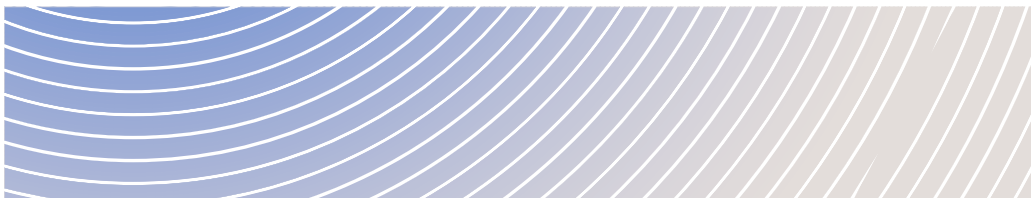




# Analysis Report



WHETHER TO DESIGNATE THE **VIVIAN SAND PROJECT** IN MANITOBA  
PURSUANT TO THE *IMPACT ASSESSMENT ACT*

December 2021

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# Purpose

The Impact Assessment Agency of Canada (the Agency) prepared this report for consideration by the Minister of Environment and Climate Change Canada (the Minister) in responding to new information that has become available and receipt of a further request to designate the Vivian Sand Project (the physical activities) pursuant to section 9 of the *Impact Assessment Act* (IAA).

The Agency has also considered the Analysis Report and Minister's Response related to the physical activities prepared in 2020 (hereafter referred to as the 2020 Analysis Report<sup>12</sup>).

## Physical activities

CanWhite Sands Corp. (the Proponent) is proposing the construction and operation of physical activities for the extraction and processing of silica sand (Figure 1). As proposed, the physical activities would be located within the Rural Municipality of Springfield, about 35 kilometres east of Winnipeg, Manitoba. The physical activities would include a silica sand processing facility with a wet and dry plant as well as a rail load out. In addition, there would be silica sand extraction activities including the installation, operation and decommissioning of extraction wells and transport via a slurry line. The physical activities are designed to produce over 1.3 million tonnes of silica sand per year and were previously referred to as the Vivian Sand Processing Facility Project and Vivian Sand Extraction Project.

## Context of Request

In August and September 2020, the Minister received requests to designate the physical activities. On November 16, 2020, the Minister responded that designation of the physical activities was unwarranted. The Minister's reasons included that there was limited information available to assess whether the extraction activities had the potential to cause adverse effects within federal jurisdiction or adverse direct or incidental effects. The Proponent has since submitted new information about the extraction activities in a proposal under Manitoba's *The Environment Act*, including a Hydrogeology and Geochemistry Assessment Report, which was posted on August 3, 2021 to the Manitoba Conservation and Climate public registry<sup>3</sup>.

On September 8, 2021, the Minister received a request to designate the physical activities from What the Frack Manitoba. The requester raised concerns regarding changes to the environment (such as quality and quantity of groundwater and surface water) and the corresponding effects to fish and fish habitat and

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<sup>1</sup> <https://iaac-aeic.gc.ca/050/evaluations/document/136761>

<sup>2</sup> <https://iaac-aeic.gc.ca/050/evaluations/document/136759>

<sup>3</sup> <https://www.gov.mb.ca/sd/eal/registries/6119/index.html>

species at risk; cumulative effects; proponent engagement; impacts to the rights of Indigenous peoples; and human health and socio-economic conditions.

The Agency commenced the process to reconsider the request to designate the physical activities with the new information available and sought additional input from the Proponent, federal authorities, Manitoba Conservation and Climate, and 18 potentially affected Indigenous groups. On October 7, 2021, the Minister received a letter from Peguis First Nation expressing support for the designation of the physical activities.

The Proponent responded on October 15, 2021, with information about the physical activities, a response to the requester's concerns, and its view that the physical activities should not be designated.

Advice on applicable legislative mechanisms and potential effects due to the physical activities was received from Environment and Climate Change Canada, Fisheries and Oceans Canada, Natural Resources Canada, and Health Canada. Manitoba Conservation and Climate provided information on the provincial process. The Agency also received and considered the submission from Peguis First Nation as well as submissions from the public, including additional submissions from What the Frack Manitoba representatives.

The Agency considered comments received in 2020, including from requesters, federal authorities, Manitoba Conservation and Climate, Brokenhead Ojibway Nation, Manitoba Métis Federation, stakeholders, and the public. The 2020 Analysis Report and submissions received in relation to that process are available on the Canadian Impact Assessment Registry # 80974<sup>4</sup>.

# Context for the Physical Activities

## Physical Activities Overview

The physical activities would include extraction of silica sand via the sequential installation, operation, and decommissioning of extraction wells and transportation via a slurry line to a new processing facility for washing, drying, and shipment via rail. The processing facility would potentially also receive sand from other sources and would supply high purity silica sand for use in a variety of markets (e.g., renewable energy industry, telecommunications, and silicon enhanced alloys, among others). The physical activities are designed to produce over 1.3 million tonnes of silica sand per year.

The processing activities (referred to by the Proponent as the Vivian Sand Processing Facility) would have a footprint of approximately 17 hectares and be located on private land designated for aggregate/industrial activities and adjacent to existing Canadian National Railway (CN Rail) infrastructure to allow for the transportation of the silica sand product to national and international markets. A proposal for the processing activities is currently under review by Manitoba Conservation and Climate under Manitoba's *The Environment Act*<sup>5</sup>.

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<sup>4</sup> <https://iaac-aeic.gc.ca/050/evaluations/proj/80974>

<sup>5</sup> <https://www.gov.mb.ca/sd/eal/registries/6057canwhite/index.html>

For the extraction activities (referred to by the Proponent as the Vivian Sand Extraction Project), water well drilling rigs would be used to drill extraction wells and install casings to the target sand deposit approximately 61 metres below ground. Air would be injected into the drill holes to flow water and sand to the surface as a slurry. It would then be transported to the processing facility using a moveable slurry line, relocated from site to site as the drilling rigs relocate. Groundwater would be treated with ultraviolet light and reinjected back to the sandstone aquifer. Extraction wells would be clustered in groups of seven within a 50 to 60 metre diameter area, and well clusters would be separated by 60 metres in all directions. The extraction activities would progress each year within blocks of land adjacent to those used in the previous year, occurring within a total area of 8,235 hectares over the anticipated 24-year life of the activities (Figure 1). The proposal that is now under review by Manitoba Conservation and Climate under Manitoba's *The Environment Act* is focussed on the first four years of the extraction activities and separate from the proposal for the processing activities. If approved, the Proponent anticipates submitting Notices of Alteration under *The Environment Act* for future potential extraction years to address advancements in extraction methods and operations.

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## Physical activities and components

Components and activities related to processing include construction, operation, and/or decommissioning of the following:

- site clearing; processing facility for the washing and drying of sand, including a 'Wet Plant', a 'Dry Plant', stockpiles, storage silos, and ancillary structures; rail loop track and load-out of product; and a gravel access road.

Components and activities related to extraction include construction, operation, and/or decommissioning of the following:

- temporary well access trails; extraction well drilling and sand extraction; separation of water from sand and ultraviolet light treatment of groundwater for return to aquifer; pre-screening of sand and water slurry; slurry lines, water return lines, pumping stations and their progressive relocation; transport of slurry; propane and diesel storage tanks; mobile office; temporary contained storage of large material and well drill cuttings; progressive decommissioning and rehabilitation.

