Comment ID	Reference to EIS	Result of Review of NexGen Oct 2023 Response	Result of Review of NexGen May 22, 2024 Response +Justification / Rational / Additional Advice to Proponent	NexGen Response	Section in EIS
ECCC-13 Link: IR 126	Section 14.4.2 Table 14.4-1 Table 23A-1 Table 23A-5	NEW Feb 12, 2024 Not Accepted	**Justification:** In some cases, nest surveys may be carried out successfully by skilled and experienced observers using appropriate methodology, if activities are expected to take place in simple habitats with only a few likely nesting spots or a small community of migratory birds. Examples of simple habitats include: ▪ an urban park consisting mostly of lawns with a few isolated trees; ▪ a vacant lot with few possible nest sites; ▪ a previously cleared area where there is a lag between clearing and construction activities (and where ground nesters may have been attracted to nest in cleared areas or in stockpiles of soil, for instance); or ▪ a structure such as a bridge, a beacon, a tower or a building (often chosen as a nesting spot by robins, swallows, phoebes, Common Nighthawks, gulls and others). Nest searches can also be considered when looking for: ▪ conspicuous nest structures (such as nests of Great Blue Herons, Bank Swallows, Chimney Swifts); ▪ cavity nesters in snags (such as woodpeckers, goldeneyes, nuthatches); or ▪ colonial-breeding species that can often be located from a distance (such as a colony of terns or gulls). Through Table 2 of Attachment IR 111-R1, 121-R1, 207-R1, and 270-R1 the Proponent committed to applying mitigation measures specific to Pileated Woodpecker with regards to the Abandoned Nest Registry for MBCA Schedule 1 listed species. In the response to the IRs, the Proponent states that the mitigation measures listed in Table 2, which include Pileated Woodpecker, will be incorporated into the Project Environmental Protection Program and supporting documents. **Advice:** ECCC recommends not to clear vegetation during the migratory bird nesting season. ECCC requests the Proponent remove any qualifying language around nest searches from Tables 1 and 2 of Attachment IR 111-R1, 121-R1, 207-R1, and 270-R1 to reflect this. This language should also be consistent throughout the EIS (e.g., Table 14.4-1).	NexGen acknowledges the reviewer's comment regarding vegetation clearing during the migratory bird nesting season, though maintains that flexibility is required for vegetation clearing activities. As noted in revised EIS Section 1.2.2 (Project Location and Setting), climatic conditions at the Project site are considered sub-arctic and winters are characterized as long and cold, with mean monthly temperatures below freezing from October to April. In nesting zone B6 (i.e., where the Project site is located), nesting periods for migratory birds range from late April to late August (ECCC 2018). Therefore, avoiding vegetation clearing during the migratory bird nesting season would only allow for clearing activities to occur for approximately one month under snow-free conditions, which is impractical. Also, as noted in NexGen's response to IR 111, flexibility is required due to uncertainties in final design logistical details and permitting timelines. However, NexGen acknowledges its responsibility to adhere to the requirements of the *Migratory Birds Convention Act, 1994*, which prohibits the destruction of migratory bird nests during the breeding season. As noted in revised EIS Section 14.4.2 (Secondary Pathways), NexGen confirms that, to the extent possible, clearing and grubbing of vegetation would be completed outside of the migratory bird breeding/nesting season. If vegetation removal is required during the nesting period, then non-intrusive nesting surveys