ʔehdzo Got’ı̨nę Gots’ę́ Nákedı – Sahtú Renewable Resources Board

Intervention for the Norman Wells Operations Line 490 Flowline Replacement Project Environmental Assessment, EA2425-01

Submitted to the Mackenzie Valley Environmental Impact Review Board
April 30, 2025

Plain Language Summary

The ʔehdzo Got’ı̨nę Gots’ę́ Nákedı, or Sahtú Renewable Resources Board (SRRB), submits the following intervention for the Mackenzie Valley Environmental Impact Review Board (MVEIRB) environmental assessment (EA) of Imperial Oil NWT Ltd.’s (Imperial’s) proposed Line 490 flowline replacement activities (EA2425-01).

SRRB is concerned about procedural fairness of the EA2425-01 hearing process. Due to scheduling conflicts with the amended hearing dates, SRRB is unable to fully participate in the hearing process. It is suggested that MVEIRB provide additional opportunities for SRRB’s participation in the hearing process, including questioning and being questioned by other parties. The availability of detailed planning in Imperial’s submissions to the public record do not adequately describe or assess mitigation measures for the proposed activities. It is suggested that detailed plans be finalized prior to disturbance, if the proposed activities were approved.

Imperial did not provide an assessment of wastes generated from the proposed activities, either by design or through any incidents. Pre-disturbance assessments did not characterize soil conditions of the proposed project footprint, but focused only on vegetation. It is suggested that all wastes generated through construction, operation, and reclamation of the proposed activities be carefully characterized, and that any contaminated materials be hauled off-site. Imperial did not provide reclamation plans for the proposed activities, despite direction from MVEIRB to include reclamation of the proposed activities in the environmental assessment. It is suggested that, if the proposed activities were approved and enable the continued operation of NWO, this additional time is used to plan and begin implementing progressive remediation and reclamation of the site. Imperial did not propose to decommission the proposed flowline replacement in place or to remove the below-ground infrastructure, and so key uncertainties remain. Imperial did not provide detailed monitoring plans in the Summary Impact Statement (SIS). It is suggested that Imperial develop rigorous community-based monitoring programs during all phases of the proposed activities (i.e., construction, operation, reclamation, post-closure).

Wildlife exclusion practices are unclear. It is suggested that community-based monitors participate in wildlife management on and around the site, especially contaminated areas or treatment facilities. There are concerns regarding the containment of contaminated materials and associated impacts on wildlife and wildlife habitat. It is suggested that additional containment is explored, in addition to the use of community-based monitors. Uncertainties regarding impacts to fish and fish habitat persist, limiting the ability to identify or assess mitigation measures. It is suggested that updated geotechnical information be made available to better understand risks of the proposed activities to the Mackenzie Valley riverbed, underlying formations, water quality, and fish and fish habitat. Risks to birds and bird habitat exist in the event of a spill. It is suggested that Imperial work with co-management bodies, including the SRRB, to develop spill response strategies that are protective of birds and bird habitat. Insufficient information was provided to assess the impacts of climate change on the construction, operation, but especially long-term closure and reclamation of the proposed activities, particularly given the uncertainties in decommissioning and reclamation of the proposed Line 490 flowline replacement project. It is suggested that Imperial undertake reclamation planning with co-management bodies, including SRRB, which would include consideration of future climate change and the cumulative effects of development and climate change.

ʔehdzo Got’ı̨nę Gots’ę́ Nákedı – Sahtú Renewable Resources Board Mandate Summary

The ʔehdzo Got’ı̨nę Gots’ę́ Nákedı, or Sahtú Renewable Resources Board (SRRB), is one of three co-management boards in the Sahtú region. Our Dene name, ʔehdzo Got’ı̨ nę Gots’ę́ Nákedı, means helpers of the trap people in Dene kədǝ́ (language). ʔehdzo Got’ı̨ nę Gots’ę́ Nákedı was created by the *Sahtú Dene and Métis Comprehensive Land Claim* (1993). The land claim agreement directs ʔehdzo Got’ı̨ nę Gots’ę́ Nákedı and the five ɂehdzo got’ı̨ nę (renewable resources councils), one for each Sahtú community, to collaborate as partners in research and management. Together, ʔehdzo Got’ı̨ nę Gots’ę́ Nákedı and ɂehdzo got’ı̨ nę work to maintain Dene and Métis ts’ı̨ lı̨ (ways of life), including harvesting traditions, and keep the land and animals healthy for future generations. Imperial’s operations at Norman Wells impact the land, the water, the animals, and Dene and Métis ts’ı̨ lı̨,.

Detailed Submission

1. Procedural Fairness

Developer's Conclusions
MVEIRB made a decision to hold the EA2425-01 hearings when SRRB indicated they would not be available.

