

Environment and Climate Change Canada (ECCC's)
Review of the draft Impact Assessment Report and conditions for the Crawford Nickel Project

Department Contact Information

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Table 1: ECCC Comments on the draft Impact Assessment Report for the Crawford Nickel Project.

Comment ID	IA Report Reference (if applicable)	Context	Recommendation (Strikethrough indicates deletion and bold indicates additions)
ECCC-01	Executive Summary; Table 1	ECCC offers minor edits to the “Direct or incidental adverse effects” row of Table 1 on page iv.	ECCC recommends the following edits be made in Table 1: <i>“Direct or incidental adverse effects (effects on wetlands from authorizations under the Fisheries Act and potential amendments to the Schedule 2 of the Metal and Diamond Mine-Mining Effluent Regulations”</i>
ECCC-02	Executive Summary; Table 1	Table 1 “Direct or incidental adverse effects (effects on wetlands from authorizations under the Fisheries Act and amendments to Schedule 2 of the Metal and Diamond Mine Effluent Regulations). IAAC’s conclusion states: <i>“Direct or incidental residual effects on wetlands are likely to be significant to a low extent, taking into account the local and regional abundance of similar wetlands. Cumulative effects are likely to be significant to a low extent due to other local <u>mining</u> activities.”</i>	ECCC suggests “ forestry ” be added as an activity contributing to cumulative effects if it was considered in the cumulative effects assessment related to direct or incidental adverse effects.

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ECCC-03	Executive Summary	Within the Executive Summary it states that <i>"In addition to the impact assessment, the project is expected to require federal permits for specific activities including: ... potentially a permit under the Species at Risk Act for any species at risk migratory bird residences <u>that are protected year-round</u>, if found).</i> ECCC notes that the underlined text is not entirely accurate as there is a potential permitting need for Barn Swallow if an unoccupied nest is removed during the active season. ECCC suggests minor re-wording to improve clarity.	ECCC recommends the following edits on pages vi and vii within the Executive Summary: <i>"In addition to the impact assessment, the project is expected to require federal permits for specific activities including: ... potentially a permit under the Species at Risk Act for any species at risk migratory bird residences where protections extend beyond those of the Migratory Birds Convention Act (e.g., residences that are protected year round or where unoccupied nests are protected during the active season), if found).</i>"
ECCC-04	Sec 2.1 Fish and fish habitat; Fish habitat offsetting plan	In section 2.1 under the sub-heading "Fish habitat offsetting plan", ECCC recommends several edits to reflect that one single compensation plan is being developed to comply with both the Fisheries Act Authorization and the Metal and Diamond Mining Effluent Regulations (MDMER). ECCC also suggests edits to clarify language around the Tailings Impoundment Area (TIA) Governor-in-Council (GIC) designation and the condition to develop a compensation plan as requirements under the MDMER.	ECCC recommends the following edits: <i>"Authorization under the Fisheries Act and the Metal and Diamond Mining Effluent Regulations (MDMER) under the Fisheries Act would be conditional on a plan to partially restore the lost habitat and to create or enhance fish habitat elsewhere to offset losses. This includes offsetting for any reduction in fish productivity from any permanent and temporary habitat loss. The Proponent will inform the conditions of the Fisheries Act authorization by clarifying assumptions in its modelling and refining predictions for any outstanding uncertainty.</i> <i>The habitat loss resulting from the authorization under the Fisheries Act and the MDMER is proposed to be offset as part of this broader offsetting plan.</i> Further, <i>An authorization for mine waste disposal under the MDMER requires an amendment to Schedule 2 of the regulations to designate certain water bodies frequented by fish as Tailings Impoundment Areas (TIA). The MDMER also requires the development of a fish habitat compensation plan to offset any fish habitat loss resulting from the disposal of mine waste. The Metal and Diamond Mining Effluent Regulations (MDMER) under the Fisheries Act would need to be amended to allow if certain waterbodies are to be</i>

