Enclosure 1: Provincial Authority Advice Record - Crawford Nickel Project

Please submit the completed form by **February 2, 2026**, to Crawford@iaac-aeic.gc.ca.

Department Contact Information

Submission Date	
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1. Review the assigned proponent responses to IAAC's comments on the Impact Statement and provide views for IAAC's consideration in the analysis of the project's effects and preparation of the Impact Assessment Report (in Table 1). Also using Table 1, provide an answer to each of IAAC's targeted questions outlined in Table 2 that is assigned to your ministry.

Scott Parker

Name of Ministry Responder

Surface Water Specialist, Northern Region Technical Support

Title of Responder

Feb 17, 2026

Date

Table 1. Advice to Inform the Impact Assessment

Table 1 should be used to provide views for IAAC's consideration in the analysis of the project's effects[1] and preparation of the Impact Assessment Report and potential conditions. Reviewers should consider project and regulatory context and provide risk-proportional, solution-oriented advice that allows the assessment to proceed to decision-making. Advice should include responses to, but not be constrained by, the targeted questions in Table 2.

Comment ID	Reference to IAAC's Comment	Description of View or Concern Related to an Effect	Advice to Inform the Impact Assessment
Please identify comments by organization and comment number. *e.g.: IAAC-01*	*Identify the specific Comment ID associated with IAAC's comments on the Impact Statement to which your comment applies.* *e.g.: FFH-01*	*Provide a brief description of the view or concern for IAAC's consideration in the analysis of effects, based on available information, such as:* • *a missing pathway of an adverse federal effect that may increase the overall extent of significance;* • *inaccurate characterization of an adverse residual effect; or* • *sources of uncertainty that, in your organization's view, may weaken conclusions*	*Considering project and regulatory context, provide solution-oriented advice that allows the assessment to proceed to decision-making. For example:* • *Characterize residual effects and associated uncertainty, as predicted by your organization, based on available information. Explain the uncertainty. Consider describing a range of possible effects scenarios. Consider qualitative descriptions of effects, if needed.* • *Suggest other mitigation and follow-up measures or adaptive management that may reduce predicted adverse federal effects, increase certainty in predictions, or help manage uncertainty, including operational guidance or standards, and well-understood practices.* • *Describe any other federal or provincial legislative frameworks, policies, programs, and potential complementary measures that may provide another means to address adverse federal effects, including predictable outcomes and whether other tools set conditions on the proponent.* • *Identify those mitigation measures and project design elements that are necessary to limit the extent of significance of adverse federal effects, and those follow-up program measures that address substantial uncertainty with the accuracy of predictions and the effectiveness of mitigation, in relation to key issues that are material to decision-making.* • *Provide advice on risk (likelihood and severity of effects), using applicable frameworks relevant to your mandate, to support IAAC's risk-based decisions.* *Based on current knowledge, IAAC does not intend to ask more questions of the proponent. If you are not able to respond to the specific prompts for advice outlined here and in Table 2, IAAC requests a discussion to better understand your views.*
MECP-01			
	GHC-01e-2 Updated ML/ARD Management Plan 5.2.4 FFH-02, FFH-02-2, FFH-03	Ore will be extracted from the single open pit and will be divided into an east zone and a main zone pit. Mining of ore will occur for approximately 30 years. Ore milling/processing is expected to continue for an additional 11 years. Open pit is to be filled with tailings from year 18 onward until closure. Approximately 61% of tailing will be deposited in the open pit and will be water covered at closure to reduce potential for ML/ARD. The IS indicated that the NDR will be returned to its natural channel post closure once the open pit has filled and reached equilibrium (decades to centuries post closure).	It was understood from the impact statement that the North Driftwood River (NDR) would be returned to its original channel that intersects the open pit post closure. • The Impact Statement does not address the potential impact on water quality/quantity of the restoration of the NDR to its historical channel. • It is understood that this mitigation is conceptual, and the restoration of the stream channel is likely more than 110+ years post closure and dependent on the time required to fill the open pit. IAAC should note that the Government of Ontario regulates groundwater takings through Permits to Take Water (PTTWs) issued under the Ontario Water Resources Act, and similarly regulates the discharge of dewatering effluent through Environmental Compliance Approvals (ECAs) issued under the Environmental Protection Act.