SRRB's Predictions of Impacts and Explanation of Difference
In response to Catarina Owen, Acting Executive Director of SRRB's scheduling conflict with the new dates, Alan Ehrlich, Manager of Environmental Impact Assessment, MVEIRB relayed that it was a requirement to have the hearing within 90 days of Notice of a Hearing as per the Rules of Procedure. In the Notice of Proceeding Hearing Phase of the Environmental Assessment Preparing for Public Hearings for EA2425-01 dated April 17, 2025, Section 1.1 indicates that MVEIRB is following Rule 8 where the Rules of Procedure are dispensed by issuing a Direction on the Rules "to vary the number of days so that we can hold these hearings at the preferred time for parties and the developer." SRRB interprets this to mean that MVEIRB could extend the hearing date to accommodate SRRB's Acting Executive Director's participation in the hearing through a Direction on the Rules.

SRRB's Conclusions on Potentially Adverse Impacts and Significance
Procedural fairness is an integral part of ensuring all perspectives are represented in an environmental assessment. Barriers to SRRB's full and meaningful participation in the hearing process significantly limits SRRB's ability to carry out its mandate and to ensure adequate consideration of wildlife, wildlife habitat, and traditional practices in the environmental assessment process.

Recommendations and Mitigation Measures
It is requested that MVEIRB create an opportunity to question other parties and respond to questions from other parties at a time when SRRB's Acting Executive Director is available to fully participate.

Significance of Impacts without the Proposed Mitigations
SRRB's ability to carry out its mandate and to ensure adequate consideration of wildlife, wildlife habitat, and traditional practices in the environmental assessment process would be limited.

2. Availability of Detailed Planning and Mitigation Measures

Developer's Conclusions

Throughout the SIS and appendices, Imperial refers to various plans which have yet to be finalized and which bear upon SRRB's ability to understand the effects of the proposed Line 490 flowline replacement project activity and proposed mitigation measures.

The Flowline Integrity Management Plan summarizes the control strategies and the corrosion control maintenance program for flowlines. Imperial's response to SRRB Information Request (IR) #165 states, "It will be determined by the design contractor which of the available strategies will be used in the replacement lines."

Imperial's responses to SRRB IR #30-31 state that future development of "geotechnical investigation and subsequent engineering plans" would be "expected to identify and mitigate any potential stability, integrity, or execution risks that thawing permafrost may pose".

Imperial's response to SRRB IR #25, in reference to the SIS, stated, "The intent of [the monitoring and adaptive management plans] will include protection to wildlife and habitat", but no details were provided regarding the protections to wildlife and habitat that Imperial anticipates will be included.

Imperial's response to SRRB IR #43 stated, "A detailed post construction monitoring plan has not been developed at this stage of the project planning." During the pre-hearing conference on April 23, 2025, Alan Ehrlich, Manager of Environmental Impact Assessment, MVEIRB, confirmed that closure and reclamation of the proposed Line 490 flowline replacement activities is within the scope of EA2425-01.

Additional plans referenced in the SIS and appendices which have yet to be finalized and which bear upon SRRB's ability to understand the effects of the proposed Line 490 flowline replacement project activity and proposed mitigation measures include the Turbidity Monitoring Plan, Execution Plan, Drilling Fluid Management Plan, Risk Assessment Management Plan, Frac-out Contingency Plan, and updates to the Groundwater Management Plan.

SRRB's Predictions of Impacts and Explanation of Difference

Imperial did not provide finalized versions of the above plans which would provide supporting data, an assessment of potential impacts, mitigation measures, and an assessment of residual effects following implementation of mitigation measures. It is therefore difficult to state predictions of impacts. For instance, risks to the physical and meteorological environment if permafrost is encountered and the efficacy of associated mitigation measures cannot be assessed without relevant information from a geotechnical investigation and subsequent engineering plans.

SRRB's Conclusions on Potentially Adverse Impacts and Significance

Notwithstanding the lack of data or assessment regarding waste generated by the proposed Line 490 flowline replacement activities, SRRB notes potential short- and long-term impacts associated with the information gaps outlined above.

Recommendations and Mitigation Measures
Given that the above plans are not yet finalized, a mitigation measure would be to complete these plans in collaboration with co-management bodies including SRRB, to enable them to uphold their mandates. For instance, SRRB should be involved in developing post-construction monitoring plans and monitoring and adaptive management plans which may impact wildlife, wildlife habitat, and traditional practices.

Significance of Impacts without the Proposed Mitigations
Without the proposed mitigations, plans may not reflect the values and priorities of SRRB and Sahtú beneficiaries, and SRRB and Sahtú beneficiaries would be unable to make informed decisions about how to manage and use traditional lands and resources.

3. Assessment of Waste Generated

Developer's Conclusions

MVEIRB's "Scope of Environmental Assessment and Reasons for Decision" issued December 11, 2024 states, "Although the proposed water use and waste disposal activities will use existing facilities, in this EA the Review Board will consider whether the existing impact mitigations are likely enough to prevent significant adverse impacts from this project (that is, the Line 490 replacement). The Review Board will also consider whether Imperial's existing facilities have capacity and ability to mitigate impacts from this project" (p. 3 of 6). Imperial did not quantify the waste volumes or concentrations of contaminants in waste volumes that would result from the proposed activities.

