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Environmental Impact Assessment Registration Document JDI Deersdale On-Site Septic System Upgrades

Deersdale, New Brunswick

GEMTEC Project: 100083.046

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Submitted to:

Department of Environment and Local Government
Marysville Place, P.O. Box 6000
Fredericton, NB
E3A 5T8

Environmental Impact Assessment Registration Document
JDI Deersdale On-Site Septic System Upgrades
Deersdale, New Brunswick

June 27, 2022
GEMTEC Project: 100083.046

GEMTEC Consulting Engineers and Scientists Limited
191 Doak Road
Fredericton, NB, Canada
E3C 2E6

June 27, 2022

File: 100083.046

Department of Environment and Local Government
Marysville Place, P.O. Box 6000
Fredericton, NB
E3A 5T8

Re: Environmental Impact Assessment
JDI Deersdale On-Site Septic System Upgrades, Deersdale, New Brunswick

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) is pleased to submit this electronic copy of the Environmental Impact Assessment (EIA) registration document for the proposed Septic System Upgrades at the J.D. Irving, Limited (JDI) Deersdale former sawmill site in Deersdale, New Brunswick. The proposed project involves the replacement of an existing septic system with an upgraded disposal field system on property identified by Service New Brunswick as Parcel Identifier (PID) 75466789 to support occupancy at the main camp accommodations.

Please do not hesitate to contact the undersigned if you have any questions or concerns about the registration document or the information presented herein.

Sincerely,

Paul Vanderlaan, P.Eng.
Environmental Regulatory Specialist
GEMTEC

Jennifer Hachey, B.Sc.
Senior Environmental Scientist
GEMTEC

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

GEMTEC Consulting Engineers and Scientists Limited (GEMTEC) has been retained by J.D. Irving, Limited (JDI) to prepare an Environmental Impact Assessment (EIA) document for the proposed septic system upgrades (herein referred to as “the Project”) at the former JDI sawmill site in Deersdale, New Brunswick. The proposed project involves the replacement of an existing septic system with an upgraded disposal field system on property identified by Service New Brunswick as Parcel Identifier (PID) 75466789 to support occupancy at the main camp accommodations. The existing infrastructure is approaching the end of its useful life and is in need of replacement.

The proposed project type is specified as an undertaking outlined in Schedule A of the *New Brunswick Environment Impact Assessment Regulation 87-83* under paragraph:

> (n): all sewage disposal or sewage treatment facilities, other than domestic, on-site facilities.

This document is in support of the EIA Registration for the proposed Project. The document details the necessary information as outlined in the New Brunswick Department of Environment and Local Government (NBDELG) document “A Guide to Environmental Impact Assessment in New Brunswick” dated January, 2018.

1.1 Name of the Undertaking and Project Proponent

1.1.1 Name of the Undertaking

JDI Deersdale On-Site Septic System Upgrade, Deersdale, New Brunswick

1.1.2 Project Proponent

The name and contact information of the Proponent is presented in Table 1.1.

Table 1.1 Proponent Information

Name of Proponent	J.D. Irving, Limited
Address of Proponent	10 First Avenue Clair, New Brunswick E7A 2A7
Principal Proponent Contact	Ms. Renée Morais, P.Eng. J.D. Irving, Limited Director of Environment Telephone: (506) 632-6433 Email: morais.renee@jdirving.com
Principal Contact Person for EIA	Paul Vanderlaan, P.Eng. GEMTEC 191 Doak Road, Fredericton, New Brunswick, E3C 2E6 Telephone: (506) 453-1025 Email: paul.vanderlaan@gemtec.ca
Property Ownership	The property is private land owned by New Brunswick Railway Company, a division of JDI.

2.0 PROJECT DESCRIPTION

2.1 Project Overview

JDI currently operates a main camp at the former JDI sawmill site on a portion of PID 75466789 in Deersdale, New Brunswick (Figure 1). The main camp has been in operation for more than 50 years, and incorporates fourteen (14) lodging buildings, a cook house, and a community building designed to accommodate 150 workers. JDI is proposing to upgrade the existing on-site septic disposal system that services this main camp.

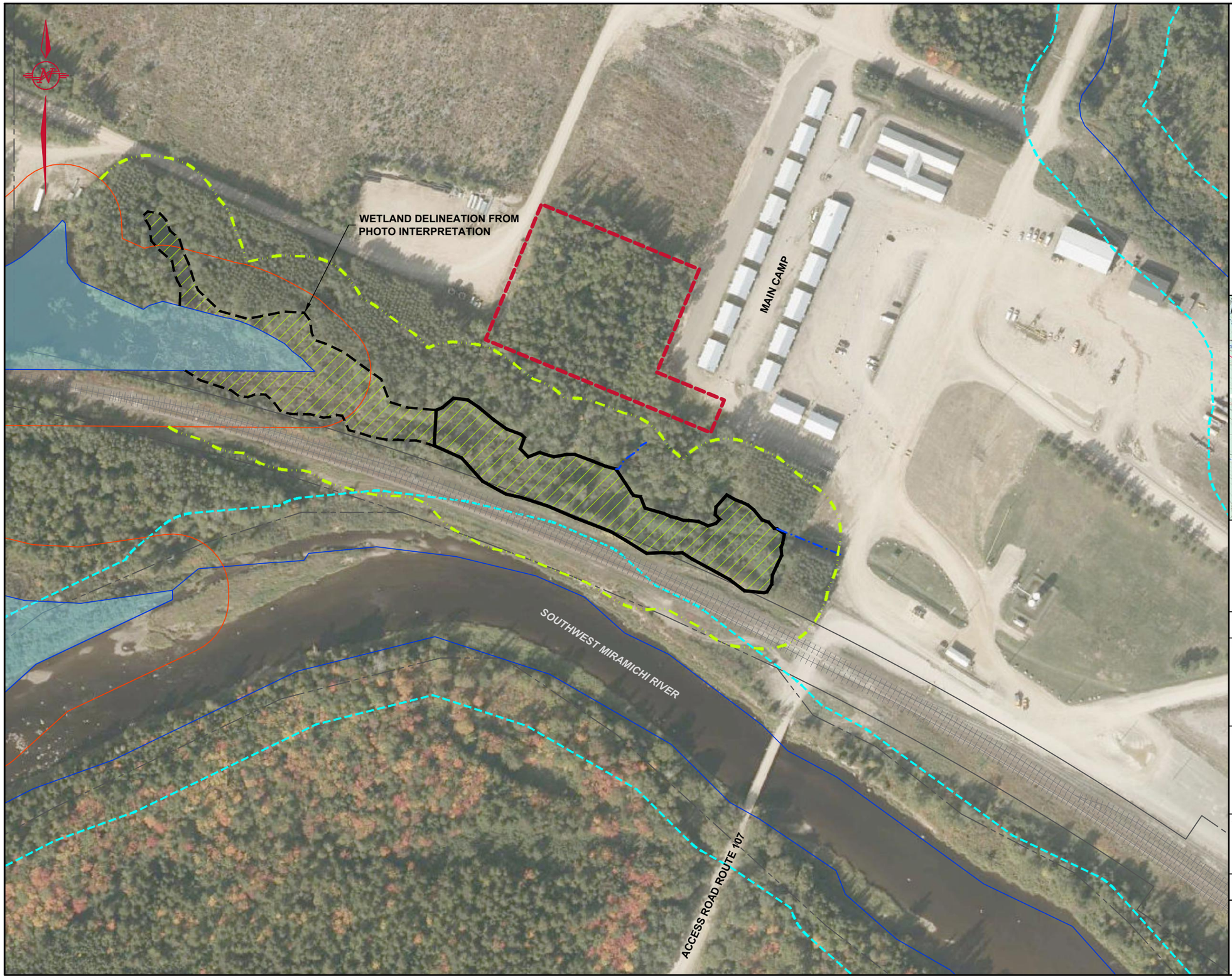
The existing septic system was installed in the 1970's and is approaching the end of its useful life and is in need of replacement. Currently, the septic system consists of two collection pipes, once small grease interceptor, and two 4,500-litre settling tanks (Base Map of New System, Appendix A). A small pump station transfers effluent from several camps to the collection piping. Historically, the main camp has been used intermittently to support JDI operations. In recent years, the camp was dormant or only minimally used. JDI is proposing to refurbish the on-site effluent disposal system to support future seasonal operations.

The proposed Project consists of the installation of a state of the art on-site effluent disposal system for the main camp. The upgraded system would continue to utilize the existing collection pipes, with two new pump stations, four new 13,000-litre septic tanks, 600 infiltrators, and 700 metres of leach field pipe would be installed southwest of the main camp (shown as the "Project Development Area" on Figure 1). The cook house will also be equipped with a new 4,500-litre grease interceptor. The new septic tanks and the grease interceptor will replace existing infrastructure in the same location; preliminary design drawings for the disposal field are presented in Appendix A. The new septic system will be designed and installed in accordance with the "New Brunswick Technical Guidelines for On-site Sewage Disposal System" by New Brunswick Health dated April 2020. Project related construction will be carried out in the summer of 2022, if approved.

2.2 Purpose / Rationale / Need for the Undertaking

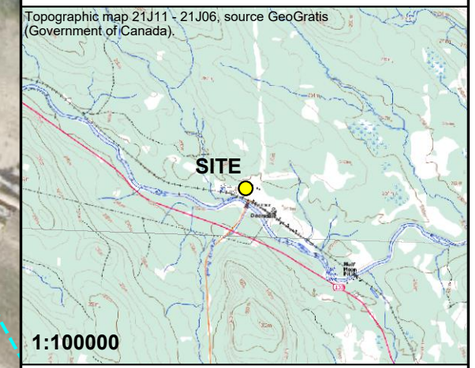
The purpose of the Project is to continue to provide safe and effective on-site septic disposal services to support the JDI Deersdale main camp during future operations.

The Project is located within JDI property, and is proposed to replace aging, existing infrastructure.



Legend

- PROPERTY LINE
- RAILWAY
- DELINEATED DRAINAGE
- DELINEATED WETLAND
- 30m BUFFER FROM DELINEATED WETLAND
- 30m BUFFER FROM WATERCOURSE
- REGULATED WETLAND
- 30m BUFFER FROM REGULATED WETLAND
- PROJECT DEVELOPMENT AREA



Notes

1. This drawing is a schematic representation. Sizes, locations and dimensions are approximate.
2. Coordinate system: New Brunswick; Stereographic projection, NAD83 (CSRS) Datum.
3. Aerial photograph from 2019. Source GeoNB Map Viewer.

Date	Draw	Checked
JUNE 2022	CHG	JH

Project

JDI DEERSDALE -
ON-SITE SEPTIC DISPOSAL
SYSTEM UPGRADES, DEERSDALE, NB

Drawing

SITE LOCATION PLAN

Scale

1:2000

0 40 80 120m

Project No.	Drawing No.	Revision No.
100083.046	FIGURE 1	0

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Consulting Engineers and Scientists

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2.3 Siting Considerations

The Project location was selected due to its proximity to the main camp and existing infrastructure (collection pipes). The proposed new effluent disposal field has been selected based on:

- flat topography (Figure 2),
- surficial geology,
- distance to environmental sensitive areas (wetland setbacks are met),
- current land use and proximity to service infrastructure, and
- aesthetic objectives (treed buffer will be maintained, when feasible).

Setbacks prescribed in the New Brunswick Technical Guidelines for On-Site Sewage Disposal Systems (April, 2020) are met with the proposed design of the new system.

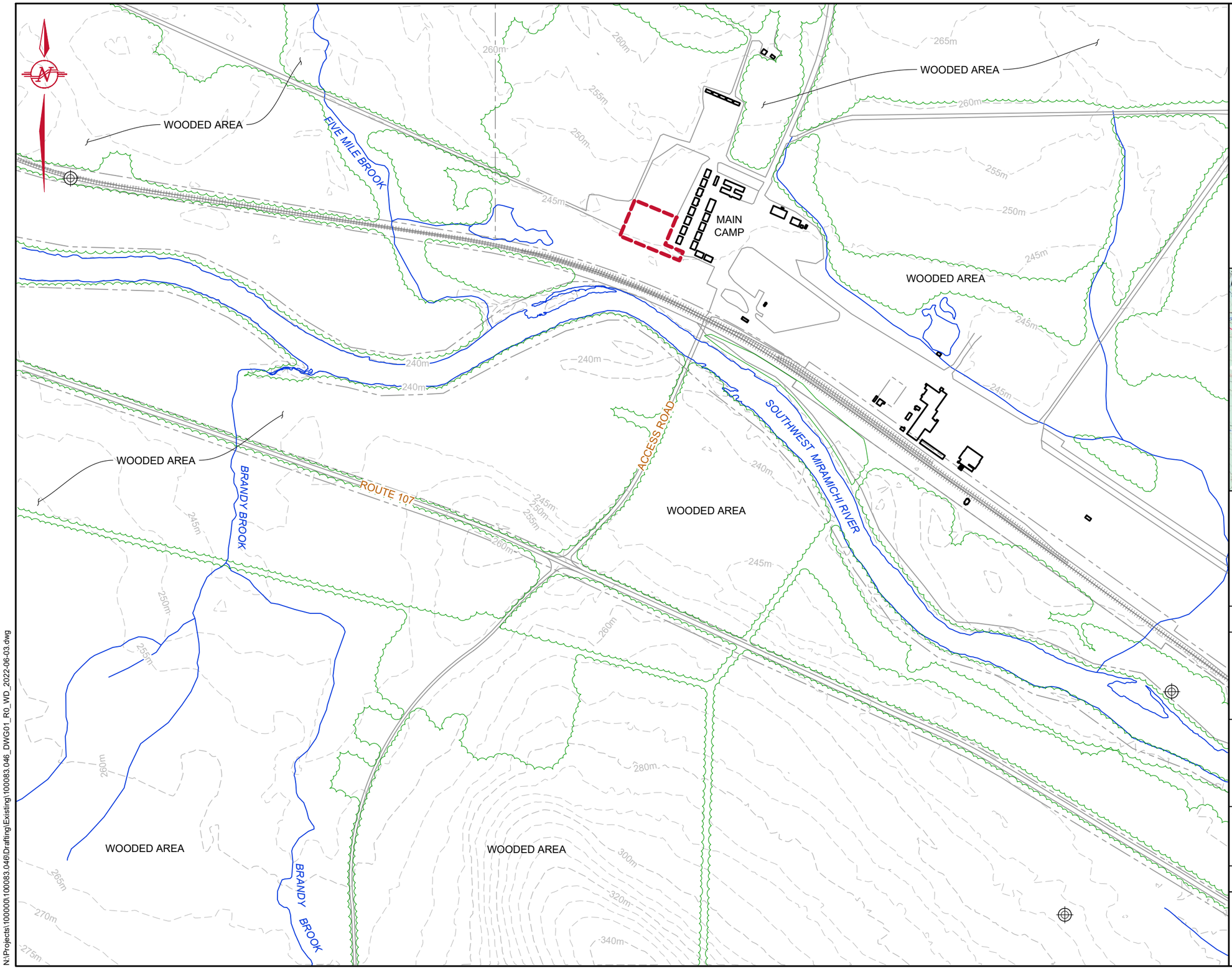
A regulated wetland is located south of the site; however, the new system is proposed outside the regulated 30-metre buffer. A wetland delineation was completed as part of the EIA and associated data is presented in Appendix B.

2.4 Physical Components and Dimensions of the Project

Preliminary design drawings are presented in Appendix A.

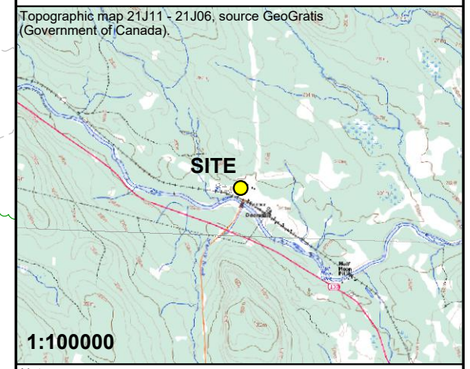
2.5 Project Related Documents

There are no known prior EIAs or environmental studies available for the Project.



Legend

- GROUNDWATER WELL (NBDELG Online Well Log System, 2022)
- WATERCOURSE
- TREE LINE
- PROPERTY LINE
- GROUND SURFACE CONTOUR, 5m. LIDAR 2018
- RAILWAY
- PROJECT DEVELOPMENT AREA



Notes

1. This drawing is a schematic representation. Sizes, locations and dimensions are approximate.
2. Coordinate system: New Brunswick; Stereographic projection, NAD83 (CSRS) Datum.
3. LIDAR from 2018. Vertical datum 2013 (CGVD2013). Source GeoNB LiDAR.

Date	Draw	Checked
JUNE 2022	CHG	JH

Project

JDI DEERSDALE -
ON-SITE SEPTIC DISPOSAL
SYSTEM UPGRADES, DEERSDALE, NB

Drawing

TOPOGRAPHY MAP

Scale

1:7500

0 150 300 450m

Project No.	Drawing No.	Revision No.
100083.046	FIGURE 2	0

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3.0 ENVIRONMENTAL IMPACT ASSESSMENT METHODOLOGY

This EIA report has been written to meet the requirements of the *New Brunswick Environmental Impact Assessment Regulation 87-83* (as described in Section 1.0), and in particular:

- Documents the existing conditions of the site and the Project description;
- Assesses potential environmental effects of the Project (positive or negative);
- Outlines mitigation and impact management measures to minimize anticipated impacts or to reduce anticipated impacts to acceptable levels.

Specific to the EIA document, potential interactions or effects of the Project on the environment have been identified and are discussed herein. Where potential effects are anticipated, the proposed methods for mitigating the potential effects have been presented.

The EIA has been completed for two spatial boundaries:

- The Project Development Area (PDA) is defined as the general location of the proposed Project as depicted in Figure 1; and
- The Assessment Area is generally defined as nearby sensitive receptors on PID 75466789 and adjoining properties.

The temporal boundaries of the assessment have been considered for the construction and operation phase of the Project. It is expected that a decommissioning plan will be developed in accordance with the approval provided by Public Health, when applicable.

4.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

4.1 Groundwater Resources

4.1.1 Drainage and Topography

A review of contour mapping indicates the general gradient of the PDA is sloping southwest. Downgradient flow is expected west through the nearby wetland area, then south via Five Mile Brook to outlet into the Southwest Miramichi River (Photo 6, Appendix B; GeoNB Mapping, Appendix C). The existing rail embankment serves as barrier to direct the passage of surface water flow from the PDA into the Southwest Miramichi River. The nearby wetland area currently receives hydrological inputs from existing stormwater ditching along the main camp roadways and parking lots adjoining the PDA.

Regionally, the Southwest Miramichi River flows west to east / northeast and serves as the primary receiver of the surrounding drainage basins (Toporama Mapping, Appendix C).

4.1.2 Geology

Surficial geology mapping indicates that the area of study is covered with Late Wisconsinan morainal sediments consisting of blankets and veneers of loamy lodgment till, minor ablation till, silt, sand, gravel, rubble. Generally being stony till that is 0.5 metres to 3 metres thick (Rampton, V. N., 1984).

As part of the Project, NATECH Environmental Services Inc. (NATECH) undertook a geotechnical investigation of exploratory test pits situated near the PDA. Generally, the soil strata conditions consist of a layer of organic overburden followed by sand and gravel. Bedrock was not encountered in two of the three test pits which were dug to the required depth of 1.8 metres. Groundwater seepage was not observed during the investigation. Borehole logs are included in Appendix A.

Local bedrock geology mapping indicates bedrock in the area generally comprises Late Cambrain – Early Ordovician deep water marine clastics sedimentary rocks (NBDNR, 2008).

4.1.3 Groundwater Quality and Quantity

The NBDELG Online Well Log System (OWLS) was accessed to identify groundwater extraction wells located within a 1 kilometre (km) radius of the PDA. The OWLS database is maintained by NBDELG and contains information on water wells constructed since 1994. The NBDELG takes no responsibility and makes no guarantee as to the completeness, accuracy or timeliness of the data provided in this database.

There were five groundwater wells, drilled between 2003 and 2018, identified in the NBDELG database that occur within a 1 km radius of the PDA; the three closest wells are shown on Figure 2. Well driller reports are presented in Appendix C and well construction details for these wells are summarized in Table 4.1.

Groundwater chemistry records were not available for any wells drilled within 1 km of the PDA.

Table 4.1 Construction Details for Wells Reported Within 1 km of PDA

Well Construction Component	Minimum	Maximum	Average
Total Well Depth (m)	42.67	79.25	58.52
Casing Depth (m)	11.28	21.34	13.87
Casing Diameter (cm)	15.24	15.24	15.24
Estimated Safe Yield (L/min)	91	136	118
Water Bearing Fracture Zones (m)	15.24	74.68	38.27
Depth to Bedrock (m)	0	11.58	6
Bedrock Type	Sandstone, Granite, Shale		

Notes:
m = metres; cm = centimetres; L/min = litres per minute

A domestic groundwater well services the main camp for drinking water purposes. This well is located approximately 200 metre northeast and upgradient of the existing septic infrastructure and proposed new infrastructure. The prescribed setback in the New Brunswick Technical Guidelines for On-site Sewage Disposal System (April 2020) are met with the new design.

The nearest residential property with a presumed potable well is located 8 km upgradient of the PDA.

4.2 Ecological Environment

A two-phased approach was used to determine the existing ecological environment, and any potential interaction with the Project, including:

- A desktop study of all existing information for habitat, flora and fauna species at risk (SAR) and species of conservation concern (SOCC) that may occur within the PDA. SAR are considered species that have a protective status under Schedule 1 of the federal *Species at Risk Act* (*SARA*) or are protected under the provincial *New Brunswick Species at Risk Act* (*NBSAR*). SOCC include species that are:
    - Considered rare in New Brunswick with an Atlantic Canada Conservation Data Centre (ACCDC) S-rank of S1 (imperiled) to S3 (vulnerable); and / or
    - Ranked At Risk, May Be At Risk or Sensitive by the New Brunswick Department of Natural Resources and Energy Development (NBDNRED);
- Field investigation by GEMTEC biologists was conducted on May 18 and May 31, 2022 to field truth habitat types within the PDA, conduct a wetland delineation, and to conduct a breeding bird survey.

A data request was submitted to the ACCDC for a 5 km radius of the PDA. The ACCDC report provides the location of recorded flora and fauna SAR or SOCC, the presence or absence of any location sensitive species, and the location and information on significant or managed natural areas. The ACCDC report in presented in Appendix C.

4.2.1 Terrestrial Habitat Description

GEMTEC biologists attended the site on May 18 and 31, 2022 to characterize the habitat and complete a delineation of the wetland near the PDA. Three habitats were identified and are discussed below.

4.2.1.1 Wetland

The provincial GeoNB mapping was reviewed prior to the field investigation and showed a mapped wetland associated with a small unnamed tributary to Five Mile Brook, west of the PDA (GeoNB Mapping, Appendix C). During the field investigation, it was determined that this wetland extends east along the northern side of the rail embankment (Figure 3, Appendix B). To determine the wetland boundaries, the assessor used accepted industry standards as described by the Corps of Engineers Wetlands Delineation Manual - Technical Report Y-87-1, U.S. Army Corps of Engineers (1987), and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, U.S. Army Corps of Engineers (2012). This included identifying the presence of dominating hydrophytic vegetation, hydric soils and any hydrological indicators such as surface water, soil saturation and drainage patterns, etc. A paired data point (wetland and upland) was recorded at any encountered wetland to show the three parameter

determinations. The data point information was recorded on the NBDELG Wetland Delineation Data Form for New Brunswick (Appendix B). A handheld GPS was used to capture the coordinates of the wetland boundary and data points. Site photos are included in Appendix B.

Hydrophytic vegetation, hydrology indicators and hydric soil characteristics are all confirmed in the wetland area. The wetland is largely dominated by Balsam Poplar (*Populus balsamifera*) with associate species including Speckled Alder (*Alnus incana*) and Sensitive Fern (*Onoclea sensibilis;* Photo 1, Appendix B). Surface water was observed throughout the wetland; a saturated loam matrix was observed in the soil assessment (Photo 2, Appendix B). Wetland delineation data sheets are provided in Appendix B. The wetland is located south of the PDA, separated by mixed woodland upland (described below).

4.2.1.2 Woodlands

A mixed woodland comprises the PDA and areas north of the wetland (Figure 1). The mixed woodland is dominated by Balsam Poplar (*Populus balsamifera*) and Trembling Aspen (*Populus tremuloides*). Understory vegetation is dominated by regenerating tree species. Ground vegetation included Raspberry (*Rubus idaeus*), Strawberry (*Fragaria sp.*), White Meadowsweet (*Spriaea alba*), and grass (*Grass sp.*). The woodland is described as having a closed canopy comprised of mature coniferous and deciduous trees and a relatively dense understory (Photo 3, Appendix B).

A Red Pine (*Pinus resinosa*) plantation adjoins the PDA to the southwest.

4.2.1.3 Anthropogenic – Disturbed Lands

A railway embankment is situated south of the PDA, spanning west to east, and creates the southern wetland boundary (Photo 6, Appendix B). Gravel roadways / parking lots adjoin the PDA to the west and east (Figure 1).

4.2.2 Aquatic Habitat Description

Observations regarding the aquatic habitat surrounding the Project were collected using GeoNB mapping tool and field observations during the site visit on May 31, 2022.

The delineated wetland included open-water marsh habitat with a mix of emergent and submerged vegetation (Photo 1, Appendix B). Substrate was a mix on fines and gravel with some cobble. The wetland serves as headwaters for a small tributary to Five Mile Brook, approximately 450 meters long, running parallel to the railway embankment. The tributary flows west to join Five Mile Brook, located approximately 500 metre downgradient from the PDA.

Downstream of the junction with the unnamed tributary, Five Mile Creek flows southeast through wetland habitat for approximately 360 metres before outletting into the Southwest Miramichi River (GeoNB Mapping, Appendix C).

4.2.3 Ecological Significant Areas (ESAs)

The ACCDC report did not identify any managed areas or biologically significant sites within a 5 km radius of the PDA (ACCDC, 2022; Appendix C).

No National Wildlife Areas (NWAs), Migratory Bird Sanctuaries (MBSs), Ramsar Sites, or New Brunswick Protected Natural Areas are located within 5 km of the PDA (Environment Canada Protected Areas Network, 2022, Ramsar Sites Information Service, 2022, and NBDNRED Protected Natural Areas, 2022).

The Project is not expected to interact with any ESAs; therefore, is not discussed further in this EIA.

4.2.4 Flora SAR and SOCC

The ACCDC report identified three flora species (vascular plants) as occurring within 5 km of the PDA (Appendix C), and these species are considered to be SOCC under this assessment. Two of the SOCC species, White Elm (*Ulmus americana*) and Canada Lily (*Lilium canadense*) are reported to occur less than 1 km from the PDA, along the Southwest Miramichi River (ACCDC, 2022). These species are ranked S3S4 (vulnerable / apparently secure) by the ACCDC; preferred habitat was not observed within the PDA.

The preferred habitat descriptions for all ACCDC listed flora are presented in Table 4.2.

A targeted flora survey was not conducted; however, GEMTEC biologists did not encounter any incidental flora SAR during the 2022 field investigations.

The Project is not expected to interact with any flora SAR or SOCC and, therefore, is not discussed further in this EIA.

Table 4.2 Flora Species of Conservation Concern Recorded within 5 km of the Project Site

Common Name	Scientific Name	S-Rank	Habitat	Probability of Occurrence in PDA
Black Ash	*Fraxinus nigra*	S3S4	Poorly drained soils in wetlands, valleys, and along watercourses or floodplains.	Low
White Elm	*Ulmus americana*	S3S4	Tolerant to shade and moisture, prefers well drained soils and full sunlight.	Low
Canada Lily	*Lilium canadense*	S3S4	Areas of full sun with moist soils such as marshes, ditches, and along watercourses.	Low

4.2.5 Breeding Bird Survey

On May 18, 2022, between 06:30 and 07:40, a GEMTEC biologist conducted a breeding bird survey within the vicinity of the PDA. Three-point counts were conducted to collect evidence of breeding birds such as nests, territorial displays, alarm calling, individuals flushed, mating, and aggressive defending of territories.

A total of 15 avifauna species were recorded during the survey. These species would be expected given the development stage, species composition and diversity of habitat types within the PDA. One species, the Evening Grosebeak (*Coccothraustes vespertinus*) is listed as Special Concern under *SARA*; therefore, is considered a SAR under this assessment. A summary of the bird species recorded during the May 18, 2022 field survey is presented in Table 4.3.

Table 4.3 Summary of Observed Birds May 18, 2022

Common Name	Scientific Name	S-Rank	NBDNRED General Status
American Robin	*Turdus migratorius*	S5B	Secure
White-throated Sparrow	*Zonotrichia albicollis*	S5B	Secure
Chirping Sparrow	*Spizella passerina*	S5B	Secure
American Crow	*Corvus brachyrhynchos*	S5	Secure
Yellow Rumped Warbler	*Dendroica coronata*	S5B	Secure
American Redstart	*Setophaga ruticilla*	S5B	Secure
Common Yellowthroat	*Geothlypis trichas*	S5B	Secure
Chestnut-sided Warbler	*Setophaga pensylvanica*	S5B	Secure
Common Grackle	*Quiscalus quiscula*	S5B	Secure
Evening Grosbeak	*Coccothraustes vespertinus*	S3B,S3S4N,SUM	Secure
Redwinged Blackbird	*Agelaius phoeniceus*	S4B	Secure
Pine Siskin	*Spinus pinus*	S3	Secure
Yellow Warbler	*Setophaga petechia*	S5B	Secure
Song Sparrow	*Melospiza melodia*	S5B	Secure
Northern Parula	*Parula americana*	S5B	Secure

4.2.6 Wildlife Species at Risk (SAR) and Critical Habitat

The ACCDC listed 10 fauna species as occurring within 5 km of the PDA. Seven of the 10 species listed are considered SAR under this assessment, and three of the SAR have a moderate to high potential of utilizing the PDA based on the habitat units described in Section 4.2.1:

- The Rusty Blackbird (*Euphagus carolinus*) is listed as Special Concern under *SARA* and *NBSAR*. Rusty Blackbirds prefer forest wetlands, such as slow moving streams, peat bogs, sedge meadows, marshes, swamps, beaver ponds and pasture edges (SARA, 2021). These habitats are found near the PDA;
- The Olive-sided Flycatcher (*Contopus cooperi*) is listed as Threatened under *SARA* and *NBSAR*. This species is often associated with natural forest openings and other forest edges (especially along wetlands) or open to semi-open forest stands containing snags. Olive-sided Flycatcher requires habitat heterogeneity along high-contrast edges of two distinct habitats, most often occurring where mature forest meets burns, shrub fields, bogs, meadows, and other openings (SARA, 2021). These habitats are found near the PDA; and
- The Canada Warbler (*Cardellina canadensis*) is listed as Threatened under *SARA* and *NBSAR*. This species is found in a variety of forest types, but it is most abundant in wet, mixed deciduous-coniferous forest with a well-developed shrub layer. It is also found in riparian shrub forests on slopes as well as in stands regenerating after natural disturbances, such as forest fires, or anthropogenic disturbances, such as logging (SARA, 2021). These habitats are found near the PDA.

Table 4.4 summarizes ACCDC listed SAR species and the potential interactions with the Project based on known habitats in the PDA.

The ACCDC listed the Wood Turtle (*Glyptemys insculpta*) as a location sensitive species (*i.e.,* known to in-habitat areas within 5 km of the PDA). The Wood Turtle is listed as Threatened under *SARA* and the *NBSAR.* This species is generally found in forested habitats and require daily water resources; thus are associated with clear, freshwater streams and the associated floodplains. The preferred streams contain a year-around flow with substrate beds of sand, gravel and sometimes cobble. Wood Turtles also use bogs, marshy pastures, beaver ponds, oxbow lakes, riparian and shrub areas, meadows, hay and agricultural fields, and transmission line right-of-ways (SARA, 2021). These habitats were observed along the Southwest Miramichi River, located approximately 150 metres from the PDA. The rail embankment and rail infrastructure creates a migration barrier between the watercourse and the PDA (Photo 6, Appendix B); therefore, the occurrence of Wood Turtles in the PDA is considered low.

4.2.7 Wildlife Species of Conservation Concern

The three remaining species recorded by ACCDC are considered SOCC; however, none of the SOCC have a high or moderate potential for utilizing the PDA. Table 4.5 summarizes ACCDC listed SOCC species and the potential interactions with the Project based on known habitats in the PDA.

Table 4.4 Fauna Species at Risk with 5 km of the Project Site + Potential Use of PDA

Common Name	Scientific Name	S-Rank	NBDNRED General Status	Nesting Habitat	Probability of Occurrence in PDA
Chimney Swift	*Chaetura pelagica*	S2S3B, S2M	Threatened	Vertical cavity for nesting (e.g., hollow trees, chimneys, silos, wells, abandoned buildings).	Low
Rusty Blackbird	*Euphagus carolinus*	S2S3B, S3M	Special Concern	Nesting on margins of wetlands in boreal forest, over or near water in riparian vegetation.	Moderate
Olive-sided Flycatcher	*Contopus cooperi*	S3B	Threatened	Nests in trees on the edges of coniferous or mixed forests.	Moderate
Common Nighthawk	*Chordeiles minor*	S3B, S4M	Threatened	Nesting sites in open areas with dry, well-drained substrates and nearby shade.	Low
Canada Warbler	*Cardellina canadensis*	S3S4B	Threatened	Nesting habitat in moist dense thickets near wetlands.	Moderate / High
Canada Lynx	*Lynx canadensis*	S4	Endangered	Multi-layered boreal forest stands with dense vegetation.	Low
Cougar – Eastern population	*Puma concolor pop. 1*	SU	Endangered	Large, undisturbed and unfragmented areas of forest, wetland, or rocky outcrops.	Low

Table 4.5 Fauna Species of Conservation Concern with 5 km of the Project Site + Potential Use of PDA

Common Name	Scientific Name	S-Rank	NBDNRED General Status	Nesting Habitat	Probability of Occurrence in PDA
Cliff Swallow	*Petrechelidon pyrrhonota*	S2B	Sensitive	Nesting habitat includes bridges, farms, cliffs, and river bluffs.	Low
Scarlet Tanager	*Piranga olivacea*	S3B	Undetermined	Nests in mature deciduous trees such as maple, beech, and oak.	Low
Canada Jay	*Perisoreus canadensis*	S3S4	Sensitive	Boreal and subalpine forests.	Low

4.3 Cultural Features

There are no federally, provincially, or locally recognized heritage areas located within or adjoining the PDA.

