EIA Registration – Thermalite Facility Water Supply Source Assessment (WSSA)

Hive Engineering

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Final

Project Name:
EIA Registration – Thermalite Facility Water Supply Source Assessment (WSSA), Cap-Pelé, NB

Project Number:
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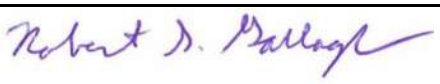
Reviewed By: Robert Gallagher, M.Sc.Eng., P. Eng.	

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1.1 Name of Proponent

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1.5 Property Ownership

The Thermalite facility is located at 2598 Chemin Acadie in Cap-Pelé, NB. The subject property, which has an approximate area of 16.0 ha, is identified by three land parcels identified by Service New Brunswick (SNB) property identification numbers PID 70410089, PID 70371257 and PID 00845743. The latter land parcels are owned by Downeast Plastics Ltd. which is the parent company of Thermalite Products Inc.

2 Project Description

2.1 Project Name

Thermalite Facility Water Supply Source Assessment (WSSA), Cap-Pelé, NB

2.2 Project Overview

The project consists of the completion of a Water Supply Source Assessment (WSSA) of the current operational groundwater supply well (i.e. Well #1) which supplies potable and process water to the existing Thermalite manufacturing facility situated in Cap-Pelé. Since the project relates to the assessment of an existing water supply and does not involve the development of a new source, it is anticipated that the minimal requirements under the provincial EIA process will suffice and it is noted that several aspects of a typical EIA (e.g. formal siting study, construction considerations, etc.) are not applicable to this project.

The location of the study area in a regional context is indicated on Figure 1, which also shows the approximate locations of the subject property and Well #1.

The EIA trigger for the project relates to the requirement for "*all waterworks with a capacity greater than fifty cubic metres of water daily*" to be registered as an undertaking in accordance with the Environmental Impact Assessment (EIA) Regulation (NB Regulation 87-83) under the *Clean Environment Act* since plant management is contemplating a possible future increase in the workforce and plant production. It is expected that these potential future changes would result in the water demand of the plant (i.e. Well #1) exceeding the regulatory threshold of 50 m^3/day.

The WSSA will be completed in general accordance with the requirements of the New Brunswick Department of the Environment and Local Government (NBDELG), with some minor modifications related to the fact that Well #1 is an existing well situated in an operational facility as described in Appendix 1. In general, the process consists of the completion of a Step 1 application form which provides background information on the proposed project including water quality and quantity requirements; the rationale for the proposed source development; a discussion of local hydrogeological conditions and existing area groundwater users; and details potential sources of contamination in the study area. The Step 1 application is typically included with the EIA registration document submitted to NBDELG (refer to Appendix 1). If the Step 1 WSSA application is approved following EIA registration, well drilling (if required) and pump testing to identify the aquifer hydrogeological parameters and characterize the safe yield and water quality of the proposed groundwater source(s) may commence and a Step 2 WSSA report which summarizes the results of the above activities is prepared. The Step 2 WSSA report is subsequently submitted to NBDELG for technical review in conjunction with the overall EIA Determination Review process.

For the current project, it is anticipated that two existing on-site wells (i.e. Well #2 and Well #3) can be used as observation wells during the Step 2 WSSA assessment which will eliminate the requirement for any new well drilling. Initial step-drawdown testing will not be completed as it is not considered to be necessary since the actual yield of the Well #1 is understood to significantly exceed existing water requirements. Furthermore, step-drawdown testing may not be feasible/practical given the constraints of the existing on-site plumbing and plant operational hours. As such, the Step 2 WSSA

will consist of the completion of a constant rate pumping test on Well #1. Following the completion of the constant rate test, water level recovery will be monitored in the pumping and observation wells for the lesser of the time required for 100% recovery or one-half the duration of the constant rate test.

2.3 Purpose/Rationale/Need for Undertaking

The groundwater source (i.e. Well #1) is required to provide potable and process water for the manufacturing of expanded polystyrene (EPS) foam insulation products and gel-paks at the Thermalite facility in Cap-Pelé. The business, which was initially established in the early-1980s, consists of the manufacturing of insulated packaging containers and gel-paks primarily for the fishing industry in addition to board insulation for the construction industry. The facility also has the ability to manufacture custom-designed orders to meet client requirements and retains a small trucking fleet to ship their manufactured products.

Concerning employment, the business currently employs approximately 80 full time staff which work in two 8 hr shifts per day, five days per week (Monday to Friday). It is also note that much of the manufactured product (i.e. shipping containers) is utilized by the local fishing and seafood processing industry. As such, the business is considered to be a significant asset to local economy.

The process water is specifically utilized to provide boiler makeup water; cool molds used in the EPS manufacturing process; and facilitate the manufacturing of the gel-paks. The on-site water supply also provides potable water to the plant employees.

The current water demand is met by Well #1, which is the sole active water supply well on the subject property. Athough there are no current plans to expand or modify the existing manufacturing facility, plant management is contemplating a future increase in plant workforce/production which would be expected to result in a water demain in excess of the regulatory threshold of 50 m^3/day. Three inactive wells are also currently located on-site, and it is understood that some or all of these currently inactive wells were previously utilized by the plant when the historical water demand significantly exceeded the current demand. Existing water conservation measures include re-circulating plant cooling water to the extent practical in a closed loop system.

In the interest of practicality, no other alternatives to Well #1 were considered or required as the existing well meets the current water demand and it is anticipated that this well will also satisfy the near future plant demand if the contemplated future increase in the plant workforce and production is realized. Therefore, as previously indicated, the sole purpose of the currently proposed work is to establish the regulated safe yield of the existing well under possible future water demand conditions which would be expected to exceed 50 m^3/day. The “do nothing” alternative is considered unacceptable as the water supply source is required to operate the existing manufacturing facility and assessment and regulation of the water supply is required for all waterworks with a capacity in excess of 50 m^3/day in accordance with provincial requirements.

The current water demand is proportional to the production capacity of the plant which will vary somewhat with market demand. Currently, the plant water demand is met by Well #1 which operates intermittently with an estimated pumping capacity of 43 m^3/day (6.6 Igpm) which is less than the regulatory threshold of 50 m^3/day (7.6 Igpm). However, in the future, management is contemplating the addition of another work shift each day which would result in a potential future water demand of

about 131 m^3/day (20 Igpm). The future addition of another work shift would need to be justified by market demands.

For more complete details concerning the existing water demand and the nature of the existing on-site water supply wells, refer to the Step 1 WSSA application provided in Appendix 1.

2.4 Project Location

Location/PID: As previously indicated, the subject property (existing Thermalite manufacturing plant) is comprised of three land parcels identified as PID 70410089, PID 70371257 and PID 00845743. The approximate co-ordinates of Well #1 are Lat: 46°-12'-59.76"N and Long: 64°-16'-38.82"W.

Address: The Thermalite facility is located in the Botsford Parish of Westmorland County at 2598 Chemin Acadie, Cap-Pelé, NB.

Location Map: The project location relative to communities, roads, existing environmental features, etc. is indicated on Figure 2.

2.5 Siting Considerations

A siting assessment was not completed in conjunction with the current project, as the proposed undertaking is limited to the completion of a WSSA of an existing operational well at an existing commercial facility in accordance with provincial requirements. Furthermore, its is noted that the requirement for additional well drilling or other construction related to the project is not anticipated, as it is intended that one or more of the existing on-site inactive wells will be utilized as observation wells during the hydrogeological pump testing component of the WSSA.

2.6 Physical Components and Dimensions of the Project

The precise construction date of the existing water source (Well #1), which is located inside the on-site manufacturing plant in the southwest corner of the building, is unknown. Furthermore, no other information pertaining to the well is definitively known as the original well driller's record outlining the well construction details and the encountered sub-surface stratigraphy is not available.

The existing well operates intermittently during the operation of the plant. As previously indicated, much of the process water supply used for cooling molds, etc. is recirculated in a closed loop system.

No modifications to the existing on-site facility are currently planned. The developed portion of the facility (i.e. the plant) is located on the southern portion of the subject property. The key components of the facility include the manufacturing plant and the asphalt-paved parking lot and driveways which surround the southern portion of the plant building; three residential dwellings which are periodically rented out to transient local fish plant workers; a storage shed; and a gravel/dirt surfaced yard which forms the remainder of the developed portion of the site. Several transport trailers storing the on-site manufactured products are parked in the yard area of the property and along the existing plant building. The undeveloped portion of the subject property consists of woodland except for the wetland adjacent to Friel Brook situated near the northeastern site boundary. It is noted that the 30 m regulated wetland buffer is situated approximately 270 m to 570 m northwest of the developed portion of the site.

As previously indicated, the proposed undertaking is limited to the WSSA of the existing water source, and there is no anticipated requirement for any new construction (e.g. well drilling, etc.) or ground disturbance associated with the project.

The physical components of the project (i.e. Well #1) and the remaining existing on-site and nearby development is indicated on Figure 2.

2.7 Construction Details

As previously indicated, no well drilling or other new construction is planned as the undertaking is limited to the WSSA of the existing on-site water source.

The field work will be limited to the completion of Step 2 of the WSSA as previously described in **Section 2.2**. Details of the proposed work schedule are outlined in the Step 1 WSSA application provided in Appendix 1.

2.8 Operation and Maintenance Details

General: The Thermalite maintenance staff will continue to be responsible for the operation and maintenance of the existing water supply source. Qualified contractors (e.g. Licensed Well Drilling Contractor, electrical contractor, etc.) will be retained to conduct any necessary repairs and/or maintenance as required (e.g. pump replacement).

Since the proposed undertaking relates to the WSSA of an existing operational water supply source and no plant modifications or expansions are planned (see below), the project will not result in any change to the plant's existing operation and maintenance regimen.

Water Supply: As previously indicated, the existing plant water demand is approximately 43 m^3/day (6.6 Igpm). However, a minimum regulated safe yield of 131 m^3/day (20 Igpm) is desired to meet the anticipated potential future demand of the on-site manufacturing facility.

Lifespan of Project: The lifespan of commercial production wells vary in accordance with site specific considerations, but a typical lifespan would be 50 years or greater. Associated mechanical equipment (e.g. well pump) will need to be replaced on a more frequent basis.

Power Requirements: the plant including Well #1 are connected to the NB Power electrical transmission grid.

Fate of Wastes: No waste will be generated during the operation of Well #1.

2.9 Future Modifications, Extensions or Abandonment

As previously indicated, there are no plans to expand or modify the existing Thermalite facility including the existing water source.

The existing water supply source (Well #1) and the three inactive wells will need decommissioned in accordance with the NBDELG Guidelines for the Decommissioning (Abandonment) of Water Wells upon the end of their service lives (note that some "inactive" wells may be utilized as observation wells during the operational life of the packaging and insulation manufacturing facility).

2.10 Project Related Documents

No other project related documents (i.e. previous EIAs, groundwater studies, etc.) are available. In addition, other than a WSSA approval from NBDELG, no project-related environmental permits will be required (e.g. WAWA permit, etc.).

A copy of the Step 1 WSSA application related to this project has been provided in Appendix 1.

3 Description of the Existing Environment

The project site is commercial and developed, and surrounding land use is a mixture of commercial and residential. All of the required infrastructure for the proposed well testing activities under the WSSA process currently exist. No additional disturbances including well drilling will be required.

3.1 Physical and Natural Features

Topography and Surface Water Drainage: Based on a review of regional (1:50,000) scale topographic mapping, the ground surface elevation in the study area slopes to the north-northwest towards Friel Brook at a gradient of approximately 2.7% or less. The existing ground surface elevation is on the order of 15 m for the southern developed portion of the subject property and estimated to be less than 5 m for the northern undeveloped portion of the site in the vicinity of Friel Brook.

Geology and Hydrogeology: A review of regional scale surficial geology mapping indicates the study area is situated near the boundary between two geologic units. The northern portion of the study area adjacent to the coast and along portions of Friel Brook and the Tedish River are mapped as being underlain by blankets and plains comprised of sand, silt, some gravel and clay (Rampton et al., 1984). Where present, this unit typically ranges from 0.5 m to 3.0 m in thickness. South of this area, the study area is underlain by a 0.5 m to 3 m thick blanket of loamy lodgment till, minor ablation till, silt, sand, gravel and rubble (Rampton et al., 1984). Overlying this material is a thin, discontinuous veneer of sand, some gravel and silt and rare clay. Where present, the thickness of the above noted unit is typically less than 0.5 m.

Concerning bedrock geology, the study area is underlain by red to grey sandstone, conglomerate and siltstone (Potter et al., 1968).

Based on our past experience and the above noted geological conditions, study area water wells would be expected to abstract water from the underlying sedimentary bedrock aquifer. Groundwater flow in this aquifer would be expected to be governed by secondary permeability features such as bedrock fractures, joints and faults.

A detailed description of the study area geology and hydrogeology is outlined in the Step 1 WSSA application provided in Appendix 1.

Watercourses and Wetlands: There are no watercourses on the subject property, but it is noted that Friel Brook is located near the northern boundary of the subject property. The latter watercourse flows northwest and discharges to the Northumberland Strait.

A review of the New Brunswick Department of Energy and Resource Development (NBDERD) wetlands layer indicates that a provincially significant wetland (i.e. coastal marsh) is located along Friel Brook and the northern boundary of the subject property. However, as previously noted herein, the 30 m regulated wetland buffer associated with this wetland is situated approximately 270 m to 570 m northwest of the developed portion of the subject property.

Significant Fish/Wildlife Populations or Habitats: As indicated above, the required infrastructure for the proposed WSSA already exists and no additional ground disturbances are planned. The well

testing will occur on the developed portion of the subject property, which would generally not be expected to represent suitable habitat for area mammals and birds.

The Atlantic Canada Conservation Data Centre (ACCDC) was requested to search their databases for a 5 km buffer around the existing Thermalite facility to complete a screening level assessment of the nature and extent of potential ecological receptors in the study area. The results of the ACCDC data request are provided in Appendix 2. It is important to note that this data only provides information on the potential presence of rare flora or fauna in the vicinity of the proposed areas of development.

The 5 km buffer contained eight (8) records of five (5) vascular flora and no records of any non-vascular flora. Similarly, one hundred sixty-four (164) records of twenty-eight (28) vertebrate fauna and eight (8) records of three (3) invertebrate fauna were identified. The majority of the vertebrate fauna observations within the 5 km area were bird sightings. Wood turtles were not noted to be present in the study area. The above noted flora and fauna observations within the study area were assigned proximity estimates ranging from 0.5 km ± 0 km to 5.0 km ± 0 km.

Finally, the records review identified one (1) managed area (MA) and no Environmentally Significant Areas (ESAs). Managed areas typically have some degree of protected status and ESAs may or may not have legal status. The identified MA is the Parc des L'aboiteau which is operated by the Village of Cap-Pelé. The coastal park, which includes salt marsh wetland habitat and a popular public beach, is removed from and would not be affected by the proposed work as it is situated approximately 3 km northwest of the Thermalite plant.

With the exception of the Piping Plover and the Bald Eagle, no species classified as endangered under the Provincial *Endangered Species Act* were identified in the ACCDC data. The proximity estimate for the single Piping Plover observation was 2.0 km ± 1 km. To minimize the potential for exploitation or disturbance, no co-ordinate information was provided for the Bald Eagle as the New Brunswick Department of Energy and Resource Development (NBDERD) considers this to be a "location sensitive" species. The Piping Plover utilizes gravel-sand beach habitat for nesting and feeding, whereas the Bald Eagle typically nests in a tall tree near coastal areas. As such, the developed portion of the subject property upon which the WSSA will take place would not be expected to represent suitable habitat for these species, and these species are not known to be present in close proximity to the Thermalite plant.

Environmentally Sensitive Areas: No environmental sensitive areas (e.g. NB Protected Areas, Protected Natural Areas, etc.) are located in the general vicinity of the site based on desktop review of New Brunswick Crown Lands Conservation Areas mapping and other sources. Furthermore, it is noted that the site is not located near any Wellfield Protected Area or Watershed Protected Area.

It is also noted that the results of the ACCDC records review within 5 km of the proposed undertaking did not reveal the presence of any environmentally sensitive areas.

3.2 Cultural Features

A municipal park owned and operated by the Village of Cap-Pelé is located approximately 2 km northeast of the subject property. The Parc de L'Aboiteau which includes a popular recreational beach is also situated about 3 km northwest of the site.

There are no other known cultural features at or in the immediate vicinity of the proposed project.

3.3 Existing and Historic Land Use

Existing and Previous Uses of the Subject Property and Adjoining Lands: As previously indicated, the subject property has been the site of a commercial packaging manufacturing facility since the early 1980s. Prior to the existing development, the subject property was reportedly undeveloped farmland.

The current and recent historical land use in the general vicinity of the subject property is a mixture of residential and commercial development.

Ownership of Adjoining Properties: A property location plan of the study area depicting the subject and adjoining properties is provided as Figure 3. The properties adjoining the subject property are identified on this figure and the property identification number (PID) for each of these adjoining land parcels is provided below in Table 1. Land ownership information for the abutting land parcels is not provided in this table in consideration of Provincial privacy related regulations, guidelines and policies.

Table 1: PID Numbers for Properties Abutting the Thermalite Site

Drawing No.	PID
1	00845438
2	70371265
3	70201751
4	00844829
5	01050392
6	70622600

Type and Extent of Any Known or Suspected Contamination Resulting from Previous Use of the Subject Property or Adjoining Property: The NBDELG maintains a PID-based database of environmental information pertaining to petroleum storage tank registrations and removals; historical solid waste landfill sites; PCB storage facilities; Ministerial orders; and contamination remediation files. It should be noted that the NBDELG petroleum storage tank database only goes back to 1987, and therefore information pertaining to any petroleum storage tank registrations and removals prior to this date is not available from NBDELG. Registration is only mandatory for tanks with a capacity in excess of 2000 L. Furthermore, it is noted that the NBDELG remediation database was not established until about the mid-1990s.

The Land Gazette feature of the SNB Real Property Information Website was used to screen the subject and adjoining properties for the presence of any environmental notices pertaining to the above noted property-based environmental information maintained by NBDELG. With the exception of PID 70410089 which was identified as having petroleum storage tank information in the NBDELG petroleum storage and handling database, the results of the above noted screening did not reveal any information pertaining the subject property.

Concerning the adjoining properties, a petroleum storage environmental notice was noted for the adjoining property to the east identified as PID 00844829 and owned by Cape Bald Packers Ltd. The presence of an NBDELG remediation file was also flagged for this property. Finally, it is noted that

the presence of an NBDELG remediation file was also flagged for another property adjoining the east side of the site identified as PID 70622600 and owned by the Village of Cap-Pele. The latter property contains a treatment lagoon for the central municipal wastewater collection and treatment system. No other environmental notices were identified under the Land Gazette feature for the properties adjoining the Thermalite Site.

A property-based environmental information request was submitted to NBDELG concerning the two above noted properties which adjoin the subject property. A copy of the NBDELG response to this request is provided in Appendix 3.

The results of the records review indicated that a total of six underground storage tanks (USTs) ranging in capacity from 2270 L to 14,000 L were removed from PID 00844829 in 1988, 1989 and 1999. The above noted tanks were of single wall steel or fiberglass reinforced plastic (FRP) type construction and the substance stored was listed as gasoline or unknown. An NBDELG remediation file related to petroleum contamination identified during the 1999 UST removals was opened in September 1999. The current status of the remediation file is listed as "Closed – 1999 Tier 2 site specific remedial criteria achieved – conditional closure". There were no third-party contaminant impacts associated with the above noted contamination, and the conditional closure relates to the presence of a potable water well exclusion zone which was defined for a portion of the property (i.e. former pump island and tank field areas). Concerning PID 70622600, the results of the records review indicate that this property is a third-party property associated with petroleum hydrocarbon contamination on a portion of PID 70308580 (former Ecole Aboiteau property – 40 chemin Acadie). An NBDELG remediation file for the source property identified as a portion of PID 70308580 was opened in July 1987. The current status of the file is listed as "Closed - 2003 Tier III remedial criteria achieved – conditional closure". This conditional closure also relates to the presence of a potable well exclusion zone on the contaminant source property. It is noted that no remediation was required on PID 70622600 or other third-party impact properties, as groundwater monitoring results indicated that any contaminant impacts on these properties were within the applicable Tier 1 regulatory screening criteria.

Therefore, concerning the petroleum hydrocarbon contamination related to the two above noted properties which adjoin the Thermalite property, the results of the NBDELG records review indicated that the NBDELG remediation files related to these properties have been closed. The closing of a remediation file represents a formal acknowledgement from the Minister of Environment that the contamination has been successfully remediated and/or risk managed in accordance with NBDELG requirements and guidelines.

4 Summary of Environmental Impacts

Since the portion of the subject property which contains the Thermalite facility is currently fully developed for it intended use; the water supply source (i.e. Well #1) and the required infrastructure for the proposed well testing activities currently exist; and the requirement for additional disturbances including well drilling is not anticipated, interaction with the environment during the implementation of the WSSA will be minimal. The proposed undertaking will not involve any new construction and is limited to hydrogeological pump testing to assess the sustainable yield of the existing Well #1 followed by the continued operation of the water source in accordance with current practices, other than revising the pumping rate and/or schedule if required, pending the possible future addition of a third daily work shift. As such, potential environmental impact considerations associated with the project include sediment and erosion control as required during the pump test and protection of groundwater quality during the operation and maintenance phase of the project. Concerning potential socio-economic impacts, it is expected that the project will have a positive effect on the local economy as the completion of the work will permit the future economic growth of the Thermalite facility which currently provides full and part-time employment for approximately 80 persons.

Potential accidents, malfunctions and unplanned events during all project phases include hazardous materials spills (e.g. petroleum spills/leaks from well pump housings, etc.), fires and failure of sedimentation and erosion control structures.

Concerning the potential effects of the environment on the project, it is noted that sustainable well yields are generally expected to decrease in the future in response to diminishing groundwater supplies which is one of the predicted adverse effects of climate change in the province (NBDELG, 2019).

A summary of the interpreted project related environmental interaction with key valued environmental components (VECs) for the pump testing and operation phases of the project in addition to potential accidents, malfunctions and unplanned events is provided in Table 2 which follows **Section 10.0** of this report. A qualitative rating system was employed as outlined below to assist with the assessment which was based on the professional judgement and experience of the project team in addition to our current understanding of the project.

Rating	**Interpretation**
0	-No interaction with this VEC is anticipated;
1	-Interaction occurs, but it would not be expected to result in a significant effect even without mitigation; or the interaction would not be expected to result in a significant environmental effect upon the implementation of suitable mitigation measures (e.g. typical environmental “best practices”, project specific mitigation, etc.); and,
2	-Interaction occurs and may result in an environmental effect of concern even with mitigation (this would typically require compensation for habitat loss, etc.).

As indicated in Table 2, mitigation measures will be required for some potential impact categories (e.g. sedimentation and erosion control) as detailed in **Section 5.0**.

5 Summary of Proposed Mitigation

A summary of the proposed mitigation efforts associated with the undertaking are outlined herein. A tiered approach was utilized in developing the project mitigation measures as suggested in the technical guide to EIA in New Brunswick. Under this approach, environmental impact avoidance opportunities are implemented wherever possible. If it is not possible or practical to avoid some degree of environmental impact, impact reduction measures are stipulated. Finally, in occasional instances where more extensive impacts are unavoidable and justifiable (e.g. public good, etc.), compensation measures are proposed.

