge, perspectives, and other cultural values associated with surface water in the Keewatin River were sought and considered in reaching the conclusion that withdrawals of less than 10% have a low probability of detectable impacts to ecosystems that support commercial, recreational, or Aboriginal fisheries.
IAAC-R2-21	Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Request Responses Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses	4.3 Study strategy and methodology 6.2.2 Changes to groundwater and surface water	9.4.1.4 Project Residual Effects Federal IR Responses, Round 1, Package 1, Response to IAAC-30	The EIS Guidelines require the Proponent to substantiate all conclusions and clearly state all assumptions in making predictions with respect to the potential effects of the Project. The Proponent is also required to describe how each assumption has been tested. In its response to IAAC-30, the Proponent states that the use of a 10% threshold change in model baseline flow for incorporating nodes into the assessment was chosen partially based on Fisheries and Oceans Canada's (DFO) *Framework for Assessing the Ecological Flow Requirements to Support Fisheries in Canada* (2013), which states that "cumulative flow alterations <10% in amplitude of the actual (instantaneous) flow in the river relative to a "natural flow regime" have a low probability of detectable impacts to ecosystems that support commercial, recreational or Aboriginal fisheries". DFO notes that, while this advice is correct, based on the EIS, it appears that the Proponent has applied the 10% threshold to average monthly or annual changes in flow. This is an incorrect application of the DFO advice, which explicitly applies the 10% change to instantaneous discharge. Applying this 10% threshold to average monthly and/or annual changes in flow may underestimate potential effects to surface water and related VCs, which may be amplified during low flow	a) Update the analysis of potential effects, including residual effects, to surface water based on the 10% change in instantaneous flow outlined in DFO's *Framework for Assessing the Ecological Flow Requirements to Support Fisheries in Canada* (2013). i. If an updated threshold is to be used to determine the selection of nodes to incorporate into the assessment, describe this threshold and provide a clear rationale for its selection. b) Based on the updated analysis referred to in a), update the analysis of potential effects, including residual effects, for other VCs (e.g. fish and fish habitat, migratory birds, wildlife, impacts to rights, other Indigenous-related VCs, etc.). c) Describe how waterbody morphology and geometry, seasonal changes in baseline flow, the biological and physical requirements of fish and other biota present, and Indigenous traditional knowledge and perspectives pertaining to water

				periods. An updated analysis of potential effects to surface water is required to address the improper use of DFO's 10% threshold. As effects to surface water may affect other VCs, including Indigenous peoples, migratory birds, and fish and fish habitat, an updated analysis of potential effects to other VCs is also required. MCCN expresses concerns that the decision to use the 10% threshold does not appear to have included consideration of waterbody morphology and geometry, seasonal changes in baseline flow, the biological and physical requirements of fish and other biota present, or Indigenous traditional knowledge or perspectives pertaining to water flow thresholds required for the maintenance of Indigenous practices and the exercise of rights. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	flow thresholds required for the maintenance of Indigenous practices and the exercise of rights were considered in the selection of the 10% threshold for incorporating nodes into the assessment or any updated threshold that may be used in response to a). d) Describe how all Indigenous nations being engaged as part of the environmental assessment for the Project will be provided the opportunity to participate in the selection of appropriate thresholds for the maintenance of traditional activities and the exercise of their rights.
IAAC-R2-22	Impact Assessment Agency of Canada	8.2 Monitoring	9.4.2.2 Project Pathways 9.4.2.4 Project Residual Effect 9.8.2 Surface Water Quality Federal IR Responses, Round 1, Package 1, Response to IAAC-31	The EIS Guidelines require the Proponent to provide an environmental monitoring program for all phases of the Project and describe the characteristics of the monitoring program and intervention mechanisms in the event of non-compliance. In its response to IAAC-31, the Proponent states that an Erosion and Sediment Control Plan (ESCP) will be developed to reduce the risk of site erosion and sedimentation and that the ESCP will include mitigation measures outlined in DFO's *Measures to Protect Fish and Fish Habitat and Land Development Guidelines for the Protection of Aquatic Habitat* and other best management practices typically included in industrial ESCPs. It is unclear what specific best management practices will be included or are being considered for inclusion in the ESCP for the Project. The Proponent also notes in its response to IAAC-31 that total suspended solids (TSS) concentrations in contact water will be monitored in the collection pond to verify that concentrations meet discharge criteria prior to being discharged. It is unclear which discharge criteria will be adhered to prior to the discharge of contact water to the Keewatin River. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water quality.	a) Describe the best management practices that are being considered for inclusion in the ESCP and/or that are typically included in industrial ESCPs. b) Clarify which discharge criteria will be adhered to prior to the discharge of contact water to the Keewatin River and provide a rationale as to how this discharge criteria is protective of water quality and fish and fish habitat.

				See Annex I for related advice.	
IAAC-R2-23	Impact Assessment Agency of Canada Environment and Climate Change Canada – Technical Review of Round 1, Package 1 Information Request Responses Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses	6.2.2 Changes to groundwater and surface water 6.3.1 Fish and fish Habitat	9.4.2 Surface Water Quality Volume 5, Appendix D Lynn Lake Gold Project Hydrology Water Balance and Water Quality Impact Assessment: Gordon Site Technical Modelling Report 2.0 Modelling Approach Appendix E Lynn Lake Gold Project Hydrology Water Balance and Water Quality Impact Assessment: MacLellan Site Technical Modelling Report 2.0 Modelling Approach Federal IR Responses, Round 1, Package 1, Response to IAAC-32	The EIS Guidelines require the Proponent to describe changes to groundwater, surface water, and fish and fish habitat as a result of the Project, including any effects associated with mine effluent releases or surface runoff. In its response to IAAC-32, the Proponent notes that the Expected Case scenario provides the basis for assessing potential Project-related effects, identifying mitigation measures, and determining the significance of potential residual effects. Results from the Upper Case scenario, which is described as a highly conservative and highly unlikely scenario, were provided to show potential extreme changes in water quality parameters at both the MacLellan and Gordon sites. Given that mitigation measures were informed only by the results of the Expected Case scenario, contingency measures must be described that are informed by the results of the Upper Case scenario in the event that effects of the magnitude described in the Upper Case scenario were to occur. In response to IAAC-32, the Proponent also provided tables summarizing exceedances of long-term water quality guidelines in the receiving environment of the Gordon and MacLellan sites for the Expected and Upper Case scenarios. MCCN expresses concerns regarding the lack of information on the magnitude and duration of exceedances for both scenarios. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	a) Describe contingency measures that will be implemented to manage and mitigate contact water volumes and parameter concentrations predicted for a potential Upper Case scenario and describe the thresholds that would trigger the implementation of these contingency measures, including the parameters to be measured and quantitative thresholds that will be used as triggers. i. Discuss how such measures would prevent adverse effects to fish and fish habitat and other VCs that may be affected by changes to surface water under a potential Upper Case scenario. b) For both the Expected and Upper Case scenarios, describe the magnitude and duration of exceedances of long-term water quality guidelines in the receiving environment of the Gordon and MacLellan sites, as indicated in Tables IAAC-32-1 to IAAC-32-4.

IAAC-R2-24	Impact Assessment Agency of Canada Environment and Climate Change Canada – Technical Review of Round 1, Package 1 Information Request Responses Mathias Colomb Cree Nation - Technical Review of the EIS and Round 1 Information Requests Peter Ballantyne Cree Nation - Technical Review of the EIS and Round 1 Information Requests	6.1.5 Groundwater and Surface Water 6.3.4 Indigenous peoples	Supplemental Filing re MacLellan Site Water Balance/Water Quality Model Update following Mine Rock Storage Area Refinement, Section 4.5	The EIS Guidelines require the Proponent to describe potential Project effects to water quality attributed to ARD/ML associated with mine material, and must prepare environmental management and monitoring programs to verify the accuracy of the effects assessment and, where necessary, identify adaptive management measures that will be implemented. In its Supplemental Filing document, the Proponent notes that the updated predicted maximum total arsenic concentration in tributary KEE3-B1 (0.041 mg/L) is nearly 80% higher than predicted by the EIS model (0.023 mg/L) and approximately eight times higher than the long-term *Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life* (CWQG-FAL; 0.005 mg/L). The report concludes that no adverse effects to the health, growth, or survival of fish and aquatic biota in tributary KEE3-B1 is expected to occur. ECCC notes that the CWQG-FAL (arsenic) is a newer and more conservative guideline than the *Manitoba Water Quality Standards, Objectives, and Guidelines* (MWQSOG) (arsenic), which is based on a 1995 United States Environmental Protection Agency (US EPA) publication. Given that arsenic concentrations in the receiving environment are predicted to exceed the more recent long-term/chronic guideline, options to reduce arsenic loadings in the receiving environment must be described. The Proponent also states in the Supplemental Filing document that "[t]he magnitude of residual effects to fish health, growth, and survival due to the updated water quality predictions in tributary KEE3- B1 and Minton Lake continues to be rated as negligible, despite the guideline exceedances discussed above, because the updated mean and maximum concentrations are unlikely to cause a measurable change in the abundance, structure, or health of focal fish populations in the [Local Assessment Area (LAA)]". MCCN notes that while the Project redesign does not substantially change water quality predictions, maximum predicted levels of many parameters of potential concern (POPCs) during the closure phase continue to be higher than Manitoba and/or Canadian Water Quality Guidelines for Freshwater Aquatic Life. While it is the Proponent's position that adverse effects to fish health are unlikely, these guideline exceedances suggest that adverse effects may occur.	a) Discuss whether and how the magnitude of residual effects to fish health, growth, and survival and to Indigenous peoples, including current use, Indigenous health, country foods, and cultural heritage, presented in the EIS may be affected due to the updated water quality predictions in tributary KEE3-B1 and Minton Lake and conclusion presented in the Supplemental Filing document. b) Reassess conclusions regarding potential Project effects to aquatic life and Indigenous peoples given updated water quality predictions, including arsenic, in the receiving environment. Provide clarity on how conclusions on significance criteria (reversibility, magnitude, etc.) are reflected in the overall conclusions on adverse effects to the health, growth, or survival of fish and aquatic biota. c) Provide specific commitments for mitigation and monitoring in areas where POPCs may exceed water quality guidelines. Evaluate options (e.g. treatment) to reduce arsenic concentrations in the receiving environment. d) Identify adaptive management measures and criteria/triggers for implementation of adaptive management measures for potential exceedances in water quality guidelines. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans. e) Identify and discuss a plan to communicate any exceedances to Indigenous harvesters or water users.

				PBCN also expresses concerns that Project-related increases in contaminant concentrations in surface water and fish may result in adverse effects to current use, Indigenous health, and impacts to rights due to real or perceived effects to drinking water quality, country foods, and resources, including wildlife species of cultural significance. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	
IAAC-R2-25	Impact Assessment Agency of Canada Health Canada – Technical Review of Round 1, Package 1 Information Request Responses	6.2.2 Changes to groundwater and surface water 6.3.4 Indigenous peoples	Supplemental Filing re MacLellan Site Water Balance/Water Quality Model Update following Mine Rock Storage Area Refinement, Sections 2.3.2.1; 3.3.2; 8.4.3; 9.4.1.2; Appendix B Map 6	The EIS Guidelines require the Proponent to describe potential effects of the Project to groundwater and surface water, including changes to hydrological and hydrometric conditions as a result of the Project, fish and fish habitat, and Indigenous peoples. In its Supplemental Filing document, the Proponent indicates that various POPCs continue to be predicted to exceed guideline values downstream of the Mine Rock Storage Area (MRSA). In addition, four new POPCs are noted, but these were only expected to exceed guidelines for two months post-closure. It is also noted in the Supplemental Filing that antimony exceeds drinking water guidelines in two months post-closure (maximum of 0.007 mg/L) at KEE3-B1, but a data output table was not provided. Based on Table 3-15, arsenic could exceed the Health Canada Maximum Acceptable Concentration of 0.010 mg/L (based on treatment achievability) and negligible risk level of 0.0003 mg/L (Health Canada 2006) during the Expected Case post-closure phase and under the Upper Case scenario. However, this comparison has not been made as part of the assessment. Health Canada notes that the potential for human exposure to POPCs downstream of the MRSA was not sufficiently discussed and further details are needed. Further, it is unclear how far downstream the elevated concentrations would be expected to extend and if humans could be exposed to these POPCs. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	a) Explain how far downstream the elevated levels of POPCs would be expected to extend beyond the location of the model node (KEE3-B1) and whether this location would be accessible to Indigenous harvesters. b) Provide the modelled data for antimony in tabular form as per the other POPCs, and include antimony in the forthcoming surface water monitoring plans. c) Confirm that there is no current human use for drinking water or recreation in the surface waters for which elevated concentrations of POPCs are predicted. If human ingestion of this water is possible and reasonably foreseeable, include a comparison of all predicted concentrations of POPCs, including arsenic, to drinking water quality guidelines, and update the Human Health Risk Assessment (HHRA) accordingly. d) Reassess conclusions regarding potential Project effects to Indigenous peoples' health, given the identification of potential effects to Indigenous harvesters or water users.
IAAC-R2-26	Environment and Climate Change Canada – Technical	6.2.2 Changes to groundwater and surface water	9.4.2 Surface Water Quality 9.4.2.1 Analytical	The EIS Guidelines require the Proponent to describe changes to groundwater, surface water, and fish and fish habitat as a result of the Project, including any effects associated with mine effluent releases or surface runoff.	a) Clarify how the screening criteria identified were used to identify POPCs to carry forward to the assessment of potential residual Project effects to surface water quality.