would be completed by qualified biologists prior to clearing activities. If nests are discovered, the qualified biologist would consult with ECCC or the ENV, as required, to apply appropriate buffers to avoid disturbance (revised EIS Section 14.4.2). In consideration of the information provided above, it is critical to maintain the proposed mitigation measure associated with nest searches to avoid adverse effects to migratory birds and adhere to the *Migratory Birds Convention Act, 1994*. With respect to the reviewer's comment regarding the removal of language in Attachment IR 111-R1, 121-R1, 207-R1, and 270-R1 and the EIS speaking to the use of nest searches as a proposed mitigation measure, as noted above, NexGen maintains that this mitigation measure is required for the Project. With respect to the reviewer's comment regarding the consistency of language used in describing mitigation measures, NexGen has reviewed these items and confirms that while the wording for mitigation measures occasionally varies within the EIS depending on the context in which the discussion is framed, NexGen maintains that the meaning of the mitigation measure associated with the timing of vegetation clearing is consistent and clear. Therefore, references will be retained as currently written. No changes will be completed in either Attachment IR 111-R1, 121-R1, 207-R1, and 270-R1 or the Final EIS in response to this advice to proponent. **References** ECCC. 2018. General Nesting Periods of Migratory Birds. Available at https://www.canada.ca/en/environment/climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods/nesting-periods.html. *Migratory Birds Convention Act, 1994*. SC 1994, c 22. Last amended 12 December 2017. Available at https://laws-lois.justice.gc.ca/eng/acts/m-7.01/.	n/a
ECCC-15 Link: IR 84	TSD XXI ERA Section 4.2.4 Baseline Annex V.I Aquatic Baseline Section 9.2.1.3, Section 9.2.1.4, Section 9.3.2.2 Baseline Annex V.I Aquatic Baseline Appendix C Table 49 and Table 51	NEW Feb 12, 2024	**Justification/Rationale/Advice:** ECCC appreciates that the Proponent will include relevant context provided in their response to advice comment ECCC 15 in Section 4.2.4 of revised EIS TSD XXI (Environmental Risk Assessment). ECCC recommends that the Proponent also include the supporting information used to derive the bioaccumulation factors (BAF) (i.e., plot that depicts underlying data used to derive BAF).	NexGen confirms that a figure showing a plot that depicts underlying data used to derive bioaccumulation factors for northern pike and lake whitefish will be added in Section 4.2.4 of Final EIS TSD XXI (Environmental Risk Assessment). NexGen confirms that the updates referenced by the reviewer that were committed to as part of the original response to this Advice to Proponent comment were included in Section 4.2.4 of the revised EIS TSD XXI (Environmental Risk Assessment).	TSD XXI
ECCC-16 Link: IR-51	Section 14.4.2 Table 14.4-1		**Justification/Rationale/Advice:** The Proponent had committed to a set of mitigation measures with regards to the communication tower that were accepted in Round 2 of IRs. All but one measure was included in the revised EIS, Table 14.4-1. The mitigation measure "include locating the tower away from wetlands and other high suitability habitats for SAR" was not included in Table 14.4-1 of the revised EIS. ECCC recommends this mitigation be added to the EIS as committed to in the response.	NexGen confirms that the addition of the mitigation measure "locate the communications tower away from wetlands and other high suitability habitats for species at risk" will be added to Pathway ID W-01 in Table 14.4-1 of Final EIS Section 14.4 (Project Interactions and Mitigation Measures).	Section 14.4