[1] "Effects" means adverse effects within federal jurisdiction and direct or incidental adverse effects (as defined in section 2 of the *Impact Assessment Act*).

	FFH-02, FFH-02-2, FFH-03 Attachment SW Qual-03	The re-alignment of the NDR will have a potentially irreversible impact on both the section that is realigned and the adjacent up and downstream sections of the NDR. And again, when the re-aligned section is returned to its natural channel post closure/pit filling.	Water quality considerations in the re-aligned section of the NDR include erosion, bottom scouring, lack of natural woody debris, allochthonous inputs, and changes to water chemistry from the inundation of the excavated channel (similar to impacts from reservoir flooding). • These potential water quality impacts will in turn potentially impact fish movement, spawning habitat, nursery habitat, and spatial/thermal refugia. • The diversion of the NDR may also increase mercury methylation during the decomposition of flooded vegetation and soils by the initial inundation and then seasonal flooding of the realigned channel. IIt is likely to take years to decades to replicate and reach an equilibrium of the natural biome in the realigned segment. IAAC should rely on the Ontario Water Resources Act (OWRA), Environmental Protection Act (EPA), the Lakes and Rivers Improvement Act (LRIA), and the Fisheries Act to refine predictions and manage uncertainty. IAAC should note that the MECP regulates groundwater takings through Permits to Take Water (PTTWs) issued under the Ontario Water Resources Act, and similarly regulates the discharge of dewatering effluent through Environmental Compliance Approvals (ECAs) issued under the Environmental Protection Act.
	SW Qual-01	Comparison of potential worst-case seepage quality to appropriate guidelines/criteria is necessary to better understand potential impacts to fish health (growth, survival, reproduction, etc.) and fish habitat. This is necessary to identify/propose appropriate mitigation to manage potential worst-case impacts to fish and fish habitat. MECP IS comments SW-05 (15.4.2.3.2), SW-06 (section 15.4.2.3.4), and SW-10 (Appendix C and C.4) suggested modelling potential impacts from worst-case concentrations from the untreated fugitive seepage.	The proponent used the 90th percentile seepage water quality for TMF seepage (for life of mine). Seepage flows were combined with background GW concentrations along the flow path to derive flow-weighted concentrations at the seepage face. These concentrations represent predicted attenuation in the subsurface prior to discharge to SW receivers due to factors such as travel time, redox conditions, organic carbon availability, ground composition, etc., and are thus not indicative of worst-case scenario
	SW Qual-01	Greater confidence is required in the quantity and quality of potential seepage into the NDR, WBR, and the eight small lakes within the site footprint. Seepage quality will vary depending on source and the distance to the receiver.	Table SW Qual-01.1 indicates that seepage discharge to the receivers (NDR, WBR, Jocko Creek, and the eight small lakes) varies from 0% to 46% of the total GW input from the TMF, Impoundment, and/or tailings in the pit, at discrete surface water locations. Jocko Creek and Sutherland Lake are the only two on-site water features that do not receive discharge seepage. Parameters predicted to exceed effluent criteria include chromium VI, uranium, and nitrate (at the seepage face) at one or more locations. • The water quality parameter concentrations in Table SW Qual-01.2 are the 90th percentile flow-weighted water quality concentrations at the seepage face. • The predicted seepage face water quality concentrations may underestimate potential exceedances (worst-case concentration) for other parameters in Table SW Qual-01.2.