The nearest First Nations communities are the Neqotkuk (Tobique) First Nation and Wotstak (Woodstock) First Nations located approximately 55 km northwest and 60 km southwest of the PDA, respectively.

A preliminary survey Archaeological Impact Assessment (AIA) is being undertaken on the PDA by subcontracted archaeologist. The results of survey will be submitted under separate cover.

4.4 Existing Land Use

The PDA is a portion of the former JDI Deersdale sawmill site and adjoins the associated main camp. The main camp has been in operation for more than 50 years, and incorporates fourteen (14) lodging buildings, a cook house and a community building designed to accommodate 150 workers. The existing septic system was installed in the 1970's is approaching the end of its useful life and is in need of replacement. Currently, the septic system consists of two collection pipes, once small grease interceptor, and two 4,500-litre settling tanks. Historically, the main camp has been used intermittently to support JDI operations. In recent years, the camp was dormant or only minimally used.

The PDA is a mixed woodland plot adjoining the main camp. The southeastern portion of the PDA houses the existing septic tanks (Base Map of New System, Appendix A).

All adjoining properties are owned by the New Brunswick Railway Company.

4.4.1 New Brunswick Department of Environment and Local Government Records

Based on SNB land gazette records, the PDA's parent parcel (PID 75466789) is a registered petroleum storage tank site under the provincial *Petroleum Product Storage and Handling Regulation,* and contamination has been found on the adjoining property (PID 75145623; SNB, 2022). A copy of received NBDELG information is presented in Appendix C.

There are no records of ministerial orders or remediation orders for the parent or adjoining properties, nor are these PID known polychlorinated biphenyl (PCB) storage sites, or former landfills.

The Project is not expected to interact with petroleum storage tanks; thus, is not discussed further in this EIA.

The contamination records for the adjoining property (PID 75145623) are summarized in Table 4.6.

Three of the remediation files were closed following remedial action of petroleum impacts; and as such, do not pose an environmental risk to the PDA. Two remediation files have not been closed; however, the closest upgradient property boundary to the PDA is approximately 1 km north; thus potential interaction with contaminated soil / water and the Project is considered low and not discussed further herein.

Table 4.6 Summary of Contamination Information (PID 75145623)

Site Name	File Opened	Contamination Type	File Status
Hwy 107, Napadogan, JDI Woodlands Garage	November 1990	Petroleum	File #6515-5-0217: Closed. 1992 Generic criteria achieved, no further action necessary.
Hwy 107, Napadogan, J.D. Irving Woodlands (Deersdale)	October 1999	Petroleum	File #6515-5-0606: Closed. 1999 Limited remedial action taken. No further action necessary.
Hwy 107, Napadogan, NB Railway Co. Ltd.	July 1996	Petroleum	File #6515-5-0716: Closed. Some remedial action taken – Contamination status has not been confirmed.
5120 Route 107, Deersdale Mill Yard, NB Railway Co. Ltd.	December 2004	Petroleum	File #6515-5-0780: Open.
5120 Route 107, Deersdale, NB Railway Co. Ltd.	September 2003	Petroleum	File #6515-5-0792: Open.

The provided information is an accurate reflection of what is contained in NBDELG databases.

5.0 IDENTIFICATION OF ENVIRONMENTAL IMPACTS

The proposed Project involves ground disturbing activities required for the construction of a new septic system, and the operation of the upgraded septic system in support of JDI Deersdale main camp seasonal operations.

5.1 Groundwater Resources Potential Effects

5.1.1 Drainage and Topography Potential Effects

Potential effects to regional physiography as a result of Project activities are not expected. The overall drainage patterns will remain consistent or similar to existing conditions. The minor changes to drainage patterns are not expected to interact with groundwater resources within the Assessment Area; therefore, physiography and drainage are not discussed further in this EIA.

5.1.2 Geology and Hydrogeology Potential Effects

Potential effects to surficial geology as a result of Project activities include ground disturbance and the release of accumulated biomat or other contaminates during removal of the null infrastructure.

Any excavated material will be used as bedding in natural depressions and as fill after grading. No material is expected to be removed from the PDA. In the event of a release of biomat build-up or other contaminate during the removal of the null infrastructure, the impacted soil will be removed from PDA and disposed of at a designated facility.

Imported material will consist of treatment sand and topsoil.

5.1.3 Groundwater Quality and Quantity Potential Effects

Potential effects to groundwater quality as a result of Project activities include the potential for:

- Contaminants through spills of fuels, lubricants, and chemicals from on-site equipment and storage areas during construction phase of the Project; and / or
- The release of septic effluent through a failure of the system into a groundwater resource during the operation phase of the Project.

As the groundwater table was not encountered during nearby geotechnical investigations, the potential for effects to groundwater quality is considered low. The proposed infrastructure is designed per the New Brunswick Technical Guidelines for On-Site Sewage Disposal Systems (April 2020), and with the consideration of regular maintenance, any effluent is assumed to be properly treated before entering a nearby aquifer.

Further, the septic pumps will be tied into the emergency power source on the site. In the event of a power source failure, the water source pump will also be immobilized; thus, effluent quantities will be reduced.

5.2 Ecological Environment Potential Effects

5.2.1 Terrestrial Habitat Potential Effects

Potential effects to the terrestrial environment include ground disturbance and vegetation clearing required for the construction phase of the Project. An approximate area of 0.4 hectares (ha) will be cleared of trees.

Once cleared, an excavator will trench the overburden soils to allow for the installation of the new treatment sand and filter bed infrastructure, the new force mains, and new septic tanks. Any excavated material will be used as bedding in natural depressions and as fill after grading. No material is expected to be removed from the PDA. In the event of a release of biomat build-up or other contaminate during the removal of the null infrastructure, the impacted soil will be removed from PDA and disposed of at a designated facility.

5.2.2 Wetlands and Watercourses Potential Effects

No Project footprint is required within the boundaries or regulated buffer of a watercourse or wetland. However, drainage features may provide a corridor between the PDA and these features. Potential effects to wetland and watercourses as a result of Project activities include:

- Contaminants through spills of fuels, lubricants, and chemicals from on-site equipment and storage areas during construction phase of the Project;
- Ground disturbance increases potential for the degradation of the adjoining habitat via the failure of erosion and sediment control structures during the construction phase of the Project, and / or
- The release of septic effluent through a failure of the system into the surface water habitats during the operational phase of the Project.

The existing septic system was installed in the 1970's and is approaching the end of its useful life and is in need of replacement. The proposed Project is expected to have a positive impact to the surrounding wetlands and watercourses by replacing deteriorated infrastructure with a new system designed to accommodate future operations at the main camp.

5.2.3 Wildlife and Bird Habitat Potential Effects

The identified potential effects to wildlife and habitat as a result of the Project include:

- Noise from construction activities may disrupt wildlife and birds; however, this is not considered new Project-related activity as the PDA is located in an industrial area where heavy equipment is frequent;
- Increased motor vehicle traffic will occur during the construction phase of the Project and vehicular collisions may cause injury or death to involved wildlife and birds. This is not

considered new Project-related activity as vehicle traffic is currently observed on roadway adjoining the PDA;

- There is a possibility of human interaction with wildlife as a result of personnel within the PDA. In addition, there is a possibility of wildlife attraction to waste, garbage and stockpiled material stored on PDA. This is not considered new Project-related activity as human presence is currently observed on areas adjoining the PDA;
- Wood Turtles may frequent the PDA or adjoining areas,
- Impacts to migratory birds:
    - Migratory birds may utilize the habitat in the PDA and these birds and their nests are protected under the federal *Migratory Bird Convention Act (1994) (MBCA)*. Project activities may alter or destroy migratory bird habitat as a result of the vegetation clearing;
    - Attraction to cleared or stockpile areas may result in an increase in bird injuries or deaths, and / or destruction of nests; and
- Accidental contaminant spills may result in wildlife injury or death and / or destruction of nests, habitat or foraging areas.

The one bird SAR and the preferred habitat for three bird SOCC were identified within or near the PDA. The construction phase of the Project may result in injury or death and / or destruction of nests, habitat or foraging areas for these species. During the operational phase of the Project, birds and wildlife will be able to access and utilize the PDA.

5.3 Cultural Features Potential Effects

No First Nations or designated reserve lands adjoin the PDA. A notification letter was sent to the Wolastoqey Nation in New Brunswick (WNNB) and Mi'gmawe'l Tplu'taqnn Incorporated (MTI) to inform these organizations of the proposed Project. Any received correspondence and concerns will be presented to NBDELG under a separate cover detailing public and First Nations consultation.

5.4 Existing Land Use

The Project is expected to have a positive impact to existing land use by replacing aging infrastructure with a safe and effective on-site septic treatment to support the JDI Deersdale operations, and to accommodate future operations at the main camp.

6.0 SUMMARY OF PROPOSED MITIGATION

The potential effects and proposed mitigation measures to minimize the potential adverse effects to the environment during the Project are summarized in Table 6.1.

Table 6.1 Summary of Proposed Mitigation Measures

Project Component	Summary of Potential Interaction	Mitigation Measures
Geology and Terrestrial Habitat	Ground disturbance during construction increases potential for the degradation of the PDA adjoining properties via the failure of erosion and sediment control structures.	Erosion and sediment control (ESC) structures (i.e., silt fencing) should be properly installed around the work area prior to commencement of any on-site activities, as applicable. All structures should be inspected regularly to ensure that they are functioning as intended during construction; At the first evidence that runoff of sediment is starting to occur, Project work should temporarily cease. All siltation prevention devices should be inspected and monitored. Any necessary repairs should be made such that they accomplish their intended function prior to work commencing; Once the Project work is complete, all exposed, erodible soil should be stabilized against erosion (i.e., grading); and Existing vegetation should be retained whenever possible.
	Release of accumulated biomat or other contaminates during removal of existing infrastructure.	The existing septic system should be removed entirely; Existing tanks should be emptied prior to removal; and Appropriate spill response equipment should be stored and readily available for the duration of the construction phase of the Project.

Table 6.1 Summary of Proposed Mitigation Measures

Project Component	Summary of Potential Interaction	Mitigation Measures
Groundwater Quality	Potential for contaminants to be released into groundwater resources through spills of fuels, lubricants, and chemicals from on-site equipment and storage areas during the construction phase of the Project.	No construction chemical or petroleum storage should occur within 100-metres of a private groundwater well; No construction chemical or petroleum storage should occur within 30-metres of an environmental sensitive area (i.e., wetland, etc.); and Construction equipment should be kept in good working order.
	Potential for a release of septic effluent into water resources through a failure of the system infrastructure during the operational phase of the Project.	The system should be designed in accordance with New Brunswick Technical Guidelines for on-Site Sewage Disposal Systems, April 2020; The system meets all separation distances stated in the New Brunswick Technical Guidelines for on-Site Sewage Disposal Systems, April 2020; All design and construction work should be conducted by persons qualified / licensed in their trade; Installation and initiation of the system should be completed during “off-season” when septic load is low to monitor for leaks or ground surface breakout; Vehicle traffic should not be permitted atop the newly installed infrastructure; Infrastructure should be regularly inspected as per manufactures recommendations and maintained for discrepancies and immediate resolution should be initiated, as required; and Pumps should be tied to emergency power on site.

Table 6.1 Summary of Proposed Mitigation Measures

Project Component	Summary of Potential Interaction	Mitigation Measures
Wetlands and Watercourses	Potential for contaminants to be released into water resources through spills of fuels, lubricants, and chemicals from on-site equipment and storage areas during the construction phase of the Project.	No construction chemical or petroleum storage should occur within 30-metres of an environmental sensitive area (i.e., wetland, etc.); and Construction equipment should be kept in good working order.
	Potential for a release of septic effluent into surface water resources through a failure of the system infrastructure during the operational phase of the Project.	The system should be designed in accordance with New Brunswick Technical Guidelines for on-Site Sewage Disposal Systems, April 2020; The system meets all separation distances stated in the New Brunswick Technical Guidelines for on-Site Sewage Disposal Systems, April 2020; All design and construction work should be conducted by persons qualified / licensed in their trade; Installation and initiation of the system should be completed during “off-season” when septic load is low to monitor for leaks or ground surface breakout; Vehicle traffic should not be permitted atop the newly installed infrastructure; Infrastructure should be regularly inspected as per manufactures recommendations and maintained for discrepancies and immediate resolution should be initiated, as required; and Pumps should be tied to emergency power on site.

Table 6.1 Summary of Proposed Mitigation Measures

Project Component	Summary of Potential Interaction	Mitigation Measures
	Ground disturbance during construction increases potential for the degradation of surface water quality via the failure of erosion and sediment control structures.	ESC structures (i.e., silt fencing) should be properly installed around the work area prior to commencement of any on-site activities, as applicable. All structures should be inspected regularly to ensure that they are functioning as intended during construction; At the first evidence that runoff of sediment is starting to occur, Project work should temporarily cease. All siltation prevention devices should be inspected and monitored. Any necessary repairs should be made such that they accomplish their intended function prior to work commencing; Once the Project work is complete, all exposed, erodible soil should be stabilized against erosion (i.e., grading); and Existing vegetation should be retained whenever possible.

Table 6.1 Summary of Proposed Mitigation Measures

Project Component	Summary of Potential Interaction	Mitigation Measures
Wildlife and Avifauna	Vegetation clearing will alter / destroy habitat in the PDA; Noise from Project activities may disrupt wildlife and birds; Possibility of human interaction as a result of personnel within the PDA, possible attraction to waste / garbage stored on site; Attraction to cleared / stockpile areas may result in an increase in bird injuries and / or deaths or destruction of nests; and Wood Turtles may frequent the PDA.	Nearby wildlife should likely be deterred by the noise on the PDA during Project activities and more suitable habitat types are not limiting on adjoining properties; Equipment should be maintained in good working order and muffled, if feasible; If vegetation clearing is completed within the Breeding Bird period (April 15 to September 1) a nesting survey should be conducted no more than 5 days prior to clearing activities; An appropriate vegetated buffer should be established around any bird nests encountered to protect them from disturbance and work in that area should be avoided until after the birds have fledged or vacated; If any SAR are encountered during construction activities, a qualified biologist should be contacted for further direction; Vegetation clearing should be conducted outside of the Wood Turtle nesting season (April to May); Silt fencing should be installed around work areas within the 30-metre buffer of on-site wetland to minimize the risk of a Wood Turtle entering the PDA; If a Wood Turtle is encountered in the Project PDA, the turtle should be relocated in the same direction of travel outside of the active work area. Wood Turtles should be reported to the NBDNRED, Species at Risk Program.

Table 6.1 Summary of Proposed Mitigation Measures

Project Component	Summary of Potential Interaction	Mitigation Measures
Archaeological Resources	Ground disturbance could alter or destroy archeological artifacts during the construction phase of the Project.	A test-pitting program may be implemented prior to any ground disturbance within the areas identified as being high potential for archeological significance; Existing vegetation should be retained whenever possible and tree / vegetation clearing should be kept to a minimum; and Areas to be excavated should be clearly marked to minimize the footprint within the PDA.

7.0 PUBLIC AND FIRST NATIONS INVOLVEMENT

7.1 First Nations Involvement

The Province of New Brunswick has a constitutional Duty to Consult, and accommodate where required, Aboriginal Peoples whenever a decision or activity is being contemplated that could adversely impact Aboriginal or Treaty rights. As per the Interim Proponent Guide published by the Province of New Brunswick, project proponents play a valuable role in the consultation process by engaging Aboriginal Peoples in the development of any project or proposal.

In keeping with the above guidance, a notification letter was sent to the Wolastoqey Nation in New Brunswick (WNNB) and Mi'gmawe'l Tplu'taqnn Incorporated (MTI) to inform these organizations of the proposed Project, in accordance with recommendations in the Interim Proponent Guide (Department of Aboriginal Affairs, August 2019).

Any comments and / or questions will be addressed and responded to and summarized in the First Nation Involvement / Public Consultation Summary report to be submitted to NBDELG.

7.2 Public and Stakeholder Involvement

A notice detailing the Project will be send to neighboring landowners within a 3 km radius of the project site as well as to local MLAs. In addition, a copy of this registration document will be posted on the DELG website. Any comments and / or questions will be addressed and responded to and summarized in the First Nation Involvement / Public Consultation Summary report to be submitted to NBDELG.

8.0 APPROVAL OF THE PROJECT

Subsequent to the receipt of a Certificate of Determination, any applicable approvals, permits and / or authorizations will be obtained as required.

9.0 FUNDING

The Project will be funded solely by the Proponent.

10.0 REFERENCES

Atlantic Canada Conservation Data Centre (ACCDC). 2022. Ranking Data. Internet Publication: http://www.accdc.com/products/ranking.html Updated March 14, 2022.

Atlantic Canada Conservation Data Centre (ACCDC). 2022. Data Report 7255 Deersdale, NB

All About Birds. 2022. Website Accessed June 2022. Website: https://www.allaboutbirds.org/

Audubon. 2022. Guide to North American Birds. Accessed June 2022. Website: http://www.audubon.org/bird-guide

Birdlife International, Bird Studies and Nature Canada. 2016. Important Bird Areas of Canada. Accessed June 2022. Website: http://www.ibacanada.com

Environment Canada Protected Areas Network (ECPAN). 2022. Accessed June 2022. Website: http://www.ec.gc.ca/ap-pa/default.asp?lang=En&n=7FC45404-1#a3

Department of Aboriginal Affairs (DAA) Interim Proponent Guide, A Guide for Proponents on Engaging with Aboriginal Peoples in New Brunswick. August 2019. Website: https://www2.gnb.ca/content/dam/gnb/Departments/aas-saa/pdf/ProponentGuide-Excel/InterimProponentGuide.pdf

GeoNB Wetland Mapping (GeoNB). Accessed June, 2022. Website: http://geonb.snb.ca/geonb/

Hinds, Harold R. (Hinds) Flora of New Brunswick. 2nd Edition (2000). Biology Department, University of New Brunswick

New Brunswick Department of Environment and Local Government (NBDELG). January 2018. A Guide to Environmental Impact Assessment in New Brunswick.

New Brunswick Department of Environment and Local Government (NBDELG). Online Well Log System. Accessed June 2022. Website: http://app.elg-egl.gnb.ca/0375-0001/userType.aspx

New Brunswick Department of Heath. April 2020. New Brunswick Technical Guidelines for On-site Sewage Disposal System.

New Brunswick Department of Natural Resources. 2008. Bedrock Geology of New Brunswick. Mineral. Policy and Planning Division. Map NR-1 (2008 edition). Scale 1:5000 000 (Revised December 2008).

New Brunswick Department of Natural Resources and Energy Development (NBDNRED). 2018d. Protected Natural Areas. Accessed June 2022. Website:

http://nbdnr.maps.arcgis.com/apps/webappviewer/index.html?id=ceb3caf9aba34466bbb0bfa0bb0c3ed5&locale=en

Rampton, V. N., 1984: Generalized surficial geology of New Brunswick. Department of Natural Resources and Energy. Minerals, Policy and Planning Division. Map 1594A; scale 1: 500 000. Reproduced with the permission of the minister of Public Works and Government Services Canada. 2002 and Courtesy of Natural Resources Canada. Geological Survey of Canada

Service New Brunswick (SNB). 2022. Registry and Mapping Services. Accessed June 2022. Website: https://www.planet.snb.ca/PLANET/index.html

Species At Risk Public Registry (SARA). 2022. Species Summary Canada Warbler (Cardellina canadensis). Accessed June 2022. Website: https://species-registry.canada.ca/index-en.html#/species/1008-699

Species At Risk Public Registry (SARA). 2021. Species Summary Olive-sided Flycatcher (Contopus cooperi). Accessed June 2022. Website: https://species-registry.canada.ca/index-en.html#/species/999-683

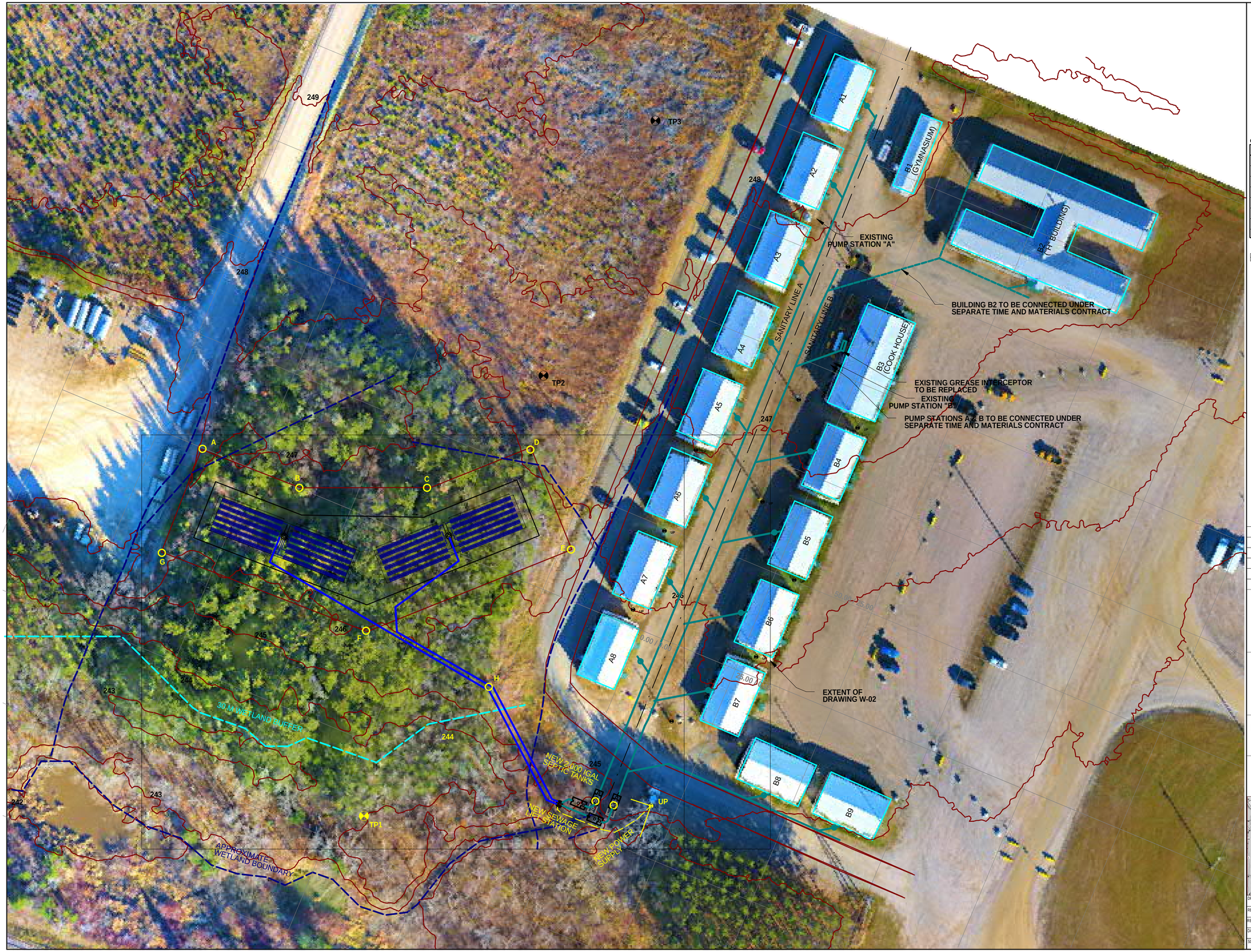
Species At Risk Public Registry (SARA). 2021. Species Summary Rusty Blackbird (Euphagus carolinus). Accessed June 2022. Website: https://species-registry.canada.ca/index-en.html#/species/907-624

Species At Risk Public Registry (SARA). 2021. Species Summary Wood Turtle (Glyptemys insculpta). Accessed June 2022. Website: https://species-registry.canada.ca/index-en.html#/species/286-449

The RAMSAR Convention Secretariat. 2022. The Ramsar Sites Information Service. Accessed June 2022. Website: https://rsis.ramsar.org/

APPENDIX A

Preliminary Design



N

CLEARING LIMITS

LOCATION	EASTING (M)	NORTHING (M)
A	2,457,738	7,500,210
B	2,457,761	7,500,200
C	2,457,792	7,500,200
D	2,457,817	7,500,209
E	2,457,826	7,500,185
F	2,457,777	7,500,166
G	2,457,728	7,500,185
H	2,457,807	7,500,152

8 4 0 10 20 METRES

20 0 40 80 FEET

LEGEND

- 247 1 M CONTOUR
- DRAINAGE SWALE
- TP3 TEST PIT
- UP UTILITY POLE
- TREE LINE
- SANITARY CONNECTION WITH CLEAN OUT

EXISTING UNDERGROUND INFRASTRUCTURE LOCATIONS ARE ASSUMED

DRONE PHOTO TAKEN NOVEMBER 4, 2021

FOR INFORMATION	JS	22 / 03 / 30
	BY	DATE

J.D. Irving, Limited
PROJECT ENGINEERING
SAINT JOHN, NEW BRUNSWICK
Tel. No. 506 632-7777 Fax No. 506 632-6408

NATECH
Environmental Services Inc.
2492 Route 640, Hanwell, NB E2E 2C2
ph: (506) 455-1085, fax: (506) 455-1088

DEERSDALE ON-SITE EFFLUENT TREATMENT AND DISPOSAL SYSTEM

BASE MAP OF NEW SYSTEM

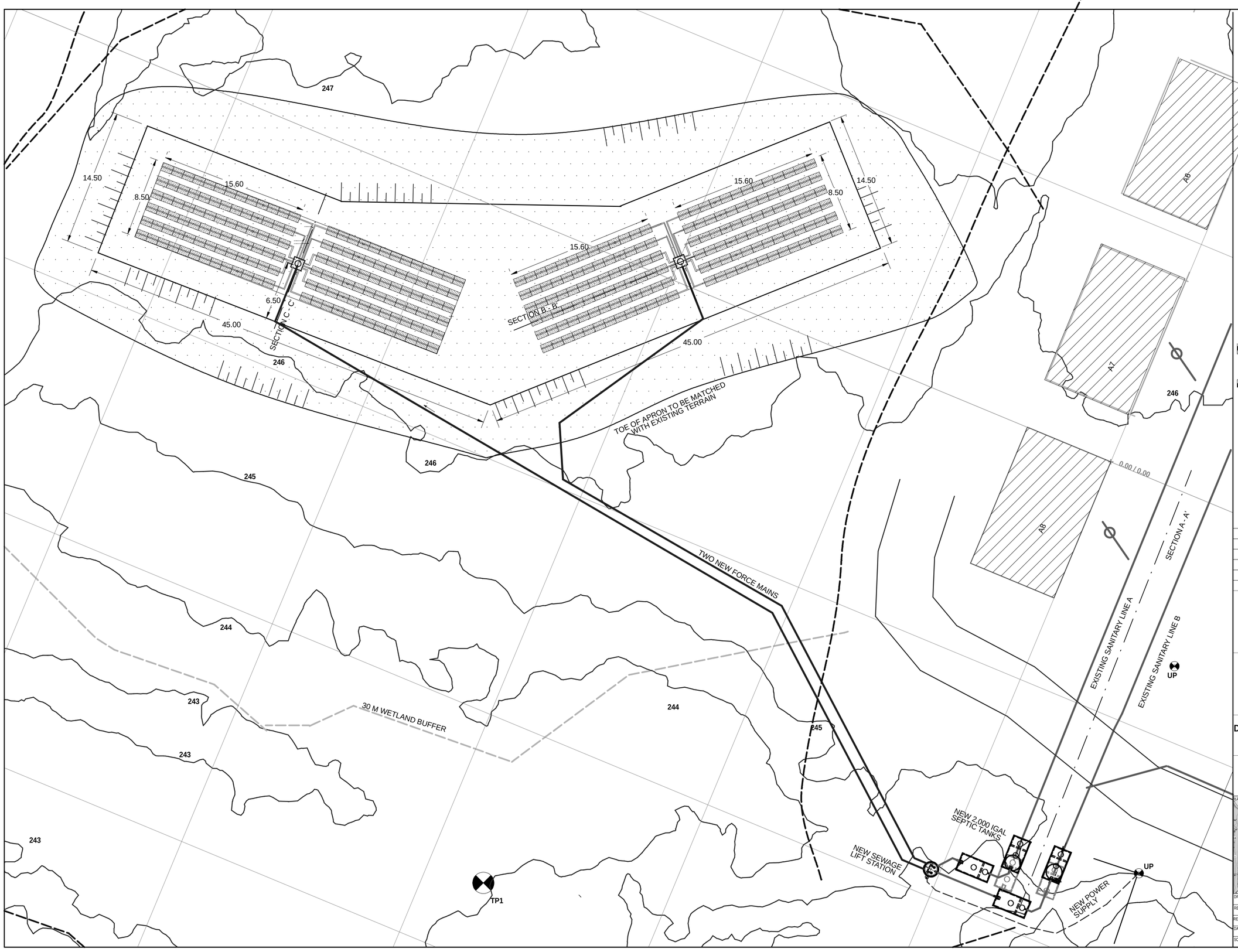
STAMP

DRAWN BY:	JS
REVIEW 1:	JS
REVIEW 2:	FR
DATE:	FEBRUARY 2021
SCALE:	1 : 400

JOB. No. JDI 21-01

DRAWING NO. W - 01

REV.



N

LEGEND

- TP3 — TEST PIT
- UP — UTILITY POLE
- TREE LINE
- 246 — 1.00 M CONTOUR
- 245.75 — 0.25 M CONTOUR
- 0.00 / 0.00 — 25M BY 25 M CONSTRUCTION GRID

DRONE PHOTO TAKEN NOVEMBER 4, 2021

0 20 40 80 FEET

0 4 8 10 20 METRES

EXISTING UNDERGROUND INFRASTRUCTURE LOCATIONS ARE ASSUMED

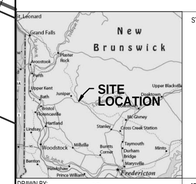
FOR INFORMATION	JS	22 / 02 / 10
	BY	DATE

J.D. Irving, Limited
PROJECT ENGINEERING
SAINT JOHN, NEW BRUNSWICK
Tel. No. 506 632-7777 Fax No. 506 632-6408

NATECH
Environmental Services Inc.
2492 Route 640, Hanwell, NB E2E 2C2
ph: (506) 455-1085, fax: (506) 455-1088

DEERSDALE ON-SITE EFFLUENT TREATMENT AND DISPOSAL SYSTEM

LAYOUT OF TANKS AND DISPOSAL FIELD



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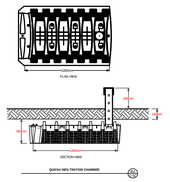
DRAWN BY:	JS
REVIEW 1:	JS
REVIEW 2:	FR
DATE:	FEBRUARY 2022
SCALE:	1 : 175

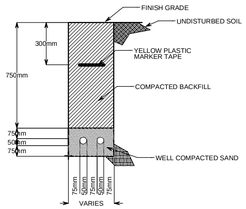
JOB. No. JDI 22-01

DRAWING NO. W - 02

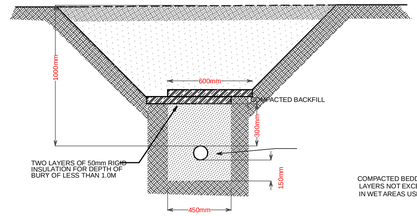
REV.

UNDERGROUND WIRE AS PER PUMP SPECIFICATION
IN 50mm DIA. RIGID PVC CONDUIT
BETWEEN BUILDING AND CONTROL PANEL FOR
FLOAT SWITCH CABLES





ELECTRICAL TRENCH DETAIL

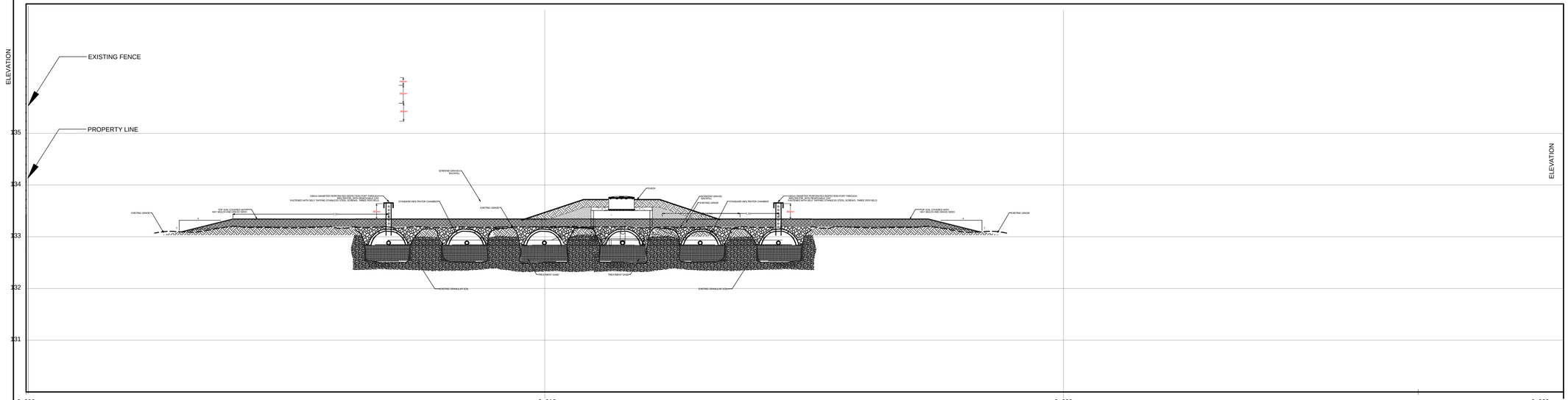


TRENCH SIDES TO BE SHORED OR SLOPED
IN ACCORDANCE WITH N.B. DEPARTMENT
OF HEALTH GUIDELINES.