	Review of Round 1, Package 1 Information Request Responses	6.3.1 Fish and fish Habitat	Assessment Methods Federal IR Responses, Round 1, Package 1, Response to IAAC-32	As noted in the EIS, the Proponent identified POPCs to carry forward to the assessment of potential residual Project effects as those water quality parameters predicted by water quality models to meet the following screening criteria, at least once during any mine phase: • the parameter was predicted to exceed an applicable federal or provincial water quality guideline; • the parameter was predicted to exceed the corresponding modelled baseline concentration by greater than 20% for the same node, phase, and month; and • due to the conservatism of the Upper Case sensitivity scenarios, only the Expected Case was used to identify POPCs. ECCC expresses concerns regarding the lack of details regarding how these screening criteria were applied. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	b) Describe which water quality predictions (e.g. effluent, seepage, pits, receiving environment, etc.) were screened against the criteria identified and clarify how these screening criteria were applied to the edge of the mixing zone or to concentrations in the entire waterbody in question. i. If screening criteria were applied to concentrations within the entire waterbody in question, provide a rationale for selecting a screening value of "greater than 20%" with respect to baseline concentrations.
IAAC-R2-27	Impact Assessment Agency of Canada Environment and Climate Change Canada – Technical Review of Round 1, Package 1 Information Request Responses	6.2 Predicted changes to the physical environment 6.2.2 Changes to groundwater and surface water	Volume 5, Appendix D Lynn Lake Gold Project Hydrology Water Balance and Water Quality Impact Assessment: Gordon Site Technical Modelling Report Tables 5-1 to 5-8 Volume 5, Appendix J Summary of Predicted Seepage Water Quality	The EIS Guidelines require the Proponent to describe changes to groundwater and surface water as a result of the Project, including changes to surface water and groundwater quality. In its response to IAAC-33, the Proponent clarifies that the tables presenting water quality concentrations in the appendices of Volume 5 of the EIS present a comparison of average monthly seepage concentrations for each Project phase against long-term/chronic federal and provincial aquatic surface water quality guidelines. ECCC notes that comparing average monthly concentrations against federal and provincial guidelines will not identify all predicted exceedances, including the highest exceedances for POPCs. As the Expected Case predictions are likely to occur, as noted by the Proponent, it is important to also compare maximum monthly concentrations for each Project phase against long-term/chronic guidelines to identify the highest predicted exceedances for the Expected Case scenario. Further, comparing predicted maximum monthly concentrations for the Upper Case scenario, which is described by the Proponent as being comparable to the worst-case scenario, against long-term/chronic federal and provincial guidelines would also support contingency planning for potential worst-case seepage quality.	a) Update the following tables to include a comparison of predicted maximum monthly seepage concentrations for each Project phase, as opposed to average monthly concentrations: i. Appendix J-1 (Summary of predicted MRSA seepage water quality - Expected Case) of Volume 5, Appendix D; ii. Appendix J-2 (Summary of predicted MRSA seepage water quality - Upper Case) of Volume 5, Appendix D; iii. Appendix H-1 (Summary of predicted MRSA and TMF seepage water quality - Expected Case) of Volume 5, Appendix E; and iv. Appendix H-2 (Summary of predicted MRSA and TMF seepage water quality - Upper Case) of Volume 5, Appendix E. b) Identify the probability of occurrence of the predicted maximum monthly seepage concentrations referred to in a)

			Volume 5, Appendix E Lynn Lake Gold Project Hydrology Water Balance and Water Quality Impact Assessment: MacLellan Site Technical Modelling Report Tables 4-5 to 4-7 Volume 5, Appendix H Predicted Seepage Water Quality Federal IR Responses, Round 1, Package 1, Response to IAAC-33	The Proponent also notes in its response to IAAC-33 that Tables 5-3 and 5-4 of Appendix D of the EIS each provide two sets of mean/maximum concentration predictions for the construction, operation, and closure phases of the Project. ECCC expresses concerns that the Proponent does not distinguish between the two sets of results. It appears that the two sets of mean/maximum concentrations presented in each table may represent the Expected and Upper Case scenarios, however, this should be clarified. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	for each Project phase. c) Identify adaptive management measures and criteria/triggers for implementation of adaptive management measures should predicted maximum monthly seepage concentrations occur. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans. d) Clarify whether the two sets of mean/maximum concentration predictions for Project construction, operation, and closure presented in Tables 5-3 and 5-4 of Volume 5, Appendix D represent the Expected and Upper Case scenarios, respectively. i. If not, clarify what the concentration predictions for Project construction, operation, and closure presented in Tables 5-3 and 5-4 of Volume 5, Appendix D represent.
IAAC-R2-28	Environment and Climate Change Canada – Technical Review of Round 1, Package 1 Information Request Responses	6.2.2 Changes to groundwater and surface water	Appendix 9E Characterization of Mine Discharges Federal IR Responses, Round 1, Package 1, Response to IAAC-34	The EIS Guidelines require the Proponent to describe potential effects to surface water and groundwater as a result of the Project, including changes to surface water and groundwater quality. In its response to IAAC-34, the Proponent provided an updated characterization of mine discharges during construction, operation, and post-closure for the Gordon and MacLellan sites, including a comparison of effluent quality against limits defined in the MDMER and short-term water quality guidelines. ECCC notes that the water quality prediction tables provided for mine discharges appear to only include those parameters with short-term/acute guidelines and MDMER limits. A characterization of the anticipated concentrations of all parameters present or potentially present in effluent must be provided, even if said parameters do not have associated short-term/acute guidelines and/or MDMER limits.	a) Provide a characterization of all parameters that will be or may be present in mine discharges from the Gordon and MacLellan sites, including their predicted concentrations, for each phase of the Project, even if said parameters do not have associated short-term/acute guidelines and/or MDMER limits. i. Update Tables 9E-1 to 9E-11 for mine discharges to include all parameters. b) Identify and discuss any gaps in the EIS baseline dataset, which will be compared to the parameters referred to in a) to identify and assess Project effects, with respect to surface water quality and how these gaps will be addressed. i. Clarify whether any additional baseline monitoring has been completed since submission of the EIS

				This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	and Round 1 IR responses or is planned to be completed to address any data gaps in the EIS baseline dataset.
IAAC-R2-29	Impact Assessment Agency of Canada Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	6.1.5 Groundwater and Surface Water 6.4. Mitigation measures	9.4.2.3 Mitigation Federal IR Responses, Round 1, Package 1, Response to IAAC-35	The EIS Guidelines require the Proponent to describe potential effects to surface water and groundwater as a result of the Project, including changes to surface water and groundwater quality. In its response to IAAC-35, the Proponent states that water quality criteria for discharge of water from the pit lakes will not be finalized until the permitting phase of the Project and that derivation of final water quality criteria will be informed by federal and provincial water quality guidelines, standards, and objectives for the protection of aquatic life; baseline water quality in the receiving environment; characteristics of the mixing zone downstream of the pit lakes; and the sensitivity of aquatic life in the receiving environment. It is unclear why the Proponent is choosing to derive separate water quality criteria for the discharge of water from the pit lakes and whether this criteria will meet federal water quality guidelines, standards, and objectives. It is also unclear how the Proponent will consider Indigenous uses of the receiving environment, including for the exercise of rights, traditional practices, drinking water, etc., in developing this water quality criteria and how the Proponent will ensure that it is protective of these uses. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	a) Provide a rationale for why the Proponent is choosing to derive separate water quality criteria for the discharge of water from the pit lakes and whether this criteria will meet federal water quality guidelines, standards, and objectives, including those for the protection of aquatic life. b) Describe how the Proponent will consider Indigenous uses of the receiving environment, including for the exercise of rights, traditional practices, drinking water, etc., in developing water quality criteria for the discharge of water from the pit lakes and how the Proponent will ensure that the criteria is protective of these uses.
IAAC-R2-30	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information	6.1.5 Groundwater and Surface Water 6.4. Mitigation measures	9.4.2.3 Mitigation Federal IR Responses, Round 1, Package 1, Response to IAAC-35	The EIS Guidelines require the Proponent to describe potential effects to surface water and groundwater as a result of the Project, including changes to surface water and groundwater quality. In its response to IAAC-35, the Proponent notes that, should water quality monitoring during the pit re-fill periods for the MacLellan and Gordon sites indicate that water quality is exceeding water quality criteria in the pit lakes, passive treatment options, such as controlled pit stratification, fertilizer amendment, and/or flow segregation, will be implemented. In the EIS, the Proponent also notes that fertilizing of the open pit to encourage precipitation of metals out of solution may also be undertaken and that bench and lab scale studies are not planned at this time. Information has	a) Describe the anticipated efficacy of fertilization of the open pit and the passive treatment options proposed should water quality monitoring indicate that water quality criteria is being exceeded in the pit lakes. This should include data from relevant literature, case studies, and/or bench/lab scale studies conducted by the Proponent or others, where available. i. If data from relevant literature, case studies, and/or bench/lab scale studies is not available, discuss the implications of this lack of data for conclusions drawn, uncertainty, and additional follow up and monitoring

	Request Responses			not been provided regarding the anticipated efficacy of the proposed passive treatment options or fertilization of the open pit, including the results of case studies, literature, or bench/lab scale studies conducted by the Proponent or others. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	that would be implemented to address uncertainty in a precautionary manner.
IAAC-R2-31	Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Request Responses	6.3.1 Fish and Fish Habitat	Table 9-21 10.2.2.3 Fish Community Composition, Distribution, and Relative Abundance 10.4.1.4 Project Residual Effects Table 10-22 Framework for Assessing the Ecological Flow Requirements to Support Fisheries in Canada Federal IR Responses, Round 1, Package 1, Response to IAAC-47	The EIS Guidelines require the Proponent to describe potential effects to fish and fish habitat, including effects from modifications of hydrological and hydrometric conditions on fish habitat and on the fish species' life cycle activities. In its response to IAAC-47, the Proponent states that instantaneous streamflow data is not achievable from a water balance model because data are reported as average monthly flow and that instantaneous discharge from the Keewatin River will be monitored as part of the Surface Water Management and Monitoring Plan (SWMMP). This Plan will include an adaptive management component that sets out a water withdrawal limit of less than 10% of instantaneous stream discharge, based on DFO's *Framework for Assessing the Ecological Flow Requirements to Support Fisheries in Canada* (2013). DFO notes that, while this is a reasonable and appropriate measure to incorporate into mitigation and monitoring plans, the Proponent must consider that the DFO advice related to this threshold from the *Framework for Assessing the Ecological Flow Requirements to Support Fisheries in Canada* (2013) is in regard to a cumulative 10% change in instantaneous discharge, which requires that other water withdrawals be considered collectively in meeting the 10% threshold. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	a) Describe how cumulative water withdrawals from the Keewatin River will be considered when establishing water withdrawal limits and describe how this consideration may affect the Proponent's limit of less than 10% of instantaneous stream discharge. Refer to IAAC-R2-21 and IAAC-R2-34 for additional details on the limitations of the flow modelling, the Proponent's interpretation of DFO's *Framework for Assessing the Ecological Flow Requirements to Support Fisheries in Canada* (2013), potential effects on fish and fish habitat, and mitigation.
IAAC-R2-32	Fisheries and Oceans Canada – Technical Review of	6.1.5 Groundwater and Surface Water	8.4.3 Assessment of Change in Groundwater Quality	The EIS Guidelines require the Proponent to describe potential effects to surface water and groundwater as a result of the Project, including changes to hydrological and hydrometric conditions.	a) Include and provide details for a lotic (riverine) reference monitoring site(s) for Farley Creek/Gordon site.