	SW Qual-01	The potential impacts from seepage on SW quality are assessed at points downstream at the “point of full mixing” – potentially kilometers to tens of kilometers downstream of the source. Example - Untreated seepage is predicted to account for flow increases >10% in Jocko Creek during low flow (7Q20) conditions. (Phase 2)	The assessment of seepage impacts at the point of full mixing may under/overestimate potential impacts in headwater streams/ponds/lakes that may be more susceptible/sensitive to increases/decreases in flow/level.
	SW Qual-01	The Impact Statement uses MECP Brownfield O. Reg. 153/04 APVs as the water quality criteria for the assessment of water quality impacts from seepage. Brownfield APVs are not appropriate for this project, a new greenfield development.	Comparison of seepage quality to ministry accepted criteria is necessary to understand the potential impacts of fish and stream habitat. Brownfield APVs are not appropriate for this project, a new greenfield development.
	SW Qual-01	Table B.1.2.1 Appendix B of Appendix C.5 – seepage quality predictions. Several elements/compounds had predicted seepage concentrations that exceeded criteria, including As, Cl, Cr VI, Co, Cu, NO4, NO3, Se, U, V, Zn. • Proposed mitigation (interception ditching) will likely not be sufficient to manage seepage.	The proponent has proposed adaptive management in response to future seepage management. However, the IS does not provide enough information to properly assess the conceptual nature of this proposal.
	SW Quan-01a, FFH-01, FFH-02, FFH-03, GW-01b, SW Quan-01 Attachment	The Impact Statement indicated that regional hydrologic data from 5 WSC stations including WSC Station 04D004 on the Porcupine River at Hoyle. HEC-HMS models were developed for each of the three watersheds. Baseline assessment model calibration was performed to match historical recorded flows from WSC station on the Porcupine River at Hoyle. • NOTE: previous MECP SW review comments indicated that the use of this WSC station is not suitable for model calibration. The Porcupine River (at Hoyle) WSC 04MD004 station was discontinued in July 2022 as the water levels and discharges may not be valid due to beaver activity and variable backwater from operation of the OPG dam on Nighthawk Lake. • WSC historical discharge remarks states that discharge was “*continuously affected by beaver activity and a control dam at tailings (mine) dump site*.”	If the Porcupine River (at Hoyle) WSC 04MD004 station was included in the updated modelling, then the original comment is unresolved. If WSC 04MD004 station on the Porcupine River (Hoyle) was used as part of the data collected from local hydrometric monitoring stations for the generation of station-specific rating curves and hydrographs for Jocko Creek, West Buskegau River, and North Driftwood River, it is likely these results do not provide an accurate estimation of natural streamflow characteristics in the proposed receivers. • Estimates of potential impacts on those receivers, such as from seepage or zone-of-influence drawdown, may not accurately predict streamflow and level characteristics over time. SW Quan-01 Attachment (Crawford Nickel Project – 2025 Hydrology Monitoring: Rating Curve and Hydrological Model Update), dated December 23, 2025 (Stantec Memo), in Section 2 HEC-HMS Model Validation (SW Quan-01a. 1,2,and 3) states that “A separate HEC-HMS model was developed for each of the three following watershed: Jocko Creek, North Driftwood River, and West Buskegau River, which were calibrated using hydrometric data from WSC station 04MD004 at Porcupine River (Stantec 2024a)”. • MECP may require additional technical studies to support the issuance of permits and approvals. • Based on the results of such studies, MECP can tailor project-specific conditions for effects monitoring, reporting, and contingency actions to prevent and/or mitigate adverse effects of water takings and associated discharges.

		• WSC indicates that some or all maximum and/or minimum discharge and daily water levels and discharges were flagged as not valid between 2014 and 2022. • WSC Station 04MD004 was relocated 400 metres downstream of the original 1976 location in 2007. The use of the WSC Station 04MD004 for pro-rating flow likely does not provide an accurate estimation of natural streamflow characteristics in the proposed receivers. • The IS comment responses from the proponent do not indicate if this comment was addressed in the updated modelling presented.	
	SW Quan-01a, (FFH-01, FFH-02, FFH-03, GW-01b), SW Quan-01 Attachment	Similar to the previous comment, the IS indicated that the initial hydrologic modeling, water balance modeling, lab analytical data, water quality modeling, and assimilative capacity assessments on the NDR, WBR, and Jocko Creek included data from WSC station on the Porcupine River at Hoyle (WSC 04MD004). • The results may not be an accurate estimation of characteristics in the proposed receivers. The Porcupine River (at Hoyle) WSC 04MD004 station was discontinued in July 2022 as the water levels and discharges may not be valid due to beaver activity and variable backwater from operation of the OPG dam on Nighthawk Lake. • WSC historical discharge remarks states that discharge was "*continuously affected by beaver activity and a control dam at tailings (mine) dump site*." • WSC indicates that some or all maximum and/or minimum discharge and daily water levels and discharges were flagged as not valid between 2014 and 2022.	The use of the WSC Station 04MD004 for pro-rating flow likely does not provide an accurate estimation of natural streamflow characteristics in the proposed receivers. • This WSC station should be removed from future modelling.