Comment ID	Reference to EIS	Result of Review of NexGen Oct 2023 Response	Result of Review of NexGen May 22, 2024 Response +Justification / Rational / Additional Advice to Proponent	NexGen Response	Section in EIS
ECCC-17 Link: IR-121	Section 14.4.2 Table 14.4-1		**Justification/Rationale/Advice:** The Proponent provided information on mitigation measures to be applied for migratory birds for vegetation clearing activities in Tables 1 and 2 of Attachment IR 111-R1, 121-R1, 207-R1, and 270-R1. Specifically, the measures stated were to avoid the breeding bird window, where possible, and conduct nest searches if vegetation clearing activities cannot be avoided during this window. ECCC advises that qualifying language around these mitigations be consistent throughout the EIS for clarity.	NexGen has reviewed these items and acknowledges that the wording for mitigation measures occasionally varies within the EIS depending on the context in which the discussion is framed. Therefore, the phrasing of the mitigation measure associated with the timing of vegetation clearing may vary slightly across EIS subsections; however, NexGen maintains that the meaning of the commitment is consistent and clear. As a result, references will be retained as currently written, and no changes will be made in the Final EIS.	n/a
ECCC-18 Link: IR-127	Section 14.4.2 Table 14.4-1		**Justification/Rationale/Advice:** As committed to in Round 2 of IRs, the Proponent included mitigations in Table 14.4-1 to avoid bat roosts where practicable for pathways W-01 habitat loss, W-05 injury and mortality from clearing, and W-19 wildlife attractants. ECCC recommends that these bat roost mitigations be applied to pathway W-03 sensory disturbance.	NexGen confirms that the following mitigation measure will be added to Pathway ID W-03 in Table 14.4-1 of Final EIS Section 14.4 (Project Interactions and Mitigation Measures): ▪ If bats or birds are observed nesting, roosting, or hibernating, do not disturb them, to the extent practicable. Contact the ENV and ECCC to discuss measures for the removal/relocation and to identify further measures that could prevent future access.	Section 14.4
ECCC-19 Link: IR-207	Section 14.7 Section 23		**Justification/Rationale/Advice:** The Proponent states that the request to provide the Environmental Monitoring Plan, Environmental Protection Program, Biodiversity Action Plan, Effluent Monitoring Plan, and Decommissioning and Reclamation Plan is outside the scope of the requirement of an EA and Project Terms of Reference. To address the IR, the Proponent described and listed additional mitigation measures in Table 1 of Attachment IR 111-R1, 121-R1, 207-R1, and 270-R1 that were not included in the draft EIS. The Proponent committed to adding these additional measures to Table 14.4-1 of the revised EIS Section 14 (Project Interactions and Mitigations). The Proponent also committed to adding any mitigation measures noted in Table 2 of Attachment IR 111-R1, 121-R1, 207-R1, and 270-R1 to be incorporated into the Project Environmental Protection Program and supporting documents. The Proponent discusses that monitoring and follow-up would be applied through adaptive management. ECCC advises the Proponent to describe these monitoring and follow-up actions in the appropriate and applicable plans.	NexGen confirms that monitoring and management plans would be developed within NexGen's Integrated Management System (IMS) related to environmental protection for the Project. These monitoring and management plans would demonstrate compliance with NexGen's standards and regulatory commitments related to the environment (Draft EIS Section 23.4.1 [Environmental Management]). As described in Draft EIS Section 23.5.1 (Environmental Assessment Follow-Up Monitoring), NexGen confirms that follow-up monitoring programs will be designed and implemented to test the accuracy of effects predictions, reduce or address uncertainties, determine the effectiveness of mitigation, or provide appropriate feedback to operations for modifying or adopting new mitigation designs, policies, and practices (e.g., implementation of adaptive management). Where uncertainties associated with the effects predictions and mitigation measures exist, adaptive management plans may be developed. The process for determining when, how, and where to use adaptive management would be described within the IMS Manual (Draft EIS Section 23.5.3 [Adaptive Management]).	n/a
ECCC-20 Link: IR-230	TSD XII		**Justification/Rationale/Advice:** ECCC encourages the Proponent to continue to expand on their framework using section 3.1 and 3.5.1 of the Draft Technical Guide Related to the Strategic Assessment of Climate Change, as the framework is developed.	NexGen appreciates the reviewer's comment and will consider information provided in Section 3.1 and Section 3.5.1 of the Draft Technical Guide Related to the Strategic Assessment of Climate Change (ECCC 2021) during further development of the net-zero framework as it is advanced in parallel to, and commensurate with, the appropriate stage of Project engineering design. **<u>References</u>** ECCC. 2021. Draft Technical Guide Related to the Strategic Assessment of Climate Change. August 2021. Available at https://www.canada.ca/en/environment-climate-change/corporate/transparency/consultations/draft-technical-guide-strategic-assessment-climate-change.html.	n/a