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			used for the disposal of mine waste. Habitat loss from these would be offset as part of this broader offsetting plan.
ECCC-05	Sec 2.1 Fish and fish habitat; Uncontrolled effluent I the North Driftwood River, West Buskegau River, and Jocko Creek watersheds	Under section 2.1 Fish and fish habitat, under the sub-header “Uncontrolled effluent in the North Driftwood River, West Buskegau River, and Jocko Creek watersheds”, it states: <i>“The Fisheries Act prohibits the deposit of all deleterious substances into water frequented by fish or to any place, under any conditions, where it may enter water frequented by fish. IAAC therefore recommends a seepage management follow-up program to demonstrate that concentrations of the metals of concern would not, or do not cause acute toxicity to fish at the seepage face.”</i> While ECCC endorses the recommendation to develop and implement a seepage management follow-up program, this recommendation should not be linked to the <i>Fisheries Act</i> as deleterious substances are not limited to concentrations of metals that would cause acute lethality (as described in Frequently asked questions: Fisheries Act pollution prevention provisions - Canada.ca)	ECCC recommends the following edits on page 23: <i>“Ontario and NRCan shared similar concerns that the proponent underestimated the extent of seepage. The Fisheries Act prohibits the deposit of all deleterious substances into water frequented by fish or to any place, under any conditions, where it may enter water frequented by fish. IAAC therefore recommends a seepage management follow-up program to demonstrate that concentrations of the metals of concern would not, or do not cause acute toxicity to fish at the seepage face.”</i>
ECCC-06	Sec 2.1 Fish and fish habitat; Cumulative Effects	ECCC notes that the Metal and Diamond Mining Effluent Regulations (MDMER) would only apply to the Project once the application criteria are met. This means that during construction, the general prohibition under the Fisheries Act may apply. It is unclear when this Project would meet the application criteria of the MDMER. Therefore, ECCC is recommending a minor edit to avoid implying that the MDMER would apply to effluent discharge over the life of the Project.	ECCC recommends the following minor change be made in Section 2.1 under “Cumulative Effects”: <i>“Like this Project, The mine is subject to the prohibitions of the Fisheries Act, MDMER (once application criteria pursuant to section 2, “Application” of the MDMER, SOR/2002-222 have been met), the Ontario Water Resources Act, and its Environmental Compliance Approval under Ontario’s Environmental Protection Act.”</i>
ECCC-07	Sec 2.1 Fish and fish habitat; Alteration of habitat from the alteration of stream flows	ECCC notes that in section 2.1 under the sub-header “Alteration of habitat from the alteration of stream flows”, it states <i>“It is predicted that for most surface water features, this change would become reversible throughout passive closure; however, the effect would not be completely reversed until the open pit has been filled and is connected to the North Driftwood River and West Buskegau River via spillways, which may not occur until over 100 years after active closure.”</i>	To mitigate potential irreversible changes, the design of spillways between the open pit and the receiving environment will be critical. ECCC recommends this be carefully considered in the Closure and Reclamation Plan. To reflect that these changes may not be fully reversible, ECCC recommends the following edits on page 16 of the draft IA report under “Alteration to habitat from the alteration of stream flows”:

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		ECCC flags that based on available information, the effects to surface water features may not be completely reversed even once the open pit has filled. Larger loss of water due to evaporation is expected from the waterbody.	<i>"...; however, the effect would not be completely reversed until the open pit has been filled and is connected to the North Driftwood River and West Buskegau River via spillways, which may not occur until over 100 years after active closure. Even once the open pit is filled and reconnected to the receiving environment, it is possible that the effects to surface water features may not be fully reversible, demonstrating the importance of a carefully designed Closure and Reclamation Plan, including the design of the spillways."</i>
ECCC-08	Sec 2.1 Fish and fish habitat; Alteration of habitat from the alteration of stream flows	ECCC suggests minor edits in section 2.1 under the sub-header "Alteration of habitat from the alteration of stream flows" to more accurately characterize the Department's views on the uncertainty associated with the water quantity modelling.	ECCC recommends the following edits on page 16 of the draft IA report: <i>"ECCC and NRCan identified a high level of uncertainty in the water quantity modelling, which could influence the alteration quantification of fish habitat altered by the Project."</i>
ECCC-09	Sec 2.1 Fish and fish habitat; Alteration of habitat from the alteration of stream flows	ECCC notes the following statement in section 2.1 under the sub-header " <i>Alteration of habitat from the alteration of stream flows</i> " where it states: " <i>Other corrective actions identified in the plan include the flexible optimization of on-site water treatment and storage, and diversion of water from the headwaters of Jocko Creek or other nearby watersheds.</i> " ECCC notes that these corrective actions would require further assessment as they may introduce additional environmental effects that have not been accounted for.	ECCC recommends a minor addition be made to reflect that certain corrective actions may require further assessment: <i>"Other corrective actions identified in the plan include the flexible optimization of on-site water treatment and storage, and diversion of water from the headwaters of Jocko Creek or other nearby watersheds-; however, these corrective actions would require further assessment, as they may introduce additional environmental effects."</i>
ECCC-10	Sec 2.2 Migratory birds	ECCC recommends a minor edit in section 2.2 to reflect that vibration was also included in IAAC's assessment of effects.	ECCC recommends the following edits be made in Section 2.2: <i>"IAAC's assessment of effects to migratory birds focused on displacement from lost habitat, disturbance from noise, vibration and light, and harm or mortality from project interactions."</i>
ECCC-11	Sec 2.2 Migratory birds; Displacement	ECCC recommends several minor edits within section 2.2 migratory birds under sub-header " <i>Displacement of Migratory Birds</i> " to clarify the characterization of ECCC's information and knowledge provided throughout the impact assessment process.	ECCC recommends the following edits in the "Assessment of effects" with respect to the "Displacement of Migratory Birds" within section 2.2: <i>"Displacement from lost habitat may affect migratory birds through the concentration of individuals in the</i>

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	of Migratory birds		reduced regional breeding success or increased predation pressure, disease, and competition. Habitat loss could also disrupt existing waterfowl migration routes migratory bird migration routes including waterfowl migration routes. • “ECCC and MNR note that accurate estimations of the effects of displacement further concentrating birds are challenging to make as this is a complex and poorly understood topic further compounded by due to factors such as a lack of species-specific information for this project and limited research on pathogen dynamics in the region. However, given the high mobility of most migratory birds, ECCC advised that these displacement effects (e.g., reduced regional breeding success, increased predation pressures, disease, competition) are likely to be temporary (days to months) as the birds leave or circumnavigate the project area to find suitable habitat.” • “Habitat loss from groundwater drawdown maywould be partially restored throughout operations and post-closure as groundwater levels equilibrate (refer to Section 2.1 and 4.2.2).” • “Indirect habitat loss from increased vibration, noise and light may lead to behavioral changes causing displacement or nest abandonment. Vibration, noise and light in the PA and some areas of the LSA would increase during construction, operations, and decommissioning. The proponent would develop and implement a light, noise and vibration management plan...IAAC recommends that lighting be controlled in this manner. Altogether, controls on vibration, noise and light would reduce but not eliminate the indirect habitat loss and associated behavioral changes”