		• WSC Station 04MD004 was relocated 400 metres downstream of the original 1976 location in 2007.	
	FFH-01, FFH-02, FFH-03, GW-01b, SW Quan-01d, SW Quan-01 Attachment	The IS indicated that HEC-HMS hydrological modelling of sub-watersheds with a predicted change in daily flow of < 10% were identified for subsequent assessment. The 10% threshold was selected based on case studies including Richter et. al (2011), Acreman and Ferguson (2010), and DFO (2013), which indicate that when flow alterations are within 10% of the natural flow "*a high level of ecological protection is provided*".	It is important to note that the DFO's (2013) Ecological Flow Requirements to Support Fisheries in Canada which provides guidance regarding flow in riverine ecosystems recommends a minimum of 20 years of river flow data to establish a statistically robust natural flow regime. This can be accomplished using modelled streamflow data and that these models must be both calibrated and validated. The data used to create and calibrate these models cannot be the same data used to validate the models. The guidance may not be applicable for relatively long-term change (years to decades) in flow/volume in small receivers as is describe in the Impact Statement. The updated modeling and responses to the IAAC comments continue to use the DFO 10% threshold for assessing potential impact on the receivers,
	SW Qual-02.1 (Pp 439-460) – extent of mixing zone	The ACS was updated to incorporate outcomes of proposed discharge management scenarios. Two scenarios were evaluated: • 1:1 ratio • Pre-and Post-development (HEC-HMS)	The IAAC comments response does not indicate if the 1:1 scenario considers the 7Q20 relative to the cumulative effluent discharge from both FDPs for each FDP calculation. • The cumulative effluent discharge must be equal to or less than the 7Q20. • Each FDP can only discharge 50% (or proportional combination equaling 100%) of the stream 7Q20 in the worst case 1:1 scenario. • The 7Q20 1:1 discharge scenario is the worst-case effluent to stream flow scenario. The actual 7Q20 modelled flows and the observed low flows measured between 2021 and present may in fact be too low to discharge any effluent without potentially negatively impacting stream water quality and biotic life processes. • A minimum instream flow threshold in both the North Driftwood River and the West Buskegau River for effluent discharge may be necessary to mitigate potential impacts to the riverscape. • The proponent should also investigate alternative discharge locations able to support the volume of effluent discharge proposed. Baseline monthly average flow estimated in HEC-HMS (downstream) was used to calculate maximum FDP discharges (volumes). • I agree with the use of monthly average flows for use in model estimates. • The use of Mean Annual Flow (MAF) is not representative of the flashy, variable flow conditions in the receivers for much of the year.
	SW Qual-02.2 (Pp 439-460)	Assimilative capacity assessments were conducted using near-field mixing CORMIX model (Version 12.0) in conjunction with mass balance analyses to determine PoPC concentrations at the point of complete mixing and at "pourpoints" (outlets) of subwatersheds downstream of the FDPs. In the IS,	The specific modelling inputs that determined the mixing zone lengths in each receiver is unclear based on the information presented in the Impact Statement and therefore the extent of potential impacts is unclear. • The information as presented appears to be inconsistent with provincial requirements for effluent discharges and generally accepted mixing zone lengths.