Due to the nature of the proposed project and the existing environment (i.e. developed site), the project-environment interaction requiring mitigation measures will be limited to a few VECs as previously indicated. It is expected that there will be no significant residual adverse environmental impacts if the mitigation measures outlined herein are implemented.

The main aspects of the work that *may require* mitigation during the pump testing and/or operation and maintenance of the well include erosion control (re: suspended solids runoff); potential spills (e.g. fuel or oil leak from equipment) and related impacts on groundwater quality/human health; fires; and effects of the environment on the project. These will be mitigated as follows:

Suspended Solids: As described in the Step 1 WSSA application (Appendix 1), during the Step 2 WSSA pump testing of Well #1 it is anticipated that the internal plant plumbing will be configured such that the plant water requirements will be separated off and the remainder of the clean water flow will be allowed to drain to waste. If possible, the plant plumbing will be configured such that the unused water during the constant rate pump test will discharge to an existing stormwater drain inside the plant. If this approach is utilized, it is expected that no sedimentation and erosion control measures will be required as the discharge water will not come in contact with soil.

If it is not possible to discharge to an existing stormwater drain inside the plant during the pump test, it is anticipated that a discharge line will be used to convey the clean pumped groundwater outside the plant where the runoff will be discharged to the environment. Any external discharge point will be situated a suitable distance away from the well to avoid artificial groundwater recharge during the pump test. Prior to commencing the pump test, suitable erosion control structures (e.g. silt fences, check dams, etc.) will be put in placed in ditches and other locations as required downstream of the point of discharge for sediment and erosion control. All erosion control structures will be maintained for the duration of the pump testing, as required.

Hazardous Materials Spills: Spills (if any) will be addressed by applicable regulatory requirements (e.g. notification and response). On-site equipment related to the pump testing and operation of the well (e.g. submersible well pump) will be required to be in good condition and free of any known fluid leaks. During the operational phase of the well, a licensed well drilling contractor will also be retained to complete any necessary future well maintenance related work (e.g. replacement of well pump, etc.).

Fires: Under existing management policy, smoking is not permitted within the Thermalite plant. Smoking will also not be permitted during the completion of the Step 2 WSSA of the existing well.

Portable fire extinguishers will also continue to be made available within the plant building over the operational life of the well.

Effects of the Environment on the Project: Over the long term, the sustainable yield of the well may decrease due to adverse effects of climate change. As such, if the future plant water demand exceeds the regulated threshold of 50 m^3/day (7.6 Igpm) as a result of an increase in the workforce/plant production capacity, it is recommended that water levels, water quality information and other operational data be collected for the pumping well and any active observation wells on a regular basis. Concerning water quality monitoring, as a minimum, it is recommended that the groundwater quality monitoring program initially include the collection of samples from the pumping well for microbiological (coliforms and E. coli), general chemistry, trace metal and petroleum hydrocarbon parameter analysis on an annual basis for comparison with the applicable potable water guideline criteria. The scope and frequency of the water quality monitoring program could be reduced with time, pending the receipt of favorable results. The above noted operational monitoring data should be periodically reviewed by a qualified hydrogeologist and the pumping related parameters (i.e. pumping rate and schedule) revised, if warranted, based upon this review.

Other: Following the completion of the EIA determination, the proponent commits to operating the plant water system in accordance with any future Approval to Operate which may be issued by NBDELG if the plant water demand exceeds the regulated threshold of 50 m^3/day (7.6 Igpm) at some point in the future due to an increase in production.

In the event of a power outage, it is noted that production at the plant ceases until power is restored.

6 Public and First Nations Involvement

The minimum public and First Nations consultation requirements outlined in Appendix C of the Provincial EIA registration guide will be followed (NBDELG, 2018). Stakeholders include the owners of all properties which adjoin the existing Thermalite Facility (i.e. the subject property). A public notice containing the information specified in the registration guide will be delivered to the above noted stakeholders in addition to the local Member of the Legislative Assembly (MLA) and the Village of Cap-Pelé subsequent to registering the undertaking under the Provincial EIA process.

Although no First Nation communities are located within the immediate study area, a project notification/information letter will be prepared and submitted to nearby First Nation communities (i.e. Fort Folly First Nation and Bouctouche First Nation) and the Aboriginal Affairs Secretariat in accordance with provincial Duty to Consult requirements.

Following the completion of the consultation process, a summary report on the public and First Nation involvement will be prepared and submitted to NBDELG in accordance with the EIA process requirements.

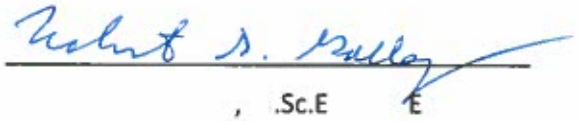
7 Approval of the Project

The following permits and approvals will be required for the proposed project:

- Authorization/conditional approval of the undertaking under the Provincial EIA requirements as outlined in NB Regulation 87-83.
- Project approval from NBDELG under the Water Supply Source Assessment (WSSA) process to proceed with a Step 2 WSSA Hydrogeological Assessment of the existing water supply (Well #1) under the WSSA process (see completed Step 1 WSSA application form in Appendix 1).

8 Funding

All project funding will be provided by Thermalite Products Inc.



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10 References

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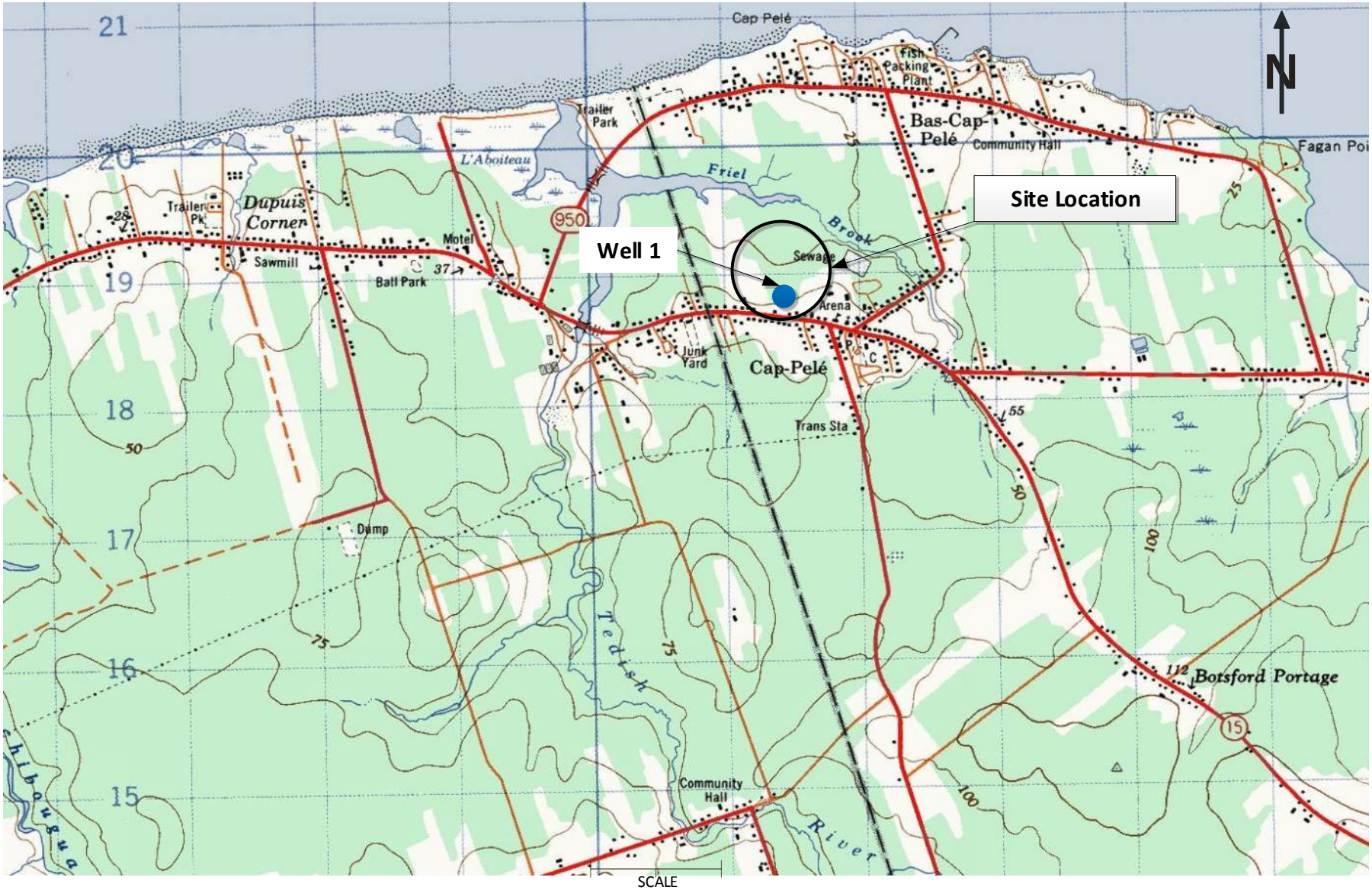

This drawing is not to be scaled

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Project Title	EIA REGISTRATION – THERMALITE GROUNDWATER SUPPLY SOURCE
Dwg. Title:	SITE LOCATION PLAN
Drawn By: AMP	Project No. MON-00252430-A0
Dwg. Standards Ckd. By:	Dwg. No. FIGURE 1
Designed By:	Dwg. Design Ckd. By: / Rev. No.

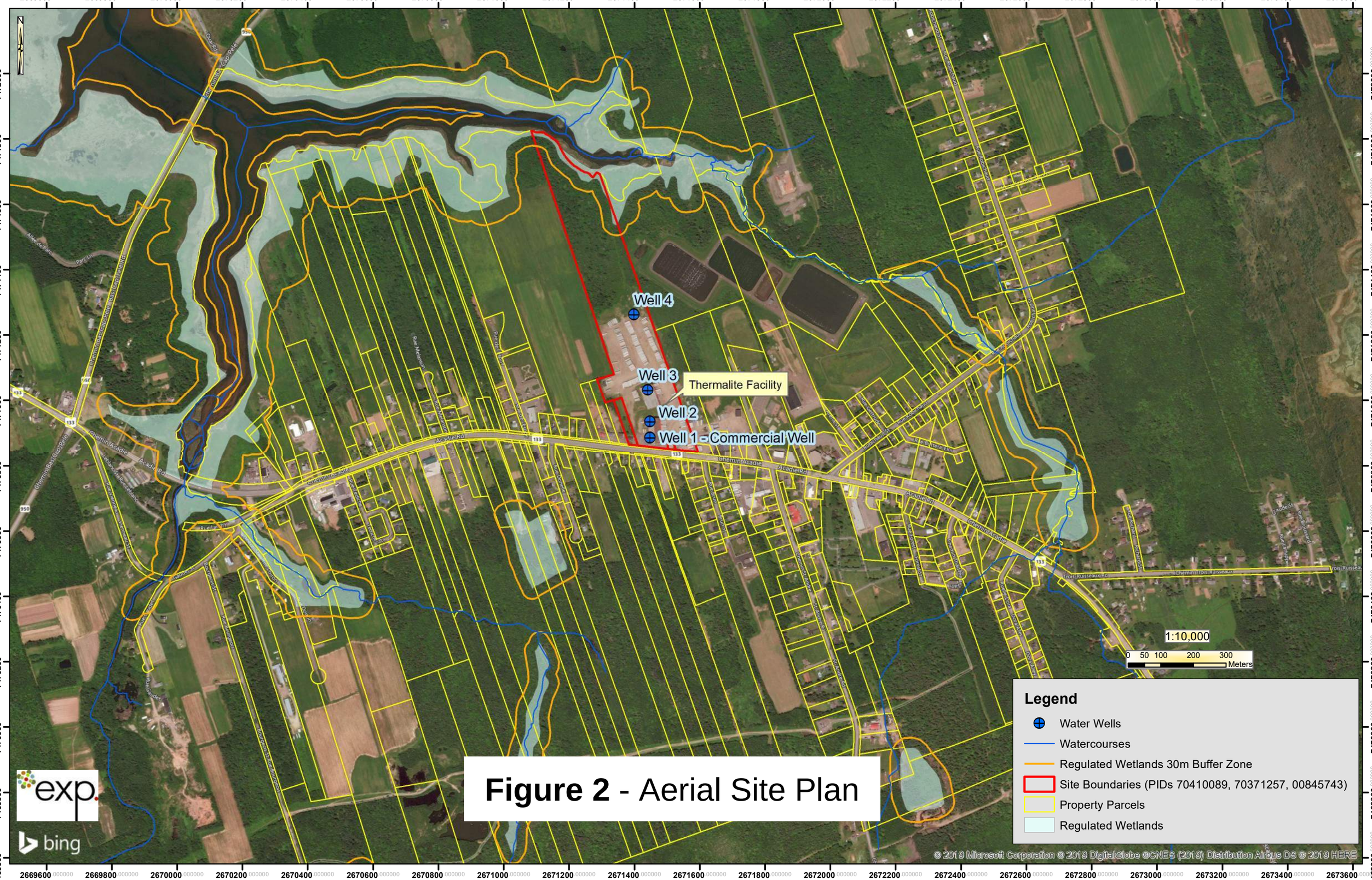

Figure 2 - Aerial Site Plan

Service New Brunswick

Service Nouveau-Brunswick

N

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Project Title
EIA REGISTRATION – THERMALITE GROUNDWATER SUPPLY SOURCE

Dwg. Title
OWNERSHIP OF ADJOINING PROPERTIES

Drawn By: AMP	Project No. MON-00252430-A0	
Dwg. Standards Ckd. By:	Dwg. No. **FIGURE 3**	
Designed By:	Dwg. Design Ckd. By:	Rev. No.

Table 2: Project-Environment Interaction Matrix

Component	Air Quality	Sound Quality	Groundwater	Surface Water	Fish and Fish Habitat	Wildlife/Habitat	Species at Risk	Wetlands	Heritage/ Archaeology	Land Use	Land Use by First Nations	Human Health	Transportation and Navigation
Hydrogeological Pump Test Activities													
Pump Testing	0	0	0	1	0	0	0	0	0	0	0	0	0
Operation and Maintenance of Well													
Well Maintenance	0	0	1	0	0	0	0	0	0	0	0	1	0
Well Monitoring	0	0	1	0	0	0	0	0	0	0	0	1	0
Potential Accidents/Malfunctions/Unplanned Events													
Hazardous Material Spills	0	0	1	0	0	0	0	0	0	0	0	1	0
Erosion & Sediment Control Failure (Pump Test Only)	0	0	0	1	0	0	0	0	0	0	0	0	0
Fires	1	0	0	0	0	0	0	0	0	1	0	1	1

Appendix 1 –
NBDELG Step 1 WSSA Application

Thermalite Products Inc.

Water Supply Source Assessment

WSSA Initial Application

1) *Name of proponent:* Mr. Denis Landry, Thermalite Products Inc., 2598 Acadie Rd, Cap-Pele. NB, E4N 1E3.

2) *Location of Drill Targets (including property PID and purpose of the proposed water supply?* The existing Thermalite plant in Cape Pele has four existing water supply wells located as shown in the attached Figure 1. The wells all appear to be located on PID 70410089 and currently only Well 1 is in use. The well water is used for potable uses in the plant and industrial process water (cooling molds, making gel packs, and make up water for the building boiler system). Copies of available well logs are attached; however, it is not currently known which wells correspond to which well logs. No new wells will be drilled as part of this project.

3) *Required water quantity (in m^3/day) and/or required pumping rate:* Currently the plant uses one well with a pump capacity estimated at 6.6 igpm or 43 m^3/day. The well is presently in use for two 8-hour shifts, five days a week. It is anticipated; however, that potentially in the future, the plant could run three shifts a day and require up to 20 igpm, depending on requirements. This translates to a potential future estimated need of approximately 20 igpm or 131 m^3/day. This would depend on future market demands.

4) *List alternate water supply sources in area (including municipal systems):* The closest existing municipal groundwater supply is approximately 25 km west of the Thermalite facility in Shediac, NB. On site groundwater wells represent the safest and most economical of the potential potable water sources.

5) *Discuss area hydrogeology as it relates to the project requirements:* The proponent's site is located at 2598 Acadie Rd, Cap-Pele, NB and the general location and layout of the existing plant is shown in Figure 1. The plant is located on parcel PID 70410089. Based

on an air photo review, the existing land use in the general area is industrial, commercial and residential. The existing development in the area utilizes private wells, however, a municipal sewage system is present. The site and adjacent properties are serviced with municipal sewers.

Geology and Hydrogeology: A well log search was conducted using the NB Environment and Local Government well log database for wells constructed within a 200-meter radius of PID 70410089, the parent PID. The well log search provided 14 well logs.

The surficial overburden at the site is a brown sandy till of approximately 1.5 to approximately 8.5 meters (5 to 28 feet) in thickness. The overburden is not used for ground water supplies in the area.

The bedrock in the area is mapped as Late Carboniferous age sedimentary rocks composed of grey to brownish red sandstone, conglomerate and silt/mudstone which also forms the local bedrock aquifer. The specific formation beneath the site is the Richibucto Formation of the Pictou Group. The bedrock is known to be relatively transmissive (readily conducts the flow of ground water).

Based on common knowledge of the area, the bedrock aquifer has been successfully developed for both municipal and private residential wells by many individuals over the general area. The general conditions found in the aquifer are suitable for water supply development. Local well drillers with knowledge of the area confirmed the potential for water supply development. In some of the local areas, zones of the aquifer can be quite soft and prone to caving, a condition that requires careful well logging and casing or lining of those soft zones. Longer than typically expected casing lengths are present in some of the well logs provided by the well log search, possibly indicating the presence of soft zones in the local sandstone aquifer.

NB Environment Well Log Database: The review of the NB Environment well log database for wells constructed within a 200-meter radius of PID 70410089 provided the following information relating to the bedrock aquifer (Table 1). A total of 14 well logs were returned in the database search

Table 1: 200 Meters Search Radius

Well Depth (feet)	Estimated Yield (igpm)	Depth to Bedrock (feet)	Casing Length (feet)
Average: 113.2	Average: 27.3	Average: 13.4	Average: 44.0
Median: 111	Median: 20	Median: 12.5	Median: 40.0
Minimum: 65	Minimum: 5	Minimum: 5	Minimum: 20
Maximum: 180	Maximum: 60	Maximum: 28	Maximum: 90

As can be seen from the above information the 14 well logs found in the database for wells in this area have an average depth of 113.2 feet with an estimated average yield of approximately 27.3 igpm. The average estimated yield of 27.3 igpm and the observed median yield of 20 igpm are significantly in excess of the typical domestic well instantaneous needs of approximately 3 igpm. The minimum yield observed was 5 igpm in an 80 foot deep well. The maximum yield observed in the well logs was 60 igpm which was observed in a 140 foot deep well. In general terms, the existing wells in this area have what can be considered to be above average yields. Low yield wells (i.e. less than 3 igpm) will be infrequent at this location. Out of the 14 well logs located within 200 meters of PID 70410089 no well had an estimated safe yield of less than 3 igpm. The aquifer can be considered to have potential for high yield groundwater supplies.

NB Environment Well Water Chemistry Database: A search of the NB Environment well chemistry database was conducted for a radius of 250 meters around PID 70410089. The precise locations of the wells from which the ground water chemistry was obtained are not available due to right to privacy considerations for the property owners. The results from the data available in the NB Environment database are provided in Table 2 which follows. A total of seven sample records were provided for inorganic chemistry as a result of the database search. The average value of the measured result and the Canadian Drinking Water Quality Guideline (CDWQG) are included in the table for the purpose of comparison. Any parameter which exceeds the Canadian Drinking Water Quality Guideline concentration is bolded and shaded for ease of recognition in the data table.

Table 2

CDWQG = Canadian Drinking Water Quality Guideline

NBDELG Groundwater Chemistry Database

Parameter	ALK_T (mg/L)	Al (mg/L)	As (µg/L)	B (mg/L)	Ba (mg/L)	Br (mg/L)	COND (µSIE/cm)	Ca (mg/L)	Cd (µg/L)
	167	0.025	1.5	0.01	0.671	0.1	464	66.6	0.5
	98	0.025	1.5	0.02	0.01	0.1	284	0.1	0.5
	99.1	0.025	1.5	0.026	0.301	0.1	571	55.2	0.5
	79.9	0.025	1	0.2	0.078	0.1	225	38.1	0.1
	94.6	0.025	1	0.2	0.29	0.1	210	29.2	0.5
	113	0.025	1.5	0.2	0.752	0.1	478	52.4	0.5
	32.1	0.025	1.5	0.2	0.029	0.1	164	14.7	0.5
Mean	**97.7**	**0.025**	**1.4**	**0.122**	**0.304**	**0.1**	**342**	**36.6**	**0.4**
CDWQG			**<10**	**<5.0**	**<1.0**				**<5.0**

Parameter	Cl (mg/L)	Cr (µg/L)	Cu (µg/L)	E_coli P/A (P/A)	F (mg/L)	Fe (mg/L)	HARD (mg/L)	K (mg/L)	Mg (mg/L)
	45.1	14	10	Ab	0.1	0.107	205	2.3	9.44
	23.7	10	13	Ab	0.1	0.083	0.67	0.4	0.1
	96.5	10	41	Ab	0.1	0.029	159	1.5	5.29
	10.6	20	10	Ab	0.1	**2.83**	113.4	0.66	4.44
	7.55	10	10	Ab	0.1	**0.675**	91.4	0.97	4.5
	68.7	13	10	Ab	0.1	**0.71**	158	1.47	6.67
	18.6	10	25	Ab	0.1	0.05	47	1.59	2.48
Mean	**38.7**	**12**	**17**		**0.10**	**0.641**	**110.6**	**1.27**	**4.70**
CDWQG	**<250**	**<50**	**<1000**		**<1.5**	**<0.3**		.	

Table 2

CDWQG = Canadian Drinking Water Quality Guideline

NBDELG Groundwater Chemistry Database

Parameter	Mn (mg/L)	NO2 (mg/L)	NO3 (mg/L)	NOX (mg/L)	Na (mg/L)	PH (pH)	Pb (µg/L)	SO4 (mg/L)	Sb (µg/L)
	0.048	0.05	0.05	0.05	13.4	8	1	6.92	1
	0.005	0.05	0.05	0.05	64.8	7.54	1.1	6.28	1
	0.011	0.05	3	3	55.7	7.57	1.4	21	1
	0.13	0.05	1.02	1.07	10.4	7.32	7	4.87	1.1
	0.052	0.05	0	0.05	8.9	8.14	1	4.62	1
	0.088	0.05	0.05	0.05	16.3	8.03	1	7.43	1
	0.005	0.05	1.72	1.73	10.4	**6.9**	1	10.7	1
Mean	**0.048**	**0.05**	**0.84**	**0.86**	**25.70**	**7.64**	**1.9**	**8.83**	**1.01**
CDWQG	**<0.05**	**<10**	**<10**	**<10**	**<200**	**7.0-10.5**	**<10**	**<500**	**6**

Parameter	Se (µg/L)	TC-P/A (P/A)	TURB (NTU)	Tl (µg/L)	U (µg/L)	Zn (µg/L)	TDS (mg/L)
	1.5	Ab	**1.37**	1	16	5	244
	1.5	Ab	0.2	1	0.5	5	155
	1.5	Ab	0.2	1	2.6	5	308
	1	Ab	**5.7**	1		10	
	1	Ab	**6.3**	1		10	
	1.5	**Pr**	**4.3**	1		26	222
	1.5	Ab	0.7	1		12	86
Mean	**1.4**		**2.7**	**1**	**6.4**	**10**	**203**
CDWQG			**<1.0**		**<20**	**<5000**	**<500**

Elevated concentrations of iron and manganese are common in many groundwater aquifers in New Brunswick and some elevated concentrations are present in this bedrock aquifer in this general location. Out of the seven chemistry sample results available, three exceeded the guideline for iron and the same three samples also exceeded the guideline for manganese. Such elevated concentrations are generally due to natural conditions within the aquifer. The Canadian Drinking Water Guidelines for iron and manganese are aesthetic objectives, not based on health considerations. Iron and manganese can cause staining of plumbing fixtures and laundry and may be associated with smells imparted to the water. Iron and manganese can usually be readily removed by commercial water softeners at the hardness observed in this water.