TYPICAL TRENCH DETAIL

008
C-02

007
C-02



SECTION B-B'

LEGEND

TP3	TEST PIT
UP	UTILITY POLE
	TREE LINE

DRONE PHOTO TAKEN NOVEMBER 4, 2021

ROAD CULVERT

EXISTING UNDERGROUND INFRASTRUCTURE LOCATIONS ARE ASSUMED

	JS	21 / 07 / 07
FOR CONSTRUCTION	JS	21 / 03 / 29
	JS	21 / 03 / 05
	BY	DATE

IRVING

J.D. Irving, Limited
PROJECT ENGINEERING
SAINT JOHN, NEW BRUNSWICK
Tel. No. 506 632-7777 Fax No. 506 632-6408

NATECH
Environmental Services Inc.
2492 Route 640, Hanwell, NB E2E 2C2
ph: (506) 455-1085, fax: (506) 455-1088

DEERSDALE ON-SITE EFFLUENT TREATMENT AND DISPOSAL SYSTEM

BASE MAP OF NEW SYSTEM

STAMP

JS	JOB. No. JDI 21-01
JS	
FR	DRAWING NO. W - 01
FEBRUARY 2021	REV.
1 : 400	

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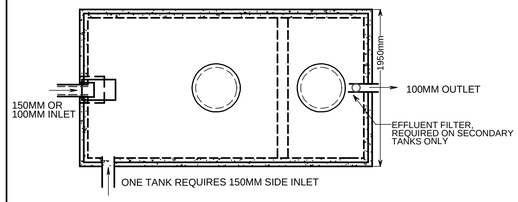
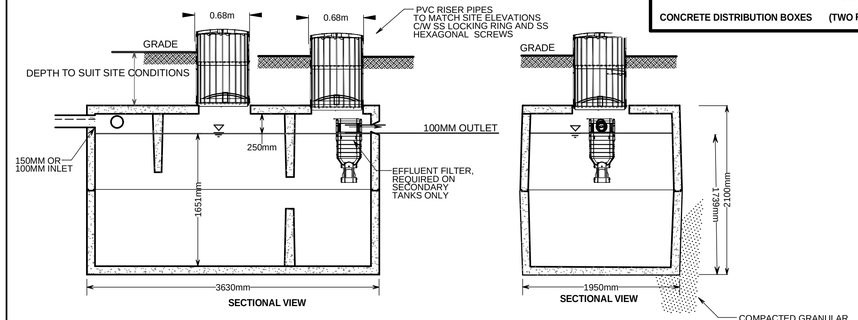
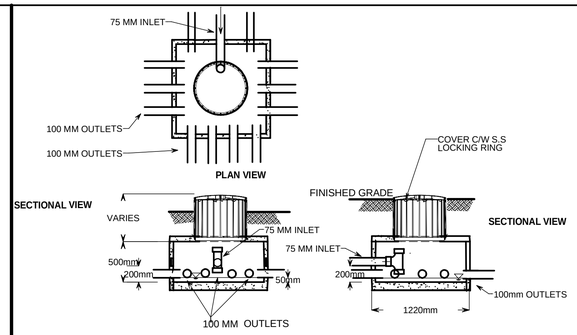


PLAN VIEW

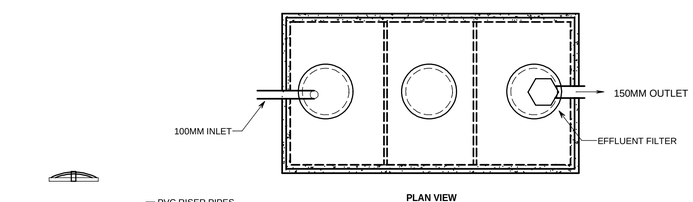


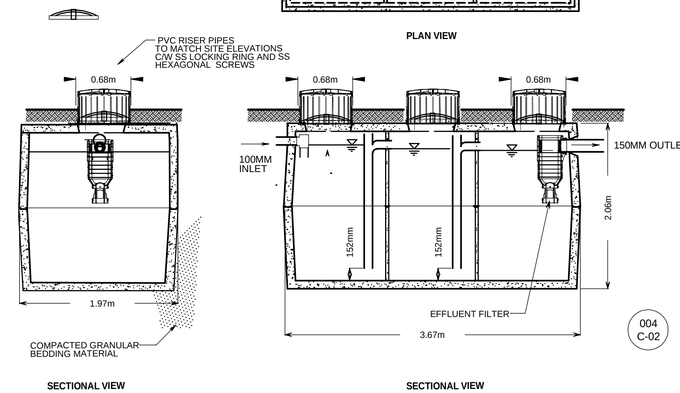
9.1 M3 (2,000 iGAL) CSA APPROVED CONCRETE SEPTIC TANKS (FIVE REQUIRED) WITH TYPICAL DIMENSIONS. RISERS TO MATCH GRADE. ONLY THE THREE SECONDARY TANKS REQUIRE EFFLUENT FILTERS. MAXIMUM DIFFERENCE BETWEEN INLET AND OUTLET = 100 MM (4").



CONCRETE DISTRIBUTION BOXES (TWO REQUIRED)

NOTE: PIPES TO PROTRUDE 100 MM INTO D-BOX OUTLETS TO BE EQUIPPED WITH SPEED LEVELLERS





004
C-02

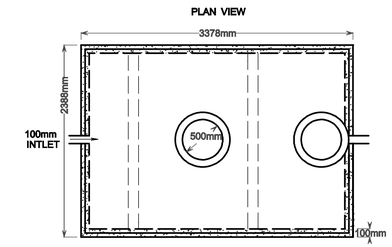
6.8 M3 (1,500 IGAL) THREE COMPARTMENT GREASE INTERCEPTOR WITH TYPICAL DIMENSIONS. MAX DIFFERENCE BETWEEN INLET AND OUTLET = 150 MM (6")

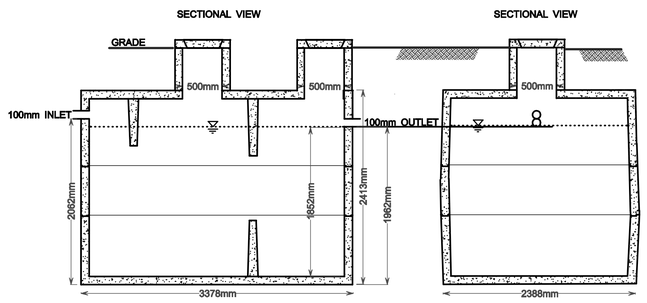
NOTE: PRIMARY SEPTIC TANKS DO NOT REQUIRE EFFLUENT FILTERS.

IF DEPTH OF BURY EXCEEDS MANUFACTURER'S MAXIMUM ALLOWABLE DEPTH, INSTALL STRUCTURAL STYROFOAM ON TOP OF TANK, AS REQUIRED.

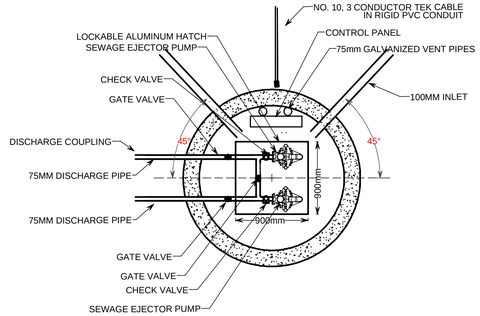
ALL TANKS TO BE LEAK TESTED IN THE PRESENCE OF THE ENGINEER

SS LOCKING RINGS TO BE PROVIDED ON ALL RISERS, C/W HEXAGONAL HEAD SS SCREWS





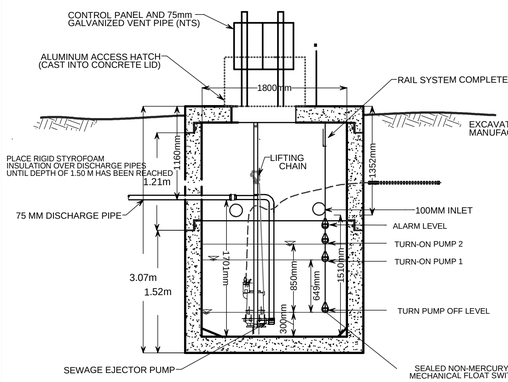
3000 IGAL SEPTIC TANK

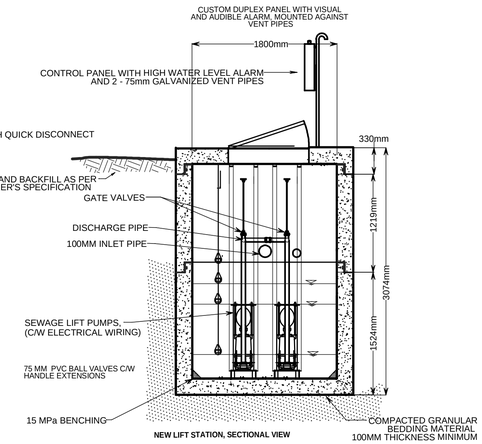


NEW LIFT STATION, PLAN VIEW

STAINLESS STEEL
GUIDE RAILS AND SS LIFTING CHAINS
50MM PVC EXTENSION

NOTE: ALL PIPING INSIDE LIFT STATION TO BE STAINLESS STEEL





NEW LIFT STATION, SECTIONAL VIEW

FOR APPROVAL	JS	22 / 03 / 30
	BY	DATE

J.D. Irving, Limited
PROJECT ENGINEERING
SAINT JOHN, NEW BRUNSWICK
Tel. No. 506 632-7777 Fax No. 506 632-6408

NATECH
Environmental Services Inc.
2492 Route 640, Hanwell, NB E2E 2C2
ph: (506) 455-1085, fax: (506) 455-1088

DEERSDALE ON-SITE EFFLUENT TREATMENT AND DISPOSAL SYSTEM

TANK AND PUMP STATION DETAILS

STAMP

JS	JOB. No.
JS	JDI 22-01
FR	DRAWING NO. / REV.
FEBRUARY 2021	W - 04
1 : 400	

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SPECIFICATIONS

1. GENERAL SPECIFICATIONS

1.1 ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL LOCAL PROVINCIAL, AND NATIONAL BUILDING CODES, THE CANADIAN BUILDING CODE AND THE CANADIAN PLUMBING CODE, LATEST EDITION UNLESS **OTHERWISE PROCEDURES AND TESTING**

1.2 ALL WORK RELATED TO PIPING, WATER AND SEWER WORK SHALL BE IN ACCORDANCE WITH THE RECOMMENDED STANDARDS FOR WATER & SEWER PROJECTS BY THE ASSOCIATION OF PROFESSIONAL ENGINEERS AND GEOSCIENTISTS OF NEW BRUNSWICK, 3RD EDITION, 2000.

1.3 ALL WORK RELATED TO ON-SITE EFFLUENT DISPOSAL SHALL BE IN ACCORDANCE WITH NEW BRUNSWICK TECHNICAL GUIDELINES FOR ON-SITE SEWAGE DISPOSAL SYSTEMS, LATEST EDITION.

1.4 ALL WORK SHALL BE CARRIED OUT BY PERSONS QUALIFIED IN THEIR TRADE AND LICENSED TO PRACTICE SUCH TRADE IN N.B.

1.5 ANY AND ALL TEMPORARY BRACING AND SHORING WHICH IS NEEDED TO HOLD THE STRUCTURES IN PLACE IN A SAFE AND STABLE POSITION UNTIL THE PROJECT IS COMPLETE IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR HAS TO CONSULT AN INDEPENDENT ENGINEER IF DESIGN ASSISTANCE OR REVIEW IS NEEDED.

1.6 ALL MATERIAL AND WORK SHALL CARRY A ONE YEAR WARRANTY AFTER THE DATE OF SUBSTANTIAL COMMISSIONING.

1.7 ALL CHANGES TO THE DESIGN WILL BE RECORDED BY THE CONTRACTOR ON "AS BUILT" DRAWINGS AND TOGETHER WITH ALL MANUALS AND DOCUMENTS PROVIDED TO THE OWNER AT THE END OF THE JOB.

1.8 THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.

1.9 ALL SHOP DRAWINGS PROVIDED BY OTHERS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO THE FABRICATION OF MATERIAL OR THE PURCHASE OF NON-RETURNABLE STOCK. DIMENSIONAL REVIEW IS THE CONTRACTOR'S RESPONSIBILITY.

1.10 THE CONTRACTOR SHALL COMPLY WITH NB OCCUPATIONAL HEALTH AND SAFETY (OHS) ACT AND ITS REGULATIONS.

2. SCOPE OF WORK

2.1 LUMP SUM CONTRACT

2.1.1 LOCATE EXISTING UNDERGROUND SEPTIC TANKS AND PIPING. REMOVE EXISTING TANKS AND REPLACE WITH NEW CSA APPROVED SEPTIC TANKS AS PER DRAWING.

2.1.2 PLACE NEW GREASE INTERCEPTOR NEAR COOK HOUSE C/W PIPING AS SHOWN ON DRAWINGS

2.1.3 PLACE NEW SEWAGE DOSING PUMP STATION C/W CONTROL PANEL AND ELECTRICAL HOOK UP, AS SHOWN ON DRAWINGS

2.1.4 INSTALL NEW INFILTRATIVE CHAMBER EFFLUENT DISPOSAL FIELD C/W D-BOXES AND INSPECTION PORTS, AS SHOWN ON DRAWINGS

2.1.5 RESTORE AND LANDSCAPE SITE AS PER DRAWINGS

2.1.6 COMPLY WITH ALL REGULATORY REQUIREMENTS

2.2 TIME AND MATERIALS CONTRACT

2.2.1 LOCATE EXISTING SEWAGE LIFT PUMPS AND PIPING NEAR BUILDINGS A3 AND B3

2.1.2 REPAIR OR REPLACE AS INDICATED BY ENGINEER

2.1.3 LOCATE PIPING NEXT TO BUILDING B2 AND CONNECT TO EXISTING SEWER LINE AS DIRECTED BY ENGINEER

3. PRODUCTS:

3.1 SEPTIC TANKS: ONE NEW CSA APPROVED, 9,000 l (2,000 IGAL) TWO COMPARTMENT CONCRETE TANKS, MUST BE EQUIPPED WITH LOCKABLE PLASTIC RISERS AND COVERS AND POLYLOCK PL-122 EFFLUENT FILTER. alSO, SECONDARY ACCESS PROTECTION IS REQUIRED. AS AVAILABLE FROM WHITE'S PRECAST CONCRETE, A&P CONCRETE OR APPROVED EQUAL.

3.2 SEWAGE LIFT PUMP: DUPLEX PUMP SEWAGE LIFT STATION PACKAGE ASSEMBLY WITH 3/4" SOLIDS HANDLING PUMPS. PUMPS MUST BE ABLE TO DELIVER .410 L/MIN (110 USGPM) AT A TOTAL DYNAMIC HEAD OF 8.0 M (26 FT). PUMPS MUST BE RATED FOR 1/3 HP, 208-230 V, 1PH., AS PROVIDED BY LIBERTY OR MYERS PUMPS OR APPROVED EQUAL.

3.3 PUMP CONTROLLER: CLASS 1, ZONE 2, STANDARD ELECTROMECHANICAL DUPLEX PUMP CONTROLLER FOR: TWO SINGLE PHASE SEWAGE LIFT PUMPS. CONTROL AT THE SEWAGE PUMPING STATION SHALL BE ACHIEVED THROUGH THE USE OF A RELAY-BASED PUMP CONTROLLER CAPABLE OF ACHIEVING THE FOLLOWING REAL TIME TASKS:
.1 PUMP STATION OPERATION CONTROL.
.2 ALARM DETECTION AND ANNUNCIATION.
.3 PUMP ALTERNATION, BASED ON SIMPLE ALTERNATION AFTER EACH USE.
.4 PUMP LOCKOUTS.
.5 SAFETY INTERLOCKING.
.6 AUTOMATIC TRANSFER TO STANDBY (LAG) IN THE EVENT OF LEAD PUMP FAILURE.
.7 INTERFACING OF PUMP MONITORING SENSORS TO THE RELAY LOGIC.
.8 INTERFACING OF THE LEVEL CONTROLS TO THE RELAY LOGIC.
.9 RECORDING RUN TIMES AND PUMP CYCLES OF EACH PUMP.

3.4 DISTRIBUTION BOX: CONCRETE BOX, AS SHOWN ON DRAWINGS, WITH SPEED LEVELLERS AVAILABLE FROM A & P CONCRETE, WHITE'S PRECAST CONCRETE, OR APPROVED EQUAL.

3.5 ELECTRICAL POWER SUPPLY: BY LICENSED ELECTRICIAN BASED ON AVAILABILITY OF ELECTRICAL POWER FROM NEAREST UTILITY POLE. TECK90 12/2 CABLE IN RIGID PVC CONDUIT, UNLESS SPECIFIED DIFFERENTLY BY PUMP SUPPLIER. TO BE APPROVED FOR DIRECT BURY.

3.6 INFILTRATORS: QUICK4 INFILTRATOR CHAMBERS OR APPROVED EQUAL.

3.7 PIPING, AS TABULATED BELOW:

3.8 TREATMENT SAND:
MATERIAL HAS TO MEET THE FOLLOWING GRADATION:

Sieve Size (mm)	% Pass by Weight
10	100
2.5	80 - 100
1.25	30 - 100
0.6	15 - 95
0.3	4 - 15
0.2	2 - 8
<0.1	0 - 3

THE TREATMENT SAND HAS TO MEET THE FOLLOWING REQUIREMENTS:
D10: 0.15mm to 0.50 mm, Cu: 1 .0 to 6.0, Kfs: 5E-5 to <=6E-4 m/sec
(SEE NB TECHNICIAL GUIDELINES FOR ON-SITE EFFLUENT DISPOSAL SYSTEMS)

3.9 BEDDING AND GRANULAR MATERIAL: MATERIAL HAS TO MEET THE FOLLOWING GRADATION:

Sieve Size (mm)	% Pass by Weight
40	100
28	95 - 100
20	90 - 100
10	60 - 100
5	35 - 80
2.5	15 - 60
0.3	0 - 30
0.1	0 - 10

3.10 SCREENED GRAVEL: GRADATION BETWEEN 5MM AND 25MM
3.11 CRUSHED STONE: BROKEN HARD ROCK, GRADATION BETWEEN 5MM AND 17MM

3.12 TOP SOIL SHALL BE A MIXTURE OF SOIL WITH DECOMPOSING ORGANIC MATTER TO BE USED AS A FERTILIZER OR MULCH. TOP SOIL TO BE COVERED WITH GRASS SEED AND HAY MULCH. TOPSOIL MATERIAL TO BE APPROVED BY ENGINEER PRIOR TO PLACEMENT.

TABLE OF PIPE MATERIALS

LOCATION	MATERIAL	DIAMETER	THICKNESS	JOINTS
FROM WALL TO NEW SEPTIC TANK	ABS	100MM	DR35	GLUED
FROM SEPTIC TANKS TO PUMP STATION	PVC	100MM	DR35	GLUED
FROM PUMP STATION TO DISPOSAL FIELD	HDPE	25MM	DR11	SOLID OR WELDED
INSIDE DISPOSAL FIELD	PVC	100MM	DR35 PERF. NS SPEC.	GLUED

TABLE OF ELEVATIONS (SUBJECT TO SITE CONDITIONS)

DESCRIPTION	ELEV. (M)
TOP OF CONCRETE AT FUEL STORAGE (TBM)	44.05 M
INV. PIPE AT BUILDING WALL	42.99 M
TOP OF CONCRETE FLOOR	43.70 M
INVERT INLET INTO SEPTIC TANK	42.96 M
INVERT OUTLET OF SEPTIC TANK	42.89 M
INVERT INTO PUMP STATION	42.65 M
TOP OF PUMP STATION	44.03 M
INVERT INTO LEACHING GALLEY	44.38 M
FINISHED GRADE OF DISPOSAL FIELD	44.70 M

4. PROCEDURES:

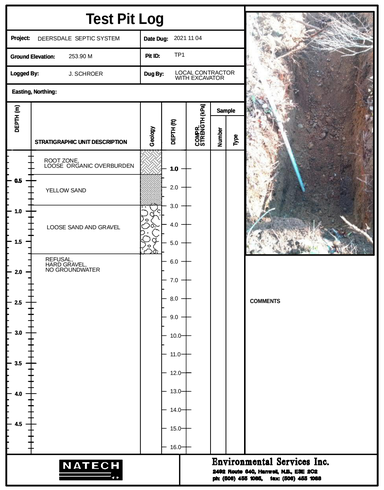
4.1 TREATMENT SAND GRADATION CURVES HAVE TO BE SUBMITTED TO THE ENGINEER TWO WEEKS PRIOR TO COMMENCEMENT OF THE PROJECT.

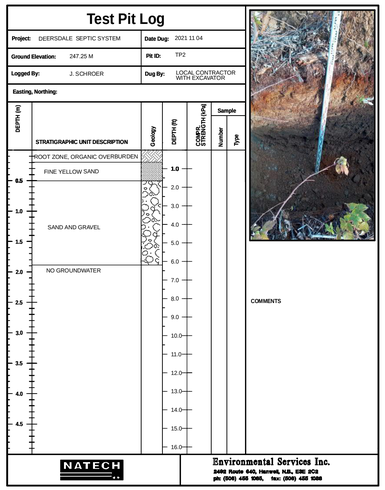
4.2 ALL CONCRETE TANKS TO BE LEAK TESTED IN PRESENCE OF ENGINEER.

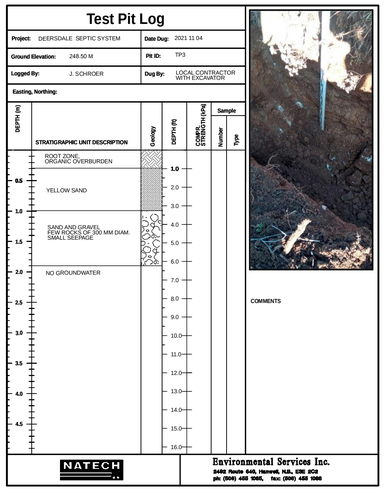
4.3 ALL SEWER PIPE TO BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS.

4.4 ALL NON GASKETED PIPE TO BE GLUED AT JOINTS. ENDS TO BE CAPPED.

4.5 PRIOR TO BACKFILLING, THE DISPOSAL FIELD HAS TO BE INSPECTED BY THE ENGINEER.







NOTE: PRIMARY SEPTIC TANKS DO NOT REQUIRE EFFLUENT FILTERS.

IF DEPTH OF BURY EXCEEDS MANUFACTURER'S MAXIMUM ALLOWABLE DEPTH, INSTALL STRUCTURAL STYROFOAM ON TOP OF TANK, AS REQUIRED.

ALL TANKS TO BE LEAK TESTED IN THE PRESENCE OF THE ENGINEER

SS LOCKING RINGS TO BE PROVIDED ON ALL RISERS, C/W HEXAGONAL HEAD SS SCREWS

FOR APPROVAL	JS	22 / 03 / 30
	BY	DATE

IRVING
J.D. Irving, Limited
PROJECT ENGINEERING
SAINT JOHN, NEW BRUNSWICK
Tel. No. 506 632-7777 Fax No. 506 632-6408

NATECH
Environmental Services Inc.
2492 Route 640, Harwell, NB E2E 2C2
ph: (506) 455-1085, fax: (506) 455-1088

DEERSDALE ON-SITE EFFLUENT TREATMENT AND DISPOSAL SYSTEM

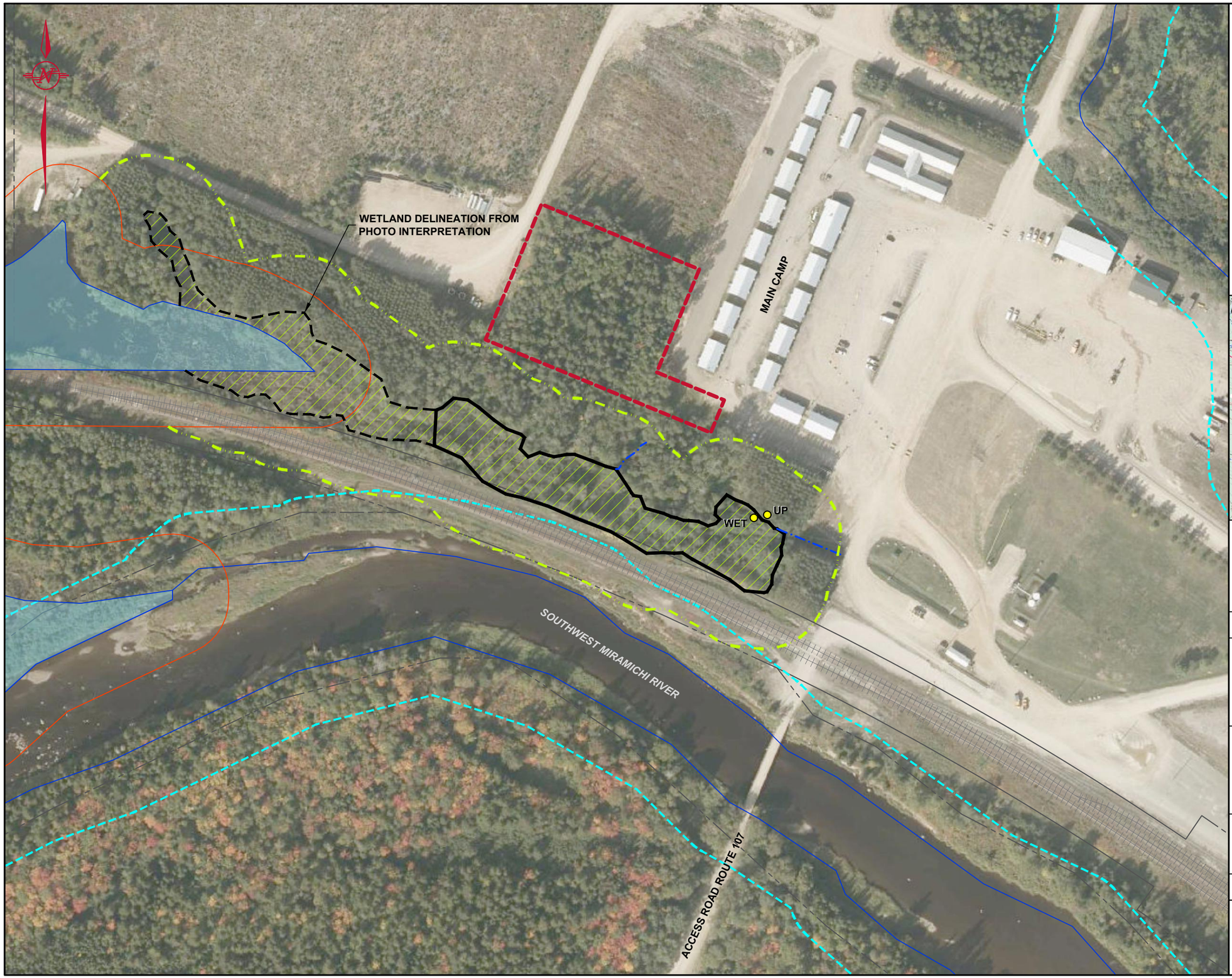
SPECIFICATIONS AND TEST PIT LOGS

STAMP

JS	JOB. No.	
JS	JDI 21-01	
FR	DRAWING NO.	REV.
FEBRUARY 2021	W - 05	
1 : 400		

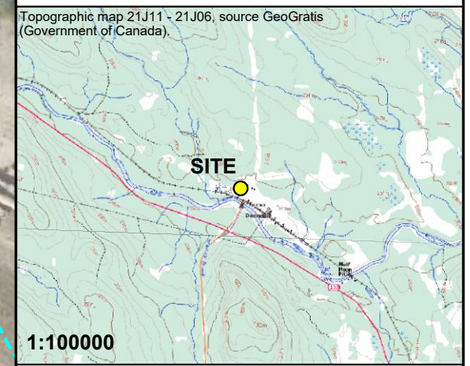
APPENDIX B

Wetland Delineation Information



Legend

- PROPERTY LINE
- RAILWAY
- DELINEATED DRAINAGE
- DELINEATED WETLAND
- 30m BUFFER FROM DELINEATED WETLAND
- 30m BUFFER FROM WATERCOURSE
- REGULATED WETLAND
- 30m BUFFER FROM REGULATED WETLAND
- PROJECT DEVELOPMENT AREA



Notes

1. This drawing is a schematic representation. Sizes, locations and dimensions are approximate.
2. Coordinate system: New Brunswick; Stereographic projection, NAD83 (CSRS) Datum.
3. Aerial photograph from 2019. Source GeoNB Map Viewer.

Date	Draw	Checked
JUNE 2022	CHG	JH

Project

JDI DEERSDALE -
ON-SITE SEPTIC DISPOSAL
SYSTEM UPGRADES, DEERSDALE, NB

Drawing

WETLAND DELINEATION

Scale

1:2000

0 40 80 120m

Project No.	Drawing No.	Revision No.
100083.046	FIGURE 3	0

GEMTEC
Consulting Engineers and Scientists

N:\Projects\100000\100083.046\Drafting\Existing\100083.046_DWG01_R0_WD_2022-06-03.dwg

Project Site:	Deersdale, NB	Date:	May 31 2022	Sample Point:	Wetland
Applicant/Owner:	NATECH Environmenta	Field Investigator(s):	Jennifer Hachey, Laura Moore		
County:	York	Coordinates:	N 46.499369, W 67.048958		
PID:	75466789	Do normal environmental conditions exist on-site?	☑ Yes ☐ No		

if no explain:

Atypical Situation? ☐ Yes ☑ No Explain:

Is this a potential **Problem Area**? ☐ Yes ☑ No Explain:

Wetland Determination

(Check One Only For Each Criteria)

Dominant Hydrophytic Vegetation	(50/20 rule) ☑ Yes ☐ No	***Wetland***	
Wetland Hydrology	☑ Yes ☐ No	***Determination***	
Hydric Soils	☑ Yes ☐ No	☑ Yes ☐ No	

Wetland Type: Forested swamp/marsh

Rational for Determination: Wetland characteristics, tree canopy cover

Vegetation

Tree Stratum: (Plot size: 30m)	% Cover	Dominant	Indicator
1. Prunus sp.	10		FACU
2. Populus balsamifera	50	x	FACW
3. Populus tremuloides	15		FACU
4.			
5.			
	75	**= Total Cover**	

Shrub Stratum: (Plot size: 15m)	% Cover	Dominant	Indicator
1. Spiraea alba	20	x	FACW+
2. Alnus incana	15	x	FACW
3. Prunus sp.	15	x	FACU
4. Salix sp.	5		FACW
5.			
	55	**= Total Cover**	

Herb Stratum: (Plot size: 1.5m)	% Cover	Dominant	Indicator
1. Onoclea sensibilis	25	x	FACW
2. Rubus idaeus	5		FAC-
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	30	**= Total Cover**	

Dominance Test Worksheet

# of Dominant Species that are OBL, FACW, FAC:	4
Total # of Dominant Species across all strata:	5
% of Dominant Species that are OBL, FACW, FAC:	80.00

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species:	x 1 =	
FAC Species:	x 1 =	
FACU Species:	x 1 =	
Column Totals:	x 1 =	
Prevalence Index = B/A =		

Hydrophytic Vegetation Indicators:

- ☑ Rapid Test for Hydrophytic Vegetation
- ☑ Dominance Test is > 50%
- ☐ Prevalence Index is ≤ 3.0[1]
- ☐ Morphological Adaptations[1] (explain)
- ☐ Problematic Hydrophytic Vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? ☑ Yes ☐ No

Comments:

Hydrology

Primary Hydrological Indicators: (minimum of one is required; check all that apply)

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [x] Water Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres on Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron reduction in tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators: (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [x] Drainage Patterns (B10)
- [x] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [x] Saturation Visible on Aerial Imagery (C9)
- [ ] Stunted or Stressed Plants (D1)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [ ] Microtopographic Relief (D4)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	[x] Yes [ ] No	Depth:	0
Water Table Present?	[x] Yes [ ] No	Depth:	10
Saturation Present?	[x] Yes [ ] No	Depth:	5

Wetland Hydrolody Present? [x] Yes [ ] No

Comments:

Soil Profile

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (cm)	Matrix		Redox Features					
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0 - 5	organic							
5 - 30	2.5YR 5/3						loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] 5cm Mucky Peat or Peat (S3)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Dark Surfaces (S7)
- [ ] Polyvalue Below Surface (S8)
- [ ] Thin Dark Surface (S9)
- [ ] Loamy Gleyed Matrix (F2)
- [x] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)

Restrictive Layer (if observed): Type: Depth:

Hydric Soil Present? [x] Yes [ ] No

Comments: Water in soil pit at 10 cm. Saturated soil.