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ECCC-12	Sec 2.2 Migratory birds; Assessment of Effects; Mortality risk	ECCC recommends clarifying language around protections under the <i>Migratory Bird Convention Act (MBCA)</i>, the <i>Migratory Bird Regulations, 2022, (MBR, 2022)</i> and the <i>Species at Risk Act (SARA)</i>. ECCC's edits within the "Mortality Risk" section of 2.2 Migratory Birds clarifies the following: • MBCA protects a migratory bird nest when it contains a live bird or viable egg. • The nests of 18 species listed under schedule 1 of the MBR, 2022 are protected year-round (e.g., Great Blue Heron). • SARA may protect SARA-listed migratory birds beyond protection received under the MBCA, for example: ○ The residence (i.e., structure used for nesting/roosting) of Chimney Swift is protected year-round. ○ For Barn Swallow, unoccupied nests (i.e., residences) are protected during the active season.	ECCC recommends the following edits in Section 2.2 under "Mortality Risk": <i>"Some migratory bird nests receive year-round regulatory protection under the Migratory Bird Regulations (MBR, 2022) until they are deemed abandoned (e.g., Great Blue Heron). In addition, some SARA-listed migratory birds receive residence protections under the Species at Risk Act (SARA) that extend beyond Migratory Birds Convention Action (MBCA) protection (e.g., Chimney Sswift and Bbarn Sswallow). Similar to above, where protected nests are observed, the proponent would need to avoid effects to those nests or structures establish set back distances while they nests are protected. Removal of protected nests or structures would have be required to comply with the SARA and MBR, 2022 where it applies."</i>
ECCC-13	Sec 2.2 Migratory birds	ECCC disagrees with the following characterization of collision risk in the "Mortality Risk" section of 2.2 Migratory birds: <i>"The collision risk associated with the relocation and operation of the existing 500-kW transmission line and Highway 655 is not expected to change from existing conditions given that there is no substantial net change in the footprint of that infrastructure."</i>	The absence of a substantial net change in the footprint of the infrastructure does not demonstrate that the impact would remain the same. The same size of footprint may not mean the same level of impact, particularly where the 500-kW transmission line and Highway 655 would be relocated to a new area that does not currently contain infrastructure. Collision risk should be evaluated based on the location, alignment, design and operation of the relocated infrastructure in relation to wildlife movement, habitat use and seasonal patterns, rather than inferred from footprint size alone. ECCC recommends the following edits to address the uncertainty associated with collision risks from the relocated infrastructure: <i>"The collision risk associated with the relocation and operation of the existing 500-kW transmission line and Highway 655 is not expected to change from existing conditions given that there is</i>

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			<i>no substantial net change in the footprint of that infrastructure. However, uncertainty remains as collision risk is also influenced by the location, alignment, design and operation of the relocated infrastructure in relation to wildlife movement, habitat use and seasonal patterns.</i>
ECCC-14	Sec 2.2 Migratory birds	ECCC suggests a recurring edit throughout section 2.2 to broaden use of the term 'waterfowl' to also include 'migratory birds', as waterfowl are not the only type of migratory birds to which these contexts apply. For example, in the "Mortality Risk" section, waterfowl are not the only migratory birds that may try to access contaminated water sources within the Project Area.	ECCC recommends the following edits: Under "Mortality risk": <i>"To mitigate potential exposure to contaminants, IAAC recommends the proponent ensure migratory birdswaterfowl do not access stored contact water that exceeds Canadian Council of Ministers of the Environment's Canadian Water Quality Guidelines for the Protection of Aquatic Life. To manage uncertainties associated with deterring migratory birds including waterfowl from the large PA, IAAC recommends a follow-up program to monitor the effectiveness of mitigations and whether additional measures need to be implemented."</i> Under "Residual effects": <i>"The moderate degree of uncertainty associated with deterring migratory birds, including waterfowl from exposure to project contaminants over a large area would be managed through a follow-up program."</i> Within Table 5 under "Recommended follow-up programs that would potentially be included as conditions in the impact assessment decision statement": <i>"Develop and implement a follow-up program to monitor migratory birds including waterfowls use of tailings management ponds, water collection ponds, settling ponds, the pit lake, and any other infrastructure where contact water may be stored or conveyed. ... If monitoring shows that migratory birds including waterfowl are using these areas, additional extra-bird-</i>

