

Attachment 2 – Updated Final Views – Lynn Lake Gold Project

Updated Department Final Views

Objective: To document your final views on each area of your department’s mandate related to potential environmental effects under the *Canadian Environmental Assessment Act, 2012*. Please ensure that advice and recommendations are concise, focused, explained, and are linked to your departmental mandate.

Please provide us with your comments on the information request responses by [August 17, 2022](#)

Topic Area	Reference comments and/or IRs (optional)	Adequacy of proponent’s responses/outstanding issues (optional)	Potential significant residual effects	Key mitigation measures or follow-up
Select the section 5 effect to which your comment applies: 5(1)(a)(i) Fish and Fish Habitat 5(1)(a)(ii) Aquatic Species 5(1)(a)(iii) Migratory Birds 5(1)(b) Federal Lands /Transboundary Effects 5(1)(c)(i) Aboriginal Peoples’ Health/Socio-economic Conditions 5(1)(c)(ii) Aboriginal Peoples’ Physical and Cultural Heritage 5(1)(c)(iii) Current Use of Lands and	Identify what additional information was requested, reference departmental submission(s) and comment(s), and/or Agency IR. This column is optional if your department has not provided comments related to the referenced topic area.	Describe whether your department is satisfied with the Proponent’s responses to those requests and concerns. Identify any outstanding issues that you believe are unaddressed. This column is optional if your department has not provided comments related to the referenced topic area.	Identify whether or not you think there may be potential significant residual effects after key mitigation measures are implemented. Provide appropriate rationale.	Identify any mitigation measures or follow-up your department believes are necessary.

<p>Resources for Traditional Purposes 5(1)(c)(iv) Any Structure, Site, or Thing of Historical, Archaeological, Paleontological, or Architectural Significance</p> <p>5(2) Linked to Regulatory Permits/Authorizations (specify which legislation)</p> <p>If the interaction between the issue of concern and a section 5 effect is unclear, indicate the interaction pathway.</p>				
<p>5(1)(a)(i) Fish and Fish Habitat</p>	<p>IAAC-R3-01</p>	<p>NRCan acknowledges the data and sensitivity analysis results presented in IAAC-R3-01, and previous rounds of related IRs (IAAC-62, IAAC-R2-62) to support the hydrostratigraphic conceptualization presented as the base case groundwater flow model; however, limited data for the deep bedrock units results in continued uncertainty.</p>	<p>As the proponent has demonstrated, the increasing the hydraulic conductivity of the deep bedrock can increase the quantity of groundwater inflow to the pit proportionally. This in turn can increase the magnitude and location of changes to groundwater-surface water interaction, affecting fish and fish habitat.</p>	<p>NRCan recommends:</p> <ul style="list-style-type: none"> a) Updated groundwater modelling to more closely reflect site specific data as a follow-up to guide monitoring and mitigation planning. b) Development of detailed groundwater monitoring program to validate the results of the model during the early stages of mining

		<p>Given the limited data overall, the lack of data for the majority of the deep bedrock unit, and the similarity in RQD and hydraulic conductivity between the intermediate and deep bedrock units, there is no data to support the distinction of the bedrock at these depths into separate hydrostratigraphic units within the numerical models.</p> <p>Based on the data collected to date, an equally feasible hydrostratigraphic model would have a uniform hydraulic conductivity below 50 meters from the top of rock. This uniform representation has the potential to change the surface water features affected by groundwater drawdown, with implications for fish and fish habitat.</p>	<p>Given the limited data on hydraulic conductivity at depth (in particular for the MacLellan Site), uncertainty remains in the assessment.</p>	<p>and support adaptive management.</p>
5(1)(a)(i) Fish and Fish Habitat	IAAC-R2-63	<p>NRCan acknowledges the additional data and modelling presented on the interceptor well system for the Gordon Site. This</p>	<p>Ongoing work is required to properly design a system to limit the flow of water through the groundwater flow system from Gordon and Farley</p>	<p>NRCan recommends that the Proponent uses the results of ongoing testing (including long term pumping tests) to validate and transiently calibrate the groundwater numerical model used to support the design of</p>