Project Site:	Deersdale, NB	Date:	May 31 2022	Sample Point:	Upland
Applicant/Owner:	NATECH Environmenta	Field Investigator(s):	Jennifer Hachey, Laura Moore		
County:	York	Coordinates:	N 46.499367, W 67.048925		
PID:	75466789	Do normal environmental conditions exist on-site?	☑ Yes ☐ No		

if no explain:

Atypical Situation? ☐ Yes ☑ No Explain:

Is this a potential **Problem Area**? ☐ Yes ☑ No Explain:

Wetland Determination

(Check One Only For Each Criteria)

Dominant Hydrophytic Vegetation	(50/20 rule) ☐ Yes ☑ No	***Wetland***	
Wetland Hydrology	☐ Yes ☑ No	***Determination***	
Hydric Soils	☐ Yes ☑ No	☐ Yes ☑ No	

Wetland Type: N/A

Rational for Determination: Upland characteristics in hydrologoy and soil

Vegetation

Tree Stratum: (Plot size: 30m)	% Cover	Dominant	Indicator
1. Pinus resinosa	50	x	FACU
2. Populus balsamifera	10		FACW
3. Populus tremuloides	15		FACU
4.			
5.			
	75	**= Total Cover**	

Shrub Stratum: (Plot size: 15m)	% Cover	Dominant	Indicator
1. Populus balsamifera	35	x	FACW
2. Populus tremuloides	20	x	FACU
3. Spiraea alba	15		FACW+
4. Prunus sp.	25	x	FACU
5.			
	95	**= Total Cover**	

Herb Stratum: (Plot size: 1.5m)	% Cover	Dominant	Indicator
1. Grass sp.	10	x	-
2. Rubus idaeus	10	x	FAC-
3. Acer rubrum	5		FAC
4. Fragaria sp.	10	x	FACU
5. Spiraea alba	10	x	FACW+
6.			
7.			
8.			
9.			
10.			
	45	**= Total Cover**	

Dominance Test Worksheet

# of Dominant Species that are OBL, FACW, FAC:	2
Total # of Dominant Species across all strata:	8
% of Dominant Species that are OBL, FACW, FAC:	25.00

Prevalence Index Worksheet:

Total % Cover of:	Multiply by:	
OBL Species:	x 1 =	
FACW Species:	x 1 =	
FAC Species:	x 1 =	
FACU Species:	x 1 =	
Column Totals:	x 1 =	
Prevalence Index = B/A =		

Hydrophytic Vegetation Indicators:

- ☑ Rapid Test for Hydrophytic Vegetation
- ☐ Dominance Test is > 50%
- ☐ Prevalence Index is ≤ 3.0[1]
- ☐ Morphological Adaptations[1] (explain)
- ☐ Problematic Hydrophytic Vegetation[1] (explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? ☐ Yes ☑ No

Comments:

Hydrology

Primary Hydrological Indicators: (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron reduction in tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators: (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? ☐ Yes ☑ No Depth: _____

Water Table Present? ☐ Yes ☑ No Depth: _____

Saturation Present? ☐ Yes ☑ No Depth: _____

Wetland Hydrolody Present? ☐ Yes ☑ No

Comments:

Soil Profile

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators)

Depth (cm)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0 - 5	organic							
5 - 30	5YR 3/2						sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

[2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5cm Mucky Peat or Peat (S3)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surfaces (S7)
- ☐ Polyvalue Below Surface (S8)
- ☐ Thin Dark Surface (S9)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Restrictive Layer (if observed): Type: _____ Depth: _____

Hydric Soil Present? ☐ Yes ☑ No

Comments:

Photo 1: View of the wetland (May 31, 2022).

Photo 2: View of wetland soil pit (May 31, 2022).

Photo 3: View of the upland (May 31, 2022).

Photo 4: View of the upland soil pit (May 31, 2022).

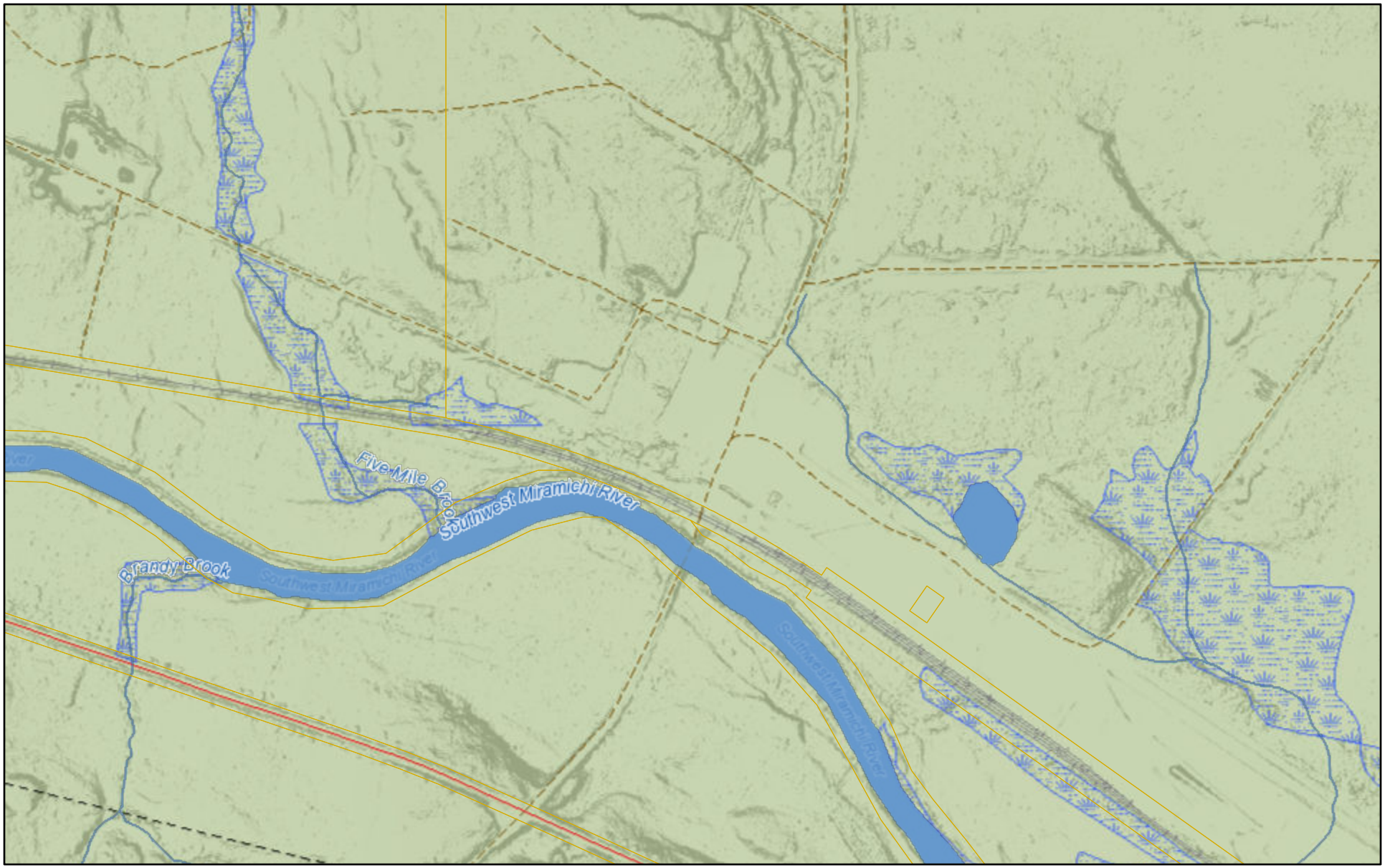
Photo 5: View of sludge in drainage channel (May 31, 2022)

Photo 6: View of adjoining land uses (May 31, 2022).

APPENDIX C

Supporting Documents

ArcGIS Web Map



6/9/2022, 10:43:58 AM

Property

Water Courses

Water Bodies

1:9,028

0 0.07 0.15 0.3 mi

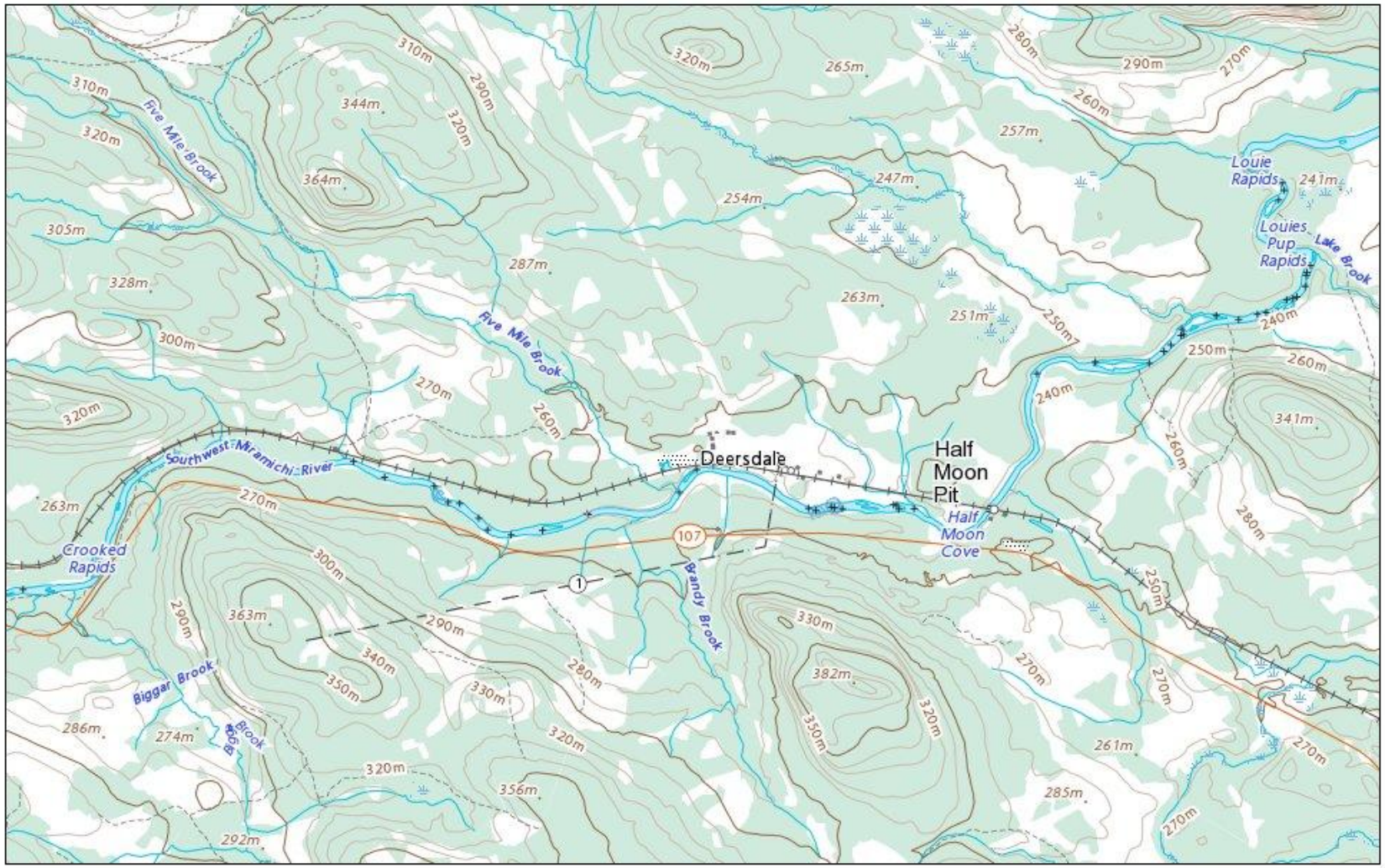
0 0.1 0.2 0.4 km

Service New Brunswick

Web AppBuilder for ArcGIS

Service New Brunswick | Service New Brunswick/Service Nouveau Brunswick | Department of Public Safety / Ministère de la Sécurité publique | Government of New Brunswick / Gouvernement du Nouveau-Brunswick | Department of Environment and Local

Toporama



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Canada

New Nouveau Brunswick

Environment

Report Number **7351**

Well Driller's Report

Date printed **6/3/2022**

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	**New Well**	**Rotary**	**03/19/2003**

Casing Information — Casing above ground — Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
7351	Steel	15.24cm	0m	11.89m	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	**6.10m**	**91 lpm**	**1hr**	**4.57m**	**91 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
Bleach (Javex)
Qty **0L**

Pump Installed
Submersible
Intake Setting (BTC)
30.48m

Driller's Log

Well Log	From	End	Colour	Rock Type
7351	0m	10.97m	Brown	Sand and Gravel
7351	10.97m	11.58m	Brown	Broken Conglomerate and Clay
7351	11.58m	44.20m	Grey	Sandstone

Overall Well Depth
44.20m

Bedrock Level
11.58m

Water Bearing Fracture Zone

Well Log	Depth	Rate
7351	15.24m	9.1 lpm
7351	38.10m	81.9 lpm

Setbacks

Well Log	Distance	Setback From
7351	304.80m	Right of any Public Way Road

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	**New Well**	**Rotary**	**03/19/2003**

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
7351	**Steel**	**15.24cm**	**0m**	**11.89m**	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	**6.10m**	**91 lpm**	**1hr**	**4.57m**	**91 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
Bleach (Javex)

Qty **0L**

Pump Installed
Submersible

Intake Setting (BTC)
30.48m

Driller's Log

Well Log	From	End	Colour	Rock Type
7351	**0m**	**10.97m**	**Brown**	**Sand and Gravel**
7351	**10.97m**	**11.58m**	**Brown**	**Broken Conglomerate and Clay**
7351	**11.58m**	**44.20m**	**Grey**	**Sandstone**

Overall Well Depth
44.20m

Bedrock Level
11.58m

Water Bearing Fracture Zone

Well Log	Depth	Rate
7351	**15.24m**	**9.1 lpm**
7351	**38.10m**	**81.9 lpm**

Setbacks

Well Log	Distance	Setback From
7351	**304.80m**	**Right of any Public Way Road**

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	**New Well**	**Rotary**	**03/19/2003**

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
7351	**Steel**	**15.24cm**	**0m**	**11.89m**	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	**6.10m**	**91 lpm**	**1hr**	**4.57m**	**91 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
Bleach (Javex)

Qty **0L**

Pump Installed
Submersible

Intake Setting (BTC)
30.48m

Driller's Log

Well Log	From	End	Colour	Rock Type
7351	**0m**	**10.97m**	**Brown**	**Sand and Gravel**
7351	**10.97m**	**11.58m**	**Brown**	**Broken Conglomerate and Clay**
7351	**11.58m**	**44.20m**	**Grey**	**Sandstone**

Overall Well Depth
44.20m

Bedrock Level
11.58m

Water Bearing Fracture Zone

Well Log	Depth	Rate
7351	**15.24m**	**9.1 lpm**
7351	**38.10m**	**81.9 lpm**

Setbacks

Well Log	Distance	Setback From
7351	**304.80m**	**Right of any Public Way Road**

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	**New Well**	**Rotary**	**03/19/2003**

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
7351	**Steel**	**15.24cm**	**0m**	**11.89m**	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	**6.10m**	**91 lpm**	**1hr**	**4.57m**	**91 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
Bleach (Javex)

Qty **0L**

Pump Installed
Submersible

Intake Setting (BTC)
30.48m

Driller's Log

Well Log	From	End	Colour	Rock Type
7351	**0m**	**10.97m**	**Brown**	**Sand and Gravel**
7351	**10.97m**	**11.58m**	**Brown**	**Broken Conglomerate and Clay**
7351	**11.58m**	**44.20m**	**Grey**	**Sandstone**

Overall Well Depth
44.20m

Bedrock Level
11.58m

Water Bearing Fracture Zone

Well Log	Depth	Rate
7351	**15.24m**	**9.1 lpm**
7351	**38.10m**	**81.9 lpm**

Setbacks

Well Log	Distance	Setback From
7351	**304.80m**	**Right of any Public Way Road**

New Nouveau Brunswick

Environment

Report Number **16893**

Well Driller's Report

Date printed **6/3/2022**

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Municipal	**New Well**	**Rotary**	**02/28/2007**

Casing Information — Casing above ground — Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
16893	Steel	15.24cm	0m	12.19m	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
	9.14m	**27.3 lpm**	**1hr**	**1.83m**	**136 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty **0L**

Pump Installed
N/A

Intake Setting (BTC)
0m

Driller's Log

Well Log	From	End	Colour	Rock Type
16893	0m	9.14m	Brown	Sand
16893	9.14m	22.86m	Grey	Granite
16893	22.86m	23.16m	White and red	Granite
16893	23.16m	45.72m	Red	Granite
16893	45.72m	47.24m	White and red	Granite

Overall Well Depth
47.24m

Bedrock Level
0m

Water Bearing Fracture Zone

Well Log	Depth	Rate
16893	22.86m	4.55 lpm
16893	45.72m	18.2 lpm

Setbacks

Well Log	Distance	Setback From
16893	21.34m	Septic Tank
16893	91.44m	Right of any Public Way Road

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Municipal	**New Well**	**Rotary**	**02/28/2007**

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
16893	Steel	15.24cm	0m	12.19m	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
	9.14m	**27.3 lpm**	**1hr**	**1.83m**	**136 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty **0L**

Pump Installed
N/A

Intake Setting (BTC)
0m

Driller's Log

Well Log	From	End	Colour	Rock Type
16893	0m	9.14m	Brown	Sand
16893	9.14m	22.86m	Grey	Granite
16893	22.86m	23.16m	White and red	Granite
16893	23.16m	45.72m	Red	Granite
16893	45.72m	47.24m	White and red	Granite

Overall Well Depth
47.24m

Bedrock Level
0m

Water Bearing Fracture Zone

Well Log	Depth	Rate
16893	22.86m	4.55 lpm
16893	45.72m	18.2 lpm

Setbacks

Well Log	Distance	Setback From
16893	21.34m	Septic Tank
16893	91.44m	Right of any Public Way Road

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Municipal	**New Well**	**Rotary**	**02/28/2007**

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
16893	Steel	15.24cm	0m	12.19m	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
	9.14m	**27.3 lpm**	**1hr**	**1.83m**	**136 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty **0L**

Pump Installed
N/A

Intake Setting (BTC)
0m

Driller's Log

Well Log	From	End	Colour	Rock Type
16893	0m	9.14m	Brown	Sand
16893	9.14m	22.86m	Grey	Granite
16893	22.86m	23.16m	White and red	Granite
16893	23.16m	45.72m	Red	Granite
16893	45.72m	47.24m	White and red	Granite

Overall Well Depth
47.24m

Bedrock Level
0m

Water Bearing Fracture Zone

Well Log	Depth	Rate
16893	22.86m	4.55 lpm
16893	45.72m	18.2 lpm

Setbacks

Well Log	Distance	Setback From
16893	21.34m	Septic Tank
16893	91.44m	Right of any Public Way Road

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Municipal	**New Well**	**Rotary**	**02/28/2007**

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
16893	Steel	15.24cm	0m	12.19m	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
	9.14m	**27.3 lpm**	**1hr**	**1.83m**	**136 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty **0L**

Pump Installed
N/A

Intake Setting (BTC)
0m

Driller's Log

Well Log	From	End	Colour	Rock Type
16893	0m	9.14m	Brown	Sand
16893	9.14m	22.86m	Grey	Granite
16893	22.86m	23.16m	White and red	Granite
16893	23.16m	45.72m	Red	Granite
16893	45.72m	47.24m	White and red	Granite

Overall Well Depth
47.24m

Bedrock Level
0m

Water Bearing Fracture Zone

Well Log	Depth	Rate
16893	22.86m	4.55 lpm
16893	45.72m	18.2 lpm

Setbacks

Well Log	Distance	Setback From
16893	21.34m	Septic Tank
16893	91.44m	Right of any Public Way Road

New Nouveau Brunswick

Environment

Report Number **17501**

Well Driller's Report

Date printed **6/3/2022**

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	**New Well**	**Rotary**	**05/14/2008**

Casing Information — Casing above ground — Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
17501	**Steel**	**15.24cm**	**0m**	**11.28m**	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	**6.10m**	**136.5 lpm**	**1hr**	**13.72m**	**136 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty **0L**

Pump Installed
N/A

Intake Setting (BTC)
0m

Driller's Log

Well Log	From	End	Colour	Rock Type
17501	**0m**	**10.67m**	**Brown**	**Overburden**
17501	**10.67m**	**79.25m**	**Red**	**Shale**

Overall Well Depth
79.25m

Bedrock Level
10.67m

Water Bearing Fracture Zone

Well Log	Depth	Rate
17501	**28.96m**	**45.5 lpm**
17501	**74.68m**	**91 lpm**

Setbacks

Well Log	Distance	Setback From
17501	**16.76m**	**Septic Tank**
17501	**22.86m**	**Leach Field**
17501	**304.80m**	**Right of any Public Way Road**

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	**New Well**	**Rotary**	**05/14/2008**

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
17501	Steel	15.24cm	0m	11.28m	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	**6.10m**	**136.5 lpm**	**1hr**	**13.72m**	**136 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty **0L**

Pump Installed
N/A

Intake Setting (BTC)
0m

Driller's Log

Well Log	From	End	Colour	Rock Type
17501	0m	10.67m	Brown	Overburden
17501	10.67m	79.25m	Red	Shale

Overall Well Depth
79.25m

Bedrock Level
10.67m

Water Bearing Fracture Zone

Well Log	Depth	Rate
17501	28.96m	45.5 lpm
17501	74.68m	91 lpm

Setbacks

Well Log	Distance	Setback From
17501	16.76m	Septic Tank
17501	22.86m	Leach Field
17501	304.80m	Right of any Public Way Road

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	**New Well**	**Rotary**	**05/14/2008**

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
17501	Steel	15.24cm	0m	11.28m	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	**6.10m**	**136.5 lpm**	**1hr**	**13.72m**	**136 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty **0L**

Pump Installed
N/A

Intake Setting (BTC)
0m

Driller's Log

Well Log	From	End	Colour	Rock Type
17501	0m	10.67m	Brown	Overburden
17501	10.67m	79.25m	Red	Shale

Overall Well Depth
79.25m

Bedrock Level
10.67m

Water Bearing Fracture Zone

Well Log	Depth	Rate
17501	28.96m	45.5 lpm
17501	74.68m	91 lpm

Setbacks

Well Log	Distance	Setback From
17501	16.76m	Septic Tank
17501	22.86m	Leach Field
17501	304.80m	Right of any Public Way Road

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	**New Well**	**Rotary**	**05/14/2008**

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
17501	Steel	15.24cm	0m	11.28m	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	**6.10m**	**136.5 lpm**	**1hr**	**13.72m**	**136 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty **0L**

Pump Installed
N/A

Intake Setting (BTC)
0m

Driller's Log

Well Log	From	End	Colour	Rock Type
17501	0m	10.67m	Brown	Overburden
17501	10.67m	79.25m	Red	Shale

Overall Well Depth
79.25m

Bedrock Level
10.67m

Water Bearing Fracture Zone

Well Log	Depth	Rate
17501	28.96m	45.5 lpm
17501	74.68m	91 lpm

Setbacks

Well Log	Distance	Setback From
17501	16.76m	Septic Tank
17501	22.86m	Leach Field
17501	304.80m	Right of any Public Way Road

New Nouveau Brunswick

Environment

Report Number **17503**

Well Driller's Report

Date printed **6/3/2022**

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	**New Well**	**Rotary**	**05/14/2008**

Casing Information — Casing above ground — Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
17503	Steel	15.24cm	0m	12.65m	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	**6.10m**	**100.1 lpm**	**1hr**	**12.19m**	**91 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty **0L**

Pump Installed
N/A

Intake Setting (BTC)
73.15m

Driller's Log

Well Log	From	End	Colour	Rock Type
17503	0m	10.97m	Brown	Sand and Gravel
17503	10.97m	79.25m	Red	Granite

Overall Well Depth
79.25m

Bedrock Level
10.97m

Water Bearing Fracture Zone

Well Log	Depth	Rate
17503	57.91m	91 lpm
17503	24.38m	9.1 lpm

Setbacks

Well Log	Distance	Setback From
17503	16.76m	Septic Tank
17503	22.86m	Leach Field
17503	304.80m	Right of any Public Way Road

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	**New Well**	**Rotary**	**05/14/2008**

Casing Information — Casing above ground — Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
17503	Steel	15.24cm	0m	12.65m	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	**6.10m**	**100.1 lpm**	**1hr**	**12.19m**	**91 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty **0L**

Pump Installed
N/A

Intake Setting (BTC)
73.15m

Driller's Log

Well Log	From	End	Colour	Rock Type
17503	0m	10.97m	Brown	Sand and Gravel
17503	10.97m	79.25m	Red	Granite

Overall Well Depth
79.25m

Bedrock Level
10.97m

Water Bearing Fracture Zone

Well Log	Depth	Rate
17503	57.91m	91 lpm
17503	24.38m	9.1 lpm

Setbacks

Well Log	Distance	Setback From
17503	16.76m	Septic Tank
17503	22.86m	Leach Field
17503	304.80m	Right of any Public Way Road

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	**New Well**	**Rotary**	**05/14/2008**

Casing Information — Casing above ground — Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
17503	Steel	15.24cm	0m	12.65m	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	**6.10m**	**100.1 lpm**	**1hr**	**12.19m**	**91 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty **0L**

Pump Installed
N/A

Intake Setting (BTC)
73.15m

Driller's Log

Well Log	From	End	Colour	Rock Type
17503	0m	10.97m	Brown	Sand and Gravel
17503	10.97m	79.25m	Red	Granite

Overall Well Depth
79.25m

Bedrock Level
10.97m

Water Bearing Fracture Zone

Well Log	Depth	Rate
17503	57.91m	91 lpm
17503	24.38m	9.1 lpm

Setbacks

Well Log	Distance	Setback From
17503	16.76m	Septic Tank
17503	22.86m	Leach Field
17503	304.80m	Right of any Public Way Road

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	**New Well**	**Rotary**	**05/14/2008**

Casing Information — Casing above ground — Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
17503	Steel	15.24cm	0m	12.65m	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	**6.10m**	**100.1 lpm**	**1hr**	**12.19m**	**91 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty **0L**

Pump Installed
N/A

Intake Setting (BTC)
73.15m

Driller's Log

Well Log	From	End	Colour	Rock Type
17503	0m	10.97m	Brown	Sand and Gravel
17503	10.97m	79.25m	Red	Granite

Overall Well Depth
79.25m

Bedrock Level
10.97m

Water Bearing Fracture Zone

Well Log	Depth	Rate
17503	57.91m	91 lpm
17503	24.38m	9.1 lpm

Setbacks

Well Log	Distance	Setback From
17503	16.76m	Septic Tank
17503	22.86m	Leach Field
17503	304.80m	Right of any Public Way Road

New Nouveau Brunswick

Environment

Report Number **37197**

Well Driller's Report

Date printed **6/3/2022**

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	**New Well**	**Rotary**	**11/08/2018**

Casing Information		Casing above ground			Drive Shoe Used?
Well Log	Casing Type	Diameter	From	End	Slotted?
37197	**Steel**	**15.24cm**	**0m**	**21.34m**	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	**12.19m**	**136.5 lpm**	**1hr**	**12.19m**	**136 lpm**	**No**	**0 lpm**
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
Chlorine pellets

Qty **0L**

Pump Installed
Submersible

Intake Setting (BTC)
24.38m

Driller's Log

Well Log	From	End	Colour	Rock Type
37197	**0m**	**5.49m**	**Grey**	**Sandstone**
37197	**5.49m**	**19.81m**	**Brown**	**Clay**
37197	**19.81m**	**36.58m**	**Grey**	**Sandstone**
37197	**36.58m**	**42.67m**	**Brown**	**Clay**

Overall Well Depth
42.67m

Bedrock Level
0m

Water Bearing Fracture Zone

Well Log	Depth	Rate
37197	**36.58m**	**136.5 lpm**

Setbacks

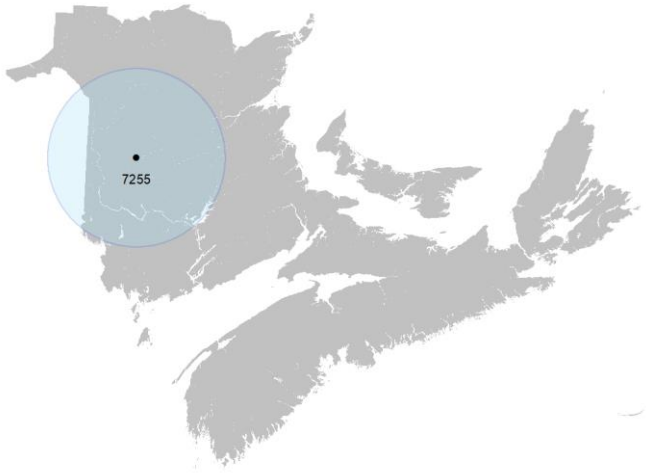
Well Log	Distance	Setback From
37197	**18.29m**	**Septic Tank**
37197	**24.38m**	**Leach Field**
37197	**22.86m**	**Right of any Public Way Road**
37197	**24.38m**	**Center of road**

Atlantic Canada Conservation Data Centre
Centre de données sur la conservation du Canada atlantique

DATA REPORT 7255: Deersdale, NB

Prepared 2 May 2022
by J. Pender, Data Manager

CONTENTS OF REPORT



Map 1. A 100 km buffer around the study area

1.0 PREFACE

The Atlantic Canada Conservation Data Centre (AC CDC; www.accdc.com) is part of a network of NatureServe data centres and heritage programs serving 50 states in the U.S.A, 10 provinces and 1 territory in Canada, plus several Central and South American countries. The NatureServe network is more than 30 years old and shares a common conservation data methodology. The AC CDC was founded in 1997, and maintains data for the jurisdictions of New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador. Although a non-governmental agency, the AC CDC is supported by 6 federal agencies and 4 provincial governments, as well as through outside grants and data processing fees.

Upon request and for a fee, the AC CDC queries its database and produces customized reports of the rare and endangered flora and fauna known to occur in or near a specified study area. As a supplement to that data, the AC CDC includes locations of managed areas with some level of protection, and known sites of ecological interest or sensitivity.

1.1 DATA LIST

Included datasets:

Filename	Contents
DeersdaleNB_7255ob.xls	Rare or legally-protected Flora and Fauna in your study area
DeersdaleNB_7255ob100km.xls	A list of Rare and legally protected Flora and Fauna within 100 km of your study area
DeersdaleNB_7255ff_py.xls	Rare Freshwater Fish in your study area (DFO database)

1.2 RESTRICTIONS

The AC CDC makes a strong effort to verify the accuracy of all the data that it manages, but it shall not be held responsible for any inaccuracies in data that it provides. By accepting AC CDC data, recipients assent to the following limits of use:

a) Data is restricted to use by trained personnel who are sensitive to landowner interests and to potential threats to rare and/or endangered flora and fauna posed by the information provided.
b) Data is restricted to use by the specified Data User; any third party requiring data must make its own data request.
c) The AC CDC requires Data Users to cease using and delete data 12 months after receipt, and to make a new request for updated data if necessary at that time.
d) AC CDC data responses are restricted to the data in our Data System at the time of the data request.
e) Each record has an estimate of locational uncertainty, which must be referenced in order to understand the record's relevance to a particular location. Please see attached Data Dictionary for details.
f) AC CDC data responses are not to be construed as exhaustive inventories of taxa in an area.
g) The absence of a taxon cannot be inferred by its absence in an AC CDC data response.

1.3 ADDITIONAL INFORMATION

The accompanying Data Dictionary provides metadata for the data provided.

Please direct any additional questions about AC CDC data to the following individuals:

Plants, Lichens, Ranking Methods, All other Inquiries
Sean Blaney
Senior Scientist / Executive Director
(506) 364-2658
sean.blaney@accdc.ca

Animals (Fauna)
John Klymko
Zoologist
(506) 364-2660
john.klymko@accdc.ca

Data Management, GIS
James Churchill
Conservation Data Analyst / Field Biologist
(902) 679-6146
james.churchill@accdc.ca

Billing
Jean Breau
Financial Manager / Executive Assistant
(506) 364-2657
jean.breau@accdc.ca

Questions on the biology of Federal Species at Risk can be directed to AC CDC: (506) 364-2658, with questions on Species at Risk regulations to: Samara Eaton, Canadian Wildlife Service (NB and PE): (506) 364-5060 or Julie McKnight, Canadian Wildlife Service (NS): (902) 426-4196.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in New Brunswick, please contact Hubert Askanas, Energy and Resource Development: (506) 453-5873.

For provincial information about rare taxa and protected areas, or information about game animals, deer yards, old growth forests, archeological sites, fish habitat etc., in Nova Scotia, please contact Donna Hurlburt, NS DLF: (902) 679-6886. To determine if location-sensitive species (section 4.3) occur near your study site please contact a NS DLF Regional Biologist:

Western: Emma Vost
(902) 670-8187
Emma.Vost@novascotia.ca

Western: Sarah Spencer
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Central: Kimberly George
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Eastern: Maureen Cameron-MacMillan
(902) 295-2554
Maureen.Cameron-MacMillan@novascotia.ca

Eastern: Elizabeth Walsh
(902) 563-3370
Elizabeth.Walsh@novascotia.ca

For provincial information about rare taxa and protected areas, or information about game animals, fish habitat etc., in Prince Edward Island, please contact Garry Gregory, PEI Dept. of Communities, Land and Environment: (902) 569-7595.