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			deterrent measures must would be put in place until the water meets the Canadian Council of Ministers of the Environment's Canadian Water Quality Guidelines for the Protection of Aquatic Life ."
ECCC-15	Sec 2.2 Migratory birds; Residual Effects and Cumulative Effects	The residual effects determination for migratory birds states that "IAAC <i>acknowledges there is a low degree of uncertainty with the extent to which birds can be further concentrated in the remaining habitat.</i>" ECCC suggests that this uncertainty be classified as 'moderate' rather than 'low', given a lack of species-specific information, limited research on pathogen dynamics in the region, and the inherent complexity of the issue. This level of uncertainty should also be reflected in the "Cumulative Effects" section where it states that "[Displacement] <i>Effects would be temporary as migratory birds situate in the remaining habitat, and reversible as previously harvested forest regenerates.</i>"	ECCC recommends the following edits within IAAC's "Residual effects" for migratory birds: <i>"IAAC acknowledges there is a low moderate degree of uncertainty with the extent to which birds can be further concentrated in the remaining habitat."</i> And similar edits within the "Cumulative effects" portion of the same chapter: <i>"Effects would be temporary as migratory birds situate in the may be able to utilize the remaining habitat, and possibly reversible as previously harvested forest regenerates."</i>
ECCC-16	Sec 4.2.2 Effects on the current use of lands and resources for traditional purposes by Indigenous Peoples	In section 4.2.2 under the subtitle "Plant Gathering", it states "IAAC <i>also recommends follow-up programs to monitor and manage effects to vegetation from air quality...</i>" ECCC endorses this suggestion but offers additional information in the adjacent column for IAAC's consideration to better reflect the intent of the recommendation.	ECCC supports IAAC's recommendation to develop and implement a follow-up program that would monitor and manage effects to vegetation from air quality. Given that a follow-up program has not yet been developed, ECCC recommends the Proponent confirm the monitoring locations, monitoring parameters, and demonstrate how impacts to vegetation from air quality can be mitigated and managed. For example, deposition sampling on plants to observe contaminant loading may be a suitable approach to monitoring. ECCC encourages the Proponent to consult with Indigenous communities in the development of this follow-up program.
ECCC-17	Sec 4.2.3 Effects on the health, social, and economic conditions of Indigenous Peoples	In section 4.2.3 under the sub-header " <i>Atmospheric and Acoustic Environment</i> ", it states that an air quality follow-up program " <i>would monitor exceedances of baseline levels</i> " for various parameters of concern. Baseline concentrations represent pre-Project conditions and should not be used as exceedance thresholds. ECCC proposes clarified wording to indicate that the monitoring results should instead be compared against applicable standards, including the	ECCC recommends the following edits be made on page 78: <i>"The program would monitor exceedances of baseline levels for concentrations of PM_{2.5}, PM₁₀, SO₂ and NO₂, and any other contaminants of concern, during project construction and operations, at locations determined in accordance with the MECP Operations manual for air quality monitoring in Ontario and in collaboration with Indigenous communities., using as</i>

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		Canadian Ambient Air Quality Standards (CAAQS) and applicable provincial standards, or pre-defined action levels established through the follow-up program. PM _{2.5} , PM ₁₀ , SO ₂ and NO ₂ are generally compared against the CAAQS. For other substances or pollutants of concern, such as dust, suspended particulate matter, asbestos, volatile organic compounds (VOCs) and polyaromatic hydrocarbons (PAHs), applicable provincial standards should be used, or other relevant standards such as the World Health Organization guidelines where no federal or provincial standard exists.	benchmarks applicable standards, including the CAAQS and applicable provincial standards, or pre-defined action levels established through the follow-up program."
ECCC-18	Sec 4.2.3 Effects on the health, social, and economic conditions of Indigenous Peoples; Table 9	In Table 9: Summary of IAAC's recommended mitigation measures and follow-up program measure pertaining to changes to the health, social and economic conditions of Indigenous Peoples, ECCC recommends modifications to the text to reflect that concentrations of air contaminants should be compared to applicable standards rather than baseline (see previous comment).	ECCC recommends the following edits be made in Table 9: "As part of the implementation of the follow-up program, the Proponent shall: Monitor during construction and operations, at the identified monitoring locations, for exceedances concentrations of baseline levels for PM_{2.5}, PM₁₀, SO₂, NO₂ and any other contaminant of concern determined in consultation with Indigenous communities, using as benchmarks the applicable standards, including the CAAQS and applicable provincial standards, or pre-defined action levels established through the follow-up program; If feedback on the results from monitoring indicate exceedances of applicable standards or pre-defined action levels established through the follow-up program baseline levels , develop and implement modified or additional mitigation measures..."
ECCC-19	Sec 2.2 Migratory birds; Table 6	ECCC suggests the inclusion of a bullet related to stockpile slope stability. ECCC acknowledges IAAC's recommendation that the Project infrastructure be designed to meet applicable standards for slope stability, and that the Proponent anticipates stockpile slopes to be well below the recommended maximum 70 degrees. However, ECCC suggests adding text in Table 6 and a corresponding condition (see ECCC-26 in Table 2) to prevent Bank Swallows from creating burrows.	In Section 2.2 in Table 6 under the row "Recommended mitigation measures that would potentially be included as conditions in the impact assessment decision statement" ECCC recommends the following addition: "Stockpile slope stability will be designed in alignment with applicable standards for slope stability."

