File MC0094

Big Bear Contracting Ltd.

Summary of Initial Project Description - Big Bear Camp Aerodrome Near La Loche, SK

MISTY CLIFTON ENGINEERING

MISTY CLIFTON ENGINEERING

25 June 2024 **File MC0094**

Big Bear Contracting Ltd.

Summary of Initial Project Description - Big Bear Camp Aerodrome
Near La Loche, SK

<original signed by>

Prepared by:
Lindsay Larre BASc
Environmental Scientist

<original signed by>

Reviewed by:
Mark Wittrup MSc PEng PGeo CMC
Vice President, Environmental and Regulatory Affairs

Distribution List

Recipient	Date	Revision No.	By	Sent Via	Document Type	Description	No. of Hard Copies
Big Bear Contracting Ltd.	16 April 2024	0	LL	E-mail	PDF	Draft Report	0
Impact Assessment Agency of Canada	25 June 2024	0	LL	Portal	PDF	Summary of Initial Project Description	0

List of Acronyms

AF	Activity Factor
AGN	Aircraft Group Number
AHPP	Aquatic Habitat Protection Permit
Clifton	Clifton Engineering Group Inc.
CF	Conversion Factor
CH_4	Methane
CO2	Carbon Dioxide
CO_{2e}	Carbon Dioxide Equivalent
CRDN	Clearwater River Dene Nation
DPD	Detailed Project Description
DTC	Duty to Consult
EA	Environmental Assessment
EASB	Saskatchewan Environmental Assessment and Stewardship Branch
EDI	EDI Environnemental Dynamics
EF	Emission Factor
EIA	Environmental Impact Assessment
GHG	Greenhouse Gas
GWP	Global Warming Potential
HABISask	Hunting, Angling, and Biodiversity in Saskatchewan
HCB	Heritage Conservation Branch
IAAC	Impact Assessment Agency of Canada
ISED	Innovation, Science and Economic Development Canada
IK	Indigenous Knowledge
IPD	Initial Project Description
IPCC	Intergovernmental Panel on Climate Change
LSA	Local Study Area
LSD	Legal Subdivision
MBS	Migratory Bird Sanctuary
MCEL	Misty Clifton Engineering Ltd.
PLS	Patterson Lake South
RSA	Regional Study Area
RCMP	Royal Canadian Mounted Police
SARRC	Saskatchewan Association for Resource Recovery Corporation
SKCDC	Saskatchewan Conservation Data Centre
SOCC	Species of Conservation Concern
USEPA	U.S. Environmental Protection Agency
WSA	Water Security Agency

Table of Contents

List of Tables

List of Figures

1.0 Introduction

This Summary Initial Project Description (IPD) is being submitted by Misty Clifton Engineering Ltd. (MCEL) on behalf of Big Bear Contracting Ltd. (Big Bear) for their proposed Big Bear Camp Aerodrome Project at their existing Big Bear Camp near Grygar Lake, SK (Site/Project). This document conforms with the requirements of an IPD under the Government of Canada's *Impact Assessment Act, 2019*.

Big Bear is solely Indigenous-owned by members of the Clearwater River Dene Nation (CRDN) and operates as an Indigenous-owned business on Crown Land. Big Bear provides a range of services for uranium exploration in the region, including accommodations at the Big Bear Camp, exploration services, and construction services. The camp is currently accessible via Highway 955.

The information included in this Summary IPD has been prepared in accordance with Annex I – Contents of an Initial Project Description of the Impact Assessment Agency of Canada (IAAC). Throughout the report under the headings there is orange italicized text which includes the guidance language from Annex I to which the section is directly applicable. This was included for the convenience of the reviewer and reader to correlate the content with the guidelines and demonstrate concordance with the Annex I.

2.0 General Information

2.1 Project's Name, Type/Sector, and Proposed Location

The project's name, type or sector, and proposed location.

General project information is provided in Table 2.1. The Project is located approximately 145 km (approximately 175 km drivable distance) north of the Northern Village of La Loche along Highway 955.

The location of the Project is depicted in Figure 2.1.

Table 2.1 – General Project Information	
Name	Big Bear Camp Aerodrome
Type/Sector	Aerodrome
Proposed Location of the Aerodrome	Approximate GPS Coordinates: N57.777813, W109.466969 Legal Land Descriptions: LSD 24-101-22 W3M

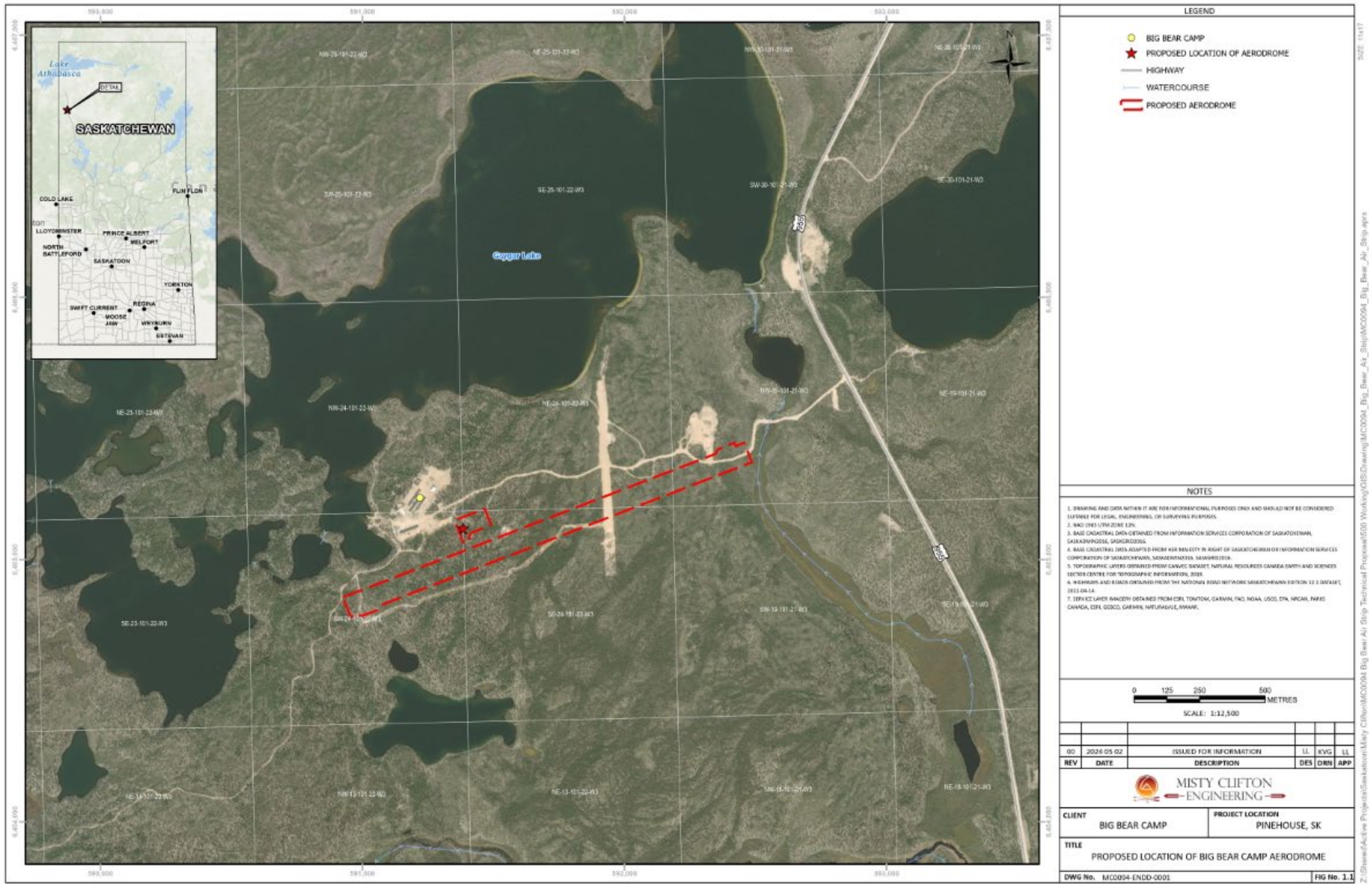

Figure 2.1 – Site Location with Big Bear Camp Located Immediately to the North of the Proposed Aerodrome

2.2 Proponent Contact Information

The proponent's name and contact information and the name and contact information of their primary representative for the purpose of the description of the project.

The proponent contact information for the purpose of this application is detailed in Table 2.2.

Table 2.2 – Proponent Information	
Name of Project	Big Bear Camp Aerodrome
Name of Proponent	Big Bear Contracting Ltd.
Proponent's Contact Information	PO Box 5108 Clearwater River, SK S0M 3H0
Primary Representative	Dean Balaneski Big Bear Camp General Manager
Primary Representative's Contact Information	bigbeargm@hotmail.com <Email address removed> <Personal information removed>

2.3 Engagement with Jurisdictions or Agencies

A summary of any engagement undertaken with any jurisdiction or other party, including a summary of the key issues raised and the results of engagement, and brief description of any plan for future engagement.

This application to the IAAC will be submitted in conjunction with a technical proposal to the Saskatchewan Environmental Assessment and Stewardship Branch (EASB). MCEL contacted the EASB on July 3, 2024, to advise of the upcoming submission.

Table 2.3 below presents a summary of agencies or parties that will be engaged or contacted throughout the planning and permitting phase of the Project, along with forecasted engagement activities for each of the agencies.

2.3.1 Federal Stakeholder Engagement

2.3.1.1 Impact Assessment Agency of Canada

Correspondence with IAAC took place in late 2023. MCEL contacted IAAC to discuss the project and notify them that a project summary would be submitted in the coming months.

2.3.1.2 Transport Canada

Aviation and aerodromes are regulated by the federal government through Transport Canada's Canadian Aviation Regulations SOR96/433. Prior to construction, Big Bear must notify Transport Canada of its proposal to construct and operate an aerodrome. This notification must contain information such as company and contact information, location, size and orientation of the proposed aerodrome, and a list of the organizations, authorities, companies and landowners to be consulted, including any aerodromes within 30 nautical miles. A minimum of 45 days is to be allocated for comments or objections and the proposed mitigations of the concerns.

At the end of the comment period for the proposal to Transport Canada, the proponent is required to prepare a summary report listing comments or concerns received from each organization, the proposed mitigations and identifying any objections not addressed with the rationale for not doing so. This report is provided to Transport Canada and other interested parties and is available for up to 5 years.

Transport Canada has 30 days to assess the report. Barring any additional requirements from Transport Canada, construction of the aerodrome can start after the 30 days. Transport Canada will also notify Nav Canada Data Management of their acceptance of this report.

2.3.1.3 Innovation, Science and Economic Development Canada

Innovation, Science and Economic Development (ISED) does not directly regulate aerodromes; however, they provide guidance for the technical requirements for mobile stations in the aeronautical service in Canada. The ISED also operates a service centre for issuing aerodrome radio operator certification throughout Canada.

2.3.1.4 Nav Canada

Although not a federal regulator, Big Bear will be required to notify Nav Canada who is the sole service provider for air navigation in Canada. A General Submission Form will be required for Nav Canada to conduct an initial assessment and provide a formal response with actions that are required to proceed in the building and approval of the Project.

2.3.2 Provincial Stakeholder Engagement

In Saskatchewan, the environmental assessment (EA) and the licensing process are separate and sequential, as the EA process must be completed prior to the issuance of specific licenses and permits. The first step in the EA process is to submit a Technical Proposal (formerly the project proposal) to the Saskatchewan EASB for Environmental Assessment Screening to determine whether the project requires a

full environmental impact assessment (EIA – meets the definition of a Development) or it can proceed to licensing.

2.3.2.1 Saskatchewan Environmental Assessment and Stewardship Branch

MCEL has prepared a technical proposal document for submission to the EASB for review. MCEL has contacted the EASB on July 3, 2024, to advise of the submission of the technical proposal.

2.3.2.2 Saskatchewan Ministry of Parks, Culture and Sport – Heritage Conservation Branch

Heritage resources are the property of the Provincial Crown and are protected under *The Heritage Property Act*. A Heritage Sensitivity Screening Report was completed and required the Project area to be submitted to the Heritage Conservation Branch (HCB) for further review. Further details on the HCB submission are included in Section 6.3.

2.3.2.3 Other Provincial Stakeholders

The other provincial stakeholders involved with the Project (listed in Table 2.3) will be engaged during the design/construction phase of the Project.

2.3.3 Municipal Stakeholder Engagement

The Project is owned by members of the CRDN and therefore no municipal stakeholder engagement is required.

2.3.4 Landowner

The Project is owned by members of the CRDN. CRDN is in full support of the project moving forward and plans to work with Big Bear to ensure the Project is protective of CRDN's traditional knowledge and land use of the area.

2.3.5 Resident Stakeholder Engagement

There are no surrounding resident stakeholders who require engagement given the land and surrounding land is Indigenous owned by CRDN. No residences are located within 50+ km of the Project.

2.3.6 Industry Stakeholder Engagement

No industry stakeholder has been completed for the project. Through operations at Big Bear Camp, the Proponent has had discussions with mining companies and outfitters in the area that may utilize the aerodrome.

2.3.7 Summary of Engagement with Jurisdictions or Agencies

Engagement activities related to public, industry, government and regulatory stakeholders, and their status, is summarized in Table 2.3 below. The table also includes agencies identified for future engagement during design and construction stages.

Table 2.3 – Public and Regulatory Stakeholders

Stakeholder Organization	Engagement Summary
IAAC	• MCEL contacted IAAC in late 2023 to notify them of the Project. • IAAC made recommendations on draft initial project description in April 2024. • Engagement with IAAC will be ongoing.
Transport Canada ISED Nav Canada	• Plan to engage prior to construction, following the submissions and reviews from IAAC and SKENV.
Saskatchewan Environmental Assessment and Stewardship Branch	• Big Bear has discussed intent of the Project with EASB; MCEL advised the EASB of the upcoming technical proposal submission (July 2024). • TPD will be submitted to the EASB in Q2/Q3 of 2024. • Engagement with EASB will be continuous throughout the duration of the Project.
Saskatchewan Ministry of Environment – Environmental Protection Branch Saskatchewan Ministry of Labour Relations and Workplace Safety (occupational health and safety) Saskatchewan Ministry of Agriculture (Forest Product permit for land clearing) Saskatchewan Ministry of Highways (highway access) Saskatchewan Ministry of Health (camp, hygiene, water and sewage treatment) Saskatchewan Public Safety Agency	• Engagement with these agencies will start at the design/construction phase of the Project.
Saskatchewan Ministry of Environment Resource Management Division – Lands Branch (surface leases)	• Big Bear has discussed the Project with the Lands Branch; the intent moving forward is that once the TPD has been reviewed that an extension to the Big Bear Camp industrial lease permit will be extended to include the aerodrome Project.

Table 2.3 – Public and Regulatory Stakeholders

Stakeholder Organization	Engagement Summary
Saskatchewan Ministry of Parks, Culture and Sport Heritage Conservation Branch	• The Project area was submitted to HCB for review. A heritage resource impact assessment will be completed prior to construction activities (see details in Section 6.3). • Big Bear will work with HCB throughout the construction phase of the Project.
Municipal stakeholders	• Not applicable; no municipal groups have been identified that require engagement.
Landowner or Residential Stakeholders	• The Project is located on the traditional territory of CRDN; CRDN is in full support of the Project and continual engagement with CRDN will take place throughout the duration of the Project. • No other residential landowners within proximity of the Project have been identified that require engagement.
Industry Stakeholder Engagement	• Big Bear plans to advise the mining companies in the area on the intent of the Project.