In the SIS Attachment 1: Environmental Interactions Table, soil mitigation measures include, "Where contamination is **known or suspected** to occur, stockpile those materials separately." Imperial's responses to SRRB's IR #36, 37, 82, 169, and 170 stated that locations and volumes of contaminated soils within the project footprint, anticipated volumes of drilling wastes produced, and other wastes associated with the proposed activities including waste materials generated from reclamation and restoration projects are **unknown**. Despite these unknowns, in the SIS Attachment 1: Environmental Interactions Table, "Residual effects on soil and soil productivity are predicted to be not significant."

Imperial's response to SRRB IR #37 stated, "The pre-disturbance assessment focused on vegetation only. During excavations of the entry and exit pits on Bear and Goose Island, the environmental monitor on-site will observe the top soil and sub soil being excavated for signs of contamination (staining, odour, etc.). Confirmatory samples will be collected by trained professionals and sent to a third party lab for analysis to further investigate if required."

MVEIRB's "Scope of Environmental Assessment and Reasons for Decision" issued December 11, 2024, S. 2.4 Temporal scope states, "The temporal scope of this EA will include the time period of the project activities that Imperial is proposing and will also include the duration of any resulting impacts. The Review Board will consider any relevant impacts arising from Imperial's activities related to this proposed project, regardless of whether the impacts occur during or after project completion" (p. 5 of 6). For greater clarity, during the pre-hearing conference on April 23, 2025, Alan Ehrlich, Manager of Environmental Impact Assessment, MVEIRB, confirmed that closure and reclamation of the proposed Line 490 flowline replacement activities is within the scope of EA2425-01.

SRRB's Predictions of Impacts and Explanation of Difference

Imperial did not provide supporting data, an assessment of potential impacts, mitigation measures, or an assessment of residual effects following implementation of mitigation measures. Imperial also did not directly consult with SRRB on this matter as it pertains to the proposed Line 490 flowline replacement project. It is therefore difficult to state predictions of impacts.

SRRB's Conclusions on Potentially Adverse Impacts and Significance

Notwithstanding the lack of data or assessment regarding waste generated by the proposed Line 490 flowline replacement activities, SRRB notes potential short- and long-term impacts associated with wastes generated and subsequent management. Short-term impacts include

unintended releases into the environment and subsequent risk to wildlife and wildlife habitat, including fish; and localized impacts to surface and shallow groundwater quantity and quality. Long-term impacts include contributions to existing waste management facilities, for which uncertainties persist regarding long-term remediation and reclamation.

Recommendations and Mitigation Measures
Provide information on the proposed Line 490 flowline replacement project's contributions to contaminated soils and waters, and commit to quantifying and qualifying all contributions throughout construction, operation, and closure and reclamation of the proposed activities. Develop and share mitigation measures proposed as part of the present environmental assessment to minimize the continued generation of contaminated soils and to initiate treatment to meet closure objectives in a timely manner and such that Imperial's objective of "no long term active care" is met. Describe how the proposed mitigation measures avoid, minimize, then mitigate additions to NWO's existing volumes of contaminated materials.

Conduct a pre-disturbance assessment to identify and delineate any contaminated soils. In addition to observing staining or odours to identify contaminated soils, test soil samples proactively, prior to disturbance.

In the response to SRRB IR #195, Imperial committed to the following: "Any impacted solids will be staged within the lined operations biocell for treatment and/or temporary storage and will be included in future annual waste haul programs to remove from site as part of base operations." Please confirm this commitment to remove any impacted solids from site which may result from the proposed Line 490 flowline replacement activities.

Significance of Impacts without the Proposed Mitigations
Contributing unknown quantities and qualities of contaminated materials to existing operations would detract from efforts to characterize existing volumes of contaminated materials onsite.

Uncertainties in soil available for reclamation impacts reclamation planning and ability to progressively reclaim the site as it approaches closure. Imperial has already stated that restoration will be constrained by topsoil availability (SIS Appendix N: NWO Interim Closure and Reclamation Plan).

Failure to conduct a pre-disturbance assessment of soils in the proposed project footprint creates risk of contaminating clean soils through improper stockpiling and use in reclamation.

4. Reclamation and Assessment of Residual Effects

4.1. Reclamation Planning Timelines

Developer's Conclusions

MVEIRB's "Scope of Environmental Assessment and Reasons for Decision" issued December 11, 2024, S. 2.4 Temporal scope states, "The temporal scope of this EA will include the time period of the project activities that Imperial is proposing and will also include the duration of any resulting impacts. The Review Board will consider any relevant impacts arising from Imperial's activities related to this proposed project, regardless of whether the impacts occur during or after project completion" (p. 5 of 6); S. 2.1 Scope of development states, "Once the Line 490 replacement project is complete, Review Board understands that oil, gas and produced water will flow through this section of the gathering system. The use of the flowline is part of the scope of development for this EA" (p. 3 of 6); and S. 2.2 Scope of Assessment states, "The KGC proposed including 'the risks and impacts posed by the remaining flowlines which remain buried in the sediment of the Mackenzie River' as a primary issue (PR#46). Concerns about the remaining flowlines are not directly within the scope of the development for this EA. However, these concerns about risks from existing flowlines in combination with potential impacts from the proposed project will be considered in the cumulative effects assessment for this EA" (p. 4 of 6). For greater clarity, during the pre-hearing conference on April 23, 2025, Alan Ehrlich, Manager of Environmental Impact Assessment, MVEIRB, confirmed that closure and reclamation of the proposed Line 490 flowline replacement activities is within the scope of EA2425-01.