2.0 RARE AND ENDANGERED SPECIES

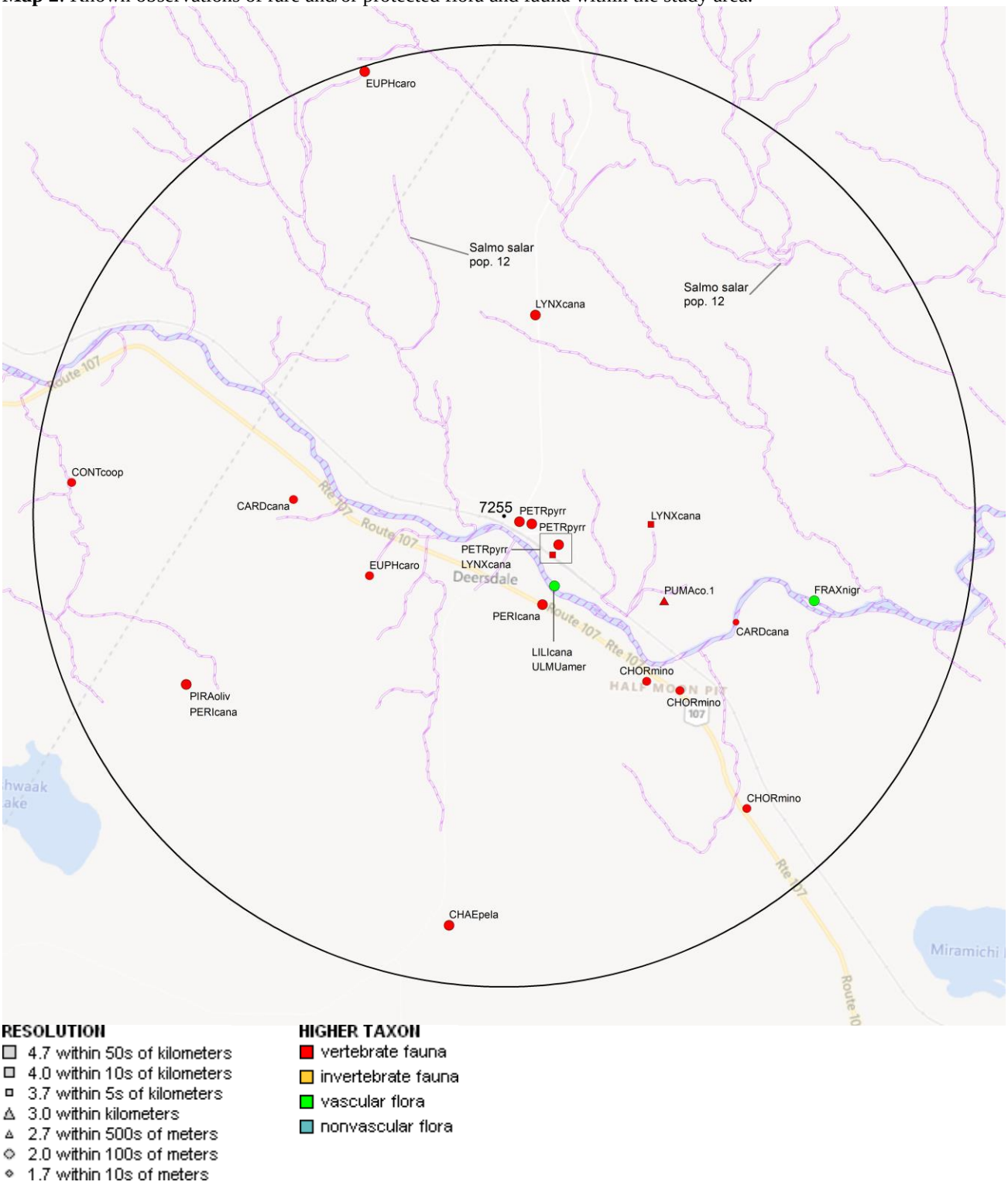
2.1 FLORA

The study area contains 3 records of 3 vascular, no records of nonvascular flora (Map 2 and attached: *ob.xls), excluding 'location-sensitive' species.

2.2 FAUNA

The study area contains 20 records of 10 vertebrate, no records of invertebrate fauna (Map 2 and attached data files - see 1.1 Data List), excluding 'location-sensitive' species. Please see section 4.3 to determine if 'location-sensitive' species occur near your study site.

Map 2: Known observations of rare and/or protected flora and fauna within the study area.



3.0 SPECIAL AREAS

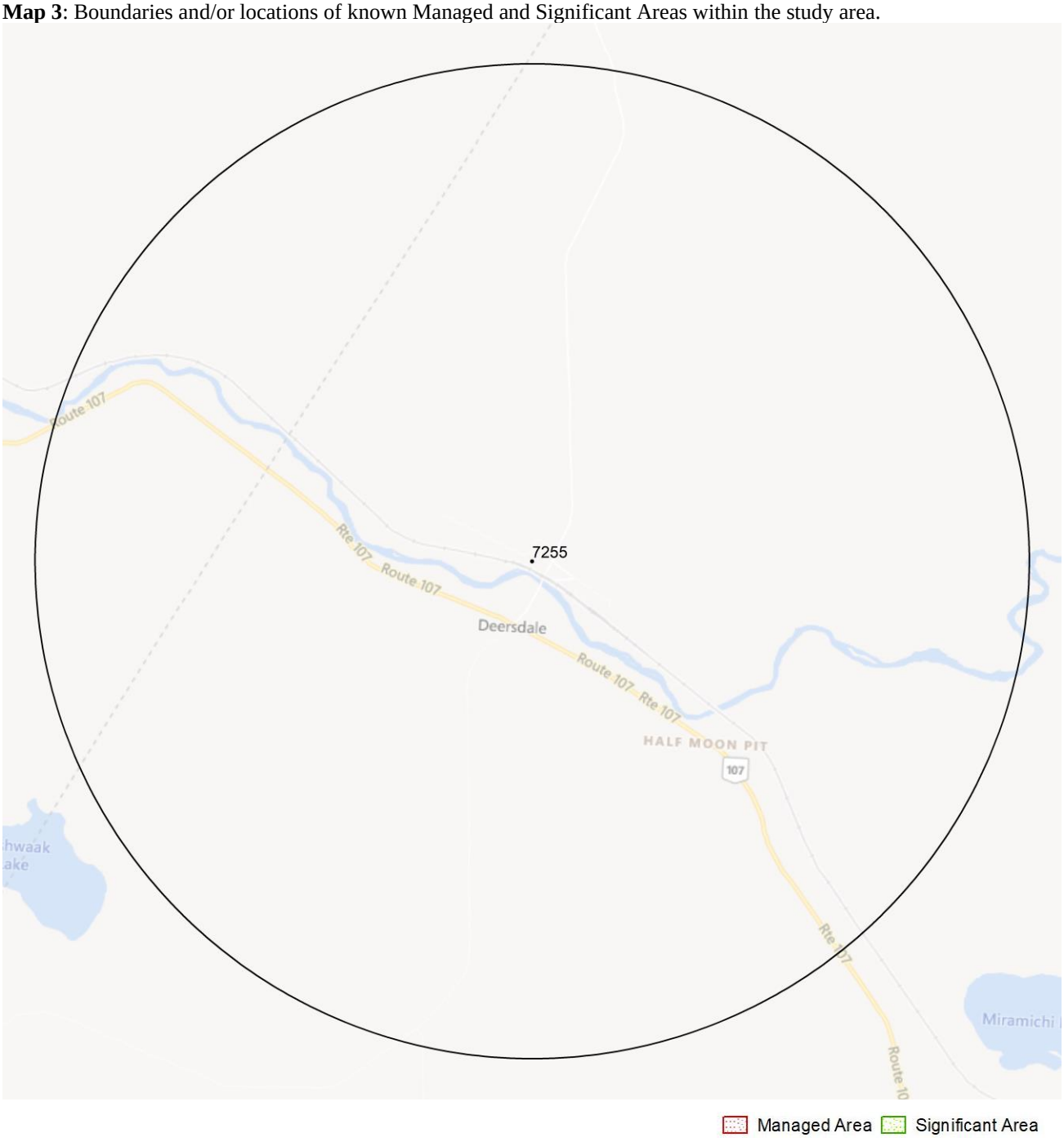
3.1 MANAGED AREAS

The GIS scan identified no managed areas in the vicinity of the study area (Map 3).

3.2 SIGNIFICANT AREAS

The GIS scan identified no biologically significant sites in the vicinity of the study area (Map 3).

Map 3: Boundaries and/or locations of known Managed and Significant Areas within the study area.



4.0 RARE SPECIES LISTS

Rare and/or endangered taxa (excluding "location-sensitive" species, section 4.3) within the study area listed in order of concern, beginning with legally listed taxa, with the number of observations per taxon and the distance in kilometers from study area centroid to the closest observation (± the precision, in km, of the record). [P] = vascular plant, [N] = nonvascular plant, [A] = vertebrate animal, [I] = invertebrate animal, [C] = community. Note: records are from attached files *ob.xls/*ob.shp only.

4.1 FLORA

	Scientific *Name*	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)
P	*Fraxinus nigra*	Black Ash	Threatened			S3S4	1	3.4 ± 0.0
P	*Ulmus americana*	White Elm				S3S4	1	0.9 ± 0.0
P	*Lilium canadense*	Canada Lily				S3S4	1	0.9 ± 0.0

4.2 FAUNA

	Scientific *Name*	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)
A	*Chaetura pelagica*	Chimney Swift	Threatened	Threatened	Threatened	S2S3B,S2M	1	4.4 ± 0.0
A	*Euphagus carolinus*	Rusty Blackbird	Special Concern	Special Concern	Special Concern	S2S3B,S3M	2	1.6 ± 0.0
A	*Contopus cooperi*	Olive-sided Flycatcher	Special Concern	Threatened	Threatened	S3B	1	4.6 ± 0.0
A	*Chordeiles minor*	Common Nighthawk	Special Concern	Threatened	Threatened	S3B,S4M	3	2.3 ± 0.0
A	*Cardellina canadensis*	Canada Warbler	Special Concern	Threatened	Threatened	S3S4B	2	2.2 ± 0.0
A	*Lynx canadensis*	Canada Lynx	Not At Risk		Endangered	S4	3	0.7 ± 5.0
A	*Puma concolor pop. 1*	Cougar - Eastern population	Data Deficient		Endangered	SU	1	1.9 ± 1.0
A	*Petrochelidon pyrrhonota*	Cliff Swallow				S2B	3	0.2 ± 0.0
A	*Piranga olivacea*	Scarlet Tanager				S3B	2	3.8 ± 0.0
A	*Perisoreus canadensis*	Canada Jay				S3S4	2	1.0 ± 0.0

4.3 LOCATION SENSITIVE SPECIES

The Department of Natural Resources in each Maritimes province considers a number of species "location sensitive". Concern about exploitation of location-sensitive species precludes inclusion of precise coordinates in this report. Those intersecting your study area are indicated below with "YES".

New Brunswick

Scientific *Name*	Common Name	SARA	Prov Legal Prot	Known within the Study Site?
Chrysemys picta picta	Eastern Painted Turtle	Special Concern		No
Chelydra serpentina	Snapping Turtle	Special Concern	Special Concern	No
Glyptemys insculpta	**Wood Turtle**	**Threatened**	**Threatened**	**YES**
Haliaeetus leucocephalus	Bald Eagle		Endangered	No
Falco peregrinus pop. 1	Peregrine Falcon - anatum/tundrius pop.	Special Concern	Endangered	No
Cicindela marginipennis	Cobblestone Tiger Beetle	Endangered	Endangered	No
Coenonympha nipisiquit	Maritime Ringlet	Endangered	Endangered	No
Bat hibernaculum or bat species occurrence		[Endangered][1]	[Endangered][1]	No

1 *Myotis lucifugus* (Little Brown Myotis), *Myotis septentrionalis* (Long-eared Myotis), and *Perimyotis subflavus* (Tri-colored Bat or Eastern Pipistrelle) are all Endangered under the Federal Species at Risk Act and the NB Species at Risk Act.

4.4 SOURCE BIBLIOGRAPHY

The recipient of these data shall acknowledge the AC CDC and the data sources listed below in any documents, reports, publications or presentations, in which this dataset makes a significant contribution.

# recs	CITATION
8	Lepage, D. 2014. Maritime Breeding Bird Atlas Database. Bird Studies Canada, Sackville NB, 407,838 recs.
6	Stantec. 2014. Energy East Pipeline Corridor Species Occurrence Data. Stantec Inc., 4934 records.
4	Blaney, C.S.; Mazerolle, D.M. 2009. Fieldwork 2009. Atlantic Canada Conservation Data Centre. Sackville NB, 13395 recs.
2	Dept of Fisheries & Oceans. 2001. Atlantic Salmon Maritime provinces overview for 2000. DFO.
2	Toner, M. 2005. Lynx Records 1996-2005. NB Dept of Natural Resources, 48 recs.
1	Pardieck, K.L., Ziolkowski Jr., D.J., Lutmerding, M., Aponte, V.I., and Hudson, M-A.R. 2020. North American Breeding Bird Survey Dataset 1966 - 2019: U.S. Geological Survey data release, https://doi.org/10.5066/P9J6QUF6
1	Scott, Fred W. 1998. Updated Status Report on the Cougar (Puma Concolor couguar) [Eastern population]. Committee on the Status of Endangered Wildlife in Canada, 298 recs.
1	Sollows, M.C,. 2008. NBM Science Collections databases: mammals. New Brunswick Museum, Saint John NB, download Jan. 2008, 4983 recs.

5.0 RARE SPECIES WITHIN 100 KM

A 100 km buffer around the study area contains 20013 records of 134 vertebrate and 1232 records of 68 invertebrate fauna; 12659 records of 324 vascular, 528 records of 136 nonvascular flora (attached: *ob100km.xls).

Taxa within 100 km of the study site that are rare and/or endangered in the province in which the study site occurs (including “location-sensitive” species). All ranks correspond to the province in which the study site falls, even for out-of-province records. Taxa are listed in order of concern, beginning with legally listed taxa, with the number of observations per taxon and the distance in kilometers from study area centroid to the closest observation (± the precision, in km, of the record).

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
A	*Myotis lucifugus*	Little Brown Myotis	Endangered	Endangered	Endangered	S1	15	43.3 ± 1.0	NB
A	*Myotis septentrionalis*	Northern Myotis	Endangered	Endangered	Endangered	S1	5	66.9 ± 1.0	NB
A	*Salmo salar pop. 1*	Atlantic Salmon - Inner Bay of Fundy population	Endangered	Endangered	Endangered	S2	432	19.4 ± 1.0	NB
A	*Empidonax virescens*	Acadian Flycatcher	Endangered	Endangered		SNA	2	68.1 ± 0.0	NB
A	*Icteria virens*	Yellow-Breasted Chat	Endangered	Endangered		SNA	1	51.9 ± 7.0	NB
A	*Salmo salar pop. 7*	Atlantic Salmon - Outer Bay of Fundy population	Endangered		Endangered	SNR	20	48.7 ± 0.0	NB
A	*Rangifer tarandus pop. 2*	Caribou - Atlantic-Gasp ├⌐sie population	Endangered	Endangered	Extirpated	SX	3	18.9 ± 1.0	NB
A	*Sturnella magna*	Eastern Meadowlark	Threatened	Threatened	Threatened	S1B	30	25.2 ± 7.0	NB
A	*Asio flammeus*	Short-eared Owl	Threatened	Special Concern	Special Concern	S1S2B	4	94.8 ± 7.0	NB
A	*Ixobrychus exilis*	Least Bittern	Threatened	Threatened	Threatened	S1S2B	17	48.6 ± 0.0	NB
A	*Hylocichla mustelina*	Wood Thrush	Threatened	Threatened	Threatened	S1S2B	207	5.8 ± 7.0	NB
A	*Antrostomus vociferus*	Eastern Whip-Poor-Will	Threatened	Threatened	Threatened	S2B	57	12.4 ± 0.0	NB
A	*Catharus bicknelli*	Bicknell's Thrush	Threatened	Threatened	Threatened	S2B	549	14.3 ± 7.0	NB
A	*Riparia riparia*	Bank Swallow	Threatened	Threatened		S2B	349	5.8 ± 7.0	NB
A	*Glyptemys insculpta*	Wood Turtle	Threatened	Threatened	Threatened	S2S3	545	0.8 ± 0.0	NB
A	*Chaetura pelagica*	Chimney Swift	Threatened	Threatened	Threatened	S2S3B,S2M	289	4.4 ± 0.0	NB
A	*Dolichonyx oryzivorus*	Bobolink	Threatened	Threatened	Threatened	S3B	679	6.7 ± 0.0	NB
A	*Tringa flavipes*	Lesser Yellowlegs	Threatened			S3M	53	58.2 ± 0.0	NB
A	*Anguilla rostrata*	American Eel	Threatened		Threatened	S4N	29	34.4 ± 0.0	NB
A	*Coturnicops noveboracensis*	Yellow Rail	Special Concern	Special Concern	Special Concern	S1?B,SUM	2	90.5 ± 7.0	NB
A	*Histrionicus histrionicus pop. 1*	Harlequin Duck - Eastern population	Special Concern	Special Concern	Endangered	S1B,S1S2N,S2M	1	61.8 ± 0.0	NB
A	*Hirundo rustica*	Barn Swallow	Special Concern	Threatened	Threatened	S2B	901	5.8 ± 7.0	NB
A	*Salmo salar pop. 12*	Atlantic Salmon - Gaspe - Southern Gulf of St. Lawrence population	Special Concern		Special Concern	S2S3	1762	10.4 ± 0.0	NB
A	*Euphagus carolinus*	Rusty Blackbird	Special Concern	Special Concern	Special Concern	S2S3B,S3M	312	1.6 ± 0.0	NB
A	*Bucephala islandica*	Barrow's Goldeneye	Special Concern	Special Concern	Special Concern	S2S3N,S3M	27	52.0 ± 1.0	NB
A	*Acipenser brevirostrum*	Shortnose Sturgeon	Special Concern	Special Concern	Special Concern	S3	1	63.1 ± 10.0	NB
A	*Chelydra serpentina*	Snapping Turtle	Special Concern	Special Concern	Special Concern	S3	26	37.2 ± 0.0	NB
A	*Contopus virens*	Eastern Wood-Pewee	Special Concern	Special Concern	Special Concern	S3B	749	5.8 ± 7.0	NB
A	*Contopus cooperi*	Olive-sided Flycatcher	Special Concern	Threatened	Threatened	S3B	860	4.6 ± 0.0	NB
A	*Coccothraustes vespertinus*	Evening Grosbeak	Special Concern	Special Concern		S3B,S3S4N,SUM	334	5.8 ± 7.0	NB
A	*Chordeiles minor*	Common Nighthawk	Special Concern	Threatened	Threatened	S3B,S4M	441	2.3 ± 0.0	NB
A	*Phalaropus lobatus*	Red-necked Phalarope	Special Concern	Special Concern		S3M	2	99.7 ± 0.0	NB
A	*Podiceps auritus*	Horned Grebe	Special Concern	Special Concern	Special Concern	S3N	4	55.9 ± 2.0	NB
A	*Cardellina canadensis*	Canada Warbler	Special Concern	Threatened	Threatened	S3S4B	1120	2.2 ± 0.0	NB
A	*Chrysemys picta picta*	Eastern Painted Turtle	Special Concern	Special Concern		S4	37	67.9 ± 13.0	NB
A	*Fulica americana*	American Coot	Not At Risk			S1B	4	94.9 ± 0.0	NB
A	*Falco peregrinus pop. 1*	Peregrine Falcon - anatum/tundrius	Not At Risk	Special Concern	Endangered	S1B,S3M	8	67.8 ± 0.0	NB
A	*Bubo scandiacus*	Snowy Owl	Not At Risk			S1N,S2S3M	5	43.1 ± 5.0	NB
A	*Accipiter cooperii*	Cooper's Hawk	Not At Risk			S1S2B	22	38.3 ± 0.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
A	*Buteo lineatus*	Red-shouldered Hawk	Not At Risk			S1S2B	28	22.9 ± 0.0	NB
A	*Aegolius funereus*	Boreal Owl	Not At Risk			S1S2B,SUM	3	92.5 ± 0.0	NB
A	*Sorex dispar*	Long-tailed Shrew	Not At Risk			S2	20	39.8 ± 1.0	NB
A	*Chlidonias niger*	Black Tern	Not At Risk			S2B	166	67.5 ± 5.0	NB
A	*Podiceps grisegena*	Red-necked Grebe	Not At Risk			S2N,S3M	3	56.1 ± 0.0	NB
A	*Desmognathus fuscus pop. 2*	Northern Dusky Salamander - Quebec / New Brunswick population	Not At Risk			S3	56	38.5 ± 0.0	NB
A	*Sterna hirundo*	Common Tern	Not At Risk			S3B,SUM	179	44.0 ± 0.0	NB
A	*Haliaeetus leucocephalus*	Bald Eagle	Not At Risk		Endangered	S4	528	5.8 ± 7.0	NB
A	*Lynx canadensis*	Canada Lynx	Not At Risk		Endangered	S4	63	0.7 ± 5.0	NB
A	*Canis lupus*	Grey Wolf	Not At Risk		Extirpated	SX	1	85.4 ± 1.0	NB
A	*Puma concolor pop. 1*	Cougar - Eastern population	Data Deficient		Endangered	SU	47	1.9 ± 1.0	NB
A	*Morone saxatilis*	Striped Bass	E,SC			S3S4B,S3S4N	8	69.2 ± 1.0	NB
A	*Salmo salar*	Atlantic Salmon	E,T,SC			S2S3	1	92.0 ± 0.0	NB
A	*Thryothorus ludovicianus*	Carolina Wren				S1	35	55.6 ± 0.0	NB
A	*Salvelinus alpinus*	Arctic Char				S1	2	43.2 ± 1.0	NB
A	*Synaptomys borealis sphagnicola*	Northern Bog Lemming				S1	1	94.1 ± 1.0	NB
A	*Vireo flavifrons*	Yellow-throated Vireo				S1?B	5	66.7 ± 7.0	NB
A	*Tringa melanoleuca*	Greater Yellowlegs				S1?B,S4S5M	103	58.2 ± 0.0	NB
A	*Gallinula galeata*	Common Gallinule				S1B	9	13.3 ± 0.0	NB
A	*Grus canadensis*	Sandhill Crane				S1B	2	22.6 ± 0.0	NB
A	*Bartramia longicauda*	Upland Sandpiper				S1B	7	80.5 ± 7.0	NB
A	*Phalaropus tricolor*	Wilson's Phalarope				S1B	6	74.6 ± 7.0	NB
A	*Leucophaeus atricilla*	Laughing Gull				S1B	1	69.2 ± 1.0	NB
A	*Progne subis*	Purple Martin				S1B	188	16.7 ± 7.0	NB
A	*Aythya marila*	Greater Scaup				S1B,S2N,S4M	4	86.6 ± 7.0	NB
A	*Oxyura jamaicensis*	Ruddy Duck				S1B,S2S3M	5	43.1 ± 0.0	NB
A	*Aythya affinis*	Lesser Scaup				S1B,S4M	41	55.9 ± 2.0	NB
A	*Eremophila alpestris*	Horned Lark				S1B,S4N,S5M	47	31.0 ± 7.0	NB
A	*Chroicocephalus ridibundus*	Black-headed Gull				S1N,S2M	2	69.2 ± 1.0	NB
A	*Branta bernicla*	Brant				S1N,S2S3M	5	83.9 ± 0.0	NB
A	*Calidris alba*	Sanderling				S1N,S3S4M	8	58.2 ± 0.0	NB
A	*Butorides virescens*	Green Heron				S1S2B	16	44.3 ± 7.0	NB
A	*Nycticorax nycticorax*	Black-crowned Night-heron				S1S2B	2	55.2 ± 1.0	NB
A	*Empidonax traillii*	Willow Flycatcher				S1S2B	53	31.8 ± 0.0	NB
A	*Stelgidopteryx serripennis*	Northern Rough-winged Swallow				S1S2B	13	44.3 ± 7.0	NB
A	*Troglodytes aedon*	House Wren				S1S2B	13	49.0 ± 7.0	NB
A	*Calidris bairdii*	Baird's Sandpiper				S1S2M	2	58.2 ± 0.0	NB
A	*Melanitta americana*	American Scoter				S1S2N,S3M	17	49.5 ± 2.0	NB
A	*Microtus chrotorrhinus*	Rock Vole				S2?	35	39.8 ± 1.0	NB
A	*Petrochelidon pyrrhonota*	Cliff Swallow				S2B	382	0.2 ± 0.0	NB
A	*Cistothorus palustris*	Marsh Wren				S2B	82	52.6 ± 7.0	NB
A	*Mimus polyglottos*	Northern Mockingbird				S2B	67	10.7 ± 0.0	NB
A	*Pooecetes gramineus*	Vesper Sparrow				S2B	58	5.8 ± 7.0	NB
A	*Mareca strepera*	Gadwall				S2B,S3M	7	61.2 ± 0.0	NB
A	*Tringa solitaria*	Solitary Sandpiper				S2B,S4S5M	88	11.5 ± 0.0	NB
A	*Pinicola enucleator*	Pine Grosbeak				S2B,S4S5N,S4S5M	95	7.8 ± 7.0	NB
A	*Phalacrocorax carbo*	Great Cormorant				S2N	3	52.0 ± 1.0	NB
A	*Larus hyperboreus*	Glaucous Gull				S2N	21	63.2 ± 50.0	NB
A	*Asio otus*	Long-eared Owl				S2S3	16	42.6 ± 0.0	NB
A	*Picoides dorsalis*	American Three-toed Woodpecker				S2S3	61	5.8 ± 7.0	NB
A	*Toxostoma rufum*	Brown Thrasher				S2S3B	95	11.3 ± 0.0	NB
A	*Icterus galbula*	Baltimore Oriole				S2S3B	178	15.0 ± 7.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
A	*Somateria mollissima*	Common Eider				S2S3B,S2S3N,S4M	2	63.2 ± 199.0	NB
A	*Larus delawarensis*	Ring-billed Gull				S2S3B,S4N,S5M	128	20.6 ± 0.0	NB
A	*Pluvialis dominica*	American Golden-Plover				S2S3M	2	72.6 ± 0.0	NB
A	*Calcarius lapponicus*	Lapland Longspur				S2S3N,SUM	2	57.1 ± 2.0	NB
A	*Larus marinus*	Great Black-backed Gull				S3	52	58.6 ± 7.0	NB
A	*Picoides arcticus*	Black-backed Woodpecker				S3	133	6.5 ± 7.0	NB
A	*Loxia curvirostra*	Red Crossbill				S3	115	5.1 ± 0.0	NB
A	*Spinus pinus*	Pine Siskin				S3	230	6.5 ± 7.0	NB
A	*Prosopium cylindraceum*	Round Whitefish				S3	5	51.6 ± 1.0	NB
A	*Salvelinus namaycush*	Lake Trout				S3	6	39.7 ± 0.0	NB
A	*Sorex maritimensis*	Maritime Shrew				S3	1	61.4 ± 1.0	NB
A	*Spatula clypeata*	Northern Shoveler				S3B	36	56.3 ± 0.0	NB
A	*Charadrius vociferus*	Killdeer				S3B	492	5.8 ± 7.0	NB
A	*Tringa semipalmata*	Willet				S3B	2	80.8 ± 0.0	NB
A	*Coccyzus erythropthalmus*	Black-billed Cuckoo				S3B	111	22.0 ± 7.0	NB
A	*Myiarchus crinitus*	Great Crested Flycatcher				S3B	335	13.0 ± 0.0	NB
A	*Piranga olivacea*	Scarlet Tanager				S3B	334	3.8 ± 0.0	NB
A	*Pheucticus ludovicianus*	Rose-breasted Grosbeak				S3B	778	5.8 ± 7.0	NB
A	*Passerina cyanea*	Indigo Bunting				S3B	101	33.5 ± 0.0	NB
A	*Molothrus ater*	Brown-headed Cowbird				S3B	202	5.8 ± 7.0	NB
A	*Setophaga tigrina*	Cape May Warbler				S3B,S4S5M	167	7.9 ± 7.0	NB
A	*Mergus serrator*	Red-breasted Merganser				S3B,S4S5N,S5M	38	12.9 ± 1.0	NB
A	*Anas acuta*	Northern Pintail				S3B,S5M	25	35.1 ± 1.0	NB
A	*Anser caerulescens*	Snow Goose				S3M	5	46.9 ± 5.0	NB
A	*Arenaria interpres*	Ruddy Turnstone				S3M	4	58.2 ± 0.0	NB
A	*Calidris pusilla*	Semipalmated Sandpiper				S3M	14	47.6 ± 0.0	NB
A	*Calidris melanotos*	Pectoral Sandpiper				S3M	10	58.9 ± 0.0	NB
A	*Limnodromus griseus*	Short-billed Dowitcher				S3M	14	58.2 ± 0.0	NB
A	*Phalaropus fulicarius*	Red Phalarope				S3M	1	58.2 ± 0.0	NB
A	*Bucephala albeola*	Bufflehead				S3N	24	51.1 ± 0.0	NB
A	*Calidris maritima*	Purple Sandpiper				S3N	1	52.0 ± 1.0	NB
A	*Perisoreus canadensis*	Canada Jay				S3S4	413	1.0 ± 0.0	NB
A	*Poecile hudsonicus*	Boreal Chickadee				S3S4	495	5.5 ± 0.0	NB
A	*Eptesicus fuscus*	Big Brown Bat				S3S4	26	62.4 ± 1.0	NB
A	*Synaptomys cooperi*	Southern Bog Lemming				S3S4	2	24.7 ± 0.0	NB
A	*Tyrannus tyrannus*	Eastern Kingbird				S3S4B	503	5.8 ± 7.0	NB
A	*Vireo gilvus*	Warbling Vireo				S3S4B	251	11.9 ± 0.0	NB
A	*Actitis macularius*	Spotted Sandpiper				S3S4B,S4M	550	5.8 ± 7.0	NB
A	*Melospiza lincolnii*	Lincoln's Sparrow				S3S4B,S4M	349	5.5 ± 0.0	NB
A	*Gallinago delicata*	Wilson's Snipe				S3S4B,S5M	581	7.9 ± 7.0	NB
A	*Setophaga striata*	Blackpoll Warbler				S3S4B,S5M	680	10.3 ± 0.0	NB
A	*Pluvialis squatarola*	Black-bellied Plover				S3S4M	10	58.2 ± 0.0	NB
A	*Morus bassanus*	Northern Gannet				SHB	1	81.3 ± 0.0	NB
C	*Quercus macrocarpa - Acer rubrum / Onoclea sensibilis - Carex arcta Forest*	Bur Oak - Red Maple / Sensitive Fern - Northern Clustered Sedge Forest				S2	1	96.4 ± 0.0	NB
C	*Acer saccharinum / Onoclea sensibilis - Lysimachia terrestris Forest*	Silver Maple / Sensitive Fern - Swamp Yellow Loosestrife Forest				S3	1	98.8 ± 0.0	NB
C	*Acer saccharum - Fraxinus americana / Gymnocarpium dryopteris - Deparia acrostichoides Forest*	Sugar Maple - White Ash / Common Oak Fern - Silvery Glade Fern Forest				S3	2	52.8 ± 0.0	NB
C	*Acer saccharum - Fraxinus americana / Polystichum acrostichoides Forest*	Sugar Maple - White Ash / Christmas Fern Forest				S3S4	1	88.6 ± 0.0	NB
I	*Bombus bohemicus*	Ashton Cuckoo Bumble Bee	Endangered	Endangered		S1	4	68.0 ± 5.0	NB

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I	*Gomphurus ventricosus*	Skillet Clubtail	Endangered	Endangered	Endangered	S2	54	67.6 ± 1.0	NB
I	*Danaus plexippus*	Monarch	Endangered	Special Concern	Special Concern	S2S3?B	136	33.3 ± 0.0	NB
I	*Bombus affinis*	Rusty-patched Bumble Bee	Endangered	Endangered		SH	1	67.4 ± 5.0	NB
I	*Cicindela marginipennis*	Cobblestone Tiger Beetle	Special Concern	Endangered	Endangered	S2S3	205	40.7 ± 0.0	NB
I	*Ophiogomphus howei*	Pygmy Snaketail	Special Concern	Special Concern	Special Concern	S2S3	26	71.6 ± 0.0	NB
I	*Alasmidonta varicosa*	Brook Floater	Special Concern	Special Concern	Special Concern	S3	13	48.5 ± 0.0	NB
I	*Lampsilis cariosa*	Yellow Lampmussel	Special Concern	Special Concern	Special Concern	S3	64	60.5 ± 1.0	NB
I	*Bombus terricola*	Yellow-banded Bumble Bee	Special Concern	Special Concern		S4	97	30.5 ± 0.0	NB
I	*Coccinella transversoguttata richardsoni*	Transverse Lady Beetle	Special Concern			SH	18	46.7 ± 2.0	NB
I	*Appalachina sayana sayana*	Spike-lip Crater Snail	Not At Risk			S3?	2	54.8 ± 0.0	NB
I	*Conotrachelus juglandis*	Butternut Curculio				S1	3	72.0 ± 0.0	NB
I	*Haematopota rara*	Shy Cleg				S1	1	69.1 ± 1.0	NB
I	*Tharsalea dorcas*	Dorcas Copper				S1	19	47.6 ± 7.0	NB
I	*Erora laeta*	Early Hairstreak				S1	11	30.3 ± 7.0	NB
I	*Somatochlora septentrionalis*	Muskeg Emerald				S1	5	54.6 ± 0.0	NB
I	*Polites origenes*	Crossline Skipper				S1?	2	59.9 ± 0.0	NB
I	*Icaricia saepiolus*	Greenish Blue				S1S2	9	66.9 ± 2.0	NB
I	*Pachydiplax longipennis*	Blue Dasher				S1S2	1	91.5 ± 0.0	NB
I	*Cicindela ancocisconensis*	Appalachian Tiger Beetle				S2	4	42.5 ± 0.0	NB
I	*Encyclops caeruleus*	Cerulean Long-horned Beetle				S2	3	60.3 ± 0.0	NB
I	*Scaphinotus viduus*	Bereft Snail-eating Beetle				S2	1	68.7 ± 13.0	NB
I	*Brachyleptura circumdata*	Dark-shouldered Long-horned Beetle				S2	6	82.3 ± 0.0	NB
I	*Satyrium calanus*	Banded Hairstreak				S2	28	39.3 ± 7.0	NB
I	*Satyrium calanus falacer*	Falacer Hairstreak				S2	1	70.0 ± 1.0	NB
I	*Strymon melinus*	Gray Hairstreak				S2	2	99.5 ± 2.0	NB
I	*Aeshna juncea*	Sedge Darner				S2	8	54.6 ± 0.0	NB
I	*Somatochlora brevicincta*	Quebec Emerald				S2	8	46.8 ± 0.0	NB
I	*Hybomitra frosti*	Frost's Horse Fly				S2S3	1	97.3 ± 0.0	NB
I	*Ophiogomphus colubrinus*	Boreal Snaketail				S2S3	36	63.7 ± 0.0	NB
I	*Sphaeroderus nitidicollis*	Polished Snail-eating Beetle				S3	1	90.1 ± 0.0	NB
I	*Orthosoma brunneum*	Moist Long-horned Beetle				S3	1	96.4 ± 5.0	NB
I	*Elaphrus americanus*	Boreal Elaphrus Beetle				S3	1	82.5 ± 0.0	NB
I	*Semanotus terminatus*	Light Long-horned Beetle				S3	1	76.8 ± 0.0	NB
I	*Desmocerus palliatus*	Elderberry Borer				S3	2	67.5 ± 0.0	NB
I	*Agonum excavatum*	Excavated Harp Ground Beetle				S3	1	82.5 ± 0.0	NB
I	*Clivina americana*	America Pedunculate Ground Beetle				S3	1	82.5 ± 0.0	NB
I	*Olisthopus parmatus*	Tawny-bordered Harp Ground Beetle				S3	1	90.1 ± 0.0	NB
I	*Tachys scitulus*	Handsome Riverbank Ground Beetle				S3	1	82.5 ± 0.0	NB
I	*Carabus serratus*	Serrated Ground Beetle				S3	1	92.1 ± 0.0	NB
I	*Hippodamia parenthesis*	Parenthesis Lady Beetle				S3	3	76.8 ± 0.0	NB
I	*Stenocorus vittiger*	Shrub Long-horned Beetle				S3	1	82.5 ± 0.0	NB
I	*Badister neopulchellus*	Red-black Spotted Beetle				S3	1	82.5 ± 0.0	NB
I	*Gonotropis dorsalis*	Birch Fungus Weevil				S3	1	76.8 ± 0.0	NB
I	*Ceruchus piceus*	Black Stag Beetle				S3	1	43.1 ± 0.0	NB
I	*Epargyreus clarus*	Silver-spotted Skipper				S3	8	83.3 ± 0.0	NB
I	*Hesperia sassacus*	Indian Skipper				S3	20	47.6 ± 7.0	NB
I	*Euphyes bimacula*	Two-spotted Skipper				S3	16	30.3 ± 7.0	NB
I	*Papilio brevicauda gaspeensis*	Short-tailed Swallowtail				S3	5	45.7 ± 1.0	NB
I	*Satyrium acadica*	Acadian Hairstreak				S3	7	30.3 ± 7.0	NB
I	*Callophrys eryphon*	Western Pine Elfin				S3	17	47.4 ± 7.0	NB