2.4 Indigenous Engagement

A list of Indigenous groups that may be affected by the carrying out of the project, a summary of any engagement undertaken with the Indigenous peoples of Canada, including a summary of key issues raised and the results of the engagement, and a brief description of any plan for future engagement.

The proponent for this project is Indigenous and the Project is located on their traditional territory. Big Bear has informed the Indigenous groups in Table 2.4 about their intentions to develop the Big Bear Camp Aerodrome Project. Comments received from each group will be summarized in the regulatory submissions and will help to inform the regulators.

Big Bear commits to future engagement with the Indigenous groups as the Project progresses. Forecasted engagement is also summarized in Table 2.4.

Table 2.4 – Name of Indigenous Community or Group

Indigenous Community	Engagement Summary
Clearwater River Dene Nation	• Letter sent to Chief Teddy Clarke on 31 January 2024. A letter of support for the Project was received from CRDN on 10 April 2024. • No concerns have been made from CRDN. • Big Bear will continually work with CRDN throughout the Project. • Follow-up phone call with Cameron Willier (CRDN Engagement Lead) on 16 May 2024 indicates they strongly support the project.
Birch Narrows Dene Nation	• Letter sent via email to Chief Jonathon Sylvestre on 18 March 2024. No response received. • Attempted follow-up phone call to Chief Jonathon Sylvestre on 16 May 2024 to inquire about comments/concerns. No answer and left a voicemail. Awaiting response. • Will provide an update to the group once the review process from IAAC and EASB has been complete.
Buffalo River Dene Nation	• Letter sent via email to Chief Norma Catarat on 18 March 2024. No response received. • Attempted a follow-up phone call on 16 May 2024 to inquire about comments/concerns. Unable to reach Chief or band office. Awaiting response. • Will provide an update to the group once the review process from IAAC and EASB has been complete.
Ya' Thi Néné Lands and Resources (organization representing seven First Nations in the Athabasca basin)	• Letter sent via email to Mr. Garret Schmidt on 18 March 2024. No response received. • Attempted follow-up phone call to Dana Kellet (Manager of Environment) on 16 May 2024 to inquire about comments/concerns. No answer and left a voicemail Awaiting response. • Will provide an update to the group once the review process from IAAC and EASB has been complete.

Table 2.4 – Name of Indigenous Community or Group

Indigenous Community	Engagement Summary
Athabasca Chipewyan First Nation	• Letter sent via email to Chief Allan Adam on 18 March 2024. No response received. • Attempted follow-up phone call on 16 May 2024 to inquire about comments/concerns. Chief Allan Adam indicated he would call back at a more convenient time. Awaiting response. • Will provide an update to the group once the review process from IAAC and EASB has been complete.
Clearwater Clear Lake Metis Region, Metis Nation - Saskatchewan (MN-S)	• Letter sent via email to Mr. Leonard Montgrand on 29 January 2024. • Response received via phone call on 31 January 2024. • No issues or concerns from the group. • Follow-up phone call with Leonard Montgrand on 16 May 2024 to inquire about comments/concerns. Response was no comment at this time. • Will provide an update to the group once the review process from IAAC and EASB has been complete.

2.5 Studies and Plans

Any study or plan relevant to the project that is being or has been conducted of the region where the project is to be carried out, including any Regional Assessment carried out under the Impact Assessment Act, or by any jurisdiction including by or on behalf of an Indigenous governing body, where the study or plan is available to the public.

An aerodrome pre-feasibility study was completed for the Project by Tetra Tech in July 2022 (*Big Bear Camp Aerodrome Feasibility Design,* Tetra Tech, 2022). The study included design basis development and feasibility level design. The proposed aerodrome will have a single runway approximately measuring 5,000 feet (1,524 m) in length and 110 feet (36 m) in width. A graveled firebreak is located in close proximity to the Big Bear Camp, and the proposed new runway will run east-west perpendicular to the firebreak.

The feasibility study was desktop based and involved the design analyses of the proposed runway including recommending an orientation perpendicular to the runway-like firebreak. The design basis

focused on a feasibility-level analysis of the Site for an Aircraft Group Number (AGN) IIIA aircraft capable, gravel surfaced aerodrome including airfield lighting. AGN IIIA aircraft include those currently servicing northern Saskatchewan such as 44 passenger ATR-42.

Recommendations from the pre-feasibility study included engineering studies required for construction, such as completion of a Lidar survey, a geotechnical study for specifications and design of the runway, taxiway and apron structures, and a hydrology study for drainage requirements. These studies should be completed prior to final design of the Project.

CRDN has completed traditional land use studies of the surrounding areas for the NexGen and Fission mine sites, which are located approximately 20 km south of the proposed aerodrome. These studies were not available for review by MCEL; however, they have been incorporated into the EAs for the mine sites which are publicly available online. Big Bear will work closely with CRDN throughout the Project to ensure traditional land uses are protected during the design and construction phases.

2.6 Strategic Assessments

Any strategic assessment, relevant to the project, that is being or has been carried out under Section 95 of the Act.

The Strategic Assessment of Climate Change, published in 2020, would be relevant to the project; it is a strategic assessment conducted under subsection 95(2) of the *Impact Assessment Act*, and it applies to all designated projects under the *Impact Assessment Act*. The Strategic Assessment of Climate Change was considered during the Project's greenhouse gas (GHG) emissions estimate (refer to Section 6.6).

3.0 Project Information

3.1 Project Purpose and Need

A statement of purpose of and need for the project, including any potential benefits.

The purpose of the Project is to improve accessibility to the northwestern area of the Province and to provide economic growth and employment opportunities for the local communities, including Indigenous groups such as CRDN. With accessibility comes amenities such as emergency medical services, which will enhance safety to the northern communities.

The airstrip is designed to support local communities and business development, including tourism, logistics support, and support to mining and exploration companies in the northwest. The graveled surfaced aerodrome will service AGN IIIA aircraft (or similar). These are aircraft that have a landing approach speed

of 169 km/h (91 kt) or less. The main types of aircraft that would use such a strip are ATR 42 (twin engine and up to 44 passengers), SAAB 340 A/B (twin engine and up to 34 passengers), Beechcraft 1900D (twin engine and up to 19 passengers, DeHavilland Twin Otter (twin engine and up to 19 passengers), and smaller aircraft (Rise Air website, April 2024).

The Project will serve the transportation needs of the northwestern portion of the province and looks to fill a niche similar to that filled by the Points North Landing operation on the east side of the Athabasca Basin (IATA airport code YNL). In this role, the Project can provide the following services:

- Support regional tourism.
- Service the expanding needs of the mining industry both for exploration projects and the proposed mining projects in the area (e.g. NexGen Rook I project and Fission PLS project), including facilitating and increasing capacity with crew changes and movement of supplies, and adding a helicopter base.
- Access to Big Bear Camp services for food and lodging.
- Scheduled air services.
- Emergency services support (e.g., medivacs) for the northern regions.
- Provide a potential base for the Saskatchewan Public Safety Agency, wildfire services, including accommodation of crews and aircraft support.
- Serve as a delivery/courier service for northern communities.

The Project is anticipated to create positive socio-economic outcomes for local community members through increased employment and training opportunities and community capacity building.

The airstrip will have the potential to support other business activities in northern Saskatchewan including providing an airstrip for emergency operations such as evacuations and wildfire support, especially as accommodations are available on site.

While initially most flights would be charters, there is the potential to base aircraft at the airstrip and have commercial flights, if the demand warrants. Through support of mining and exploration projects, it will provide a conduit for job holders from small northern communities, similar to what was done on the east side of the province.

3.2 Project Applicable Physical Activities Regulation

The provisions in the schedule to the Physical Activities Regulations describing the project, in whole or in part. Proponents must detail how the project meets the description, threshold, and the criteria in any of the other provisions.

The project is subject to Section 46 (a) of the Physical Activities Regulation which states the following:

- (a) a new aerodrome with a runway length of 1,000 m or more.

The proposed aerodrome is to be approximately 1,524 m in length.

There are no other criteria presented in the Physical Activities Regulation which would be applicable to the project. There do not appear to be any other federal authorities that would have direct jurisdiction over the aerodrome project. Transport Canada regulates aviation projects in Canada.

Big Bear is aware of the need to comply with the *Migratory Birds Convention Act* and the *Species at Risk Act* in developing the Project.

3.3 Project Activities, Infrastructure, and Physical Works

A list of all activities, infrastructure, permanent or temporary structures and physical works to be included in and associated with the construction, operation, decommissioning of the project.

3.3.1 Proposed New Infrastructure and Project Activities

The proposed aerodrome will be a non-certified, single runway with a compacted gravel top approximately 5,000 feet (1,524 m) in length and up to197 feet (60 m) in width for the runway strip allowance. Other features will include a taxiway that will connect the runway to a parking apron. The parking apron will be designed to accommodate a variety of aircraft and will include tie-down areas for aircraft that are not in use. A small terminal building will also be constructed that will provide basic amenities for passengers, such as restrooms, seating areas, and vending machines. The terminal will also include a small baggage handling area for passengers arriving and departing on flights. The proposed site layout and facility information is shown in Figure 3.1.

Figure 3.1 – Proposed Site Layout (Tetra Tech, 2022)

The civil works included with the construction of the Project include:

- Mobilization to the Project.
- Construction surveying.
- Tree clearing.
- Stripping.
- Earthworks – cut to fill with grading and compaction.
- Earthworks – cut to haul off-site.
- Install granular subbase. Subbase is expected to be sourced from a gravel pit located nearby which on Big Bear territory.
- Produce and install granular base for runway, taxiway, apron and safety areas.
- Construction of concrete apron hardstand.
- Installation of lined sump for glycol collection on apron.
- Installation of airfield lighting and electrical works.

Operational activities will include site maintenance, storage of hazardous materials including the refueling of storage tanks, grading of the runway, and management and staffing of the aerodrome itself. Locations of storage tanks and infrastructure have not yet been determined and will be completed at the design phase of the Project. Care will be taken to position all infrastructure for the Project as far as possible from sensitive receptors (such as Grygar Lake). Design and construction of the aerodrome will be completed by qualified professionals.

The purpose of decommissioning would be to ensure that any surficial disturbance related to the Project is able to return to as close to pre-disturbance conditions as possible. While the aerodrome is expected to have a long life, once the Project has reached its lifespan, all infrastructure associated with the aerodrome will be removed from the Site. Replacement of any stockpiled subsoil and topsoil will be completed where possible. Natural encroachment of native vegetation will be encouraged at reclaimed areas and where necessary, an approved seed mixture will be applied.

3.3.2 Existing Infrastructure

Big Bear Camp is located at the Site and has been in operation since 2005. The company offers a variety of services including maintenance, construction, trucking, seismic line cutting services, aggregate crushing, general field labour, delivery and aviation services, fuel services, and camp services for contractors.

The camp consists of various buildings including four dorm buildings, a kitchen, maintenance sheds, office trailers and a bulk fuel storage area.

There is currently a graveled firebreak near the proposed Project, and all-weather gravel Highway 955 is located approximately 1.6 km east of the Site.

3.4 Production Capacity

An estimate of maximum production capacity of the project and a description of the production processes to be used.

The final product for the Project will be an aerodrome with a single runway with a compacted gravel top approximately 5,000 feet (1,524 m) in length and up to 197 feet (60 m) in width. The frequency of flights will be highly dependent on the mining support required in the area.

3.5 Anticipated Schedule

The anticipated schedule for the project's construction, operation, decommissioning, and abandonment, including any expansions of the project.

The anticipated schedule is outlined in Table 3.1 below; however, it is dependent on receipt of the necessary environmental approvals and will be extended if a federal IA is required.

Table 3.1 – Anticipated Schedule – No Impact Assessment Required

Task	Schedule
• Preparation of technical proposal, engagement activities and regulatory licensing requirements	Ongoing with submissions in Q2 2024
• Feasibility engineering	Q4 2024
• Design engineering; procurement of equipment, materials, and labor	2025
• Construction phase, including; site preparation, construction of airstrip and supporting infrastructure, site access construction, electrical infrastructure, water and sewer facilities, waste management requirements, etc.	2025
• Operation phase	Q2 or Q3 2026
• Decommissioning phase	At this time there are no plans to decommission the project and it is expected to operate as long as it is technically and economically feasible.

Should a federal IA be required, the following schedule (Table 3.2) would apply:

Table 3.2 – Anticipated Schedule – Impact Assessment Required

Task	Schedule
• Preparation of technical proposal, engagement activities and regulatory licensing requirements and ongoing with submissions of detailed project description (DPD)*	Q2 2024
• Impact Assessment Process	2025 – 2028
• Design engineering; procurement of equipment, materials, and labor	2028 – 2029
• Construction phase, including; site preparation, construction of airstrip and supporting infrastructure, site access construction, electrical infrastructure, water and sewer facilities, waste management requirements, etc.	2029
• Operation phase	2030 onward
• Decommissioning phase	At this time there are no plans to decommission the project and it is expected to operate as long as it is technically and economically feasible.

**If an impact assessment decision is received, studies and further engineering will be completed.*

3.6 Potential Alternatives

A list of potential:

- *Alternative means that the proponent is considering and that are technically and economically feasible, including through the use of best available technologies; and*
- *Alternatives to the project that the proponent is considering and that are technically and economically feasible, and directly related to the project.*

There have been no alternative locations considered for this aerodrome. The location has been chosen based on the pre-feasibility and proximity to the Big Bear Camp site.

Currently the Site is serviced by float and ski planes which severely limits year-round air access and winter operations are becoming more problematic with global warming. While access is available from Highway 955, transportation safety on this highway is a concern especially for travelers and tourists not familiar with the road. Big Bear and CRDN do not see another alternative for the Project and are not considering any other alternatives at this time.

A smaller aerodrome was considered during the feasibility study, but a smaller airstrip would not provide enough variability in aircraft types to make the aerodrome economical.

The proponent will examine the possibility of using renewable energy once the Project is at the design phase to reduce the projects emission footprint.

4.0 Location Information and Context

4.1 Geographic Coordinates

Proposed geographic coordinates, including, for linear development projects, the proposed locations of major ancillary facilities that are integral to the project and a description of the spatial boundaries of the proposed study corridor. Coordinates should be appropriate for the project type.

The Project is located in northern Saskatchewan, approximately 145 km north of La Loche and 200 km south, south-east of the airstrip at Uranium City (direct distances). The Project is accessible via Highway 155 to La Loche, and then north from La Loche on Highway 955 (old Cluff Lake Mine Road).

The UTM coordinates for the Project are N57.777813, W109.466969. Grygar Lake is present immediately north of the Project. Both the developing NexGen and Fission properties are located approximately 20 km south of the Project in the Patterson Lake area (Figure 4.1).

4.1.1 Site Maps

Site maps produced at an appropriate scale in order to determine the project's proposed general location and the spatial relationship of the project components.

Figure 3.1 shows the general Project location with surrounding features such as waterbodies and the nearby mine sites. Figure 2.1 and Figure 3.1 also present site maps with additional features.