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ECCC-20	Sec 4.2.2 Effects on the current use of lands and resources for traditional purposes by Indigenous Peoples; Assessment of Effects; Hunting and trapping	ECCC recommends minor revisions to clarify sources of Project-induced habitat fragmentation.	ECCC recommends the following revisions within the "Hunting and trapping" portion of the Assessment of Effects in Section 4.2.2: <i>"Habitat fragmentation from forest clearing and changes to linear infrastructure (e.g., realignment of Highway 655, transmission line, rail spur) are-is expected to result in habitat loss and interruption of migratory routes."</i>
ECCC-21	Sec 4.2.2 Effects on the current use of lands and resources for traditional purposes by Indigenous Peoples; Assessment of Effects; Hunting and trapping	ECCC recommends the inclusion of "waterfowl" in several instances within the "Hunting and trapping" portion of the section 4.2.2 Assessment of Effects since they are species of importance to Indigenous Peoples.	ECCC recommends the following revisions within the "Hunting and trapping" portion of the Assessment of Effects in Section 4.2.2: <i>"This would change the availability of furbearers (e.g., mink and lynx), moose and waterfowl at preferred hunting and trapping locations near the Project."</i> <i>"IAAC anticipates these water level changes may alter habitat features beyond the PA and thereby decrease the carrying capacity of the area and reduce opportunities to hunt for waterfowl, moose and other furbearers."</i>
ECCC-22	Sec 4.2.2 Effects on the current use of lands and resources for traditional purposes by Indigenous Peoples; Assessment of Effects;	Within the Hunting and Trapping portion of Section 4.2.2 it states that " <i>because the Kesagami Range is below the 65 percent minimum undisturbed habitat threshold, as set by the 2020 federal amended recovery strategy, all <u>existing habitat</u> within the range that would contribute to the attainment of 65 percent undisturbed habitat is considered critical habitat.</i> " ECCC recommends edits to specify providing a definition for "existing habitat" to provide context under the federal recovery strategy and provide information on federal considerations for habitat.	ECCC recommends the following edits within Section 4.2.2: " <i>...because the Kesagami Range is below the 65 percent minimum undisturbed habitat threshold, as set by the 2020 federal amended recovery strategy, all <u>existing habitat</u> within the range that would contribute to the attainment of 65 percent undisturbed habitat is considered critical habitat under the amended federal recovery strategy.</i> " ECCC further suggests the following definition of 'existing habitat' be included in a footnote:

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	Hunting and trapping		<i>“Existing habitat is the entire boreal caribou range area minus permanent alterations, where permanent alterations are existing features found within a range, such as industrial or urban developments, permanent infrastructure, and graded or paved roads that do not currently possess or have the potential to possess the biophysical attributes of critical habitat for boreal caribou.”</i>

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Table 2: ECCC comments on the draft conditions for the Crawford Nickel Project

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ECCC-23	3.5	ECCC recommends the addition of a new condition related to the development and implementation of a surface water quantity monitoring program. This addition is intended to address the water quantity gaps that are relevant to the fish and fish habitat assessment and ensure the information necessary to implement adaptive management is collected. ECCC worked with the Department of Fisheries and Oceans to develop this recommended condition. ECCC notes that “additional mitigation measures” mentioned in the proposed condition 3.5.3 could include modifying discharge volumes based on flow conditions, using on-site storage during low periods (as noted in the draft EA report) which effectively would require additional storage on-site (including discharge-ready cells), pumping flexibility to accommodate changes to flows and enhanced real-time monitoring of the receiving environment to effectively benefit from increased capacity.	ECCC recommends the addition of the new condition 3.5 as follows: “3.5 The Proponent shall develop, prior to construction and in consultation with Indigenous groups, Fisheries and Oceans Canada and any other relevant authorities, and implement, during all phases of the Designated Project, a follow-up program to verify the accuracy of the impact assessment and determine the effectiveness of mitigation measures with respect to adverse federal effects from the Designated Project on fish and fish habitat resulting from changes to surface water quantity. As part of the follow-up program, the Proponent shall: 3.5.1 Monitor, beginning prior to construction and continuing year-round through decommissioning, continuous surface water flows and levels in the receiving environment at the baseline monitoring locations in the North Driftwood River, West Buskegau River, and Jocko Creek and their headwater lakes, unless not feasible for safety reasons. Using the data collected through monitoring, calculate: • 3.5.1.1 the mean annual discharge, mean monthly discharge and 7-day low flow; and • 3.5.1.2 the monthly cumulative discharge at all discharge points from the mine site to the receiving environment and the monthly cumulative water withdrawal from all water intakes; 3.5.2 Recalibrate the relevant hydrologic models every five years using the data collected pursuant to condition 3.5.1, beginning prior to operations;