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I	*Argynnis aphrodite*	Aphrodite Fritillary				S3	16	47.9 ± 0.0	NB
I	*Boloria eunomia*	Bog Fritillary				S3	17	11.9 ± 0.0	NB
I	*Boloria bellona*	Meadow Fritillary				S3	64	36.7 ± 7.0	NB
I	*Boloria chariclea*	Arctic Fritillary				S3	26	64.2 ± 7.0	NB
I	*Nymphalis l-album*	Compton Tortoiseshell				S3	21	47.2 ± 0.0	NB
I	*Gomphurus vastus*	Cobra Clubtail				S3	76	63.1 ± 0.0	NB
I	*Ladona exusta*	White Corporal				S3	1	71.5 ± 0.0	NB
I	*Ischnura kellicotti*	Lilypad Forktail				S3	4	72.6 ± 0.0	NB
I	*Arigomphus furcifer*	Lilypad Clubtail				S3	17	82.5 ± 0.0	NB
I	*Alasmidonta undulata*	Triangle Floater				S3	12	71.7 ± 0.0	NB
I	*Atlanticoncha ochracea*	Tidewater Mucket				S3	86	55.0 ± 0.0	NB
I	*Striatura ferrea*	Black Striate Snail				S3	1	69.7 ± 1.0	NB
I	*Neohelix albolabris*	Whitelip Snail				S3	2	69.7 ± 1.0	NB
I	*Pantala hymenaea*	Spot-Winged Glider				S3B	2	43.5 ± 0.0	NB
I	*Bombus griseocollis*	Brown-belted Bumble Bee				S3S4	2	62.0 ± 0.0	NB
I	*Somatochlora forcipata*	Forcipate Emerald				S3S4	16	12.6 ± 1.0	NB
I	*Somatochlora tenebrosa*	Clamp-Tipped Emerald				S3S4	9	70.5 ± 0.0	NB
N	*Anzia colpodes*	Black-foam Lichen	Threatened	Threatened		S1S2	3	34.1 ± 0.0	NB
N	*Fuscopannaria leucosticta*	White-rimmed Shingle Lichen	Threatened			S2	86	50.3 ± 0.0	NB
N	*Peltigera hydrothyria*	Eastern Waterfan	Threatened	Threatened		S2S3	9	63.8 ± 0.0	NB
N	*Aphanorrhegma serratum*	a Moss				S1	2	47.5 ± 0.0	NB
N	*Arctoa fulvella*	a Moss				S1	2	99.1 ± 1.0	NB
N	*Campylophyllum halleri*	Haller's Fine Wet Moss				S1	2	80.4 ± 1.0	NB
N	*Drepanocladus longifolius*	Long-leaved Hook Moss				S1	1	62.2 ± 1.0	NB
N	*Grimmia donniana*	Donn's Grimmia Moss				S1	4	98.6 ± 0.0	NB
N	*Grimmia unicolor*	a Moss				S1	1	64.1 ± 1.0	NB
N	*Grimmia incurva*	Black Grimmia				S1	4	98.6 ± 0.0	NB
N	*Hypnum recurvatum*	Recurved Plait Moss				S1	3	80.4 ± 1.0	NB
N	*Kiaeria starkei*	Starke's Fork Moss				S1	1	99.1 ± 1.0	NB
N	*Atrichum angustatum*	Lesser Smoothcap Moss				S1?	1	56.6 ± 2.0	NB
N	*Ptychostomum pallens*	Pale Bryum				S1?	2	80.4 ± 1.0	NB
N	*Catoscopium nigritum*	Black Golf Club Moss				S1?	4	66.2 ± 0.0	NB
N	*Cinclidium stygium*	Sooty Cupola Moss				S1?	2	45.5 ± 0.0	NB
N	*Dichelyma falcatum*	a Moss				S1?	1	65.3 ± 10.0	NB
N	*Dicranum bonjeanii*	Bonjean's Broom Moss				S1?	2	68.6 ± 1.0	NB
N	*Entodon brevisetus*	a Moss				S1?	1	38.2 ± 1.0	NB
N	*Oxyrrhynchium hians*	Light Beaked Moss				S1?	2	49.2 ± 0.0	NB
N	*Paludella squarrosa*	Tufted Fen Moss				S1?	1	45.7 ± 0.0	NB
N	*Niphotrichum ericoides*	Dense Rock Moss				S1?	1	92.3 ± 3.0	NB
N	*Splachnum pensylvanicum*	Southern Dung Moss				S1?	2	68.5 ± 0.0	NB
N	*Splachnum sphaericum*	Round-fruited Dung Moss				S1?	1	46.8 ± 1.0	NB
N	*Timmia megapolitana*	Metropolitan Timmia Moss				S1?	3	68.7 ± 1.0	NB
N	*Placynthium asperellum*	Lilliput Ink Lichen				S1?	1	86.0 ± 0.0	NB
N	*Enchylium tenax*	Soil Tarpaper Lichen				S1?	4	52.4 ± 0.0	NB
N	*Pallavicinia lyellii*	Lyell's Ribbonwort				S1S2	2	93.6 ± 1.0	NB
N	*Brachythecium acuminatum*	Acuminate Ragged Moss				S1S2	2	66.9 ± 10.0	NB
N	*Calliergon richardsonii*	Richardson's Spear Moss				S1S2	1	45.6 ± 0.0	NB
N	*Pseudocampylium radicale*	Long-stalked Fine Wet Moss				S1S2	3	52.8 ± 0.0	NB
N	*Ditrichum pallidum*	Pale Cow-hair Moss				S1S2	3	44.6 ± 0.0	NB
N	*Drummondia prorepens*	a Moss				S1S2	1	54.1 ± 1.0	NB
N	*Fissidens taxifolius*	Yew-leaved Pocket Moss				S1S2	5	52.9 ± 0.0	NB
N	*Grimmia longirostris*	a Moss				S1S2	1	80.4 ± 1.0	NB
N	*Oncophorus virens*	Green Spur Moss				S1S2	2	80.4 ± 1.0	NB
N	*Platydictya confervoides*	a Moss				S1S2	2	80.4 ± 1.0	NB
N	*Sphagnum platyphyllum*	Flat-leaved Peat Moss				S1S2	2	57.1 ± 1.0	NB
N	*Tomentypnum falcifolium*	Sickle-leaved Golden Moss				S1S2	1	69.4 ± 1.0	NB
N	*Pseudotaxiphyllum*	a Moss				S1S2	1	67.3 ± 1.0	NB

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	distichaceum								
N	*Hamatocaulis vernicosus*	a Moss				S1S2	2	45.5 ± 0.0	NB
N	*Haplocladium microphyllum*	Tiny-leaved Haplocladium Moss				S1S2	7	49.8 ± 1.0	NB
N	*Anaptychia crinalis*	Hanging Fringed Lichen				S1S2	1	86.0 ± 0.0	NB
N	*Frullania selwyniana*	Selwyn's Scalewort				S1S3	1	86.0 ± 0.0	NB
N	*Cirriphyllum piliferum*	Hair-pointed Moss				S2	3	74.9 ± 1.0	NB
N	*Didymodon ferrugineus*	Rusty Beard Moss				S2	3	57.0 ± 0.0	NB
N	*Ditrichum flexicaule*	Flexible Cow-hair Moss				S2	6	80.4 ± 1.0	NB
N	*Anomodon tristis*	a Moss				S2	2	86.0 ± 0.0	NB
N	*Hygrohypnum bestii*	Best's Brook Moss				S2	1	80.4 ± 10.0	NB
N	*Hypnum pratense*	Meadow Plait Moss				S2	2	41.7 ± 1.0	NB
N	*Meesia triquetra*	Three-ranked Cold Moss				S2	2	66.6 ± 100.0	NB
N	*Physcomitrium immersum*	a Moss				S2	7	58.1 ± 0.0	NB
N	*Seligeria recurvata*	a Moss				S2	5	80.4 ± 1.0	NB
N	*Seligeria brevifolia*	a Moss				S2	1	57.2 ± 1.0	NB
N	*Sphagnum flexuosum*	Flexuous Peatmoss				S2	1	93.6 ± 0.0	NB
N	*Tayloria serrata*	Serrate Trumpet Moss				S2	1	98.9 ± 0.0	NB
N	*Thamnobryum alleghaniense*	a Moss				S2	2	63.9 ± 0.0	NB
N	*Tortula mucronifolia*	Mucronate Screw Moss				S2	3	80.4 ± 1.0	NB
N	*Zygodon viridissimus var. rupestris*	a moss				S2	2	63.2 ± 0.0	NB
N	*Anomobryum julaceum*	Slender Silver Moss				S2	2	66.9 ± 1.0	NB
N	*Leptogium corticola*	Blistered Jellyskin Lichen				S2	3	53.7 ± 0.0	NB
N	*Leptogium milligranum*	Stretched Jellyskin Lichen				S2	2	46.8 ± 0.0	NB
N	*Nephroma laevigatum*	Mustard Kidney Lichen				S2	2	40.5 ± 0.0	NB
N	*Peltigera lepidophora*	Scaly Pelt Lichen				S2	2	57.7 ± 0.0	NB
N	*Barbilophozia lycopodioides*	Greater Pawwort				S2?	2	74.3 ± 1.0	NB
N	*Anomodon minor*	Blunt-leaved Anomodon Moss				S2?	2	60.2 ± 1.0	NB
N	*Ptychostomum pallescens*	Tall Clustered Bryum				S2?	1	80.4 ± 1.0	NB
N	*Dichelyma capillaceum*	Hairlike Dichelyma Moss				S2?	1	80.6 ± 4.0	NB
N	*Hygrohypnum montanum*	a Moss				S2?	2	96.7 ± 0.0	NB
N	*Schistostega pennata*	Luminous Moss				S2?	4	49.5 ± 0.0	NB
N	*Plagiomnium rostratum*	Long-beaked Leafy Moss				S2?	1	52.0 ± 1.0	NB
N	*Collema leptaleum*	Crumpled Bat's Wing Lichen				S2?	5	49.2 ± 0.0	NB
N	*Imshaugia placorodia*	Eyed Starburst Lichen				S2?	1	86.7 ± 0.0	NB
N	*Ptychostomum cernuum*	Swamp Bryum				S2S3	2	80.4 ± 1.0	NB
N	*Calliergonella cuspidata*	Common Large Wetland Moss				S2S3	3	45.5 ± 0.0	NB
N	*Drepanocladus polygamus*	Polygamous Hook Moss				S2S3	2	80.4 ± 10.0	NB
N	*Didymodon rigidulus*	Rigid Screw Moss				S2S3	7	76.1 ± 8.0	NB
N	*Ephemerum serratum*	a Moss				S2S3	1	58.0 ± 0.0	NB
N	*Fissidens bushii*	Bush's Pocket Moss				S2S3	4	48.7 ± 0.0	NB
N	*Isopterygiopsis pulchella*	Neat Silk Moss				S2S3	1	40.2 ± 1.0	NB
N	*Orthotrichum elegans*	Showy Bristle Moss				S2S3	4	44.7 ± 12.0	NB
N	*Scorpidium scorpioides*	Hooked Scorpion Moss				S2S3	4	45.5 ± 0.0	NB
N	*Seligeria campylopoda*	a Moss				S2S3	3	57.0 ± 0.0	NB
N	*Sphagnum centrale*	Central Peat Moss				S2S3	1	45.4 ± 0.0	NB
N	*Taxiphyllum deplanatum*	Imbricate Yew-leaved Moss				S2S3	1	57.2 ± 0.0	NB
N	*Plagiomnium drummondii*	Drummond's Leafy Moss				S2S3	1	94.6 ± 8.0	NB
N	*Cyrtomnium hymenophylloides*	Short-pointed Lantern Moss				S2S3	2	85.9 ± 0.0	NB
N	*Dendriscocaulon umhausense*	a lichen				S2S3	2	50.9 ± 0.0	NB
N	*Punctelia caseana*					S2S3	3	39.9 ± 0.0	NB
N	*Hypnum curvifolium*	Curved-leaved Plait Moss				S3	1	49.2 ± 0.0	NB
N	*Tortella fragilis*	Fragile Twisted Moss				S3	4	44.4 ± 0.0	NB

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N	*Hymenostylium recurvirostrum*	Curve-beak Beardless Moss				S3	3	80.4 ± 1.0	NB
N	*Collema nigrescens*	Blistered Tarpaper Lichen				S3	8	49.2 ± 0.0	NB
N	*Solorina saccata*	Woodland Owl Lichen				S3	2	85.4 ± 0.0	NB
N	*Ahtiana aurescens*	Eastern Candlewax Lichen				S3	1	91.5 ± 0.0	NB
N	*Scytinium lichenoides*	Tattered Jellyskin Lichen				S3	3	52.6 ± 0.0	NB
N	*Peltigera degenii*	Lustrous Pelt Lichen				S3	1	27.6 ± 0.0	NB
N	*Leptogium laceroides*	Short-bearded Jellyskin Lichen				S3	4	49.2 ± 0.0	NB
N	*Peltigera membranacea*	Membranous Pelt Lichen				S3	6	40.4 ± 0.0	NB
N	*Ptychostomum inclinatum*	Blunt-tooth Thread Moss				S3?	1	86.5 ± 0.0	NB
N	*Dicranella rufescens*	Red Forklet Moss				S3?	2	67.7 ± 4.0	NB
N	*Sphagnum inundatum*	a Sphagnum				S3?	1	88.8 ± 0.0	NB
N	*Rostania occultata*	Crusted Tarpaper Lichen				S3?	1	56.9 ± 0.0	NB
N	*Cystocoleus ebeneus*	Rockgossamer Lichen				S3?	1	40.4 ± 0.0	NB
N	*Scytinium subtile*	Appressed Jellyskin Lichen				S3?	4	44.5 ± 0.0	NB
N	*Anomodon rugelii*	Rugel's Anomodon Moss				S3S4	10	43.1 ± 0.0	NB
N	*Barbula convoluta*	Lesser Bird's-claw Beard Moss				S3S4	3	76.1 ± 8.0	NB
N	*Brachytheciastrum velutinum*	Velvet Ragged Moss				S3S4	3	44.7 ± 3.0	NB
N	*Calliergon giganteum*	Giant Spear Moss				S3S4	1	70.2 ± 3.0	NB
N	*Dicranella varia*	a Moss				S3S4	8	52.1 ± 2.0	NB
N	*Fissidens bryoides*	Lesser Pocket Moss				S3S4	3	57.2 ± 0.0	NB
N	*Elodium blandowii*	Blandow's Bog Moss				S3S4	4	40.2 ± 1.0	NB
N	*Isopterygiopsis muelleriana*	a Moss				S3S4	3	69.6 ± 4.0	NB
N	*Myurella julacea*	Small Mouse-tail Moss				S3S4	4	52.5 ± 0.0	NB
N	*Orthotrichum speciosum*	Showy Bristle Moss				S3S4	1	61.9 ± 0.0	NB
N	*Physcomitrium pyriforme*	Pear-shaped Urn Moss				S3S4	7	56.9 ± 1.0	NB
N	*Pogonatum dentatum*	Mountain Hair Moss				S3S4	1	98.5 ± 0.0	NB
N	*Tomentypnum nitens*	Golden Fuzzy Fen Moss				S3S4	5	45.2 ± 0.0	NB
N	*Weissia controversa*	Green-Cushioned Weissia				S3S4	5	52.7 ± 0.0	NB
N	*Abietinella abietina*	Wiry Fern Moss				S3S4	7	52.5 ± 0.0	NB
N	*Trichostomum tenuirostre*	Acid-Soil Moss				S3S4	1	57.2 ± 0.0	NB
N	*Scorpidium revolvens*	Limprichtia Moss				S3S4	4	45.2 ± 0.0	NB
N	*Rauiella scita*	Smaller Fern Moss				S3S4	6	44.2 ± 0.0	NB
N	*Pannaria rubiginosa*	Brown-eyed Shingle Lichen				S3S4	15	46.8 ± 0.0	NB
N	*Pseudocyphellaria holarctica*	Yellow Specklebelly Lichen				S3S4	51	40.0 ± 0.0	NB
N	*Scytinium teretiusculum*	Curly Jellyskin Lichen				S3S4	1	65.6 ± 0.0	NB
N	*Montanelia panniformis*	Shingled Camouflage Lichen				S3S4	1	40.4 ± 0.0	NB
N	*Nephroma parile*	Powdery Kidney Lichen				S3S4	5	40.6 ± 0.0	NB
N	*Nephroma resupinatum*	a lichen				S3S4	8	28.3 ± 0.0	NB
N	*Protopannaria pezizoides*	Brown-gray Moss-shingle Lichen				S3S4	6	40.4 ± 0.0	NB
N	*Usnea strigosa*	Bushy Beard Lichen				S3S4	1	40.6 ± 0.0	NB
N	*Fuscopannaria sorediata*	a Lichen				S3S4	4	70.9 ± 1.0	NB
N	*Pannaria conoplea*	Mealy-rimmed Shingle Lichen				S3S4	17	49.2 ± 0.0	NB
N	*Anaptychia palmulata*	Shaggy Fringed Lichen				S3S4	3	40.4 ± 0.0	NB
N	*Leucodon brachypus*	a Moss				SH	1	37.0 ± 10.0	NB
N	*Orthotrichum gymnostomum*	a Moss				SH	1	35.4 ± 10.0	NB
P	*Juglans cinerea*	Butternut	Endangered	Endangered	Endangered	S1	825	26.4 ± 0.0	NB
P	*Pedicularis furbishiae*	Furbish Lousewort	Endangered	Endangered	Endangered	S1	55	57.0 ± 1.0	NB
P	*Fraxinus nigra*	Black Ash	Threatened			S3S4	1043	3.4 ± 0.0	NB
P	*Isoetes prototypus*	Prototype Quillwort	Special Concern	Special Concern	Endangered	S1	22	37.8 ± 0.0	NB
P	*Symphyotrichum anticostense*	Anticosti Aster	Special Concern	Special Concern	Endangered	S3	84	40.2 ± 0.0	NB
P	*Pterospora andromedea*	Woodland Pinedrops			Endangered	S1	33	61.4 ± 0.0	NB
P	*Cryptotaenia canadensis*	Canada Honewort				S1	10	56.1 ± 1.0	NB

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P	*Arnica lonchophylla*	Northern Arnica				S1	3	86.8 ± 5.0	NB
P	*Bidens discoidea*	Swamp Beggarticks				S1	4	89.6 ± 0.0	NB
P	*Erigeron acris var. kamtschaticus*	Kamtchatka Fleabane				S1	1	80.2 ± 0.0	NB
P	*Pseudognaphalium obtusifolium*	Eastern Cudweed				S1	2	94.4 ± 0.0	NB
P	*Helianthus decapetalus*	Ten-rayed Sunflower				S1	21	59.7 ± 0.0	NB
P	*Hieracium paniculatum*	Panicled Hawkweed				S1	2	80.3 ± 0.0	NB
P	*Betula glandulosa*	Glandular Birch				S1	27	88.9 ± 0.0	NB
P	*Andersonglossum boreale*	Northern Wild Comfrey				S1	16	55.7 ± 0.0	NB
P	*Cardamine concatenata*	Cut-leaved Toothwort				S1	17	49.3 ± 0.0	NB
P	*Draba cana*	Lance-leaved Draba				S1	10	59.8 ± 0.0	NB
P	*Chenopodiastrum simplex*	Maple-leaved Goosefoot				S1	7	54.0 ± 1.0	NB
P	*Blitum capitatum*	Strawberry-Blite				S1	9	53.8 ± 0.0	NB
P	*Hypericum virginicum*	Virginia St. John's-wort				S1	5	76.0 ± 0.0	NB
P	*Drosera anglica*	English Sundew				S1	5	45.4 ± 0.0	NB
P	*Drosera linearis*	Slender-Leaved Sundew				S1	5	45.1 ± 0.0	NB
P	*Vaccinium boreale*	Northern Blueberry				S1	13	85.3 ± 0.0	NB
P	*Vaccinium uliginosum*	Alpine Bilberry				S1	1	98.6 ± 0.0	NB
P	*Hylodesmum glutinosum*	Large Tick-trefoil				S1	8	39.2 ± 0.0	NB
P	*Lespedeza capitata*	Round-headed Bush-clover				S1	9	97.6 ± 0.0	NB
P	*Oxytropis deflexa var. foliolosa*	Nodding Locoweed				S1	8	52.4 ± 0.0	NB
P	*Ribes cynosbati*	Prickly Gooseberry				S1	1	57.0 ± 0.0	NB
P	*Decodon verticillatus*	Swamp Loosestrife				S1	4	66.3 ± 0.0	NB
P	*Polygala verticillata*	Whorled Milkwort				S1	2	77.3 ± 0.0	NB
P	*Hepatica acutiloba*	Sharp-lobed Hepatica				S1	11	41.6 ± 0.0	NB
P	*Coptidium lapponicum*	Lapland Buttercup				S1	21	26.3 ± 1.0	NB
P	*Crataegus jonesiae*	Jones' Hawthorn				S1	3	67.6 ± 1.0	NB
P	*Potentilla canadensis*	Canada Cinquefoil				S1	1	97.0 ± 0.0	NB
P	*Rubus flagellaris*	Northern Dewberry				S1	1	66.1 ± 0.0	NB
P	*Galium brevipes*	Limestone Swamp Bedstraw				S1	2	52.7 ± 0.0	NB
P	*Agalinis tenuifolia*	Slender Agalinis				S1	9	65.1 ± 0.0	NB
P	*Pedicularis canadensis*	Canada Lousewort				S1	2	61.8 ± 0.0	NB
P	*Viola sagittata var. ovata*	Arrow-Leaved Violet				S1	11	62.8 ± 0.0	NB
P	*Carex annectens*	Yellow-Fruited Sedge				S1	1	57.4 ± 0.0	NB
P	*Carex backii*	Rocky Mountain Sedge				S1	5	60.0 ± 0.0	NB
P	*Carex blanda*	Eastern Woodland Sedge				S1	1	57.1 ± 0.0	NB
P	*Carex scirpoidea*	Scirpuslike Sedge				S1	2	62.0 ± 1.0	NB
P	*Carex sterilis*	Sterile Sedge				S1	14	61.0 ± 0.0	NB
P	*Carex grisea*	Inflated Narrow-leaved Sedge				S1	6	52.7 ± 0.0	NB
P	*Carex saxatilis*	Russet Sedge				S1	6	67.2 ± 0.0	NB
P	*Carex bigelowii*	Bigelow's Sedge				S1	7	91.0 ± 0.0	NB
P	*Cyperus diandrus*	Low Flatsedge				S1	7	60.8 ± 0.0	NB
P	*Rhynchospora capillacea*	Slender Beakrush				S1	7	61.8 ± 0.0	NB
P	*Sisyrinchium angustifolium*	Narrow-leaved Blue-eyed-grass				S1	5	56.9 ± 0.0	NB
P	*Juncus stygius ssp. americanus*	Moor Rush				S1	1	98.0 ± 10.0	NB
P	*Juncus subtilis*	Creeping Rush				S1	3	77.6 ± 0.0	NB
P	*Oreojuncus trifidus*	Highland Rush				S1	9	90.8 ± 0.0	NB
P	*Allium canadense*	Canada Garlic				S1	10	61.3 ± 1.0	NB
P	*Goodyera pubescens*	Downy Rattlesnake-Plantain				S1	3	67.3 ± 0.0	NB
P	*Malaxis monophyllos var. brachypoda*	North American White Adder's-mouth				S1	11	37.2 ± 0.0	NB
P	*Platanthera flava var. herbiola*	Pale Green Orchid				S1	10	70.0 ± 0.0	NB

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P	*Platanthera macrophylla*	Large Round-Leaved Orchid				S1	4	46.0 ± 1.0	NB
P	*Spiranthes casei*	Case's Ladies'-Tresses				S1	6	61.8 ± 0.0	NB
P	*Bromus pubescens*	Hairy Wood Brome Grass				S1	6	95.8 ± 0.0	NB
P	*Cinna arundinacea*	Sweet Wood Reed Grass				S1	2	98.0 ± 0.0	NB
P	*Danthonia compressa*	Flattened Oat Grass				S1	4	75.8 ± 0.0	NB
P	*Dichanthelium xanthophysum*	Slender Panic Grass				S1	6	25.0 ± 0.0	NB
P	*Sporobolus compositus*	Rough Dropseed				S1	17	61.0 ± 0.0	NB
P	*Potamogeton friesii*	Fries' Pondweed				S1	2	64.7 ± 5.0	NB
P	*Potamogeton nodosus*	Long-leaved Pondweed				S1	17	61.3 ± 0.0	NB
P	*Dryopteris clintoniana*	Clinton's Wood Fern				S1	14	44.8 ± 0.0	NB
P	*Gymnocarpium continentale*	Nahanni Oak Fern				S1	4	85.8 ± 0.0	NB
P	*Gymnocarpium robertianum*	Limestone Oak Fern				S1	2	69.3 ± 0.0	NB
P	*Huperzia selago*	Northern Firmoss				S1	7	57.5 ± 1.0	NB
P	*Botrychium lunaria*	Common Moonwort				S1	7	68.5 ± 0.0	NB
P	*Sceptridium oneidense*	Blunt-lobed Moonwort				S1	7	38.2 ± 0.0	NB
P	*Sceptridium rugulosum*	Rugulose Grapefern				S1	4	41.8 ± 0.0	NB
P	*Selaginella rupestris*	Rock Spikemoss				S1	7	61.6 ± 1.0	NB
P	*Cuscuta campestris*	Field Dodder				S1?	1	99.6 ± 10.0	NB
P	*Polygonum aviculare ssp. neglectum*	Narrow-leaved Knotweed				S1?	5	39.8 ± 1.0	NB
P	*Galium trifidum ssp. subbiflorum*	Three-petaled Bedstraw				S1?	2	54.0 ± 1.0	NB
P	*Alisma subcordatum*	Southern Water Plantain				S1?	5	56.9 ± 1.0	NB
P	*Carex laxiflora*	Loose-Flowered Sedge				S1?	2	40.2 ± 0.0	NB
P	*Carex appalachica*	Appalachian Sedge				S1?	1	60.0 ± 0.0	NB
P	*Sisyrinchium mucronatum*	Michaux's Blue-eyed-grass				S1?	3	59.2 ± 0.0	NB
P	*Wolffia columbiana*	Columbian Watermeal				S1?	4	65.1 ± 0.0	NB
P	*Galium kamtschaticum*	Northern Wild Licorice				S1S2	11	18.8 ± 0.0	NB
P	*Galearis spectabilis*	Showy Orchis				S1S2	80	38.6 ± 0.0	NB
P	*Eriophorum russeolum ssp. albidum*	Smooth-fruited Russet Cottongrass				S1S3	2	83.7 ± 0.0	NB
P	*Spiranthes cernua*	Nodding Ladies'-Tresses				S1S3	11	23.8 ± 0.0	NB
P	*Spiranthes arcisepala*	Appalachian Ladies'-tresses				S1S3	3	68.7 ± 0.0	NB
P	*Neottia bifolia*	Southern Twayblade			Endangered	S2	18	78.3 ± 0.0	NB
P	*Osmorhiza depauperata*	Blunt Sweet Cicely				S2	1	98.2 ± 0.0	NB
P	*Sanicula trifoliata*	Large-Fruited Sanicle				S2	25	39.3 ± 1.0	NB
P	*Sanicula odorata*	Clustered Sanicle				S2	33	36.1 ± 1.0	NB
P	*Hieracium robinsonii*	Robinson's Hawkweed				S2	2	22.4 ± 0.0	NB
P	*Betula minor*	Dwarf White Birch				S2	25	53.2 ± 0.0	NB
P	*Hypericum x dissimulatum*	Disguised St. John's-wort				S2	1	89.8 ± 0.0	NB
P	*Viburnum dentatum var. lucidum*	Northern Arrow-Wood				S2	15	88.9 ± 10.0	NB
P	*Astragalus eucosmus*	Elegant Milk-vetch				S2	19	44.4 ± 1.0	NB
P	*Quercus macrocarpa*	Bur Oak				S2	96	52.3 ± 1.0	NB
P	*Nuphar x rubrodisca*	Red-disk Yellow Pond-lily				S2	12	46.8 ± 2.0	NB
P	*Polygaloides paucifolia*	Fringed Milkwort				S2	9	69.9 ± 0.0	NB
P	*Persicaria amphibia var. emersa*	Long-root Smartweed				S2	18	42.8 ± 0.0	NB
P	*Geum fragarioides*	Barren Strawberry				S2	27	66.8 ± 1.0	NB
P	*Micranthes virginiensis*	Early Saxifrage				S2	14	58.2 ± 5.0	NB
P	*Scrophularia lanceolata*	Lance-leaved Figwort				S2	15	34.0 ± 1.0	NB
P	*Viola canadensis*	Canada Violet				S2	87	35.9 ± 0.0	NB
P	*Carex cephaloidea*	Thin-leaved Sedge				S2	35	40.5 ± 0.0	NB
P	*Carex albicans var. emmonsii*	White-tinged Sedge				S2	9	30.8 ± 0.0	NB
P	*Cyperus lupulinus ssp. macilentus*	Hop Flatsedge				S2	61	88.2 ± 0.0	NB