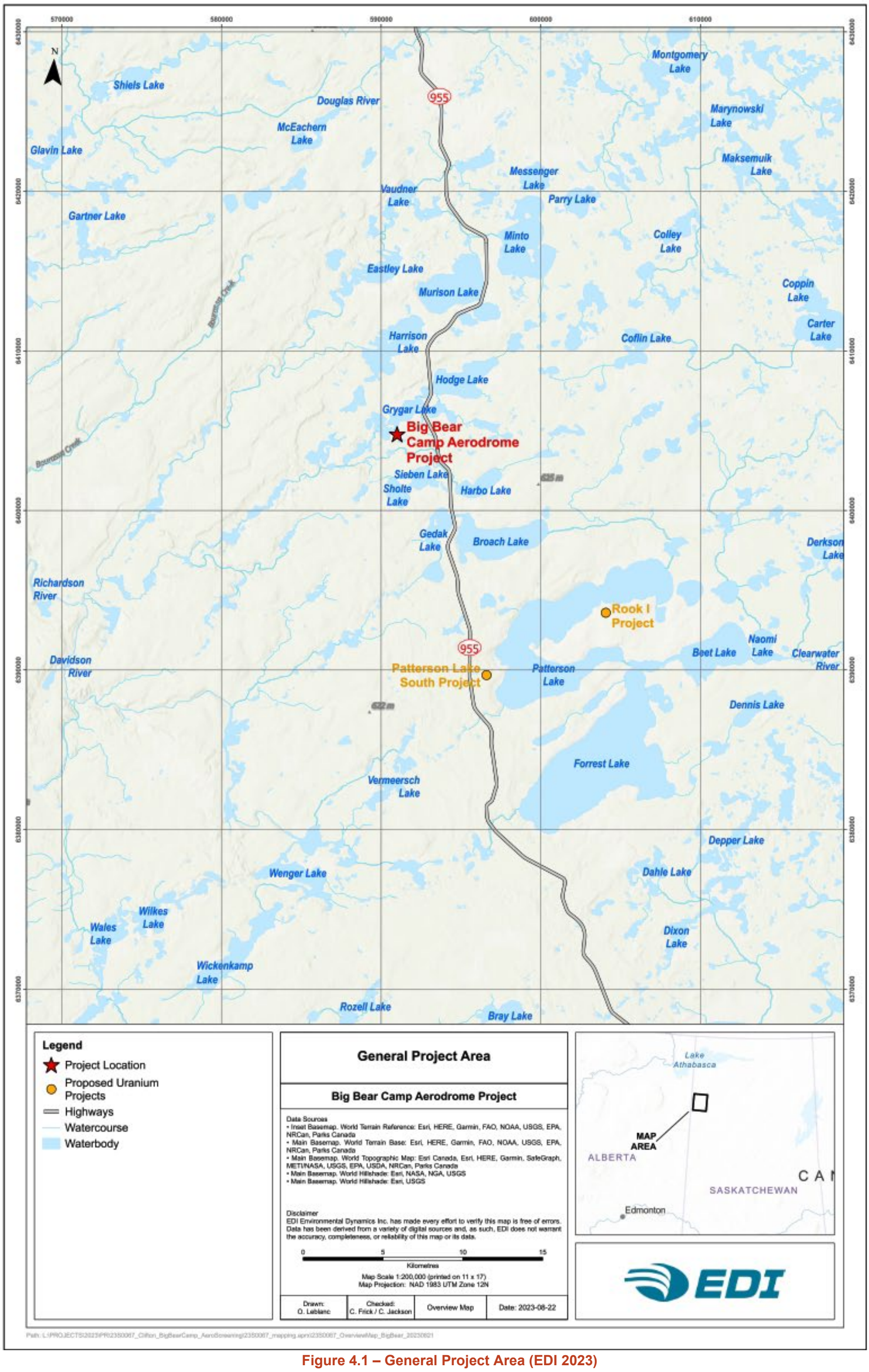

Figure 4.1 – General Project Area (EDI 2023)

4.1.2 Legal Land Descriptions and Landowner Documents

The legal description of land to be used for the project, including, if the land has already been acquired, the title, deed or document and any authorization relating to a water lot. The level of detail should be appropriate for the project type.

The Site is located on LSD 24-101-22 W3M.

The land is an industrial lease issued by the province of Saskatchewan to Big Bear (Lease Numbers 14ML224; CA021; 0064252-00-00 issued on 16 June 2015), which covers the existing Big Bear camp and outfitting cabins. Once the provincial EA process is complete, Big Bear will apply for an amendment to their lease to include the aerodrome location.

4.1.3 Proximity to Residents and Communities

The project's proximity to any permanent, seasonal, or temporary residences and to the nearest affected communities.

The small settlement of Descharme Lake is the nearest community to the Project. Descharme Lake, located approximately 87 km south of the Project, has a total of 26 residents according to the 2021 Census (Statistics Canada, 2023).

La Loche and CRDN are the closest large communities to the Project, located approximately 145 km south (direct distance), with populations of 2,514 and 831 people, respectively.

In Section 5.1 below there is a figure which illustrates the proximity of the Project to nearby communities.

4.1.4 Project Proximity to Traditional Indigenous Uses

The project's proximity to land used for traditional purposes by Indigenous peoples of Canada, land in a reserve as defined in Subsection 2(1) of the Indian Act, First Nation land as defined in Subsection 2(1) of the First Nations Land Management Act, land that is subject to a comprehensive land claim agreement or a self-government agreement and any other land set aside for the use and benefit of Indigenous peoples of Canada.

The Project is located on land within Treaty 8 Territory that is owned by Clearwater River Dene Nation. The Clearwater River Dene Traditional Territory boundaries are shown below in Figure 4.2.

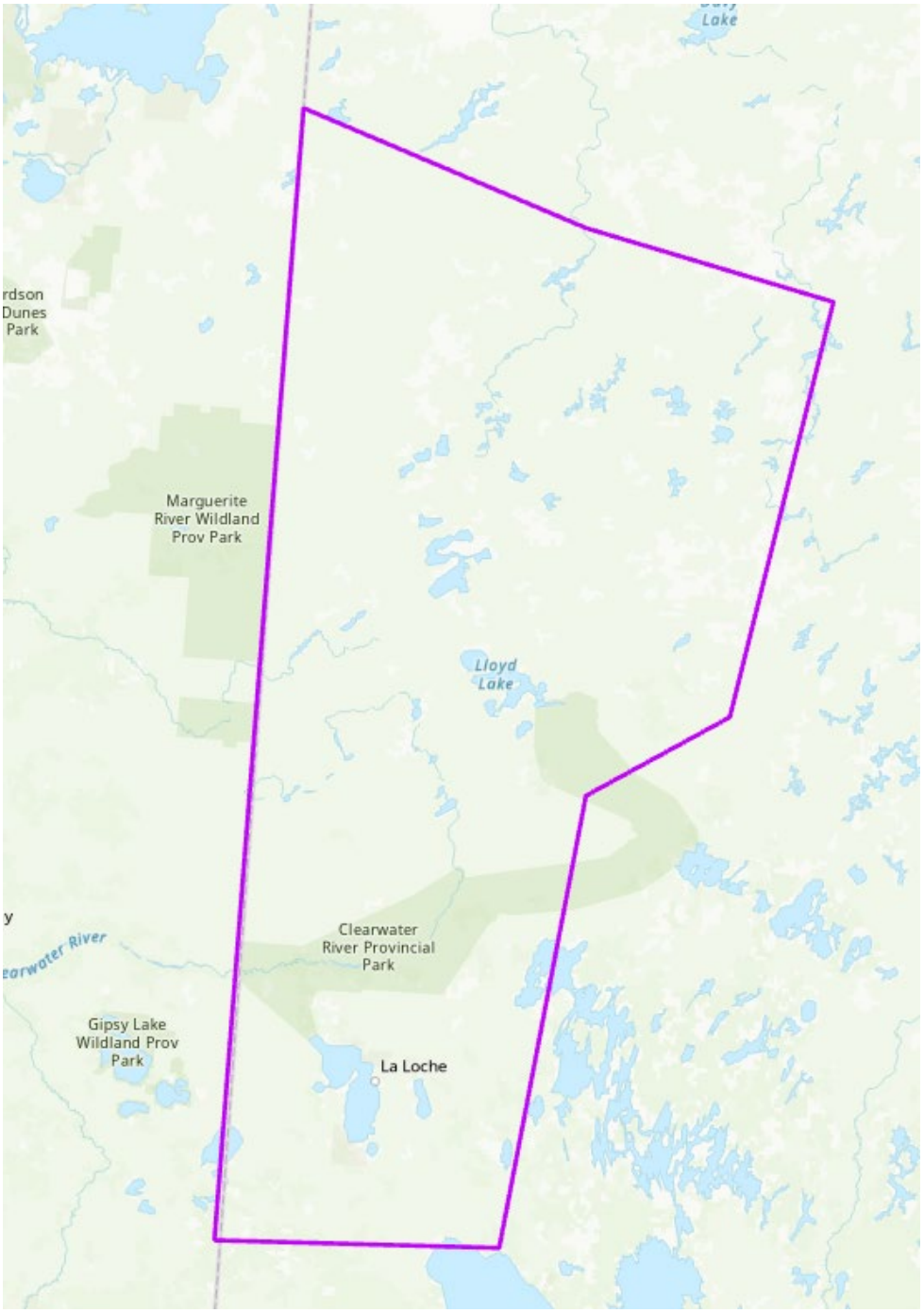

Figure 4.2 – Clearwater River Dene Traditional Territory Boundary (source, CRDN)

Other traditional territories in the area include Buffalo River Dene Nation, Birch Narrows Dene Nation, Black Lake Denesuline First Nation, Fond du Lac Denesuline First Nation, and Athabasca Chipewyan First Nation. Figure 4.3 and Table 4.1 provide information on the traditional Nations surrounding the Project. The closest federal land to the Project is Athabasca Chipewyan First Nation (201A), which is approximately 105 km (direct distance as there is no driveable route from the Project).

Indigenous Knowledge (IK) has the potential to provide valuable information. Big Bear will work with members of Clearwater River Dene Nation who will participate in all phases of the Project to offer historical perspective that cannot be gathered through conventional scientific baseline surveys.

The Project and regional study area are located in within the claim settlement area of CRDN and the homeland of the Métis Nation within the boundaries of the 2019 North West Métis Land Claim area. The Local Study Area (LSA) is defined as a 1 km buffer around the Project component's footprint and the Regional Study Area (RSA) is defined as a 15 km buffer around the Project component's footprint.

Table 4.1 – Indigenous Nations Surrounding the Project

Nation	Status	Population In 2021 Census	Distance From the Project Area (km)[1]
Clearwater River Dene	Indian Reserve	831	135
Birch Narrows Dene Nation	Indian Reserve	476	152
Buffalo River Dene Nation	Indian Reserve	842	200
Black Lake Denesuline First Nation	Indian Reserve	2,096	264
Fond du Lac Denesuline First Nation	Indian Reserve	926	172
Athabasca Chipewyan First Nation (Jackfish, AB)	Indian Reserve	1,508	105
Total		2,149	

[1] Distance from the Project area is a shown as the approximate direct distance.

Source: Statistics Canada. 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E Available: September 2023.

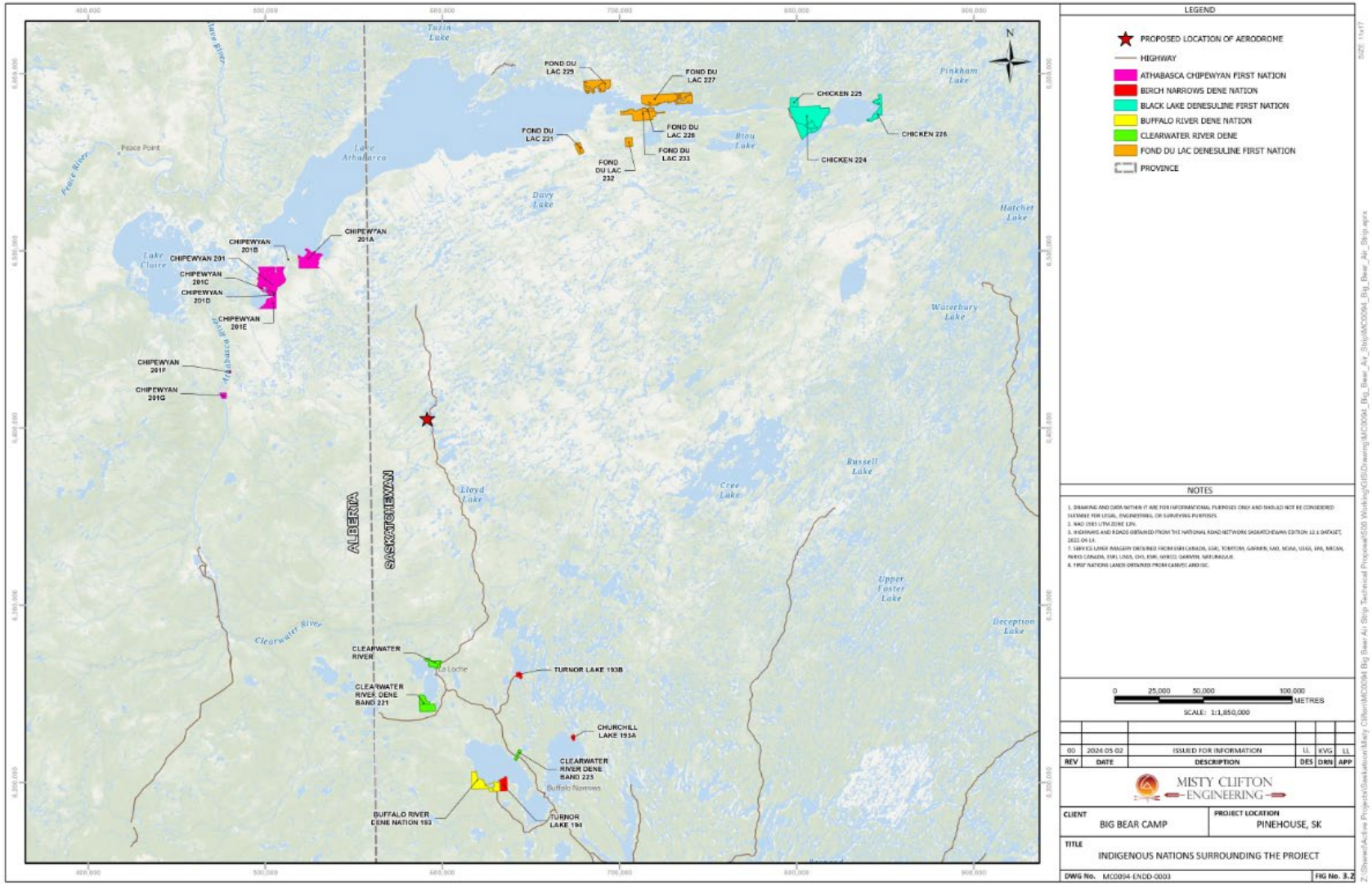

Figure 4.3 – Surrounding Indigenous Nations in Proximity to the Project

Table 4.2 below lists the communities, the 2021 Statistics Canada census population data, and the distance from the Project for communities that are located along and directly adjacent to Highway 955 and Highway 155, beginning at Beauval.