	Round 1, Package 1 Information Request Responses Sayisi Dene First Nation - Technical Review of Round 1, Package 2 Information Requests Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	8.0 Follow-up and Monitoring Programs	8.9 Follow-up and Monitoring 9.4.1.4 Project Residual Effects, Table 9-15 9.9 Follow-up and Monitoring 22.5.2.3 Environmental Effects Assessment 23.5.4 Groundwater Monitoring Plan 23.5.5 Surface Water Monitoring and Management Plan Federal IR Responses, Round 1, Package 1, Response to IAAC-108	In the EIS, the Proponent states that winter flows within Farley Creek are predicted to increase by up to 375% during construction (i.e. year -2 to year -1) and up to 325% during operational years (i.e. year 1 to year 6). In its response to IAAC-108, the Proponent states that an objective of the SWMMP is to establish and/or maintain reference monitoring sites to differentiate between natural seasonal or climatic variability in surface water quantity and quality and potential Project effects as the Project progresses. However, the only reference sites listed for the Gordon site are lentic waterbodies (i.e. Simpson Lake and White Owl Lake). Given the significant increases in predicted flows anticipated for Farley Creek, along with DFOs concerns regarding the limitations surrounding the *Lynn Lake Gold Project: Farley Creek Hydraulic Habitat Model and Assessment of Predicted Results to Fish and Fish Habitat* report (refer to IAAC-R2-43), details for a lotic (riverine) reference site for Farley Creek/Gordon site to further assess post-impact changes to stream quantity is required. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water.	b) Describe how the reference sites will adequately differentiate between natural seasonal or climatic variability in surface water quantity and quality and potential Project effects. c) Describe how input and traditional knowledge from Indigenous nations was considered in the selection of the reference site(s) referred to in a). If input/knowledge from Indigenous peoples has not been considered, describe how the Proponent will provide an opportunity for Indigenous nations to provide input on the location of the reference site(s).
IAAC-R2-33	Impact Assessment Agency of Canada Manitoba Metis Federation – Technical Review of	6.1.5 Groundwater and Surface Water 8.0 Follow-up and Monitoring Programs	10.2.2.8 Sediment Quality 23.0 Environmental Management and Monitoring	The EIS Guidelines require the Proponent to provide a sediment quality analysis for key sites likely to receive mine effluents and to describe the follow-up and monitoring plans for the Project. In its response to IAAC-54, the Proponent states that details of the sediment monitoring program, including sampling locations, will be developed as part of the Environmental Effects Monitoring Plan for the Project. Details of the sediment monitoring program, including potential sampling locations, parameters to be measured, and reference sites are not	a) Provide details of the sediment monitoring program proposed for the Project, including potential sampling locations, parameters to be measured, and reference sites selected and/or being considered. b) Describe how sediment monitoring data will inform the adaptive management plan for the Project. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans.

	Round 1, Packages 1 and 2 Information Request Responses		Federal IR Responses, Round 1, Package 1, Response to IAAC-54	provided. This information is required to understand whether the sediment monitoring program is likely to be adequate to verify the accuracy of the effects assessment and to determine the effectiveness of the measures proposed to mitigate the adverse effects of the Project. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water quality.	
IAAC-R2-34	Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Request Responses Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests	6.5 Significance of residual effects	EIS Summary - Table A-1 9.1.5 Residual Effects Characterization 9.7 Determination of Significance 9.4.1.4 Project Residual Effects Federal IR Responses, Round 1, Package 1, Response to IAAC-36	The EIS Guidelines require the Proponent to identify the criteria used to assign significance ratings to any predicted adverse effects. The Proponent is also required to explain the assumptions, definitions and limits to the criteria defined. In its response to IAAC-36, the Proponent notes that the thresholds to define the magnitude of changes in surface in water quantity as a result of the Project were selected based partly on DFO's *Framework for Assessing the Ecological Flow Requirements to Supports Fisheries in Canada* (DFO 2013), which specifies 10% and 30% as important thresholds for assessing changes in streamflow and its effect on fish. As noted in IAAC-R2-21, DFO notes that, while the quoted advice is correct, the 10% and 30% thresholds identified from DFO's guidance document appear to have been misinterpreted. DFO's guidance document does not provide a range of thresholds between 10 and 30%, but rather provides two distinct thresholds, both of which pose a heightened risk to aquatic environments: 1) changes of 10% to instantaneous flow relative to the natural flow regime and, 2) instantaneous flows less than 30% mean annual discharge. Further, the thresholds defined in DFO's guidance document are intended for use in riverine systems only, and do not apply to lake levels and stream flow, as they have been applied by the Proponent in Table A-1. In the EIS, the Proponent defines a "high" magnitude change to surface water quantity as a Project-related change in hydrology (i.e. flow or levels) of greater than 30% relative to existing conditions. Although the Proponent concludes that the Project will result in substantial effects to surface water quantity in exceedance of baseline variability, the Proponent concludes that Project-related changes to surface water quantity will not be significant as predicted changes are not expected to exceed a 30% relative change from existing conditions. Given the limitations noted above regarding the use of the 30% threshold, conclusions with respect to the	a) Revise and justify the magnitude categories presented in Table A-1 for riverine systems based on DFO's *Framework for Assessing the Ecological Flow Requirements to Supports Fisheries in Canada* (DFO 2013) and provide peer-reviewed literature to support the current rationale provided. i. If a well-supported rationale is not achievable, define thresholds of change in lentic systems associated with lake level measurements using peer-reviewed literature. b) Revise the assessment of the significance of potential Project effects to surface water quantity with respect to the use of the 10% and 30% thresholds defined in DFO's guidance document. i. Clarify how the Proponent differentiated between effects across different types of potentially affected waterbodies (e.g. lentic vs riverine systems) in its significance determinations with respect to potential Project effects to surface water quantity and how effects to different waterbody types were weighted in making the significance determination. c) Describe how Indigenous uses and cultural values associated with surface water quantity were considered in determining significance thresholds for assessing changes in flow. i. If Indigenous uses and cultural values were not considered, revise the assessment of the significance of potential Project effects to surface water quantity to consider these uses and values.

				anticipated significance of effects to surface water quantity as a result of the Project much be reassessed. It is also unclear whether, and if so how, the Proponent differentiated between effects across different types of potentially affected waterbodies (e.g. lentic vs riverine systems) or how effects to different types of waterbodies were weighted in its significance determinations with respect to potential Project effects to surface water quantity. MCCN notes that the thresholds used to define significance of Project effects to surface water quantity do not appear to account for other uses of surface waterbodies beyond fish and aquatic species. As changes to surface water quantity may affect Indigenous peoples and their unique uses and values (e.g. current use of lands and resources for traditional purposes, cultural uses, the exercise of rights, etc.), these factors must be considered in defining the significance of effects to surface water quantity. This information is required to support the Agency's understanding of potential effects to fish and fish habitat, Indigenous peoples, and other VCs that may be affected by changes to surface water quantity.	ii. Provide details of how Indigenous nations will be engaged regarding the revised thresholds and assessment of effects.
IAAC-R2-35	Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses	6.2.2 Changes to groundwater an surface water 6.3.4 Indigenous peoples 6.5 Significance of residual effects	9.1.5 Residual Effects Characterization 9.1.6.2 Change in Surface Water Quality 9.4.3.2 Surface Water Quality 9.7 Determination of Significance Federal IR Responses, Round 1, Package 1, Response to IAAC-37	The EIS Guidelines require the Proponent to describe potential Project effects to surface water quality and effects to Indigenous peoples, including Indigenous health, current use, and cultural heritage. In its response to IAAC-37, the Proponent notes that potential effects to aquatic biota were considered in the assessment of residual effects to surface water quality as they are the end user of surface water in the study areas. MCCN notes concerns that Indigenous rights and uses of surface water, including current use, cultural values, drinking water, and recreational use, in the study area and potential effects to other VCs that may be affected by changes in surface water quality, such as culturally important wildlife species, medicinal plants, and other country foods, do not seem to have been considered in the assessment of residual effects or the significance of residual effects to surface water quality. The Proponent also notes in its response to IAAC-37 that the water quality assessment accounted for potential tolerance to changes in water quality by considering site-specific toxicological conditions and the potential for predicted changes in water quality to actually result in adverse effects. Excluding toxicological considerations from the magnitude of effects	a) Clarify whether potential effects to Indigenous rights and uses of surface water, and effects to other VCs that may be affected by changes in surface water quality (e.g. wildlife, medicinal plants, country foods, etc.) were considered in the assessment of residual effects of the Project and the significance of effects for surface water quality. i. If Indigenous rights and uses were not considered in the assessment of residual effects of the Project and the significance of effects, revise these assessments to include Indigenous rights and uses of surface water quality. b) Describe how the Proponent accounted for uncertainty and the precautionary approach in assessing the effect that site-specific toxicological conditions would have with respect to potential Project effects to surface water quality. i. Describe the level of uncertainty with respect to predictions, any assumptions that were used to derive predictions regarding site-specific toxicological conditions, and how those

				associated with surface water quality would yield a lower-resolution assessment of residual effects. Such an approach would therefore potentially cause an exaggerated significance determination and an unnecessarily high perception of Project-related effects. It is unclear how the Proponent accounted for uncertainty and the precautionary approach in assessing the effect that site-specific toxicological conditions would have with respect to potential Project effects. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples, fish and fish habitat, and other VCs that may affected by changes to surface water quality.	assumptions may influence the uncertainty of predictions.
IAAC-R2-36	Environment and Climate Change Canada – Technical Review of Round 1, Package 1 Information Request Responses Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses	3.2.3 Decommissioning and abandonment 3.2.3 Spatial and temporal boundaries 6.1.5 Groundwater and Surface Water 6.2.2. Changes to groundwater and surface water	2.7.4 Decommissioning / Closure 9.1.4.2 Temporal Boundaries Appendix 23B, 4.2.2 Filling and Discharge Federal IR Responses, Round 1, Package 1, Response to IAAC-38	The EIS Guidelines require the Proponent to describe progressive reclamation and monitoring planned for the decommissioning and abandonment phases of the Project. The Proponent is also required to describe pit water chemistry during operation, decommissioning, and abandonment, and pit closure management measures, including geochemical modelling of pit water quality in the post-closure period. In the EIS and its response to IAAC-38, the Proponent notes that permanent closure, and the cessation of monitoring, will be considered to be complete when surface water quality is within the pertinent guidelines and discharge will be allowed, even if pit filling is still ongoing. ECCC and MCCN note that although the pit lakes will be monitored during filling, the physical and chemical stability of the pit lakes cannot be determined prior to completion of filling, while the volume/contents of the pit lakes are changing. Further, post-closure water quality monitoring should be of a sufficient duration to demonstrate the acceptability and stability of water quality onsite and in the receiving environment. It is unclear how long it will take to achieve acceptable and stable water quality. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat, Indigenous nations, and other VCs that may be affected by changes to surface water.	a) Revise the Conceptual Closure Plan to include details of how post-closure water quality monitoring will continue until it is demonstrated that the water quality of the pit lakes is stable and will consistently meet water quality objective values over the short-, medium-, and long-term. i. Describe the criteria that will be used to demonstrate stability of the pit lakes and how the Proponent will involve Indigenous nations in the selection of this criteria.
Navigation					
IAAC-R2-37	Mathias Colomb Cree Nation – Technical Review of Round 1,	2.2 Alternative means of carrying out the Project 3.1 Project	2.3.2.3 Utilities and Infrastructure 2.9.3.2 Access to Project Sites	The EIS Guidelines require the Proponent to describe, for each nation, how changes to the environment caused by the Project may affect access and perceived access into areas used for traditional purposes, including development of new roads, deactivation or reclamation of access roads and changes to waterways that affect navigation, and how this may affect	a) Based on the construction methodology for the new proposed bridge across the Keewatin River described in response to IAAC-09, provide an assessment of potential effects to navigation by Indigenous peoples during Project