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P	*Galearis rotundifolia*	Small Round-leaved Orchid				S2	11	45.8 ± 1.0	NB
P	*Calypso bulbosa var. americana*	Calypso				S2	46	32.7 ± 0.0	NB
P	*Coeloglossum viride*	Long-bracted Frog Orchid				S2	11	22.4 ± 1.0	NB
P	*Cypripedium parviflorum var. makasin*	Small Yellow Lady's-Slipper				S2	39	31.9 ± 1.0	NB
P	*Platanthera huronensis*	Fragrant Green Orchid				S2	3	40.7 ± 0.0	NB
P	*Elymus hystrix*	Spreading Wild Rye				S2	51	27.0 ± 50.0	NB
P	*Festuca subverticillata*	Nodding Fescue				S2	35	40.1 ± 0.0	NB
P	*Diphasiastrum sitchense*	Sitka Ground-cedar				S2	6	90.8 ± 0.0	NB
P	*Botrychium minganense*	Mingan Moonwort				S2	10	64.3 ± 0.0	NB
P	*Coryphopteris simulata*	Bog Fern				S2	23	53.1 ± 0.0	NB
P	*Toxicodendron radicans var. radicans*	Eastern Poison Ivy				S2?	13	29.7 ± 0.0	NB
P	*Symphyotrichum novi-belgii var. crenifolium*	New York Aster				S2?	1	68.3 ± 1.0	NB
P	*Humulus lupulus var. lupuloides*	Common Hop				S2?	5	62.4 ± 5.0	NB
P	*Rubus x recurvicaulis*	arching dewberry				S2?	1	99.0 ± 10.0	NB
P	*Osmorhiza longistylis*	Smooth Sweet Cicely				S2S3	17	39.2 ± 0.0	NB
P	*Symphyotrichum racemosum*	Small White Aster				S2S3	6	82.4 ± 0.0	NB
P	*Canadanthus modestus*	Great Northern Aster				S2S3	12	62.7 ± 0.0	NB
P	*Alnus serrulata*	Smooth Alder				S2S3	25	67.0 ± 1.0	NB
P	*Cuscuta cephalanthi*	Buttonbush Dodder				S2S3	10	61.2 ± 0.0	NB
P	*Gentiana linearis*	Narrow-Leaved Gentian				S2S3	26	45.1 ± 0.0	NB
P	*Hedeoma pulegioides*	American False Pennyroyal				S2S3	2	57.7 ± 1.0	NB
P	*Aphyllon uniflorum*	One-flowered Broomrape				S2S3	7	47.4 ± 1.0	NB
P	*Polygala senega*	Seneca Snakeroot				S2S3	53	57.0 ± 1.0	NB
P	*Persicaria careyi*	Carey's Smartweed				S2S3	8	68.1 ± 1.0	NB
P	*Hepatica americana*	Round-lobed Hepatica				S2S3	68	27.0 ± 100.0	NB
P	*Ranunculus sceleratus*	Cursed Buttercup				S2S3	3	63.1 ± 0.0	NB
P	*Rosa acicularis ssp. sayi*	Prickly Rose				S2S3	35	17.6 ± 0.0	NB
P	*Cephalanthus occidentalis*	Common Buttonbush				S2S3	27	68.3 ± 0.0	NB
P	*Galium obtusum*	Blunt-leaved Bedstraw				S2S3	7	36.0 ± 1.0	NB
P	*Dirca palustris*	Eastern Leatherwood				S2S3	114	36.2 ± 0.0	NB
P	*Phryma leptostachya*	American Lopseed				S2S3	109	36.1 ± 1.0	NB
P	*Verbena urticifolia*	White Vervain				S2S3	38	42.0 ± 0.0	NB
P	*Viola novae-angliae*	New England Violet				S2S3	2	39.9 ± 0.0	NB
P	*Carex comosa*	Bearded Sedge				S2S3	8	49.9 ± 0.0	NB
P	*Carex rostrata*	Narrow-leaved Beaked Sedge				S2S3	13	45.0 ± 0.0	NB
P	*Scirpus atrovirens*	Dark-green Bulrush				S2S3	86	59.8 ± 0.0	NB
P	*Allium tricoccum*	Wild Leek				S2S3	20	43.3 ± 0.0	NB
P	*Corallorhiza maculata var. occidentalis*	Spotted Coralroot				S2S3	13	40.7 ± 0.0	NB
P	*Corallorhiza maculata var. maculata*	Spotted Coralroot				S2S3	5	29.3 ± 0.0	NB
P	*Elymus canadensis*	Canada Wild Rye				S2S3	26	42.4 ± 1.0	NB
P	*Piptatheropsis canadensis*	Canada Ricegrass				S2S3	6	91.6 ± 0.0	NB
P	*Poa glauca*	Glaucous Blue Grass				S2S3	4	64.0 ± 0.0	NB
P	*Piptatheropsis pungens*	Slender Ricegrass				S2S3	8	20.4 ± 0.0	NB
P	*Potamogeton vaseyi*	Vasey's Pondweed				S2S3	7	62.6 ± 0.0	NB
P	*Isoetes tuckermanii ssp. acadiensis*	Acadian Quillwort				S2S3	8	70.5 ± 0.0	NB
P	*Panax trifolius*	Dwarf Ginseng				S3	16	42.4 ± 1.0	NB
P	*Artemisia campestris ssp. caudata*	Tall Wormwood				S3	107	42.8 ± 0.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
P	*Artemisia campestris*	Field Wormwood				S3	3	79.9 ± 0.0	NB
P	*Nabalus racemosus*	Glaucous Rattlesnakeroot				S3	13	52.4 ± 5.0	NB
P	*Solidago racemosa*	Racemose Goldenrod				S3	53	42.1 ± 1.0	NB
P	*Tanacetum bipinnatum ssp. huronense*	Lake Huron Tansy				S3	118	40.3 ± 0.0	NB
P	*Ionactis linariifolia*	Flax-leaved Aster				S3	84	40.6 ± 0.0	NB
P	*Pseudognaphalium macounii*	Macoun's Cudweed				S3	8	59.8 ± 0.0	NB
P	*Impatiens pallida*	Pale Jewelweed				S3	13	53.1 ± 0.0	NB
P	*Boechera stricta*	Drummond's Rockcress				S3	9	44.3 ± 0.0	NB
P	*Turritis glabra*	Tower Mustard				S3	16	37.1 ± 0.0	NB
P	*Arabis pycnocarpa*	Cream-flowered Rockcress				S3	17	43.4 ± 100.0	NB
P	*Cardamine maxima*	Large Toothwort				S3	116	31.3 ± 0.0	NB
P	*Stellaria longifolia*	Long-leaved Starwort				S3	9	6.5 ± 0.0	NB
P	*Hudsonia tomentosa*	Woolly Beach-heath				S3	5	90.9 ± 0.0	NB
P	*Cornus obliqua*	Silky Dogwood				S3	44	71.0 ± 1.0	NB
P	*Lonicera oblongifolia*	Swamp Fly Honeysuckle				S3	165	43.8 ± 0.0	NB
P	*Triosteum aurantiacum*	Orange-fruited Tinker's Weed				S3	185	34.1 ± 0.0	NB
P	*Viburnum lentago*	Nannyberry				S3	47	60.8 ± 0.0	NB
P	*Shepherdia canadensis*	Soapberry				S3	17	52.4 ± 0.0	NB
P	*Astragalus alpinus*	Alpine Milk-vetch				S3	2	43.2 ± 0.0	NB
P	*Astragalus alpinus var. brunetianus*	Alpine Milk-Vetch				S3	26	42.2 ± 0.0	NB
P	*Oxytropis campestris var. johannensis*	Field Locoweed				S3	21	43.2 ± 0.0	NB
P	*Gentianella amarella ssp. acuta*	Northern Gentian				S3	10	41.2 ± 0.0	NB
P	*Geranium bicknellii*	Bicknell's Crane's-bill				S3	3	54.3 ± 1.0	NB
P	*Myriophyllum farwellii*	Farwell's Water Milfoil				S3	12	66.2 ± 0.0	NB
P	*Myriophyllum humile*	Low Water Milfoil				S3	7	77.6 ± 1.0	NB
P	*Proserpinaca palustris*	Marsh Mermaidweed				S3	19	78.9 ± 0.0	NB
P	*Fraxinus pennsylvanica*	Red Ash				S3	117	19.4 ± 0.0	NB
P	*Rumex pallidus*	Seabeach Dock				S3	1	94.1 ± 0.0	NB
P	*Rumex occidentalis*	Western Dock				S3	1	74.3 ± 1.0	NB
P	*Podostemum ceratophyllum*	Horn-leaved Riverweed				S3	33	55.8 ± 1.0	NB
P	*Primula mistassinica*	Mistassini Primrose				S3	28	28.3 ± 1.0	NB
P	*Pyrola minor*	Lesser Pyrola				S3	9	8.0 ± 0.0	NB
P	*Anemone multifida*	Cut-leaved Anemone				S3	36	42.2 ± 0.0	NB
P	*Anemone multifida var. multifida*	Early Anemone				S3	7	43.3 ± 5.0	NB
P	*Clematis occidentalis*	Purple Clematis				S3	31	32.5 ± 0.0	NB
P	*Ranunculus flabellaris*	Yellow Water Buttercup				S3	9	69.8 ± 0.0	NB
P	*Amelanchier gaspensis*	Gasp ├⌐ Serviceberry				S3	1	57.0 ± 0.0	NB
P	*Amelanchier canadensis*	Canada Serviceberry				S3	12	48.5 ± 1.0	NB
P	*Crataegus scabrida*	Rough Hawthorn				S3	4	36.9 ± 1.0	NB
P	*Rubus occidentalis*	Black Raspberry				S3	149	35.9 ± 0.0	NB
P	*Salix candida*	Sage Willow				S3	34	45.2 ± 0.0	NB
P	*Salix myricoides*	Bayberry Willow				S3	59	35.2 ± 0.0	NB
P	*Salix nigra*	Black Willow				S3	109	61.7 ± 1.0	NB
P	*Salix interior*	Sandbar Willow				S3	146	22.8 ± 0.0	NB
P	*Comandra umbellata*	Bastard's Toadflax				S3	1	97.9 ± 10.0	NB
P	*Agalinis purpurea var. parviflora*	Small-flowered Purple False Foxglove				S3	9	61.0 ± 0.0	NB
P	*Castilleja septentrionalis*	Northeastern Paintbrush				S3	15	21.6 ± 0.0	NB
P	*Valeriana uliginosa*	Swamp Valerian				S3	77	44.0 ± 0.0	NB
P	*Viola adunca*	Hooked Violet				S3	13	14.0 ± 0.0	NB
P	*Symplocarpus foetidus*	Eastern Skunk Cabbage				S3	2	79.5 ± 0.0	NB
P	*Carex adusta*	Lesser Brown Sedge				S3	14	42.9 ± 0.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
P	*Carex arcta*	Northern Clustered Sedge				S3	51	58.4 ± 0.0	NB
P	*Carex conoidea*	Field Sedge				S3	1	61.3 ± 1.0	NB
P	*Carex garberi*	Garber's Sedge				S3	14	12.4 ± 0.0	NB
P	*Carex granularis*	Limestone Meadow Sedge				S3	8	43.2 ± 0.0	NB
P	*Carex gynocrates*	Northern Bog Sedge				S3	52	43.8 ± 0.0	NB
P	*Carex hirtifolia*	Pubescent Sedge				S3	86	39.2 ± 0.0	NB
P	*Carex livida*	Livid Sedge				S3	32	45.1 ± 0.0	NB
P	*Carex ormostachya*	Necklace Spike Sedge				S3	31	29.5 ± 0.0	NB
P	*Carex plantaginea*	Plantain-Leaved Sedge				S3	181	36.4 ± 0.0	NB
P	*Carex prairea*	Prairie Sedge				S3	43	45.5 ± 0.0	NB
P	*Carex rosea*	Rosy Sedge				S3	251	19.6 ± 0.0	NB
P	*Carex sprengelii*	Longbeak Sedge				S3	66	38.7 ± 0.0	NB
P	*Carex tenuiflora*	Sparse-Flowered Sedge				S3	32	43.9 ± 0.0	NB
P	*Carex vaginata*	Sheathed Sedge				S3	18	46.6 ± 0.0	NB
P	*Cyperus esculentus var. leptostachyus*	Perennial Yellow Nutsedge				S3	95	43.1 ± 0.0	NB
P	*Cyperus squarrosus*	Awned Flatsedge				S3	40	70.4 ± 0.0	NB
P	*Eriophorum gracile*	Slender Cottongrass				S3	14	50.0 ± 0.0	NB
P	*Elodea nuttallii*	Nuttall's Waterweed				S3	14	48.5 ± 0.0	NB
P	*Juncus brachycephalus*	Small-Head Rush				S3	66	43.1 ± 0.0	NB
P	*Juncus vaseyi*	Vasey Rush				S3	10	16.7 ± 0.0	NB
P	*Najas gracillima*	Thread-Like Naiad				S3	3	88.4 ± 0.0	NB
P	*Cypripedium reginae*	Showy Lady's-Slipper				S3	143	44.2 ± 0.0	NB
P	*Goodyera oblongifolia*	Menzies' Rattlesnake-plantain				S3	3	32.7 ± 0.0	NB
P	*Neottia auriculata*	Auricled Twayblade				S3	9	44.4 ± 0.0	NB
P	*Platanthera grandiflora*	Large Purple Fringed Orchid				S3	18	40.5 ± 0.0	NB
P	*Platanthera orbiculata*	Small Round-leaved Orchid				S3	43	11.1 ± 0.0	NB
P	*Spiranthes lucida*	Shining Ladies'-Tresses				S3	22	27.0 ± 0.0	NB
P	*Agrostis mertensii*	Northern Bent Grass				S3	5	21.2 ± 0.0	NB
P	*Bromus latiglumis*	Broad-Glumed Brome				S3	37	40.3 ± 0.0	NB
P	*Dichanthelium linearifolium*	Narrow-leaved Panic Grass				S3	8	44.4 ± 0.0	NB
P	*Leersia virginica*	White Cut Grass				S3	23	59.9 ± 1.0	NB
P	*Muhlenbergia richardsonis*	Mat Muhly				S3	74	40.2 ± 0.0	NB
P	*Schizachyrium scoparium*	Little Bluestem				S3	57	42.4 ± 0.0	NB
P	*Zizania aquatica*	Southern Wild Rice				S3	1	92.8 ± 0.0	NB
P	*Zizania aquatica var. aquatica*	Eastern Wild Rice				S3	3	66.9 ± 5.0	NB
P	*Adiantum pedatum*	Northern Maidenhair Fern				S3	504	28.2 ± 5.0	NB
P	*Asplenium trichomanes*	Maidenhair Spleenwort				S3	5	71.1 ± 0.0	NB
P	*Anchistea virginica*	Virginia chain fern				S3	42	69.9 ± 0.0	NB
P	*Dryopteris goldieana*	Goldie's Woodfern				S3	343	35.6 ± 0.0	NB
P	*Woodsia alpina*	Alpine Cliff Fern				S3	18	64.7 ± 0.0	NB
P	*Woodsia glabella*	Smooth Cliff Fern				S3	8	57.7 ± 0.0	NB
P	*Isoetes tuckermanii ssp. tuckermanii*	Tuckerman's Quillwort				S3	7	68.5 ± 1.0	NB
P	*Diphasiastrum x sabinifolium*	Savin-leaved Ground-cedar				S3	13	21.8 ± 1.0	NB
P	*Huperzia appressa*	Mountain Firmoss				S3	7	67.5 ± 0.0	NB
P	*Sceptridium dissectum*	Dissected Moonwort				S3	50	21.8 ± 1.0	NB
P	*Botrychium lanceolatum ssp. angustisegmentum*	Narrow Triangle Moonwort				S3	30	41.5 ± 0.0	NB
P	*Botrychium simplex*	Least Moonwort				S3	34	32.8 ± 0.0	NB
P	*Ophioglossum pusillum*	Northern Adder's-tongue				S3	20	41.3 ± 0.0	NB
P	*Selaginella selaginoides*	Low Spikemoss				S3	1	99.8 ± 0.0	NB
P	*Crataegus submollis*	Quebec Hawthorn				S3?	9	51.9 ± 1.0	NB
P	*Crataegus succulenta*	Fleshy Hawthorn				S3?	1	66.9 ± 5.0	NB
P	*Platanthera hookeri*	Hooker's Orchid				S3?	58	30.0 ± 1.0	NB
P	*Arnica lanceolata*	Lance-leaved Arnica				S3S4	35	25.9 ± 0.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
P	*Solidago altissima*	Tall Goldenrod				S3S4	58	40.3 ± 0.0	NB
P	*Symphyotrichum boreale*	Boreal Aster				S3S4	159	45.1 ± 0.0	NB
P	*Betula pumila*	Bog Birch				S3S4	43	44.2 ± 0.0	NB
P	*Subularia aquatica ssp. americana*	American Water Awlwort				S3S4	12	71.2 ± 1.0	NB
P	*Lobelia cardinalis*	Cardinal Flower				S3S4	46	59.7 ± 1.0	NB
P	*Callitriche hermaphroditica*	Northern Water-starwort				S3S4	2	49.1 ± 0.0	NB
P	*Viburnum edule*	Squashberry				S3S4	36	40.2 ± 1.0	NB
P	*Crassula aquatica*	Water Pygmyweed				S3S4	2	88.5 ± 1.0	NB
P	*Penthorum sedoides*	Ditch Stonecrop				S3S4	21	42.7 ± 1.0	NB
P	*Elatine americana*	American Waterwort				S3S4	3	89.4 ± 1.0	NB
P	*Hedysarum americanum*	Alpine Hedysarum				S3S4	68	43.1 ± 0.0	NB
P	*Fagus grandifolia*	American Beech				S3S4	376	9.7 ± 0.0	NB
P	*Stachys hispida*	Smooth Hedge-Nettle				S3S4	62	43.2 ± 0.0	NB
P	*Stachys pilosa*	Hairy Hedge-Nettle				S3S4	48	61.9 ± 0.0	NB
P	*Utricularia radiata*	Little Floating Bladderwort				S3S4	48	90.5 ± 0.0	NB
P	*Utricularia gibba*	Humped Bladderwort				S3S4	15	76.3 ± 0.0	NB
P	*Fraxinus americana*	White Ash				S3S4	294	20.4 ± 0.0	NB
P	*Epilobium strictum*	Downy Willowherb				S3S4	57	44.2 ± 0.0	NB
P	*Fallopia scandens*	Climbing False Buckwheat				S3S4	30	32.8 ± 0.0	NB
P	*Littorella americana*	American Shoreweed				S3S4	17	34.4 ± 1.0	NB
P	*Thalictrum confine*	Northern Meadow-rue				S3S4	68	41.5 ± 0.0	NB
P	*Drymocallis arguta*	Tall Wood Beauty				S3S4	56	29.1 ± 1.0	NB
P	*Rosa palustris*	Swamp Rose				S3S4	142	50.1 ± 0.0	NB
P	*Rubus pensilvanicus*	Pennsylvania Blackberry				S3S4	11	46.0 ± 1.0	NB
P	*Galium boreale*	Northern Bedstraw				S3S4	15	27.0 ± 50.0	NB
P	*Galium labradoricum*	Labrador Bedstraw				S3S4	114	44.2 ± 0.0	NB
P	*Salix pedicellaris*	Bog Willow				S3S4	97	42.3 ± 0.0	NB
P	*Geocaulon lividum*	Northern Comandra				S3S4	10	6.0 ± 0.0	NB
P	*Parnassia glauca*	Fen Grass-of-Parnassus				S3S4	97	37.2 ± 0.0	NB
P	*Agalinis neoscotica*	Nova Scotia Agalinis				S3S4	1	63.9 ± 0.0	NB
P	*Ulmus americana*	White Elm				S3S4	276	0.9 ± 0.0	NB
P	*Boehmeria cylindrica*	Small-spike False-nettle				S3S4	25	56.6 ± 0.0	NB
P	*Carex capillaris*	Hairlike Sedge				S3S4	24	53.8 ± 0.0	NB
P	*Carex concinna*	Beautiful Sedge				S3S4	5	52.4 ± 0.0	NB
P	*Carex eburnea*	Bristle-leaved Sedge				S3S4	37	44.8 ± 0.0	NB
P	*Carex exilis*	Coastal Sedge				S3S4	48	44.2 ± 0.0	NB
P	*Carex haydenii*	Hayden's Sedge				S3S4	81	9.1 ± 0.0	NB
P	*Carex lupulina*	Hop Sedge				S3S4	46	57.2 ± 0.0	NB
P	*Carex tenera*	Tender Sedge				S3S4	34	40.2 ± 0.0	NB
P	*Carex wiegandii*	Wiegand's Sedge				S3S4	23	42.5 ± 0.0	NB
P	*Carex atratiformis*	Scabrous Black Sedge				S3S4	6	35.4 ± 0.0	NB
P	*Cladium mariscoides*	Smooth Twigrush				S3S4	68	39.9 ± 0.0	NB
P	*Cyperus dentatus*	Toothed Flatsedge				S3S4	159	61.1 ± 0.0	NB
P	*Eleocharis quinqueflora*	Few-flowered Spikerush				S3S4	36	45.4 ± 0.0	NB
P	*Rhynchospora capitellata*	Small-headed Beakrush				S3S4	58	23.4 ± 0.0	NB
P	*Trichophorum clintonii*	Clinton's Clubrush				S3S4	115	15.5 ± 0.0	NB
P	*Bolboschoenus fluviatilis*	River Bulrush				S3S4	7	85.4 ± 0.0	NB
P	*Lilium canadense*	Canada Lily				S3S4	142	0.9 ± 0.0	NB
P	*Triantha glutinosa*	Sticky False-Asphodel				S3S4	133	34.0 ± 0.0	NB
P	*Corallorhiza maculata*	Spotted Coralroot				S3S4	17	27.9 ± 0.0	NB
P	*Liparis loeselii*	Loesel's Twayblade				S3S4	23	48.2 ± 0.0	NB
P	*Neottia cordata*	Heart-leaved Twayblade				S3S4	42	19.0 ± 1.0	NB
P	*Platanthera obtusata*	Blunt-leaved Orchid				S3S4	31	20.9 ± 0.0	NB
P	*Calamagrostis stricta*	Slim-stemmed Reed Grass				S3S4	3	62.6 ± 0.0	NB
P	*Eragrostis pectinacea*	Tufted Love Grass				S3S4	12	61.2 ± 0.0	NB
P	*Stuckenia filiformis*	Thread-leaved Pondweed				S3S4	6	43.3 ± 0.0	NB
P	*Potamogeton praelongus*	White-stemmed Pondweed				S3S4	16	45.9 ± 1.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	# recs	Distance (km)	Prov
P	*Potamogeton richardsonii*	Richardson's Pondweed				S3S4	35	48.5 ± 0.0	NB
P	*Xyris montana*	Northern Yellow-Eyed-Grass				S3S4	5	66.2 ± 0.0	NB
P	*Cryptogramma stelleri*	Steller's Rockbrake				S3S4	6	64.2 ± 1.0	NB
P	*Asplenium viride*	Green Spleenwort				S3S4	1	66.6 ± 0.0	NB
P	*Dryopteris fragrans*	Fragrant Wood Fern				S3S4	45	39.3 ± 0.0	NB
P	*Equisetum palustre*	Marsh Horsetail				S3S4	16	48.9 ± 0.0	NB
P	*Polypodium appalachianum*	Appalachian Polypody				S3S4	45	26.2 ± 0.0	NB
P	*Solidago ptarmicoides*	Upland White Goldenrod				SX	3	56.3 ± 10.0	NB
P	*Celastrus scandens*	Climbing Bittersweet				SX	4	57.2 ± 1.0	NB

5.1 SOURCE BIBLIOGRAPHY (100 km)

The recipient of these data shall acknowledge the AC CDC and the data sources listed below in any documents, reports, publications or presentations, in which this dataset makes a significant contribution.

# recs	CITATION
6660	Lepage, D. 2014. Maritime Breeding Bird Atlas Database. Bird Studies Canada, Sackville NB, 407,838 recs.
3187	Erskine, A.J. 1992. Maritime Breeding Bird Atlas Database. NS Museum & Nimbus Publ., Halifax, 82,125 recs.
2134	Cowie, F. 2007. Electrofishing Population Estimates 1979-98. Canadian Rivers Institute, 2698 recs.
1805	Pardieck, K.L., Ziolkowski Jr., D.J., Lutmerding, M., Aponte, V.I., and Hudson, M-A.R. 2020. North American Breeding Bird Survey Dataset 1966 - 2019: U.S. Geological Survey data release, https://doi.org/10.5066/P9J6QUF6
1329	Blaney, C.S.; Mazerolle, D.M.; Belliveau, A.B. 2014. Atlantic Canada Conservation Data Centre Fieldwork 2014. Atlantic Canada Conservation Data Centre, # recs.
931	Blaney, C.S.; Mazerolle, D.M.; Belliveau, A.B. 2015. Atlantic Canada Conservation Data Centre Fieldwork 2015. Atlantic Canada Conservation Data Centre, # recs.
919	eBird. 2014. eBird Basic Dataset. Version: EBD_relNov-2014. Ithaca, New York. Nov 2014. Cornell Lab of Ornithology, 25036 recs.
790	Kouwenberg, Amy-Lee. 2019. Mountain Birdwatch database 2012-2018. Bird Studies Canada, Sackville, NB, 6484 recs.
770	Stantec. 2014. Energy East Pipeline Corridor Species Occurrence Data. Stantec Inc., 4934 records.
746	iNaturalist. 2020. iNaturalist Data Export 2020. iNaturalist.org and iNaturalist.ca, Web site: 128728 recs.
670	Goltz, J.P. 2012. Field Notes, 1989-2005. , 1091 recs.
617	Benedict, B. Connell Herbarium Specimens. University New Brunswick, Fredericton. 2003.
609	Blaney, C.S.; Mazerolle, D.M. 2009. Fieldwork 2009. Atlantic Canada Conservation Data Centre. Sackville NB, 13395 recs.
590	Berrigan, L. 2019. Maritimes Marsh Monitoring Project 2013, 2014, 2016, 2017, and 2018 data. Bird Studies Canada, Sackville, NB.
563	Wisniowski, C. & Dowding, A. 2019. NB species occurrence data for 2016-2018. Nature Trust of New Brunswick.
471	Mazerolle, D.M. 2018. Atlantic Canada Conservation Data Centre botanical fieldwork 2018. Atlantic Canada Conservation Data Centre, 13515 recs.
469	Blaney, C.S.; Mazerolle, D.M.; Belliveau, A.B. 2013. Atlantic Canada Conservation Data Centre Fieldwork 2013. Atlantic Canada Conservation Data Centre, 9000+ recs.
416	Mazerolle, D.M. 2020. Atlantic Canada Conservation Data Centre botanical fieldwork 2019. Atlantic Canada Conservation Data Centre.
404	Morrison, Guy. 2011. Maritime Shorebird Survey (MSS) database. Canadian Wildlife Service, Ottawa, 15939 surveys. 86171 recs.
392	MacDougall, A.; Bishop, G.; et al. 1998. 1997 Appalachian Hardwood Field Data. Nature Trust of New Brunswick, 4473 recs.
367	Clayden, S.R. 1998. NBM Science Collections databases: vascular plants. New Brunswick Museum, Saint John NB, 19759 recs.
352	Benedict, B. Connell Herbarium Specimens (Data) . University New Brunswick, Fredericton. 2003.
346	Chapman, C.J. 2018. Atlantic Canada Conservation Data Centre botanical fieldwork 2018. Atlantic Canada Conservation Data Centre, 11171 recs.
334	Blaney, C.S. 2000. Fieldwork 2000. Atlantic Canada Conservation Data Centre. Sackville NB, 1265 recs.
312	Tims, J. & Craig, N. 1995. Environmentally Significant Areas in New Brunswick (NBESA). NB Dept of Environment & Nature Trust of New Brunswick Inc, 6042 recs. https://doi.org/10.1037/arc0000014.
295	Klymko, J. 2020. Atlantic Canada Conservation Data Centre zoological fieldwork 2019. Atlantic Canada Conservation Data Centre.
282	Wallace, S. 2020. Stewardship Department species occurrence data on NTNB preserves. Nature Trust of New Brunswick.
281	Askanas, H. 2016. New Brunswick Wood Turtle Database. New Brunswick Department of Energy and Resource Development.
274	Wisniowski, C. & Dowding, A. 2020. NB species occurrence data for 2020. Nature Trust of New Brunswick.
268	Chapman, C.J. 2019. Atlantic Canada Conservation Data Centre 2019 botanical fieldwork. Atlantic Canada Conservation Data Centre, 11729 recs.
245	Belliveau, A.G. 2016. Atlantic Canada Conservation Data Centre Fieldwork 2016. Atlantic Canada Conservation Data Centre, 10695 recs.
238	Blaney, C.S.; Mazerolle, D.M.; Oberndorfer, E. 2007. Fieldwork 2007. Atlantic Canada Conservation Data Centre. Sackville NB, 13770 recs.
227	Blaney, C.S. 2003. Fieldwork 2003. Atlantic Canada Conservation Data Centre. Sackville NB, 1042 recs.
225	Campbell, G. 2017. Maritimes Bicknell's Thrush database 2002-2015. Bird Studies Canada, Sackville NB, 609 recs.
217	Blaney, C.S.; Spicer, C.D.; Popma, T.M.; Hanel, C. 2002. Fieldwork 2002. Atlantic Canada Conservation Data Centre. Sackville NB, 2252 recs.
198	Churchill, J.L.; Klymko, J.D. 2016. Bird Species at Risk Inventory on the Acadia Research Forest, 2016. Atlantic Canada Conservation Data Centre, 1043 recs.
185	Blaney, C.S. 2019. Sean Blaney 2019 field data. Atlantic Canada Conservation Data Centre, 4407 records.
169	Sabine, M. 2016. Black Ash records from the NB DNR Forest Development Survey. New Brunswick Department of Natural Resources.
168	Anonymous. 2017. Observations from protected sources. Atlantic Canada Conservation Data Centre.

# recs	CITATION
163	Mazerolle, D.M. 2016. Atlantic Canada Conservation Data Centre Fieldwork 2017. Atlantic Canada Conservation Data Centre.
162	Hinds, H.R. 1986. Notes on New Brunswick plant collections. Connell Memorial Herbarium, unpubl, 739 recs.
156	Brunelle, P.-M. (compiler). 2009. ADIP/MDDS Odonata Database: data to 2006 inclusive. Atlantic Dragonfly Inventory Program (ADIP), 24200 recs.
155	Mazerolle, D.M. 2017. Atlantic Canada Conservation Data Centre Fieldwork 2017. Atlantic Canada Conservation Data Centre.
142	Klymko, J. 2019. Atlantic Canada Conservation Data Centre zoological fieldwork 2018. Atlantic Canada Conservation Data Centre.
140	Blaney, C.S.; Mazerolle, D.M.; Klymko, J; Spicer, C.D. 2006. Fieldwork 2006. Atlantic Canada Conservation Data Centre. Sackville NB, 8399 recs.
133	Belliveau, A.G. 2018. Atlantic Canada Conservation Data Centre Fieldwork 2017. Atlantic Canada Conservation Data Centre.
126	Porter, Caitlin. 2021. Field data for 2020 in various locations across the Maritimes. Atlantic Canada Conservation Data Centre, 3977 records.
125	Blaney, C.S.; Spicer, C.D.; Rothfels, C. 2004. Fieldwork 2004. Atlantic Canada Conservation Data Centre. Sackville NB, 1343 recs.
125	Chapman-Lam, C.J. 2021. Atlantic Canada Conservation Data Centre 2020 botanical fieldwork. Atlantic Canada Conservation Data Centre, 17309 recs.
123	Clayden, S.R. 2007. NBM Science Collections databases: vascular plants. New Brunswick Museum, Saint John NB, download Mar. 2007, 6914 recs.
112	Benedict, B. Connell Herbarium Specimen Database Download 2004. Connell Memorial Herbarium, University of New Brunswick. 2004.
112	Churchill, J.L. 2018. Atlantic Canada Conservation Data Centre Fieldwork 2017. Atlantic Canada Conservation Data Centre, 2318 recs.
111	Honeyman, K. 2019. Unique Areas Database, 2018. J.D. Irving Ltd.
108	Bagnell, B.A. 2001. New Brunswick Bryophyte Occurrences. B&B Botanical, Sussex, 478 recs.
106	Sollows, M.C,. 2009. NBM Science Collections databases: molluscs. New Brunswick Museum, Saint John NB, download Jan. 2009, 6951 recs (2957 in Atlantic Canada).
96	Klymko, J. 2018. Maritimes Butterfly Atlas database. Atlantic Canada Conservation Data Centre.
86	eBird. 2020. eBird Basic Dataset. Version: EBD_relNov-2019. Ithaca, New York. Nov 2019, Cape Breton Bras d'Or Lakes Watershed subset. Cornell Lab of Ornithology.
82	Blaney, C.S.; Spicer, C.D.; Mazerolle, D.M. 2005. Fieldwork 2005. Atlantic Canada Conservation Data Centre. Sackville NB, 2333 recs.
81	Haughian, S.R. 2018. Description of Fuscopannaria leucosticta field work in 2017. New Brunswick Museum, 314 recs.
80	Sollows, M.C,. 2008. NBM Science Collections databases: mammals. New Brunswick Museum, Saint John NB, download Jan. 2008, 4983 recs.
78	Beardmore, T. 2017. Wood turtle data: observations May 2017. Nashwaaksis Stream, NB. Natural Resources Canada, 78 records.
76	Tranquilla, L. 2015. Maritimes Marsh Monitoring Project 2015 data. Bird Studies Canada, Sackville NB, 5062 recs.
73	Belland, R.J. Maritimes moss records from various herbarium databases. 2014.
73	Sollows, M.C. 2008. NBM Science Collections databases: herpetiles. New Brunswick Museum, Saint John NB, download Jan. 2008, 8636 recs.
71	Blaney, C.S. 2017. Atlantic Canada Conservation Data Centre Fieldwork 2017. Atlantic Canada Conservation Data Centre.
67	Bishop, G. & Papoulias, M.; Arnold (Chaplin), M. 2005. Grand Lake Meadows field notes, Summer 2005. New Brunswick Federation of Naturalists, 1638 recs.
61	iNaturalist. 2018. iNaturalist Data Export 2018. iNaturalist.org and iNaturalist.ca, Web site: 11700 recs.
58	Robinson, S.L. 2015. 2014 field data.
55	e-Butterfly. 2016. Export of Maritimes records and photos. Maxim Larrivee, Sambo Zhang (ed.) e-butterfly.org.
54	Klymko, J.J.D. 2016. 2015 field data. Atlantic Canada Conservation Data Centre.
54	Neily, T.H. 2017. Maritmes Lichen and Bryophyte records. Atlantic Canada Conservation Data Centre, 1015 recs.
53	Sabine, D.L. 2005. 2001 Freshwater Mussel Surveys. New Brunswick Dept of Natural Resources & Energy, 590 recs.
53	Thomas, A.W. 1996. A preliminary atlas of the butterflies of New Brunswick. New Brunswick Museum.
52	Neily, T. H. 2018. Lichen and Bryophyte records, AEI 2017-2018. Tom Neily; Atlantic Canada Conservation Data Centre.
51	Erskine, A.J. 1999. Maritime Nest Records Scheme (MNRS) 1937-1999. Canadian Wildlife Service, Sackville, 313 recs.
51	McAlpine, D.F. 1998. NBM Science Collections: Wood Turtle records. New Brunswick Museum, Saint John NB, 329 recs.
47	Scott, Fred W. 1998. Updated Status Report on the Cougar (Puma Concolor couguar) [Eastern population]. Committee on the Status of Endangered Wildlife in Canada, 298 recs.
46	Belliveau, A.G. 2020. E.C. Smith Herbarium and Atlantic Canada Conservation Data Centre Fieldwork 2019, 2020. E.C. Smith Herbarium.
46	iNaturalist. 2020. iNaturalist butterfly records selected for the Maritimes Butterfly Atlas. iNaturalist.
46	Spicer, C.D. 2002. Fieldwork 2002. Atlantic Canada Conservation Data Centre. Sackville NB, 211 recs.
44	Nature Trust of New Brunswick. 2021. Nature Trust of New Brunswick site inventory data submitted in April 2021. Nature Trust of New Brunswick, 2189 records.
43	Speers, L. 2008. Butterflies of Canada database: New Brunswick 1897-1999. Agriculture & Agri-Food Canada, Biological Resources Program, Ottawa, 2048 recs.
40	Busby, D.G. 1999. 1997-1999 Bicknell's Thrush data, unpublished files. Canadian Wildlife Service, Sackville, 17 recs.
39	Klymko, J.J.D. 2016. 2014 field data. Atlantic Canada Conservation Data Centre.
38	Mills, E. Connell Herbarium Specimens, 1957-2009. University New Brunswick, Fredericton. 2012.
37	Richardson, Leif. 2018. Maritimes Bombus records from various sources. Richardson, Leif.
35	Cowie, Faye. 2007. Surveyed Lakes in New Brunswick. Canadian Rivers Institute, 781 recs.
34	Klymko, J. 2021. Atlantic Canada Conservation Data Centre zoological fieldwork 2020. Atlantic Canada Conservation Data Centre.
33	Klymko, J.J.D. 2018. 2017 field data. Atlantic Canada Conservation Data Centre.
32	Blaney, C.S.; Spicer, C.D. 2001. Fieldwork 2001. Atlantic Canada Conservation Data Centre. Sackville NB, 981 recs.
31	Shortt, R. UNB specimen data for various tracked species formerly considered secure. Connell Memorial Herbarium, UNB, Fredericton NB. 2019.
30	Miramichi River Environmental Assessment Committee. 2017. Wood Turtle (Glyptemys insculpta) Miramichi & Richibucto Watersheds Inventory 2016. Vladimir King Trajkovic (ed.) Miramichi River Environmental Assessment Committee.
29	Blaney, C.S.; Mazerolle, D.M. 2010. Fieldwork 2010. Atlantic Canada Conservation Data Centre. Sackville NB, 15508 recs.
29	Hinds, H.R. 1999. Connell Herbarium Database. University New Brunswick, Fredericton, 131 recs.
27	Blaney, C.S. & Mazerolle, D.M. 2011. NB WTF Fieldwork on Magaguadavic & Lower St Croix Rivers. Atlantic Canada Conservation Data Centre, 4585 recs.
27	Nature Trust of New Brunswick. 2020. Nature Trust of New Brunswick 2020 staff observations of species occurence data. Nature Trust of New Brunswick, 133 records.
27	Sabine, M. 2016. NB DNR staff incidental Black Ash observations. New Brunswick Department of Natural Resources.