Table 4.2 – Communities Surrounding the Project

Community Name	Status	Population In 2021 Census	Distance From the Project Area (km)[1]
Descharme Lake	Northern Settlement	26	80
La Loche	Northern Village	2,514	145
Turnor Lake	Northern Hamlet	154	155
Black Point	Northern Settlement	39	160
Bear Creek	Northern Settlement	45	170
Garson Lake	Northern Settlement	10	165
Michel Village	Northern Hamlet	37	205
Dillon	Unorganized	1,871	210
St. Georges Hill	Northern Hamlet	77	220
Buffalo Narrows	Northern Village	1,014	225
Ile-a-la-Crosse	Northern Village	1,425	280
Beauval	Northern Village	840	320
Total		8,052	

[1] Distance from the Project area is shown as the approximate direct distance.

Source: Statistics Canada. 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E Available: September 2023.

4.1.5 Proximity to Federal Lands

The project's proximity to any federal lands.

The Project itself is located on provincially leased land (see Section 4.1.2). The Project will operate as an Indigenous-owned business on the leased land.

The closest federal land to the Project is Athabasca Chipewyan First Nation (201A), which is approximately 105 km (direct distance as there is no driveable route from the Project).

There are no Migratory Bird Sanctuaries (MBS), national wildlife areas or national parks near the Site. The closest sanctuary is the Richardson Lake MBS approximately 110 km northwest in Alberta, and the closest MBS in Saskatchewan is the Murray Lake (over 500 km south). The closest National Park is the Prince Albert National Park, over 450 km southeast.

4.2 Physical and Biological Environment

A brief description of the physical and biological environment of the project's location, based on information that is available to the public.

MCEL retained EDI Environmental Dynamics (EDI) to complete a desktop biophysical assessment. The data presented for the physical and biological environment (Section 4.2) is copied from EDI's *Description of the Environment for Big Bear Aerodrome Technical Proposal, 2024.*

The following sections provide an overview of the existing environment for the LSA and regional study areas RSA surrounding the Project. All information included in this section was obtained from existing, publicly available literature and online data sources as field studies have not been completed. Pre-construction surveys will be conducted as part of the permitting phase of the Project.

This section provides information on the terrestrial environment of the LSA and RSA, including land cover types, vegetation and wildlife communities, as well as species of conservation concern (SOCC). Sources of information herein include publicly available reports for the PLS and Rook I projects in the RSA:

- Fission Project Description – PLS Project (Clifton Engineering Group Inc. (Clifton) and CanNorth 2021).
- Vegetation Baseline Report 2 (Inventory, Rare Plants, and Wetlands) for the Rook I Project – Final Report; Annex VII.2 (CanNorth 2021b).
- Wildlife Baseline Report 1 (Mammals, Waterfowl and Raptors) for the Rook I Project; Annex VIII.1. (Omnia 2021a).
- Wildlife Baseline Report 2 (Amphibians, Birds and Bats) for the Rook I Project; Annex VIII.2 (CanNorth 2021c).

4.2.1 Terrain and Soil Summary

The soils that predominate in the Project area are sandy soils typical of the Athabasca Basin area. The soil is predominantly silica sand with a thin A-horizon layer of a few centimetres with some organic content. The soils are not very productive.

4.2.1.1 Land Cover

The Project is within the Boreal Shield Ecozone, specifically the McTaggart Plain at the southwest boundary of the Athabasca Plain Ecoregion (Acton et al. 1998). The Boreal Shield landcover has been influence by wildfire throughout, which is a determining factor in habitat successional stages throughout the ecozone (CanNorth 2021b).

In general, habitat in the McTaggart Plain is dominated by open jack pine (*Pinus banksiana*) woodlands on sandy glaciofluvial material (Acton et al. 1998). A mix of both black spruce (*Picea mariana*) and jack pine is typically found on the slopes of eskers. Boggy lowlands are often associated with closed stands of stunted black spruce forest. According to the Saskatchewan Conservation Data Centre (SKCDC) Hunting, Angling, and Biodiversity in Saskatchewan (HABISask) database (SKCDC 2023) Saskatchewan Digital Land Cover, the Project will predominantly be situated within the following land cover types:

- closed canopy jack pine (greater than 75% of jack pine by area; greater than 55% crown closure).
- open canopy jack pine (greater than 75% of jack pine by area; 10% to 55% crown closure).
- mixed woods: all softwood/hardwood mixtures; open and closed canopy (i.e., an area of hardwood and softwood combinations in which neither hardwood nor softwood accounts for greater than 75% of species by area, and where the crown closure is greater than 10%).
- revegetating/regeneration burn (an area showing evidence of natural or prescribed burning and where regeneration or revegetation is visible).
- treed rock (areas of exposed bedrock with generally less than 10% tree cover).
- disturbed (developed lands for industrial land use purposes comprised of exposed areas with little or no vegetation).

4.2.1.2 Potential Impacts and Mitigation

A summary of the potential impacts and mitigations to terrain and soil during construction of the Project are presented in Table 4.3.

Table 4.3 – Terrain and Soil – Potential Impacts and Mitigations

Potential Impacts	Mitigation
• Direct loss of soil via erosion	• Erosion control practices will be implemented throughout the duration of construction activities. An Erosion and Sediment Control Plan will be developed for the project.
• Removal of soil and grading of terrain in the project footprint. Reduction in soil quality/productivity, changes to terrain stability and alteration of local slope profiles	• Project footprint will be kept to the smallest extent possible to do the work safely and work area boundaries will be maintained for the duration of construction. It is estimated the total Project footprint to be approximately 23 hectares (TetraTech).
• Hazardous waste spills or leaks from equipment/ vehicles can affect soils and vegetation	• Emergency response plans will be included in the Environmental Protection Plan (EPP) per the provincial Environmental Code and spill response requirements to provide quick detection, control, and management of any spill during construction/operation and to ensure proper disposal of hazardous waste. • Development and implementation of a Hazardous Materials Management Plan. • Properly designed and licensed facilities for the storage of hazardous materials and fuel.

4.2.2 Vegetation

Various plant species are found in the vegetation communities within the Athabasca Plain Ecoregion and the associated McTaggart Plain (Acton et al. 1998).

Open jack pine woodlands on sandy glaciofluvial soil typically have an understory of low-lying shrubs such as blueberry (*Vaccinium angustifolium*) and cranberry (*Vaccinium oxycoccos*) and a ground cover of lichens. Closed jack pine stands, on lower slopes with more moisture, have tall shrubs, such as green alder (*Alnus viridis*) or willow (*Salix* species). Mixedwood stands of trembling aspen (*Populus tremuloides*) and white birch (*Betula papyrifera*) occur occasionally within the jack pine forests, typically on finer textured sands and sandy loam soils, found near the shores of lakes and streams (Acton et al. 1998).

A baseline vegetation survey was completed in 2018 for the Rook I project, located approximately 15 km southeast of the Project (CanNorth 2021b). Results of the survey identified overstory jack pine stands containing shrubs such as Labrador tea (*Rhododendron groenlandicum*), blueberry (*Vaccinium myrtilloides*), mountain cranberry (*Vaccinium vitis-idaea* ssp. *minus*), bearberry (*Arctostaphylos uva-ursi*), and green alder, with an understory of lichens, mosses, and needle littler.

Black spruce-jack pine communities are transitional between drier upland pine woodlands and lowland black spruce stands (Acton et al. 1998). Other common trees in this community include trembling aspen, white birch, and green alder. The understory includes shrubs mixed with intermittent groundcover of lichens and feather mosses (e.g., species in the order *Hypnales*).

Bogs in the Athabasca Plain Ecoregion form upslope from fens, are nutrient poor and receive water via precipitation (Acton et al. 1998). These conditions lead to the growth of acid-loving sphagnum mosses (i.e., *Sphagnum* species), herbs, shrubs and stunted black spruce.

A terrestrial baseline inventory was conducted for the PLS project in 2018/2019 (Clifton and CanNorth 2021), which included a 15 km x 15 km area around the proposed PLS project that extended north toward the Project LSA. Browse surveys identified seven shrub that are highly palatable to moose (*Alces alces*), but many plots had low forage potential as they did not contain any of these preferred browse species. Reindeer lichen (*Cladonia rangiferina*) was found in most plots, which would provide a high forage potential for caribou (*Rangifer tarandus caribou*).

As detailed in Omnia (2021b), fire plays a role in shaping the vegetation community in the RSA. In general, younger forest stands are found in areas that have been burnt in recent years. The most recent fire within the RSA occurred in 2009, less than 5 km east of the Project and south and east of Hodge Lake.

4.2.2.1 Potential Impacts and Mitigations

A summary of the potential impacts and mitigations to vegetation during construction of the Project are presented in Table 4.4.

Table 4.4 – Vegetation – Potential Impacts and Mitigations	
Potential Impacts	**Mitigation**
Removal of vegetation	• Project footprint will be kept to the smallest extent possible to do the work safely and work area boundaries will be maintained for the duration of construction. • Construction during sensitive wildlife windows will be avoided. Clearing activities will only be completed during specified timeframes. • Development of an EPP.
Introduction of prohibited, noxious, nuisance, and/or invasive plants	• Prevention of the introduction and spread of prohibited, noxious, nuisance, and invasive plants will be addressed in the environmental management plan. • Disturbed areas will be re-seeded with native vegetation as soon as possible.

4.2.3 Wildlife and Wildlife Habitat

4.2.3.1 Mammals

The Athabasca Plain Ecoregion represents the interface between the southern limit of the open boreal forest and the northern extent of the closed boreal forest. The harsh climate, sandy shallow soils, and high fire frequency in this ecoregion result in moderate species richness for mammals (Acton et al. 1998).

Typical mammal species found in this ecoregion include moose, black bear (*Ursus americanus*), woodland caribou (*Rangifer tarandus caribou)*, northern flying squirrel (*Glaucomys sabrinus*), beaver (*Castor canadensis*), grey wolf (*Canis lupus*), least weasel (*Mustela nivalis*), North American porcupine (*Erethizon dorsatum*), northern bog lemming (*Synaptomys borealis*), Canada lynx (*Lynx canadensis*), American marten (*Martes americana*), and wolverine (*Gulo gulo*).

Various mammal species were identified in the terrestrial baseline inventory conducted for the PLS project in 2018/2019 (Clifton and CanNorth 2021). Winter track surveys identified 12 mammal species or species groups, including: woodland caribou, moose, grey wolf, wolverine, Canada lynx, American marten, fisher (*Martes pennanti*), American mink (*Mustela vison*), snowshoe hare (*Lepus americanus*), red squirrel (*Tamisciurus hudsonicus*), weasel species (*Mustela species*) and voles or mice. Semi-aquatic mammals identified included beaver, river otter (*Lontra candesis*), muskrat (*Ondatra zibethicus*) and American mink.

Mammal species were identified during several surveys conducted for the Rook I project from 2018 to 2020. Winter track count surveys conducted in 2018 and 2020 identified 13 species or species groups: moose, coyote (*Canis latrans*), snowshoe hare, red squirrel, marten, fisher, ermine, red fox (*Vulpes*

vulpes), microtine rodent species, mink, Canada lynx, otter, and least weasel (Omnia 2021a). Moose, woodland caribou, and wolf were encountered in March and/or April 2019 during winter backtrailing surveys (Omnia 2021a). The presence of moose, black bear, woodland caribou, mink and otter was determined during surveys for pellets or scats in June 2018 and May 2019 (Omnia 2021a). In September 2018, sign of muskrat, beaver and mink were identified during a semi-aquatic furbearing mammals survey (Omnia 2021a). During a 2018 wildlife field program for the Rook I project, mammal species recorded incidentally included moose, black bear, northern grey wolf (*Canis lupus occidentalis*), beaver, American mink, muskrat, snowshoe hare, least chipmunk (*Tamias minimus*), red squirrel, and woodland caribou (CanNorth 2021c).

Bat surveys completed as part of the baseline surveys for the PLS project in 2018/2019 (Clifton and CanNorth 2021) identified three categories of bats based on recorded vocalizations: 1) high frequency group, including eastern red bats (*Lasiurus borealis*), little brown myotis (*Myotis lucifugus*) and northern myotis (*Myotis septentrionalis*); 2) myotis subset group including little brown myotis and northern myotis; and 3) low-frequency group, including big brown bat (*Eptesicus fuscus*), silver-haired bat (*Lasionycteris noctivagans*) and hoary bat (*Lasiurus cinereus*). These same three bat groupings were detected in surveys conducted for the Rook I project in 2018 (CanNorth 2021c). Results of both surveys indicated that the majority of the bat passes recorded belonged to the high frequency and myotis subset groups.

4.2.3.2 Birds

Resident and abundant bird species, common migrant species, and waterfowl found in the Athabasca Plain Ecoregion are listed in Table 4.5. Approximately 176 avian species occur within this ecoregion, which is identified as having low diversity compared to other regions within the Boreal Shield Ecozone (Acton et al. 1998).

The density in the Athabasca Plain Ecoregion is 140 birds per 100 hectares, dropping to 12 to 37 birds per 100 hectares in the dry upland jack pine forests. Avian abundance is concentrated in riparian areas. Low productivity of the waterbodies within the RSA results in a low diversity of waterfowl.

Table 4.5 – Resident and Abundant Bird Species, Common Migrant Species and Waterfowl of the Athabasca Plain Ecoregion

Resident and Abundant Bird Species	Common Migrant Species	Waterfowl
Black-backed Woodpecker (*Picoides arcticus*)	American Robin (*Turdus migratorius*)	American white pelican (*Pelecanus erythrorhynchos*)
Boreal chickadee (*Poecile hudsonicus*)	Barn swallow (*Hirundo rustica*)	Common merganser (*Mergus merganser*)
Common raven (*Corvus corax*)	Belted kingfisher (*Megaceryle alcyon*)	Common loon (*Gavia immer*)
Downy woodpecker (*Dryobates pubescens*)	Bohemian waxwing (*Bombycilla garrulus*)	Ring-necked duck (*Aythya collaris*)
Great gray owl (*Strix nebulosa*)	Common nighthawk (*Chordeiles minor*)	Lesser scaup (*Aythya affinis*)
Gray jay (*Perisoreus canadensis*)	Dark-eyed junco (*Junco hyemalis*)	Bufflehead (*Bucephala albeola*)
Hairy woodpecker (*Leuconotopicus villosus*)	Hermit thrush (*Catharus guttatus*)	
Red-breasted nuthatch (*Sitta canadensis*)	Olive-sided flycatcher (*Contopus cooperi*)	
Sharp-tailed grouse (*Tympanuchus phasianellus*)	Palm warbler (*Setophaga palmarum*)	
Spruce grouse (*Canachites canadensis*)	Red-tailed hawk (*Buteo jamaicensis*)	
Three-toed woodpecker (*Picoides dorsalis*)	Swainson's thrush (*Catharus ustulatus*)	
White-winged crossbill (*Loxia leucoptera*)	Yellow warbler (*Setophaga petechia*)	

4.2.3.3 Potential Impacts and Mitigations

A summary of the potential impacts and mitigations to wildlife during construction of the Project are presented in Table 4.6.