In response to SRRB IRs pertaining to closure and reclamation of the proposed Line 490 flowline replacement activities, Imperial stated either that plans had not been developed or did not share any plans demonstrating development of options for the remediation, closure and reclamation of the proposed Line 490 flowline (see responses to SRRB IR #13, 15, 19, 28, 86, 118, 168, 196, 204, 205, 210, 211, and 226). Imperial identified the need to develop an Execution Plan which would include "detailed schedules, sequences and methods for cleaning, removal and capping activities for all Proven Area assets included in the Subsurface Infrastructure component" (SIS Appendix N: NWO Interim Closure and Reclamation Plan S. 5.5.7.5). Imperial's response to SRRB IR #227 did not describe the schedule or approach to closure and reclamation activities of the proposed Line 490 flowline replacement activities.

In MVEIRB's "Scope of Environmental Assessment and Reasons for Decision" document dated December 11, 2024, key lines of inquiry included, "**alternatives** to the proposed activities, such as trenching, the no project alternative, replacing all the flowlines under the Mackenzie River using HDD, or alternative remediation techniques, including the impact on the environment of these alternatives" (emphasis in original). Imperial did not provide an assessment of all VCs for the 'no project' alternative, stating only that not proceeding with the proposed activities could result in closure of NWO.

Imperial applies an inconsistent understanding of the temporal scope of the environmental assessment by including the stated benefits and risks (e.g., economic, social) associated with both the continued operations of NWO and what Imperial considers to be a "premature" shutdown of the facility, thereby recognizing that the replacement activities and remaining lifespan of the site are connected.

SRRB's Predictions of Impacts and Explanation of Difference
SRRB's prediction of the important implications of site-specific reclamation planning is consistent with MVEIRB's. Reclamation and monitoring considerations are required to assess short- and long-term effects of the proposed Line 490 flowline replacement activities, as recognized by MVEIRB. Construction, operations, and closure and reclamation of the proposed activities must be assessed to understand environmental effects. Imperial did not provide closure or reclamation plans or an assessment of residual effects following implementation of mitigation measures through closure and reclamation. Imperial also did not directly consult with SRRB on this matter as it pertains to the proposed Line 490 flowline replacement project. It is therefore difficult to state predictions of impacts.

SRRB's Conclusions on Potentially Adverse Impacts and Significance
Notwithstanding the lack of data or assessment regarding closure and reclamation of the proposed Line 490 flowline replacement activities, SRRB notes long-term effects associated with closure and reclamation of the proposed Line 490 flowline replacement activities and cumulative effects resulting from the combination of potential impacts from the proposed activities and closure and reclamation of the existing flowlines.

According to Imperial, if the proposed Line 490 flowline replacement activities are approved, this would enable the continued operation of NWO. This may provide an opportunity for progressively remediating and reclaiming the site.

Recommendations and Mitigation Measures
Work with Sahtú co-management bodies, including SRRB, to assess extended closure timelines in the assessment of impacts to the Rights of Indigenous Peoples and Indigenous Traditional Land and Resource Use. Work with SRRB to develop remediation, closure and reclamation plans including development of a seed mix for use on the proposed Line 490 flowline replacement footprint which would promote the return of wildlife habitat and traditional land uses to the NWO post-closure, including studies on re-establishment of native vegetation following seeding with the provided seed mix, and work with SRRB to develop conditions under which this seed mix would be used and when the 'natural recovery' approach described in the SIS would be appropriate. Work with SRRB to develop an "acceptable aesthetic" for reclaiming the proposed Line 490 flowline replacement footprint (SIS Appendix N: NWO Interim Closure and Reclamation Plan S. 5.7.1.5). Work with Sahtú beneficiaries and co-management bodies, including SRRB, related to end land uses; visual expectations; biodiversity, target ecosystems, and chemical health expectations; and how reclaimed areas will be integrated with the surrounding landscape. Include SRRB in all closure and reclamation working groups for NWO. Include SRRB in designing and carrying out reclamation research, including research described in SIS Appendix N: NWO Interim Closure and Reclamation Plan.

Develop and implement reclamation standards protective of Indigenous use, including end land use planning in addition to the proposed reclamation targets using industrial/residential/parkland classifications for reclamation targets. Develop soil criteria protective of Indigenous use, including subsistence and cultural use which may include exposures to materials that are more frequent, longer duration, and through multiple exposure mechanisms, and with consideration for

impacts to wildlife health as well as human health, including criteria which are protective of consumption of sensitive organs of wildlife (e.g., liver).

If extending closure timelines allows for enhanced progressive reclamation prior to closure, state this, or if extending closure timelines delays the ability to undertake substantive reclamation, state this. Develop progressive remediation and reclamation plans, if approval of the proposed activities enables the continued operation of the site. Complete studies within the first two years to delineate the quantities and qualities of contaminated materials onsite, in order to address uncertainties related to the proposed Line 490 flowline replacement project in a timely manner, such that lessons learned can be applied to remediation and reclamation across the site.