# recs	CITATION
26	Shortt, R. Connell Herbarium Black Ash specimens. University New Brunswick, Fredericton. 2019.
25	Klymko, J. 2016. Atlantic Canada Conservation Data Centre Fieldwork 2016. Atlantic Canada Conservation Data Centre.
24	Klymko, J.J.D.; Robinson, S.L. 2014. 2013 field data. Atlantic Canada Conservation Data Centre.
23	Keppie, D.M. 2005. Rare Small Mammal Records in NB, PE. Pers. comm. to K. Bredin; PE 1 rec., NB 24 recs, 23 recs.
22	McAlpine, D.F. 1998. NBM Science Collections databases to 1998. New Brunswick Museum, Saint John NB, 241 recs.
20	Benedict, B. Connell Herbarium Specimens. University New Brunswick, Fredericton. 2000.
19	Benedict, B. Connell Herbarium Specimens, Digital photos. University New Brunswick, Fredericton. 2005.
19	Manthorne, A. 2014. MaritimesSwiftwatch Project database 2013-2014. Bird Studies Canada, Sackville NB, 326 recs.
18	Bishop, G. 2002. A floristic survey of known & potential sites of Furbish's lousewort. , 18 recs.
18	Doucet, D.A. & Edsall, J. 2007. Ophiogomphus howei records. Atlantic Canada Conservation Data Centre, Sackville NB, 21 recs.
17	Churchill, J.L.; Walker, J. 2017. Species at Risk Surveys at Correctional Services Canada Properties in Nova Scotia and New Brunswick. Atlantic Canada Conservation Data Centre.
17	Wilhelm, S.I. et al. 2011. Colonial Waterbird Database. Canadian Wildlife Service, Sackville, 2698 sites, 9718 recs (8192 obs).
15	Nussey, Pat & NCC staff. 2019. AEI tracked species records, 2016-2019. Chapman, C.J. (ed.) Atlantic Canada Conservation Data Centre, 333.
15	Webster, R.P. 2006. Survey for Suitable Salt Marshes for the Maritime Ringlet, New Populations of the Cobblestone Tiger Beetle, & New Localities of Three Rare Butterfly Species. New Brunswick WTF Report, 28 recs.
14	NatureServe Canada. 2019. iNaturalist Maritimes Butterfly Records. iNaturalist.org and iNaturalist.ca.
14	Patrick, A.; Horne, D.; Noseworthy, J. et. al. 2017. Field data for Nova Scotia and New Brunswick, 2015 and 2017. Nature Conservancy of Canada.
14	Toner, M. 2005. Lynx Records 1996-2005. NB Dept of Natural Resources, 48 recs.
12	Vladimir King Trajkovic. 2018. Brook Floater (Alasmidonta varicosa) records from MREAC surveys 2010-2017. Miramichi River Environmental Assessment Committee.
11	Sabine, M. 2016. Black Ash records from NB DNR permanent forest sampling Plots. New Brunswick Department of Natural Resources, 39 recs.
11	Trajkovic, V.K. 2017. Wood turtles inventroy miramichi watershed 2017. Miramichi River Environmental Action Committee, 22 records.
11	Webster, R.P. 2004. Lepidopteran Records for National Wildlife Areas in New Brunswick. Webster, 1101 recs.
11	Wood Turtle (Glyptemys insculpta) Miramichi Watershed Synopsis 2013 Compiled by: Vladimir King Trajkovic, EPt Miramichi River Environmental Assessment Committee
10	Doucet, D.A. 2008. Fieldwork 2008: Odonata. ACCDC Staff, 625 recs.
10	Downes, C. 1998-2000. Breeding Bird Survey Data. Canadian Wildlife Service, Ottawa, 111 recs.
10	Webster, R.P. Database of R.P. Webster butterfly collection. 2017.
10	Wisniowski, C. 2018. Optimizing wood turtle conservation in New Brunswick through collaboration, strategic planning, and landowner outreach. Nature Trust of New Brunswick, 10 records.
9	Bateman, M.C. 2000. Waterfowl Brood Surveys Database, 1990-2000 . Canadian Wildlife Service, Sackville, unpublished data. 149 recs.
9	Beardmore, T. 2017. 2017 Butternut observations. Natural Resources Canada.
9	Blaney, C.S. 2016. Atlantic Canada Conservation Data Centre Fieldwork 2016. Atlantic Canada Conservation Data Centre, 6719 recs.
8	Doucet, D.A. & Edsall, J.; Brunelle, P.-M. 2007. Miramichi Watershed Rare Odonata Survey. New Brunswick ETF & WTF Report, 1211 recs.
8	Tingley, S. (compiler). 2001. Butterflies of New Brunswick. , Web site: www.geocities.com/Yosemite/8425/buttrfly. 142 recs.
8	Webster, R.P. Atlantic Forestry Centre Insect Collection, Maritimes butterfly records. Natural Resources Canada. 2014.
7	Blaney, C.S.; Mazerolle, D.M. 2011. Fieldwork 2011. Atlantic Canada Conservation Data Centre. Sackville NB.
7	Edsall, J. 2007. Personal Butterfly Collection: specimens collected in the Canadian Maritimes, 1961-2007. J. Edsall, unpubl. report, 137 recs.
7	Goltz, J.P. & Bishop, G. 2005. Confidential supplement to Status Report on Prototype Quillwort (Isoetes prototypus). Committee on the Status of Endangered Wildlife in Canada, 111 recs.
7	Goltz, J.P. 1994. In the Footsteps of Our Ancestors. NB Naturalists, 21 (2-4): 20. 8 recs.
7	Klymko, J. Dataset of butterfly records at the New Brunswick Museum not yet accessioned by the museum. Atlantic Canada Conservation Data Centre. 2016.
7	Klymko, J.J.D. 2012. Insect fieldwork & submissions, 2003-11. Atlantic Canada Conservation Data Centre. Sackville NB, 1337 recs.
7	Paquet, Julie. 2018. Atlantic Canada Shorebird Survey (ACSS) database 2012-2018. Environment Canada, Canadian Wildlife Service.
7	Paquet, Julie. 2019. Atlantic Canada Shorebird Survey ACSS database for 2019. Environment Canada, Canadian Wildlife Service.
6	Chaput, G. 2002. Atlantic Salmon: Maritime Provinces Overview for 2001. Dept of Fisheries & Oceans, Atlantic Region, Science Stock Status Report D3-14. 39 recs.
6	Cronin, P. & Ayer, C.; Dubee, B.; Hooper, W.C.; LeBlanc, E.; Madden, A.; Pettigrew, T.; Seymour, P. 1998. Fish Species Management Plans (draft). NB DNRE Internal Report. Fredericton, 164pp.
6	Dowding, A.; Mandula, M. 2017. Observation of Hepatica acutiloba in New Brunswick. Nature Trust New Brunswick.
6	Edsall, J. 2001. Lepidopteran records in New Brunswick, 1997-99. , Pers. comm. to K.A. Bredin. 91 recs.
6	Goltz, J.P. 2008. Email to Sean Blaney re: discovery of Cryptotaenia canadensis and other rare species at the mouth of the Salmon River, Victoria Co., NB. pers. comm.
6	Klymko, J. Henry Hensel's Butterfly Collection Database. Atlantic Canada Conservation Data Centre. 2016.
6	Popma, T.M. 2003. Fieldwork 2003. Atlantic Canada Conservation Data Centre. Sackville NB, 113 recs.
5	Blaney, C.S.; Mazerolle, D.M. 2012. Fieldwork 2012. Atlantic Canada Conservation Data Centre, 13,278 recs.
5	Newell, R.E. 2000. E.C. Smith Herbarium Database. Acadia University, Wolfville NS, 7139 recs.
5	Sollows, M.C,. 2009. NBM Science Collections databases: Coccinellid & Cerambycid Beetles. New Brunswick Museum, Saint John NB, download Feb. 2009, 569 recs.
5	Speers, L. 2001. Butterflies of Canada database. Agriculture & Agri-Food Canada, Biological Resources Program, Ottawa, 190 recs.
4	Blaney, C.S. Miscellaneous specimens received by ACCDC (botany). Various persons. 2001-08.
4	Bredin, K.A. 2003. NB Freshwater Mussel Fieldwork. Atlantic Canada Conservation Data Centere, 20 recs.
4	Chaput, G. 1999. Atlantic Salmon: Miramichi & SFA 16 Rivers. Dept of Fisheries & Oceans, Atlantic Region, Science Stock Status Report D3-05. 6 recs.
4	Dalton, M. & Saba, B.A. 1980. A preliminary report on the natural history of the Gaspé shrew. The Atlantic Center for the Environment, Ipwich, MA, 29 pp.
4	Doucet, D.A. 2008. Wood Turtle Records 2002-07. Pers. comm. to S. Gerriets, 7 recs, 7 recs.

# recs	CITATION
4	Goltz, J.P. 2001. Botany Ramblings April 29-June 30, 2001. N.B. Naturalist, 28 (2): 51-2. 8 recs.
4	Munro, Marian K. Nova Scotia Provincial Museum of Natural History Herbarium Database. Nova Scotia Provincial Museum of Natural History, Halifax, Nova Scotia. 2013.
4	Sabine, D.L. 2011. Dorcas Copper records from 2001 Fieldwork. New Brunswick Dept of Natural Resources, 4 recs.
4	Toner, M. 2001. Lynx Records 1973-2000. NB Dept of Natural Resources, 29 recs.
3	Lautenschlager, R.A. 2005. Survey for Species at Risk on the Canadian Forest Service's Acadia Research Forest near Fredericton, New Brunswick. Atlantic Canada Conservation Data Centre, 6. 3 recs.
3	Newell, R.E. 2008. Vascular Plants of Muzroll Lake. Pers. comm. to C.S. Blaney, 1 pg. 43 recs.
3	Patrick, Allison. 2021. Animal and plant records from NCC properties from 2019 and 2020. Nature Conservancy Canada.
3	Richardson, D., Anderson, F., Cameron, R, McMullin, T., Clayden, S. 2014. Field Work Report on Black Foam Lichen (Anzia colpodes). COSEWIC.
3	Simpson, D. Collection sites for Black Ash seed lots preserved at the National Tree Seed Centre in Fredericton NB. National Tree Seed Centre, Canadian Forest Service. 2016.
2	Anon. 2017. Export of Maritimes Butterfly records. Global Biodiversity Information Facility (GBIF).
2	Basquill, S.P. 2003. Fieldwork 2003. Atlantic Canada Conservation Data Centre, Sackville NB, 69 recs.
2	Basquill, S.P., Porter, C. 2019. Bryophyte and lichen specimens submitted to the E.C. Smith Herbarium. NS Department of Lands and Forestry.
2	Brunelle, P.-M. 2005. Wood Turtle observations. Pers. comm. to S.H. Gerriets, 21 Sep. 3 recs, 3 recs.
2	Hay, G.U. 1883. Botany of the Upper St. John. Bulletin of the Natural History Society of New Brunswick, 2:21-31. 2 recs.
2	Layberry, R.A. 2012. Lepidopteran records for the Maritimes, 1974-2008. Layberry Collection, 1060 recs.
2	Majka, C. 2009. Université de Moncton Insect Collection: Carabidae, Cerambycidae, Coccinellidae. Université de Moncton, 540 recs.
2	Nelson Poirier. 2009. Rare plant finds in the Exmoor & Lyttleton areas. Pers. comm. to S. Blaney. 4 recs, 4 recs.
2	Pike, E., Tingley, S. & Christie, D.S. 2000. Nature NB Listserve. University of New Brunswick, listserv.unb.ca/archives/naturenb. 68 recs.
2	Scott, F.W. 1988. Status Report on the Gaspé Shrew (Sorex gaspensis) in Canada. Committee on the Status of Endangered Wildlife in Canada, 12 recs.
2	Webster, R.P. & Edsall, J. 2007. 2005 New Brunswick Rare Butterfly Survey. Environmental Trust Fund, unpublished report, 232 recs.
2	Webster, R.P. Reggie Webster's records of Encyclops caerulea . pers. collection. 2018.
1	Bagnell, B.A. 2003. Update to New Brunswick Rare Bryophyte Occurrences. B&B Botanical, Sussex, 5 recs.
1	Belliveau, A.G. E.C. Smith Herbarium Specimen Database 2019. E.C. Smith Herbarium, Acadia University. 2019.
1	Bishop, G. 2012. Field data from September 2012 Anticosti Aster collection trip. , 135 rec.
1	Bredin, K.A. 2001. NB Freshwater Mussel Fieldwork. Atlantic Canada Conservation Data Centere, 16 recs.
1	Bredin, K.A. 2001. WTF Project: Freshwater Mussel Fieldwork in Freshwater Species data. Atlantic Canada Conservation Data Centere, 101 recs.
1	Brunton, D.F. 2016. Record of Potamogeton vaseyi in Joslin Creek, NB. pers. comm., 1 record.
1	Buchanan, Jean. 2021. Email to Sean Blaney regarding Wood Turtle, Chipman, NB. pers. comm.
1	Calhoun, J.C. Butterfly records databased at the McGuire Center for Lepidoptera and Biodiversity. Calhoun, J.C. 2020.
1	DeMerchant, A. 2019. Bank Swallow colony observation. NB Department of Energy and Resource Development, Pers. comm. to J.L. Churchill.
1	e-Butterfly. 2019. Export of Maritimes records and photos. McFarland, K. (ed.) e-butterfly.org.
1	Edsall, J. 1993. Spring 1993 Report. New Brunswick Bird Info Line, 3 recs.
1	Edsall, J. 1993. Summer 1993 Report. New Brunswick Bird Info Line, 2 recs.
1	Forbes, G. 2001. Bog Lemming, Phalarope records, NB. , Pers. comm. to K.A. Bredin. 6 recs.
1	Forbes, G.J. 2020. Email regarding a Snapping Turtle (Chelydra serpentina) occurrence in New Brunswick, from Graham Forbes to John Klymko. pers. comm, 1 record.
1	Goltz, J.P. 2002. Botany Ramblings: 1 July to 30 September, 2002. N.B. Naturalist, 29 (3):84-92. 7 recs.
1	Goltz, J.P. 2020. Email to Sean Blaney regarding Anchistea virginica (Virginia Chain-fern) at Magaguadavic Lake, NB. pers. comm., 1 record.
1	Houghton, Andrew. 2021. Email to Sean Blaney re: nesting Snapping Turtle, NB. pers. comm.
1	Jolicoeur, G. 2008. Anticosti Aster at Chapel Bar, St John River. QC DOE? Pers. comm. to D.M. Mazerolle, 1 rec.
1	Klymko, J. 2019. Maritimes Hemiptera records harvested from iNaturalist . iNaturalist.
1	Klymko, J. Univeriste de Moncton insect collection butterfly record dataset. Atlantic Canada Conservation Data Centre. 2017.
1	Klymko, J., Sabine, D. 2015. Verification of the occurrence of Bombus affinis (Hymenoptera: Apidae) in New Brunswick, Canada. Journal of and Acadian Entomological Society, 11: 22-25.
1	Litvak, M.K. 2001. Shortnose Sturgeon records in four NB rivers. UNB Saint John NB. Pers. comm. to K. Bredin, 6 recs.
1	Madden, A. 1998. Wood Turtle records in northern NB. New Brunswick Dept of Natural Resources & Energy, Campbellton, Pers. comm. to S.H. Gerriets. 16 recs.
1	Mandula, M. 2017. Nature Trust of New Brunswick Site Report: Jackson Falls, NB – new rare plant station. Nature Trust of New Brunswick, 2 pp.
1	Manthorne, A. 2019. Incidental aerial insectivore observations. Birds Canada.
1	Marshall, L. 1998. Atlantic Salmon: Southwest New Brunswick outer-Fundy SFA 23. Dept of Fisheries & Oceans, Atlantic Region, Science. Stock Status Report D3-13. 6 recs.
1	McIntosh, W. 1904. Supplementary List of the Lepidoptera of New Brunswick. Bulletin of the Natural History Society of New Brunswick, 23: 355-357.
1	NatureServe Canada. 2018. iNaturalist Butterfly Data Export . iNaturalist.org and iNaturalist.ca.
1	Newell, R.E. 2005. E.C. Smith Digital Herbarium. E.C. Smith Herbarium, Irving Biodiversity Collection, Acadia University, Web site: http://luxor.acadiau.ca/library/Herbarium/project/. 582 recs.
1	Norton, Barb. 2010. Personal communication concerning Botrychium oneidense near Ayers Lake, NB. , One record.
1	Ogden, K. Nova Scotia Museum butterfly specimen database. Nova Scotia Museum. 2017.
1	Olsen, R. Herbarium Specimens. Nova Scotia Agricultural College, Truro. 2003.
1	Parkinson, K. 2017. Wood Turtle record in the Meduxnekeag Valley Nature Preserve. Pers. comm. to AC CDC.
1	Sabine, D.L. 2004. Specimen data: Whittaker Lake & Marysville NB. Pers. comm. to C.S. Blaney, 2pp, 4 recs.
1	Sabine, D.L. 2013. Dwaine Sabine butterfly records, 2009 and earlier.
1	Singleton, J. 2004. Primula mistassinica record for Nashwaak NB. Pers. comm. to C.S. Blaney, 1 rec.
1	Toner, M. 2005. Listera australis population at Bull Pasture Plains. NB Dept of Natural Resources. Pers. comm. to S. Blaney, 8 recs.

# recs	CITATION
1	Toner, M. 2009. Wood Turtle Sightings. NB Dept of Natural Resources. Pers. comm. to S. Gerriets, Jul 13 & Sep 2, 2 recs.
1	Toner, M. 2011. Wood Turtle sighting. NB Dept of Natural Resources. Pers. com. to S. Gerriets, Sep 2, photo, 1 rec.
1	Torenvliet, Ed. 2010. Wood Turtle roadkill. NB Dept of Transport. Pers. com. to R. Lautenschlager, Aug. 20, photos, 1 rec.
1	Walker, E.M. 1942. Additions to the List of Odonates of the Maritime Provinces. Proc. Nova Scotian Inst. Sci., 20. 4: 159-176. 2 recs.
1	Webster, R.P. Email to John Klymko detailing records of butterflies collected by Reggie Webster in June 2017. Webster, R.P. 2017.

June 7, 2022
File No.: 100-05-R6

GEMTEC Limited
191 Doak Rd.
Fredericton, NB E3C 2E6
Attention: Jennifer Hachey

Your Ref.: 100083.046

RE: PID#: 75145623

In response to your request for property-based environmental information regarding the above noted property, please be advised that a search of related departmental electronic databases has been conducted *with the information provided*, and the following information was found.

There is no record of Ministerial Orders or Remediation Orders related to this PID number, using our current search process.

Our records indicate that there are no petroleum storage tanks registered with the Department, under the Petroleum Product Storage and Handling Regulation, for this PID number.

Our records indicate that there has been contamination found at:

1.) **Hwy 107, Napadogan, JDI Woodlands Garage (PID# 75145623)**. See attached information report.
2.) **107 Hwy, Napadogan, J. D. Irving Woodlands (Deersdale) (PID# 75145623)**. See attached information report.
3.) **107 Hwy., Napadogan, NB Railway Co. Ltd. (PID# 75145623)**. See attached information report.
4.) **5120 Route 107, Deersdale Mill Yard, NB Railway Co. Ltd. (PID# 75145623)**. See attached information report.
5.) **5120 Route 107, Deersdale, NB Railway Co. Ltd. (PID# 75145623)**. See attached information report.

This PID number is not registered with the Department as a PCB Storage site.

We have no records of landfill sites or former dumpsites located near this PID number.

The absence of departmental records in this search does not necessarily indicate that the sites have not been subject to environmental incidents. The information is accurate in that it provides a factual reflection of what is contained in departmental databases. The files themselves may or may not be complete.

As an example, in the case of underground petroleum storage tanks, the files accurately reflect all those that were registered with the program; there may be underground storage tanks that were not registered and of which the Department has no knowledge. Likewise, there may be incidents of spills of which the Department was not informed or which pre-date Departmental records. "Remediation Site Management System" was established in the early 2000's and does not contain a complete history of past spills or remediation efforts. Furthermore, if the properties have been recently altered, the PID#'s provided may not correspond with those contained in departmental files and thus on the databases.

Any persons intending to purchase or occupy the property should make their own independent determination of the environmental condition of the property and the extent of responsibility and liability, if any, that may arise from taking ownership or occupancy.

Authorizations Branch

Enclosures: 5

/lr

Remediation Management
(PID 75145623)

FILE	**6515-5-0217**
PID	75145623
SITENAME	JDI Woodlands Garage
CIVIC ADDRESS	Hwy 107, Napadogan
FILE OPENED	11/13/1990
FILE STATUS	Closed 1992 Generic criteria achieved, no further action necessary.
CONTAMINATION TYPE	Petroleum
PARTY RESPONSIBLE	Irving Oil Limited
CONSULTANT	Jacques Whitford Environment Ltd
ORDERS ISSUED	No
RESULT TYPE	Source PID

Remediation Management
(PID 75145623)

FILE	**6515-5-0606**
PID	75145623
SITENAME	J. D. Irving Woodlands (Deersdale)
CIVIC ADDRESS	107 Hwy, Napadogan
FILE OPENED	10/8/1999
FILE STATUS	Closed 1999 Limited remedial action taken - no further action necessary.
CONTAMINATION TYPE	Petroleum
PARTY RESPONSIBLE	J.D. Irving Ltd.
CONSULTANT	None
ORDERS ISSUED	No
RESULT TYPE	Source PID

Remediation Management
(PID 75145623)

FILE	**6515-5-0716**
PID	75145623
SITENAME	NB Railway Co. Ltd.
CIVIC ADDRESS	107 Hwy., Napadogan
FILE OPENED	7/17/1996
FILE STATUS	Closed Some remedial action taken - Contamination status has not been confirmed.
CONTAMINATION TYPE	Petroleum
PARTY RESPONSIBLE	Other
CONSULTANT	None
ORDERS ISSUED	No
RESULT TYPE	Source PID

Remediation Management
(PID 75145623)

FILE	**6515-5-0780**
PID	75145623
SITENAME	NB Railway Co. Ltd.
CIVIC ADDRESS	5120 Route 107, Deersdale Mill Yard
FILE OPENED	12/22/2004
FILE STATUS	Open
CONTAMINATION TYPE	Petroleum
PARTY RESPONSIBLE	Irving Oil Limited
CONSULTANT	Dillon Consultants
ORDERS ISSUED	No
RESULT TYPE	Source PID

Remediation Management
(PID 75145623)

FILE	**6515-5-0792**
PID	75145623
SITENAME	NB Railway Co. Ltd.
CIVIC ADDRESS	5120 Route 107, Deersdale
FILE OPENED	9/12/2003
FILE STATUS	Open
CONTAMINATION TYPE	Petroleum
PARTY RESPONSIBLE	Other
CONSULTANT	Jacques Whitford Environment Ltd
ORDERS ISSUED	No
RESULT TYPE	Source PID

June 7, 2022
File No.: 100-05-R6

GEMTEC Limited
191 Doak Rd.
Fredericton, NB E3C 2E6
Attention: Jennifer Hachey

Your Ref.: 100083.046

RE: PID#: 75466789

In response to your request for property-based environmental information regarding the above noted property, please be advised that a search of related departmental electronic databases has been conducted *with the information provided*, and the following information was found.

There is no record of Ministerial Orders or Remediation Orders related to this PID number, using our current search process.

Petroleum storage tank information related to **PID# 75466789** is attached. These tanks have been registered with the Department, under the Petroleum Product Storage and Handling Regulation.

We have no records in our database of any remedial activity or contamination for this PID number.

This PID number is not registered with the Department as a PCB Storage site.

We have no records of landfill sites or former dumpsites located near this PID number.

The absence of departmental records in this search does not necessarily indicate that the sites have not been subject to environmental incidents. The information is accurate in that it provides a factual reflection of what is contained in departmental databases. The files themselves may or may not be complete.

As an example, in the case of underground petroleum storage tanks, the files accurately reflect all those that were registered with the program; there may be underground storage tanks that were not registered and of which the Department has no knowledge.

Likewise, there may be incidents of spills of which the Department was not informed or which pre-date Departmental records. "Remediation Site Management System" was established in the early 2000's and does not contain a complete history of past spills or remediation efforts. Furthermore, if the properties have been recently altered, the PID#'s provided may not correspond with those contained in departmental files and thus on the databases.

Any persons intending to purchase or occupy the property should make their own independent determination of the environmental condition of the property and the extent of responsibility and liability, if any, that may arise from taking ownership or occupancy.

Authorizations Branch

Enclosures: 1

/lr

Petroleum Storage (PID 75466789)

PID #: 75466789	Site #: 4566	Address:	J D IRVING SAWMILL ROUTE 107 DEERSDALE

Tank Information

Current Status	Removed
Date Out of Service	
Installation Date	1975
Tank Size	68000 L
Location	Under Ground
Constructed Of	Single Wall Steel
Substance Stored	Furnace Oil

Current Status	Removed
Date Out of Service	1996-07-17
Installation Date	1975
Tank Size	44500 L
Location	Above Ground
Constructed Of	Single Wall Steel
Substance Stored	Bunker

Current Status	Removed
Date Out of Service	1996-07-17
Installation Date	1975
Tank Size	44500 L
Location	Above Ground
Constructed Of	Single Wall Steel
Substance Stored	Bunker

Current Status	Removed
Date Out of Service	1996-07-17
Installation Date	1975
Tank Size	44500 L
Location	Above Ground
Constructed Of	Single Wall Steel
Substance Stored	Bunker

Current Status	Removed
Date Out of Service	1996-07-17
Installation Date	1975
Tank Size	2275 L
Location	Above Ground
Constructed Of	Single Wall Steel
Substance Stored	Furnace Oil

Current Status	Removed
Date Out of Service	1996-07-17
Installation Date	1975
Tank Size	2275 L
Location	Above Ground
Constructed Of	Single Wall Steel
Substance Stored	Furnace Oil

Current Status	Removed
Date Out of Service	1996-07-17
Installation Date	1975
Tank Size	2275 L
Location	Above Ground
Constructed Of	Single Wall Steel
Substance Stored	Furnace Oil

Current Status	Inactive
Date Out of Service	
Installation Date	1980
Tank Size	4450 L
Location	Above Ground
Constructed Of	Single Wall Steel
Substance Stored	Furnace Oil

Current Status	Removed
Date Out of Service	1990-09-01
Installation Date	1980
Tank Size	2270 L
Location	Under Ground
Constructed Of	Single Wall Steel
Substance Stored	Waste Oil

Current Status	Inactive
Date Out of Service	2010-09-22
Installation Date	1989
Tank Size	4450 L
Location	Under Ground
Constructed Of	Single Wall FRP
Substance Stored	Furnace Oil

Current Status	Removed
Date Out of Service	2020-02-05
Installation Date	1990
Tank Size	4540 L
Location	Above Ground
Constructed Of	Single Wall Steel
Substance Stored	Furnace Oil

Current Status	Active
Date Out of Service	
Installation Date	1993
Tank Size	45400 L
Location	Above Ground
Constructed Of	Single Wall Steel
Substance Stored	Furnace Oil

Current Status	Removed
Date Out of Service	2003-10-10
Installation Date	1989
Tank Size	2270 L
Location	Under Ground
Constructed Of	Single Wall Steel
Substance Stored	Separator

Current Status	Removed
Date Out of Service	1996-07-17
Installation Date	Unknown
Tank Size	908 L
Location	Above Ground
Constructed Of	Single Wall Steel
Substance Stored	Furnace Oil

Current Status	Active
Date Out of Service	
Installation Date	1996
Tank Size	45400 L
Location	Above Ground
Constructed Of	Double Wall Steel
Substance Stored	Bunker

Current Status	Active
Date Out of Service	
Installation Date	1996
Tank Size	45400 L
Location	Above Ground
Constructed Of	Double Wall Steel
Substance Stored	Bunker

Current Status	Active
Date Out of Service	
Installation Date	1996
Tank Size	45400 L
Location	Above Ground
Constructed Of	Double Wall Steel
Substance Stored	Bunker

Current Status	Active
Date Out of Service	
Installation Date	1996
Tank Size	9080 L
Location	Above Ground
Constructed Of	Double Wall Steel
Substance Stored	Furnace Oil

Current Status	Active
Date Out of Service	
Installation Date	2003
Tank Size	3000 L
Location	Under Ground
Constructed Of	Double Wall FRP
Substance Stored	Separator

PID #: 75466789 Site #: 6878 Address: J D IRVING DEERSDALE SCALEHOUSE CAMP 61
ROUTE 107
DEERSDALE

Tank Information

Current Status	Active
Date Out of Service	
Installation Date	1994
Tank Size	18184 L
Location	Above Ground
Constructed Of	Double Wall Steel
Substance Stored	Regular

Current Status	Active
Date Out of Service	
Installation Date	1994
Tank Size	90920 L
Location	Above Ground
Constructed Of	Single Wall Steel
Substance Stored	Diesel

Current Status	Active
Date Out of Service	
Installation Date	1994
Tank Size	90920 L
Location	Above Ground
Constructed Of	Single Wall Steel
Substance Stored	Diesel

Current Status	Active
Date Out of Service	
Installation Date	1986
Tank Size	9080 L
Location	Under Ground
Constructed Of	Single Wall FRP
Substance Stored	Separator

Current Status	Removed
Date Out of Service	1994-09-24
Installation Date	1976
Tank Size	13000 L
Location	Under Ground
Constructed Of	Single Wall Steel
Substance Stored	Gasoline

Current Status	Removed
Date Out of Service	1994-09-24
Installation Date	1976
Tank Size	9000 L
Location	Under Ground
Constructed Of	Single Wall Steel
Substance Stored	Gasoline

Current Status	Removed
Date Out of Service	1994-09-24
Installation Date	1976
Tank Size	18000 L
Location	Under Ground
Constructed Of	Single Wall Steel
Substance Stored	Gasoline

Current Status	Removed
Date Out of Service	1994-09-24
Installation Date	1976
Tank Size	18000 L
Location	Under Ground
Constructed Of	Single Wall Steel
Substance Stored	Diesel

Current Status	Removed
Date Out of Service	1994-09-24
Installation Date	1976
Tank Size	13500 L
Location	Under Ground
Constructed Of	Single Wall Steel
Substance Stored	Diesel

Current Status	Removed
Date Out of Service	1995-09-01
Installation Date	1976
Tank Size	67500 L
Location	Above Ground
Constructed Of	Single Wall Steel
Substance Stored	Diesel

Current Status	Removed
Date Out of Service	1995-09-01
Installation Date	1976
Tank Size	67500 L
Location	Above Ground
Constructed Of	Single Wall Steel
Substance Stored	Diesel

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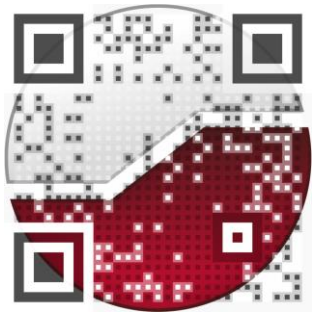

civil	civil
geotechnical	géotechnique
environmental	environnement
structural	structures
field services	surveillance de chantier
materials testing	service de laboratoire des matériaux

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