		Section 6.2 mass Balance Assessment (Appendix C.5) Table 6.2 provided beyond-model limit pourpoints used for mass balance assessment of PoPCs to estimate the mixing zone. The pourpoints were described as stream confluences within both the North Driftwood River and West Buskegau River. It is important to note that these pourpoints do not necessarily represent the actual location (length) of mixing for individual PoPCs relative to contaminant concentration. • The mixing zone for individual PoPCs is expected to be smaller than these arbitrary downgradient locations.	• Mixing zone lengths for mine effluent discharge typically range from several metres to a maximum of a few hundred metres, • If the EA is ultimately approved and the project proceeds to the provincial permitting stage, receiver-based effluent limits that are protective of the environment will need to be developed in accordance with Procedure B-1-5,
	SW Qual-02.2 (Pg 439-460)	In the report prepared by Stantec (Attachment SW Qual-02) the mixing zone lengths changed based on flow to discharge ratios. • The worst-case mixing zone length is where the proposed parameter (PoPC) concentration compliance limit achieves PWQO (or other applicable approved criterion) or background in the receiver. • The mixing zone length is calculated for each parameter concentration limit (maximum allowed discharge concentration) using the maximum proposed discharge volume (not greater than at a 1:1 ratio) relative to the proposed receiver 7Q20 flow.	If 7Q20 receiver flows are deemed too low to receive any effluent discharge, a minimum flow-based discharge threshold criteria could be used to establish a worst-case discharge scenario, below which no effluent would ever be discharged. • The proponent should investigate alternative discharge locations able to support the volume of effluent discharge proposed. MECP may require additional technical studies to improve confidence in the proposed undertaking and to support the issuance of permits and approvals. Based on the results, the province can tailor project-specific conditions for effects monitoring, reporting, and contingency actions to prevent and/or mitigate adverse effects of water takings and associated discharges.
	SW Qual-02.2 (Pg 453)	The memorandum states that “The improvement in mixing zones with the NDR and WBR is achieved solely through discharge management, without any changes to treatment criteria.”	The proposed mixing zone lengths for most parameters (from Figure 5, pg. 452) in the NDR and WBR are extremely long for all scenarios. Apart from a few parameters, the mixing zone lengths range from approximately 15 to 90+ km, however, the updated mixing zone modelling does demonstrate an overall decrease in mixing zone lengths. • As stated in previous comments, worst-case scenario (7Q20 and maximum contaminant concentration limit) mixing zone lengths for mine effluent discharge typically range from several metres to a few hundred metres, with few exceptions. • It is important to note that mixing zones are not a substitute for reasonable and practical treatment. • Due to the estimated mixing zone lengths, the proponent should investigate alternative discharge locations able to support the volume of effluent discharge proposed that will minimize the mixing zone.

	SW Qual-02.2 (Pp 439-460)	Parameters of potential concern (PoPCs) identified as having a background concentration in the receiver that are greater than the PWQO or other applicable guideline are considered “Policy 2 receivers”. The IS does not provide the target effluent objective concentration limit for PoPCs for Policy 2 receivers; however, the maximum effluent discharge concentration must be set to no greater than the background concentration. The Policy states that, “In areas with water quality not meeting the PWQO for a specific contaminant (Policy 2), no further degradation of water quality will be allowed for that contaminant”. • Parameters described as “Policy 2” in the IS that have mixing zone lengths up to 90+ kms in the NDR and 40+ km in the WBR, due to a lack of assimilative capacity in each receiver, should in fact have NO mixing zone because, as stated previously, the maximum effluent discharge concentration must be set to no greater than the background concentration.	It is important to note that mixing zones are not a substitute for reasonable and practical treatment. The maximum effluent discharge concentration of PoPCs into a Policy 2 receiver must not exceed the background concentration of the receiver. PoPCs discharging into a Policy 2 receiver for those specific parameters will have no mixing zone. The province relies on MECP Procedure B-1-5 (1994) Deriving Receiving-Water Based, Point-Source Effluent Requirements for Ontario Waters for Policy 2 receivers.
	SW Qual-02.	The mixing zone assessment(s) for the receivers indicated that the regulatory scenario model inputs (worst-case scenario) and results are what were used to propose effluent discharge criteria limits and to establish the extent of the mixing zone for each parameter (PoPCs). • Section 6 and Table 6.1 of the IS identified CORMIX model input data effluent flow rates that exceeded the instream 7Q20 flow rates. • Table 6.1 shows three proposed final discharge locations exceed the instream 7Q20 flow under the regulatory scenario. The cumulative impact from both FDP locations along each of the West Buskegau River and The North Driftwood River was addressed in the mixing zone assessment relative to PoPC concentrations.	The IAAC comment responses indicates that the 7Q20 flow in each receiver was used to calculate mixing zone lengths under different discharge and streamflow scenarios; one of which is the worst-case 1:1 effluent to receiver flow. The 1:1 discharge to effluent scenario (regulatory) implies that maximum effluent discharges will not exceed the 7Q20 flow. • Section 2.1 of SW Qual-02 states that under the One-to-One (1-to-1) Scenario effluent discharge was set equal to the available flow in the receiving watercourse at the location of the discharge during low-flow conditions (7Q20). • The IAAC comment responses do not indicate whether the final discharge volumes (m^3/s) described for each final discharge point (FDP) are a cumulative volume at the most downstream FDP. • The discharge volume/parameter concentration at all FDPs on each receiver cannot exceed the cumulative volume/parameter concentration for any one FDPs on the receiver. MECP may require additional technical studies to improve confidence in the proposed undertaking and to support the issuance of permits and approvals.