Figure 1: Location of physical activities and site map

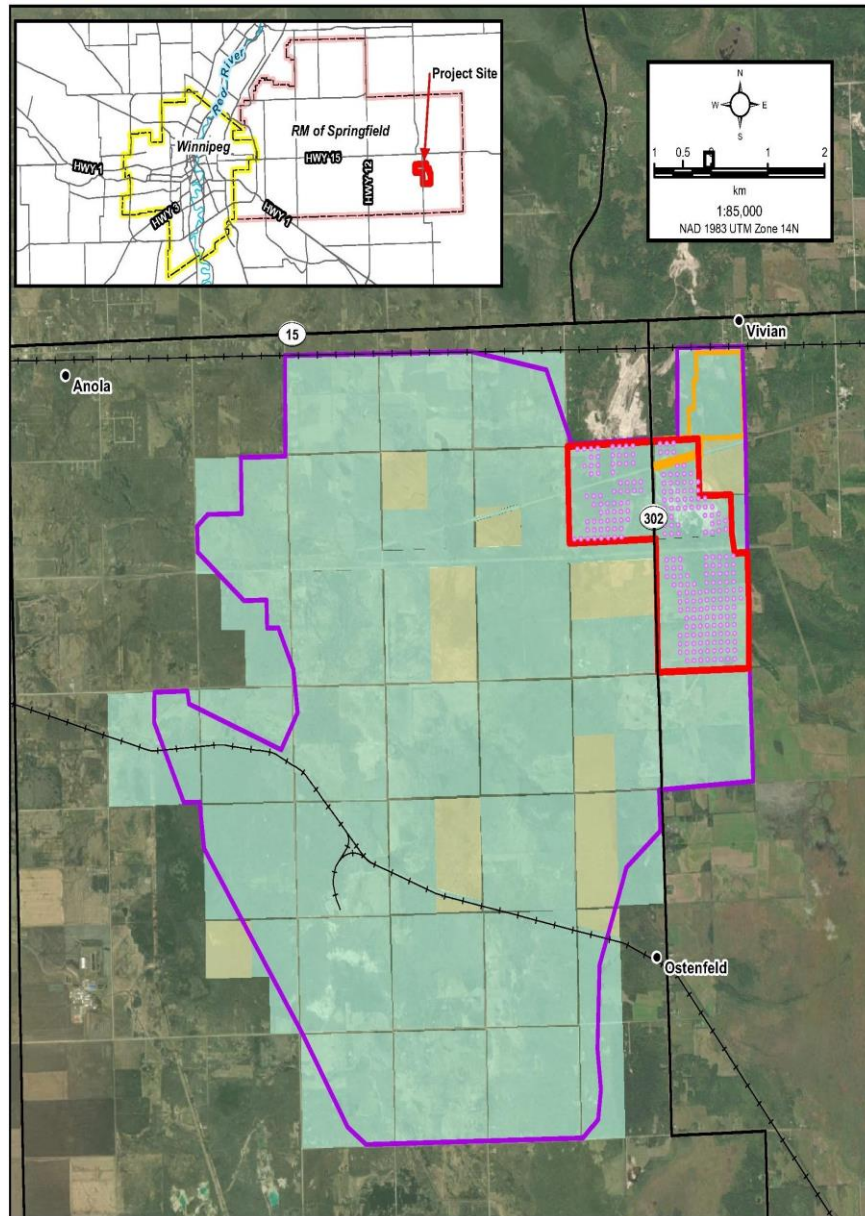
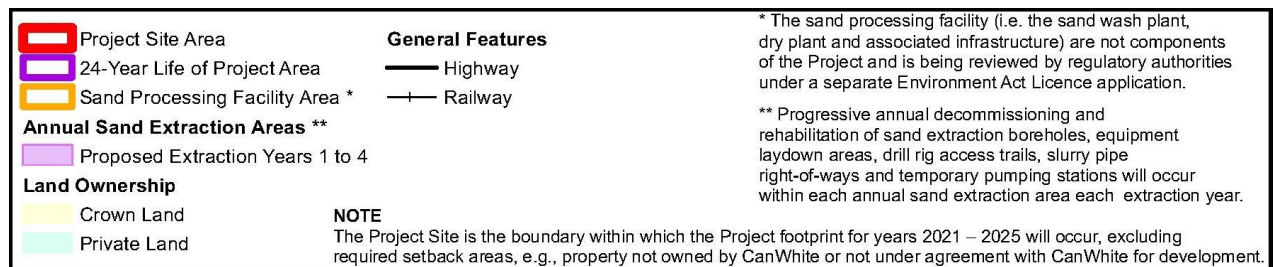


Figure 1: Map Legend (Enlarged for Analysis Report)



Source: CanWhite Sands Corp. *The Environment Act Proposal*

# Analysis of Designation Request

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## Authority to designate the Physical Activities

The *Physical Activities Regulations* (the Regulations) of the IAA identify the physical activities that constitute designated projects. Descriptions provided by the Proponent include physical activities for silica processing and silica extraction. Neither of these are included in the Regulations and therefore are not designated physical activities. Proposed infrastructure also includes a railway yard component that does not meet the threshold in the Regulations of a total area of 50 hectares or more to be a designated physical activity.

Under subsection 9(1) of the IAA the Minister may, by order, designate a physical activity that is not prescribed in the Regulations. The Minister may do this, if, in the Minister's opinion, the physical activity may cause adverse effects within federal jurisdiction or adverse direct or incidental effects, or public concerns related to those effects warrant the designation.

The carrying out of the physical activities has not substantially begun and no federal authority has exercised a power or performed a duty or function that would permit either physical activity to be carried out, in whole or in part.<sup>6</sup>

Given this understanding, the Agency is of the view that the Minister may consider designating the physical activities pursuant to subsection 9(1) of the IAA.

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## Potential adverse effects within federal jurisdiction

### Processing activities:

The Agency's analysis regarding the potential for adverse effects within federal jurisdiction, as defined in section 2 of the IAA, for the processing activities, is summarized in the 2020 Analysis Report. In that Report, the Agency considered information from federal authorities, Manitoba Conservation and Climate, Indigenous groups including Brokenhead Ojibway and Manitoba Métis Federation, stakeholders and the public, including submissions from What the Frack Manitoba representatives. The Agency advised that effects related to the processing activities would be limited through project design, the application of standard mitigation measures and through existing legislative mechanisms, including provincial consultation and oversight processes pursuant to Manitoba's *The Environment Act*, and federal legislation.

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<sup>6</sup> The Minister must not make the designation if the carrying out of the physical activity has substantially begun, or a federal authority has exercised a power or performed a duty or function in relation to the project (subsection 9(7) of the IAA).

The Agency understands changes to the proposal for the processing activities since the completion of the 2020 Analysis Report include the addition of mitigation measures for water management and dust prevention. As the changes to the proposal are not substantive, the Agency is of the view that the analysis and conclusions presented in the 2020 Analysis Report for the processing activities remain valid and readers should refer to this report and its annexes for further information on this topic.

## Extraction activities:

The Agency's analysis identified the potential for adverse effects within federal jurisdiction, as defined in section 2 of the IAA for the extraction activities. However, the Agency is of the view that potential changes in the environment that would cause effects within federal jurisdiction would be limited through project design, the application of standard mitigation measures, and managed through existing legislative mechanisms. Legislative mechanisms include the provincial environmental assessment and licensing process. A public hearing and technical review of the extraction activities will also be conducted by an arm's length agency, the Manitoba Clean Environment Commission. This additional measure is at the request of Manitoba's Conservation and Climate Minister to respond to public concern. At the end of the hearing process, the Commission will prepare a report with recommendations for consideration in the review process. The Proponent's *The Environment Act* Proposal focusses on the first four years of operations. The provincial process would include the review of potential future proposed amendments to extraction processes via Notices of Alterations and their approvals, which are required if the alteration is likely to change the environmental effect. Other mechanisms include adherence to legislation such as the *Migratory Birds Convention Act, 1994*, the *Fisheries Act*, and the *Species at Risk Act*, if applicable. Adverse effects on federal lands and transboundary effects are not expected.