A total of four out of the seven chemistry records available had elevated turbidity present in the samples. The elevated levels of turbidity may be related to the relative newness of the wells and they may not have had enough time, or use, to clear naturally. The water samples in the database are provided from the water well testing certificates which are provided by the well drilled immediately after the well has been drilled. As a result, most of the analytical results come from new wells. Most new wells clear naturally with time and use. At levels in excess of 5 NTUs turbidity may become noticeable to consumers and therefore, objectionable. The turbidity may be the result of elevated concentrations of iron and or manganese or the presence of particulate in the water. In either case, turbidity can be treated by water softeners and/or particulate filters.

Microbiological Results: A total of seven sample results were available in the data set for E. coli analysis. Out of these results, no well had a detection of E. coli. A total of seven sample results were available for total coliform analysis and out of these seven results, one well had a detection of total coliform. Total coliforms are natural soil bacteria and are commonly present in well water systems, particularly associated with elevated turbidities. Such detections are usually easily treated by shock chlorination of the wells and associated plumbing systems.

In general terms the groundwater chemistries found in the NBDELG database are not unusual for this area and reflect natural aquifer conditions. The elevated levels of turbidity observed in some of the wells were probably related to the newness of the wells. All other

parameters measured, other than those discussed above, had concentrations below the Canadian Drinking Water Quality Guidelines.

6) *Outline proposed hydrogeological testing and work schedule:* Thermalite Products operates for two eight hour shifts a day, five days a week with the production well being used intermittently during those periods. No scheduled shutdowns are anticipated. This presents difficulties in conducting conventional pump tests. Based on discussions with plant management it should be possible to set up the water taking so that the flow is directed through a flow meter, the plant requirements are separated off and the remainder of the flow will drain to waste. It is hoped that this will generate a constant flow in the 20 igpm range, the water taking will simply be left on overnight between shifts. The pump test will be started on a Wednesday morning (following an eight-hour shut down Tuesday night) and run through the last shift on the following Friday. The plant is shut down on Saturday and Sunday and the well will be allowed to recover over this period. Water levels will be recorded by installing pressure transducers in the Well 1 (the pumping well) and in the two closest unused wells (Well 2 and Well 3) as observation wells and the water levels measured every five minutes during the test and following recovery. A water quality sample will be collected from Well 1. As the well has been in use for several years, no trends in water quality changes are anticipated during the pump test.

7) *Identify any existing pollution or contamination hazards within a minimum radius of 500 m from the proposed drill targets. Historical land use that might pose a contamination hazard (i.e. tannery, industrial, disposal, etc.) should also be discussed:* An examination of Figure 1 shows at least three lagoons located northeast of the property. These lagoons appear to be located down flow gradient from the Thermalite wells based on area topography and predicted groundwater flow directions. Two properties situated within the 500 m radius shown in Figure 1 are flagged as having an associated NB remediation file. These properties are shown in Figure 1. The properties are identified as PID 70622600 (Village of Cap Pele) and PID 00844829 (Cape Bald Packers). Thermalite staff are not aware of any water quality problems arising from existing pollution or contamination hazards in the area.

8) *Identify any groundwater use problems (quantity or quality) that have occurred in the area.* None known at current time.

9) *Identify any watercourse(s) (stream, brook, river, wetland, etc.) within 60 m of the proposed drill targets.* Please see attached drawing, there are no surface watercourses within 60 meters of any of the existing wells.

10) *Identify site supervisory personnel involved in the source development (municipal officials, consultants and drillers:* Mr. Doug Craig (Craig Hydrogeologic Inc., 506-659-3064), Mr. Robert Gallagher, P. Eng., M.Sc.Eng. (EXP Environmental Engineering, 506-857-8889), and Mr. Denis Landry (Thermalite Products Inc., 506-577-4351).

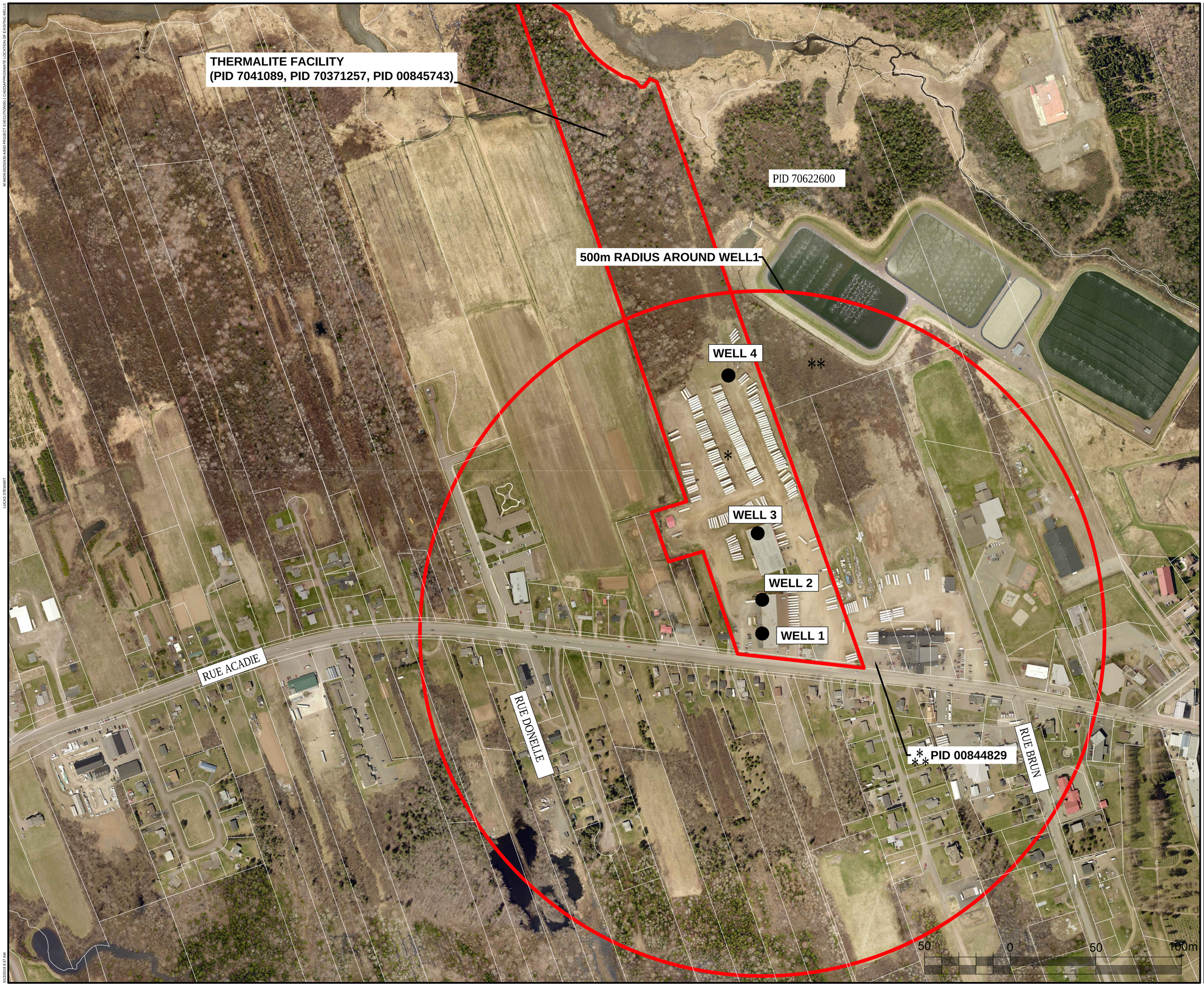
11) Attach a 1:10000 map and/or recent air photo clearly identifying the following:

- *proposed location of drill targets and property PID*
- *Domestic or production wells within a 500-m radius from the drill target(s)*
- *Any potential hazards identified in question 7.*

Please see attached Figure 1. The existing wells are identified as Well 1 through Well 4 on the drawing. As mentioned previously, only Well 1 is currently in use. The Village of Cape Pele does not have a municipal water supply and it should be assumed that every property with a structure within the 500-meter radius of Well 1 probably has at least one water supply well.

12) *Attach a land use/zoning map of the area (if any). Superimpose drill targets on this map:* The zoning map is attached. The Thermalite property is zoned industrial.

13) *Contingency plan for open loop earth energy systems:* Not Applicable



M:\MON-00252430-A0\00 PROJECT EXECUTION\Rdd\1 CAD\DAPPROXIMATE LOCATION OF EXISTING WELLS

LUCAS STEWART

5/13/2019 9:37 AM

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No.	Issue	Date

LEGEND

* - NDELG PETROLEUM STORAGE AND HANDLING NOTICE

** - NBDELG REMEDIATION FILE NOTICE

No.	Revision	Date

PRELIMINARY

Professional Seal(s)

Drawn By:	JS
Dwg Standards Ckd By:	
Designed By:	RSG
Design Checked By:	
Scale:	

Project Title

EIA REGISTRATION
THERMALITE
GROUNDWATER SOURCE

Dwg. Title

APPROXIMATE LOCATION OF EXISTING WELLS

Project No. MON-00252430-A0

Dwg. No. **FIGURE 1**

Rev. No. ----

 A1

Détroit de Northumberland

N
W E
S

CARTE DE ZONAGE de CAP-PELÉ

Proposé
No. A-005
Annexe A

Cap-Pelé

SOUTHEAST Regional Service Commission
Commission de services régionaux SUD-EST

Légende

Zonage

R	Résidentielle
RR	Résidentielle rurale
CG	Commerce général
CC	Commerce central
SC	Services collectifs
IL	Industries légères
DR	Développement des ressources
PC	Protection Côtière
AI	Aménagement intégré
PA	Projet d'aménagement
EIR	Exploitation intensive des ressources
RE	À risque pour l`environnement
ENM	Élévation du niveau de la mer

ÉBAUCHE
19-02-2019

0 235 470 940 1,410 1,880 Mètres

New Nouveau Brunswick

Well Driller's Report

Environment and Local Government

Report Number **92397900**
Well Tag ID **0023979**
PID **N/A**
Latitude **N/A**

Longitude **N/A**

Date printed **15-Mar-2017**

Well Owner(s)

Downeast Plastics Ltd

Address **2598 ch Acadie**
Cap-Pelé, NB
E4N 1E3

Telephone Nbr **(506) -**

Fax Nbr **(506) -**

Well Location

Drilled by **EASTERN WELL DRILLERS LTD., Lic 67 (Paul LeBlanc, Lic. 297)**

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	**New Well**	**Rotary**	**25-Sep-2001**

Casing Information

Casing above ground **2ft**

Drive Shoe Used? **Yes**

Well Log	Casing Type	Diameter	From	To	Slotted?
92397900	Steel	8 inch (8.in)	0ft	63ft 6in	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	**0ft**	**100.0 igpm**	**1hr**	**17ft**	**100.0 igpm**	**No**	**0.0 igpm**

(BTC - Below top of casing)

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A
Qty **0.0** igal

Pump Installed
N/A
Intake Setting (BTC)
0ft

Driller's Log

Overall Well Depth
253ft

Bedrock Level
0ft

Well Log	From	To	Colour	Rock Type
92397900	0ft	14ft	Brown	Fill
92397900	14ft	23ft	Brown	Clay
92397900	23ft	45ft	Brown	Sandstone
92397900	45ft	90ft	Grey	Sandstone
92397900	90ft	91ft	Brown	Clay and Shale
92397900	91ft	132ft	Grey	Sandstone
92397900	132ft	145ft	Brown	Sandstone
92397900	145ft	164ft	Grey	Sandstone
92397900	164ft	165ft	Brown	Clay and Shale
92397900	165ft	170ft	Brown	Sandstone
92397900	170ft	191ft	Brown	Sandstone
92397900	191ft	239ft	Grey	Sandstone
92397900	239ft	245ft	Brown	Clay and Shale
92397900	245ft	248ft	Brown	Sandstone
92397900	248ft	253ft	Brown	Clay and Shale

Water Bearing Fracture Zone

Well Log	Depth	Rate
92397900	108ft	30.0 igpm
92397900	132ft	20.0 igpm
92397900	150ft	20.0 igpm
92397900	206ft	30.0 igpm

Setbacks

There is no Setback information.

Sample Information

There is no related sample information.

The information shown was entered using the Groundwater Information Management System (GWIMS)

New Nouveau Brunswick

Well Driller's Report

Environment and Local Government

Report Number **7465**
Well Tag ID **0027464**
PID **70371273**
Latitude **N/A**
Longitude **N/A**

Date printed **15-Mar-2017**

Well Owner(s)

Downeast Plastics Ltd.

Address **2598, chemin Acadie**
Cap-Pelé, NB
E4N 1E3

Telephone Nbr **(506) -**
Fax Nbr **(506) -**

Well Location **2598 CHEMIN ACADIE, CAP PELE, NB, E4N 1E3**

Drilled by **CAP-PELÉ WELL DRILLING, Lic 5287**

Well Use	Work Type	Drill Method	Work Completed
Non-Drinking Water, Industrial	**New Well**	**Cable Tool**	**25-Jul-2003**

Casing Information

Casing above ground **3ft**

Drive Shoe Used? **Yes**

Well Log	Casing Type	Diameter	From	To	Slotted?
7465	Steel	8 inch (8.in)	0ft	21ft	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Pump	**0ft**	**0.0 igpm**	**0hr**	**0ft**	**0.0 igpm**	**No**	**0.0 igpm**

(BTC - Below top of casing)

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A
Qty **12.0** igal

Pump Installed
N/A
Intake Setting (BTC)
0ft

Driller's Log

Well Log	From	To	Colour	Rock Type
7465	0ft	1ft	Brown	Fill
7465	1ft	10ft	Brown	Sand
7465	10ft	30ft	Brown	Fine Sandstone
7465	30ft	45ft	Grey	Medium Sandstone
7465	45ft	114ft	None	None

Overall Well Depth
114ft

Bedrock Level
0ft

Water Bearing Fracture Zone

Well Log	Depth	Rate
7465	28ft	100.0 igpm
7465	110ft	400.0 igpm

Setbacks

There is no Setback information.

Sample Information

There is no related sample information.

The information shown was entered using the Groundwater Information Management System (GWIMS)

Driller's Comments

Pump for 1 hr at 250 GPM went down 8 ft.

Thermalite Cape-Pele

200 meter radius around PID 70410089

Well Depth (Feet)	**Estimated Yield** (igpm)	**Depth to Bedrock** (Feet)	**Casing Length** (Feet)	
75	5	15	20	
120	35	5	27	
140	60	5	50	
120	45	5	26	
88	5	16	20	
80	15	10	40	
140	40	6	90	
180	12	17	40	80-140 slo
160	55	8	80	
131	50	22	25	
100	10	8	80	
65	20	28	28	
84	10	23	41	
102	20	20	49	
Well Depth (Feet)	**Estimated Yield** (igpm)	**Depth to Bedrock** (Feet)	**Casing Length** (Feet)	

Median	111	20	12.5	40	Median
average	113.2	27.3	13.4	44.0	AVERAG
max	180	60	28	90	max
min	65	5	5	20	min
count	14				

New Nouveau Brunswick

Environment

Report Number **13856**

Well Driller's Report

Date printed 2019/02/18

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	New Well	Rotary	09/15/2008

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
13856	Steel	6 inch	0ft	20ft	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	25ft	25 igpm	1hr	25ft	5 igpm	No	0 igpm
	(BTC - Below top of casing)						

Well Grouting

Well Log	Grout Type	From	End
13856	Bentonite	0ft	45ft

Drilling Fluids Used
None

Disinfectant
Bleach (Javex)

Qty 0 ig

Pump Installed
N/A

Intake Setting (BTC)
0ft

Driller's Log

Well Log	From	End	Colour	Rock Type
13856	0ft	3ft	Brown	Topsoil
13856	3ft	15ft	Brown	Fill
13856	15ft	40ft	Brown	Fine Sandstone
13856	40ft	75ft	Grey	Medium Sandstone

Overall Well Depth
75ft

Bedrock Level
0ft

Water Bearing Fracture Zone

Well Log	Depth	Rate
13856	40ft	5 igpm
13856	70ft	20 igpm

Setbacks

Well Log	Distance	Setback From
13856	75ft	Right of any Public Way Road

New Nouveau Brunswick

Environment

Report Number **25699**

Well Driller's Report

Date printed 2019/02/18

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	New Well	Rotary	04/11/2011

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
25699	Steel	6 inch	0ft	27ft	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	20ft	35 igpm	1hr	20ft	35 igpm	No	0 igpm

(BTC - Below top of casing)

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
Chlorine Pucks
Qty 0 ig

Pump Installed
N/A
Intake Setting (BTC)
0ft

Driller's Log

Well Log	From	End	Colour	Rock Type
25699	0ft	5ft	Brown	Overburden
25699	5ft	20ft	Brown	Shale and Claystone
25699	20ft	81ft	Grey	Soft Sandstone
25699	81ft	85ft	Brown	Shale and Claystone
25699	85ft	120ft	Grey	Sandstone

Overall Well Depth
120ft

Bedrock Level
0ft

Water Bearing Fracture Zone

Well Log	Depth	Rate
25699	31ft	12 igpm
25699	60ft	8 igpm
25699	88ft	15 igpm

Setbacks

Well Log	Distance	Setback From
25699	310ft	Right of any Public Way Road

New Nouveau Brunswick

Environment

Report Number **25700**

Well Driller's Report

Date printed 2019/02/18

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	New Well	Rotary	04/11/2011

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
25700	Steel	6 inch	0ft	50ft	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	15ft	60 igpm	1hr	15ft	60 igpm	No	0 igpm

(BTC - Below top of casing)

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
Chlorine Pucks
Qty 0 ig

Pump Installed
N/A
Intake Setting (BTC)
0ft

Driller's Log

Well Log	From	End	Colour	Rock Type
25700	0ft	5ft	Brown	Overburden
25700	5ft	23ft	Brown	Shale and Claystone
25700	23ft	39ft	Grey	Sandstone
25700	39ft	42ft	Grey	Sandstone and Gravel
25700	42ft	130ft	Grey	Sandstone
25700	130ft	135ft	Brown	Shale and Claystone
25700	135ft	140ft	Grey	Sandstone

Overall Well Depth
140ft

Bedrock Level
0ft

Water Bearing Fracture Zone

Well Log	Depth	Rate
25700	92ft	20 igpm
25700	40ft	5 igpm
25700	57ft	30 igpm
25700	75ft	10 igpm

Setbacks

Well Log	Distance	Setback From
25700	500ft	Right of any Public Way Road

New Nouveau Brunswick

Environment

Report Number **25701**

Well Driller's Report

Date printed 2019/02/18

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	New Well	Rotary	04/11/2011

Casing Information — Casing above ground — Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
25701	Steel	6 inch	0ft	26ft	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	12ft	45 igpm	1hr	12ft	45 igpm	No	0 igpm

(BTC - Below top of casing)

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
Chlorine Pucks
Qty 0 ig

Pump Installed
N/A
Intake Setting (BTC)
0ft

Driller's Log

Well Log	From	End	Colour	Rock Type
25701	0ft	5ft	Brown	Overburden
25701	5ft	10ft	Brown	Shale and Claystone
25701	10ft	120ft	Grey	Sandstone

Overall Well Depth
120ft

Bedrock Level
0ft

Water Bearing Fracture Zone

Well Log	Depth	Rate
25701	26ft	12 igpm
25701	57ft	8 igpm
25701	83ft	25 igpm

Setbacks

Well Log	Distance	Setback From
25701	400ft	Right of any Public Way Road

New Nouveau Brunswick

Environment

Report Number **28550**

Well Driller's Report

Date printed 2019/02/18

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	New Well	Rotary	10/22/2010

Casing Information	Casing above ground	Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
28550	**Steel**	**6 inch**	**0ft**	**20ft**	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	15ft	30 igpm	1hr	15ft	5 igpm	No	0 igpm
	(BTC - Below top of casing)						

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
Bleach (Javex)
Qty 0 ig

Pump Installed
N/A
Intake Setting (BTC)
0ft

Driller's Log

Well Log	From	End	Colour	Rock Type
28550	**0ft**	**4ft**	**Brown**	**Topsoil**
28550	**4ft**	**16ft**	**Brown**	**Fill**
28550	**16ft**	**40ft**	**Brown**	**Fine Sandstone**
28550	**40ft**	**88ft**	**Grey**	**Medium Sandstone**

Overall Well Depth
88ft

Bedrock Level
0ft

Water Bearing Fracture Zone

Well Log	Depth	Rate
28550	**65ft**	**4 igpm**
28550	**84ft**	**26 igpm**

Setbacks

Well Log	Distance	Setback From
28550	**90ft**	**Right of any Public Way Road**
Municipal Sewer Line		

New Nouveau Brunswick

Environment

Report Number **35386**

Well Driller's Report

Date printed 2019/02/18

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	New Well	Rotary	12/19/2017

Casing Information — Casing above ground — Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
35386	**Steel**	**6 inch**	**0ft**	**40ft**	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	33ft	15 igpm	1hr	33ft	15 igpm	No	0 igpm

(BTC - Below top of casing)

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
Chlorine pellets
Qty 0 ig

Pump Installed
N/A
Intake Setting (BTC)
0ft

Driller's Log

Well Log	From	End	Colour	Rock Type
35386	**0ft**	**10ft**	**Brown**	**Shale**
35386	**10ft**	**80ft**	**Grey**	**Sandstone**

Overall Well Depth
80ft

Bedrock Level
0ft

Water Bearing Fracture Zone

Well Log	Depth	Rate
35386	**59ft**	**12 igpm**

Setbacks

Well Log	Distance	Setback From
35386	**40ft**	**Right of any Public Way Road**
35386	**80ft**	**Center of road**

New Nouveau Brunswick

Environment

Report Number **35397**

Well Driller's Report

Date printed 2019/02/18

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	New Well	Rotary	05/02/2018

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
35397	Steel	6 inch	0ft	90ft	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	38ft	40 igpm	1hr	38ft	40 igpm	No	0 igpm

(BTC - Below top of casing)

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
Chlorine pellets
Qty 0 ig

Pump Installed
N/A
Intake Setting (BTC)
0ft

Driller's Log

Well Log	From	End	Colour	Rock Type
35397	130ft	140ft	Grey	Sandstone
35397	15ft	21ft	Grey	Sandstone and Shale
35397	0ft	6ft	Brown	Overburden
35397	6ft	15ft	Brown	Shale
35397	21ft	65ft	Grey	Sandstone
35397	65ft	78ft	Grey	Shale
35397	78ft	116ft	Grey	Sandstone
35397	116ft	130ft	Brown	Shale