ECCC-15

4.2.4 Evaluation of Selenium in Fish Tissue

In 2016, the United States Environmental Protection Agency (USEPA) developed an aquatic criterion for selenium based on the scientific advancement that selenium toxicity in the aquatic environment is primarily from bioaccumulation of selenium in the aquatic food chain and not only from exposure to selenium in water. As such, although predicted selenium concentrations in water are below the selected water quality guideline, it is appropriate to compare predicted fish tissue concentrations in Patterson Lake North Arm – West Basin against the selenium fish tissue criterion. Fresh water fish are considered more sensitive to selenium compared to other aquatic organisms.

The recommended criterion for selenium in fish tissue is 11.3 mg/kg dry weight (dw) muscle or 8.5 mg/kg dw whole body (USEPA 2021). The whole body and muscle tissue concentrations are based on effect concentration (EC_{10}) values for selenium in egg/ovary, which caused reproductive effects in fresh water fish. The EC_{10} is the effect concentration at which 10% effect based on the endpoint is observed. The USEPA used species-specific conversion factors to convert from egg/ovary concentrations to whole body and muscle tissue concentrations.

Environment and Climate Change Canada (ECCC; 2022) published a selenium in fish tissue criterion of 6.7 mg/kg dw whole body, which represents the 5th percentile hazard concentration of the species sensitivity distribution of whole body selenium concentrations. Environment and Climate Change Canada indicates that this value is similar to that derived by the USEPA (2021). The USEPA criterion has been adopted for the Project over the ECCC criterion as the ECCC criterion is for whole body fish tissue, whereas the USEPA criterion is for fish tissue muscle as well. The fish assessed in the ERA are large-bodied fish (i.e., northern pike and lake whitefish); therefore, a fish tissue muscle guideline is preferred over the whole body guideline.

The recommended criterion for selenium in fish tissue of 11.3 mg/kg dw muscle was used for large-bodied fish included in this assessment (i.e., northern pike and lake whitefish). To compare against predicted selenium fish tissue concentrations that are in fresh weight, the criterion needed to be adjusted from a dry weight to a fresh weight basis based on the moisture content of the fish. The dry weight (dw) to fresh weight (fw) ratio of 0.25 to 1.0 from CSA N288.1-20 was used to convert the selenium criterion to a fresh weight basis.

Fish Tissue Criterion (mg/kg fw) = Fish Tissue Criterion (mg/kg dw) * 0.25 (kg dw/kg fw)

Therefore, the recommended criterion for selenium in fish tissue on a fresh weight basis is 2.83 mg/kg fw muscle.

Predicted fish tissue concentrations of selenium in northern pike and lake whitefish over the Project phases for both the Application Case and Upper Bound sensitivity scenario are shown in Figure 4-4, along with a comparison against the selenium criterion. The selenium bioaccumulation factor (BAF) for northern pike is a non-linear BAF where BAF = $949x^{0.827}$ (x is in units of µg/L) ~~9.49E+02 L/kg fw~~ and the BAF for lake whitefish is 5.94E+03 L/kg fw based on publicly available regional data from other uranium mine sites in northern Saskatchewan. Regional measured fish tissue data (Table~~s~~ 49 to Table 56 of Appendix C of Annex V.1, Aquatic Environment Baseline

Commented [RP3]: Edits made in response to ECCC-15

Report) and measured water concentrations (Table 3.3-1 of Section 3.3.2.3 of Annex V.1) were used to develop the BAFs (~~see~~ Figure 4-5), which incorporate the selenium bioaccumulation through the food chain. Large- and small-bodied fish tissue data were considered separately because selenium concentrations are based on different tissue analyses for these two groups: wet weight muscle and wet weight whole body, respectively. Tissue data were available for northern pike, cisco, lake trout, longnose sucker, lake whitefish, white sucker, lake chub, and spottail shiner. The data comparisons resulted in the following conclusions:

- The same BAF can be applied to a fish species at different lakes.~~;~~
- The BAF values for longnose sucker, cisco and lake trout were not significantly different from those for northern pike~~;~~, therefore, data from these species were combined to derive a BAF for northern pike~~.~~
- The BAF values for lake whitefish and white sucker were significantly different ($p<0.05$) from that for northern pike.~~; and~~
- The BAF values for lake chub and spottail shiner were not significantly different ($p>0.05$) from each other~~;~~, therefore, data for these two species were combined to derive a BAF for small-bodied fish.