Provide an assessment of all valued components for the 'no project' alternative.

Significance of Impacts without the Proposed Mitigations
Meaningful involvement of SRRB in remediation, closure and reclamation planning is imperative to restore the site, including the proposed Line 490 flowline replacement activities and subsequent activities enables via extended the life of operations, in a way that supports wildlife, wildlife habitat, and traditional practices.

Addressing key uncertainties regarding contaminated materials is imperative to determining the capability and projected timelines of existing treatment facilities to mitigate impacts from contamination. If progressive reclamation is not carried out in a meaningful and timely fashion, uncertainties regarding reclamation performance will be elevated at the time of closure.

Alternatives to the project, including the 'no project' alternative, is required to make an informed decision about the proposed project.

4.2. Flowline Decommissioning

Developer's Conclusions
Imperial presented plans to abandon flowlines in place in areas planned for industrial end land uses. It is unclear whether Imperial intends to remove or abandon flowlines in natural and artificial islands targeted to meet residential soil guidelines. SRRB notes that Sahtú beneficiaries may desire the return of their traditional lands to meet subsistence and other traditional practices. CEPA guidelines state that for industrial and residential land uses, flowlines should be removed. Imperial presented plans to remove flowlines in environmentally sensitive areas, while CEPA guidelines indicate that flowlines should be abandoned in environmentally sensitive areas. Imperial did not consult with SRRB to identify the locations of environmentally sensitive areas within the Line 490 footprint.

SIS Appendix N: NWO Interim Closure and Reclamation Plan S. 5.5.7.7 describes residual effects of subsurface closure and reclamation activities as including, "the presence of uncontaminated flowlines and other infrastructure elements left in place below the root zone following closure". These residual effects are not assessed in the SIS or SIS Attachment 1: Environmental Interactions Table. An assessment of residual effects resulting from subsurface closure and reclamation activities of the proposed Line 490 flowline replacement project is

required to understand the short- and long-term effects of the proposed activities and wildlife, wildlife habitat, and traditional practices.

SRRB's Predictions of Impacts and Explanation of Difference
Imperial did not provide closure or reclamation plans or an assessment of residual effects following implementation of mitigation measures through closure and reclamation. Imperial also did not directly consult with SRRB on this matter as it pertains to the proposed Line 490 flowline replacement project. It is therefore difficult to state predictions of impacts.

SRRB's Conclusions on Potentially Adverse Impacts and Significance
Notwithstanding the lack of data or assessment regarding closure and reclamation of the proposed Line 490 flowline replacement activities, SRRB notes long-term effects associated with closure and reclamation of the proposed Line 490 flowline replacement activities and cumulative effects resulting from the combination of potential impacts from the proposed activities and closure and reclamation of the existing flowlines, including the failed Line 490 which the proposed activities seek to replace but not necessarily remove.

Recommendations and Mitigation Measures
Work with SRRB to develop remediation, closure and reclamation plans including above- and below-ground infrastructure associated with the proposed Line 490 flowline replacement activities, including at the entry and exit points and the flowline itself.

Significance of Impacts without the Proposed Mitigations
Addressing key uncertainties regarding contaminated materials is imperative to determining the capability and projected timelines of existing treatment facilities to mitigate impacts from contamination. If progressive reclamation is not carried out in a meaningful and timely fashion, uncertainties regarding reclamation performance will be elevated at the time of closure. This includes determining how to decommission the failed Line 490 which the proposed activities seek to replace, and lessons learned could be applied to decommissioning of the proposed Line 490 replacement.

5. Environmental Monitoring and Adaptive Management

Developer's Conclusions

Monitoring plans that are specific to the proposed Line 490 flowline replacement activities are unclear, given that the Attachment 1: Environmental Interactions Table column labelled "Monitoring Plan/Details" does not contain monitoring plan information, somewhat with the exception of monitoring for "Rights of Indigenous Peoples", although the monitoring for this was not developed with SRRB.

Imperial's response to SRRB IR #47 stated, "Direct riverbed monitoring will not occur during the drilling activities."

Imperial's response to SRRB IR #66 states, "Any large mammals will be identified by environmental monitors completing the nest sweeps prior to vegetation clearing." SRRB notes that indications of project area use by mammals are different to indicators for nest sweeps. Regarding the timing of sweeps, SIS Appendix G: NWO Spill Contingency and Response Plan describes the islands as having "Winter habitat for moose", but nesting seasons is in the Spring.

SRRB's Predictions of Impacts and Explanation of Difference

Rigorous monitoring is required for land users to make informed decisions about how to use their traditional lands and resources and to assess project effects. Monitoring is required for early detection of accidents and malfunctions. Monitoring is required in inform adaptive management.

SRRB's Conclusions on Potentially Adverse Impacts and Significance

Detailed and site-specific monitoring plans must be developed in order to assess the adequacy of proposed mitigation measures and therefore to conduct and rigorous environmental assessment.