Overall Well Depth
140ft

Bedrock Level
0ft

Water Bearing Fracture Zone

Well Log	Depth	Rate
35397	35ft	4.5 igpm
35397	59ft	7.5 igpm
35397	96ft	17.5 igpm
35397	115ft	23 igpm

Setbacks

Well Log	Distance	Setback From
35397	75ft	Right of any Public Way Road
35397	100ft	Center of road

New Nouveau Brunswick

Environment

Report Number **39488**

Well Driller's Report

Date printed 2019/02/18

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	New Well	Rotary	01/28/2016

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
39488	Steel	6 inch	0ft	40ft	
39488	PVC	5 inch	40ft	180ft	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	22ft	12 igpm	1hr	22ft	12 igpm	No	0 igpm

(BTC - Below top of casing)

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
Chlorine Pucks
Qty 0 ig

Pump Installed
N/A
Intake Setting (BTC)
0ft

Driller's Log

Well Log	From	End	Colour	Rock Type
39488	0ft	17ft	Brown	Shale
39488	17ft	20ft	Grey	Sandstone
39488	20ft	23ft	Brown	Shale
39488	23ft	52ft	Grey	Sandstone and Shale
39488	52ft	53ft	Grey	Shale
39488	53ft	73ft	Grey	Sandstone
39488	73ft	98ft	Brown	Shale
39488	98ft	107ft	Grey	Shale
39488	107ft	115ft	Grey	Sandstone and Shale
39488	115ft	135ft	Grey	Sandstone
39488	135ft	140ft	Brown	Shale
39488	140ft	171ft	Grey	Sandstone
39488	171ft	175ft	Brown	Shale
39488	175ft	180ft	Grey	Sandstone

Overall Well Depth
180ft

Bedrock Level
0ft

Water Bearing Fracture Zone

Well Log	Depth	Rate
39488	107ft	7 igpm
39488	165ft	5 igpm

Setbacks

Well Log	Distance	Setback From
39488	300ft	Right of any Public Way Road
39488	340ft	Center of road

New Nouveau Brunswick

Environment

Report Number **39572**

Well Driller's Report

Date printed 2019/02/18

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	New Well	Rotary	09/01/2015

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
39572	Steel	6 inch	0ft	80ft	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	36ft	55 igpm	1hr	36ft	55 igpm	No	0 igpm

(BTC - Below top of casing)

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
Chlorine Pucks
Qty 0 ig

Pump Installed
N/A
Intake Setting (BTC)
0ft

Driller's Log

Well Log	From	End	Colour	Rock Type
39572	0ft	8ft	Brown	Shale
39572	8ft	65ft	Grey	Sandstone
39572	65ft	73ft	Brown	Shale
39572	73ft	112ft	Grey	Sandstone
39572	112ft	136ft	Grey	Clay and Shale
39572	136ft	146ft	Grey	Sandstone
39572	146ft	149ft	Brown	Shale
39572	149ft	160ft	Grey	Sandstone

Overall Well Depth
160ft

Bedrock Level
0ft

Water Bearing Fracture Zone

Well Log	Depth	Rate
39572	45ft	9 igpm
39572	81ft	15 igpm
39572	92ft	40 igpm

Setbacks

Well Log	Distance	Setback From
39572	100ft	Right of any Public Way Road
39572	140ft	Center of road

New Nouveau Brunswick

Environment

Report Number **91510900**

Well Driller's Report

Date printed 2019/02/18

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	New Well (NEW WELL)	Cable Tool (CABLE TOOL)	05/12/1999

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
91510900	**Steel**	**6 inch**	**1ft**	**25ft**	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Pump	16ft	50 igpm	1hr	18ft	50 igpm	No	0 igpm

(BTC - Below top of casing)

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
Bleach (Javex)
Qty 1.0 ig

Pump Installed
N/A
Intake Setting (BTC)
0ft

Driller's Log

Well Log	From	End	Colour	Rock Type
91510900	**0ft**	**3ft**	**Brown**	**Topsoil**
91510900	**3ft**	**22ft**	**Red**	**Clay**
91510900	**22ft**	**55ft**	**Brown**	**Medium Sandstone**
91510900	**55ft**	**131ft**	**Grey**	**Sandstone**

Overall Well Depth
131ft

Bedrock Level
22ft

Water Bearing Fracture Zone

Well Log	Depth	Rate
91510900	**80ft**	**20 igpm**

Setbacks

There is no Setback information.

New Nouveau Brunswick

Environment

Report Number **91678100**

Well Driller's Report

Date printed 2019/02/18

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	New Well (NEW WELL)	Rotary (ROTARY)	09/15/1999

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
91678100	**Steel**	**6 inch**	**0ft**	**80ft**	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	0ft	10 igpm	1hr	45ft	10 igpm	No	0 igpm

(BTC - Below top of casing)

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty 0 ig

Pump Installed
Submersible

Intake Setting (BTC)
0ft

Driller's Log

Well Log	From	End	Colour	Rock Type
91678100	**0ft**	**8ft**	**EMPTY VALUE**	**Overburden**
91678100	**8ft**	**36ft**	**Brown**	**Sandstone**
91678100	**36ft**	**62ft**	**Grey**	**Sandstone**
91678100	**62ft**	**75ft**	**Brown**	**Shale**
91678100	**75ft**	**100ft**	**Grey**	**Sandstone**

Overall Well Depth
100ft

Bedrock Level
0ft

Water Bearing Fracture Zone

Well Log	Depth	Rate
91678100	**90ft**	**10 igpm**

Setbacks

There is no Setback information.

New Nouveau Brunswick

Environment

Report Number **91753600**

Well Driller's Report

Date printed 2019/02/18

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	New Well (NEW WELL)	Cable Tool (CABLE TOOL)	09/08/1999

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
91753600	**Steel**	**6 inch**	**0ft**	**28ft**	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Bailer	36ft	20 igpm	1hr 30min	18ft	20 igpm	No	0 igpm

(BTC - Below top of casing)

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty 0 ig

Pump Installed
N/A

Intake Setting (BTC)
0ft

Driller's Log

Well Log	From	End	Colour	Rock Type
91753600	**0ft**	**28ft**	**Red**	**Clay**
91753600	**28ft**	**45ft**	**Red**	**Sandstone**
91753600	**45ft**	**65ft**	**Grey**	**Sandstone**

Overall Well Depth
65ft

Bedrock Level
28ft

Water Bearing Fracture Zone

Well Log	Depth	Rate
91753600	**35ft**	**10 igpm**
91753600	**65ft**	**20 igpm**

Setbacks

There is no Setback information.

New Nouveau Brunswick

Environment

Report Number **92117301**

Well Driller's Report

Date printed 2019/02/18

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	New Well	Cable Tool	04/28/2000

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
92117301	**Steel**	**6 inch**	**0ft**	**41ft**	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Bailer	15ft	10 igpm	1hr	0ft	10 igpm	No	0 igpm

(BTC - Below top of casing)

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty 0 ig

Pump Installed
Submersible

Intake Setting (BTC)
75ft

Driller's Log

Well Log	From	End	Colour	Rock Type
92117301	**0ft**	**10ft**	**Brown**	**Fill**
92117301	**10ft**	**23ft**	**Brown**	**Clay**
92117301	**23ft**	**40ft**	**Brown**	**Sandstone**
92117301	**40ft**	**84ft**	**Grey**	**Sandstone**

Overall Well Depth
84ft

Bedrock Level
0ft

Water Bearing Fracture Zone

Well Log	Depth	Rate
92117301	**75ft**	**10 igpm**

Setbacks

There is no Setback information.

New Nouveau Brunswick

Environment

Report Number **99000178**

Well Driller's Report

Date printed 2019/02/18

Drilled by

Well Use	Work Type	Drill Method	Work Completed
Drinking Water, Domestic	New Well	Rotary	10/10/1999

Casing Information

Casing above ground

Drive Shoe Used?

Well Log	Casing Type	Diameter	From	End	Slotted?
99000178	Steel	6 inch	0ft	49ft	

Aquifer Test/Yield

Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	0ft	0 igpm	0hr	0ft	20 igpm	No	0 igpm

(BTC - Below top of casing)

Well Grouting

There is no Grout information.

Drilling Fluids Used
None

Disinfectant
N/A

Qty 0 ig

Pump Installed
Submersible

Intake Setting (BTC)
0ft

Driller's Log

Well Log	From	End	Colour	Rock Type
99000178	0ft	2ft	Brown	Fill
99000178	2ft	20ft	Brown	Clay
99000178	20ft	45ft	Grey	Sandstone
99000178	45ft	102ft	Grey	Sandstone

Overall Well Depth
102ft

Bedrock Level
0ft

Water Bearing Fracture Zone

Well Log	Depth	Rate
99000178	25ft	10 igpm
99000178	95ft	20 igpm

Setbacks

There is no Setback information.

Appendix 2 –
Results of ACCDC Database Search

DATA REPORT 6385: Cap-Pele, NB

Prepared 8 April 2019
by J. Churchill, 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
CpPeleNB_6385ob.xls	All Rare and legally protected *Flora and Fauna* in your study area
CpPeleNB_6385ob100km.xls	A list of Rare and legally protected *Flora and Fauna* within 100 km of your study area
CpPeleNB_6385ma.xls	All *Managed Areas* in your study area

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:

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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: Duncan Bayne
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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

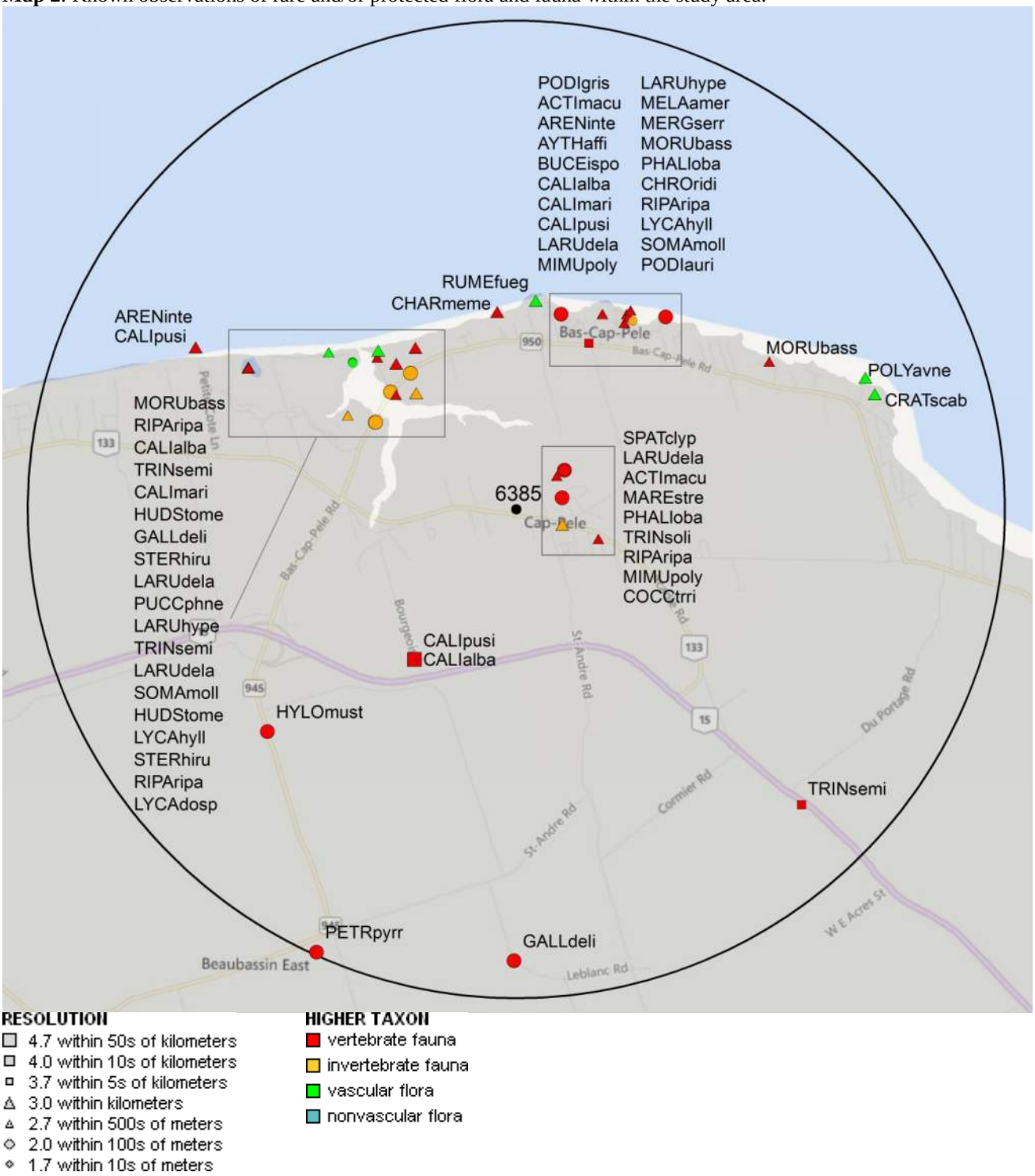
2.1 FLORA

The study area contains 8 records of 5 vascular, no records of nonvascular flora (Map 2 and attached: *ob.xls).

2.2 FAUNA

The study area contains 164 records of 28 vertebrate, 8 records of 3 invertebrate fauna (Map 2 and attached data files - see 1.1 Data List). 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 1 managed area in the vicinity of the study area (Map 3 and attached file: *ma*.xls).

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	Prov GS Rank	# recs	Distance (km)
P	*Polygonum aviculare ssp. neglectum*	Narrow-leaved Knotweed				S1?	5 Undetermined	1	3.8 ± 1.0
P	*Crataegus scabrida*	Rough Hawthorn				S2	3 Sensitive	1	3.9 ± 1.0
P	*Puccinellia phryganodes ssp. neoarctica*	Creeping Alkali Grass				S2	3 Sensitive	1	2.2 ± 1.0
P	*Hudsonia tomentosa*	Woolly Beach-heath				S3	4 Secure	4	2.2 ± 0.0
P	*Rumex fueginus*	Tierra del Fuego Dock				S3S4	4 Secure	1	2.1 ± 1.0

4.2 FAUNA

	Scientific *Name*	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)
A	*Charadrius melodus melodus*	Piping Plover melodus ssp	Endangered	Endangered	Endangered	S1B,S1M	1 At Risk	1	2.0 ± 1.0
A	*Hylocichla mustelina*	Wood Thrush	Threatened	Threatened	Threatened	S1S2B,S1S2M	2 May Be At Risk	2	3.4 ± 0.0
A	*Riparia riparia*	Bank Swallow	Threatened	Threatened		S2S3B,S2S3M	3 Sensitive	11	0.6 ± 0.0
A	*Bucephala islandica (Eastern pop.)*	Barrow's Goldeneye - Eastern pop.	Special Concern	Special Concern	Special Concern	S2M,S2N	3 Sensitive	3	2.3 ± 0.0
A	*Phalaropus lobatus*	Red-necked Phalarope	Special Concern			S3M	3 Sensitive	3	0.5 ± 0.0
A	*Podiceps auritus*	Horned Grebe	Special Concern		Special Concern	S4N,S4M	4 Secure	3	2.2 ± 0.0
A	*Sterna hirundo*	Common Tern	Not At Risk			S3B,SUM	3 Sensitive	4	1.9 ± 1.0
A	*Podiceps grisegena*	Red-necked Grebe	Not At Risk			S3M,S2N	3 Sensitive	3	2.3 ± 0.0
A	*Aythya affinis*	Lesser Scaup				S1B,S4M	4 Secure	1	2.3 ± 0.0
A	*Chroicocephalus ridibundus*	Black-headed Gull				S1N,S2M	3 Sensitive	1	2.2 ± 0.0
A	*Mimus polyglottos*	Northern Mockingbird				S2B,S2M	3 Sensitive	4	0.9 ± 0.0
A	*Mareca strepera*	Gadwall				S2B,S3M	4 Secure	4	0.6 ± 0.0
A	*Tringa solitaria*	Solitary Sandpiper				S2B,S5M	4 Secure	3	0.6 ± 0.0
A	*Larus hyperboreus*	Glaucous Gull				S2N,S2M	4 Secure	24	2.3 ± 0.0
A	*Spatula clypeata*	Northern Shoveler				S2S3B,S2S3M	4 Secure	5	0.5 ± 0.0
A	*Petrochelidon pyrrhonota*	Cliff Swallow				S2S3B,S2S3M	3 Sensitive	1	5.0 ± 0.0
A	*Tringa semipalmata*	Willet				S3B,S3M	3 Sensitive	5	1.9 ± 1.0
A	*Somateria mollissima*	Common Eider				S3B,S4M,S3N	4 Secure	4	2.1 ± 0.0
A	*Mergus serrator*	Red-breasted Merganser				S3B,S5M,S4S5N	4 Secure	1	2.3 ± 0.0
A	*Arenaria interpres*	Ruddy Turnstone				S3M	4 Secure	4	2.3 ± 0.0
A	*Melanitta americana*	Black Scoter				S3M,S1S2N	3 Sensitive	8	2.2 ± 0.0
A	*Calidris maritima*	Purple Sandpiper				S3M,S3N	4 Secure	2	2.3 ± 0.0
A	*Actitis macularius*	Spotted Sandpiper				S3S4B,S5M	4 Secure	6	0.6 ± 0.0
A	*Gallinago delicata*	Wilson's Snipe				S3S4B,S5M	4 Secure	2	3.1 ± 0.0
A	*Larus delawarensis*	Ring-billed Gull				S3S4B,S5M	4 Secure	8	0.6 ± 0.0
A	*Calidris pusilla*	Semipalmated Sandpiper				S3S4M	4 Secure	7	1.9 ± 47.0
A	*Calidris alba*	Sanderling				S3S4M,S1N	3 Sensitive	34	1.9 ± 47.0
A	*Morus bassanus*	Northern Gannet				SHB,S5M	4 Secure	10	2.2 ± 0.0
I	*Coccinella transversoguttata richardsoni*	Transverse Lady Beetle	Special Concern			SH	2 May Be At Risk	1	0.5 ± 1.0
I	*Lycaena hyllus*	Bronze Copper				S3	3 Sensitive	3	1.6 ± 1.0
I	*Lycaena dospassosi*	Salt Marsh Copper				S3	4 Secure	4	1.7 ± 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			No
Chelydra serpentina	Snapping Turtle	Special Concern	Special Concern	No
Glyptemys insculpta	Wood Turtle	Threatened	Threatened	No
Haliaeetus leucocephalus	**Bald Eagle**		**Endangered**	**Yes**
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		[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
153	eBird. 2014. eBird Basic Dataset. Version: EBD_relNov-2014. Ithaca, New York. Nov 2014. Cornell Lab of Ornithology, 25036 recs.
7	Lepage, D. 2014. Maritime Breeding Bird Atlas Database. Bird Studies Canada, Sackville NB, 407,838 recs.
4	e-Butterfly. 2016. Export of Maritimes records and photos. Maxim Larrivee, Sambo Zhang (ed.) e-butterfly.org.
3	Erskine, A.J. 1992. Maritime Breeding Bird Atlas Database. NS Museum & Nimbus Publ., Halifax, 82,125 recs.
2	Benedict, B. Connell Herbarium Specimens (Data) . University New Brunswick, Fredericton. 2003.
2	Benedict, B. Connell Herbarium Specimens. University New Brunswick, Fredericton. 2003.
2	Robinson, S.L. 2010. Fieldwork 2009 (dune ecology). Atlantic Canada Conservation Data Centre. Sackville NB, 408 recs.
1	Canadian Wildlife Service, Dartmouth. 2010. Piping Plover censuses 2007-09, 304 recs.
1	Klymko, J. 2018. Maritimes Butterfly Atlas database. Atlantic Canada Conservation Data Centre.
1	Klymko, J. Dataset of butterfly records at the New Brunswick Museum not yet accessioned by the museum. Atlantic Canada Conservation Data Centre. 2016.
1	Majka, C. 2009. Université de Moncton Insect Collection: Carabidae, Cerambycidae, Coccinellidae. Université de Moncton, 540 recs.
1	Mazerolle, D. 2003. Assessment of Seaside Pinweed (Lechea maritima var. subcylindrica) in Southeastern New Brunswick. Irving Eco-centre, la Dune du Bouctouche, 18 recs.
1	Mazerolle, D.M. 2005. Bouctouche Irving Eco-Centre rare coastal plant fieldwork results 2004-05. Irving Eco-centre, la Dune du Bouctouche, 174 recs.
1	NSDNR website
1	Webster, R.P. & Edsall, J. 2007. 2005 New Brunswick Rare Butterfly Survey. Environmental Trust Fund, unpublished report, 232 recs.