Using the regionally derived lake whitefish BAF, ~~T~~the maximum predicted upper bound selenium concentration is 0.19 mg/kg fw in lake whitefish in Patterson Lake North Arm – West Basin compared to the criterion of 2.83 mg/kg fw. Selenium concentrations in fish at the maximum location in Patterson Lake North Arm – West Basin are all well below the recommended criterion.

Based on the above conclusions, selenium was not considered for further quantitative assessment in the ERA.

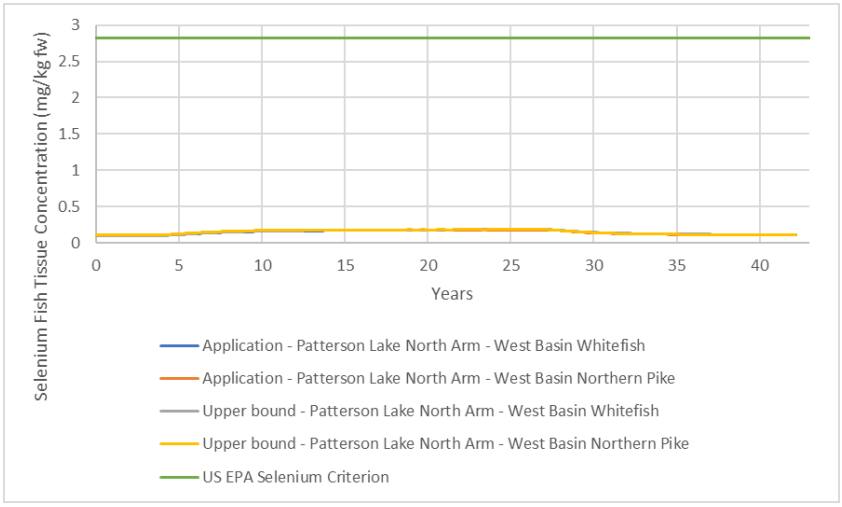

Figure 4-4: Comparison of Predicted Selenium Fish Tissue Concentrations against Criterion

Note: The predicted selenium concentrations in fish tissue for lake whitefish and northern pike are indistinguishable from each other on the figure.
USEPA = United States Environmental Protection Agency; fw = fresh weight.

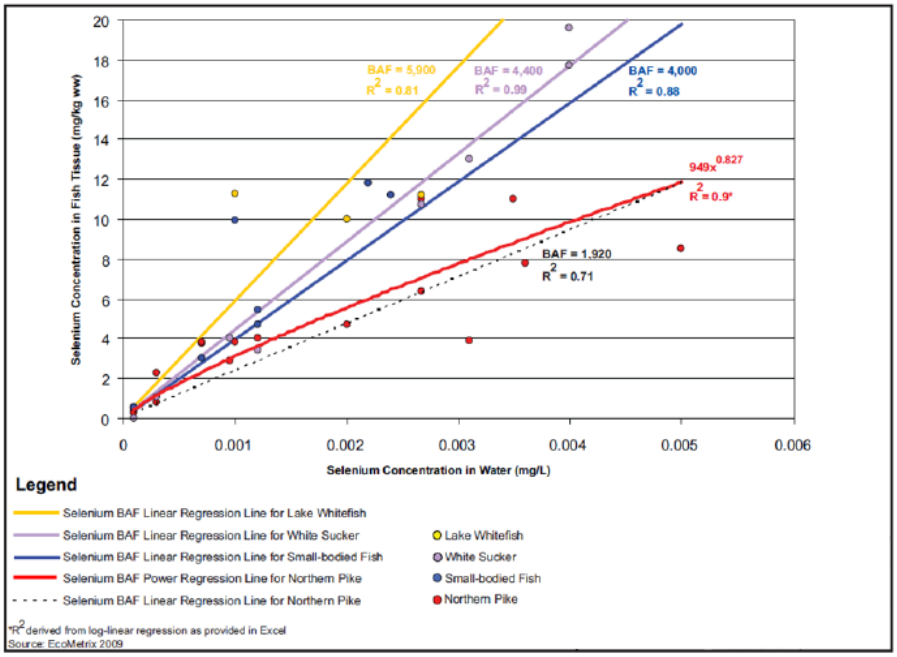

Figure 4-5: Development of Regional Bioaccumulation Factors for Selenium in Saskatchewan