Recommendations and Mitigation Measures

Describe the monitoring plans and details specific to the proposed Line 490 flowline replacement activities (i.e., complete the SIS Attachment 1: Environmental Interactions Table "Monitoring Plans/Details" column).

Commitment to creating a guardian program to conduct follow-up monitoring and inform adaptive management. This program should monitor construction, operations, reclamation, and post-closure phases. Guardians must be able to inform monitoring programs by deciding what, how, and when to monitor and the frequency of monitoring. The program could include:

- water quality monitoring, including monitoring of leak detection and efficacy of spill response in the event of an accident or malfunction of the proposed Line 490 flowline replacement activities;
- monitoring to include community-based identification of thresholds and triggers for adaptive management of valued components;
- wetlands, including wetlands in proximity to the proposed Line 490 flowline replacement footprint;
- bird sweeps (note that in response to SRRB IR #64, Imperial stated, "Nest sweeps will be completed by an experienced biologist. Imperial is open to having a Sahtu environmental monitor assist in the [nest sweeps]");

- relocation of amphibians from within the silt fence referred in to response to SRRB IR #65;
- large mammal sweeps, which Imperial proposed would take place in during nest sweeps, as opposed to taking place as an independent program during peak seasons for large mammals (i.e., Winter, see response to SRRB IR #66);
- acoustic (noise and vibrations) impacts to fish and fish habitat (note Imperial's commitment in response to SRRB IR #75, "Acoustic monitoring during construction will be completed as localized vibrations may occur during the HDD activities");
- groundwater;
- natural seep monitoring, to help delineate any effects resulting from the proposed activities;
- soil and vegetation around soil and water treatment facilities (e.g., bio-cell), and hazardous waste facilities (e.g., Hazardous Waste Storage Yard);
- reclamation, especially for any areas where natural regeneration is used as a primary revegetation approach;
- adaptive monitoring to confirm accuracy of the EA's predicted residual effects and adapt accordingly.

SRRB notes Imperial's response to SRRB IR #3: "An important, binding, commitment from Imperial is to work with community organizations in developing and implementing environmental monitoring plans for the Line 490 replacement project."

Significance of Impacts without the Proposed Mitigations

For land users to be able to trust and make informed decisions about the use of their traditional lands and resources, community-based monitoring is required to ensure that relevant aspects of the environment, including certain characteristics of wildlife, are well-understood. Without this supporting information, Sahtú beneficiaries may experience mistrust of traditional resources which in turn impacts ability to practice traditional land use and way of life and stewardship and wildlife and wildlife habitat.

Understanding the monitoring and adaptive management regimes in place is required to assess residual effects and inform any required mitigation measures as part of the EA2425-01 process.

6. Wildlife and Wildlife Habitat, Soils and Vegetation

Developer's conclusions (reference the public registry number):
Imperial is planning to not flip soil piles in the bio-cell during windy conditions and there is a berm in place around the bio-cell to minimize wind erosion of contaminated soils into the surrounding environment (see SIS Appendix D: Environmental Protection Plan S. 7.4 and Imperial's response to SRRB IR #116).

The stated mitigation for noise impacts on wildlife is the use of wildlife observation cards to report wildlife sightings (see SIS Appendix D: NWO Environmental Protection Plan). The SIS Attachment 1: Environmental Interactions Table identifies noise as an impact to wildlife, but does not specify monitoring plans, stating only, "Monitoring and inspection will occur during construction."

Imperial's SIS Appendix G: NWO Spill Contingency and Response Plan (SCARP) depicts several activities within its "wildlife branch command system", but does not describe these activities in detail. It is therefore unclear how the wildlife branch command system would apply to the proposed Line 490 flowline replacement activities.

Reclamation targets with respect to reclaiming wildlife habitat is unclear. MVEIRB's "Scope of Environmental Assessment and Reasons for Decision" issued December 11, 2024, S. 2.4 Temporal scope states, "The temporal scope of this EA will include the time period of the project activities that Imperial is proposing and will also include the duration of any resulting impacts. The Review Board will consider any relevant impacts arising from Imperial's activities related to this proposed project, regardless of whether the impacts occur during or after project completion" (p. 5 of 6). For greater clarity, during the pre-hearing conference on April 23, 2025, Alan Ehrlich, Manager of Environmental Impact Assessment, MVEIRB, confirmed that closure and reclamation of the proposed Line 490 flowline replacement activities is within the scope of EA2425-01.

SRRB's Predictions of Impacts and Explanation of Difference:
It is not clear how wildlife sightings are intended to mitigate noise impacts on wildlife.

SRRB's Conclusions on Potentially Adverse Impacts and Significance:
Additional measures should be implemented to reduce the impacts of wind erosion on the surrounding environment, especially where there are known contaminated materials, in order to reduce risk to wildlife and wildlife habitat.

Recommendations and Mitigation Measures:
Work with SRRB to minimize wind erosion at contaminated sites, including treatment facilities such as the bio-cell (e.g., cover the volumes of soil being remediated in the bio-cell). Establish a community-based monitoring or guardian program to monitor in and around the bio-cell and other soil and water treatment facilities.