		• The downstream cumulative effect of PoPC loading was not discussed and not addressed in the IAAC comment responses. I previously noted that each FDP effluent discharge flow was compared only to the corresponding instream 7Q20 flow at that specific pourpoint. For example, from Table 6.1, the 7Q20 flow for the regulatory scenario at FDP-TMF-SP (upstream) and FDP-SP-02 (downstream) is 80 L/s and 100 L/s, respectively, and the effluent discharge flow at FDP-TMF-SP (upstream) and FDP-SP-02 (downstream) is 648 L/s and 324 L/s, respectively. • The effluent discharge flow at the downstream FDP (FDP-SP-02) is the combination of both FDP-TMF-SP and FDP-SP-02 at 972 L/s. This was repeated for the calculations under the Normal Condition scenario. Also, under the normal condition scenario, the combined FDP effluent discharges would exceed the Mean Annual Flow (MAF) at the downstream FDP on the North Driftwood River. • Based on the information reviewed, the proposed FDP effluent flow rates are inconsistent with provincial requirements for effluent discharge to receiver flow/volume ratios.	
	Attachment SW Qual-03 – Surface Water Quality – Methylmercury production	The proponent indicates that for the regulatory (7Q20) worst-case scenario, the concentration of sulphate at the point of full mixing was estimated at 79 mg/L and 73 mg/L in the WBR and NDR, respectively. The distance at the point of full mixing is estimated to be less than a few hundred meters downstream of the FDP(s). The sulphate concentration(s) are predicted to decrease to 10 mg/L approximately 41km downstream, at the confluence with the Fredrick House River in the WBR, and 1.6 mg/L, approximately 87 km downstream in the NDR, based on the mass balance analysis which only considers dilution.	The use of the mass balance analysis to estimate parameter concentrations in the downstream receiver leaves considerable information gaps and uncertainty about concentration levels between confluences (pour points) along the receiver. The predicted sulphate concentrations immediately downstream of the FDP(s) is relatively low compared to established mining operation discharges throughout Ontario. However, the estimated concentrations that are expected along the entire 41 km and 87 km sections of the WBR and NDR, respectively, are within the optimal range for mercury methylation, dependent on environmental conditions. The diversion of the NDR may also increase mercury methylation driven by the decomposition of flooded vegetation and soils by the initial inundation and then seasonal flooding of the realigned channel. The potential environmental effects of mine effluent discharge must be considered within the context of watershed-scale source areas and biogeochemical controls.

		Background sulphate concentrations (75th percentile) were approximately 0.9 mg/L.	

Please insert additional rows as necessary.

Table 2. Targeted Questions to the Guide the Technical Review

Table 2 is a reference to help guide advice provided in Table 1. It outlines: the federal and provincial authorities assigned to review each of the proponent's responses to IAAC's comments on the Impact Statement; context on how IAAC will use the information to develop the Impact Assessment Report; and targeted questions to guide the technical review. Answers to the targeted questions should be provided as distinct row entries to Table 1 and consider the relevant prompts provided.