	Package 1 Information Request Responses	components 3.2 Project Activities 6.3.4 Indigenous peoples	Federal IR Responses, Round 1, Package 1, Response to IAAC-09	continued knowledge of the area, financial capacity to access the area, and desirability to access the area. The EIS Guidelines also require the Proponent to identify and consider the environmental effects of alternative means of carrying out the project that are technically and economically feasible. In its response to IAAC-09, the Proponent states that the proposed new bridge across the Keewatin River is not planned to be substantially different than the current in terms of plan, profile, or potential effects to navigation and that plan and profile drawings of the new bridge crossing will be provided as the detailed design progresses. The Proponent also describes the construction methodology for the new bridge. MCCN expresses concerns regarding the lack of assessment provided regarding potential effects to navigation by Indigenous nations for traditional purposes and the exercise of rights as a result of the new bridge crossing, including during construction and operation of the bridge. This information is required to support the Agency's understanding of potential effects to Indigenous peoples, including the current use of lands and resources for traditional purposes and impacts to the rights of Indigenous peoples.	construction. b) Based on the current design of the bridge across the Keewatin River that will be replaced, describe potential effects to navigation by Indigenous peoples during Project operation. This should be informed by information from Indigenous nations regarding how the current bridge affects navigation. c) Describe how the design of the new proposed bridge across the Keewatin River will differ from the existing bridge. i. Describe how the expected differences in design between the existing and new bridge may influence potential effects to navigation by Indigenous peoples during Project operation. d) Describe how Indigenous nations will be provided the opportunity to participate in and/or influence the final design of the new proposed bridge across the Keewatin River.
Fish & Fish Habitat					
IAAC-R2-38	Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Request Responses	3.1 Project components 3.2 Project activities 6.3.1 Fish and fish habitat	2.3.1.4 Water Development and Control 23.5.15 Fish Habitat Offsetting Plan Federal IR Responses, Round 1, Package 1, Response to IAAC-17	The EIS Guidelines require the Proponent to describe Project components and activities in sufficient detail to assist the Agency in understanding the environmental effects of the Project. The Proponent is also required to describe potential adverse effects to fish and fish habitat, including from geomorphological changes and modifications of hydrological and hydrometric conditions on fish habitat, and calculate any potential habitat offset/compensation works related to fish and fish habitat. In the EIS, the Proponent describes options to offset the harmful alteration, disruption, or destruction of fish habitat from Project activities, one of which is the replacement of the existing diversion channel with a new diversion channel with features to increase its habitat value. In its response to IAAC-17, the Proponent states that low flow design criteria used to design the diversion channel includes flow that would provide at least 15 centimetres of water under average low flow conditions to allow the passage of large-bodied fish species, and at least five centimetres of water under very low flow conditions to allow passage of small-bodied fish species. It is unclear whether the Proponent gave consideration to creating	a) Clarify whether consideration was given to creating fish habitat features and functions similar to that of Gordon Creek in the design of the new diversion channel. If not, provide a rationale as to why creating these features and functions in the new channel was not considered. b) Clarify whether limitations to fish passage caused by beaver dams was considered in the design of the new diversion channel. If not, provide an assessment of the effects of beaver dams on fish passage in the new diversion channel or provide a rationale for why this factor was not considered. i. Describe mitigation or contingency measures that will be implemented to address effects to fish passage from beaver dams in the new diversion channel.

				fish habitat features (e.g. sinuosity, riffle-pool sequences) and functions similar to that of the natural Gordon Creek, which predated the mine and the existing man-made diversion channel, in the design of the new diversion channel. DFO notes that beaver dams can limit fish passage in creeks and channels. It is unclear whether, and if so how, the Proponent considered the effects of beaver dams on fish passage in the design of the new diversion channel and what mitigation or contingency measures would be implemented to ensure fish passage in the channel is maintained. This information is required to support the Agency's understanding of potential Project effects to fish and fish habitat. **See Annex I for related advice.**	
IAAC-R2-39	Environment and Climate Change Canada – Technical Review of Round 1, Package 1 Information Request Responses Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Request Responses Mathias Colomb Cree Nation – Technical	6.1.6 Fish and fish habitat 6.3.1 Fish and fish habitat 10.1.3 Potential Effects, Pathways and Measurable Parameters	10.1.3 Potential Effects, Pathways and Measurable Parameters Federal IR Responses, Round 1, Package 1, Response to IAAC-43 Federal IR Responses, Round 1, Package 1, Response to IAAC-47	The EIS Guidelines require the Proponent to provide a characterization of fish populations on the basis of species and life stage, abundance, distribution, and movements, as well as a description and assessment of the predicted Project effects on fish and their habitat, including anticipated changes in the composition and characteristics of the populations of various fish species. Under the *Fisheries Act*, protections are afforded to all fish species. In its response to IAAC-43, the Proponent states that the focal species (Northern Pike, Lake Whitefish, and Walleye) and forage fish guild selected for the fish and fish habitat effects assessment together represent the variety of life history, habitat requirements, and trophic level of the fish species known to inhabit the LAAs at both the Gordon and MacLellan sites. The Proponent also states that Lake Sturgeon was not selected as a focal species because they have similar life history and habitat requirements to the focal species selected for the effects assessment. DFO expresses concerns with this conclusion, noting that Lake Sturgeon have a vastly different life-history strategy (i.e. k-strategy) than the focal species selected, which are r-strategists. This trait inherently increases the sensitivity of Lake Sturgeon to Project impacts which are not currently reflected by the focal species. Due to this, the effects on Lake Sturgeon, specifically at the MacLellan site, may not be fully addressed in the EIS.	a) Identify any fish species that frequent the LAAs but were not included in the assessment of potential Project effects to fish and fish habitat, and: i. identify any life history characteristics, habitat requirements, and toxicological and environmental sensitivities that were not captured by the focused assessment of potential effects on fish and fish habitat (i.e. assessment of focal species/groups); ii. assess potential Project effects to the most sensitive fish species in the LAAs, including Lake Sturgeon, and species of cultural importance, such as Burbot; iii. describe how adverse effects to the most sensitive fish species and species of cultural importance could be avoided/mitigated; iv. identify the cultural importance of these species and potential effects to Indigenous peoples' physical and cultural heritage; and v. describe associated monitoring and follow-up programs and assess the significance of residual effects for these species. b) Describe whether the fish habitat present at the confluence of the unnamed tributary (KEE3-B1/QM-04) and the

	Review of Round 1, Package 1 Information Request Responses Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses			The Proponent states in the EIS and in its response to IAAC-47 that flows at model node KEE3-B1/QM-04 are expected to change more than 30% (i.e. decrease by approximately 60% from year 2 to year 35 and increase by 50% for years 35+) across all Project phases. The Proponent also notes that Lake Sturgeon have been observed in the Keewatin River and Hughes River, and that members of the MMF report that they fish for Lake Sturgeon in Cockeram Lake and Sickle Lake, which are both connected to the Keewatin River. Given that Lake Sturgeon are likely present in the Keewatin River and that mean annual discharge is predicted to change substantially in a headwater stream (i.e. KEE-B1/QM-04), details are required regarding whether the habitat at the confluence of the unnamed tributary (KEE3-B1/QM-04) and the Keewatin River, or the unnamed tributary itself, has potential to support any life-history stage of Lake Sturgeon. MCCN also expresses concerns with the use of the focal species above to characterize effects to fish species of cultural importance. For example, Burbot, a culturally important fish species to MCCN, spawn in later winter, which does not overlap with the spawning periods of the focal fish species selected by the Proponent. With respect to Lake Sturgeon, MCCN also notes that, unlike other focal species, this species typically spawns in the fast-moving water found at the base of falls or rapids. Given the cultural importance and conservation status of lake sturgeon, which has been assessed as endangered by the Committee on the Status of Endangered Species in Canada, it is important to adequately consider the unique life history requirements of this species and any potential effects of the Project, which may not be adequately assessed using the focal species selected. ECCC also notes that it is unclear whether the LAAs for the Project include fish species that are more sensitive to potential Project effects than the four focal species used for the assessment. Therefore, it is unclear whether the assessment of potential effects on fish and fish habitat considered the most sensitive fish species. This information is required to support the Agency's understanding of potential effects to fish and fish habitat and Indigenous peoples. **See Annex I for related advice.**	Keewatin River, or the unnamed tributary itself, has potential to support any life-history stage of Lake Sturgeon. i. If so, provide an analysis of potential Project effects on Lake Sturgeon, which may include the proportion of flow KEE3-B1/QM-04 contributes to the mainstream Keewatin River. c) If potential residual effects to Lake Sturgeon are identified (refer to IAAC-R1-41), conduct further baseline assessments targeting Lake Sturgeon in the Keewatin River to assess the population status, habitat usage, and potential impacts, and include Lake Sturgeon as a focal species in the assessment of potential Project effects to fish and fish habitat. d) Discuss how Indigenous traditional knowledge and engagement contributed to the identification of fish species of cultural importance and potential effects to physical and cultural heritage referred to in a).

IAAC-R2-40	Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses	6.3.1 Fish and fish habitat	10.4.2.4 Residual Effects 10.10.1 Common Mitigation Measures Federal IR Responses, Round 1, Package 1, Response to IAAC-44	The EIS Guidelines require the Proponent to identify potential Project effects to fish and fish habitat, including any modifications to fish migration or local movements following the construction and operation of works that may create physical or hydraulic barriers. In its response to IAAC-44, the Proponent notes that installation of new culverts on streams along Project access roads or within the PDAs will be required; however, these components are not anticipated to reduce fish passage or migration. The Proponent also notes in the EIS that maintenance of culverts will be required to remove accumulated material and debris to reduce erosion, flooding, and sediment mobilization. MCCN expresses concerns that, while culverts have been designed to not limit fish passage, the accumulation of debris and maintenance activities may interfere with or prevent the passage of water and fish. Details are required regarding how culverts will be monitored and maintained to mitigate potential impacts to fish migration, passage, and local movements. This information is required to support the Agency's understanding of potential effects to fish and fish habitat and Indigenous peoples.	a) Provide information on the monitoring and maintenance activities for all proposed culverts over their lifetime, including the frequency of monitoring and maintenance and how this will ensure that fish passage is maintained. b) Describe how culverts will be maintained or decommissioned at the end of the Project's life.
IAAC-R2-41	Impact Assessment Agency of Canada Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Request Responses Mathias Colomb Cree Nation – Technical Review of Round 1,	6.3.1 Fish and Fish Habitat	10.4.2.4 Residual Effects Federal IR Responses, Round 1, Package 1, Response to IAAC-45	The EIS Guidelines require the Proponent to describe potential effects to fish and fish habitat, including a discussion of how vibration caused by blasting may affect fish behaviour, such as spawning or migrations. In its response to IAAC-45, the Proponent states that vibrations from the detonation of explosives may result in adverse effects to fish by damaging incubating fish eggs. Information is not provided regarding how vibrations caused by blasting may affect fish behaviour, including spawning or migrations. As vibrations can have a variety of effects on fish behaviour, movement, and condition, understanding the implications of vibrations caused by blasting for fish health, behaviour, movement, and reproductive success is needed to understanding potential Project effects on fish populations. MCCN notes that the timing of Project activities, including blasting and drilling, may have a significant impact on the severity and magnitude of potential effects to fish and fish habitat. It is unclear how blasting and drilling activities associated with the Project may overlap with seasonal habitat use and critical timing windows for fish. MCCN also notes that blasting and drilling activities may adversely affect the current use of lands	a) Describe how vibration caused by blasting may affect fish behavior, including spawning or migrations. b) Describe the timing, duration, and frequency of blasting and drilling activities during which vibrations and their associated effects to fish may be experienced. c) Clarify how blasting and drilling activities will be timed to avoid overlap with restricted activity windows for the protection of fish and fish habitat. d) Describe how Indigenous nations will be engaged regarding blasting and drilling activities, including the timing of these activities, blasting protocols, the plan to notify Indigenous communities of blasting activities, and the development of plans to assess, mitigate, and monitor effects to fish and fish habitat as a result of blasting and drilling activities. e) Provide details of how monitoring of overpressure from blasting activities, effects to the Keewatin River and other

	Package 1 Information Request Responses Peter Ballantyne Cree Nation - Technical Review of the EIS and Round 1 Information Requests Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses			and resources for traditional purposes and may result in impacts to rights. It is unclear how Indigenous nations will be engaged with respect to blasting and drilling activities, including the timing of these activities, as detailed engineering plans are developed. In its response to IAAC-45, the Proponent also commits to incorporating DFO's *Guidelines for the Use of Explosives in or Near Canadian Fisheries Waters* into its blasting protocols. DFO notes that, given the close proximity of the Keewatin River to the MacLellan site, the presence of Lake Sturgeon in the system, and the heightened sensitivity status of Lake Sturgeon, adverse effects of blasting to this watercourse and the fish and fish habitat within may occur. Monitoring overpressure during blasting to the Keewatin River and other watercourses potentially affected must be included in the SWMMP for the Project to ensure DFO's blasting guidelines are achieved. PBCN also notes that it is unclear how Indigenous nations will be involved in the development and implementation of blasting protocols. This information is required to support the Agency's understanding of potential effects to fish and fish habitat and Indigenous peoples.	watercourses, and monitoring to ensure DFO's blasting guidelines are being achieved will be included in the SWMMP for the Project, including monitoring locations, parameters to be measured, study design, planned protocols, and the schedule of monitoring activities. i. Should monitoring indicate that DFO's blasting guidelines are not being achieved, describe the adaptive management measures and criteria/triggers for implementation of adaptive management measures that will be implemented. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans.
IAAC-R2-42	Impact Assessment Agency of Canada	6.3.1 Fish and Fish Habitat	10.3 Project Interactions with Fish and Fish Habitat Table 10-14 Federal IR Responses, Round 1, Package 1, Response to IAAC-46	The EIS Guidelines require the Proponent to describe potential Project effects to fish and fish habitat, including effects of changes to the aquatic environment. In its response to IAAC-46, the Proponent notes that monitoring of TSS concentrations and/or turbidity, including those resulting from dust deposition in fish-bearing lakes and streams near the Project, and along site access roads, will be part of the Aquatic Environmental Management Plan (AEMP) for the Project. Details regarding the AEMP are required, including planned protocols, parameters to be measured, study design, and the anticipated schedule of monitoring activities to determine whether the monitoring program will be adequate to detect Project related changes to surface water quality and fish and fish habitat. This information is required to support the Agency's understanding of potential effects to fish and fish habitat.	a) Provide details of the monitoring activities that will be part of the AEMP related to TSS concentrations and/or turbidity, including those resulting from dust deposition in fish-bearing lakes and streams near the Project, and along site access roads. Describe the planned protocols, parameters to be measured, study design, and the anticipated schedule of monitoring activities.