Conduct community-based monitoring of the acoustic environment using relevant, objective tools and in consideration of all species which may be impacted, including bats, birds, and insects, and in collaboration with knowledge holders and land users. Include community-based

monitors or guardians in monitoring the effectiveness of any wildlife exclusion planned for the proposed footprint.

Provide training for employees and contractors to identify species of concern or cultural importance, to increase protection of culturally-relevant species.

Describe the activities at each stage of the "wildlife branch command system" figure, including various response methods available to each of the wildlife reconnaissance group, wildlife hazing group, wildlife care and processing group, and wildlife recovery and transportation group. Identify opportunities for SRRB to facilitate community involvement in each of these stages, to increase protections for wildlife and habitat.

Describe reclamation targets related to wildlife and wildlife habitat, including what criteria will be used to determine reclamation success, what adaptive management Imperial is prepared to implement to ensure that reclamation successfully meets wildlife habitat targets and Sahtú beneficiary expectations, and how Sahtù beneficiaries and SRRB will be involved in setting these criteria and developing a detailed monitoring program. Describe how reclamation targets would support the return of traditional harvesting practices. Describe how Imperial will develop commitments to include community-based monitoring of reclamation.

Significance of Impacts without the Proposed Mitigations:
Given its mandate to protect wildlife and wildlife habitat, engaging with SRRB on key wildlife-related matters such as wildlife protection in the event of a spill or contributions of contaminants from erosion would likely benefit Imperial, and would benefit Sahtú beneficiaries by promoting stewardship of their traditional lands and resources.

Mitigation measures pertaining to collaborative reclamation planning efforts with SRRB are described elsewhere in this submission.

7. Fish and Fish Habitat, Water Quality and Quantity

7.1. Mitigations for Fish and Fish Habitat

Developer's Conclusions

In Imperial's SIS Attachment 1: Environmental Interactions Table stated, "Change to fish habitat during construction includes the potential impact: "Change in timing, duration and frequency of flow during temporary diversions, resulting in fish mortality by stranding, entraining or impinging fish, or by preventing access to spawning areas." However, in response to SRRB IR #56, Imperial stated, "There are no plans or potential need for temporary water diversions associated with the project activities." Therefore, it is unclear whether or not Imperial anticipates temporary diversions and any associated mitigation measures required.

Imperial's response to SRRB IR #103 stated, "The proposed workspaces, entry and exit locations are driven by engineering constraints and **with appropriate mitigations in place, do not pose significant risk to water bodies**" (emphasis added). No evidence is provided to support the assessment of risk significance. Limited information was made available regarding how Imperial conducted its assessment on proposed project impacts to fish and fish habitat.

SRRB's Predictions of Impacts and Explanation of Difference

Imperial did not provide supporting data, an assessment of potential impacts, mitigation measures, or an assessment of residual effects following implementation of mitigation measures. Imperial also did not directly consult with SRRB on this matter as it pertains to the proposed Line 490 flowline replacement project. It is therefore difficult to state predictions of impacts.

SRRB's Conclusions on Potentially Adverse Impacts and Significance

Notwithstanding the lack of data or assessment regarding waste generated by the proposed Line 490 flowline replacement activities, SRRB notes potential short- and long-term impacts associated with the information gaps outlined above.

Recommendations and Mitigation Measures

Provide sufficient information to understand any potential need for temporary water diversions associated with the proposed activities. Provide evidence to support the statement of risk to waterbodies. Consult directly with SRRB to understand concerns about fish, fish habitat, and water quality and quantity, share information, and subsequently develop mitigation measures.

Significance of Impacts without the Proposed Mitigations

Without the proposed mitigations, plans may not reflect the values and priorities of SRRB and Sahtú beneficiaries, and SRRB and Sahtú beneficiaries would be unable to make informed decisions about how to manage and use traditional lands and resources.

7.2. Understanding Risks to Water Quality and Quantity

Developer's Conclusions

To address risk of an inadvertent release of drilling mud, bentonite, or cuttings, Imperial stated, "Monitoring of pressure and drilling performance is typically observed and can be acted upon before significant volumes of mud are lost into the surrounding formation. It is highly unlikely that a volume of drilling mud would be lost into the surrounding formation sufficient to reach the

river channel. Even with this low likelihood, the turbidity monitoring of the downstream channel is anticipated to confirm drilling mud, bentonite, cuttings have not entered the waterway" (response to SRRB IR #128). Imperial's response to KGC IR #7 stated, "Existing geotechnical data from original construction in the early 1980's informed the drill path design. Based on the available data, the drill is not expected to encounter challenging conditions like thick gravel deposits, hard rock or an interface between very soft and very hard formations", indicating that the proposed drilling route is not within an impermeable surface, although characteristics of surrounding formations are unclear. Imperial's response to SRRB IR #6 commits to providing updated geotechnical information through the Canada Energy Regulator hearing process (C30794), thereby recognizing the importance of this information to understanding project effects and any required mitigation measures, but does not provide any rationale for not providing the information as part of MVEIRB's EA2425-01.