Comment ID	Relevant Authorities	IAAC's Focus for the Impact Assessment Report	Targeted Questions
1) Fish and Fish Habitat			
FFH-01-FFH03	DFO, ECCC, NRCan	In the Impact Assessment Report, IAAC will describe the likely adverse residual effects to fish and fish habitat (using magnitude, geographic extent, duration, uncertainty etc.), taking into account both direct loss from overprinting and loss through alteration of flows. Primarily, IAAC's focus is whether the anticipated harmful alteration, disruption, or destruction of fish habitat can be reasonably offset, accounting for any uncertainty in conceptual offset options (e.g., North Driftwood Diversion Channel). IAAC will rely on authorizations needed under the *Fisheries Act* to further refine the effects predictions, mitigation measures, and follow-up programs.	• Describe your level of confidence in the proponent's analysis of effects to fish and fish habitat from changes to groundwater and surface water flows, including the overall predicted magnitude and geographic extent of fish habitat loss in water courses. • Describe your level of confidence that, with ongoing refinement through permitting, there are likely to be sufficient offsetting measures available for the harmful alteration, disruption, or destruction of fish habitat. If needed, suggest feasible offsetting concepts. • Describe any outstanding uncertainty in the geotechnical feasibility of the Natural Driftwood Diversion Channel including its ability to function as an offset for fish habitat and a location for effluent discharge. Outline any next steps for the proponent to increase certainty. If there is insufficient confidence in the information provided by the proponent, provide advice to IAAC informed by the prompts in the "Advice to Inform the Impact Assessment" column of Table 1.
2) Groundwater-Surface Water Interactions, where Changes May Affect Fish Habitat and Indigenous Peoples			
GW-01(a-e)	ECCC, MECP, NRCan	In the Impact Assessment Report, IAAC will describe the likely adverse residual effects to fish and fish habitat (using magnitude, geographic extent, duration, uncertainty etc.), as well as the likely adverse impacts on the current use of lands and resources for traditional purposes by Indigenous peoples, resulting from changes to water quantity. Understanding how reasonably the groundwater model performs is necessary to interpret how well the surface water model reflects project-related changes in groundwater-surface water interactions.	• Describe your level of confidence in the proponent's analysis of changes to groundwater-surface water interactions. • Would surface water model predictions (changes to surface water levels, flow and quantity) reasonably reflect project-related groundwater drawdown and mounding? • Describe implications of uncertainty in the groundwater-surface water interactions (see questions 3 and 4, which may overlap). Use geographic scenarios for changes to springs and surface water levels, if needed. • Consider any follow-up program and adaptive management measures proposed by the proponent, or your authoritative ability to require adaptive management, to manage uncertainty in your response.

		This information will inform IAAC's conclusions on potential adverse effects to fish habitat and impacts to Indigenous use. IAAC will rely on authorizations under the *Fisheries Act* and on provincial regulatory frameworks (e.g., *Ontario Water Resources Act, Lakes and Rivers Improvement Act*, etc.) to further refine the effects predictions, mitigation measures, and follow-up programs.	If there is insufficient confidence in the information provided by the proponent, provide advice to IAAC informed by the prompts in the "Advice to Inform the Impact Assessment" column of Table 1.
3) Surface Water Quantity, where Changes May Affect Fish Habitat and Indigenous Peoples			
SW Quan-01(a-d) and 02(a-b)	ECCC, MECP	In the Impact Assessment Report, IAAC will describe the likely adverse residual effects to fish and fish habitat (using magnitude, geographic extent, duration, uncertainty etc.), as well as the likely adverse impacts on the current use of lands and resources for traditional purposes by Indigenous peoples, resulting from changes in flows. IAAC will take into account the level of confidence in the surface water hydrological model's ability to reasonably predict potential changes to surface water levels and flows to inform predicted effects to fish habitat and use of waterways by Indigenous peoples. IAAC will rely on authorizations under the *Fisheries Act* and on provincial regulatory frameworks (e.g., *Ontario Water Resources Act, Lakes and Rivers Improvement Act*, etc.) to further refine the effects predictions, mitigation measures, and follow-up programs.	• Describe your level of confidence in the proponent's analysis of changes to surface water levels, flows, and quantity to inform effects on fish and fish habitat, use of waterways by Indigenous peoples. • Describe implications of uncertainty in the surface water model. Use geographic scenarios for changes to surface water levels, if needed. • Consider any follow-up program and adaptive management measures proposed by the proponent, or your authoritative ability to require adaptive management, to manage uncertainty in your response. If there is insufficient confidence in the information provided by the proponent, provide advice to IAAC informed by the prompts in the "Advice to Inform the Impact Assessment" column of Table 1.
Species of Importance to Indigenous peoples, where Habitat is Lost due to Changes in Groundwater and Surface Water			
IP-01	ECCC, MECP, NRCan	In the Impact Assessment Report, IAAC will consider the predicted changes to the availability of species of importance for Indigenous peoples (e.g., waterfowl, moose, etc.) and describe the likely adverse residual effects to current use of lands and resources and cultural heritage (using magnitude, geographic extent, duration, uncertainty etc.). This will take into account habitat loss from changes in groundwater and surface water levels, including drawdowns, mounding and flooding. Understanding this habitat loss is necessary to describes residual changes to resources available to Indigenous peoples for traditional purposes. IAAC will rely on provincial regulatory frameworks (e.g., *Ontario Water Resources Act, Lakes and Rivers Improvement Act*) to refine the predicted quantity of effects, mitigation measures, and follow-up programs.	• Describe your level of confidence in the proponent's analysis of changes to the habitat of species of importance to Indigenous peoples (e.g., waterfowl, moose) from changes in groundwater and surface water levels (including drawdowns, mounding and flooding). • Describe implications of uncertainty in the groundwater and surface water model. Use geographic scenarios, if needed. For example, where might wetlands be drained or flooded? If there is insufficient confidence in the information provided by the proponent, provide advice to IAAC informed by the prompts in the "Advice to Inform the Impact Assessment" column of Table 1.
Surface Water Quality, where Changes May Affect Fish or Indigenous peoples			