IAAC-R2-43	Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Request Responses Peter Ballantyne Cree Nation - Technical Review of the EIS and Round 1 Information Requests Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	6.3.1 Fish and Fish Habitat 6.4 Mitigation Measures	10.4.1.4 Project Residual Effects 10.7.1 Significance of Project Residual Effects Federal IR Responses, Round 1, Package 1, Response to IAAC-48	The EIS Guidelines require the Proponent to describe potential Project effects to fish and fish habitat, including from modifications of hydrological and hydrometric conditions, and to describe measures to mitigate potential adverse effects. An assessment of the effectiveness of the proposed technically and economically feasible mitigation measures is also required. In its response to IAAC-48, the Proponent provides a report with information on the Farley Creek hydraulic habitat model that was used to predict potential changes in flow in Farley Creek as a result of the Project and an assessment of predicted effects to fish and fish habitat as a result of changes in flow. Based on this report, the Proponent concludes that increases in flow in Farley Creek attributable to the Project will be within the range of natural variation and therefore mitigation measures identified in the EIS to reduce potential adverse effects to fish and fish habitat in Farley Creek will not be implemented. DFO notes that the general conclusions detailed in the report are greatly limited by the analyses conducted and note the following limitations to the assessment that may affect its conclusions with respect to potential effects to fish and fish habitat, including fisheries: • **Reach Selection (section 2.1 of the report):** Although it is understood, for modelling purposes, why the study reach was chosen, the straight 100 metre reach selected is not representative of the diversity of fish and fish habitat potentially affected by increased flows throughout Farley Creek. The lack of stage/discharge or hydrometric measurements specifically in higher gradient reaches (i.e. Reach 2 and 3) inherently limits the extension of the modelling domain over the entirety of Farley Creek and therefore the scope of impacts to fisheries; • **Single Discharge Location (section 2.2, Map 2.1 of the report):** Only one stream discharge location was chosen in the middle of the study reach. Validation of discharge measurements at the top and bottom ends of the reach is important to inform the model; • **Timing of the Site Visit (section 2.2 of the report):** In-situ stream discharge measurements were collected once in October 2020 and relied upon the 1-dimensional model to produce the rating curve. Measuring multiple data points over various flow regimes are pertinent when creating a robust rating curve to inform model predictions;	a) Provide details of how a more comprehensive flow monitoring program to supplement the program described in response to IAAC-48 will be conducted and provide specific details of how the following will be incorporated into the SWMMP and AEMP: i. collection of in-situ hydrometric data across a variety of flows prior to and during Project construction and operation to update, improve, validate, and/or confirm the predicted results of the 1-dimensional hydraulic model developed for Farley Creek, including monitoring locations, parameters to be measured, study design, planned protocols, and the anticipated schedule of activities related to collection of this data; ii. how data will be used to update, validate, and/or confirm the developed HSI curves; iii. details of how the comprehensive monitoring program or plan, and an adaptive management plan will adjust for discrepancies that may be identified. Refer to IAAC-R2-04 for further details regarding information requirements for adaptive management plans; iv. monitoring measures that will be implemented to track potential changes in flow, hydraulic conditions (e.g. water depths and velocities, substrate, etc.), fish habitat and fish utilization, and to address effects to fish and fish habitat in Farley Creek, including monitoring locations, parameters to be measured, study design, planned protocols, and the anticipated schedule of monitoring activities; and v. mitigation measures to address any potential adverse effects to fish and fish habitat. b) Revise the assessment and conclusions with respect to potential effects to fish and fish habitat to account for the limitations of the *Lynn Lake Gold Project: Farley Creek Hydraulic Habitat Model and Assessment of Predicted Results to Fish and Fish Habitat* report identified and to

				• **<u>No Beaver Dam Scenario (section 3.2 vs. section 3.3 of the report):</u>** The assessment of effects to fish and fish habitat focused on the 'Beaver Dam Boundary' scenario and the 'buffering capacity' of the backwater. Effects related to the 'No Beaver Dam' scenario, where more direct changes to free water flows and water depth would be expected, was not examined to the same extent. The 'No Beaver Dam' scenario, should have also been considered in the context that anticipated elevated flows in Farley Creek (e.g. 300% increase in winter) have the potential to overtop or blow-out beaver dams; and • **<u>Omission of >300% winter flow events and impacts to Burbot:</u>** Given that substantial increases in winter flows (>300%, between year -2 to year 5) are anticipated and that Burbot (i.e. winter spawning) are present in Farley Creek, the assessment failed to describe potential impacts to this species during a critical life-history phase. In Appendix D of the report, it is stated that Burbot habitat suitability indices (HSI) were developed and examined, however HSI curves specific to Burbot were omitted from the report provided. Due to the limitations noted above, DFO expresses concerns with the lack of mitigation measures that will be implemented to reduce potential adverse effects to fish and fish habitat in Farley Creek and the Proponent's rationale, which is inconsistent with the following statement in the EIS: "Potential changes in flow in Farley Creek at the Gordon site pose the greatest potential risk to focal fish populations due to changes in fish habitat at the Gordon site". DFO also notes concerns with the Proponent's conclusion that changes in flows in Farley Creek are not expected to cause a measurable reduction in local fish population productivity. While consideration is given to the broader context of local populations in decision-making at the regulatory phase, concluding an effect is not expected because it may not be realized at a population level does not align with the definition of harmful alteration, disruption, or destruction of fish habitat, which is prohibited under the amended *Fisheries Act*, is contrary to the objective of conserving and protecting fish and fish habitat, and underestimates the potential effects of the Project. For these reasons, and the given constraints of predicting downstream hydrological changes and related impacts to fisheries in Farley Creek, DFO	account for the fact that, while population level effects to fish and fish habitat may not be realized, any harmful alteration, disruption, or destruction of fish habitat, which is prohibited under the amended *Fisheries Act*, must be considered. i. If potential adverse effects to fish and fish habitat may occur, describe mitigation measures that will be implemented to address these effects. ii. Describe how the Proponent will provide an opportunity for Indigenous nations to participate in the development of mitigation measures with respect to fish and fish habitat.

				supports conducting a more comprehensive flow monitoring program, as described in the Proponent's response to IAAC-48. DFO notes that monitoring programs should focus on the collection of in-situ hydrometric data, across a variety of flows, prior to, and during Project construction and operation to update, improve, validate, or confirm the predicted results of the 1-dimensional hydraulic model developed for Farley Creek. These data should also be used to update, validate, or confirm the developed HSI curves. Details of such comprehensive monitoring programs or plans, and an adaptive management plan will need to be adjusted for discrepancies that may be identified. Monitoring to track potential changes in flow, hydraulic conditions (e.g. water depths and velocities, substrate, etc.), fish habitat and fish utilization, and to address effects to fish and fish habitat in Farley Creek should be also conducted and mitigation measures developed to address any effects identified. All of the above should be incorporated into the SWMMP and AEMP. PBCN expresses concerns that Indigenous nations may not be provided the opportunity to participate in the development of mitigation measures with respect to fish and fish habitat. Any Project effects to fish and fish habitat may affect the rights of Indigenous peoples and their traditional and cultural practices. This information is required to support the Agency's understanding of potential effects to fish and fish habitat.	
IAAC-R2-44	Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Request Responses	6.1.6 Fish and Fish Habitat 6.3.1 Fish and Fish Habitat	10.2.2.3 Fish Community Composition, Distribution, and Relative Abundance 10.4.1.4 Project Residual Effects 10.10.4 Fish and Fish Habitat Specific	The EIS Guidelines require the Proponent to characterize fish populations on the basis of species and life stage, abundance, distribution, and movements and to provide a description of fish habitat present, including habitat types and functions. In its response to IAAC-49, the Proponent states that additional sampling to collect information about fish utilization of the existing diversion channel is not planned prior to the conclusion of the environmental assessment process for the Project due to the relative inefficiency and/or safety concerns of baited minnow traps, backpack electrofishing, fyke nets, beach seines, and gillnets for the habitat conditions present in channel. If additional studies are required to collect baseline data with success metrics defined in the effectiveness monitoring program, then additional data would be collected in the existing diversion channel prior to construction. It is unclear how additional data could be collected prior to construction,	a) Describe how additional baseline data and monitoring to inform effects prediction validation and offsetting success could be collected in the existing diversion channel given the sampling efficiency and safety concerns identified. i. If fish sampling is not planned given the constraints identified, describe how the success of fish productivity and fish passage of the new diversion channel will be monitored. ii. If fish sampling is not planned given the constraints identified, discuss the implications of this lack of data for conclusions drawn, uncertainty, and additional follow-up and monitoring that will be conducted to address uncertainty in a precautionary manner.

			Mitigation Measures Federal IR Responses, Round 1, Package 1, Response to IAAC-49	given the sampling efficiency and safety constraints noted, or how the Proponent plans to monitor success of fish productivity and fish passage in the new diversion channel. In the EIS, the Proponent states that isolating in-water work areas and conducting fish rescues prior to dewatering will be conducted, including for East Pond at the MacLellan site, Wendy and East pits at the Gordon site, the existing diversion channel at the Gordon site, and other locations where instream construction will be required. It is unclear how fish will be rescued from the isolated diversion channel given the described limitations of sampling/fish capture in the channel or whether consideration has been given to using the fish rescues to document species presence/usage in the channel to inform species presence and relative abundance. This information is required to support the Agency's understanding of potential effects to fish and fish habitat.	b) Describe how fish will be rescued from the isolated diversion channel given the described limitations of sampling/fish capture in the channel. c) Describe whether consideration has been given to using the fish rescues to document species presence/usage in the channel to inform species presence and relative abundance.
IAAC-R2-45	Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Request Responses Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	6.1.6 Fish and Fish Habitat 6.3.1 Fish and Fish Habitat	10.2.2.3 Fish Community Composition, Distribution, and Relative Abundance Federal IR Responses, Round 1, Package 1, Response to IAAC-50	The EIS Guidelines require the Proponent to characterize fish populations on the basis of species and life stage, abundance, distribution, and movements and to provide a description of habitat present, including habitat types and functions. In its response to IAAC-50, the Proponent states that, due to the limited sampling data collected regarding fish species presence and relative abundance in the upstream-most reach of Farley Creek (Reach 1), a precautionary approach has been taken and it has been assumed that the fish species present in Upper Farley Creek includes, in order of likely relative abundance: Brook Stickleback, juvenile White Sucker, juvenile Northern Pike, and juvenile Burbot. The Proponent also notes that the central channel of Farley Creek flows through numerous beaver dam impoundments and has water depths of less than 1.5 metres with soft, unconsolidated silt and organic substrates, conditions that preclude safe and effective backpack electrofishing or beach seining. DFO notes that, due to the depth of Upper Farley Creek, use of this area may not be limited to only juvenile life-histories and may provide suitable habitat for adult individuals. This must be considered in the baseline characterization for Farley Creek and the effects assessment for fish and fish habitat. This information is required to support the Agency's understanding of potential effects to fish and fish habitat.	a) Revise the characterization of baseline data and the effects assessment for fish and fish habitat to account for the fact that the depth of Upper Farley Creek may allow usage by adult individuals as opposed to only juvenile and small-bodied fish. b) Due to the limited sampling data for Upper Farley Creek, discuss the implications of this lack of data for conclusions drawn, uncertainty, and additional follow-up and monitoring that will be conducted to address uncertainty in a precautionary manner.