5.0 RARE SPECIES WITHIN 100 KM

A 100 km buffer around the study area contains 37687 records of 133 vertebrate and 745 records of 56 invertebrate fauna; 5557 records of 258 vascular, 775 records of 176 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	Prov GS Rank	# recs	Distance (km)	Prov
A	*Myotis lucifugus*	Little Brown Myotis	Endangered	Endangered	Endangered	S1	1 At Risk	53	42.7 ± 1.0	NB
A	*Myotis septentrionalis*	Northern Long-eared Myotis	Endangered	Endangered	Endangered	S1	1 At Risk	60	42.7 ± 1.0	NB
A	*Perimyotis subflavus*	Eastern Pipistrelle	Endangered	Endangered	Endangered	S1	1 At Risk	11	47.2 ± 0.0	NB
A	*Charadrius melodus melodus*	Piping Plover melodus ssp	Endangered	Endangered	Endangered	S1B,S1M	1 At Risk	2659	2.0 ± 1.0	NB
A	*Dermochelys coriacea (Atlantic pop.)*	Leatherback Sea Turtle - Atlantic pop.	Endangered	Endangered	Endangered	S1S2N	1 At Risk	5	8.7 ± 1.0	NB
A	*Salmo salar pop. 1*	Atlantic Salmon - Inner Bay of Fundy pop.	Endangered	Endangered	Endangered	S2	2 May Be At Risk	42	49.4 ± 0.0	NB
A	*Calidris canutus rufa*	Red Knot rufa ssp	Endangered	Endangered	Endangered	S2M	1 At Risk	1002	10.3 ± 0.0	NB
A	*Rangifer tarandus pop. 2*	Woodland Caribou (Atlantic-Gasp├⌐sie pop.)	Endangered	Endangered	Extirpated	SX	0.1 Extirpated	2	61.0 ± 1.0	NB
A	*Sturnella magna*	Eastern Meadowlark	Threatened	Threatened	Threatened	S1B,S1M	2 May Be At Risk	32	27.8 ± 1.0	NB
A	*Ixobrychus exilis*	Least Bittern	Threatened	Threatened	Threatened	S1S2B,S1S2M	1 At Risk	13	28.3 ± 0.0	NB
A	*Hylocichla mustelina*	Wood Thrush	Threatened	Threatened	Threatened	S1S2B,S1S2M	2 May Be At Risk	42	3.4 ± 0.0	NB
A	*Antrostomus vociferus*	Eastern Whip-Poor-Will	Threatened	Threatened	Threatened	S2B,S2M	1 At Risk	16	38.4 ± 7.0	NB
A	*Hirundo rustica*	Barn Swallow	Threatened	Threatened	Threatened	S2B,S2M	3 Sensitive	1079	5.3 ± 7.0	NB
A	*Catharus bicknelli*	Bicknell's Thrush	Threatened	Special Concern	Threatened	S2B,S2M	1 At Risk	8	37.9 ± 2.0	NB
A	*Glyptemys insculpta*	Wood Turtle	Threatened	Threatened	Threatened	S2S3	1 At Risk	388	23.5 ± 0.0	NB
A	*Chaetura pelagica*	Chimney Swift	Threatened	Threatened	Threatened	S2S3B,S2M	1 At Risk	131	15.3 ± 7.0	NB
A	*Riparia riparia*	Bank Swallow	Threatened	Threatened		S2S3B,S2S3M	3 Sensitive	779	0.6 ± 0.0	NB
A	*Acipenser oxyrinchus*	Atlantic Sturgeon	Threatened		Threatened	S3	4 Secure	1	61.3 ± 1.0	NB
A	*Cardellina canadensis*	Canada Warbler	Threatened	Threatened	Threatened	S3B,S3M	1 At Risk	512	5.3 ± 7.0	NB
A	*Dolichonyx oryzivorus*	Bobolink	Threatened	Threatened	Threatened	S3B,S3M	3 Sensitive	1175	5.3 ± 7.0	NB
A	*Anguilla rostrata*	American Eel	Threatened		Threatened	S4	4 Secure	78	44.9 ± 1.0	NB
A	*Coturnicops noveboracensis*	Yellow Rail	Special Concern	Special Concern	Special Concern	S1?B,SUM	2 May Be At Risk	5	27.8 ± 1.0	NB
A	*Falco peregrinus pop. 1*	Peregrine Falcon - anatum/tundrius	Special Concern	Special Concern	Endangered	S1B,S3M	1 At Risk	261	8.1 ± 0.0	NB
A	*Asio flammeus*	Short-eared Owl	Special Concern	Special Concern	Special Concern	S2B,S2M	3 Sensitive	48	28.7 ± 1.0	NB
A	*Bucephala islandica (Eastern pop.)*	Barrow's Goldeneye - Eastern pop.	Special Concern	Special Concern	Special Concern	S2M,S2N	3 Sensitive	108	2.3 ± 0.0	NB
A	*Balaenoptera physalus*	Fin Whale - Atlantic pop.	Special Concern	Special Concern	Special Concern	S2S3		1	78.0 ± 1.0	NB
A	*Chelydra serpentina*	Snapping Turtle	Special Concern	Special Concern	Special Concern	S3	3 Sensitive	2	29.0 ± 1.0	NB
A	*Euphagus carolinus*	Rusty Blackbird	Special Concern	Special Concern	Special Concern	S3B,S3M	2 May Be At Risk	82	26.9 ± 4.0	NB
A	*Contopus cooperi*	Olive-sided Flycatcher	Special Concern	Threatened	Threatened	S3B,S3M	1 At Risk	489	10.9 ± 0.0	NB
A	*Coccothraustes vespertinus*	Evening Grosbeak	Special Concern			S3B,S3S4N,SUM	3 Sensitive	225	14.3 ± 7.0	NB
A	*Chordeiles minor*	Common Nighthawk	Special Concern	Threatened	Threatened	S3B,S4M	1 At Risk	186	14.3 ± 7.0	NB
A	*Phalaropus lobatus*	Red-necked Phalarope	Special Concern			S3M	3 Sensitive	24	0.5 ± 0.0	NB
A	*Chrysemys picta picta*	Eastern Painted Turtle	Special Concern			S4	4 Secure	17	61.2 ± 0.0	NS
A	*Contopus virens*	Eastern Wood-Pewee	Special Concern	Special Concern	Special Concern	S4B,S4M	4 Secure	611	5.3 ± 7.0	NB
A	*Podiceps auritus*	Horned Grebe	Special Concern		Special Concern	S4N,S4M	4 Secure	49	2.2 ± 0.0	NB
A	*Hemidactylium scutatum*	Four-toed Salamander	Not At Risk			S1?	5 Undetermined	5	72.6 ± 0.0	NS
A	*Bubo scandiacus*	Snowy Owl	Not At Risk			S1N,S2S3M	4 Secure	50	10.5 ± 0.0	NB
A	*Accipiter cooperii*	Cooper's Hawk	Not At Risk			S1S2B,S1S2M	2 May Be At Risk	3	28.7 ± 5.0	NB
A	*Fulica americana*	American Coot	Not At Risk			S1S2B,S1S2M	3 Sensitive	57	20.4 ± 7.0	NB
A	*Aegolius funereus*	Boreal Owl	Not At Risk			S1S2B,SUM	2 May Be At Risk	13	25.1 ± 0.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
A	*Sorex dispar*	Long-tailed Shrew	Not At Risk	Special Concern		S2	3 Sensitive	5	59.8 ± 1.0	NB
A	*Buteo lineatus*	Red-shouldered Hawk	Not At Risk	Special Concern		S2B,S2M	2 May Be At Risk	12	30.2 ± 0.0	NB
A	*Chlidonias niger*	Black Tern	Not At Risk			S2B,S2M	3 Sensitive	62	10.8 ± 1.0	NB
A	*Lynx canadensis*	Canadian Lynx	Not At Risk		Endangered	S3	1 At Risk	13	47.0 ± 1.0	NB
A	*Desmognathus fuscus*	Northern Dusky Salamander	Not At Risk			S3	3 Sensitive	1	89.4 ± 0.0	NB
A	*Sterna hirundo*	Common Tern	Not At Risk			S3B,SUM	3 Sensitive	741	1.9 ± 1.0	NB
A	*Podiceps grisegena*	Red-necked Grebe	Not At Risk			S3M,S2N	3 Sensitive	50	2.3 ± 0.0	NB
A	*Lagenorhynchus acutus*	Atlantic White-sided Dolphin	Not At Risk			S3S4		2	45.9 ± 1.0	NB
A	*Haliaeetus leucocephalus*	Bald Eagle	Not At Risk		Endangered	S4	1 At Risk	1164	3.1 ± 0.0	NB
A	*Canis lupus*	Gray Wolf	Not At Risk		Extirpated	SX	0.1 Extirpated	1	88.4 ± 100.0	NB
A	*Puma concolor pop. 1*	Eastern Cougar	Data Deficient		Endangered	SNA	5 Undetermined	108	24.2 ± 1.0	NB
A	*Morone saxatilis*	Striped Bass	E,E,SC			S3	2 May Be At Risk	39	61.3 ± 0.0	NB
A	*Vireo flavifrons*	Yellow-throated Vireo				S1?B,S1?M	8 Accidental	4	44.1 ± 0.0	NB
A	*Tringa melanoleuca*	Greater Yellowlegs				S1?B,S5M	4 Secure	3074	8.1 ± 0.0	NB
A	*Aythya americana*	Redhead				S1B,S1M	8 Accidental	10	35.7 ± 7.0	NB
A	*Gallinula galeata*	Common Gallinule				S1B,S1M	3 Sensitive	32	34.2 ± 0.0	NB
A	*Antigone canadensis*	Sandhill Crane				S1B,S1M	8 Accidental	11	17.6 ± 7.0	NB
A	*Bartramia longicauda*	Upland Sandpiper				S1B,S1M	3 Sensitive	53	23.9 ± 7.0	NB
A	*Phalaropus tricolor*	Wilson's Phalarope				S1B,S1M	3 Sensitive	59	10.3 ± 0.0	NB
A	*Leucophaeus atricilla*	Laughing Gull				S1B,S1M	3 Sensitive	9	8.1 ± 0.0	NB
A	*Progne subis*	Purple Martin				S1B,S1M	2 May Be At Risk	77	16.5 ± 7.0	NB
A	*Thryothorus ludovicianus*	Carolina Wren				S1B,S1M	8 Accidental	10	21.6 ± 0.0	NB
A	*Oxyura jamaicensis*	Ruddy Duck				S1B,S2S3M	4 Secure	103	15.9 ± 0.0	NB
A	*Aythya affinis*	Lesser Scaup				S1B,S4M	4 Secure	166	2.3 ± 0.0	NB
A	*Aythya marila*	Greater Scaup				S1B,S4M,S2N	4 Secure	14	16.0 ± 1.0	NB
A	*Eremophila alpestris*	Horned Lark				S1B,S4N,S5M	2 May Be At Risk	63	10.8 ± 1.0	NB
A	*Sterna paradisaea*	Arctic Tern				S1B,SUM	2 May Be At Risk	44	27.2 ± 7.0	NB
A	*Fratercula arctica*	Atlantic Puffin				S1B,SUN,SUM	3 Sensitive	3	44.9 ± 0.0	NB
A	*Branta bernicla*	Brant				S1N, S2S3M	4 Secure	34	10.8 ± 1.0	NB
A	*Chroicocephalus ridibundus*	Black-headed Gull				S1N,S2M	3 Sensitive	13	2.2 ± 0.0	NB
A	*Butorides virescens*	Green Heron				S1S2B,S1S2M	3 Sensitive	5	35.6 ± 0.0	NB
A	*Nycticorax nycticorax*	Black-crowned Night-heron				S1S2B,S1S2M	3 Sensitive	5	18.9 ± 0.0	NB
A	*Empidonax traillii*	Willow Flycatcher				S1S2B,S1S2M	3 Sensitive	56	23.2 ± 0.0	NB
A	*Stelgidopteryx serripennis*	Northern Rough-winged Swallow				S1S2B,S1S2M	2 May Be At Risk	4	44.6 ± 0.0	NS
A	*Troglodytes aedon*	House Wren				S1S2B,S1S2M	5 Undetermined	11	27.2 ± 7.0	NB
A	*Rissa tridactyla*	Black-legged Kittiwake				S1S2B,S4N,S5M	4 Secure	2	34.3 ± 0.0	NB
A	*Calidris bairdii*	Baird's Sandpiper				S1S2M	3 Sensitive	53	10.8 ± 1.0	NB
A	*Cistothorus palustris*	Marsh Wren				S2B,S2M	3 Sensitive	43	22.6 ± 1.0	NB
A	*Mimus polyglottos*	Northern Mockingbird				S2B,S2M	3 Sensitive	135	0.9 ± 0.0	NB
A	*Toxostoma rufum*	Brown Thrasher				S2B,S2M	3 Sensitive	22	21.6 ± 7.0	NB
A	*Pooecetes gramineus*	Vesper Sparrow				S2B,S2M	2 May Be At Risk	110	21.6 ± 7.0	NB
A	*Mareca strepera*	Gadwall				S2B,S3M	4 Secure	278	0.6 ± 0.0	NB
A	*Pinicola enucleator*	Pine Grosbeak				S2B,S4S5N,S4S5M	3 Sensitive	33	13.1 ± 7.0	NB
A	*Tringa solitaria*	Solitary Sandpiper				S2B,S5M	4 Secure	173	0.6 ± 0.0	NB
A	*Anser caerulescens*	Snow Goose				S2M	4 Secure	22	16.0 ± 1.0	NB
A	*Phalacrocorax carbo*	Great Cormorant				S2N,S2M	4 Secure	89	19.7 ± 1.0	NB
A	*Somateria spectabilis*	King Eider				S2N,S2M	4 Secure	4	10.8 ± 1.0	NB
A	*Larus hyperboreus*	Glaucous Gull				S2N,S2M	4 Secure	92	2.3 ± 0.0	NB
A	*Asio otus*	Long-eared Owl				S2S3	5 Undetermined	27	27.3 ± 7.0	NB
A	*Picoides dorsalis*	American Three-toed Woodpecker				S2S3	3 Sensitive	18	54.6 ± 0.0	NS
A	*Salmo salar*	Atlantic Salmon				S2S3	2 May Be At Risk	34	33.5 ± 1.0	NS
A	*Spatula clypeata*	Northern Shoveler				S2S3B,S2S3M	4 Secure	314	0.5 ± 0.0	NB
A	*Myiarchus crinitus*	Great Crested Flycatcher				S2S3B,S2S3M	3 Sensitive	24	16.9 ± 7.0	NB
A	*Petrochelidon pyrrhonota*	Cliff Swallow				S2S3B,S2S3M	3 Sensitive	441	5.0 ± 0.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
A	*Pluvialis dominica*	American Golden-Plover				S2S3M	3 Sensitive	285	10.8 ± 1.0	NB
A	*Calcarius lapponicus*	Lapland Longspur				S2S3N,SUM	3 Sensitive	42	10.8 ± 2.0	NB
A	*Cepphus grylle*	Black Guillemot				S3	4 Secure	56	21.0 ± 7.0	PE
A	*Loxia curvirostra*	Red Crossbill				S3	4 Secure	116	12.3 ± 7.0	NB
A	*Spinus pinus*	Pine Siskin				S3	4 Secure	301	5.3 ± 7.0	NB
A	*Sorex maritimensis*	Maritime Shrew				S3	4 Secure	140	33.4 ± 1.0	NB
A	*Eptesicus fuscus*	Big Brown Bat				S3	3 Sensitive	6	34.3 ± 10.0	NB
A	*Cathartes aura*	Turkey Vulture				S3B,S3M	4 Secure	109	11.5 ± 4.0	NB
A	*Rallus limicola*	Virginia Rail				S3B,S3M	3 Sensitive	145	15.3 ± 7.0	NB
A	*Charadrius vociferus*	Killdeer				S3B,S3M	3 Sensitive	975	5.3 ± 7.0	NB
A	*Tringa semipalmata*	Willet				S3B,S3M	3 Sensitive	1530	1.9 ± 1.0	NB
A	*Coccyzus erythropthalmus*	Black-billed Cuckoo				S3B,S3M	4 Secure	103	7.6 ± 7.0	NB
A	*Vireo gilvus*	Warbling Vireo				S3B,S3M	4 Secure	36	34.5 ± 7.0	NB
A	*Piranga olivacea*	Scarlet Tanager				S3B,S3M	4 Secure	29	28.1 ± 0.0	NB
A	*Passerina cyanea*	Indigo Bunting				S3B,S3M	4 Secure	23	43.0 ± 7.0	NB
A	*Molothrus ater*	Brown-headed Cowbird				S3B,S3M	2 May Be At Risk	247	5.3 ± 7.0	NB
A	*Icterus galbula*	Baltimore Oriole				S3B,S3M	4 Secure	75	19.7 ± 1.0	NB
A	*Somateria mollissima*	Common Eider				S3B,S4M,S3N	4 Secure	193	2.1 ± 0.0	NB
A	*Setophaga tigrina*	Cape May Warbler				S3B,S4S5M	4 Secure	252	7.6 ± 7.0	NB
A	*Anas acuta*	Northern Pintail				S3B,S5M	3 Sensitive	145	5.3 ± 7.0	NB
A	*Mergus serrator*	Red-breasted Merganser				S3B,S5M,S4S5N	4 Secure	291	2.3 ± 0.0	NB
A	*Arenaria interpres*	Ruddy Turnstone				S3M	4 Secure	1596	2.3 ± 0.0	NB
A	*Phalaropus fulicarius*	Red Phalarope				S3M	3 Sensitive	5	53.1 ± 0.0	NB
A	*Melanitta americana*	Black Scoter				S3M,S1S2N	3 Sensitive	265	2.2 ± 0.0	NB
A	*Bucephala albeola*	Bufflehead				S3M,S2N	3 Sensitive	108	9.3 ± 0.0	NB
A	*Calidris maritima*	Purple Sandpiper				S3M,S3N	4 Secure	72	2.3 ± 0.0	NB
A	*Synaptomys cooperi*	Southern Bog Lemming				S3S4	4 Secure	25	66.6 ± 1.0	NB
A	*Tyrannus tyrannus*	Eastern Kingbird				S3S4B,S3S4M	3 Sensitive	470	5.3 ± 7.0	NB
A	*Actitis macularius*	Spotted Sandpiper				S3S4B,S5M	4 Secure	981	0.6 ± 0.0	NB
A	*Gallinago delicata*	Wilson's Snipe				S3S4B,S5M	4 Secure	773	3.1 ± 0.0	NB
A	*Larus delawarensis*	Ring-billed Gull				S3S4B,S5M	4 Secure	268	0.6 ± 0.0	NB
A	*Setophaga striata*	Blackpoll Warbler				S3S4B,S5M	4 Secure	61	16.9 ± 7.0	NB
A	*Pluvialis squatarola*	Black-bellied Plover				S3S4M	4 Secure	2868	9.0 ± 0.0	NB
A	*Limosa haemastica*	Hudsonian Godwit				S3S4M	4 Secure	779	10.3 ± 0.0	NB
A	*Calidris pusilla*	Semipalmated Sandpiper				S3S4M	4 Secure	3188	1.9 ± 47.0	NB
A	*Calidris melanotos*	Pectoral Sandpiper				S3S4M	4 Secure	471	10.3 ± 0.0	NB
A	*Calidris alba*	Sanderling				S3S4M,S1N	3 Sensitive	2188	1.9 ± 47.0	NB
A	*Morus bassanus*	Northern Gannet				SHB,S5M	4 Secure	173	2.2 ± 0.0	NB
A	*Lanius ludovicianus*	Loggerhead Shrike				SXB,SXM	1 At Risk	1	42.8 ± 0.0	NB
I	*Gomphus ventricosus*	Skillet Clubtail	Endangered		Endangered	S1S2	2 May Be At Risk	1	99.1 ± 0.0	NB
I	*Danaus plexippus*	Monarch	Endangered	Special Concern	Special Concern	S3B,S3M	3 Sensitive	92	16.1 ± 1.0	NB
I	*Alasmidonta varicosa*	Brook Floater	Special Concern		Special Concern	S2	3 Sensitive	38	44.7 ± 1.0	NB
I	*Bombus terricola*	Yellow-banded Bumblebee	Special Concern			S3?	3 Sensitive	12	36.6 ± 1.0	NS
I	*Coccinella transversoguttata richardsoni*	Transverse Lady Beetle	Special Concern			SH	2 May Be At Risk	27	0.5 ± 1.0	NB
I	*Erora laeta*	Early Hairstreak				S1	2 May Be At Risk	2	44.3 ± 1.0	NB
I	*Leucorrhinia patricia*	Canada Whiteface				S1	2 May Be At Risk	7	82.9 ± 1.0	NB
I	*Plebejus saepiolus*	Greenish Blue				S1S2	4 Secure	2	70.6 ± 7.0	NB
I	*Satyrium calanus falacer*	Banded Hairstreak				S2	4 Secure	1	89.7 ± 0.0	PE
I	*Strymon melinus*	Grey Hairstreak				S2	4 Secure	1	53.4 ± 2.0	NB
I	*Somatochlora brevicincta*	Quebec Emerald				S2	5 Undetermined	2	53.7 ± 0.0	NB
I	*Somatochlora tenebrosa*	Clamp-Tipped Emerald				S2	5 Undetermined	7	25.7 ± 1.0	NB
I	*Ladona exusta*	White Corporal				S2	5 Undetermined	2	69.5 ± 0.0	NB
I	*Coenagrion interrogatum*	Subarctic Bluet				S2	3 Sensitive	2	99.4 ± 1.0	NB
I	*Callophrys henrici*	Henry's Elfin				S2S3	4 Secure	9	14.0 ± 0.0	NB
I	*Elaphrus americanus*	a Ground Beetle				S3	4 Secure	1	68.2 ± 0.0	NB
I	*Agonum crenistriatum*	a Ground Beetle				S3	5 Undetermined	1	40.3 ± 1.0	NB

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I	*Agonum consimile*	a Ground Beetle				S3	4 Secure	1	40.3 ± 1.0	NB
I	*Lachnocrepis parallela*	a Ground Beetle				S3	4 Secure	1	62.1 ± 0.0	NB
I	*Dyschirius setosus*	a Ground Beetle				S3	5 Undetermined	3	62.1 ± 0.0	NB
I	*Harpalus fulvilabris*	a Ground Beetle				S3	4 Secure	1	67.3 ± 0.0	NB
I	*Amara pallipes*	a Ground Beetle				S3	4 Secure	2	40.3 ± 1.0	NB
I	*Carabus maeander*	a Ground Beetle				S3	5 Undetermined	1	40.3 ± 1.0	NB
I	*Carabus serratus*	a Ground Beetle				S3	4 Secure	1	44.7 ± 1.0	NB
I	*Hippodamia parenthesis*	Parenthesis Lady Beetle				S3	4 Secure	7	35.5 ± 0.0	NB
I	*Xylotrechus undulatus*	a Longhorned Beetle				S3		1	31.1 ± 1.0	NB
I	*Calathus gregarius*	a Ground Beetle				S3	4 Secure	1	89.2 ± 1.0	NB
I	*Gonioctena americana*	a Leaf Beetle				S3		1	62.8 ± 0.0	NB
I	*Trachysida aspera*	a Longhorned Beetle				S3		1	73.8 ± 0.0	NB
I	*Hesperia sassacus*	Indian Skipper				S3	4 Secure	4	80.8 ± 7.0	NB
I	*Euphyes bimacula*	Two-spotted Skipper				S3	4 Secure	12	14.5 ± 1.0	NB
I	*Papilio brevicauda bretonensis*	Short-tailed Swallowtail				S3	4 Secure	12	39.6 ± 0.0	NB
I	*Lycaena hyllus*	Bronze Copper				S3	3 Sensitive	126	1.6 ± 1.0	NB
I	*Lycaena dospassosi*	Salt Marsh Copper				S3	4 Secure	134	1.7 ± 0.0	NB
I	*Satyrium acadica*	Acadian Hairstreak				S3	4 Secure	15	16.9 ± 7.0	NB
I	*Callophrys polios*	Hoary Elfin				S3	4 Secure	7	14.3 ± 0.0	NB
I	*Plebejus idas empetri*	Crowberry Blue				S3	4 Secure	28	28.8 ± 0.0	NB
I	*Speyeria aphrodite*	Aphrodite Fritillary				S3	4 Secure	14	41.8 ± 0.0	NB
I	*Boloria chariclea*	Arctic Fritillary				S3	4 Secure	9	37.7 ± 7.0	NB
I	*Polygonia satyrus*	Satyr Comma				S3	4 Secure	6	37.2 ± 0.0	NS
I	*Polygonia gracilis*	Hoary Comma				S3	4 Secure	2	81.0 ± 2.0	NB
I	*Nymphalis l-album*	Compton Tortoiseshell				S3	4 Secure	12	42.0 ± 10.0	NB
I	*Dorocordulia lepida*	Petite Emerald				S3	4 Secure	3	68.3 ± 1.0	PE
I	*Somatochlora cingulata*	Lake Emerald				S3	4 Secure	3	86.4 ± 1.0	NB
I	*Somatochlora forcipata*	Forcipate Emerald				S3	4 Secure	5	44.8 ± 0.0	NB
I	*Williamsonia fletcheri*	Ebony Boghaunter				S3	4 Secure	14	27.4 ± 1.0	NB
I	*Lestes eurinus*	Amber-Winged Spreadwing				S3	4 Secure	16	53.4 ± 1.0	NB
I	*Lestes vigilax*	Swamp Spreadwing				S3	3 Sensitive	1	79.3 ± 0.0	NS
I	*Enallagma signatum*	Orange Bluet				S3	4 Secure	2	32.2 ± 0.0	NB
I	*Stylurus scudderi*	Zebra Clubtail				S3	4 Secure	5	41.7 ± 0.0	NB
I	*Alasmidonta undulata*	Triangle Floater				S3	3 Sensitive	25	61.4 ± 1.0	NB
I	*Leptodea ochracea*	Tidewater Mucket				S3	4 Secure	22	27.8 ± 1.0	NB
I	*Pantala hymenaea*	Spot-Winged Glider				S3B,S3M	4 Secure	3	29.6 ± 0.0	NB
I	*Satyrium liparops*	Striped Hairstreak				S3S4	4 Secure	30	23.7 ± 0.0	NB
I	*Satyrium liparops strigosum*	Striped Hairstreak				S3S4	4 Secure	4	41.8 ± 0.0	NB
I	*Cupido comyntas*	Eastern Tailed Blue				S3S4	4 Secure	3	65.1 ± 0.0	NB
N	*Erioderma mollissimum*	Graceful Felt Lichen	Endangered		Endangered	SH	2 May Be At Risk	1	96.8 ± 1.0	NB
N	*Peltigera hydrothyria*	Eastern Waterfan	Threatened			S1	5 Undetermined	4	87.9 ± 0.0	NB
N	*Anzia colpodes*	Black-foam Lichen	Threatened			S1S2	5 Undetermined	2	83.8 ± 1.0	NB
N	*Pseudevernia cladonia*	Ghost Antler Lichen	Not At Risk			S2S3	5 Undetermined	1	88.5 ± 0.0	NB
N	*Aloina rigida*	Aloe-Like Rigid Screw Moss				S1	2 May Be At Risk	2	55.0 ± 0.0	NB
N	*Aulacomnium heterostichum*	One-sided Groove Moss				S1	2 May Be At Risk	2	87.3 ± 0.0	NB
N	*Campylostelium saxicola*	a Moss				S1	2 May Be At Risk	3	72.9 ± 0.0	PE
N	*Dicranoweisia crispula*	Mountain Thatch Moss				S1	2 May Be At Risk	1	86.9 ± 0.0	NB
N	*Didymodon rigidulus var. gracilis*	a moss				S1	2 May Be At Risk	1	94.0 ± 1.0	NB
N	*Zygodon viridissimus var. viridissimus*	a Moss				S1	2 May Be At Risk	1	89.0 ± 0.0	NB
N	*Collema tenax*	Soil Tarpaper Lichen				S1		1	49.1 ± 0.0	PE
N	*Cladonia straminea*	Reptilian Pixie-cup Lichen				S1	5 Undetermined	5	81.2 ± 1.0	NB
N	*Coccocarpia palmicola*	Salted Shell Lichen				S1	2 May Be At Risk	1	81.2 ± 1.0	NB
N	*Peltigera malacea*	Veinless Pelt Lichen				S1	5 Undetermined	1	94.1 ± 1.0	NB
N	*Bryoria bicolor*	Electrified Horsehair Lichen				S1	2 May Be At Risk	1	94.1 ± 1.0	NB