Appendix I provides a summary table of the potential adverse effects and associated public concerns, mitigation measures proposed by the Proponent, and relevant legislative mechanisms if the extraction activities proceed. Appendix II lists the applicable regulatory mechanisms.

## Fish and Fish Habitat

The Agency considered information provided by the Proponent, Fisheries and Oceans Canada (DFO), Environment and Climate Change Canada (ECCC), Natural Resources Canada (NRCan), the requesters, and Indigenous groups, and is of the view that potential effects to fish and fish habitat will be managed with the application of standard mitigation measures, existing legislative mechanisms pursuant to Manitoba's *The Environment Act*, and compliance with the *Fisheries Act*.

The proponent has indicated that operations do not involve the use of or any discharge to surface water. ECCC advised that based on the stated limited proximity to surface waters, the extraction activities are unlikely to have impacts on surface waters and aquatic life due to direct discharges or surface runoff. Federal authorities advised that adverse changes to water quality that could result from the accidental release of hydrocarbons, other contaminants, and erosion would require management through proposal design, drainage controls, and planning. Further, when the extraction wells are drilled, the drill cuttings that will be generated and stored at the surface will require proper storage, testing, and monitoring to prevent drainage that could otherwise lead to changes to surface water quality. These potential changes and mitigation measures are anticipated to be addressed through the environmental assessment and licensing



process under Manitoba's *The Environment Act*, which will ensure review of the proposal, and compliance with any licensing conditions including appropriate management and monitoring of water.

Effects to groundwater quantity and quality were a prominent concern of requesters, Indigenous groups, and the public, and the Agency considered this information in addition to that from the Proponent and ECCC, DFO, and NRCan. Removal of groundwater during extraction activities has the potential to result in drawdown of the water table. Less groundwater available to recharge surface water bodies could reduce the total volume of water in nearby lakes or rivers and potentially increase the concentration of contaminants in those bodies of water. NRCan advised that with respect to groundwater quantity, the Proponent's hydrogeological assessment appears to have been based on a thorough review of existing hydrogeological information and data, appropriate field studies and testing, and industry-standard hydrogeological modelling. NRCan advised that the extent and duration of predicted drawdown are small when considering the distance between the extraction activities and areas of federal jurisdiction, such as water bodies that may support fish and aquatic species, and that it is unlikely that pumping at such a distance could reduce surface water sufficiently to appreciably influence fish or aquatic species.

The Proponent characterized changes to groundwater quality as minor; their studies indicate that although the injection of oxygenated water may reduce concentrations of iron and manganese in the vicinity of extraction wells, it is not anticipated to induce metal leaching/acid rock drainage reactions due to the very low to absent concentrations of minerals prone to oxidation (i.e. pyrite and pyrrhotite). They have committed to monitoring to confirm predictions of their studies. ECCC advised that monitoring of groundwater quality will be important to reduce uncertainty and assess potential impacts to groundwater quality due to removal and re-injection of groundwater. The provincial environmental assessment process includes expert technical review of these and other potential effects (e.g., subsidence) that would be considered in any licensing and conditions under Manitoba's *The Environment Act*.

DFO advised that there are no aquatic species at risk at or near the proposed site. In the event that fish or fish habitat may occur in or near the extraction activities, the Agency considered that all activities that have the potential to affect fish and fish habitat must be carried out in compliance with the *Fisheries Act*.

## Migratory Birds and Species at Risk

The Agency considered information provided by the Proponent, ECCC, the requester, and Indigenous groups and is of the view that there is the potential for adverse effects to migratory birds that are anticipated to be appropriately managed through design, standard mitigation measures, the provincial environmental assessment and licensing process, and adherence to applicable legislation such as the *Migratory Birds Convention Act, 1994*, and the *Species at Risk Act*.

Potential for adverse effects to migratory birds could occur from direct and indirect effects such as land disturbance, vegetation clearing, sensory disturbances, and increased risk of mortality from construction and operation activities. The Agency understands the proposed design and operations include mitigation measures to minimize effects to wildlife, including migratory birds, such as locating components on previously disturbed land to the extent feasible, respecting restricted activity periods for breeding birds, and minimizing noise levels.

The extraction activities overlap with areas containing critical habitat protected under the *Species at Risk Act* for two migratory bird species at risk, Red-headed Woodpecker and Golden-winged Warbler. Proposed activities, such as clearing of vegetation and removal of trees, may result in permanent or temporary habitat loss, conversion of habitat, or habitat degradation, and these activities have the potential to negatively affect critical habitat. Of the species at risk with potential to interact with the extraction activities, two mammal species that are listed as Endangered, Little Brown Myotis and Northern Myotis, also have a greater potential to be affected by such activities. The Proponent will need to consider specific habitat requirements and effect-avoidance for species at risk to comply with the federal *Species at Risk Act*. If avoidance is not possible, a *Species at Risk Act* permit would be required. Red-headed Woodpecker, Golden-winged Warbler, Little Brown Myotis, and Northern Myotis are further protected under Manitoba's *Endangered Species and Ecosystems Act* and will be considered in the provincial environmental assessment and licensing process.

## Federal lands and Transboundary Effects

The Agency considered information from the Proponent, ECCC, NRCan, Health Canada, the requesters and Indigenous groups, and is of the view that the extraction activities are unlikely to cause a change to the environment on federal lands, transboundary waters, or air quality in another province or outside of Canada.

The Agency understands that the closest federal lands, Brokenhead Ojibway Nation's Na-Sha-Ke-Penais Indian Reserve, are located approximately 38 kilometres from the proposed site. Reserve lands situated downstream on the Brokenhead River are approximately 50 kilometres away. The physical activities are wholly situated in Manitoba and the nearest provincial or international border is approximately 100 kilometres away.

The Agency does not anticipate effects to transboundary waters or to the Brokenhead Ojibway Nation's Reserves via water, given their distance from the physical activities and the limited anticipated changes to water (see fish and fish habitat section).

Health Canada noted the potential for impacts due to changes in noise and air quality in the local area, and ECCC has advised that concentrations of nitrogen dioxide (NO<sub>2</sub>) have the potential to exceed the 1-hour Canadian Ambient Air Quality Standards with elevated concentrations at nearby receptors. These effects are anticipated to be localized and not extend to federal lands. ECCC notes the impact may be mitigated by the use of newer vehicles/equipment with lower emissions and by performing extraction activities near residences during the summer months when vertical mixing of emissions by the atmosphere is maximized.

## Indigenous Peoples of Canada

Indigenous groups have raised concerns regarding potential adverse effects of the extraction activities to traditional and cultural use of lands and potential impacts to health, social and economic conditions including:

- changes in health, social and economic conditions related to loss of access and changes to the baseline environmental conditions;
- impacts on cultural well-being linked to loss of access to sites within traditional territories;
- cumulative impacts on resources and ecosystems critical for the practice of rights-related activities;
- limitations on current use of traditional lands and resources and the ability to practice rights-related activities through lack of confidence in resource safety, and direct removal, loss of access or avoidance due to sensory disturbance to areas or routes of importance;
- concerns regarding the quality of surface and ground water due to potential contamination from extraction activities;
- effects to water balance within aquifer system, potential for subsidence due to room and pillar mining, and bearing capacity of the shale aquitard and their impacts to lands and waters; and
- lack of consultation with First Nations regarding the proposed activities.

The Agency considered information on the extraction activities provided in 2020 by Brokenhead Ojibway Nation, Manitoba Métis Federation, and in 2021 by Peguis First Nation, the Proponent, the public, Health Canada, NRCan, ECCC, and DFO and is of the view that the extraction activities may cause adverse effects to the health, social, or economic conditions of Indigenous peoples and environmental effects that would lead to adverse impacts to physical and cultural heritage, current use of lands and resources for traditional purposes, or structures, sites, or things that are of historical, archaeological, or paleontological importance to Indigenous peoples of Canada.