Table 4.6 – Wildlife – Potential Impacts and Mitigations	
Potential Impacts	**Mitigations**
Loss of Habitat	• Project footprint will be kept to the smallest extent possible to do the work safely and work area boundaries will be maintained for the duration of construction. • Limit the removal of habitat to the areas necessary. • Concentrate construction activities, such as vehicle parking, to areas that have already been disturbed.
Disturbance	• Complete clearing activities outside of the migratory bird nesting period (generally beginning of April to end of August). • Potential impacts to the environment will be assessed in a screening assessment and/or pre-construction survey, and mitigation measures will be developed where necessary along with follow-up monitoring programs. • Minimize dust and noise emissions as much as practicable to avoid stress on wildlife. • Complete daily inspections during construction activities, as detailed in the EPP.
Human Interference	• Include wildlife incidents, such as accidental vehicle collisions, in site-specific protocols as well as the steps to report an incident. • Avoid interactions with wildlife including hunting, chasing, or feeding.

4.2.4 Water –Surface Water, Wetlands, and Groundwater

4.2.4.1 Surface Water Hydrology

The nearest water body to the Project is Grygar Lake, which is approximately 200 m from the proposed aerodrome. The exact location of infrastructure for the Project have not yet been determined and will likely be further away from Grygar Lake.

The Hodge Lake watershed in the Project RSA has an area of approximately 53 km^2 (Golder 2022) and Hodge Lake has a surface area of 5.4 km^2 (Angler's Atlas 2023a; CanNorth 2021a). Grygar Lake, 2.5 km to the southwest of Hodge Lake and about 200 m north of the Project has a surface area of approximately 1.8 km^2 (Angler's Atlas 2023b). At its deepest point, Hodge Lake has a depth of approximately 46 m (CanNorth 2021a).

Hodge Lake drains west into an unnamed lake and then Grygar Lake (CanNorth 2021a). In 2020, Hodge Creek, downstream of the Hodge Lake outlet, was recorded as having a discharge ranging between

0.568 m^3/s and 0.817 m^3/s, based on readings taken monthly between June and September, with the maximum discharge recorded in August 2020 (Golder 2022).

4.2.4.2 Water Quality

Baseline monitoring programs for water quality, undertaken for the PLS and Rook I projects, generated data for Hodge Lake and other lakes to the southeast of the Project in 2016/2017 and 2019 for the PLS project and in 2018 to 2020 for Rook I (Clifton and CanNorth 2021; CanNorth 2021a). In general, these lakes were found to have a near neutral pH and dissolved oxygen levels adequate to support fish populations. They had low levels of nutrients, ions, total and dissolved metals, and radionuclides, with concentrations being similar among lakes, seasons, and years. Only concentrations of total and dissolved iron were found to exceed applicable water quality guidelines within many of the lakes, but not Hodge Lake.

4.2.4.3 Potential Impacts and Mitigations

A summary of the potential impacts and mitigations to the surface water and groundwater during construction of the Project are presented in Table 4.7.

Table 4.7 – Surface Water and Groundwater – Potential Risks and Mitigations

Potential Impacts	Mitigations
Grygar Lake	• The project is not expected to directly impact Grygar Lake or any other waterbody (see Sheet 221145-00-PLT-001, Tetra Tech, 2022). • A topographical study will be part of the site design process and it will be designed to ensure all potential receptors and drainage requirements are considered. • Erosion and sediment control will be developed and implemented as needed. • If required, all work near (bank or boundary areas) or in waterbodies will be conducted under an Aquatic Habitat Protection Permit (AHPP) and permit requirements will be followed. • Project footprint will be limited to the smallest extent possible, work area boundaries will be maintained for the duration of construction, and construction during sensitive fish timing windows will be avoided for work in or near water.
Sedimentation	• Reduce dust and airborne particles by watering the ground surface (or using other dust prevention amendments) during dry, windy conditions. • If possible, cover or vegetate areas with a high potential for erosion. • Reduce dust generation through speed limits.

Table 4.7 – Surface Water and Groundwater – Potential Risks and Mitigations	
	• Erosion and sediment control will be developed and implemented as needed.
Accidental Spills	• Emergency response plans will be included in the EPP per the provincial Environmental Code and spill response requirements to provide quick detection, control, and management of any spill during construction/operation and to ensure proper disposal of hazardous waste. • Include Hazardous Materials Management in the EPP. • Properly designed and licensed facilities for the storage of hazardous materials and fuel.

4.2.5 Fish and Fish Habitat and Aquatic Environment

4.2.5.1 Baseline Aquatic Data

The Project is situated within the McTaggart Plain along the south-west boundary of the Athabasca Plain Ecoregion of the Boreal Shield Ecozone in northern Saskatchewan (Acton et al. 1998). Aquatic habitats are abundant within the RSA, with Grygar Lake 200 m north of the Project, Hodge Lake 2.5 km to the northeast, and many smaller unnamed lakes and creeks within the LSA and RSA.

Sources of information include publicly available reports for two proposed uranium projects in the RSA:

- Fission Project Description –PLS Project (Clifton and CanNorth 2021).
- Aquatic Environment Baseline Report for the Rook I Project – Final Report; Annex V.1 (CanNorth 2021a).
- Hydrometric Monitoring Characterization Report for the Rook I Project; Annex V.2 (Golder 2022).

The PLS project is located approximately 1 km west of Patterson Lake, while the Rook I project is situated on the east side of this lake, and about 1 km south of the nearest shore of Patterson Lake. Both of these projects are located approximately 15 km to the southeast of the Project. The three aforementioned documents included information/data collected at Hodge Lake that were used to inform the environmental assessments for those projects. As Hodge Lake is 2.5 km from the Project, it could serve as a potential reference location related to aquatic baseline information.

For the purposes of this assessment, specific water quality and aquatic parameters have been included for Hodge Lake, as little to no site-specific data are available for Grygar Lake. Therefore, characterization of

the aquatic environment for Grygar Lake is inferred based on the information collected/analyzed from Hodge Lake, given the proximity of the two lakes and the fact that Hodge Lake and Grygar Lake are hydrologically connected.

4.2.5.2 Plankton

Phytoplankton

Baseline sampling programs for phytoplankton took place at Hodge Lake in July 2016 for the PLS project and September/October 2018 for the Rook I project (Clifton and CanNorth 2021; CanNorth 2021a). Phytoplankton density at Hodge Lake was recorded as 11.4 million cells/L in 2018. Most (e.g., over 85%) of the phytoplankton community consisted of *Cyanophycota* (i.e., blue-green algae); the dominant family was *Synechococcaceae.* Biovolume, which can serve as a proxy for biomass, was low in Hodge Lake in 2018 (i.e., 0.12 µL/L) compared to other lakes to the southeast (range: 0.09 to 1.83 µL/L), which were sampled as part of the phytoplankton program for the Rook I project.

Simpson's diversity index measures the number of species present against the relative abundance of each species. Simpson's eveness measures how evenly distributed species are within a community. The index was moderately high for Hodge Lake (0.76), while the Simpson's evenness was low (0.16). The low Simpson's evenness was due to the dominance of a few blue-green algae families.

Zooplankton

Baseline sampling programs for zooplankton took place at Hodge Lake in fall 2018 for the Rook I project, in July 2019 for the PLS project, and concurrently with the phytoplankton programs for both projects (CanNorth 2021a; Clifton and CanNorth 2021). The zooplankton density in 2018 was recorded as 33 organisms/L. This community was dominated by *Cyclopoida* crustaceans and *Ploima* rotifers. Other taxa identified in this community included *Cladocera, Calanoida*, and *Flosculariaceae*. Biomass at Hodge Lake (i.e., 0.27 mg/L) was relatively high compared to other lakes to the southeast (range: 0.06 mg/L to 0.30 mg/L), which were also sampled as part of the zooplankton program for the Rook I project. Simpson's diversity was moderately low at Hodge Lake (i.e., 0.45), while Simpson's evenness was low (0.23).

Sediment Quality

In September and October 2018, a baseline monitoring program for sediment quality was undertaken at Hodge Lake as part of a larger baseline program for the Rook I project (CanNorth 2021a). Results of this investigation identified that sediment at Hodge Lake was mostly (i.e., almost 75%) composed of fine and coarse sand, with the remaining fractions composed primarily of silt and a small amount of clay. Sediment quality sampling in 2017 and 2019 for the PLS project identified fine and coarse sand as the predominant fraction in the sediment composition for lakes to the southeast of the Project (Clifton and CanNorth 2021). Concentrations of key metals, nutrients and radionuclides were determined in sediment samples collected from Hodge Lake in September 2018. No parameters at Hodge Lake exceeded applicable sediment quality guidelines or reference values (CanNorth 2021a).

Benthic Invertebrates

In general, the invertebrate fauna in the Athabasca Plain Ecoregion is typical of the cold northern waters of Saskatchewan (Acton et al. 1998). A baseline sampling program for benthic invertebrates was undertaken at Hodge Lake in fall 2018, concurrent with plankton sampling for the Rook I project (CanNorth 2021a). A benthic invertebrate sampling program was undertaken for the PLS project in 2017 and 2019 (Clifton and CanNorth 2021).

The majority (i.e., over 80%) of the benthic invertebrate community at Hodge Lake in fall 2018 was comprised of *Chironomidae*, non-biting midge larvae (CanNorth 2021a). *Chironomidae* were identified as the most abundant taxa for lakes sampled in the benthic invertebrate program for the PLS project (Clifton and CanNorth 2021). Density of benthic invertebrates at Hodge Lake in 2018 (i.e., 33,655 organisms/m^2) was relatively high compared to other lakes to the southeast (range: 297 to 41,168 organisms/m^2). Both Simpson's diversity (0.24) and evenness (0.15) were relatively low at Hodge Lake, likely due to the dominance of *Chironomidae*.

Aquatic Macrophyte Chemistry

An aquatic macrophyte chemistry program for *Carex* species (i.e., sedges) took place in July 2016 for the PLS project, with some sampling taking place within the RSA for the Project (Clifton and CanNorth 2021). Parameter concentrations in shoots, roots and sediment were generally similar among the waterbodies sampled and frequently measured below the laboratory detection limits. However, uranium concentrations in shoot and root samples collected from Patterson Lake (in the Project RSA) were higher than the other two study areas, which included Broach Lake (in the Project RSA) and Naomi Lake (southeast of the Project RSA; Figure 4.1).

A monitoring program for aquatic macrophyte chemistry took place for the Rook I project in 2018 and 2019 (CanNorth 2021a). While sampling did not take place at Hodge Lake, *Carex* species samples were collected from several other lakes and creeks to the southeast (e.g., Broach Lake; Jed Creek draining into Patterson Lake). Results of the chemical analysis of the shoots and roots collected can be found in CanNorth (2021a, Table 36).

4.2.5.3 Fish Community, Spawning, Habitat and Fish Tissue Chemistry

The sandy substrate and low abundance of aquatic vegetation limits the fish species found within the Athabasca Plain Ecoregion (Acton et al. 1998). Large fish species in this ecoregion include lake trout (*Salvelinus namaycush*), walleye (*Sander vitreus*), Arctic grayling (*Thymallus arcticus*), lake whitefish (*Coregonus clupeaformis*), northern pike (*Esox lucius*), yellow perch (*Perca flavescens*), burbot (*Lota lota*), white sucker (*Catostomus commersonii*) and longnose sucker (*Catostomus catostomus*). Forage fish include cisco (*Coregonus artedi*), lake chub (*Couesius plumbeus*), trout-perch (*Percopsis omiscomaycus*), spottail shiner (*Notropis hudsonius*), ninespine stickleback (*Pungitius pungitius*), slimy sculpin (*Cottus cognatus*) and longnose dace (*Rhinichthys cataractae*).

Baseline fish studies completed in 2016 and 2017 for the PLS project resulted in the capture of 5,022 fish from 17 waterbodies to the southeast of the Project, with the northern most of these lakes located within the Project RSA (e.g., Broach Lake and Patterson Lake; Clifton and CanNorth 2021). Fourteen species were identified, including Arctic grayling, burbot, longnose sucker, lake trout, lake whitefish, northern pike, walleye, white sucker, yellow perch, slimy sculpin, lake chub, ninespine stickleback, spottail shiner, and trout-perch.

Concentrations of parameters in the flesh and bones of lake whitefish and northern pike were generally similar among the waterbodies sampled and were largely near or below reported detection limits. Concentrations of mercury and selenium in fish flesh were below Health Canada safe consumption levels and U.S. Environmental Protection Agency (USEPA) guidelines, respectively.

Fish community surveys were conducted at Hodge Lake in May (spring), August (summer) and September (fall) 2018 for the Rook I project (CanNorth 2021a). Trout-perch samples were collected, frozen and retained for potential chemical analyses in the future. Spawning surveys were not conducted at Hodge Lake.

A total of 217 fish were captured at Hodge Lake in 2018 (CanNorth 2021a). The most common fish species were yellow perch (n = 122) and burbot (n = 32). Other species included lake trout, lake whitefish, northern pike, white sucker, Johnny darter (*Etheostoma nigrum*), nine-spined stickleback, slimy sculpin, spottail shiner, and trout-perch.

In August 2018, baseline fish habitat surveys were completed for Hodge Lake in association with the Rook I project (CanNorth 2021a). Twenty-five distinct habitat sections were identified in the lake based on physical characteristics (e.g., vegetation present, bank stability, substrate type, water depth). Substrates of the littoral zone for 14 habitat sections consisted mainly of sand or a mixture of sand and gravel, with 4 comprised mainly of cobble and boulder and 2 containing mixtures of fine substrates with some gravel and cobble.

Cover for fish, when present, included sparse amounts of large woody debris and sparse to moderate amounts of overhanging vegetation. Dense rock cover occurred occasionally. Undercut banks and aquatic vegetations were generally absent or sparse.

Aquatic macrophyte species noted within Hodge Lake included *Sparganium* species (bur reed), *Carex* species (sedges) and *Potamogeton* species (pondweed).

4.2.5.4 Potential Impacts and Mitigations

Potential impacts and mitigations for fish and fish habitat are provided below in Section 6.1.1.

4.2.6 Air Quality and Noise

4.2.6.1 Noise

Noise sources in the area are minimal and locally are the sounds associated with Big Bear Camp including the generators and equipment. In addition, aircraft can produce loud noises for a short period of time when taxiing, taking off or landing.

4.2.6.2 Air Quality

With no industrial sources nearby, the air quality in the area is considered quite good. No site-specific air quality assessment was completed and information from nearby projects such as the historical Cluff Lake project or the NexGen Rook I EIA was used. Periodic aircraft use is unlikely to significantly affect air quality.

4.2.6.3 Potential Impacts and Mitigations

A summary of the potential impacts and mitigations to noise and air quality during construction of the Project are presented in Table 4.8.

Table 4.8 – Air and Noise – Potential Impacts and Mitigations

Potential Impact	Mitigation
Fugitive Dust	• Limit the area of disturbance as much as practical. • Implement reduced vehicle speed limits or other speed control measures. • Suppress dust as necessary using water trucks. • Conduct visual monitoring of dust to determine when suppression is needed. • Dust suppression and management of soil stockpiles where required.
Air Emissions	• Expected emissions will not be much greater than for the existing Big Bear Camp given the frequency of flights will be dependent on services required from local mining and outfitters. • Increased emissions will occur during construction for a limited time. These will be minimized by using well maintained equipment and limiting idling wherever possible. • Use of best available technology in design of the airstrip and supporting infrastructure to reduce emissions to air, where feasible. • Implement a regular maintenance program of vehicles and equipment to reduce combustion emissions and maximize fuel efficiency.
Potentially Disturbing Noise	• Select equipment that minimizes noise generation and conduct regular maintenance where possible. Since the site is oil generator supported, electric vehicles are not considered an option at this time.