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N	*Hygrobiella laxifolia*	Lax Notchwort				S1?	6 Not Assessed	1	95.8 ± 1.0	NB
N	*Atrichum angustatum*	Lesser Smoothcap Moss				S1?	2 May Be At Risk	1	93.3 ± 5.0	NS
N	*Bartramia ithyphylla*	Straight-leaved Apple Moss				S1?	2 May Be At Risk	2	87.7 ± 1.0	NB
N	*Dicranum bonjeanii*	Bonjean's Broom Moss				S1?	2 May Be At Risk	3	85.5 ± 4.0	PE
N	*Dicranum condensatum*	Condensed Broom Moss				S1?	2 May Be At Risk	1	87.0 ± 0.0	NB
N	*Entodon brevisetus*	a Moss				S1?	2 May Be At Risk	1	100.0 ± 10.0	NB
N	*Homomallium adnatum*	Adnate Hairy-gray Moss				S1?	2 May Be At Risk	4	76.9 ± 1.0	NB
N	*Plagiothecium latebricola*	Alder Silk Moss				S1?	2 May Be At Risk	2	85.3 ± 3.0	NS
N	*Rhytidium rugosum*	Wrinkle-leaved Moss				S1?	2 May Be At Risk	1	93.9 ± 1.0	NB
N	*Seligeria recurvata*	a Moss				S1?	2 May Be At Risk	3	71.1 ± 15.0	NB
N	*Timmia megapolitana*	Metropolitan Timmia Moss				S1?	2 May Be At Risk	3	91.4 ± 1.0	NS
N	*Rhizomnium pseudopunctatum*	Felted Leafy Moss				S1?	2 May Be At Risk	1	84.6 ± 0.0	NB
N	*Cetraria arenaria*	Sand-loving Icelandmoss Lichen				S1?		1	96.6 ± 0.0	NB
N	*Cephaloziella spinigera*	Spiny Threadwort				S1S2	6 Not Assessed	2	92.1 ± 0.0	NB
N	*Cladopodiella francisci*	Holt's Notchwort				S1S2	6 Not Assessed	4	78.9 ± 0.0	NB
N	*Harpanthus flotovianus*	Great Mountain Flapwort				S1S2	6 Not Assessed	2	82.7 ± 1.0	NB
N	*Jungermannia obovata*	Egg Flapwort				S1S2	6 Not Assessed	1	88.3 ± 0.0	NB
N	*Odontoschisma sphagni*	Bog-Moss Flapwort				S1S2	6 Not Assessed	1	93.4 ± 0.0	NB
N	*Pallavicinia lyellii*	Lyell's Ribbonwort				S1S2	6 Not Assessed	1	100.0 ± 1.0	NB
N	*Radula tenax*	Tenacious Scalewort				S1S2	6 Not Assessed	1	88.3 ± 0.0	NB
N	*Brachythecium acuminatum*	Acuminate Ragged Moss				S1S2	5 Undetermined	2	89.8 ± 2.0	NB
N	*Bryum salinum*	a Moss				S1S2	2 May Be At Risk	1	93.4 ± 1.0	NB
N	*Distichium inclinatum*	Inclined Iris Moss				S1S2	2 May Be At Risk	5	94.0 ± 1.0	NB
N	*Ditrichum pallidum*	Pale Cow-hair Moss				S1S2	2 May Be At Risk	1	98.5 ± 1.0	NB
N	*Drummondia prorepens*	a Moss				S1S2	2 May Be At Risk	1	89.2 ± 0.0	NB
N	*Hygrohypnum bestii*	Best's Brook Moss				S1S2	3 Sensitive	5	86.1 ± 1.0	NB
N	*Seligeria brevifolia*	a Moss				S1S2	3 Sensitive	4	88.8 ± 0.0	NB
N	*Timmia norvegica*	a moss				S1S2	2 May Be At Risk	2	94.2 ± 0.0	NB
N	*Timmia norvegica var. excurrens*	a moss				S1S2	2 May Be At Risk	1	94.2 ± 0.0	NB
N	*Tortella humilis*	Small Crisp Moss				S1S2	2 May Be At Risk	7	88.6 ± 1.0	NB
N	*Pseudotaxiphyllum distichaceum*	a Moss				S1S2	2 May Be At Risk	1	31.2 ± 1.0	NB
N	*Umbilicaria vellea*	Grizzled Rocktripe Lichen				S1S2	5 Undetermined	1	93.7 ± 1.0	NB
N	*Peltigera scabrosa*	Greater Toad Pelt Lichen				S1S2	2 May Be At Risk	4	79.8 ± 1.0	NB
N	*Anaptychia crinalis*	Hanging Fringed Lichen				S1S2	5 Undetermined	2	85.5 ± 4.0	PE
N	*Tritomaria scitula*	Mountain Notchwort				S1S3	6 Not Assessed	1	84.6 ± 1.0	NB
N	*Amphidium mougeotii*	a Moss				S2	3 Sensitive	11	85.0 ± 0.0	NB
N	*Anomodon viticulosus*	a Moss				S2	2 May Be At Risk	2	83.3 ± 5.0	NS
N	*Cirriphyllum piliferum*	Hair-pointed Moss				S2	3 Sensitive	3	79.2 ± 1.0	NB
N	*Dicranella palustris*	Drooping-Leaved Fork Moss				S2	3 Sensitive	7	82.7 ± 1.0	NB
N	*Didymodon ferrugineus*	a moss				S2	3 Sensitive	1	93.8 ± 0.0	NB
N	*Anomodon tristis*	a Moss				S2	2 May Be At Risk	5	88.9 ± 0.0	NB
N	*Hypnum pratense*	Meadow Plait Moss				S2	3 Sensitive	1	53.6 ± 0.0	PE
N	*Isopterygiopsis pulchella*	Neat Silk Moss				S2	3 Sensitive	7	86.3 ± 1.0	NB
N	*Platydictya jungermannioides*	False Willow Moss				S2	3 Sensitive	4	71.1 ± 15.0	NB
N	*Pohlia elongata*	Long-necked Nodding Moss				S2	3 Sensitive	14	87.3 ± 0.0	NB
N	*Pohlia sphagnicola*	a moss				S2	3 Sensitive	1	83.6 ± 0.0	NB
N	*Seligeria calcarea*	Chalk Brittle Moss				S2	3 Sensitive	2	82.7 ± 0.0	NB
N	*Sphagnum centrale*	Central Peat Moss				S2	3 Sensitive	7	47.5 ± 0.0	PE
N	*Sphagnum flexuosum*	Flexuous Peatmoss				S2	3 Sensitive	3	74.4 ± 10.0	NB
N	*Tayloria serrata*	Serrate Trumpet Moss				S2	3 Sensitive	7	65.9 ± 100.0	NB
N	*Tetrodontium brownianum*	Little Georgia				S2	3 Sensitive	12	86.9 ± 0.0	NB
N	*Thamnobryum alleghaniense*	a Moss				S2	3 Sensitive	11	59.2 ± 1.0	NB
N	*Ulota phyllantha*	a Moss				S2	3 Sensitive	4	94.2 ± 0.0	NB

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N	*Anomobryum filiforme*	a moss				S2	5 Undetermined	3	94.0 ± 1.0	NB
N	*Cladonia macrophylla*	Fig-leaved Lichen				S2	5 Undetermined	3	87.1 ± 1.0	NB
N	*Fuscopannaria leucosticta*	Rimmed Shingles Lichen				S2	2 May Be At Risk	7	80.5 ± 0.0	NB
N	*Leptogium milligranum*	Stretched Jellyskin Lichen				S2	5 Undetermined	7	18.4 ± 0.0	NB
N	*Nephroma laevigatum*	Mustard Kidney Lichen				S2	2 May Be At Risk	21	39.8 ± 0.0	PE
N	*Anacamptodon splachnoides*	a Moss				S2?	3 Sensitive	2	69.4 ± 1.0	NB
N	*Andreaea rothii*	a Moss				S2?	3 Sensitive	5	84.8 ± 1.0	NB
N	*Anomodon minor*	Blunt-leaved Anomodon Moss				S2?	2 May Be At Risk	1	83.3 ± 1.0	NB
N	*Bryum pallescens*	Pale Bryum Moss				S2?	5 Undetermined	1	84.7 ± 100.0	NB
N	*Dichelyma capillaceum*	Hairlike Dichelyma Moss				S2?	3 Sensitive	1	99.8 ± 3.0	NB
N	*Dicranum spurium*	Spurred Broom Moss				S2?	3 Sensitive	1	72.9 ± 0.0	PE
N	*Hygrohypnum montanum*	a Moss				S2?	3 Sensitive	1	86.0 ± 1.0	NB
N	*Sphagnum angermanicum*	a Peatmoss				S2?	3 Sensitive	2	90.7 ± 0.0	NB
N	*Trichodon cylindricus*	Cylindric Hairy-teeth Moss				S2?	3 Sensitive	2	71.1 ± 15.0	NB
N	*Plagiomnium rostratum*	Long-beaked Leafy Moss				S2?	3 Sensitive	4	93.5 ± 0.0	NB
N	*Ramalina labiosorediata*	Chalky Ramalina Lichen				S2?	5 Undetermined	1	90.6 ± 1.0	NB
N	*Collema leptaleum*	Crumpled Bat's Wing Lichen				S2?	5 Undetermined	1	87.6 ± 0.0	NB
N	*Nephroma arcticum*	Arctic Kidney Lichen				S2?	3 Sensitive	1	92.7 ± 1.0	NB
N	*Bryum uliginosum*	a Moss				S2S3	3 Sensitive	1	94.2 ± 0.0	NB
N	*Buxbaumia aphylla*	Brown Shield Moss				S2S3	3 Sensitive	2	72.9 ± 0.0	PE
N	*Calliergonella cuspidata*	Common Large Wetland Moss				S2S3	3 Sensitive	2	41.1 ± 0.0	PE
N	*Campylium polygamum*	a Moss				S2S3	3 Sensitive	2	77.0 ± 0.0	PE
N	*Palustriella falcata*	a Moss				S2S3	3 Sensitive	2	95.2 ± 0.0	NB
N	*Didymodon rigidulus*	Rigid Screw Moss				S2S3	3 Sensitive	8	89.8 ± 2.0	NB
N	*Orthotrichum speciosum*	Showy Bristle Moss				S2S3	5 Undetermined	14	49.1 ± 0.0	PE
N	*Pohlia proligera*	Cottony Nodding Moss				S2S3	3 Sensitive	14	71.1 ± 15.0	NB
N	*Racomitrium fasciculare*	a Moss				S2S3	3 Sensitive	3	86.9 ± 0.0	NB
N	*Racomitrium affine*	a Moss				S2S3	3 Sensitive	1	83.6 ± 1.0	NB
N	*Saelania glaucescens*	Blue Dew Moss				S2S3	3 Sensitive	2	86.9 ± 0.0	NB
N	*Sphagnum subfulvum*	a Peatmoss				S2S3	2 May Be At Risk	3	50.4 ± 0.0	PE
N	*Taxiphyllum deplanatum*	Imbricate Yew-leaved Moss				S2S3	3 Sensitive	2	88.6 ± 1.0	NB
N	*Zygodon viridissimus*	a Moss				S2S3	2 May Be At Risk	2	88.6 ± 1.0	NB
N	*Schistidium agassizii*	Elf Bloom Moss				S2S3	3 Sensitive	3	83.6 ± 1.0	NB
N	*Loeskeobryum brevirostre*	a Moss				S2S3	3 Sensitive	12	85.0 ± 0.0	NB
N	*Cyrtomnium hymenophylloides*	Short-pointed Lantern Moss				S2S3	3 Sensitive	6	82.9 ± 0.0	NB
N	*Cladonia acuminata*	Scantily Clad Pixie Lichen				S2S3	5 Undetermined	2	93.7 ± 1.0	NB
N	*Cladonia ramulosa*	Bran Lichen				S2S3	5 Undetermined	4	89.4 ± 1.0	NB
N	*Cladonia sulphurina*	Greater Sulphur-cup Lichen				S2S3	5 Undetermined	1	79.0 ± 1.0	NB
N	*Dendriscocaulon umhausense*	a lichen				S2S3	3 Sensitive	1	89.7 ± 0.0	NB
N	*Parmeliopsis ambigua*	Green Starburst Lichen				S2S3	5 Undetermined	2	85.5 ± 4.0	PE
N	*Sphaerophorus globosus*	Northern Coral Lichen				S2S3	3 Sensitive	6	93.7 ± 1.0	NB
N	*Hypnum curvifolium*	Curved-leaved Plait Moss				S3	3 Sensitive	9	39.8 ± 0.0	PE
N	*Tortella fragilis*	Fragile Twisted Moss				S3	3 Sensitive	1	94.2 ± 0.0	NB
N	*Schistidium maritimum*	a Moss				S3	4 Secure	6	84.6 ± 0.0	NB
N	*Hymenostylium recurvirostre*	Hymenostylium Moss				S3	3 Sensitive	5	94.2 ± 1.0	NS
N	*Collema nigrescens*	Blistered Tarpaper Lichen				S3	3 Sensitive	2	82.3 ± 0.0	NS
N	*Solorina saccata*	Woodland Owl Lichen				S3	5 Undetermined	6	93.7 ± 1.0	NB
N	*Ahtiana aurescens*	Eastern Candlewax Lichen				S3	5 Undetermined	1	84.6 ± 0.0	NB
N	*Normandina pulchella*	Rimmed Elf-ear Lichen				S3	5 Undetermined	5	89.4 ± 1.0	NB
N	*Cladonia farinacea*	Farinose Pixie Lichen				S3	5 Undetermined	6	77.6 ± 0.0	PE
N	*Leptogium lichenoides*	Tattered Jellyskin Lichen				S3	5 Undetermined	6	93.7 ± 1.0	NB
N	*Nephroma bellum*	Naked Kidney Lichen				S3	4 Secure	4	86.2 ± 1.0	NB
N	*Peltigera degenii*	Lustrous Pelt Lichen				S3	5 Undetermined	3	90.2 ± 1.0	NB

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N	*Usnea strigosa*	Bushy Beard Lichen				S3	5 Undetermined	5	16.2 ± 0.0	NB
N	*Leptogium laceroides*	Short-bearded Jellyskin Lichen				S3	3 Sensitive	4	49.5 ± 0.0	PE
N	*Peltigera membranacea*	Membranous Pelt Lichen				S3	5 Undetermined	11	44.1 ± 0.0	PE
N	*Cladonia carneola*	Crowned Pixie-cup Lichen				S3	5 Undetermined	1	88.5 ± 1.0	NB
N	*Cladonia deformis*	Lesser Sulphur-cup Lichen				S3	4 Secure	5	87.1 ± 1.0	NB
N	*Aulacomnium androgynum*	Little Groove Moss				S3?	4 Secure	10	52.8 ± 0.0	PE
N	*Bryum amblyodon*	a Moss				S3?	4 Secure	2	84.3 ± 0.0	PE
N	*Dicranella rufescens*	Red Forklet Moss				S3?	5 Undetermined	1	94.2 ± 0.0	NB
N	*Rhytidiadelphus loreus*	Lanky Moss				S3?	2 May Be At Risk	1	94.0 ± 1.0	NB
N	*Sphagnum lescurii*	a Peatmoss				S3?	5 Undetermined	5	30.1 ± 0.0	NS
N	*Stereocaulon subcoralloides*	Coralloid Foam Lichen				S3?	5 Undetermined	1	90.6 ± 1.0	NB
N	*Barbula convoluta*	Lesser Bird's-claw Beard Moss				S3S4	4 Secure	1	86.7 ± 15.0	NB
N	*Brachythecium velutinum*	Velvet Ragged Moss				S3S4	4 Secure	3	46.7 ± 0.0	PE
N	*Calliergon giganteum*	Giant Spear Moss				S3S4	3 Sensitive	1	47.5 ± 0.0	PE
N	*Dicranella cerviculata*	a Moss				S3S4	3 Sensitive	4	77.0 ± 0.0	NS
N	*Dicranum majus*	Greater Broom Moss				S3S4	4 Secure	24	72.9 ± 0.0	PE
N	*Dicranum leioneuron*	a Dicranum Moss				S3S4	4 Secure	2	16.1 ± 0.0	NB
N	*Encalypta ciliata*	Fringed Extinguisher Moss				S3S4	3 Sensitive	2	93.8 ± 0.0	NB
N	*Fissidens bryoides*	Lesser Pocket Moss				S3S4	4 Secure	6	48.2 ± 0.0	PE
N	*Helodium blandowii*	Wetland-plume Moss				S3S4	4 Secure	1	39.7 ± 0.0	PE
N	*Heterocladium dimorphum*	Dimorphous Tangle Moss				S3S4	4 Secure	6	72.9 ± 0.0	PE
N	*Isopterygiopsis muelleriana*	a Moss				S3S4	4 Secure	19	49.2 ± 0.0	PE
N	*Myurella julacea*	Small Mouse-tail Moss				S3S4	4 Secure	2	94.2 ± 0.0	NB
N	*Pogonatum dentatum*	Mountain Hair Moss				S3S4	4 Secure	5	77.0 ± 0.0	NS
N	*Sphagnum compactum*	Compact Peat Moss				S3S4	4 Secure	5	42.3 ± 1.0	PE
N	*Sphagnum quinquefarium*	Five-ranked Peat Moss				S3S4	4 Secure	1	89.7 ± 0.0	NB
N	*Sphagnum torreyanum*	a Peatmoss				S3S4	4 Secure	1	63.2 ± 0.0	NB
N	*Sphagnum austinii*	Austin's Peat Moss				S3S4	4 Secure	1	30.1 ± 0.0	NS
N	*Sphagnum contortum*	Twisted Peat Moss				S3S4	4 Secure	1	63.2 ± 0.0	NB
N	*Tetraphis geniculata*	Geniculate Four-tooth Moss				S3S4	4 Secure	12	77.0 ± 0.0	PE
N	*Tetraplodon angustatus*	Toothed-leaved Nitrogen Moss				S3S4	4 Secure	1	87.4 ± 0.0	NB
N	*Weissia controversa*	Green-Cushioned Weissia				S3S4	4 Secure	3	93.8 ± 0.0	PE
N	*Abietinella abietina*	Wiry Fern Moss				S3S4	4 Secure	2	94.2 ± 1.0	NS
N	*Trichostomum tenuirostre*	Acid-Soil Moss				S3S4	4 Secure	4	86.9 ± 0.0	NB
N	*Rauiella scita*	Smaller Fern Moss				S3S4	3 Sensitive	1	84.5 ± 0.0	NB
N	*Pannaria rubiginosa*	Brown-eyed Shingle Lichen				S3S4	3 Sensitive	5	46.5 ± 0.0	PE
N	*Ramalina thrausta*	Angelhair Ramalina Lichen				S3S4	5 Undetermined	11	79.8 ± 1.0	NB
N	*Hypogymnia vittata*	Slender Monk's Hood Lichen				S3S4	4 Secure	22	79.8 ± 1.0	NB
N	*Leptogium teretiusculum*	Beaded Jellyskin Lichen				S3S4	5 Undetermined	6	46.7 ± 0.0	PE
N	*Cladonia floerkeana*	Gritty British Soldiers Lichen				S3S4	4 Secure	4	92.8 ± 1.0	NB
N	*Xylopsora friesii*	a Lichen				S3S4	5 Undetermined	1	93.7 ± 1.0	NB
N	*Montanelia panniformis*	Shingled Camouflage Lichen				S3S4	5 Undetermined	4	82.0 ± 1.0	NB
N	*Nephroma parile*	Powdery Kidney Lichen				S3S4	4 Secure	8	65.7 ± 0.0	NB
N	*Protopannaria pezizoides*	Brown-gray Moss-shingle Lichen				S3S4	4 Secure	16	49.9 ± 0.0	PE
N	*Pseudocyphellaria holarctica*	Yellow Specklebelly Lichen				S3S4	3 Sensitive	26	18.3 ± 0.0	NB
N	*Stereocaulon paschale*	Easter Foam Lichen				S3S4	5 Undetermined	1	29.9 ± 1.0	NB
N	*Pannaria conoplea*	Mealy-rimmed Shingle Lichen				S3S4	3 Sensitive	16	48.5 ± 0.0	PE
N	*Anaptychia palmulata*	Shaggy Fringed Lichen				S3S4	3 Sensitive	24	50.3 ± 0.0	PE
N	*Peltigera neopolydactyla*	Undulating Pelt Lichen				S3S4	5 Undetermined	8	46.5 ± 0.0	PE
N	*Cladonia cariosa*	Lesser Ribbed Pixie Lichen				S3S4	4 Secure	4	34.8 ± 0.0	NB
N	*Hypocenomyce scalaris*	Common Clam Lichen				S3S4	5 Undetermined	1	90.6 ± 1.0	NB
N	*Dermatocarpon luridum*	Brookside Stippleback				S3S4	4 Secure	34	77.3 ± 0.0	NS