IAAC-R2-46	Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Request Responses Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	6.3.1 Fish and Fish Habitat	10.4.1.4 Project Residual Effects Appendix 20A, Table 20A-1 Federal IR Responses, Round 1, Package 1, Response to IAAC-48 Federal IR Responses, Round 1, Package 1, Response to IAAC-52	The EIS Guidelines require the Proponent to identify any potential adverse effects to fish and fish habitat, including any potential habitat loss or alterations (temporary or permanent) in terms of surface area (e.g. spawning grounds, fry-rearing areas, feeding), and in relation to watershed availability. In its response to IAAC-52, the Proponent states that the recalculation of fish habitat area potentially affected by the Project does not include potential changes to Farley Creek due to flow alterations as the hydraulic modelling completed in Farley Creek predicted no measurable change in habitat availability or suitability during any phase of the Project. As noted in IAAC-R2-43, due to the limitations with respect to the assessment presented in the report appended to the Proponent's response to IAAC-48 and the inconsistency of the Proponent's rationale with several statements made in the EIS that discuss the likelihood of potential effects to fish and fish habitat in Farley Creek, potential effects to fish and fish habitat in this area must be reconsidered in a precautionary manner to ensure potential Project effects are not underestimated. DFO notes that, to fully address potential impacts of flow changes to focal species in Farley Creek, the assessment must consider that effects of changes in flow on fish and fish habitat may include changes in species assemblage and changes in the life stages and life history processes the habitat supports. The assessment must also consider that the length of time the changes occur over (construction, operation, and closure) are not insubstantial and must be assessed considering the life history characteristics of the populations potentially affected. A precautionary approach must be used when attempting to quantify impacts given the uncertainty with the hydraulic model presented in response to IAAC-48. If at this stage, additional information cannot be obtained, the Proponent must provide a conservative estimate of impacts using a scientifically-defensible rationale and update the offsetting plan to account for it. MCCN notes concerns with respect to the Proponent's calculation and summary of fish habitat potentially affected by the Project, including: • the calculations of harmful alteration, disruption, or destruction of fish habitat have been summarized for White Sucker, Brook Stickleback, Northern Pike, Walleye, and Lake Whitefish only.	a) Given the limitations of the Farley Creek hydraulic model (as discussed in IAAC-R2-43), provide an updated analysis and assessment of potential effects to fish and fish habitat, including updates to the offsetting plan. Ensure that the assessment considers: i. the effects of changes in flow on fish and fish habitat, including changes in species assemblage and changes in the life stages and life history processes the habitat supports; ii. the length of time over which the changes occur (construction, operation, and closure) and the life history characteristics of the populations potentially affected; and iii. the precautionary approach when quantifying impacts given the uncertainty with the hydraulic model presented in response to IAAC-48. If additional information cannot be obtained, provide a conservative estimate of impacts using a scientifically-defensible rationale and update the offsetting plan to account for it. b) Describe how the fish habitat offset plan will include calculations of potential changes to Farley Creek due to flow alterations if results of hydraulic modeling show it is warranted. c) Identify the spatial areas of all temporary and permanent habitat losses or alterations (including Wendy and East pits) and the habitat quantities of this affected habitat for the focal fish species and life stages (e.g. spawning, rearing). d) Update the tables provided in Appendix IAAC-52 to include: i. summaries of harmful alteration, disruption, or destruction of fish habitat for Lake Sturgeon and Burbot; ii. alteration and disruption of fish habitat associated with access roads and transmission lines (including

				Information is not provided for other culturally important fish species, such as Lake Sturgeon and Burbot; • the calculations of fish habitat alteration provided do not account for potential effects associated with stream crossings, such as increased sedimentation, at culvert crossings and clear span bridges; and • some areas appear to have been excluded from the harmful alteration, disruption, or destruction calculations based on the results of field sampling surveys. For example, footnote 8 in Table IAAC-52-8 indicates that only the stream portion of the East Pond watershed was included as Northern Pike were not captured elsewhere in the watershed. A lack of Northern Pike captures for this area does not mean that it should be excluded as potential Northern Pike habitat. It is unclear whether other areas with fish-bearing potential have been excluded on the basis of fish occurrence data from limited field surveys. This information is required to support the Agency's understanding of potential effects to fish and fish habitat.	direct and indirect effects), such as increased sedimentation at stream crossings; and iii. the inclusion of all water bodies with fish-bearing potential for selected species. e) Include a summary table for potential Project effects to all aquatic habitat with fish bearing potential within the study area and associated mitigations and/or offsets.
IAAC-R2-47	Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Request Responses Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information Request Responses	6.3.1 Fish and Fish Habitat	10.4 Assessment of Residual Effects on Fish and Fish Habitat 10.8.1 Change in Fish Habitat 23.5.15 Fish Habitat Offsetting Plan Federal IR Responses, Round 1, Package 1, Response to IAAC-53	The EIS Guidelines require the Proponent to calculate potential habitat offset/compensation works related to fish and fish habitat in terms of the amount and spatial location of habitat offsetting/compensation. In its response to IAAC-53, the Proponent lists several offsets that are being proposed to compensate for unavoidable harmful alteration, disruption, or destruction of fish habitat, including offsets in the Waban Creek watershed and replacement of culverts on the Burnt Timber Mine access road. In Attachment IAAC-53, the Proponent also notes that there has been only one, three-day fish and fish habitat survey conducted on Waban Creek in 1993. A survey conducted in 1993 determined that the only stream likely to support fish was Waban Creek and that potentially good quality spawning habitat was situated near the confluence of Waban Creek and in the Wasekwan Lake outlet. DFO notes that the data provided suggests that specific sport fish species are present; however, the information is outdated for the context of providing offsetting quantifications. Obtaining current fish and fish habitat baseline data would provide confidence that the area would indeed be suitable to open fish passage for selected fish species within the area.	a) Provide an update on any recent efforts and/or plans to collect additional baseline data to support offsetting quantification for the culvert replacements. Discuss how additional data collection will inform offsetting quantification and the monitoring program as it relates to the effectiveness of offsetting. Any provincial data, literature searches, discussions with provincial biologists, and aerial maps denoting fish habitat to be used in offsetting measures should be used to support the update. b) Describe how equivalency, uncertainty, and time lags were considered in the development of the offset plan for the Project. If these factors were not considered in developing the offset plan, provide a revised offset plan that includes this information. Clearly identify how residual effects and anticipated benefits of the offset measures compare in terms of kind, proximity, condition, and quantity (i.e. area).

	Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses			MCCN expresses concerns with the Proponent's proposed offsetting plans, noting that DFO's *Policy for Applying Measures to Offset Adverse Effects on Fish and Fish Habitat Under the Fisheries Act* (2019) states that offset measures must be proportional to the residual effects resulting from a proposed project or activity and must account for equivalency between the residual effects and the benefits of the offsetting measures; uncertainty regarding the effectiveness of these measures; and time lags between the adverse effects on fish and fish habitat and benefits incurred from the offsetting measures. It is unclear how the offsetting measures proposed by the Proponent will meet these three criteria. The following specific concerns are noted by MCCN: • with respect to equivalency, a framework to draw equivalency between the ecological and cultural features lost to development and those gained from offset activities has not been provided. Large bodied fish species, for example, are unlikely to overwinter in Wabun Creek and Shortie Lake. Wabun Creek and Shortie Lake are also unlikely to support lake whitefish because they are too shallow and do not have the rocky substrates required for spawning; • with respect to uncertainty, fish use information for Wabun Creek is based on a single field survey conducted in 1993. There remains a great deal of uncertainty regarding fish use and the current condition of fish habitat in Wabun Creek and Shortie Lake, and therefore the anticipated benefits of the proposed offset measures. Further, the 17 kilometre access road has 12 separate stream crossings along its length, nine of which are partially to fully crushed and/or plugged. It is unclear from the Proponent's summary in the attachment to IAAC-53 whether damaged culverts upstream will affect the effectiveness of the proposed offset measures at sites 10/11 and 12. Additional offsetting is generally required where uncertainty is high, as is the case for this Project; and • with respect to time lags, timelines for the implementation of offset measures have not been identified. MCCN also notes that, to be effective, conservation offsetting must safeguard species, ecosystems and Indigenous cultural values. It is unclear how Indigenous knowledge, use, and values have been considered in the development of this offset plan to ensure that impacts to rights, traditional	c) Describe how potential effects to Indigenous peoples, including Indigenous rights, Indigenous knowledge, use, and values were considered in the development of the offset plan. i. If these factors were not considered, describe how the Proponent will work with Indigenous nations to develop a framework for assessing ecological and cultural components that integrates Indigenous knowledge, science, and the values identified by Indigenous nations. d) Describe how the Proponent will engage with all potential affected or interested Indigenous nations regarding fish habitat offsetting and the offset plan under development.

				and cultural practices, and cultural values are minimized. For instance, while the conditions of the offset location may be suitable for fish, consideration must also be given to whether the conditions are suitable for the exercise of rights. Further, the loss of cultural connection to the original locale can result in disruptions to teaching and transmission of knowledge to the next generation. Without Indigenous input, the offsetting plan cannot effectively mitigate impacts to Indigenous rights and interests associated with fish and fish habitat. The Proponent notes in its response to IAAC-53 that engagement with Indigenous nations other than Marcel Colomb Cree Nation regarding fish habitat offsetting was not conducted as the watershed for potential habitat loss is within the traditional territory of Marcel Colomb Cree Nation. As the traditional territory of other Indigenous nations and areas where those Nations have potential or established rights may also overlap with the watershed for potential habitat loss, engagement with other interested Indigenous nations must also be conducted to ensure that all potential effects to traditional and cultural practices and impacts to rights are considered. This information is required to support the Agency's understanding of potential effects to fish and fish habitat and Indigenous peoples, including the current use of lands and resources for traditional purposes and impacts to the rights of Indigenous peoples.	
IAAC-R2-48	Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Request Responses Manitoba Metis Federation – Technical Review of Round 1,	6.3.1 Fish and Fish Habitat 8.0 Follow-Up and Monitoring Programs	10.2.2.3 Fish Community Composition, Distribution, and Relative Abundance Table 10-1 23.0 Environmental Management and Monitoring	The EIS Guidelines require the Proponent to describe potential Project effects to fish and fish habitat, including from changes to groundwater and surface water. The Proponent is also required to describe the follow-up and monitoring program(s) that will be implemented to verify the accuracy of the effects assessment and to determine the effectiveness of mitigation measures proposed. In its response to IAAC-55, the Proponent indicates that a fish tissue monitoring component will be included in the AEMP for the Project to identify potential increases in mercury, arsenic, and other mine related contaminants in fish downstream of the Project. DFO notes that the information provided is not sufficient for DFO to effectively assess whether the monitoring program will be sufficient to detect change in fish and fish habitat. In order to effectively detect change, it is important to develop a robust study design up front in an attempt to capture spatial and temporal	a) Provide details regarding the fish tissue monitoring component of the AEMP, including proposed sampling locations, parameters to be measured (if additional parameters beyond those listed in response to IAAC-55 will be included), study design, baseline monitoring plan, statistical methodologies that will be used to assess change, how the monitoring plan will be directly tied into monitoring throughout all phases of the Project, and other factors identified in the guidance suggested by DFO. b) Describe how the Proponent will involve Indigenous nations in the selection of fish species to be utilized for fish tissue monitoring.