SW Qual-01 - 06	ECCC, MECP, NRCan	In the Impact Assessment Report, IAAC will describe the likely adverse residual effects to fish and to the health conditions of Indigenous peoples or their current use of resources (using magnitude, geographic extent, duration, uncertainty etc.), resulting from changes in surface water quality. Changes in surface water quality may arise from controlled effluent, uncontrolled effluent (seepage), methylmercury production, and sediment-bound contaminants from the project. Understanding the geographic extent of surface water quality changes is necessary to determine potential chronic effects to fish health and measures needed to mitigate health risks to Indigenous peoples from their use of water or fish. Further, IAAC seeks to understand the potential for future project redesigns and to build confidence in the management of mine effluent in considering federal (i.e., *Fisheries Act*, *Metal and Diamond Mining Effluent Regulations* Schedule 4) and provincial (*e.g.*, Environmental Compliance Approval for Industrial Sewage Works) regulatory frameworks. IAAC will rely on these federal and provincial regulatory frameworks to further refine the effects predictions, mitigation measures, and follow-up programs.	• Describe your level of confidence in the proponent's analysis of changes to surface water quality from planned effluent, unplanned effluent (seepage), methylmercury production, and sediment contamination. • Consider any follow-up program and adaptive management measures proposed by the proponent to manage uncertainty in your response. Where applicable, outline any next steps that may be necessary through provincial regulatory requirements to improve confidence. • Describe your level of confidence that, with ongoing refinement, the current project design will result in an effluent mixing scenario that can feasibly align with provincial policies that support issuance of an Environmental Compliance Approval for Industrial Sewage Works. Outline any next steps that may be necessary through provincial regulatory requirements to improve confidence or make a future determination. • Describe your level of confidence in the proponent's analysis of changes to surface water quality from a potential rail accident resulting in the release of nickel concentrate, including the geographic extent of potential effects. If there is insufficient confidence in the information provided by the proponent, provide advice to IAAC informed by the prompts in the "Advice to Inform the Impact Assessment" column of Table 1.
Geochemistry, where Conditions Influence Water Quality and Effects to Fish and Fish Habitat and Indigenous peoples			
GCH-01(a-e) – 02 (a-d)	NRCan, MECP	In the Impact Assessment Report, IAAC will describe the potential adverse residual effects to fish and fish habitat and impacts to Indigenous peoples (using magnitude, geographic extent, duration, uncertainty etc.), considering changes in surface water quality which are modelled based on the geochemical properties of mine materials. Understanding any uncertainties in the geochemical characterization program is necessary to understand effects to fish and fish habitat and to Indigenous peoples. IAAC will rely on provincial regulatory frameworks (e.g., *Ontario Water Resources Act, Mining Act*) to refine the effects predictions, mitigation measures, and follow-up programs.	• Describe your level of confidence in the proponent's geochemical characterization program to understand potential changes to surface water quality. Consider any future sampling, follow-up program, specific mine waste management strategies, water management plans, or other plans, and requirements of provincial regulatory frameworks to manage uncertainty in your response. If there is insufficient confidence in the information provided by the proponent, provide advice to IAAC informed by the prompts in the "Advice to Inform the Impact Assessment" column of Table 1.