4.3 Health, Social, and Economic Context

A brief description of the health, social and economic context in the region where the project is located, based on information that is available to the public or derived from any engagement undertaken.

4.3.1 Health Context

The closest health centre to the Project is the La Loche Health Centre and Hospital which is approximately 176 km south of the Site and is located within the Keewatin Yatthé Regional Health Authority. There are health clinics located in communities south of La Loche including Buffalo Narrows, CRDN, Birch Rivers, and Île-à-la-Crosse. The nearest RCMP detachment, ambulance and fire services to the Project are also located in La Loche.

4.3.2 Social Context

The Project is located within Treaty 8 Territory and the small settlement of Descharme Lake is the nearest community to the Project. Descharme Lake, located approximately 60 km south of the Project, has a total of 26 residents according to the 2021 Census (Statistics Canada 2023). Descharme Lake began as a Dene winter hunting camp and in 1974, approximately 48 residents lived in the village, but since then, most residents have moved to La Loche, located approximately 95 km south of Descharme Lake. Some residents from La Loche currently maintain seasonal cabins in Descharme Lake (Portage La Loche 2019). The residents within Descharme Lake rely on the nearby communities of La Loche and Clearwater River Dene Nation for their services such as healthcare and education.

La Loche and Clearwater River Dene Nation are the closest large communities to the Project, located approximately 176 km to the south, with populations of 2,514 people and 831 people, respectively. Both La Loche and CRDN have predominantly young populations that have the greatest proportions in the age ranges of 0 years - 14 years and 25 years - 29 years of age. The majority of the population is Indigenous, with 94% and 98% of persons identifying as Indigenous in La Loche and CRDN, respectively (Statistics Canada 2021). Recreational activities within the La Loche and CRDN area include ski trails, an indoor and outdoor rink, an outdoor volleyball court, a community hall, school gyms, bike park, ball diamonds, basketball courts, playgrounds, gymnasiums, and a fitness centre (Northern Saskatchewan Business Directory 2013).

The Northern Village of Buffalo Narrows has a population of approximately 1,014 people with a primarily younger population, with the largest age group between 0 years - 14 years of age (Statistics Canada 2021). The population is predominantly Indigenous at approximately 92% (Statistics Canada 2021).

Île-à-la-Crosse has a population of approximately 1,425 people and similar to Buffalo Narrows, has a predominantly younger population with the largest age group between 0 years - 14 years of age. Additionally, the majority of the population is Indigenous at approximately 92% (Statistics Canada 2021).

Section 4.0 (Table 4.2) lists the communities, the 2021 Statistics Canada census population data, and the distance from the Project for communities and First Nations that are located along and directly adjacent to Highway 955 and Highway 155, beginning at Beauval. These communities have the potential of being affected in both negative and positive ways from a socio-economic and traditional land and resource use perspective through Project development and operations. Figure 4.4 shows the approximate locations of nearby communities to the Project.

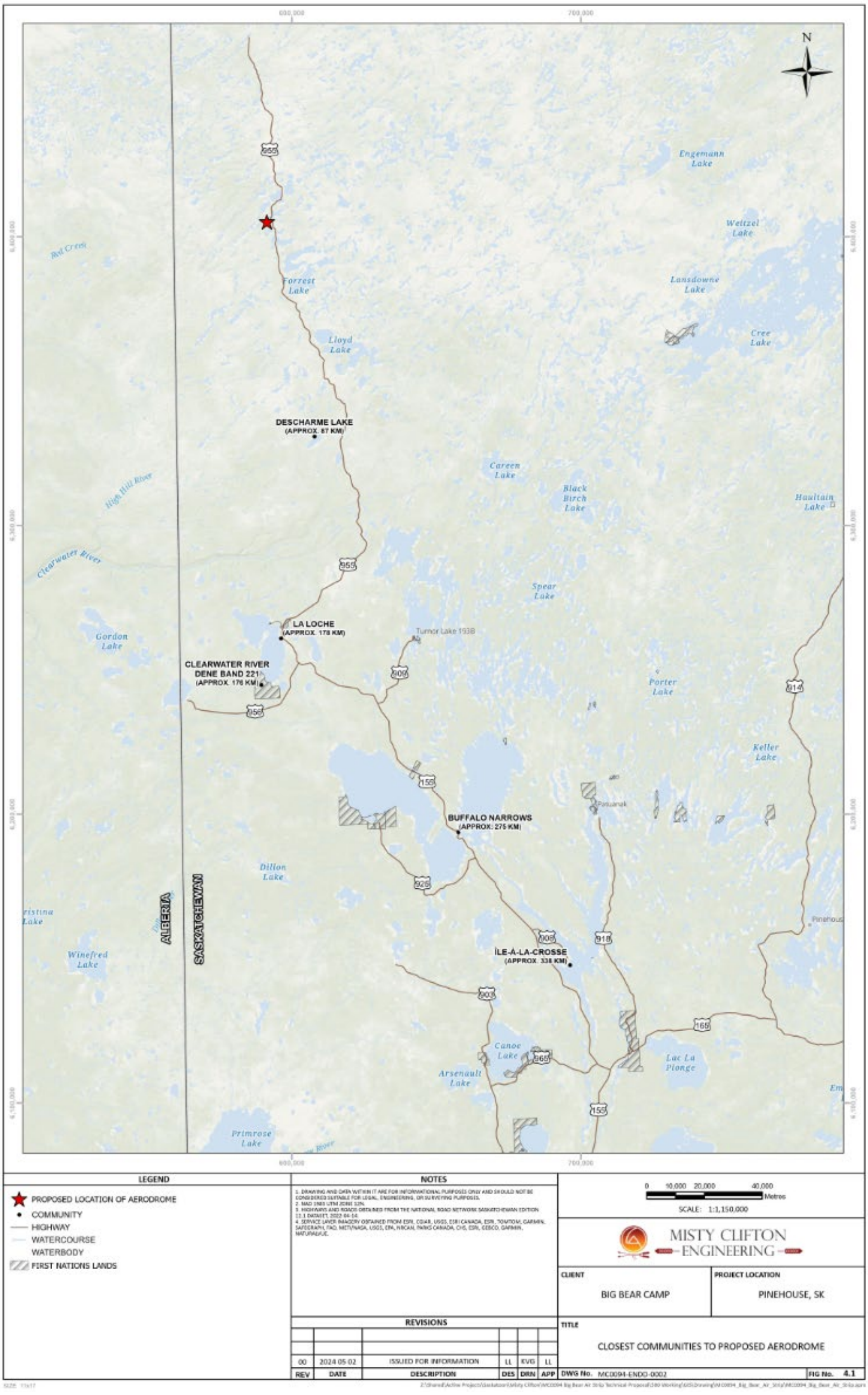

Figure 4.4 – Nearby Communities in Proximity to the Project

4.3.3 Economic Context

According to the National Occupational Classification (2021), the sectors of labor forces in the CRDN include health care, education, the construction industry, mining, retail, transportation and warehousing, public administration and administrative and support. The sector with majority of workers is educational services.

Some of the major employers in the La Loche area include the Province of Saskatchewan, La Loche Community Health Centre, educational centers, Methy Construction, retail, and maintenance. Other businesses in the La Loche area include Canada Post, Clearwater Aviation, one take-out restaurant and bar, motor inn, a gas station, gift store, liquor store, towing, construction and maintenance, pharmacy, and a general merchandise store (Norther Village of La Loche and Shop La Loche 2019). Businesses and services in Clearwater River include the Clearwater Store, Armand Bekkattla Treatment Centre, and Clearwater River Dene School.

Other employment in the area includes exploration activities for mining companies such as Cameco, Orano, NexGen, Denison, and Purepoint, among others, that have mineral claims in the vicinity of the Project.

Services in Buffalo Narrows include airline services, construction and trucking, accommodations, construction and maintenance services, fuel and retail services, a campground, a church, economic development services, restaurants and groceries (Business Directory, Buffalo Narrows 2021).

Local businesses and services within Île-à-la-Crosse include fuel services, elementary and high school, Canada Post, taxi services, Friendship Centre, RCMP detachment, St. Joseph's Hospital, a grocery store, confectionary, restaurant, motel, tavern, pharmacy, radio, and car wash (Shop Île-à-la-Crosse 2019).

5.0 Federal, Provincial, Territorial, Indigenous and Municipal Involvement and Effects

5.1 Federal Financial Support

A description of any financial support that federal authorities are, or maybe, providing to the project.

Big Bear Contracting Ltd. is the sole financer of the project.

5.2 Federal Project Lands

A list of any federal lands that may be used for the purpose of carrying out the project.

No federal lands will be used for the Project.

The closest federal land to the Project is Athabasca Chipewyan First Nation (201A), which is approximately 105 km (direct distance as there is no driveable route from the Project).

The Project itself is located on provincially leased land (see section 4.1.2). The Project will operate as an Indigenous-owned business on the leased land.

5.3 Jurisdictions with Powers, Duties, or Functions

A list of any jurisdictions that have powers, duties, or functions in relation to an assessment of the project's environmental effects.

Aside from the IAAC, there are permits/approvals that will be required through the provincial and municipal governments. The other agencies requiring approval would be:

- Saskatchewan Ministry of Environment.
- Saskatchewan Ministry of Labour Relations and Workplace Safety (occupational health and safety).
- Saskatchewan Ministry of Environment Resource Management Division – Lands Branch (surface leases).
- Saskatchewan Ministry of Environment – Environmental Protection Branch.
- Saskatchewan Ministry of Agriculture (Forest Product permit for land clearing).
- Saskatchewan Ministry of Highways (highway access).
- Saskatchewan Ministry of Health (camp, hygiene, water and sewage treatment).
- Saskatchewan Ministry of Parks, Culture and Sport – Heritage Conservation Branch.
- Saskatchewan Public Safety Agency.

There are no municipal permits or approvals that will be required for the Project.

Federal and provincial permitting requirements will be completed following the approval to proceed with the Project. Table 5.1 presents some of the Acts and Regulations that may apply.

Table 5.1 – Acts and Regulations

Acts	Regulations
PROVINCIAL	
The Environmental Management and Protection Act	Litter Control Regulations Hazardous Substances and Waste Dangerous Goods Regulations Environmental Management and Protection (General) Regulations Environmental Management and Protection (Saskatchewan Environmental Code Adoption) Regulations
The Dangerous Goods Transportation Act	Dangerous Goods Transportation Regulations
The Fisheries (Saskatchewan) Act	The Fisheries Regulations
The Wildfire Act	The Wildfire Regulations Reporting Responsibility
The Fire Safety Act	Fires Safety Regulations
The Forest Resources Management Act	The Forest Resources Management Regulations
The Heritage Property Act	Heritage Property Regulations
The Management and Reduction of Greenhouse Gases Act	The Management and Reduction of Greenhouse Gases (Standards and Compliance) Regulations
The Provincial Lands Act	The Crown Resource Land Regulations
The Public Health Act	The Health Hazard Regulations The Shoreland Pollution Control Regulations
The Sand and Gravel Act	Occupational Health and Safety Regulations
The Saskatchewan Employment Act	The Water Security Agency Regulations Ground Water Regulations
The Water Security Agency Act	Wildlife Habitat Lands Disposition and Alteration Regulations
The Wildlife Habitat Protection Act	The Wild Species at Risk Regulations
The Wildlife Act	

Table 5.1 – Acts and Regulations	
FEDERAL	
Canada Transportation Act	Air Transportation Regulations
Aeronautics Act	Canadian Aviation Regulations
Migratory Birds Convention Act	Migratory Birds Regulations
Fisheries Act	Critical Habitat of the Woodland Caribou (*Rangifer tarandus caribou*) Boreal Population Order
Species at Risk Act	Transportation of Dangerous Good Regulations
Canadian Environmental Protection Act	Transportation of Dangerous Good Act

6.0 Potential Effects of the Project

6.1 Relevant Environmental Legislation

A list of any changes that, as a result of the carrying out of the project, may be caused to the following components of the environment that are within the legislative authority of Parliament:

a. *fish and fish habitat as defined in subsection 2(1) of the Fisheries Act.*
b. *aquatic species, as defined in subsection 2(1) of the Species at Risk Act (marine plants).*
c. *migratory birds, as defined in subsection 2(1) of the Migratory Birds Convention Act, 1994.*

6.1.1 Fish and Fish Habitat

Due to the proximity of Grygar Lake to the Project, it is important that work area boundaries are properly defined to ensure no impacts. The Project is not expected to directly impact Grygar Lake or any other waterbody (see Sheet 221145-00-PLT-001, Tetra Tech, 2022). If required, all work near (bank or boundary areas) or in waterbodies will be conducted under an Aquatic Habitat Protection Permit (AHPP) and permit requirements will be followed. No in-water work is expected for the Project.

There will be no-refueling activities adjacent to waterbodies and there will be a spill response plan in place for construction activities. Erosion and sediment control will be in place during construction and reclamation activities. Further mitigations proposed from the protection of species under the *Fisheries Act* are provided in Table 6.1.

Table 6.1 – Mitigations for Species Under the *Fisheries Act*

Potential Impacts	Mitigations
Grygar Lake	• Setback distances from Grygar Lake will be as placed as far as possible. • Erosion and sediment control will be developed and implemented as needed. • The site will be graded to ensure surficial drainage is managed properly. • If required, all work near (bank or boundary areas) or in waterbodies will be conducted under an Aquatic Habitat Protection Permit (AHPP) and permit requirements will be followed. • Project footprint will be limited to the smallest extent possible, work area boundaries will be maintained for the duration of construction, and construction during sensitive fish timing windows will be avoided for work in or near water.
Sedimentation	• Reduce dust and airborne particles by watering the ground surface (or using other dust prevention amendments) during dry, windy conditions. • If possible, cover or vegetate areas with a high potential for erosion. Erosion and sediment control will be developed and implemented as needed. • If required, an AHPP will be secured, and mitigations will be followed during the construction phase of the Project.
Accidental Spills	• Emergency response plans will be included in the EPP per the provincial Environmental Code and spill response requirements to provide quick detection, control, and management of any spill during construction/operation and to ensure proper disposal of hazardous waste. • Include Hazardous Materials Management in the EPP. • Properly designed and licensed facilities for the storage of hazardous materials and fuel. Spill kits will be available at the fuel storage area in case of accidental spills.

6.1.2 Aquatic Species and Marine Plants

The *Species at Risk Act* prohibit the killing, harming, harassing, or capturing of species listed within the Act. According to the SKCDC HABISask database (SKCDC 2023), there are no occurrences of federally listed or provincially tracked species that have been historically documented within the LSA. Big Bear will comply with the prohibitions in the *Species at Risk Act* throughout all stages of the project.

A summary of mitigations measures for aquatic species and marine plants under the *Species at Risk Act* are presented in Table 6.2.

Table 6.2 – Mitigations for Aquatics Species/Marine Plants under *Species at Risk Act*

Potential Impacts	Mitigation
Habitat Disturbance	• Project footprint will be kept to the smallest extent possible to do the work safely and work area boundaries will be maintained for the duration of construction. • Erosion and sediment control will be developed and implemented as needed. • Construction during sensitive wildlife windows will be avoided. • Development of an EPP.
Introduction of prohibited, noxious, nuisance, and/or invasive plants	• Prevention of the introduction and spread of prohibited, noxious, nuisance, and invasive plants will be addressed in the environmental management plan.
Accidental Spills	• Emergency response plans will be included in the EPP per the provincial Environmental Code and spill response requirements to provide quick detection, control, and management of any spill during construction/operation and to ensure proper disposal of hazardous waste. • Include Hazardous Materials Management in the EPP. • Properly designed and licensed facilities for the storage of hazardous materials and fuel.