	Packages 1 and 2 Information Request Responses		Federal IR Responses, Round 1, Package 1, Response to IAAC-55	variability prior to implementing changes on the landscape. In particular, DFO expects a clear demonstration of the study design and baseline monitoring plan, and how it will be directly tied into monitoring throughout all phases of the Project, including relevant statistical methodologies that will be used to assess change. DFO also notes that they should be involved in review of early drafts of the monitoring plan to ensure it meets relevant requirements. DFO suggests that the Proponent refer to the following standard guidance when developing the detailed monitoring plan: • Braun, D.C., Smokorowski, K.E., Bradford, M.J., and Glover, L. 2019. *A review of functional monitoring methods to assess mitigation, restoration, and offsetting activities in Canada*. DFO Can. Sci. Advis. Sec. Res. Doc. 2019/057. vii + 75 p. • Bradford, M.J., R.G. Randall, K.S. Smokorowski, B.E. Keatley and K.D. Clarke. 2014. *A framework for assessing fisheries productivity for the Fisheries Protection Program*. DFO Can. Sci. Advis. Sec. Res. Doc. 2013/067. v + 25 p. • CSAS. 2019. *Science Advice on Operational Guidance on Functional Monitoring: Surrogate Metrics of Fish Productivity to Assess the Effectiveness of Mitigation and Offsetting Measures*. • Smokorowski, K.E., Bradford, M.J., Clarke, K.D., Clément, M., Gregory, R.S., Randall, R.G. 2015. *Assessing the effectiveness of habitat offset activities in Canada: Monitoring design and metrics*. Can. Tech. Rep. Fish. Aquat. Sci. 3132: vi + 48 p. The MMF notes that it is unclear how Indigenous nations will be involved in the selection of fish species to be utilized for fish tissue monitoring. This information is required to support the Agency's understanding of potential effects to fish and fish habitat.	
Impacts to Aboriginal or Treaty Rights					
IAAC-R2-49	Chemawawin Cree Nation - Technical Review of the EIS and Round 1 Information Requests	3.1 Project components 3.2.1 Site preparation and construction	2.1 Project Location 2.3.1.2 Utilities and Infrastructure	The EIS Guidelines require the Proponent to identify permanent and temporary linear infrastructure and to describe restrictions to access and travel routes for conducting traditional practices. In its response to IAAC-07, the Proponent outlines which areas of the PDA will be subject to access restrictions. The Proponent also indicates that they will continue to engage with Indigenous nations throughout the life of the	a) Provide further details regarding the communication plan for notifying Indigenous nations about potential future modifications to access restrictions, including: i. how the Proponent will ensure that members of Indigenous communities are made aware of modified access restrictions as soon as possible

	Sayisi Dene First Nation - Technical Review of the EIS and Round 1 Information Requests	6.1.9 Indigenous peoples	2.3.2.3 Utilities and Infrastructure 15.4 Assessment of Residual Environmental Effects on Land and Resource Use 17.4.3.3 Project Residual Effects Federal IR Responses, Round 1, Package 1, Response to IAAC-07	Project and will use ongoing engagement to notify Indigenous nations of any modifications to access restrictions. Details are required regarding this communication plan, how the Proponent will ensure that members of Indigenous communities are made aware of modified access restrictions as soon as possible, and how concerns or objections to modifications to access restrictions will be considered and addressed. This information is required to support the Agency's understanding of potential effects to Indigenous peoples, including impacts to rights and the current use of lands and resources for traditional purposes.	and with enough notice so as to not disrupt the exercise of rights or traditional use activities; and ii. how concerns or objections with respect to modified access restrictions will be considered and addressed.
Cumulative Effects					
IAAC-R2-50	Impact Assessment Agency of Canada Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests	4.2.2 Community knowledge and Aboriginal traditional knowledge 6.6.3 Cumulative effects assessment	4.3.2.1 Spatial Boundaries 9.5.1 Project Residual Effects Likely to Interact Cumulatively 4.3.2.1 Spatial Boundaries Federal IR Responses, Round 1, Package 1, Response to IAAC-18	The EIS Guidelines require the Proponent to identify and justify the spatial and temporal boundaries for the cumulative effects assessment for each VC selected. In its response to IAAC-18, the Proponent notes that information provided by Indigenous nations during engagement activities was used to inform the selection of spatial and temporal boundaries for the assessment of cumulative effects on heritage resources, the current use of lands and resources for traditional purposes by Indigenous peoples, and the general assessment of effects to Indigenous peoples. It is unclear whether Indigenous knowledge or other information provided by Indigenous nations was used to determine the appropriate spatial and temporal boundaries for the assessment of cumulative effects for other VCs, such as fish and fish habitat, surface water and groundwater, etc. This information is required to support the Agency's understanding of potential Project effects to Indigenous peoples and other areas of federal jurisdiction listed under section 5 of CEAA 2012. **See Annex I for related advice.**	a) Describe how Indigenous knowledge and/or other information from Indigenous peoples was used to inform the selection of spatial and temporal boundaries for each VC. i. If Indigenous knowledge or other information from Indigenous nations was not considered, provide a clear rationale why not or revise the spatial and temporal boundaries for the cumulative effects assessment to consider this information and provide updated analyses for each VC, as applicable.

IAAC-R2-51	Health Canada – Technical Review of Round 1, Package 1 Information Request Responses	4.2.2 Community Knowledge and Aboriginal Traditional Knowledge 6.2.1 Changes to the atmospheric environment 6.2.3 Changes to riparian, wetland, and terrestrial environments 6.3.4 Indigenous peoples 6.6.3 Cumulative Effects Assessment	4.3.2.1 Spatial Boundaries 4.3.2.2 Temporal Boundaries 7.4.1.1 Analytical Assessment Techniques Map 7-1 EIS Volume 5, Appendix A Tables 8.1 and 8.3 Figures G1 to G25 Federal IR Responses, Round 1, Package 1, Response to IAAC-18	The EIS Guidelines require the Proponent to identify and justify the spatial and temporal boundaries for the cumulative effects assessment for each VC selected, and to describe potential Project effects to the atmospheric environment, including noise levels, riparian, wetland, and terrestrial environments, and how changes to the environment caused by the Project will affect Indigenous peoples. In its response to IAAC-18, the Proponent provides a rationale for the spatial and temporal boundaries selected for each VC for the cumulative effects assessment. With respect to spatial boundaries for the cumulative effects assessment for the atmospheric environment and noise, the Proponent proposes to limit the assessment to the LAA and RAA. Health Canada notes that some receptors identified in the EIS as outside of the RAA are relatively close to the edge of the RAA (e.g. the Town of Lynn Lake, various potential Indigenous receptors). Given the uncertainty of the potential for cumulative effects of the Project with other projects and activities outside of the RAA, these receptors must be considered. The Proponent notes that the worst case years with respect to Project effects to the atmospheric environment and noise differ slightly for the construction phase (i.e. Q2 year -2 to Q1 year -1 versus Q2 year -2 to Q4 year -1). Health Canada notes that it would be logical to assume that periods of highest noise emissions (i.e. blasting, construction and mining equipment, hauling trucks, etc.) would coincide with those of the highest emissions of contaminants of potential concern (COPC). Further rationale is required to explain this discrepancy. In the EIS and in its response to IAAC-18, the Proponent defines the spatial boundary of the RAA as the area extending five kilometres from the PDA boundary and the section of PR 391 between the Gordon and MacLellan access roads. Health Canada notes that, according to Health Canada's *Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise* (2017), the RAA for noise should be based on the identified receptor locations and predicted future sound levels (both day and night) at those receptor locations. It is unclear how human receptor locations were considered when determining the spatial boundary for the cumulative effects assessment for noise.	a) Describe the level of certainty that Project effects on the atmospheric environment, including to air quality and noise, will not extend to the Town of Lynn Lake or Indigenous receptors located just beyond the RAA. i. If the level of certainty is not high, revise the cumulative effects assessment to include these receptors. b) Provide a rationale to explain the temporal differences noted between the periods of highest noise and air contaminant emissions (i.e. Q2 year -2 to Q1 year -1 versus Q2 year -2 to Q4 year -1) used in the assessment of effects during the construction phase. c) Clarify how baseline noise data and modelled noise predictions (day and night) at human receptor locations were used to inform the selection of the RAA for the cumulative effects assessment for noise. i. If this baseline noise data and modelled noise predictions at human receptor locations were not considered, revise the cumulative effects assessment for noise, including the associated RAA, to consider this information. d) Clarify whether the traditional harvesting of plants by Indigenous peoples, including the locations in which this activity is practiced, was considered when defining the spatial and temporal boundaries for the vegetation and wetlands cumulative effects assessment. i. If not, revise the cumulative effects assessment, including the spatial and temporal boundaries used, for vegetation and wetlands to consider this information. ii. Describe how the spatial boundaries selected compare to predicted ranges for dust-fall and consequent potential deposition of contaminants onto vegetation harvested for consumption or use by Indigenous peoples, and accumulation in soils.

				Health Canada also notes that human use of plants, including the traditional harvesting of plants by Indigenous peoples, does not appear to have been considered by the Proponent in assessing potential cumulative effects to vegetated and wetland areas or in determining the spatial and temporal boundaries of the cumulative effects assessment. Clarity is required to understand how the boundaries of the cumulative effects assessment for vegetation and wetlands were determined, including whether the assessment sufficiently considers potential effects to human health. This information is required to support the Agency's understanding of potential effects to Indigenous peoples, migratory birds, and other VCs that may be affected by changes to the atmospheric, riparian, wetland, and terrestrial environments.	
IAAC-R2-52	Health Canada – Technical Review of Round 1, Package 1 Information Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests	4.2.2 Community Knowledge and Aboriginal Traditional Knowledge 6.3.4 Indigenous peoples 6.6.3 Cumulative Effects Assessment	4.3.2.1 Spatial Boundaries 4.3.2.2 Temporal Boundaries 18.4.2 Change to Human Health Maps 19-2 and 19-3 Federal IR Responses, Round 1, Package 1, Response to IAAC-18	The EIS Guidelines require the Proponent to identify and justify the spatial and temporal boundaries for the cumulative effects assessment for each VC selected, and to describe how changes to the environment caused by the Project will affect Indigenous peoples. In its response to IAAC-18, the Proponent notes that the spatial boundary for the cumulative effects assessment for human health is the same as that for the atmospheric environment. In the HHRA provided as part of the EIS, the Proponent identifies the contributions of multiple pathways beyond just atmospheric environment-related pathways to baseline and Project-related exposure to COPCs for both non-Indigenous and Indigenous receptors. Health Canada notes that it is unclear why other relevant VC spatial boundaries (e.g. vegetation/wetlands and wildlife) were not considered in defining the spatial boundary for the cumulative effects assessment for human health. The Proponent also indicates in its response to IAAC-18 that the RAA for cumulative effects to Indigenous health conditions and Indigenous physical and cultural heritage includes both the PDA and LAA, and the largest extent of the RAA established for current use, which incorporates the Indigenous receptor locations established for the human health assessment, and the heritage resources RAA. Health Canada notes that the spatial boundary for the cumulative effects assessment for current use does not consider potential alternate locations for traditional activities that might be used by Indigenous peoples in the future as a result of Project-driven loss of access	a) Provide a rationale for limiting the assessment of cumulative Project effects on human health to the spatial boundaries of the atmospheric environment VC only and not considering those for other VCs, particularly those associated with pathways of exposure outlined in the HHRA (i.e. wildlife, vegetation and wetlands, surface water, fish and fish habitat, etc.), given the contributions of these pathways towards total COPC exposure described in the HHRA. i. If no rationale can be provided, revise the cumulative effects assessment, including relevant spatial boundaries, to consider the spatial boundaries and contribution to potential cumulative effects to human health of those VCs associated with pathways of exposure outlined in the HHRA. b) Clarify how the spatial boundary for the cumulative effects assessment for Indigenous health compares to those for other VCs, particularly those associated with pathways of exposure outlined in the HHRA (i.e. wildlife, vegetation and wetlands, surface water, fish and fish habitat, etc.), and how potential changes to the availability, access, and use of currently used areas for the exercise of traditional and

				or avoidance of locations currently used to exercise traditional or cultural practices. Clarity is required regarding how the spatial boundary for the cumulative effects assessment for Indigenous health compares to those for other VCs. With respect to the temporal boundary for the Indigenous health and Indigenous physical and cultural heritage cumulative effects assessment, the Proponent does not list any considerations in its response to IAAC-18. Health Canada notes that residual effects of the Project on human health and/or Indigenous health could last beyond the duration of Project-related activities, with potential for cumulative effects over an extended duration. Further, as the cumulative effects assessment considers effects from past activities and the baseline case for the Project represents the cumulative effects of historical mining in the PDA and an existent change from pre-development reference condition, VC-specific temporal boundary considerations should acknowledge existing impacts from past projects. With respect to spatial boundaries in general, the Proponent notes in the EIS that permanent closure will occur when the site is stable and monitoring is no longer required. Health Canada and PBCN express concerns that the criteria that will be used to determine site stability with respect to all VCs has not been defined by the Proponent, therefore it is unclear how this will affect the duration of Project and cumulative effects. This information is required to support the Agency's understanding of potential effects to Indigenous peoples.	cultural practices were considered. c) Revise the cumulative effects assessment, including relevant temporal boundaries, for human health and Indigenous health to consider that adverse health effects could last beyond the duration of Project-related activities. d) Describe the criteria that will be used to determine site stability and the point at which monitoring will no longer be required, including the relevant parameters and thresholds to be met. i. Describe how the anticipated duration of time for the Project site to achieve stability was considered in the cumulative effects assessment, particularly the temporal boundaries used.
IAAC-R2-53	Impact Assessment Agency of Canada Mathias Colomb Cree Nation – Technical Review of Round 1, Package 1 Information	4.2.3 Existing information 6.6.3 Cumulative effects assessment	4.3.4.4 Assessment of Cumulative Environmental Effects 9.5.1 Project Residual Effects Likely to Interact Cumulatively 11.5 Assessment of Cumulative	The EIS Guidelines require the Proponent to identify and assess the cumulative effects of the Project combined with other past, present and reasonably foreseeable physical activities. Given the prior mining history at both sites, the Proponent is required to consider each VC not only in relation to current conditions, but conditions prior to historic mining. The Proponent is also required to consider existing information and previously completed studies relevant to the Project, including pre-development monitoring studies. In its response to IAAC-21, the Proponent states that the total area of disturbance associated with the other projects and activities identified on the Project and Activity Inclusion List cannot be accurately determined due to the lack of availability of GIS shapefiles containing polygon spatial data	a) Clarify whether methods, other than GIS shapefiles and satellite imagery, exist to determine the total area of disturbance associated with the other projects and activities identified on the Project and Activity Inclusion List. i. If other methods exist, describe the total area of disturbance associated with the other projects and activities identified on the Project and Activity Inclusion List. ii. If no other methods exist, provide an estimate of the total area of disturbance associated with the other projects and activities identified on the Project and Activity Inclusion List and describe any assumptions made and the level of uncertainty of