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N	*Leucodon brachypus*	Lichen a Moss				SH	2 May Be At Risk	12	81.0 ± 0.0	NB
N	*Splachnum luteum*	Yellow Collar Moss				SH	5 Undetermined	1	84.7 ± 100.0	NB
N	*Pseudocyphellaria perpetua*	Gilded Specklebelly Lichen				SNA	3 Sensitive	1	69.2 ± 0.0	NS
P	*Juglans cinerea*	Butternut	Endangered	Endangered	Endangered	S1	1 At Risk	10	50.8 ± 0.0	PE
P	*Symphyotrichum laurentianum*	Gulf of St Lawrence Aster	Threatened	Threatened	Endangered	S1	1 At Risk	82	78.2 ± 0.0	NB
P	*Symphyotrichum subulatum (Bathurst pop)*	Bathurst Aster - Bathurst pop.	Special Concern	Special Concern	Endangered	S2	1 At Risk	20	64.9 ± 0.0	NB
P	*Isoetes prototypus*	Prototype Quillwort	Special Concern	Special Concern	Endangered	S2	1 At Risk	13	81.6 ± 0.0	NS
P	*Lechea maritima var. subcylindrica*	Beach Pinweed	Special Concern			S2	3 Sensitive	509	37.4 ± 0.0	NB
P	*Antennaria howellii ssp. petaloidea*	Pussy-Toes				S1	2 May Be At Risk	7	57.8 ± 5.0	PE
P	*Symphyotrichum subulatum (non-Bathurst pop)*	Annual Saltmarsh Aster				S1	2 May Be At Risk	12	35.1 ± 0.0	NB
P	*Pseudognaphalium obtusifolium*	Eastern Cudweed				S1	2 May Be At Risk	28	45.9 ± 5.0	NB
P	*Hieracium robinsonii*	Robinson's Hawkweed				S1	3 Sensitive	9	82.7 ± 0.0	NB
P	*Solidago multiradiata*	Multi-rayed Goldenrod				S1	2 May Be At Risk	19	49.7 ± 0.0	NB
P	*Betula michauxii*	Michaux's Dwarf Birch				S1	2 May Be At Risk	3	99.0 ± 0.0	NB
P	*Draba arabisans*	Rock Whitlow-Grass				S1	2 May Be At Risk	4	79.2 ± 0.0	NB
P	*Draba glabella*	Rock Whitlow-Grass				S1	2 May Be At Risk	3	94.0 ± 0.0	NB
P	*Draba incana*	Twisted Whitlow-grass				S1	2 May Be At Risk	4	94.5 ± 0.0	PE
P	*Stellaria crassifolia*	Fleshy Stitchwort				S1	2 May Be At Risk	3	19.5 ± 5.0	NB
P	*Chenopodiastrum simplex*	Maple-leaved Goosefoot				S1	2 May Be At Risk	5	72.6 ± 1.0	NB
P	*Suaeda rolandii*	Roland's Sea-Blite				S1	3 Sensitive	3	53.0 ± 0.0	NB
P	*Hypericum virginicum*	Virginia St. John's-wort				S1	2 May Be At Risk	1	92.6 ± 3.0	NS
P	*Corema conradii*	Broom Crowberry				S1	2 May Be At Risk	12	57.6 ± 0.0	PE
P	*Vaccinium boreale*	Northern Blueberry				S1	2 May Be At Risk	5	22.5 ± 1.0	NB
P	*Vaccinium uliginosum*	Alpine Bilberry				S1	2 May Be At Risk	1	81.0 ± 1.0	PE
P	*Euphorbia polygonifolia*	Seaside Spurge				S1	2 May Be At Risk	23	33.0 ± 0.0	NB
P	*Proserpinaca pectinata*	Comb-leaved Mermaidweed				S1	2 May Be At Risk	2	78.1 ± 5.0	NS
P	*Primula laurentiana*	Laurentian Primrose				S1	2 May Be At Risk	9	94.3 ± 0.0	NB
P	*Ranunculus sceleratus*	Cursed Buttercup				S1	2 May Be At Risk	1	88.7 ± 100.0	NB
P	*Amelanchier fernaldii*	Fernald's Serviceberry				S1	2 May Be At Risk	3	52.6 ± 5.0	NS
P	*Dryas integrifolia*	Entire-leaved Mountain Avens				S1	2 May Be At Risk	14	48.6 ± 3.0	NB
P	*Geum fragarioides*	Barren Strawberry				S1	2 May Be At Risk	1	40.5 ± 1.0	NB
P	*Salix myrtillifolia*	Blueberry Willow				S1	2 May Be At Risk	24	49.2 ± 0.0	NB
P	*Saxifraga paniculata ssp. laestadii*	Laestadius' Saxifrage				S1	2 May Be At Risk	3	93.9 ± 0.0	NB
P	*Agalinis purpurea var. parviflora*	Small-flowered Purple False Foxglove				S1	2 May Be At Risk	39	30.2 ± 0.0	NS
P	*Viola sagittata var. ovata*	Arrow-Leaved Violet				S1	2 May Be At Risk	2	86.3 ± 1.0	PE
P	*Carex annectens*	Yellow-Fruited Sedge				S1	2 May Be At Risk	3	10.4 ± 0.0	NB
P	*Carex atlantica ssp. atlantica*	Atlantic Sedge				S1	2 May Be At Risk	7	14.2 ± 0.0	NB
P	*Carex backii*	Rocky Mountain Sedge				S1	2 May Be At Risk	2	72.1 ± 0.0	NB
P	*Carex merritt-fernaldii*	Merritt Fernald's Sedge				S1	2 May Be At Risk	1	72.6 ± 0.0	NB
P	*Carex rariflora*	Loose-flowered Alpine Sedge				S1	2 May Be At Risk	1	94.4 ± 0.0	PE
P	*Carex sterilis*	Sterile Sedge				S1	2 May Be At Risk	1	82.8 ± 2.0	NB
P	*Scirpus pendulus*	Hanging Bulrush				S1	2 May Be At Risk	7	29.2 ± 0.0	NS
P	*Sisyrinchium angustifolium*	Narrow-leaved Blue-eyed-grass				S1	2 May Be At Risk	2	51.6 ± 5.0	NS
P	*Juncus greenei*	Greene's Rush				S1	2 May Be At Risk	11	33.6 ± 5.0	PE
P	*Juncus stygius ssp. americanus*	Moor Rush				S1	2 May Be At Risk	16	31.5 ± 5.0	NB

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P	*Goodyera pubescens*	Downy Rattlesnake-Plantain				S1	2 May Be At Risk	5	72.4 ± 0.0	NB
P	*Malaxis monophyllos var. brachypoda*	North American White Adder's-mouth				S1	2 May Be At Risk	6	48.2 ± 0.0	PE
P	*Platanthera macrophylla*	Large Round-Leaved Orchid				S1	2 May Be At Risk	5	31.0 ± 0.0	NB
P	*Calamagrostis stricta ssp. inexpansa*	Slim-stemmed Reed Grass				S1	2 May Be At Risk	2	28.4 ± 1.0	NB
P	*Catabrosa aquatica*	Water Whorl Grass				S1	2 May Be At Risk	10	80.1 ± 5.0	PE
P	*Danthonia compressa*	Flattened Oat Grass				S1	2 May Be At Risk	16	32.5 ± 0.0	NB
P	*Festuca subverticillata*	Nodding Fescue				S1	2 May Be At Risk	6	87.2 ± 0.0	NS
P	*Potamogeton friesii*	Fries' Pondweed				S1	2 May Be At Risk	20	36.6 ± 0.0	PE
P	*Dryopteris filix-mas ssp. brittonii*	Britton's Male Fern				S1	2 May Be At Risk	2	60.5 ± 1.0	NB
P	*Schizaea pusilla*	Little Curlygrass Fern				S1	2 May Be At Risk	1	90.0 ± 0.0	NB
P	*Bidens heterodoxa*	Connecticut Beggar-Ticks				S1?	2 May Be At Risk	8	88.8 ± 0.0	NB
P	*Polygonum aviculare ssp. neglectum*	Narrow-leaved Knotweed				S1?	5 Undetermined	4	3.8 ± 1.0	NB
P	*Cuscuta cephalanthi*	Buttonbush Dodder				S1S3	2 May Be At Risk	5	21.5 ± 0.0	NB
P	*Eriophorum russeolum ssp. albidum*	smooth-fruited russet cottongrass				S1S3	5 Undetermined	1	29.0 ± 1.0	NB
P	*Neottia bifolia*	Southern Twayblade			Endangered	S2	1 At Risk	14	15.5 ± 0.0	NB
P	*Osmorhiza longistylis*	Smooth Sweet Cicely				S2	3 Sensitive	5	69.9 ± 1.0	NS
P	*Ionactis linariifolia*	Flax-leaved Aster				S2	3 Sensitive	1	77.5 ± 5.0	NB
P	*Pseudognaphalium macounii*	Macoun's Cudweed				S2	3 Sensitive	41	47.2 ± 0.0	PE
P	*Boechera stricta*	Drummond's Rockcress				S2	3 Sensitive	8	71.8 ± 0.0	NB
P	*Sagina nodosa*	Knotted Pearlwort				S2	3 Sensitive	2	62.4 ± 0.0	PE
P	*Sagina nodosa ssp. borealis*	Knotted Pearlwort				S2	3 Sensitive	5	60.6 ± 0.0	PE
P	*Stellaria longifolia*	Long-leaved Starwort				S2	3 Sensitive	8	30.9 ± 1.0	NB
P	*Atriplex glabriuscula var. franktonii*	Frankton's Saltbush				S2	4 Secure	7	23.6 ± 0.0	NB
P	*Oxybasis rubra*	Red Goosefoot				S2	3 Sensitive	11	21.5 ± 0.0	NB
P	*Hypericum x dissimulatum*	Disguised St. John's-wort				S2	3 Sensitive	3	48.6 ± 0.0	PE
P	*Triosteum aurantiacum*	Orange-fruited Tinker's Weed				S2	3 Sensitive	7	68.7 ± 0.0	NB
P	*Shepherdia canadensis*	Soapberry				S2	3 Sensitive	41	46.1 ± 0.0	NB
P	*Gentiana linearis*	Narrow-Leaved Gentian				S2	3 Sensitive	1	73.4 ± 50.0	NB
P	*Myriophyllum humile*	Low Water Milfoil				S2	3 Sensitive	1	89.6 ± 1.0	NB
P	*Proserpinaca palustris*	Marsh Mermaidweed				S2	3 Sensitive	2	79.0 ± 1.0	NS
P	*Hedeoma pulegioides*	American False Pennyroyal				S2	4 Secure	3	61.9 ± 1.0	NS
P	*Nuphar x rubrodisca*	Red-disk Yellow Pond-lily				S2	3 Sensitive	17	20.9 ± 1.0	NB
P	*Aphyllon uniflorum*	one-flowered broomrape				S2	3 Sensitive	3	77.8 ± 0.0	PE
P	*Persicaria careyi*	Carey's Smartweed				S2	3 Sensitive	2	30.3 ± 1.0	NB
P	*Anemone parviflora*	Small-flowered Anemone				S2	3 Sensitive	8	49.2 ± 0.0	NB
P	*Hepatica americana*	Round-lobed Hepatica				S2	3 Sensitive	3	80.7 ± 0.0	NS
P	*Crataegus scabrida*	Rough Hawthorn				S2	3 Sensitive	3	3.9 ± 1.0	NB
P	*Crataegus succulenta*	Fleshy Hawthorn				S2	3 Sensitive	6	35.5 ± 0.0	PE
P	*Salix candida*	Sage Willow				S2	3 Sensitive	6	81.0 ± 0.0	PE
P	*Euphrasia randii*	Rand's Eyebright				S2	2 May Be At Risk	3	36.6 ± 0.0	PE
P	*Dirca palustris*	Eastern Leatherwood				S2	2 May Be At Risk	1	42.7 ± 1.0	NB
P	*Sagittaria montevidensis ssp. spongiosa*	Spongy Arrowhead				S2	4 Secure	67	60.2 ± 0.0	NB
P	*Symplocarpus foetidus*	Eastern Skunk Cabbage				S2	3 Sensitive	117	30.9 ± 0.0	NS
P	*Carex comosa*	Bearded Sedge				S2	2 May Be At Risk	5	26.9 ± 0.0	NB
P	*Carex granularis*	Limestone Meadow Sedge				S2	3 Sensitive	9	10.5 ± 0.0	NB
P	*Carex gynocrates*	Northern Bog Sedge				S2	3 Sensitive	1	89.6 ± 0.0	PE
P	*Carex hirtifolia*	Pubescent Sedge				S2	3 Sensitive	13	64.3 ± 0.0	NS
P	*Carex livida*	Livid Sedge				S2	3 Sensitive	8	29.0 ± 0.0	NS
P	*Carex plantaginea*	Plantain-Leaved Sedge				S2	3 Sensitive	1	95.6 ± 0.0	NB

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P	*Carex prairea*	Prairie Sedge				S2	3 Sensitive	1	93.6 ± 0.0	PE
P	*Carex rostrata*	Narrow-leaved Beaked Sedge				S2	3 Sensitive	2	70.1 ± 5.0	NB
P	*Carex tenuiflora*	Sparse-Flowered Sedge				S2	2 May Be At Risk	9	32.3 ± 0.0	NS
P	*Carex albicans var. emmonsii*	White-tinged Sedge				S2	3 Sensitive	21	12.1 ± 0.0	NB
P	*Eriophorum gracile*	Slender Cottongrass				S2	2 May Be At Risk	50	16.3 ± 0.0	NB
P	*Blysmopsis rufa*	Red Bulrush				S2	3 Sensitive	35	35.9 ± 0.0	PE
P	*Juncus vaseyi*	Vasey Rush				S2	3 Sensitive	12	40.0 ± 0.0	NB
P	*Allium tricoccum*	Wild Leek				S2	2 May Be At Risk	3	64.3 ± 1.0	NS
P	*Calypso bulbosa var. americana*	Calypso				S2	2 May Be At Risk	2	76.2 ± 5.0	NB
P	*Coeloglossum viride*	Long-bracted Frog Orchid				S2	2 May Be At Risk	5	59.1 ± 10.0	NB
P	*Goodyera oblongifolia*	Menzies' Rattlesnake-plantain				S2	3 Sensitive	1	48.0 ± 0.0	PE
P	*Spiranthes lucida*	Shining Ladies'-Tresses				S2	3 Sensitive	1	76.5 ± 1.0	NB
P	*Spiranthes ochroleuca*	Yellow Ladies'-tresses				S2	2 May Be At Risk	6	27.9 ± 0.0	NB
P	*Elymus canadensis*	Canada Wild Rye				S2	2 May Be At Risk	1	51.0 ± 1.0	NB
P	*Piptatheropsis canadensis*	Canada Ricegrass				S2	3 Sensitive	3	55.7 ± 10.0	NB
P	*Poa glauca*	Glaucous Blue Grass				S2	4 Secure	13	85.3 ± 0.0	NS
P	*Puccinellia phryganodes ssp. neoarctica*	Creeping Alkali Grass				S2	3 Sensitive	2	2.2 ± 1.0	NB
P	*Zizania aquatica var. aquatica*	Eastern Wild Rice				S2	5 Undetermined	4	62.1 ± 0.0	NS
P	*Piptatheropsis pungens*	Slender Ricegrass				S2	2 May Be At Risk	5	67.4 ± 5.0	NB
P	*Potamogeton vaseyi*	Vasey's Pondweed				S2	3 Sensitive	1	32.5 ± 0.0	PE
P	*Asplenium trichomanes*	Maidenhair Spleenwort				S2	3 Sensitive	4	68.2 ± 0.0	NB
P	*Anchistea virginica*	Virginia chain fern				S2	3 Sensitive	13	32.3 ± 0.0	NS
P	*Woodsia alpina*	Alpine Cliff Fern				S2	3 Sensitive	3	82.6 ± 0.0	NB
P	*Diphasiastrum sitchense*	Sitka Ground-cedar				S2	3 Sensitive	4	34.8 ± 0.0	NB
P	*Selaginella selaginoides*	Low Spikemoss				S2	3 Sensitive	8	91.2 ± 0.0	NB
P	*Toxicodendron radicans var. radicans*	eastern poison ivy				S2?	3 Sensitive	6	30.5 ± 5.0	NB
P	*Symphyotrichum novi-belgii var. crenifolium*	New York Aster				S2?	5 Undetermined	5	25.3 ± 0.0	NB
P	*Humulus lupulus var. lupuloides*	Common Hop				S2?	3 Sensitive	1	71.6 ± 5.0	NB
P	*Rubus x recurvicaulis*	arching dewberry				S2?	4 Secure	5	26.9 ± 0.0	NB
P	*Galium obtusum*	Blunt-leaved Bedstraw				S2?	4 Secure	7	35.5 ± 1.0	NB
P	*Salix myricoides*	Bayberry Willow				S2?	3 Sensitive	1	49.2 ± 1.0	NB
P	*Carex vacillans*	Estuarine Sedge				S2?	3 Sensitive	1	41.1 ± 0.0	NB
P	*Solidago altissima*	Tall Goldenrod				S2S3	4 Secure	1	62.1 ± 0.0	NB
P	*Callitriche hermaphroditica*	Northern Water-starwort				S2S3	4 Secure	9	45.1 ± 0.0	PE
P	*Elatine americana*	American Waterwort				S2S3	3 Sensitive	6	28.5 ± 0.0	NB
P	*Bartonia paniculata ssp. iodandra*	Branched Bartonia				S2S3	3 Sensitive	4	87.4 ± 0.0	NB
P	*Geranium robertianum*	Herb Robert				S2S3	4 Secure	80	44.3 ± 0.0	PE
P	*Myriophyllum quitense*	Andean Water Milfoil				S2S3	4 Secure	1	93.2 ± 5.0	PE
P	*Epilobium coloratum*	Purple-veined Willowherb				S2S3	3 Sensitive	5	11.2 ± 1.0	NB
P	*Rumex pallidus*	Seabeach Dock				S2S3	3 Sensitive	6	35.4 ± 0.0	PE
P	*Rubus pensilvanicus*	Pennsylvania Blackberry				S2S3	4 Secure	29	30.7 ± 0.0	NS
P	*Galium labradoricum*	Labrador Bedstraw				S2S3	3 Sensitive	30	34.6 ± 0.0	NB
P	*Carex adusta*	Lesser Brown Sedge				S2S3	4 Secure	8	37.4 ± 0.0	NB
P	*Scirpus atrovirens*	Dark-green Bulrush				S2S3	5 Undetermined	1	35.4 ± 0.0	PE
P	*Corallorhiza maculata var. occidentalis*	Spotted Coralroot				S2S3	3 Sensitive	7	44.8 ± 10.0	NB
P	*Neottia auriculata*	Auricled Twayblade				S2S3	3 Sensitive	1	95.1 ± 0.0	NB

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P	*Spiranthes cernua*	Nodding Ladies'-Tresses				S2S3	3 Sensitive	17	16.2 ± 0.0	NB
P	*Eragrostis pectinacea*	Tufted Love Grass				S2S3	4 Secure	6	40.6 ± 0.0	NB
P	*Stuckenia filiformis*	Thread-leaved Pondweed				S2S3	3 Sensitive	5	20.9 ± 1.0	NB
P	*Potamogeton praelongus*	White-stemmed Pondweed				S2S3	4 Secure	29	31.9 ± 0.0	NS
P	*Isoetes acadiensis*	Acadian Quillwort				S2S3	3 Sensitive	1	94.1 ± 1.0	NS
P	*Ophioglossum pusillum*	Northern Adder's-tongue				S2S3	3 Sensitive	7	43.2 ± 50.0	NS
P	*Panax trifolius*	Dwarf Ginseng				S3	3 Sensitive	30	21.8 ± 0.0	NB
P	*Artemisia campestris ssp. caudata*	Tall Wormwood				S3	4 Secure	5	61.9 ± 0.0	PE
P	*Bidens hyperborea*	Estuary Beggarticks				S3	4 Secure	33	48.9 ± 0.0	NB
P	*Erigeron hyssopifolius*	Hyssop-leaved Fleabane				S3	4 Secure	57	47.2 ± 1.0	NB
P	*Nabalus racemosus*	Glaucous Rattlesnakeroot				S3	4 Secure	2	74.9 ± 0.0	PE
P	*Symphyotrichum boreale*	Boreal Aster				S3	3 Sensitive	19	36.2 ± 0.0	PE
P	*Betula pumila*	Bog Birch				S3	4 Secure	69	35.8 ± 0.0	PE
P	*Arabis pycnocarpa*	Cream-flowered Rockcress				S3	4 Secure	8	21.4 ± 0.0	NB
P	*Cardamine maxima*	Large Toothwort				S3	4 Secure	2	57.6 ± 0.0	PE
P	*Subularia aquatica ssp. americana*	American Water Awlwort				S3	4 Secure	2	91.0 ± 0.0	NB
P	*Stellaria humifusa*	Saltmarsh Starwort				S3	4 Secure	15	19.5 ± 5.0	NB
P	*Ceratophyllum echinatum*	Prickly Hornwort				S3	3 Sensitive	28	8.3 ± 1.0	NB
P	*Hudsonia tomentosa*	Woolly Beach-heath				S3	4 Secure	242	2.2 ± 0.0	NB
P	*Crassula aquatica*	Water Pygmyweed				S3	4 Secure	6	72.4 ± 0.0	NB
P	*Rhodiola rosea*	Roseroot				S3	4 Secure	22	79.0 ± 0.0	NB
P	*Penthorum sedoides*	Ditch Stonecrop				S3	4 Secure	25	65.7 ± 0.0	NB
P	*Elatine minima*	Small Waterwort				S3	4 Secure	1	91.3 ± 0.0	NB
P	*Geranium bicknellii*	Bicknell's Crane's-bill				S3	4 Secure	16	37.4 ± 0.0	NB
P	*Myriophyllum farwellii*	Farwell's Water Milfoil				S3	4 Secure	9	30.1 ± 1.0	NB
P	*Myriophyllum verticillatum*	Whorled Water Milfoil				S3	4 Secure	14	29.3 ± 1.0	NB
P	*Teucrium canadense*	Canada Germander				S3	3 Sensitive	115	12.4 ± 0.0	NB
P	*Nuphar microphylla*	Small Yellow Pond-lily				S3	4 Secure	7	29.3 ± 1.0	NB
P	*Epilobium hornemannii*	Hornemann's Willowherb				S3	4 Secure	3	93.5 ± 1.0	NB
P	*Epilobium hornemannii ssp. hornemannii*	Hornemann's Willowherb				S3	4 Secure	1	93.8 ± 0.0	NB
P	*Epilobium strictum*	Downy Willowherb				S3	4 Secure	36	6.7 ± 1.0	NB
P	*Polygala sanguinea*	Blood Milkwort				S3	3 Sensitive	15	6.6 ± 0.0	NB
P	*Persicaria arifolia*	Halberd-leaved Tearthumb				S3	4 Secure	104	13.9 ± 0.0	NB
P	*Persicaria punctata*	Dotted Smartweed				S3	4 Secure	46	28.6 ± 0.0	NS
P	*Fallopia scandens*	Climbing False Buckwheat				S3	4 Secure	66	27.3 ± 0.0	PE
P	*Samolus parviflorus*	Seaside Brookweed				S3	4 Secure	120	19.7 ± 0.0	NB
P	*Pyrola minor*	Lesser Pyrola				S3	4 Secure	5	33.0 ± 0.0	NS
P	*Clematis occidentalis*	Purple Clematis				S3	4 Secure	6	47.2 ± 0.0	NS
P	*Ranunculus gmelinii*	Gmelin's Water Buttercup				S3	4 Secure	51	26.4 ± 0.0	NB
P	*Thalictrum confine*	Northern Meadow-rue				S3	4 Secure	1	67.6 ± 1.0	PE
P	*Amelanchier canadensis*	Canada Serviceberry				S3	4 Secure	34	17.2 ± 0.0	NB
P	*Rosa palustris*	Swamp Rose				S3	4 Secure	3	27.4 ± 0.0	NB
P	*Sanguisorba canadensis*	Canada Burnet				S3	4 Secure	15	86.6 ± 0.0	NB
P	*Galium boreale*	Northern Bedstraw				S3	4 Secure	8	42.6 ± 5.0	NS
P	*Salix pedicellaris*	Bog Willow				S3	4 Secure	42	16.3 ± 0.0	NB
P	*Salix interior*	Sandbar Willow				S3	4 Secure	1	51.9 ± 1.0	NB
P	*Comandra umbellata*	Bastard's Toadflax				S3	4 Secure	63	12.0 ± 0.0	NB
P	*Comandra umbellata ssp. umbellata*	Bastard's Toadflax				S3	4 Secure	1	83.9 ± 20.0	PE
P	*Limosella australis*	Southern Mudwort				S3	4 Secure	85	24.8 ± 1.0	NB
P	*Pilea pumila*	Dwarf Clearweed				S3	4 Secure	84	25.9 ± 0.0	PE
P	*Viola adunca*	Hooked Violet				S3	4 Secure	2	72.4 ± 0.0	NB
P	*Viola nephrophylla*	Northern Bog Violet				S3	4 Secure	4	50.0 ± 0.0	PE
P	*Carex arcta*	Northern Clustered Sedge				S3	4 Secure	3	68.9 ± 20.0	NB