Commented [FH4]: Edits made in response to ECCC-15

4.2.5 Water Quality Constituents for Further Evaluation in the Environmental Risk Assessment

In summary, following the screening process for surface water quality (in combination with the sediment quality screening and selenium in fish tissue discussion), the following COPCs in the aquatic environment were carried forward for further quantitative assessment in the ERA for both human and ecological health:

- major ions: chloride and sulphate;
- metals and metalloids: arsenic, cobalt, copper, molybdenum, uranium; and
- radionuclides: uranium-238, uranium-234, thorium-230, radium-226, lead-210, polonium-210.

ECCC-16

ECCC-16 (Edits made in Final EIS)

Table 14.4-1: Potential Effects Pathways for Wildlife and Wildlife Habitat

Pathway ID	Project Components/Activities	Effects Pathway	Environmental Design Features and Mitigation	Pathway Assessment
VI-01	Project components/activities that contribute to the Project footprint during **all Project phases**: • land clearing, site preparation, and construction of facilities and infrastructure • process plant • additional infrastructure (e.g., roads, airstrip, camp, maintenance shop, and offices) • handling and storage of waste rock, special waste rock, and ore • sewage treatment plant and water storage and effluent monitoring ponds • removal of infrastructure • reclamation and revegetation of facilities and infrastructure	**Habitat loss:** • Direct removal or alteration of soil and vegetation can cause loss of wildlife habitat and affect wildlife abundance and distribution	• **Site access road** between gatehouse and mine terrace realigned during Project design to **avoid a wetland** • **Limit the Project footprint** to the extent practical using practices such as: o optimizing the use of cleared areas for Project activity o using existing road infrastructure, including the existing access road and bridge crossing o storing tailings underground o designing an efficient infrastructure footprint (i.e., buildings clustered together) • **Minimize areas of vegetation clearing and soil disturbance** • Locate the communications tower away from wetlands and other high suitability habitats for species at risk • **Minimize steepness and length of slopes** of disturbed areas and stockpiled soils • **Use clearing equipment that minimizes surface disturbance, soil compaction, and topsoil loss** (e.g., equipment with low ground pressure tracks or tires, blade shoes and brush), where feasible • To the extent practical, **work in sensitive areas** (i.e., erosive soils, wetland features, and fish habitats) would be scheduled to **avoid periods that may result in high flow volumes and/or increase erosion and sedimentation** (e.g., spring freshet) • Implement **progressive reclamation and revegetation** of disturbed areas no longer required • **Reclaim and revegetate areas** where non-permanent Project facilities have been decommissioned • Work with government and Indigenous communities to **develop caribou mitigation and offsetting actions** • Implement a Project-specific **Environmental Protection Program** • Implement an **Environmental Protection Program** with restricted activity periods to limit effects on denning animals and nesting migratory birds during sensitive time periods (e.g., per Nesting Zone B6 [ECCC 2018] guidelines and the *Migratory Birds Convention Act 1994*). If sensitive periods cannot be avoided, pre-clearing wildlife sweeps will be completed by qualified professionals and buffers applied, as required • Develop and implement a **Preliminary Decommissioning and Reclamation Plan** with government and Indigenous communities to decommission and transfer the site to the province under the Institutional Control Program • If in specific situations where the setback distance(s) cannot practically be applied, contact the ENV early in the planning stage to **minimize effects on sensitive species** • Minimize habitat creation and human-wildlife interactions for the Project through design; specifically, by evaluating opportunities to include screening on vents and entranceways to rafters/attics • If bats or birds are observed nesting, roosting, or hibernating, do not disturb them, to the extent practicable. **Contact the ENV and ECCC to discuss** measures for the removal/relocation and to identify further measures that could prevent future access • For **worker protection and prevention** of the spread of rabies and white nose syndrome, **contact the ENV and ECCC if any sick, injured, or dead bats are observed**. Only trained and rabies-vaccinated staff or contractors would be allowed to handle bats. Submit bat carcasses for testing of rabies and/or white nose syndrome, as appropriate, based on communications with the ENV and ECCC	Primary pathway