	Request Responses Peter Ballantyne Cree Nation – Technical Review of the EIS and Round 1 Information Requests		Environmental Effects on Vegetation and Wetlands 12.5 Assessment of Cumulative Environmental Effects on Wildlife and Wildlife Habitat Federal IR Responses, Round 1, Package 1, Response to IAAC-21 Federal IR Responses, Round 1, Package 1, Response to IAAC-22	specific to these other projects and activities. In the absence of this polygon spatial data, review of satellite imagery cannot be relied upon to visually estimate the spatial extent of potential physical disturbances associated with most of these other projects and activities. It is unclear whether other methods of determining or estimating the extent of disturbance of other projects and activities exist to support the cumulative effects assessment. The Proponent notes in its response to IAAC-22 that it would be inappropriate to establish a baseline prior to anthropogenic development as the context within which potential Project related effects or cumulative effects are assessed to avoid underestimating potential Project effects. While this is a reasonable approach to the assessment of potential Project effects, the cumulative effects assessment requires the consideration of past, present, and reasonably foreseeable physical activities. Establishing a pre-disturbance baseline condition would assist in determining the extent of past and existing disturbances and how that will interact cumulatively with the Project and any reasonably foreseeable physical activities to affect VCs. For instance, PBCN expressed concerns that using current conditions as the baseline for the cumulative effects assessment may underestimate the severity, extent, and magnitude of effects to current use and impacts to rights. PBCN also notes that it is unclear how reclamation of the Project and/or proposed reclamation for other projects and activities in the RAA was considered in the cumulative effects assessment. The Proponent also notes in its response to IAAC-22 that no historical mine tailings are present at either the Gordon site or the MacLellan site and that there is no clear evidence that contamination from historical mining activities has substantively affected existing conditions for the vegetation and wetlands VC or the wildlife and wildlife habitat VC. However, in the EIS, the Proponent notes that water quality within the RAA will continue to be influenced by past and present projects and activities, particularly the East Tailings Management Area (ETMA) which continues to affect surface water quality downstream of the Lynn River despite recent remediation efforts. As effects to surface water quality can affect wetlands (i.e. water quality, wetland vegetation health, etc.), vegetation (i.e. vegetation health and persistence), and wildlife (i.e. wildlife health, mortality), contamination of surface water by past and present projects and activities should be considered in determining potential cumulative effects to these VCs.	the estimate provided. b) Based on existing publically available information and studies, including any pre-development monitoring studies, describe the pre-development baseline condition for the RAA for each VC and describe the extent, magnitude, and severity of past disturbance to the RAA, including any historical mining activities. i. Revise the cumulative effects assessment for each VC to consider the extent, magnitude, and severity of past disturbance identified in b). c) Describe how planned reclamation of the Project and/or proposed reclamation for other projects and activities in the RAA was considered in the cumulative effects assessment. i. If reclamation activities were not considered in the assessment, revise the cumulative effects assessment to consider this factor. d) Revise the cumulative effects assessment for vegetation, wetlands, and wildlife to consider cumulative effects of past and present projects and activities on surface water quality.

				This information is required to support the Agency's understanding of potential cumulative effects to fish and fish habitat, migratory birds, Indigenous peoples, and other areas of federal jurisdiction listed in section 5 of CEAA 2012.	

Annex I. Advice and Requests

The following table includes advice and requests from federal authorities and Indigenous nations for Proponent consideration and/or that provide supporting information to the IRs above. The Proponent is not required to respond to the following advice or requests as part of its responses to Round 2 IRs.

Advice and Requests					
Relevant IR	**Expert Dept. or Nation**	**EIS Guideline Reference**	**EIS Reference**	**Context and Rationale**	**Advice or Requests**
IAAC-R2-03 request	Peter Ballantyne Cree Nation - Technical Review of the EIS and Round 1 Information Requests Chemawawin Cree Nation - Technical Review of Round 1 Information Requests Sayisi Dene First Nation - Technical Review of Round 1, Package 2 Information Requests	2.3 Engagement with Indigenous groups 4.2.2 Community knowledge and Aboriginal traditional knowledge 8 Follow-up and Monitoring Programs	Federal IR Responses, Round 1, Package 1 Federal IR Responses, Round 1, Package 2 Federal IR Responses, Round 1, Package 3	In response to several Round 1 IRs, the Proponent notes that the results of Project follow-up and monitoring programs will be shared with Indigenous nations. PBCN expresses concerns that other monitoring reports, including compliance-related reports, may not be shared with Indigenous nations and may contain important information that may be relevant to their Nation. The Proponent also notes in its response to IAAC-25 that Indigenous nations will be engaged regarding the design and implementation of Project follow-up and monitoring programs, including the evaluation of program results. The Proponent describes an environmental monitoring committee that was developed with Marcel Colomb Cree Nation as part of Project exploration activities and how this committee or a similar committee may be engaged as part of follow-up and monitoring for the Project.	a) PBCN requests that monitoring reports, including compliance-related reports, be made available to their Nation for review. b) PBCN, Sayisi Dene First Nation (SDFN), and CCN request that the Proponent work with their Nation and other Indigenous nations involved in the environmental assessment for the Project to ensure that they have sufficient capacity to participate in the design and implementation of Project follow-up and monitoring programs.

IAAC-R2-12 request	Mathias Colomb Cree Nation – Technical Review Comments on Round 1, Package 1 IR Responses	3.1 Project components 3.2 Project activities 6.1.2 Geology and geochemistry	2.3.1.1 Resource Extraction and Storage 5.2.6 Geochemistry Federal IR Responses, Round 1, Package 1, Response to IAAC-15	In its response to IAAC-15, the Proponent indicates that a best management practice to minimize ARD/ML from ore stockpiles is to construct covers (domes) over ore stockpiles to prevent contact of precipitation with ore and migration of contaminants driven by water. The Proponent also notes that, as ARD onset time is expected to exceed the life of ore stockpiles on both the MacLellan and Gordon sites, these covers will not be required.	a) MCCN requests that the construction of covers (domes) over the ore stockpiles be included as part of the Project should the results of monitoring indicate the need for adaptive management.
IAAC-R2-17 advice	Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Requests	6.2.2 Changes to groundwater and surface water 8.0 Follow-Up and Monitoring Programs	8.4.2.2 Mitigation 8.9 Follow-up and Monitoring 9.9 Follow-up and Monitoring 23.5 Environmental Monitoring and Management Plans Federal IR Responses, Round 1, Package 1, Response to IAAC-25	With respect to mercury, in its response to IAAC-25, the Proponent states that mercury will be monitored as part of the Aquatic Effects Monitoring Plan that will be developed prior to Project construction.	a) DFO advises that the final Aquatic Effects Monitoring Plan should include regular methyl-mercury testing in both environmental and fish tissue samples.
IAAC-R2-22 request	Manitoba Metis Federation – Technical Review of Round 1, Packages 1 and 2 Information Request Responses	8.2 Monitoring	9.4.2.2 Project Pathways 9.4.2.4 Project Residual Effect 9.8.2 Surface Water Quality	In its response to IAAC-31, the Proponent states that an ESCP will be developed to reduce the risk of site erosion and sedimentation and that the ESCP will include mitigation measures outlined in DFO's *Measures to Protect Fish and Fish Habitat and Land Development Guidelines for the Protection of Aquatic Habitat* and other best management practices typically included in industrial ESCPs.	a) The MMF requests that the Proponent commit to forming distinctions-based monitoring and advisory committees as part of the ESCP, one for Manitoba Métis Citizens and one for First Nations, to enable appropriate representation and participation in the follow-up and monitoring of erosion and sedimentation caused by the Project. This should include the co-design and delivery of culturally relevant and distinction-based monitoring processes and programs that consider the unique values,

			Federal IR Responses, Round 1, Package 1, Response to IAAC-31		interests, rights, and claims of Manitoba Métis Citizens impacted by the Project.
IAAC-R2-38 advice	Fisheries and Oceans Canada – Technical Review Comments on Round 1, Package 1 IR Responses	3.1 Project components 3.2 Project activities 6.3.1 Fish and fish habitat	2.3.1.4 Water Development and Control 23.5.15 Fish Habitat Offsetting Plan Federal IR Responses, Round 1, Package 1, Response to IAAC-17	In the EIS, the Proponent describes options to offset the harmful alteration, disruption, or destruction of fish habitat from Project activities, one of which is the replacement of the existing diversion channel with a new diversion channel with features to increase its habitat value. In its response to IAAC-17, the Proponent states that low flow design criteria used to design the diversion channel includes flow that would provide at least 15 centimetres of water under average low flow conditions to allow the passage of large-bodied fish species, and at least five centimetres of water under very low flow conditions to allow passage of small-bodied fish species. It is unclear whether the Proponent has given consideration to creating fish habitat features (e.g. sinuosity, riffle-pool sequences) and functions similar to that of the natural Gordon Creek, which predated the mine and the existing man-made diversion channel, in the design of the new diversion channel.	a) DFO recommends that historical information or imagery of the original Gordon Creek be used to inform the design of the new diversion channel.
IAAC-R2-39 advice	Environment and Climate Change Canada – Technical Review of Round 1, Package 1 Information Request Responses Fisheries and Oceans Canada – Technical Review of Round 1, Package 1 Information Request Responses	6.1.6 Fish and fish habitat 6.3.1 Fish and fish habitat 10.1.3 Potential Effects, Pathways and Measurable Parameters	10.1.3 Potential Effects, Pathways and Measurable Parameters Federal IR Responses, Round 1, Package 1, Response to IAAC-43	In its response to IAAC-43, the Proponent states that the focal species (Northern Pike, Lake Whitefish, and Walleye) and forage fish guild selected for the fish and fish habitat effects assessment together represent the variety of life history, habitat requirements, and trophic level of the fish species known to inhabit the LAAs at both the Gordon and MacLellan sites. In its response to IAAC-43, the Proponent also states that it is considering the inclusion of funding for Lake Sturgeon research and assessment in the Hughes River as part of the fish habitat offset plan that will be submitted to DFO as part of the application under the *Fisheries Act* for the Project.	a) ECCC advises the Proponent that it will be subject to the Environmental Effects Monitoring requirements for Prescribed Deleterious Substances in the MDMER. b) DFO advises that the Proponent should consider inclusion of the Keewatin River Lake Sturgeon population in the research and assessment described.

IAAC-R2-50 request	Peter Ballantyne Cree Nation - Technical Review of the EIS and Round 1 Information Requests	4.2.2 Community knowledge and Aboriginal traditional knowledge 6.6.3 Cumulative effects assessment	4.3.2.1 Spatial Boundaries Federal IR Responses, Round 1, Package 1, Response to IAAC-18	The EIS Guidelines require the Proponent to establish and justify spatial and temporal boundaries for the cumulative effects assessment for each VC. The Proponent is also required to integrate traditional knowledge of Indigenous nations into all aspects of the assessment, including spatial and temporal boundary selection. In its response to IAAC-18, the Proponent indicates that information gathered through engagement, including Indigenous traditional knowledge, on key concerns and areas of interest was incorporated into the development of the spatial boundaries for cumulative effects used in the EIS. PBCN expresses concerns that the Proponent has not provided specific details regarding how information provided by their Nation to date was used to inform the selection of the RAA(s) for the Project.	a) PBCN requests the Proponent provide them with specific details regarding how information provided by their community to date was used to inform the selection of the RAA(s) for the Project.