		information is considered sufficient.	lakes to the open pit. A method to intercept this water prior to discharge to the pit, where it becomes mine contact water, is required to ensure that the water can be returned to the Lakes to maintain surface water levels, mitigating potential effects to fish and fish habitat.	the interceptor well system, or any alternative system chosen to manage the flow of groundwater from Gordon and Farley Lakes to the open pit.
5(1)(a)(i) Fish and Fish Habitat	IAAC-R2-66	<p>This IR addressed the requirement in EIS Guideline 6.1.5 to assess seasonal changes in groundwater flow.</p> <p>Section 4.4.2 of the Groundwater Modelling Reports for both Sites includes transient modelling intended to represent baseline conditions for seasonal changes in groundwater flow.</p> <p>These models did not represent the observed seasonal changes in groundwater flow at either site, and as such, the seasonal effects of groundwater flow changes is not addressed.</p>	As groundwater is a sustaining flow to surface water features during low flow months, the seasonal timing of groundwater flow changes is important to the assessment of fish and fish habitat.	NRCan recommends that the proponent develop a detailed groundwater monitoring program that that can be used to assess seasonal changes in groundwater flow during the early stages of mining. Data collected during this program should be used to validate and update the numerical models in support of adaptive management.
5(1)(a)(i) Fish and Fish Habitat	IAAC-R2-69	Groundwater flow from Gordon and Farley lakes to	During periods when the water pumped from the	NRCan recommends that the Proponent:

	<p>(IAAC-69, IAAC-70)</p>	<p>the open pit is expected to be of sufficient quantity that mitigation is required to offset losses of surface water as they relate to fish and fish habitat.</p> <p>Through the use of a trade-off study, interceptor wells were chosen to pump groundwater, prior to discharge to the open pit, and return it to the lakes to offset losses.</p> <p>NRCan acknowledges the additional modelling and details presented by the Proponent on the interceptor well system (IAAC-69, IAAC-70, IAAC-R2-69). These results indicate a decrease in the quantity of groundwater that the well system would be capable of pumping (from between 0.28 and 0.77 m³/s to 0.04 m³/s) relative to the results presented in the technical modelling report.</p> <p>The proponent has also stated that the interceptor wells would not provide sufficient quantities of</p>	<p>interceptor well system is insufficient to offset seepage losses from Gordon and Farley Lakes, mine contact water from the open pit would need to be used to supplement surface water.</p> <p>Insufficient supply of pumped water from the interceptor wells system may have residual effects to the aquatic environment and fish and fish habitat.</p>	<ul style="list-style-type: none"> a) Use the results of ongoing testing (including long term pumping tests) to validate and transiently calibrate the groundwater numerical model used to support the design of the interceptor well system b) Evaluate alternative means to offset seepage losses from Gordon and Farley lakes without using mine contact water (i.e., grout curtains), accounting for water balances within the lakes. c) Develop a detailed groundwater monitoring program to support adaptive management.
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		groundwater to offset seepage losses from the lakes during the first two years of operation, nor during the summer months through operations.		
5(1)(a)(i) Fish and Fish Habitat	IAAC-R2-77	<p>NRCan acknowledges that the Proponent has provided detailed and quantitative trigger mechanisms for groundwater monitoring at the monitoring well network as part of the follow-up monitoring program.</p> <p>Based on the results of the groundwater assessment, it is possible that groundwater effects may not be observable at the monitoring well network during the operation phases of the mine, in particular as the effects relate to seepage from the mine facilities.</p>	<p>The timing of the observation of effects to groundwater is critical to the ability to implement mitigation measures.</p> <p>Early observations are required to mitigate potential significant residual effects of groundwater seepage on fish and fish habitat.</p>	<p>NRCan recommends that the proponent expand the follow-up monitoring program to include information (e.g., the quantity and quality of groundwater seepage intercepted by the ditch system) that can be used to verify the results of the groundwater effects assessment and the groundwater numerical model in the early phases of the project development.</p>