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			3.5.2.1 compare the discharges calculated from monitoring data pursuant to condition 3.5.1.1 to the equivalent discharges calculated by the recalibrated hydrologic models pursuant to condition 3.5.2; and 3.5.2.2 compare the results of the previous iteration of the models to calculate the rate of change, to determine whether model uncertainty changes over time; 3.5.3 If the results of monitoring pursuant to condition 3.5.1 or modelling pursuant to condition 3.5.2 show a change that is likely to result in an increase in adverse effects on fish and fish habitat compared to predictions made during the impact assessment, implement modified or additional mitigation measures; and; 3.5.4 report the methodology and results of the monitoring pursuant to condition 3.5.1 and the modelling pursuant to condition 3.5.2 to the parties consulted in the development of this program.”
ECCC-24	4.2	ECCC recommends its guidelines to avoid harm to migratory birds be cited within condition 4.2.	ECCC recommends the following edits be made to condition 4.2: <i>“The Proponent shall determine, under the direction of a qualified individual and using non-intrusive methods selected based on habitat type, the presence, or likely presence of migratory bird nest(s) protected under the Migratory Birds Convention Act, 1994 and its regulations and residences protected under the Species at Risk Act that may be adversely affected by any Designated Project activity prior to initiating the activity, while taking into account Environment and Climate Change Canada’s <u>Guidelines to avoid harm to migratory birds.</u>”</i>
ECCC-25	4.5	In condition 4.5, ECCC recommends the inclusion of examples of sources of water that consistently exceed the Canadian Council	ECCC recommends the following additions to condition 4.5:

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		of Ministers of the Environment's <i>Canadian Water Quality Guidelines for the Protection of Aquatic Life</i> .	<i>"The Proponent shall take all reasonable measures to prevent migratory birds from accessing sources of water (e.g., tailings management ponds, water collection ponds, settling ponds, pit lakes) that consistently exceed the Canadian Council of Ministers of the Environment's Canadian Water Quality Guidelines for the Protection of Aquatic Life."</i>
ECCC-26	4.7	To reduce the risk of drawing Species at Risk, such as Bank Swallow (SARA-listed migratory bird known to be in the area of the Project) into the Project area, ECCC recommends a condition to ensure that stockpiles (e.g., sand or soil) have a slope that is less than 70 degrees to prevent Bank Swallow from creating burrows. Refer to the following Best Management Practices: https://www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/related-information/bank-swallow-sandpits-quarries.html	ECCC recommends the following condition be added under Section 4 – Migratory birds: "4.7 The Proponent will ensure that stockpiles (e.g., sand or soil) within the Project site will have a slope that is less than 70 degrees to prevent Bank Swallow from creating burrows."
ECCC-27	5.7.2	Condition 5.7.2 suggests that monitored concentrations should be compared against baseline levels. Baseline concentrations represent pre-Project conditions and should not be used as exceedance thresholds. As predicted by the Proponent, Project activities are expected to increase contaminant concentrations compared to baseline levels, therefore this comparison would not be useful or informative. ECCC proposes revised wording to reflect that these monitored concentrations should instead be compared to applicable standards, including the Canadian Ambient Air Quality Standards (CAAQS) and applicable provincial standards, or pre-defined action levels established through the follow-up program. This approach has been taken on other recent mining projects in Canada, including Greenstone Mine and Marathon Palladium Mine.	ECCC recommends the following edits to condition 5.7.2: "Monitor, during construction and operation, at locations determined pursuant to condition 5.7.1, for exceedances of baseline levels concentrations of PM_{2.5}, PM₁₀, NO₂, SO₂ and any other contaminants of concern determined in consultation with Indigenous groups, using as benchmarks the applicable standards and criteria set out in the Canadian Council of Ministers of the Environment's Canadian Ambient Air Quality Standards, Ontario's Ambient Air Quality Criteria, or other pre-defined action levels established through the follow-up program. "
ECCC-28	5.7.3	Similar to the previous comment, condition 5.7.3 makes reference to comparing monitoring contaminant concentrations to baseline levels. ECCC recommends this be adjusted to compare monitored concentrations to applicable standards or pre-defined action levels.	ECCC recommends the following edits to condition 5.7.3: "If results from monitoring referred to in condition 5.7.2 indicate exceedances of baseline levels the applicable standards set out in the Canadian Council of Ministers of the Environment's Canadian Ambient Air Quality Standards or Ontario's Ambient Air Quality Criteria,