Frank Halliday
ECCC-13: added environmental design feature regarding communication tower location

ECCC-18

ECCC-18 (Edits made in Final EIS)

Table 14.4-1: Potential Effects Pathways for Wildlife and Wildlife Habitat

Pathway ID	Project Components/Activities	Effects Pathway	Environmental Design Features and Mitigation	Pathway Assessment
W-03	Project components/activities that contribute to sensory disturbance during **all Project phases**: • land clearing, site preparation, and construction of facilities and infrastructure • underground shaft and mine development • process plant and underground operations • additional infrastructure (e.g., camp, maintenance shop, and offices) • handling and storage of waste rock, special waste rock, and ore • power generation • removal of infrastructure • reclamation and revegetation of facilities and infrastructure • site traffic • transportation of personnel and materials to and from the site	**Sensory disturbance:** • Sensory disturbance (e.g., presence of people, air traffic, lights, dust, smells, noise) can alter wildlife movement and behaviour and adversely affect wildlife habitat availability and wildlife abundance and distribution	• **Enclose or dampen equipment in process buildings** where the total sound power level is expected to be more than approximately 80 A-weighted decibels, where feasible • **Use and maintain noise suppression** (i.e., mufflers) on vehicles and inspect regularly to make sure they are functioning properly • Where practical, **maintain overflight altitudes of >300 m above ground level** • **Limit idling of vehicles and equipment** to the extent practical • **Limit light pollution** to the extent practical for built infrastructure • Other than where required to comply with regulatory guidelines (e.g., aviation safety) or worker health and safety, the **following guidance will be used for Project lighting** design when migratory birds may be present: o **limit the use of decorative lighting** and solid burning or slow pulsing warning lights o to the extent possible, **orient lights downward or use shielded fixtures** and limit light use to areas where Project activities are occurring (Dick 2018) o to the extent feasible, **use the amber light [spectrum >500 nanometre]**, limit blue spectral light, and do not use white light. (Dick 2016) o **turn off lights** when not in use (e.g., use timers, motion sensors) (Dick 2016) • Implement **progressive reclamation and revegetation** of disturbed areas no longer required • **Reclaim and revegetate areas** where non-permanent Project facilities have been decommissioned • Implement an Environmental Protection Program that includes **no harassing, feeding, or approaching wildlife** • If sensitive species are confirmed in the Project footprint, **apply activity restriction guidelines for sensitive species** established by the Government of Saskatchewan (ENV 2017) to the Project as required • If bats or birds are observed nesting, roosting, or hibernating, do not disturb them, to the extent practicable. **Contact the ENV and ECCC to discuss measures for the removal/relocation and to identify further measures that could prevent future access** • Work with government and Indigenous communities to **develop caribou mitigation and offsetting actions** • Implement an **Environmental Protection Program** with restricted activity periods to limit effects on denning animals and nesting migratory birds during sensitive time periods (e.g., per Nesting Zone B6 [ECCC 2018] guidelines and the *Migratory Birds Convention Act 1994*). If sensitive periods cannot be avoided, pre-clearing wildlife sweeps will be completed by qualified professionals and buffers applied, as required • Develop and implement a **Preliminary Decommissioning and Reclamation Plan** with government and Indigenous communities to decommission and transfer the site to the province under the Institutional Control Program	Primary pathway

Farrukh Naveed
ECCC-18; updates made as per ECCC advice for consistency with rows W-01, W-05, and W-19.