6.1.3 Migratory Birds

The *Migratory Birds Act* prohibits the harming of migratory birds or the disturbance/destruction of their nests and eggs. The general breeding bird window is beginning of April to end of August. There are treed areas and vegetated areas within the footprint of the project which could potentially be used as habitat for breeding bird.

Due to the potential for migratory birds to be present within the project footprint mitigation measures must be considered. Trees within the footprint of the project will be cleared outside of the breeding bird window and grasses will be mowed to prevent ground nesting birds. Additional mitigation measures can be implemented if migratory birds are observed at the time of construction. These include adjusting the construction schedule by postponing activities near occupied nests, implementing a barrier between the occupied nest and the activity, moving equipment daily, relocating nests or wildlife, and/or monitoring the

nest to determine if the inhabitant is showing signs of stress. With the primary mitigation measures in place, it is unlikely that an issue to migratory birds would occur during construction/operation.

A summary of mitigations measures for species under the *Migratory Birds Act* is presented in Table 6.3.

Table 6.3 – Mitigations Measures for Species Under the *Migratory Birds Act*

Potential Impacts	Mitigations
Loss of Habitat	• Limit the removal of habitat to the areas necessary. • Project footprint will be kept to the smallest extent possible to do the work safely and work area boundaries will be maintained for the duration of construction. • Concentrate construction activities to areas that have already been disturbed.
Disturbance	• Complete clearing activities outside of the migratory bird nesting period (generally beginning of April to end of August). • Potential impacts to the environment will be assessed in a screening assessment and/or pre-construction survey, and mitigation measures will be developed where necessary along with follow-up monitoring programs. • Complete daily inspections during construction activities, as detailed in the EPP.
Human Interference	• Include wildlife incidents, such as accidental vehicle collisions, in site-specific protocols as well as the steps to report an incident. • Avoid interactions with wildlife including hunting, chasing, or feeding.

6.2 Changes to Federal Lands

A list of any changes to the environment that, as a result of carrying out the project, may occur:

- *On federal lands.*
- *In a province other than the province in which the project is proposed to be carried out; or,*
- *Outside of Canada.*

The project is located on provincially leased land on the traditional territory of CRDN. CRDN is in full support of the Project. Big Bear Camp currently operates as an industrial lease issued by the province of Saskatchewan. Once the provincial EA process is complete, Big Bear will apply for an amendment to their lease to include the aerodrome location.

No changes to federal lands are anticipated. There are no federal lands within the footprint of the project or adjacent to the project's boundaries. The closest Indigenous Nation is approximately 105 km from the Project, which would be the closest federal lands. The Project footprint does not cross provincial or international boundaries.

6.3 Impact to Indigenous Peoples

With respect to the Indigenous peoples of Canada, a brief description of the impact — that, as a result of the carrying out of the project, may occur in Canada and result from any change to the environment — on:

- *Physical and cultural heritage.*
- *The current use of lands and resources for traditional purposes.*
- *Any structure, site or thing that is of historical, archaeological, paleontological or architectural significance, based on information that is available to the public or derived from any engagement undertaken with Indigenous peoples of Canada.*

The Big Bear Camp is owned by members of the CRDN who claim this area as their traditional territory. As such, they are best positioned to assess potential cumulative impacts to their territory. While they don't believe there are any that they cannot manage themselves, they will work with other nations should they have concerns related to traditional land use by their respective members.

In discussion with Big Bear Camp, they have stated that the land surrounding the Project is not utilized for traditional uses. They are also not aware of any other First Nations that utilize the Project area for traditional uses. The proposed aerodrome takes up a relatively small amount of area within the traditional territory and will not affect the ability to undertake traditional activities; however, it will provide economic opportunities. There will be disturbance to vegetation and trees in the area that is proposed to be cleared, which will not affect gathering, hunting or trapping. In addition, with the exception of incidental occurrences, any potential effects to Grygar Lake and the fish habitat are expected to be managed through the mitigations listed.

Potential effects to the physical and cultural heritage or the socio-economic health of the Indigenous peoples of Canada may be revealed throughout the duration of the Project. If any potential effects are brought forth, Big Bear will work with CRDN to help mitigate any issues. Given the responses received to date following the initial engagement process there are not anticipated to be any effects to the physical heritage, cultural heritage, or traditional land uses for Indigenous people.

The Crown has a legal obligation to consult with First Nations and Métis communities in advance of decisions or actions that may adversely impact Treaty and Aboriginal rights, such as the right to hunt, fish and trap for food, and to carry out traditional uses. The duty to consult (DTC) may be triggered during the EA process for projects that require an EIA. For a project that does not require an EIA, the DTC is assessed by subsequent regulatory agencies. Given that Big Bear Camp is owned by members of CRDN

and operates as an Indigenous business on Crownland, engagement letters sent to the surrounding Indigenous communities, including CRDN, should be sufficient for consultation purposes. Engagement letters have been sent to the following communities: Clearwater River Dene Nation, Birch Narrows Dene Nation, Buffalo River Dene Nation and Athabasca Chipewyan First Nation. A letter was also sent to Ya' Thi Néné Lands and Resources, an organisation representing seven First Nations in the Athabasca basin. A summary of the engagement completed to date has been provided in Section 2.4.

In discussions with CRDN, they have indicated that the Project will provide jobs and business opportunities for their Nation. This is considered a positive outcome of the Project.

In Saskatchewan, heritage resources include pre-contact period and historic period archaeological sites, built heritage sites, structures of historical and/or architectural interest, and paleontological sites. Heritage resources are the property of the Provincial Crown and are protected under *The Heritage Property Act*. A Heritage Sensitivity Screening Report was completed and required the Project area to be submitted to the HCB for further review.

A response was received from the HCB on 18 October 2023. There are no known archaeological sites located at the Site; however, the Site will affect areas of boreal forest near Grygar Lake including other tributaries and waterbodies. These types of terrain are known to have moderate to high potential to contain intact heritage resources; therefore, a HRIA is required for the Project. Big Bear acknowledges this and will ensure required surveys are completed and heritage clearance obtained from the HCB prior to commencement of construction.

The area is not considered to be of high potential for heritage resources; however, the proximity to Grygar Lake is considered to have some potential. Big Bear camp will conduct an HRIA prior to construction and will have a chance find protocol in place. CRDN will be informed of all findings.

6.4 Effect to the Health, Social or Economic Conditions of Indigenous Peoples

A brief description of any change that, as a result of the carrying out of the project, may occur in Canada to the health, social or economic conditions of Indigenous peoples of Canada, based on information that is available to the public or derived from any engagement undertaken with Indigenous peoples of Canada.

The Project is expected to have a positive effect on the economic conditions for the surrounding Indigenous communities as it will offer a form of employment and income. CRDN Chief also believes positive socio-economic benefits will come from the Project (referenced in letter of support). According to CRDN, the footprint of the Project does not encompass land that is currently utilized for traditional land uses by Indigenous Peoples. A positive effect can be expected for the health conditions of the surrounding communities as the Project will allow for easier access to medical and emergency services. Furthermore, the Project will provide a safer and reliable transportation method for all persons needing transportation to and from the area.

6.5 Greenhouse Gas Estimate

An estimate of any GHG emissions associated with the project. This should be calculated as the net GHG emissions associated with the project and estimated based on the information available to proponents at this stage.

The following GHG estimate for the Big Bear Airstrip has been developed for both the construction and operation phases. The emission and activity factors used for heavy equipment, vehicles, and land mass changes were derived using the GHG estimates for local mining EIAs, notably the Fission Uranium Project draft EIA (Fission 2024). This GHG assessment evaluates a future project without any available direct GHG emission data, and the GHG emissions quantification was restricted to the use of the appropriate emission factors (EF) and activity factors (AF) identified for the nearby mining project.

The general GHG emissions quantification equation used in (Fission 2024) was:

$$CO_{2e} \text{ (tonnes/year)} = AF * EF * GWP * CF$$

Where:
CO_{2e} (tonnes/year) – estimated GHG emissions expressed as CO_{2e} equivalent in metric tonnes (t) per year
AF – Activity Factor
EF – Emission Factor
GWP – Global Warming Potential for an evaluated GHG gas
CF – Units Conversion Factor

Applied GWP conversion factors per the Intergovernmental Panel on Climate Change (IPCC) 5th Protocol are summarized in Table 6.4. This led to emission factors shown in Table 6.5.

Table 6.4 – Applied GWP Conversion Factors

GHG Gas	CO_2	CH_4	N_2O
GWP Factor	1	28	265

Table 6.5 – Emission Calculation Factors Used	
Source	**Factor Used**
Scope 1 – Direct Emissions	
Construction Equipment – Diesel-powered 5 pieces of heavy equipment (trucks and excavators) + 2 auxiliary equipment.	**Heavy - 25 L/hr at 2.7 kg CO_{2e}/L** **Aux. - 15 L/hr at 2.7 kg CO_{2e}/L**
Operations Equipment – Diesel-powered 2 pieces of auxiliary equipment such as a plow and grader.	**Aux. - 15 L/hr at 2.7 kg CO_{2e}/L**
Construction Equipment – Gas-powered 2 vehicles – full time including construction and operations	**11 L/100km at 2.3 kg CO_{2e}/L**
Land Use Change – Biomass Oxidation	**300 t CO_{2e}/ha**
Scope 2 – Indirect Emission – Acquired Energy	**Not applicable**
Scope 3 – Indirect Emissions	
Haulage to Project – Diesel-powered	**0.0011 t CO_{2e}/km**
Personnel Vehicles – commute to site, gas-powered	**0.0017 t CO_{2e}/km**
Project related air travel	**1,000 t/y CO_{2e} all-in**
Biogenic Emissions - Land Use Change – Loss of Carbon Sequestration	**12.78 t CO_{2e}/ha**

6.5.1 Direct GHG Emissions (Formerly Scope 1 GHG Emissions)

6.5.1.1 Stationary Combustion

Site power is currently supplied by a diesel generator. The airstrip once constructed will not create a significant additional demand on the current power generation on site for avionics, runway lights, and the terminal building. There is the potential to have a small back-up generator for the airstrip for safety considerations, but this has not been sized yet, and it would operate rarely.

6.5.1.2 Mobile Combustion

Construction – The estimated equipment requirements for diesel-powered mining and auxiliary vehicles is five pieces of heavy equipment including one aggregate crusher during construction. Construction equipment would include haul trucks, excavators, compactors, and bulldozers, but only four would be operating at a given time on average. The aggregate crusher would be serviced by the same heavy equipment used for Project construction – travel to and from a pit is included in the operating hours.

Construction auxiliary vehicles include a grader, a light crane or fuel/lube truck. Based on a search of operator's sites online (e.g., JS Cole 2024) the fuel consumption for the largest piece of heavy equipment that is likely to be used is 25 L/hr, and 15 L/hr for auxiliary equipment. It is estimated that the construction equipment will run an average of 12 hours per day (less in winter and longer in summer) for consumptions of 300 L and 180 L per day respectively, for a rounded total of 500 L/day. If diesel produces 2.7 kg CO_{2e} per litre (Environment Canada Auto$mart Site), then the total CO_{2e} produced per day is 1,350 kg CO_{2e}/day or 1.35 t CO_{2e}/day. This would be a total of 492.75 t CO_{2e} for the heavy equipment for the one year of airstrip construction. While more equipment might be used, there would be a commensurate shortening of the construction period, so the annual total should remain the same.

It is estimated that there will be two gasoline powered pickup trucks for construction to move crews and service equipment. They will travel short distances and would be unlikely to exceed 100 km/day, so this distance was used to calculate the gas-powered fleet emissions. If large gas-powered pickups use 11 L/100 km (Google search for L/100 km for large pickups), then the total fuel usage for these vehicles would be 22 L/day or 50.6 kg CO_{2e}/day if gasoline produce 2.3 kg CO_{2e}/L (Environment Canada Auto$mart Site). The annual emissions from the two gas-powered vehicles would be 18.47 t CO_{2e}.

Operation – It is estimated that there will be two pieces of auxiliary equipment and one gas-powered pickup assigned to the airstrip. The auxiliary equipment would be a plow and a grader. It is estimated that they would not operate continually but for maintenance and snow clearing, so two hours per day was used as an average usage estimate. If the auxiliary equipment uses 15 L/hr of diesel, then an estimate of 60 L/day is used for operations diesel equipment usage. If diesel produces 2.7 kg CO_{2e} per L (Environment Canada Auto$mart Site), then the total CO_{2e} produced per day is 162 kg, for an annual total of 59.13 t CO_{2e}/year. Add to this one pickup that we will say does a conservative 100 km/day, which would produce 9.23 t CO_{2e}/year. The total operational vehicle emissions associated with the airstrip would be 68.36 t CO_{2e}/year.

6.5.1.3 Industrial Process Inputs

There is not expected to be any need for explosives given the lack of bedrock and the sandy nature of the materials to be moved. Solid waste and wastewater are not included in the GHG calculation as they are part of the normal operation of the Big Bear Camp and the construction would not create any unusual loadings over and above the normal range from camp operations.

6.5.1.4 Land Use Change – Biomass Oxidation

The runway is expected to cover an area of 80 m x 1,524 m for an operational area of 121,920 m^2, or 12.192 ha). Since the final design has not been done, we would double this area to account for a construction right of way and to include the flight paths, which while not impacting ground cover, will require some trees to be removed. This would mean a cleared area of approximately 23 ha, about half of this will be reclaimed to vegetated, stabilize soils. An emission factor of 300 t CO_{2e}/ha for sparse forest was applied. This analysis adopted the terminology and application of emissions factors outlined in the UNIPCC's Good Practice Guidance for Land Use and Land-use Change and Forestry (UNIPCC, 2003) into a modified methodology more typically applied when estimating GHG emissions for future land use change as described in Seabridge Gold Inc. and Rescan Environmental Services Ltd (2013). The proposed land use change related to the project would account for an estimated GHG emissions of 6,900 t CO_{2e} as a result of the biomass oxidation. This is a one-time charge to the project, and as such is added to the construction year.

6.5.2 Indirect GHG Emissions (Formerly Scope 2 GHG Emissions)

Acquired Energy GHG Emissions (Not Applicable to the Project). There are no powerlines to the site.

6.5.3 Indirect GHG Emissions (Formerly Scope 3 GHG Emissions)

Traffic in support of the project is expected to be minimal as the airstrip needs will be blended into the current camp operations. While fuel will be available for aircraft, most flights in the north leaving a large well-established base will carry enough fuel for a round trip and some extra. So, refueling at the Big Bear Camp would be minimal except for aircraft based there, whether permanently or on a temporary basis (e.g. wildfire aircraft). To be conservative, we included one fuel truck per week and one semi-truck with other supplies per week in support of the airstrip. These trucks would come from Edmonton (aviation fuel) and La Loche respectively for a total return mileage of 1,902 km and 350 km respectively, or 2,252 km/week. This average would include trips during construction when fuel would be replaced by other supplies. The estimated GHGs from trucks related to the project would be 2,252 km/week (at 0.0011 t CO_{2e}/km) for 2.48 t CO_{2e}/week (or 128.81 t CO_{2e}/year).