SRRB's Predictions of Impacts and Explanation of Difference
As described above regarding the risk of releasing drilling mud, bentonite, and/or cuttings into the surrounding formation, the permeability of the surrounding formation for the proposed Line 490 flowline replacement activities is not addressed as a potential pathway for wastes to be released to the Mackenzie River. Any impacts directly to the surrounding formation are also unaddressed.

SRRB's Conclusions on Potentially Adverse Impacts and Significance
A comprehensive understanding of the context in which the proposed Line 490 flowline replacement activities would be placed is required to understand risks to water quality and quantity, and thus to fish and fish habitat and traditional practices.

Recommendations and Mitigation Measures
Provide the results of the updated geotechnical information. Provide estimates of time it would take for any drilling mud, bentonite, cuttings released into the surrounding formation to become exposed to the waterway such that risk can be assessed by SRRB. Comment on potential pathways and any associated mitigation measures to avoid release of substances to the Mackenzie River.

Describe response considerations if such a release were to occur into the surrounding formation, and if it were to reach the Mackenzie River.

Describe impacts to the surrounding formation.

Significance of Impacts without the Proposed Mitigations
Without the proposed mitigations, plans may not reflect the values and priorities of SRRB and Sahtú beneficiaries, and SRRB and Sahtú beneficiaries would be unable to make informed decisions about how to manage and use traditional lands and resources.

Without the proposed mitigations, SRRB is unable to assess project-specific mitigation measures to reduce risk to water quality, fish, and fish habitat.

8. Birds and Bird Habitat, Including Nesting and Migratory Habitat

Developer's Conclusions

Imperial's SIS Appendix G: NWO Spill Contingency and Response Plan (SCARP) S. 1.5. Mackenzie River characteristics describes the islands, shorelines, and sandbars as "crucial stopover" areas, stating "it is crucial to prioritize the protection of these areas during any oil transportation or industrial activities in the region".

SRRB's Predictions of Impacts and Explanation of Difference

SRRB has already proposed mitigation measures related to the 'no treatment' approach described in the SCARP. It is unclear how birds and bird habitat, including nesting and migration considerations, influence how any necessary treatment action is selected, and what the potential impacts of each of the treatment actions might impact crucial stopover areas.

SRRB's Conclusions on Potentially Adverse Impacts and Significance

Depending on how bird and bird habitat considerations inform responses to any spills, the impacts on birds and their habitat may be severe, especially where spills are left with no treatment on islands, shorelines, and sandbars.

Recommendations and Mitigation Measures

Work with SRRB to develop plans to monitor proposed mitigation measures with SRRB to ensure healthy habitat and no exposure to oil or other petroleum products before and during migration season, and nesting season.

Work with co-management bodies, including SRRB, to develop consideration for migratory bird habitat informs spill management decisions on islands, shorelines, and sandbars, including inadvertent spreading of contaminants through methods outlined in the SCARP, such that spill response strategies are protective of birds and bird habitat.

Significance of Impacts without the Proposed Mitigations

Impacts on birds and their habitat may be severe, especially where spills are left with no treatment on islands, shorelines, and sandbars. This may also adversely impact land users' trust of their traditional lands and resources and ability to engage in traditional practices.

9. Assessment of Impacts of Climate Change

Developer's Conclusions

It is unclear how climate change was considered in planning the closure and reclamation of the proposed activities, and in planning the remediation and long-term storage of any contaminated materials that may result from carrying out the proposed Line 490 flowline replacement activities. It is unclear how climate change projections are factored into plans such that below-ground closure and reclamation activities are successful in the long-term, including impacts of the environment on the project including permafrost melting, erosion, and other environmental factors.

It is unclear how Imperial will support monitoring in both the short- and long-term to measure reclamation success, including sufficiency of capping depth, especially given long-term uncertainties around climate change.

SRRB's Predictions of Impacts and Explanation of Difference

Imperial did not provide an assessment of potential impacts, mitigation measures, and an assessment of residual effects following implementation of mitigation measures related to climate change. It is therefore difficult to state predictions of impacts. For instance, risks to the physical environment if groundwater movement changes over time and the efficacy of associated mitigation measures cannot be assessed without relevant information from a geotechnical investigation and subsequent engineering plans.

SRRB's Conclusions on Potentially Adverse Impacts and Significance

Notwithstanding the lack of data or assessment regarding waste generated by the proposed Line 490 flowline replacement activities, SRRB notes potential short- and long-term impacts associated with the information gaps outlined above.

Recommendations and Mitigation Measures

Involve SRRB in developing post-construction monitoring plans and monitoring and adaptive management plans which may impact wildlife, wildlife habitat, and traditional practices and which assess any potential changes to project and reclamation performance due to climate change or the cumulative effects of development and climate change (e.g., potential changes in groundwater movement due to below-ground infrastructure and changes in permafrost).

Significance of Impacts without the Proposed Mitigations

Without the proposed mitigations, plans may not reflect the values and priorities of SRRB and Sahtú beneficiaries, and SRRB and Sahtú beneficiaries would be unable to make informed decisions about how to manage and use traditional lands and resources. Insufficient climate change planning introduces uncertainty regarding the long-term viability of closure and reclamation of the site, including the proposed Line 490 flowline replacement activities.