The Agency acknowledges that detailed information on engagement and potential interaction of the proposed activities with local First Nations and Métis communities has not been provided to date. However, the Agency is of the view that impacts may be limited in part given that: many potential effects are anticipated to be mitigable or limited to the local area (e.g., air quality, water quality, noise, potential effects to fish or wildlife species that may be of importance to Indigenous peoples); there are no reserve lands in close proximity to proposed activities; and extraction activities will be carried out on private lands only. The proponent indicates that any heritage resources encountered onsite will be documented and reported to the Historic Resources Branch of Manitoba. The Proponent has met with several Indigenous groups to discuss concerns and commits to continue discussing the proposal with them.

Manitoba Conservation and Climate has indicated that Indigenous consultation will be carried out and that the environmental assessment considers all environmental effects.

## Other Considerations

### *Greenhouse gas (GHG) Emissions*

The proponent estimates the extraction activities will generate 6.797411 kilotonnes of carbon dioxide equivalent annually, which is 0.0296% of reported Manitoba emissions in 2019 and about 0.000931% of reported Canadian emissions in 2019. The Proponent indicates emissions will be minimized by regularly

maintaining equipment and vehicles, minimizing idling, and ensuring that vehicles and equipment meet required emission standards.

ECCC noted that the construction, operation, and decommissioning of the extraction activities may result in GHG emissions, and may hinder or contribute to the Government of Canada's ability to meet its commitments in respect of climate change. Furthermore, the extraction activities have the potential to be affected by future climate change, possibly resulting in impacts to the environment.

Facilities are subject to federal greenhouse gas emissions reporting requirements, pursuant to the *Canadian Environmental Protection Act, 1999*, if they emit 10 kilotonnes or more of greenhouse gas emissions, in carbon dioxide equivalent units per year.

### *Cumulative Effects*

Concerns were raised regarding the cumulative effects from the extraction process on the environment, which include potential contamination of the Upper Red River and lower Winnipeg aquifers. The Agency considered this information in addition to that from the Proponent, ECCC, DFO, and NRCan.

Given the information available, it is unlikely that the physical activities would interact cumulatively in areas of federal jurisdiction, beyond the impacts attributed to each physical activity alone. Any effects can be addressed through existing provincial and federal legislative and regulatory processes.

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## Potential adverse direct or incidental effects

Direct or incidental effects refer to effects that are directly linked or necessarily incidental to a federal authority's exercise of a power or performance of a duty or function that would permit the carrying out, in whole or in part, of a physical activity, or to a federal authority's provision of financial assistance for the purpose of enabling that physical activity to be carried out, in whole or in part.

Approval from the Canadian Transportation Agency may be required for the processing activities, as the Proponent has indicated that the railway spur component is part of CN Rail's network.

For the extraction activities, a permit would be required under the *Species at Risk Act*, administered by ECCC, for terrestrial wildlife species listed in Schedule 1 as Extirpated, Endangered or Threatened, for activities that affect any part of its critical habitat, or the residences of its individuals, where those prohibitions are in place.

Additional information would be required to understand the potential effects; however, effects are expected to be addressed through the requirements set by the relevant federal authorities. Potential federal authorizations or approvals are listed in Appendix II.

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## Public concerns

The concerns expressed regarding the extraction activities by the requester, general public, and Indigenous groups that relate to effects within federal jurisdiction are noted above in the relevant section and in Annex I, along with the associated mitigation measures proposed by the Proponent, if any, and applicable regulatory mechanisms. The public concerns related to the physical activities are further summarized in the Annex I of the 2020 Analysis Report.

The Agency is of the view that these concerns would be addressed through the provincial environmental assessment and licensing process and Manitoba Clean Environment Commission hearing, which include opportunities for public participation, consideration of public comments, and Indigenous consultation, or through other relevant legislation (see Annex II).

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## Potential adverse impacts on the rights of Indigenous peoples

The Agency, in relation to subsection 9(2) of the IAA, is of the view that while there is the potential for the extraction activities to cause adverse impacts on rights that are recognized and affirmed by section 35 of the *Constitution Act, 1982* (section 35 rights), existing legislative mechanisms would include Indigenous consultation and address impacts.

The Agency considered all submissions from Indigenous groups and any relevant advice from federal and provincial authorities. The extraction activities are located within Treaty 1 and the Métis Southeast Region. The Proponent indicates that although the 24-year footprint for the activities includes some crown lands (Figure 1), no activities will be conducted on crown land at any point during the life of the activities.

Concerns were expressed by Peguis First Nation, Brokenhead Ojibway Nation, and Manitoba Métis Federation specific to the lack of consultation efforts from the Proponent and that the extraction activities could adversely effect their ability to practice treaty rights within the proposed and surrounding areas due to direct, indirect and cumulative effects.

The Agency understands that the provincial environmental assessment and licensing process includes consideration of potential impacts to Indigenous peoples and their rights as protected under section 35 of the *Constitution Act, 1982* and that an initial assessment to identify communities for consultation is underway.

In conducting this analysis, the Agency considered potential impacts to and any comments received from:

- Anishinabe of Wauzhushk Onigum;
- Black River First Nation;
- Brokenhead Ojibway Nation;
- Buffalo Point First Nation;
- Dakota Tipi;
- Dakota Plains First Nation;
- Fort Alexander - Sagkeeng Anicinabe First Nation;

- Grassy Narrows First Nation;
- Hollow Water First Nation;
- Iskatewizaagegan #39 Independent First Nation;
- Long Plain First Nation;
- Manitoba Métis Federation;
- Niisaachewan Anishinaabe Nation;
- Northwest Angle No.33;
- Peguis First Nation;
- Roseau River Anishinabe First Nation Government;
- Shoal Lake No.40; and
- Wabaseemoong Independent Nations.

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## Regional and strategic assessments

There are no regional or strategic assessments pursuant to sections 92, 93, or 95 of the IAA that are relevant to the physical activities.

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## Conclusion

The Agency is of the view that the potential for adverse effects, as described in subsection 9(1) of the IAA, would be limited through project design, the application of standard mitigation measures and through existing legislative mechanisms applicable to the processing and extraction activities (2020 Analysis Report, Annexes I and II), including public hearings to be conducted by the Manitoba Clean Environment Commission, provincial consultation, oversight processes pursuant to Manitoba's *The Environment Act*, and federal legislation (Annex II).

Further, the Agency considered the potential for the physical activities to cause adverse impacts on the rights that are recognized and affirmed by section 35 of the *Constitution Act, 1982* and is satisfied that existing legislative mechanisms include opportunities for Indigenous consultation and to address impacts.

# Annexes

## Annex 1: Potential adverse effects within federal jurisdiction

This Annex covers information regarding the extraction activities, and references to “the Project” in this Annex refer to the extraction activities. Proponent information on the extraction activities herein includes information from *The Environment Act* Proposal for the extraction activities. The Proposal focuses on the area used during first four years extraction, which is referred to as the “Project Site”. For potential adverse effects within federal jurisdiction related to the processing activities, see Annex 1 of the 2020 Analysis Report.

Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
<p>A change to fish and fish habitat, as defined in subsection 2(1) of the <i>Fisheries Act</i></p>	<p><b>Public and Indigenous Concerns:</b> Potential effects to groundwater and surface water due to: oxygenation of aquifer leading to metal leaching and acid mine drainage reactions; potential for intentional or accidental releases to waters and landscape; concern regarding the UV sterilization system and its effectiveness to eliminate harmful microbes of water being reinjected into aquifers. This could impact fish-bearing waters (Cooks Creek, Brokenhead River and Red River), transboundary aquifers, federal lands &amp; Indigenous peoples (downstream effects to Brokenhead Ojibway Nation reserve lands), and drinking water quality.</p> <p><u>FA Perspective:</u></p> <p><i>Fisheries and Oceans Canada</i> (DFO): DFO advised that a <i>Fisheries Act</i> paragraph 35(2)(b) Authorization will be required if the Project is likely to cause the harmful alteration, disruption, or destruction to fish habitat and/or a <i>Fisheries Act</i> paragraph 34.4(2)(b) Authorization if the Project is likely to result in the death of fish. DFO reviewed the available project information. As proposed, DFO understands that there will be no in-water works related to this Project, and no impacts to watercourses from</p>	<p>Impacts to fish and fish habitat and aquatic species at risk are prohibited unless authorized under the <i>Fisheries Act</i> and <i>Species at Risk Act</i>.</p> <p>Deposit of deleterious substances into waters frequented by fish, unless authorized by regulations or other federal legislation, is prohibited under the <i>Fisheries Act</i>.</p> <p>A licence under Manitoba’s <i>The Environment Act</i> would set requirements to protect ground and surface</p>

Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
	<p>groundwater drawdown. Should works be proposed that may impact fish and fish habitat, DFO recommends that this information be provided to them. For example, water crossings that may be required for access roads. No aquatic species at risk are mapped for the Project area.</p> <p><i>Environment and Climate Change Canada:</i> Based on the Proponent's <i>The Environment Act</i> Proposal and the limited proximity to surface waters, ECCC concluded that it is unlikely that the sand extraction activities will have impacts on surface waters and aquatic life due to direct discharges or surface runoff. Adverse effects to water quality, wildlife and wildlife habitat could result from the accidental release of hydrocarbons and other contaminants to surrounding water, but optimized spill prevention, preparedness and response measures and systems can minimize this risk. Impacts due to erosion and spills should be mitigated through standard mitigation measures to be outlined in management plans.</p> <p>Monitoring of groundwater quality is an important aspect to reduce uncertainty and assess potential impacts to groundwater quality due to removal and reinjection of ground water. Mining projects may result in adverse effects to surface water quality though "drawdown" of the water table, this can happen due to construction of wells (to extract sand slurry). The "drawdown" can affect the water table by reducing the quantity of groundwater available to recharge surface water bodies which in turn could reduce the total volume of water in nearby lakes or rivers, potentially increasing the concentration of contaminants in those bodies of water and resulting in adverse effects on water quality.</p> <p>With regard to metal leaching / acid rock drainage and geochemical testing of drill cuttings, ECCC states that proper storage and adequate testing is required to ensure that appropriate management and mitigation may be implemented and that impacts to surface water quality are</p>	<p>water resources and their uses.</p> <p>Provincial water rights licence(s), pursuant to <i>The Water Rights Act</i> and approval by Manitoba Conservation and Climate – Drainage and Water Rights Licensing Branch, will be required by the Proponent to withdraw and divert groundwater for extraction wells. Approval for this licence will include assessment of the volume of water to be pumped, the rate of pumping, duration, location of wells, size and depth of wells, and impacts on local users.</p> <p>Provincial injection permit(s) for the safe, uncontaminated return of water to the sandstone aquifer requires authorization pursuant to <i>The Groundwater and</i></p>



Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
	<p>prevented. In addition to geochemical testing, ECCC recommends that follow-up monitoring of drainage and runoff from any drill cutting storage piles be completed to confirm that metal leaching / acid rock drainage is not occurring.</p> <p><i>Natural Resources Canada:</i> NRCan concluded that the Project has the potential to negatively affect fish habitat through drainage from drilling waste rock stored at the surface. However this could be prevented with appropriate monitoring and management. The tested Winnipeg Shale unit demonstrated uncertain potential to generate acid rock drainage, while all three tested units (also Red River Carbonate and Winnipeg Sandstone) have the potential for metal leaching including (but not limited to) aluminum, iron, arsenic, selenium, and uranium. NRCan agrees with the approach to test drill cuttings during development of the Project, and further recommends monitoring of drainage from the surface waste pile with means to capture and manage prior to release to the environment, should it be found to contain elevated metal concentrations. The sampling methods proposed by the Requester are not applicable as they are for sampling deep ocean sediments. NRCan recommends using the Mine Environment Neutral Drainage Program as it provides guidance on sampling mine materials.</p> <p>NRCan is of the view the Project does not have the potential to cause significant adverse effects within federal jurisdiction or adverse direct or incidental effects from a groundwater quantity perspective.</p> <p><u>Proponent Perspective:</u> The Proponent does not anticipate Project-related impacts on fish and fish habitat due to the lack of fish habitat within the Project Site (4 year area), and application of an Erosion and Sediment Control Plan. The Proponent has indicated that the Project does not</p>	<p><i>Water Well Act</i> and approval by Agriculture and Resource Development – Water Branch.</p> <p>Authorization requirements include assessment of the location of wells, borehole licence(s), treatment to ensure no contamination of water prior to reinjection, and reinjection procedure and abandonment (sealing) plans.</p> <p>In relation to the above described injection permit(s), a provincial borehole licence(s) for extraction wells is also required for the drilling, construction and abandonment of extraction wells and pursuant to <i>The Mines and Minerals Act</i>. Authorization is approved by Agriculture and Resource Development – Mines Branch and approval requires assessment of the location of wells, planned method of drilling,</p>

Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
	<p>require the use of surface waters and no discharges to the surface waters will occur.</p> <p>Slurry lines are not prone to leakage, there are periodic valves placed throughout the slurry line to allow for isolation in the unlikely event of a leak. It is important to note that the contents of the slurry line are water and sand. The water will have been treated at the facility site with a non-toxic biodegradable flocculant and only trace amounts would remain in the slurry line. The Proponent will be monitoring the slurry line and leak detection will be used in slurry lines, in addition to visual inspection and non-destructive testing.</p> <p>The potential risks to groundwater are assessed to be minor, seasonal in duration and reversible. Water levels in the Winnipeg Sandstone and Red River Carbonate aquifers are expected to recover 80% in the first two days with the remaining 20% recovering over a period of 20 to 80 days following the end of extraction activities in the fall of each year. The storage of bedrock cuttings may result in metal leaching and acid mine drainage through exposures of sulphidic minerals to oxygen. The Waste Management Plan will include geochemical testing of drill cuttings, proper storage and adequate testing and appropriate management and mitigation may be implemented to prevent impacts to surface water. In addition, follow-up monitoring of drainage and runoff from any drill cutting storage piles should be completed to confirm metal leaching and acid mine drainage is not occurring.</p>	<p>cementing, casing, depth size, well purpose, and well abandonment.</p>
<p>A change to aquatic species, as defined in subsection 2(1) of the <i>Species at Risk Act</i></p>	<p>See the section "A change to fish and fish habitat, as defined in subsection 2(1) of the <i>Fisheries Act</i>" for fish species at risk.</p>	<p>See fish and fish habitat section.</p>

Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
	<p>The physical activities will not impact the marine environment so marine plants will not be affected.</p>	
<p>A change to migratory birds, as defined in subsection 2(1) of the <i>Migratory Birds Convention Act, 1994</i></p>	<p><b>Public and Indigenous Concerns:</b> The extensive subsidence and land disturbance from slurry line and drill pad clearance and Project noise and light disturbance continuing for 24 years or more would have serious detrimental effects on birds and wildlife habitat and behaviour.</p> <p><u>FA perspective:</u></p> <p><i>Environment Climate Change Canada:</i> Activities linked to the construction, operation, and decommissioning of silica sand mines may have adverse effects to terrestrial wildlife resources (wildlife), including migratory birds and non-aquatic species at risk as listed on the <i>Species at Risk Act</i> (SARA), and their habitat. The Project will include annual land disturbance and vegetation clearing for up to 24 years within an 8,235 ha 'life of Project area'. Manitoba's <i>The Environment Act</i> proposal describes temporary habitat losses, as natural vegetation is anticipated to regenerate to reduce the initial project habitat loss following a lag time estimated by the Proponent to be 5 to 10 years following closure. However, habitat features important to wildlife may be directly and indirectly affected by the Project's clearing footprint of the planned wellsite arrays, temporary access trails, or slurry and water pipelines. Sensory disturbances (e.g. noise from extraction well drilling, sand extraction, diesel generator operation) and increased risk of wildlife mortality from construction and operation activities are also predicted by the Proponent and planned to occur through each operating year. Species like the Golden-winged Warbler, which inhabits early successional habitat, may be drawn to recently disturbed habitats in portions of active project areas and</p>	<p>The physical activities would be subject to the <i>Migratory Birds Convention Act, 1994</i>.</p> <p>Compliance with the <i>Species at Risk Act</i> is required.</p> <p>A permit would be required under the <i>Species at Risk Act</i> for terrestrial wildlife species listed in Schedule 1 of the Act as Extirpated, Endangered or Threatened, for activities that affect any part of its critical habitat, or the residences of its individuals, where those prohibitions are in place.</p> <p>A licence under Manitoba's <i>The Environment Act</i> would include provisions to minimize adverse impacts on the environment, as well</p>

Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
	<p>as a result be exposed to greater sensory disturbance or airborne contaminants during project operations.</p> <p>Of the species at risk with potential to interact with the Project, ECCC notes that two migratory bird species at risk have greater potential to be affected by the Project's proposed temporary conversion of habitat, which could affect biophysical attributes important for breeding and foraging habitat. These include Golden-winged Warbler (listed as Threatened) and the Red-headed Woodpecker (listed as Endangered). The Project overlaps with areas containing critical habitat protected under the SARA for these two species. ECCC advises that consideration is required for whether the predicted project effects will result in effects to critical habitat for Golden-winged Warbler and Red-headed Woodpecker.</p> <p>No species-specific information is provided in <i>The Environment Act</i> Proposal regarding species-specific effect avoidance, mitigation, or monitoring. In consideration of information available in published recovery strategy documents, effects to these habitat features should be evaluated and avoided in specific planning.</p> <p><u>Proponent Perspective:</u> According to the Manitoba Breeding Bird Atlas (2018), at least 60 bird species are likely to breed within the landcover types that occur within the Project Site. Clearing of natural vegetation for Project construction and operations (including slurry lines and water return lines) will occur outside of the peak breeding bird season for the Project area (i.e. April 25 – August 15) to avoid contravening the <i>Migratory Birds Convention Act, 1994</i>.</p> <p>Areas to be cleared of vegetation will be minimized to the extent feasible and disturbed areas will be allowed to revegetate naturally and augmented using an approved native seed mixture and native plantings if required.</p>	<p>as set out requirements for land rehabilitation.</p> <p>The physical activities would be subject to Manitoba's <i>The Endangered Species and Ecosystems Act</i>.</p> <p>The physical activities would be subject to Manitoba's <i>The Mines and Minerals Act</i>, and associated Regulations include mining and borehole requirements for drilling, reclamation and abandonment. Provincial Closure Plan Approval and provincial Borehole Licence(s) for extraction wells (both authorizations approved by Agriculture and Resource Development – Mines Branch) are required pursuant to <i>The Mines and Minerals Act</i>.</p>

Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
	<p>The footprint area of each well cluster will be minor (i.e. 0.20 ha to 0.28 ha), with only seven well clusters active at any one time and other clusters being progressively rehabilitated. The footprint area of the pumping stations will also be minor, approximately 63 m<sup>2</sup> each.</p> <p>Wildlife species present in the vicinity of the Project are anticipated to be accustomed to some level of noise due to the presence of existing developments. Light pollution emanating from the well cluster/work areas can disturb wildlife, but these impacts will be mitigated through fully shielded directional lighting fixtures to focus light specifically to work areas and minimize dispersal of light.</p> <p>Environmental effects may potentially occur due to fuel or chemical spills (such as diesel fuel, lubricants, oils and hydraulic fluid); safe work practices and proposed mitigation measures will adequately minimize this risk.</p> <p>Probability of occurrence in the Project Site for Golden-winged Warbler and Red-headed Woodpecker is ranked as low to moderate.</p> <p>Less than half (45%) of the Project Site is forested with agriculture fields being the next most common cover type (31%). An additional 13% of the Project Site includes other types of land development such as quarry pits, residential lots, transmission line corridor and municipal and provincial roads.</p>	
A change to the environment that would occur on federal lands	<b>Public and Indigenous Concerns:</b> Potential impacts to water quality or quantity of the Brokenhead River could influence reserve lands downstream (~50 km).	A determination under section 82 of the <i>Impact Assessment Act</i> would be required for projects on federal lands, but is not

Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
	<p><u>Proponent Perspective:</u> The closest First Nation reserve land in relation to the Project Site is the Brokenhead Ojibway Nation's Na-Sha-Ke-Penais Indian Reserve (3 ha), approximately 38 km northwest of the Project Site.</p> <p><u>FA perspective:</u></p> <p><i>Natural Resources Canada:</i> The extent and duration of predicted drawdown are small when one considers the distance between the Project and the areas of federal jurisdiction (e.g., reserve lands or fish-bearing waters). It is unlikely that pumping at such a distance could reduce surface water sufficiently to significantly influence fish or aquatic species in a stream/river with sufficient flow to support fish and aquatic species. In NRCan's opinion, potentially significant impacts to fisheries, aquatic species and Indigenous people due to drawdown are not anticipated and are highly unlikely with respect to groundwater quantity.</p>	<p>applicable to the physical activities.</p>
<p>A change to the environment that would occur in a province other than the one in which the project is being carried out or outside Canada</p>	<p>Note: the distance from the extraction activities to the nearest provincial and international borders is approximately 100 kilometres.</p> <p><b>Public and Indigenous Concerns:</b> Potential impacts to quality and/or quantity of the aquifer could result in transboundary water effects.</p> <p><u>FA perspective:</u></p> <p><i>Natural Resources Canada:</i> The extent and duration of predicted drawdown are small when one considers the distance between the proposal site and the areas of federal jurisdiction. It is unlikely that pumping at such a distance could reduce surface water sufficiently to significantly influence fish or aquatic species in a water course with</p>	<p>Licences, permits and approvals required for the physical activities are pursuant to Manitoba's <i>The Environment Act</i>. Manitoba Conservation and Climate would set requirements to ensure that environmental effects are localized and mitigated within provincial jurisdiction.</p> <p>Facilities are subject to federal greenhouse gas</p>

Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
	<p>sufficient flow to support fish and aquatic species. In NRCan's opinion, potentially significant impacts to fisheries, aquatic species and Indigenous people due to drawdown are not anticipated and are highly unlikely with respect to groundwater quantity.</p> <p>It does not appear that the removal of silica sand would significantly reduce groundwater resources at a regional scale.</p> <p><i>Environment and Climate Change Canada:</i> ECCC has advised that concentrations of NO<sub>2</sub> have the potential to exceed the 1-hour Canadian Ambient Air Quality Standards (CAAQS) as the operations schedule is 24 hours per day/7 days per week. This impact may be mitigated by the use of newer vehicles/equipment with lower emissions. Extraction activities near residences would best be performed during the summer months when vertical mixing of emissions by the atmosphere is maximized.</p> <p><i>Health Canada:</i> Health Canada advises that there could potentially be Project-related impacts due to changes in noise and air quality.</p> <p><u>Proponent Perspective:</u> Emissions will be minimized by regularly maintaining equipment and vehicles and minimizing idling, alongside ensuring that vehicles and equipment will meet required emission standards.</p> <p>There are no stockpiles or silica dust risks during the extraction process. The slurry line will transport the sand wet. The sand comes out of the ground in water and remains wet and/or in water at all times throughout the process. The stockpiles that currently exist have been covered and are monitored closely. The sand was deposited on these piles wet and the results of air dispersion modeling predict no exceedances of air quality</p>	<p>emissions reporting requirements, pursuant to the <i>Canadian Environmental Protection Act, 1999</i>, if they emit 10 kilotonnes or more of greenhouse gas emissions, in carbon dioxide equivalent units per year.</p>

Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
	<p>guidelines at the nearest residences for any of the parameters that were modeled (e.g. dust, including silica dust).</p>	
<p>With respect to the Indigenous peoples of Canada, an impact - occurring in Canada and resulting from any change to the environment - on physical and cultural heritage</p>	<p><b>Public and Indigenous Concerns:</b> Inadequate consultation efforts by the Proponent with the Indigenous groups to understand Project activities and potential impacts.</p> <p><u>FA Perspective:</u></p> <p><i>Health Canada:</i> Health Canada noted the absence of First Nation and Métis engagement on potential effects of the proposed Project. Project activities could result in adverse health effects due to changes in air quality, drinking water quality, country food quality and noise from unconsidered interactions between the Project and these communities.</p> <p><u>Provincial Perspective:</u> Requests for Crown Indigenous Consultation have been received and an initial assessment will be conducted to determine if the proposed development may adversely affect Indigenous peoples and their rights as protected under section 35 of the <i>Constitution Act, 1982</i>.</p> <p>The review and licensing process under Manitoba's <i>The Environment Act</i> includes consideration of potential impacts to Indigenous peoples and their rights under section 35 of the <i>Constitution Act, 1982</i>. Representatives from the Historic Resource Branch are part of the Technical Advisory Committee that review <i>The Environment Act</i> proposals and the provincial <i>Heritage Resources Act</i> sets out requirements in relation to heritage objects.</p> <p><u>Proponent Perspective:</u> The Project is located within Treaty No. 1 area; there are no First Nation reserve lands within the local or regional Project</p>	<p>A licence under Manitoba's <i>The Environment Act</i> would include provisions to minimize adverse impacts on the environment, as well as set out requirements for land rehabilitation. The licence application process includes consultation. Proponents are expected to address concerns raised by provincial ministries, Indigenous groups and the public.</p> <p>Manitoba's <i>Heritage Resources Act</i> applies to historical or archeological objects.</p>



Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
	<p>area. The closest First Nation reserve lands to the Project Site is the Brokenhead Ojibway Nation's Na-Sha-Ke-Penais Indian Reserve (3 ha) approximately 38 kilometres northwest of the Project Site.</p> <p>The Project is not expected to adversely impact the exercise of Indigenous or Treaty rights because:</p> <ul style="list-style-type: none"> <li>- the Project Site consists of private land with private surface rights that do not have public access;</li> <li>- no fish or fish habitat will be impacted by the Project;</li> <li>- the residual environmental impact of the Project on vegetation beyond the Project Site is assessed to be negligible; and,</li> <li>- the residual environmental impacts of the Project on regional wildlife populations is assessed to be negligible.</li> </ul> <p>If heritage resources are discovered, work will be stopped, Historic Resources Branch will be advised, and discovered resources will be adequately recorded and protected.</p> <p>The Proponent has had meetings with several Indigenous groups and will continue to have discussions with local Indigenous communities in the area.</p>	
<p>With respect to the Indigenous peoples of Canada, an impact - occurring in Canada and resulting from any change to the environment - on current use of lands and resources for traditional purposes</p>	<p><b>Requester and Indigenous Concerns:</b> Potential impacts of the Project on water quality or quantity could adversely impact traditional lands, wildlife and the fish-bearing water bodies of Cook's Creek, the Brokenhead River, and Red River.</p> <p><u>FA Perspective:</u></p>	<p>A licence under Manitoba's <i>The Environment Act</i> would require the proponent to address concerns raised by potentially affected Indigenous groups.</p>

Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
	<p><i>Natural Resources Canada:</i> The extent and duration of predicted drawdown are small when one considers the distance between the proposal site and the areas of federal jurisdiction. It is unlikely that pumping at such a distance could reduce surface water sufficiently to significantly influence fish or aquatic species in a water course with sufficient flow to support fish and aquatic species. In NRCan's opinion, potentially significant impacts to fisheries, aquatic species and Indigenous people due to drawdown are not anticipated and are highly unlikely with respect to groundwater quantity.</p> <p>It does not appear that the removal of silica sand would significantly reduce groundwater resources at a regional scale.</p> <p><i>Environment and Climate Change Canada:</i> ECCC has advised that concentrations of NO<sub>2</sub> have the potential to exceed the 1-hour Canadian Ambient Air Quality Standards (CAAQS) as the operations schedule is 24 hours per day/7 days per week. This impact may be mitigated by the use of newer vehicles/equipment with lower emissions. Extraction activities near residences would best be performed during the summer months when vertical mixing of emissions by the atmosphere is maximized.</p> <p>Activities linked to the construction, operation and decommissioning of a silica sand mine and associated infrastructure can have negative effects on wildlife.</p> <p><i>Health Canada:</i> Health Canada advised that there could potentially be Project-related impacts due to changes in noise and air quality.</p> <p><u>Proponent Perspective:</u> The closest First Nation reserve lands to the Project Site is the Brokenhead Ojibway Nation's Na-Sha-Ke-Penais Indian Reserve approximately 38 kilometres northwest of the Project Site.</p>	

Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
	<p>The Project is not expected to adversely impact the exercise of Indigenous or Treaty rights because:</p> <ul style="list-style-type: none"> <li>- the Project Site consists of private land with private surface rights that do not have public access;</li> <li>- no fish or fish habitat will be impacted by the Project;</li> <li>- the residual environmental impact of the Project on vegetation beyond the Project Site is assessed to be negligible; and,</li> <li>- the residual environmental impacts of the Project on regional wildlife populations is assessed to be negligible.</li> </ul> <p>The regional Project area is within an area recognized by the Manitoba Métis Federation as an area for Métis Natural Resource Harvesting (The Métis Economic Development Organization, 2018). This area corresponds with the Manitoba Conservation and Climate Game Hunting Areas numbers 34A, 35 and 35A.</p> <p>The Proponent has had, and will continue to have, discussions with local Indigenous communities in the area. The opportunity for public review of the proposed Project will occur during the public review period.</p>	
<p>With respect to the Indigenous peoples of Canada, an impact - occurring in Canada and resulting from any change to the environment - on any structure, site, or thing that is of historical, archaeological,</p>	<p><b>Public and Indigenous Concerns:</b> Potential for irreversible impacts to our Indigenous and Métis cultural heritage, historical and archaeological resources through this Project.</p> <p><u>Proponent Perspective:</u> Results of an on-site archaeological investigation found the Project Site to have substantial previous disturbances and concluded that there were no heritage concerns regarding development of the Project. If heritage resources are discovered, work will be stopped,</p>	<p>A licence under Manitoba's <i>The Environment Act</i> would require the Proponent to address concerns raised by potentially affected Indigenous groups.</p>

Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
paleontological or architectural significance	<p>Historic Resources Branch will be advised, and discovered resources will be adequately recorded and protected.</p> <p>The Proponent has had, and will continue to have, discussions with local Indigenous communities in the area. The opportunity for public review of the proposed Project will occur during the public review period.</p>	Manitoba's <i>Heritage Resources Act</i> applies to historical or archeological objects.
Any change occurring in Canada to the health, social or economic conditions of the Indigenous peoples of Canada	<p><b>Public and Indigenous Concerns:</b> Potential adverse effects to air and water quality could impact the health of Indigenous peoples through direct impacts or through consumption of traditional foods, including compromising food security (economic impact).</p> <p><u>FA perspective:</u></p> <p>Environment and Climate Change Canada (ECCC): ECCC has advised that concentrations of NO<sub>2</sub> have the potential to exceed the 1-hour Canadian Ambient Air Quality Standards with elevated concentrations at nearby receptors. ECCC notes the impact may be mitigated by the use of newer vehicles/equipment with lower emissions and by performing extraction activities near residences during the summer months when vertical mixing of emissions by the atmosphere is maximized.</p> <p><i>Health Canada:</i> Health Canada notes that sand extraction activities in the local area by the Proponent are reportedly causing public concerns and complaints due to noise and silica dust emissions. This is consistent with the potential for Project-related impacts due to changes in noise and air quality, as indicated previously by Health Canada.</p> <p><u>Provincial Perspective:</u> Crown Indigenous Consultation will be carried out for this Project in order to understand potential impacts to Indigenous</p>	A licence under Manitoba's <i>The Environment Act</i> would require the proponent to address concerns raised by potentially affected Indigenous groups.

Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
	<p>peoples and their rights as protected under section 35 of the <i>Constitution Act, 1982</i>.</p> <p><u>Proponent perspective:</u> There is no credible pathway for any interaction between the Project and the health, social or economic conditions of Indigenous peoples.</p> <p>The Project is not expected to adversely impact the exercise of Indigenous or Treaty rights because:</p> <ul style="list-style-type: none"> <li>- the Project Site consists of private land with private surface rights that do not have public access;</li> <li>- no fish or fish habitat will be impacted by the Project</li> <li>- the residual environmental impact of the Project on vegetation beyond the Project Site is assessed to be negligible</li> <li>- the residual environmental impacts of the Project on regional wildlife populations is assessed to be negligible.</li> </ul> <p>The Proponent has had, and will continue to have, discussions with local Indigenous communities in the area. The opportunity for public review of the proposed Project will occur during the public review period.</p>	
Adverse direct or incidental effects	<p><u>Proponent Perspective:</u> No federal licences, permits, authorizations, approvals or financial assistance will be required or sought for the extraction activities.</p>	<p>Pursuant to section 98 of the <i>Canada Transportation Act</i>, a company shall not construct a railway line without the approval of the Canadian Transportation Agency (CTA). The proponent has indicated</p>

Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
		<p>that the railway spur is part of CN's network and is likely to require approval from the CTA.</p> <p>A permit would be required under the <i>Species at Risk Act</i> for terrestrial wildlife species listed in Schedule 1 of the Act as Extirpated, Endangered or Threatened, for activities that affect any part of its critical habitat, or the residences of its individuals, where those prohibitions are in place.</p>
<p>Cumulative effects on areas of federal jurisdiction</p>	<p><b>Public and Indigenous Concerns:</b> Concerns regarding development in the area and public and Indigenous groups have indicated that a federal impact assessment should be carried out, there are often effects to federal lands from projects that are not considered by the province. As an example, concern was expressed that contaminants will effect regional ground water aquifers.</p> <p><u>FA Perspective:</u></p> <p><i>Health Canada:</i> Health Canada noted the incorporation of the extraction project and processing facility as an inclusive approach. The inclusive approach supports a cumulative effects assessment. The railway yard is</p>	<p>A licence under Manitoba's <i>The Environment Act</i> would include provisions to minimize adverse impacts on the environment.</p>

Area of Federal Jurisdiction	Summary of Requester Concerns, Effects and Mitigation Proposed by the Proponent and Advice from Federal Authorities (FA) and Provincial Experts	Relevant Legislative Mechanisms
	another local project in the area which would be relevant to a cumulative effects assessment.	

## Annex 2: Potential Federal and Provincial Authorizations Relevant to the Physical Activities

Authorization	Description
Federal	
Canadian Transportation Agency (CTA) approval under section 98 of the <i>Canada Transportation Act</i>	If the railway spur related to the processing activities is part of CN Rail's network, then pursuant to section 98 of the <i>Canada Transportation Act</i> , a company shall not construct a railway line without the approval of the CTA. The Proponent has indicated that the railway spur is part of CN Rail's network and is likely to require approval from the CTA.
<i>Fisheries Act</i> Authorization	<p>As proposed, it appears that the extraction activities will have no in-water works, and no impacts to watercourses from groundwater drawdown. Should works be proposed that may impact fish and fish habitat, this information should be provided to DFO. For example, water crossings that may be required for access roads.</p> <p>A <i>Fisheries Act</i> paragraph 35(2)(b) Authorization will be required if the activities are likely to cause the harmful alteration, disruption, or destruction to fish habitat and/or a <i>Fisheries Act</i> paragraph 34.4(2)(b) Authorization if the activities are likely to result in the death of fish. The Proponent should submit a Request for Review for DFO which outlines the specific impacts of the activities on fish and fish habitat for review under the <i>Fisheries Act</i>.</p> <p>DFO also reviews proposals for effects to listed aquatic species at risk, any part of their critical habitat or the residences of their individuals in a manner which is prohibited under sections 32, 33 and subsection 58(1) of the <i>Species at Risk Act</i>.</p> <p>The <i>Fisheries Act</i> 36(3) prohibits the deposit of deleterious substances into waters frequented by fish, unless authorized by regulations or other federal legislation.</p>
<i>Species at Risk Act</i> Permit	For non-aquatic species listed in Schedule 1 of the <i>Species at Risk Act</i> (SARA) as Extirpated, Endangered or Threatened, a permit may be required from ECCC (e.g. under section 73 of SARA) for activities that affect a listed terrestrial wildlife species, any part of its critical habitat, or the residences of its individuals, where those prohibitions are in place. Such permits may only be issued: if all reasonable alternatives to the activity that would reduce the impact on the species have been considered and the best solution has been adopted; all feasible measures will be taken to minimize the impact of the activity on the species or its critical habitat or the residences of its individuals; and if the activity will not jeopardize the survival or recovery of the species.



Authorization	Description
Provincial	
<p><i>The Environment Act</i> Licence issued by Manitoba Conservation and Climate</p>	<p>A licence under Manitoba's <i>The Environment Act</i> would include provisions to minimize adverse impacts on the environment, as well as set out requirements for land rehabilitation.</p> <p>The licence application process includes consultation. Proponents are expected to address concerns raised by provincial ministries, Indigenous groups and the public. <i>The Environment Act</i> licensing would include assessment by all impacted departments including but not limited to; Manitoba Health, Mines Branch, Groundwater Management Section, Water Quality Management Section, Water Science and Watershed Management Branch, Forestry Branch, Wildlife and Fisheries Branch, Agriculture and Resource Development, Environmental Compliance and Enforcement, Lands Branch.</p>
<p>Borehole Licence and Closure Plan Approval pursuant to the <i>Mines and Minerals Act</i></p>	<p>Approval is granted by the Manitoba Agriculture and Resource Development – Mines Branch and is required for drilling, construction and abandonment (sealing) of extraction wells.</p>
<p>Injection permit pursuant to <i>The Groundwater and Water Well Act</i></p>	<p>Approval of these permit is granted by the Manitoba Agriculture and Resource Development – Water Branch and is required for returning water safely to the aquifer it came from without contamination.</p>
<p>Burning permit pursuant to subsection 19(1) of <i>The Wildfires Act</i></p>	<p>Approval granted by Manitoba Conservation and Climate and is required for disposing of woody debris through burning. Approval is subject to assessment of the timing of any burning, size of the burn, location of the burn and methods of safety and mitigation.</p>
<p>Water Rights Licence pursuant to <i>The Water Rights Act</i></p>	<p>Approval granted by Manitoba Conservation and Climate – Drainage and Water Rights Licensing Branch and required to withdraw and divert groundwater for extraction wells.</p>