For personnel vehicles, there will not be a large staff involved in construction, say 12 persons. With carpooling and a two-week shift rotation (likely less frequent) we can estimate four vehicles during construction (one year) and one car per rotation during operations. If all employees come from La Loche (likely as the Project will be hiring locally), that would account for 1400 km every two weeks for construction (36,400 km/year), and 350 km every two weeks for operations (9,100 km/year). This works out to 61.88 t CO_{2e}/year (0.0017 t CO_{2e}/km x 36,400 km/year) during construction, and 15.47 t CO_{2e}/year during operations.

6.5.3.1 Project-related Aircraft Traffic

In the Fission EIA, it was estimated that the GHG emissions from air travel would be 453.12 t/y CO_{2e} (Fission draft EIA, submitted March 2024, specifically Clifton 2024). This is considered accurate as Big Bear is one of the potential airstrips that mines would use. As Fission is the closest mine, we used their air

transportation GHG estimate (Fission, 2024). If the Big Bear Camp is to truly be a regional airstrip, it is estimated that two mining operations could be going on at the same time, although another potential mine (other than NexGen and Fission) has not yet been announced. There have been a number of high-grade discoveries locally that could portend another mine in the future. The estimate excludes the NexGen uranium project because they are building their own airstrip. So, to be conservative and to incorporate another mine, exploration operations, charters, or wildfire aircraft, we estimate 1,000 t/y CO_{2e} for all flight traffic.

6.5.3.2 Biogenic GHG Emissions – Carbon Sequestration Loss

The runway is expected to cover an area of 80m x 1,524 m for an operational area of 121,920 m^2, or 12.192 ha). Since the final design has not been completed, we would double this area to account for a construction right of way and to include the flight paths, which while not impacting ground cover, would require some trees to be removed. This would mean a cleared area of approximately 23 ha, about half of this will be reclaimed to stabilize soils. With a factor of 12.78 t CO_{2e}/ha/year the proposed land use change related to the project would account for a loss of 293.94 t CO_{2e} sequestration/year, although about half this will be reclaimed to ground cover immediately after construction.

6.5.3.3 Total GHG Calculation for the Project

Table 6.6 summarizes the estimated Project emissions and provides a per year total for the one year of construction and per year of operations. With construction taking about one year or less, it is estimated that the total construction emissions will be approximately 7,473.1 t CO_{2e}/year, say, 7,500 t CO_{2e} during the construction year. For operations, the estimated tons of GHGs per year will be 1,506.58 CO_{2e}, say 1,500 tCO_{2e}/year. These levels of emissions are below any emissions reporting criteria either federally or provincially.

Table 6.6 – Tonnes CO_{2e}/year for Construction and Operations

Source	GHG Total/Year
Scope 1 – Direct Emissions	
1) Construction Equipment – Diesel 5 pieces of heavy equipment (trucks and excavators) + 2 pieces of auxiliary equipment.	**492.75 t CO_{2e}/year**
2) Operations Equipment – 2 pieces of auxiliary equipment such as a plow and grader + one pickup truck	**68.36 CO_{2e}/year**
3) Construction Equipment – Gas 2 vehicles – full time including construction and operations	**18.47 t CO_{2e}/year**

Table 6.6 – Tonnes CO_{2e}/year for Construction and Operations	
Source	**GHG Total/Year**
4) Land Use Change – Biomass Oxidation (one time charge to project (UNIPCC 2003)	**6900 t/CO_{2e}**
Scope 2 – Indirect Emission – Acquired Energy	**Not applicable**
Scope 3 – Indirect Emissions	
5) Haulage to Project (aviation fuel and supplies)	**128.81 t CO_{2e}/year**
6) Personnel Vehicles – Construction	**61.88 t CO_{2e}/year**
7) Personnel Vehicles – Operations	**15.47 t CO_{2e}/year**
8) Project related air travel	**1,000 t CO_{2e}/year**
Land Use Change – Biogenic Emissions	
9) Land Use Change-Carbon Sequestration Loss	**293.94 t CO_{2e}/year**
TOTAL – Construction (includes 1, 3, 4 and 6)	**7,473.1 t CO_{2e}/year**
TOTAL – Operations (includes 2, 5, 7, 8 and 9)	**1,506.58 t CO_{2e}/year**

6.5.3.4 Decommissioning

The aerodrome is expected to operate so long as it is technically and economically feasible, which is anticipated to be several decades. The GHG contributions at decommissioning are anticipated to be of similar nature and magnitude as the estimates calculated for the construction phase and include the following stages:

- Airstrip and infrastructure will need to be removed.
- Re-grading and recontouring of the site to restore pre-development drainage to the extent practicable.
- Topsoil spreading, grading and revegetation.

Specific plans and estimates would be calculated in a more realistic timeframe for the project's end-of-life and using updated tools and information available at that time. At present, emissions at decommissioning

are conservatively estimated to be the equivalent of 1 year of construction emissions and include the emissions and quantities outlined in Table 6.7 below:

Table 6.7 – Tonnes CO_2e/year for Decommissioning

Source	GHG Total/Year
Scope 1 – Direct Emissions	
1) Construction Equipment – Diesel 5 pieces of heavy equipment (trucks and excavators) + 2 pieces of auxiliary equipment.	**492.75 t CO_{2e}/year**
2) Construction Equipment – Gas 2 vehicles – full time including construction and operations	**18.47 t CO_{2e}/year**
Scope 2 – Indirect Emission – Acquired Energy	**Not applicable**
Scope 3 – Indirect Emissions	
3) Personnel Vehicles – Construction	**61.88 t CO_{2e}/year**
4) Project related air travel	**1,000 t CO_{2e}/year**
TOTAL – Decommissioning	**1,573.1 t CO_{2e}/year**

6.6 Strategic Assessment of Climate Change

Utilizing the net GHG calculations in Section 3.1 of the Government of Canada's *Strategic Assessment of Climate Change (*Revised, October 2020) the following calculations for construction (Table 6.8) and for operations (Table 6.9) were computed.

Table 6.8 – Net GHG Emissions for Construction	
Calculation Element	**Project Value for the One Year of Construction (tCO_{2e})**
Direct Emissions	511.22
Plus Acquired energy GHG emissions	Not applicable
Minus CO_2 Captured and Stored	0
Minus Avoided Domestic GHG Emissions	0
Minus Offset Credits	0
Net GHG Emissions	**511.22**

Table 6.9 – Net GHG Emissions for Operations	
Calculation Element	**Project Value for the One Year of Construction (tCO_{2e})**
Direct Emissions	68.36
Plus Acquired energy GHG emissions	Not applicable
Minus CO_2 Captured and Stored	0
Minus Avoided Domestic GHG Emissions	0
Minus Offset Credits	0
Net GHG Emissions	**68.36**

Note: It is estimated that while decommissioning would not occur for the foreseeable future, the level of GHG emissions would be similar to construction phase.

6.7 Types of Waste and Emissions

A list of the types of waste and emissions that are likely to be generated — in the air, in or on water and in or on land — during any phase of the project.

6.7.1 Air

Per 6.4, expected emissions include: (i) emissions from earthworks and heavy equipment during construction and; (ii) emissions from aircraft and from use and maintenance of the gravel airstrip during operation. Emissions from vehicles and heavy equipment will be minimized by using best management practices including regular vehicle and equipment maintenance, limiting idling wherever possible, and use of best available technology where possible.

6.7.2 Water

The Big Bear Camp currently holds a license from the Water Security Agency (WSA) to pull water from Grygar Lake and treat it at their on-site water treatment plant. If additional water is required over the current allocation, an amendment to the WSA license will be obtained to include the water supply for the aerodrome. Septic services for the aerodrome terminal building will be in holding tanks (above or underground), which will be emptied by a vac truck and disposed of as required. Big Bear Camp currently has sewage holdings tanks which are permitted by SKENV and are emptied as required.

6.7.3 Land

Potential solid waste generated by the project are building materials, construction waste, and garbage/scrap materials. Materials will be sourced to minimize waste at source and then follow the waste management hierarchy: avoid waste, repurpose/reuse, recycle, and as a last resort dispose.

Domestic waste and recyclables will be stored, recycled or disposed in an appropriate manner. Source reduction elimination methods through design resource planning will be utilized. Materials on-Site will be re-used and recycled wherever possible.

Hazardous materials will be handled and stored in compliance with the Hazardous Substances and Waste Dangerous Goods Regulations. All chemicals and hazardous substances will be stored and handled according to Transportation of Dangerous Goods Regulations (TDG) and Workplace Hazardous Material Information System (WHMIS) requirements. Hazardous substance will be setback from waterbodies. Appropriate procedures for spill response will be outlined and readily available.

Aviation fuel(s), diesel and gasoline will be stored in approved double walled storage tanks equipped with secondary containment in accordance with provincial regulations and standards.

Oils, greases and coolant for equipment maintenance will be stored in the truck maintenance shop in appropriate containers. Material recycling such as used oil, oil filters, etc. will be conducted accordingly through the Saskatchewan Association for Resource Recovery Corporation (SARRC) program.

References

Acton, D.F., Padbury, G.A. and Stushnoff, C.T. (eds.) 1998. Ecoregions of Saskatchewan. Regina: Canadian Plains Research Center.

Angler's Atlas. 2023a. Hodge Lake. https://www.anglersatlas.com/place/110432/hodge-lake.

Angler's Atlas. 2023b. Grygar Lake. https://www.anglersatlas.com/place/112690/grygar-lake.

Canadian Environmental Assessment Act, 2012. *Guide to Preparing a Description of a Designated Project under the Canadian Environmental Assessment Act, July 2012.*

Canadian Environmental Assessment Act, 2012. *Assessing Cumulative Environmental Effects under the Canadian Environmental Assessment Act, 2012.*

Canadian Herpetological Society. 2023a. Boreal Chorus Frog. https://canadianherpetology.ca/species/species_page.html?cname=Boreal%20Chorus%20Frog.

Canadian Herpetological Society. 2023b. Canadian Toad. https://canadianherpetology.ca/species/species_page.html?cname=Canadian%20Toad.

Canadian Herpetological Society. 2023c. Northern Leopard Frog. https://canadianherpetology.ca/species/species_page.html?cname=Northern%20Leopard%20Frog.

Canadian Herpetological Society. 2023d. Red-sided Gartersnake. https://canadianherpetology.ca/species/species_page.html?cname=Red-sided%20Gartersnake.

Canadian Herpetological Society. 2023e. Wood Frog. https://canadianherpetology.ca/species/species_page.html?cname=Wood%20Frog.

Canada North Environmental Services (CanNorth). 2021a. Rook I Project Environmental Impact Statement Annex V.1: Aquatic Environment Baseline Report for the Rook I Project – Final Report. Prepared for NexGen Energy Ltd. Project No. 3008. September 2021.

Canada North Environmental Services (CanNorth). 2021b. Rook I Project Environmental Impact Statement Annex VII.2: Vegetation Baseline Report 2 (Inventory, Rare Plants, and Wetlands) for the Rook I Project – Final Report. Prepared for NexGen Energy Ltd. Project No. 3008. September 2021.

Canada North Environmental Services (CanNorth). 2021c. Rook I Project Environmental Impact Statement Annex VIII.2: Wildlife Baseline Report 2 (Amphibians, Birds and Bats). Prepared for NexGen Energy Ltd. Project No. 3008. September 2021.

Clifton Engineering Group (Clifton) and CanNorth. 2021. Fission Project Description – Patterson Lake South Project. Prepared for Fission Uranium Corporation. 130 pp. https://publications.saskatchewan.ca/#/products/115606.

Cornell Lab of Ornithology (Cornell). 2019. All About Birds. Cornell Lab of Ornithology, Ithaca, New York. https://www.allaboutbirds.org

COSEWIC. 2009. COSEWIC assessment and updated status report on Northern Leopard Frog *Lithobates pipiens*, Rocky Mountain population, Western Boreal/Prairie populations and Eastern populations, in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vii + 69 pp. (www.sasregistry.gc.ca/status/status_e.cfm).

UK Government. CO2 emissions of transport modes– processed by Our World in Data. *Transport emissions per kilometer travelled [dataset*]. https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2022

Environment Canada. 2013. Management Plan for the Northern Leopard Frog (*Lithobates pipiens*), Western Boreal/Prairie Populations, in Canada [Proposed]. *Species at Risk Act* Management Plan Series. Environment Canada, Ottawa. iii + 28 pp

Fission 2024, Fission Uranium Corp. Triple R Deposit Draft Environmental Impact Statement. Currently in review with Saskatchewan Environmental Assessment and Stewardship Branch, Saskatchewan Ministry of Environment. Submitted, March 2024.

Golder Associates Ltd. (Golder). 2022. Rook I Project Environmental Impact Statement Annex IV.2: Hydrometric Monitoring Characterization Report for the Rook I Project. Prepared for NexGen Energy Ltd. March 2022.

Government of Canada. *Strategic Assessment of Climate Change (*Revised, October 2020). Available online: https://www.strategicassessmentclimatechange.ca/

Government of Canada. 2019a. Impact Assessment Act. Available Online: https://laws-lois.justice.gc.ca/eng/acts/I-2.75/FullText.html.

Government of Canada. 2023. Northern Leopard Frog - Species At Risk Public Registry. http://www.registrelep-sararegistry.gc.ca/sar/index/default_e.cfm.

Ministry of Environment (ENV), Fish, Wildlife and Lands Branch. 2017. Activity Restriction Guidelines for Sensitive Species. Regina, Saskatchewan. Retrieved from https://publications.saskatchewan.ca/#/categories/2062

Myclimate flight emission calculator. https://co2.myclimate.org/en/flight_calculators/new

National Wetlands Working Group. 1997. The Canadian Wetland Classification System. Wetlands Research Centre, University of Waterloo, ON.

Omnia Ecological Services (Omnia). 2021a. Rook I Project Environmental Impact Statement Annex VIII.1: Wildlife Baseline Report 1 (Mammals, Waterfowl and Raptors). Prepared for NexGen Energy Ltd. December 2021.

Omnia Ecological Services (Omnia). 2021b. Rook I Project Environmental Impact Statement Annex VII.1: Vegetation Baseline Report 1 (Mapping). Prepared for NexGen Energy Ltd. December 2021.

Saskatchewan Conservation Data Centre. 2023a. Saskatchewan Non-Vascular Plant Species by Ecoregion Tracked Taxa List. Regina, Saskatchewan. Retrieved from www.biodiversity.sk.ca/SppList.htm.

Saskatchewan Conservation Data Centre. 2023b. Saskatchewan Non-Vascular Plant Species by Ecoregion Tracked Taxa List. Regina, Saskatchewan. Retrieved from www.biodiversity.sk.ca/SppList.htm.

Saskatchewan Conservation Data Centre. 2023c. Saskatchewan Vertebrate Tracked Taxa List. Regina, Saskatchewan. Retrieved from www.biodiversity.sk.ca/SppList.htm.

Saskatchewan Ministry of Environment. *Technical Proposal Guidelines.* June 2014.

Statistics Canada. 2023. (table). *Census Profile*. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released March 29, 2023. https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/index.cfm?Lang=E

MISTY CLIFTON
ENGINEERING

Misty Clifton Engineering Ltd.
#4 – 1925 1st Avenue N
Saskatoon, SK S7K 6W1

T (306) 975-0401
F (306) 975-1076

www.mistyventures.ca