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			develop and implement modified or additional mitigation measures..."
ECCC-29	7.7.2	ECCC recommends additions to condition 7.7.2 to clarify that, where dust fall monitoring results exceed the applicable standard, the Proponent must not only notify Indigenous groups but also develop and implement appropriate mitigation measures to address potential adverse effects on the current use of lands and resources for traditional purposes related to plant gathering.	ECCC recommends the following edits: "If results of monitoring referred to in condition 7.7.1 indicate that dustfall at any of the sites identified in condition 7.6.1 exceed the Ontario Ministry of Environment, Conservation and Parks' <i>Ambient Air Quality Criteria</i> , notify Indigenous groups, in accordance with the communication plan referred to in condition 7.1, and develop and implement modified or additional mitigation measures to mitigate adverse effects on the current use of lands and resources for traditional purposes related to plant gathering. "
ECCC-30	10.1.3	In condition 10.1.3, the term "1-in-100-year flood event" can be technically ambiguous unless clearly defined. Depending on interpretation, it may refer to flow, water level, or rainfall-derived runoff, and it may be understood as representing historical climate conditions only unless explicitly stated otherwise. In practice, some practitioners interpret the term as being derived from stationary Intensity-Duration-Frequency (IDF) information, while others understand it as referring to an Annual Exceedance Probability (AEP)-based flood magnitude. Under changing climate conditions, extreme short-duration rainfall is projected to increase in many regions. As a result, stationary IDF curves based solely on historical observations may underestimate future extreme precipitation, particularly over the lifespan of a long-lived infrastructure. In such cases, a rainfall event historically characterized as a 1-in-100-year event may occur with greater frequency under future conditions, unless climate-adjusted inputs are applied. An AEP-based flow represents a flood magnitude (expressed as flow rate or water level) associated with a given Annual Exceedance Probability (for example, 1% AEP corresponding to a "1-in-100-year flood"). When derived using climate-adjusted hydrological inputs, AEP-based flood estimates provide a clearer	ECCC recommends the following revisions to condition 10.1.3: "Design, construct, and maintain water management structures to accommodate, at a minimum, a 1-in-100-year flood (annual exceedance probability of 1%) event, based on historical climate data and projected future climate conditions for changes in extreme precipitation-rainfall."

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		and more robust specification for the design and performance of water management structures over the life of the Project.	
ECCC-31	10.1.4	ECCC recommends condition 10.1.4 be revised to reflect the broader emergency management planning framework for the Project, rather than limiting its scope to fire and spill prevention plans. Emergency management planning should address the full range of credible accidents and malfunctions associated with the Project, which are not limited to fire and spill events. At a minimum, the condition should clearly require the inclusion of spill response measures in addition to prevention.	ECCC recommends revising condition 10.1.4 as follows: “Develop and implement emergency management plans, including fire and spill prevention and response plans establish fire and spill prevention plans ; restrict vehicle and equipment refueling and servicing to designated areas with spill containment;”