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
P	*Carex capillaris*	Hairlike Sedge				S3	4 Secure	9	55.2 ± 0.0	NS
P	*Carex chordorrhiza*	Creeping Sedge				S3	4 Secure	54	27.7 ± 0.0	NB
P	*Carex conoidea*	Field Sedge				S3	4 Secure	5	10.4 ± 0.0	NB
P	*Carex eburnea*	Bristle-leaved Sedge				S3	4 Secure	11	65.9 ± 100.0	NB
P	*Carex exilis*	Coastal Sedge				S3	4 Secure	1	78.5 ± 0.0	NS
P	*Carex garberi*	Garber's Sedge				S3	3 Sensitive	1	21.4 ± 0.0	NB
P	*Carex haydenii*	Hayden's Sedge				S3	4 Secure	2	23.2 ± 0.0	NB
P	*Carex lupulina*	Hop Sedge				S3	4 Secure	6	51.8 ± 3.0	NS
P	*Carex michauxiana*	Michaux's Sedge				S3	4 Secure	7	29.0 ± 0.0	NS
P	*Carex ormostachya*	Necklace Spike Sedge				S3	4 Secure	4	35.5 ± 1.0	NB
P	*Carex rosea*	Rosy Sedge				S3	4 Secure	7	87.0 ± 1.0	NS
P	*Carex tenera*	Tender Sedge				S3	4 Secure	9	29.3 ± 0.0	NB
P	*Carex tuckermanii*	Tuckerman's Sedge				S3	4 Secure	25	44.9 ± 0.0	NS
P	*Carex wiegandii*	Wiegand's Sedge				S3	4 Secure	119	14.5 ± 0.0	NB
P	*Carex recta*	Estuary Sedge				S3	4 Secure	21	32.6 ± 0.0	NB
P	*Carex atratiformis*	Scabrous Black Sedge				S3	4 Secure	3	86.9 ± 0.0	NS
P	*Cyperus dentatus*	Toothed Flatsedge				S3	4 Secure	1	58.9 ± 1.0	NB
P	*Cyperus esculentus var. leptostachyus*	Perennial Yellow Nutsedge				S3	4 Secure	1	86.8 ± 0.0	NB
P	*Eleocharis intermedia*	Matted Spikerush				S3	4 Secure	1	95.2 ± 0.0	NB
P	*Eleocharis quinqueflora*	Few-flowered Spikerush				S3	4 Secure	1	88.5 ± 0.0	PE
P	*Rhynchospora fusca*	Brown Beakrush				S3	4 Secure	8	29.1 ± 0.0	NS
P	*Trichophorum clintonii*	Clinton's Clubrush				S3	4 Secure	24	92.6 ± 0.0	NB
P	*Bolboschoenus fluviatilis*	River Bulrush				S3	3 Sensitive	4	32.7 ± 1.0	NB
P	*Schoenoplectus torreyi*	Torrey's Bulrush				S3	4 Secure	1	37.2 ± 0.0	NB
P	*Lemna trisulca*	Star Duckweed				S3	4 Secure	27	28.5 ± 0.0	NB
P	*Cypripedium reginae*	Showy Lady's-Slipper				S3	3 Sensitive	36	33.1 ± 1.0	NS
P	*Liparis loeselii*	Loesel's Twayblade				S3	4 Secure	64	21.6 ± 0.0	NB
P	*Platanthera blephariglottis*	White Fringed Orchid				S3	4 Secure	217	10.0 ± 0.0	NB
P	*Platanthera grandiflora*	Large Purple Fringed Orchid				S3	3 Sensitive	47	16.5 ± 0.0	NB
P	*Bromus latiglumis*	Broad-Glumed Brome				S3	3 Sensitive	23	60.7 ± 0.0	NS
P	*Calamagrostis pickeringii*	Pickering's Reed Grass				S3	4 Secure	6	73.6 ± 0.0	NB
P	*Dichanthelium depauperatum*	Starved Panic Grass				S3	4 Secure	6	59.4 ± 0.0	NB
P	*Potamogeton obtusifolius*	Blunt-leaved Pondweed				S3	4 Secure	36	25.9 ± 0.0	NB
P	*Xyris montana*	Northern Yellow-Eyed-Grass				S3	4 Secure	88	14.8 ± 0.0	NB
P	*Zannichellia palustris*	Horned Pondweed				S3	4 Secure	53	9.6 ± 0.0	NB
P	*Cryptogramma stelleri*	Steller's Rockbrake				S3	4 Secure	1	93.0 ± 0.0	NS
P	*Asplenium viride*	Green Spleenwort				S3	4 Secure	15	72.2 ± 1.0	NB
P	*Dryopteris fragrans*	Fragrant Wood Fern				S3	4 Secure	43	80.8 ± 0.0	NB
P	*Woodsia glabella*	Smooth Cliff Fern				S3	4 Secure	34	80.8 ± 0.0	NB
P	*Isoetes tuckermanii*	Tuckerman's Quillwort				S3	4 Secure	2	87.4 ± 0.0	NB
P	*Diphasiastrum x sabinifolium*	Savin-leaved Ground-cedar				S3	4 Secure	17	33.8 ± 0.0	NB
P	*Huperzia appressa*	Mountain Firmoss				S3	3 Sensitive	18	83.0 ± 1.0	NS
P	*Sceptridium dissectum*	Dissected Moonwort				S3	4 Secure	7	30.3 ± 1.0	NB
P	*Botrychium lanceolatum ssp. angustisegmentum*	Narrow Triangle Moonwort				S3	3 Sensitive	10	31.7 ± 0.0	NB
P	*Botrychium simplex*	Least Moonwort				S3	4 Secure	7	33.1 ± 0.0	NB
P	*Polypodium appalachianum*	Appalachian Polypody				S3	4 Secure	23	50.2 ± 0.0	PE
P	*Crataegus submollis*	Quebec Hawthorn				S3?	3 Sensitive	2	90.4 ± 7.0	NS
P	*Mertensia maritima*	Sea Lungwort				S3S4	4 Secure	4	55.5 ± 0.0	NB
P	*Suaeda calceoliformis*	Horned Sea-blite				S3S4	4 Secure	44	6.9 ± 0.0	NB
P	*Myriophyllum sibiricum*	Siberian Water Milfoil				S3S4	4 Secure	34	47.4 ± 0.0	NS
P	*Utricularia gibba*	Humped Bladderwort				S3S4	4 Secure	4	9.3 ± 0.0	NB
P	*Rumex fueginus*	Tierra del Fuego Dock				S3S4	4 Secure	142	2.1 ± 1.0	NB
P	*Rubus chamaemorus*	Cloudberry				S3S4	4 Secure	120	30.8 ± 1.0	NB
P	*Geocaulon lividum*	Northern Comandra				S3S4	4 Secure	39	27.5 ± 0.0	NB
P	*Juniperus horizontalis*	Creeping Juniper				S3S4	4 Secure	41	45.9 ± 0.0	PE

Taxonomic Group	Scientific Name	Common Name	COSEWIC	SARA	Prov Legal Prot	Prov Rarity Rank	Prov GS Rank	# recs	Distance (km)	Prov
P	*Cladium mariscoides*	Smooth Twigrush				S3S4	4 Secure	7	8.3 ± 1.0	NB
P	*Eriophorum russeolum*	Russet Cottongrass				S3S4	4 Secure	226	9.5 ± 0.0	NB
P	*Triglochin gaspensis*	Gasp ├⌐ Arrowgrass				S3S4	4 Secure	73	9.7 ± 0.0	NB
P	*Spirodela polyrhiza*	great duckweed				S3S4	4 Secure	34	29.8 ± 1.0	NS
P	*Corallorhiza maculata*	Spotted Coralroot				S3S4	3 Sensitive	25	30.8 ± 0.0	NS
P	*Calamagrostis stricta*	Slim-stemmed Reed Grass				S3S4	4 Secure	38	19.7 ± 2.0	NB
P	*Calamagrostis stricta ssp. stricta*	Slim-stemmed Reed Grass				S3S4	4 Secure	31	31.9 ± 0.0	NS
P	*Distichlis spicata*	Salt Grass				S3S4	4 Secure	106	10.0 ± 0.0	NB
P	*Potamogeton oakesianus*	Oakes' Pondweed				S3S4	4 Secure	8	9.3 ± 0.0	NB
P	*Toxicodendron radicans*	Poison Ivy				S5	4 Secure	3	48.3 ± 0.0	PE
P	*Polygonum oxyspermum ssp. raii*	Ray's Knotweed				SH	0.1 Extirpated	4	83.9 ± 20.0	PE
P	*Montia fontana*	Water Blinks				SH	2 May Be At Risk	2	19.7 ± 1.0	NB
P	*Agalinis maritima*	Saltmarsh Agalinis				SX	0.1 Extirpated	2	74.0 ± 50.0	NB

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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.

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69	Blaney, C.S.; Mazerolle, D.M.; Oberndorfer, E. 2007. Fieldwork 2007. Atlantic Canada Conservation Data Centre. Sackville NB, 13770 recs.
68	Canadian Wildlife Service, Dartmouth. 2010. Piping Plover censuses 2007-09, 304 recs.
67	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.
62	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.
61	Sharkie, R., MacQuarrie, K., Fraser, M. 2003. A Floral Inventory of the Western Section of Prince Edward Island National Park and adjacent Crown lands. Parks Canada Agency, v + 106 pp.
60	Benjamin, L.K. (compiler). 2007. Significant Habitat & Species Database. Nova Scotia Dept Natural Resources, 8439 recs.
57	Neily, T.H. 2017. Maritmes Lichen and Bryophyte records. Atlantic Canada Conservation Data Centre.
56	Brunelle, P.-M. (compiler). 2009. ADIP/MDDS Odonata Database: data to 2006 inclusive. Atlantic Dragonfly Inventory Program (ADIP), 24200 recs.
53	Blaney, C.S. 2000. Fieldwork 2000. Atlantic Canada Conservation Data Centre. Sackville NB, 1265 recs.
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47	Blaney, C.S.; Mazerolle, D.M.; Belliveau, A.B. 2014. Atlantic Canada Conservation Data Centre Fieldwork 2014. Atlantic Canada Conservation Data Centre, # recs.
46	Chapman, C. 2018. Atlantic Canada Conservation Data Centre botanical fieldwork 2018. Atlantic Canada Conservation Data Centre.
45	Erskine, A.J. 1999. Maritime Nest Records Scheme (MNRS) 1937-1999. Canadian Wildlife Service, Sackville, 313 recs.
42	MacDonald, M. 2008. PEI Power Corridor Floral Surveys, 2004-08. Jacques Whitford Ltd, 2238 recs (979 rare).
41	Mazerolle, D.M. 2018. Atlantic Canada Conservation Data Centre botanical fieldwork 2018. Atlantic Canada Conservation Data Centre.
41	Wissink, R. 2006. Fundy National Park Digital Database. Parks Canada, 41 recs.
40	Curley, F.R. 2005. PEF&W Collection 2003-04. PEI Fish & Wildlife Div., 716 recs.
40	Munro, Marian K. Nova Scotia Provincial Museum of Natural History Herbarium Database. Nova Scotia Provincial Museum of Natural History, Halifax, Nova Scotia. 2013.
39	Klymko, J.J.D. 2016. 2015 field data. Atlantic Canada Conservation Data Centre.
39	Majka, C. 2009. Université de Moncton Insect Collection: Carabidae, Cerambycidae, Coccinellidae. Université de Moncton, 540 recs.
38	Churchill, J.L. 2018. Atlantic Canada Conservation Data Centre Fieldwork 2018. Atlantic Canada Conservation Data Centre, 907 recs.
36	Roland, A.E. & Smith, E.C. 1969. The Flora of Nova Scotia, 1st Ed. Nova Scotia Museum, Halifax, 743pp.
36	Scott, F.W. 2002. Nova Scotia Herpetofauna Atlas Database. Acadia University, Wolfville NS, 8856 recs.
35	Klymko, J. 2016. Atlantic Canada Conservation Data Centre Fieldwork 2016. Atlantic Canada Conservation Data Centre.
34	Blaney, C.S & Spicer, C.D.; Popma, T.M.; Basquill, S.P. 2003. Vascular Plant Surveys of Northumberland Strait Rivers & Amherst Area Peatlands. Nova Scotia Museum Research Grant, 501 recs.
34	Donell, R. 2008. Rare plant records from rare coastal plant project. Bouctouche Dune Irving Eco-centre. Pers. comm. to D.M. Mazerolle, 50 recs.
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33	Erskine, D. 1960. The plants of Prince Edward Island, 1st Ed. Research Branch, Agriculture Canada, Ottawa., Publication 1088. 1238 recs.
32	Blaney, C.S.; Spicer, C.D. 2001. Fieldwork 2001. Atlantic Canada Conservation Data Centre. Sackville NB, 981 recs.
32	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.
31	Benedict, B. Connell Herbarium Specimen Database Download 2004. Connell Memorial Herbarium, University of New Brunswick. 2004.
31	Sollows, M.C,. 2008. NBM Science Collections databases: mammals. New Brunswick Museum, Saint John NB, download Jan. 2008, 4983 recs.
30	Doucet, D.A. 2007. Lepidopteran Records, 1988-2006. Doucet, 700 recs.
29	Blaney, C.S.; Mazerolle, D.M. 2009. Fieldwork 2009. Atlantic Canada Conservation Data Centre. Sackville NB, 13395 recs.
26	Canadian Wildlife Service, Atlantic Region. 2010. Piping Plover censuses 2006-09. , 35 recs.
24	Bateman, M.C. 2001. Coastal Waterfowl Surveys Database, 1965-2001. Canadian Wildlife Service, Sackville, 667 recs.
24	Coursol, F. 2005. Dataset from New Brunswick fieldwork for Eriocaulon parkeri COSEWIC report. Coursol, Pers. comm. to C.S. Blaney, Aug 26. 110 recs.
24	Tingley, S. (compiler). 2001. Butterflies of New Brunswick. , Web site: www.geocities.com/Yosemite/8425/buttrfly. 142 recs.
23	Belland, R.J. 2012. PEI moss records from Devonian Botanical Garden. DBG Cryptogam Database, Web site: https://secure.devonian.ualberta.ca/bryo_search.php 748 recs.
23	Goltz, J.P. 2012. Field Notes, 1989-2005. , 1091 recs.

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22	Blaney, C.S.; Spicer, C.D.; Rothfels, C. 2004. Fieldwork 2004. Atlantic Canada Conservation Data Centre. Sackville NB, 1343 recs.
22	Plissner, J.H. & Haig, S.M. 1997. 1996 International piping plover census. US Geological Survey, Corvallis OR, 231 pp.
22	Sollows, M.C,. 2009. NBM Science Collections databases: molluscs. New Brunswick Museum, Saint John NB, download Jan. 2009, 6951 recs (2957 in Atlantic Canada).
21	Bryson, I. 2013. Nova Scotia rare plant records. CBCL Ltd., 180 records.
20	Kouchibouguac National Park, Natural Resource Conservation Sec. 1988. The Resources of Kouchibouguac National Park. Beach, H. (ed.) , 90 recs.
20	Pronych, G. & Wilson, A. 1993. Atlas of Rare Vascular Plants in Nova Scotia. Nova Scotia Museum, Halifax NS, I:1-168, II:169-331. 1446 recs.
19	Clayden, S.R. 2007. NBM Science Collections databases: vascular plants. New Brunswick Museum, Saint John NB, download Mar. 2007, 6914 recs.
19	Hinds, H.R. 1999. Connell Herbarium Database. University New Brunswick, Fredericton, 131 recs.
19	Pike, E., Tingley, S. & Christie, D.S. 2000. Nature NB Listserve. University of New Brunswick, listserv.unb.ca/archives/naturenb. 68 recs.
18	Gagnon, J. 2004. Specimen data from 2002 visit to Prince Edward Island. , 104 recs.
18	Klymko, J. Dataset of butterfly records at the New Brunswick Museum not yet accessioned by the museum. Atlantic Canada Conservation Data Centre. 2016.
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17	Mazerolle, D. 2003. Assessment of Seaside Pinweed (Lechea maritima var. subcylindrica) in Southeastern New Brunswick. Irving Eco-centre, la Dune du Bouctouche, 18 recs.
16	Grandtner, M.M. 1971. Ecological Study of the Interior Dunes of West Brackley Beach, Prince Edward Island National Park. Parks Canada, 1: 70. 41 recs.
16	Klymko, J.J.D.; Robinson, S.L. 2014. 2013 field data. Atlantic Canada Conservation Data Centre.
15	Belland, R.J. 1992. The Bryophytes of Kouchibouguac National Park. Parks Canada, Kouchibouguac NP, 101 pp. + map.
15	Edsall, J. 2001. Lepidopteran records in New Brunswick, 1997-99. , Pers. comm. to K.A. Bredin. 91 recs.
14	Churchill, J.L., Klymko, J.D.D. 2016. Atlantic Canada Conservation Data Centre Fieldwork 2016. Atlantic Canada Conservation Data Centre.
14	Mazerolle, M.J., Drolet, B., & Desrochers, A. 2001. Small Mammal Responses to Peat Mining of Southeastern Canadian Bogs. Can. J. Zool., 79:296-302. 21 recs.
14	Morton, L.D. & Savoie, M. 1983. The Mammals of Kouchibouguac National Park. Parks Canada Report prep. by Canadian Wildlife Service, Sackville, NB, Vols 1-4. 14 recs.
14	Thomas, A.W. 1996. A preliminary atlas of the butterflies of New Brunswick. New Brunswick Museum.
14	Zinck, M. & Roland, A.E. 1998. Roland's Flora of Nova Scotia. Nova Scotia Museum, 3rd ed., rev. M. Zinck; 2 Vol., 1297 pp.
13	Wissink, R. 2000. Rare Plants of Fundy: maps. Parks Canada, 20 recs.
12	Caissie, A. Herbarium Records. Fundy National Park, Alma NB. 1961-1993.
12	Hall, R.A. 2003. NS Freshwater Mussel Fieldwork. Nova Scotia Dept Natural Resources, 189 recs.
12	NatureServe Canada. 2018. iNaturalist Butterfly Data Export . iNaturalist.org and iNaturalist.ca.
12	Speers, L. 2008. Butterflies of Canada database: New Brunswick 1897-1999. Agriculture & Agri-Food Canada, Biological Resources Program, Ottawa, 2048 recs.
12	Webster, R.P. 2004. Lepidopteran Records for National Wildlife Areas in New Brunswick. Webster, 1101 recs.
11	Doucet, D.A. 2009. Census of Globally Rare, Endemic Butterflies of Nova Scotia Gulf of St Lawrence Salt Marshes. Nova Scotia Dept of Natural Resources, Species at Risk, 155 recs.
11	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.
11	McAlpine, D.F. 1983. Status & Conservation of Solution Caves in New Brunswick. New Brunswick Museum, Publications in Natural Science, no. 1, 28pp.
11	McMullin, R.T. 2015. Prince Edward Island's lichen biodiversity and proposed conservation status in a report prepared for the province of PEI. Biodiversity Institute of Ontario Herbarium, University of Guelph, 776 records.
11	Webster, R.P. & Edsall, J. 2007. 2005 New Brunswick Rare Butterfly Survey. Environmental Trust Fund, unpublished report, 232 recs.
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10	Klymko, J.J.D. 2016. 2014 field data. Atlantic Canada Conservation Data Centre.
10	Manthorne, A. 2014. MaritimesSwiftwatch Project database 2013-2014. Bird Studies Canada, Sackville NB, 326 recs.
10	Tremblay, E. 2001. Kouchibouguacis River Freshwater Mussel Data. Parks Canada, Kouchibouguac NP, 45 recs.
9	Amirault, D.L. 2000. Piping Plover Surveys, 1983-2000. Canadian Wildlife Service, Sackville, unpublished data. 70 recs.
9	Curley, F.R. 2007. PEF&W Collection. PEI Fish & Wildlife Div., 199 recs.
9	Godbout, V. 2002. SAR Inventory: Birds in Fort Beauséjour NHS. Parks Canada, Atlantic, SARINV02-01. 202 recs.
9	Mawhinney, K. & Seutin, G. 2001. Lepidoptera Survey of the Salt Marshes of of Kouchibouguac National Park. Parks Canada Unpublished Report, 5p. 9 recs.
9	McAlpine, D.F. 1998. NBM Science Collections: Wood Turtle records. New Brunswick Museum, Saint John NB, 329 recs.
9	Sabine, D.L. 2013. Dwaine Sabine butterfly records, 2009 and earlier.
8	Basquill, S.P. 2010. Plant data from Prince Edward Island National Park Forest Community Plots. Atlantic Canada Conservation Data Centre, 150 records.
8	Blaney, C.S. Miscellaneous specimens received by ACCDC (botany). Various persons. 2001-08.
8	Harris, P. 2004. Plant records from 1997-2003. Island Nature Trust, Charlottetown PE, 71 recs.
8	Hinds, H.R. 1997. Vascular Plants of Cocagne Island. , 14 recs.
8	Klymko, J.J.D. 2018. 2017 field data. Atlantic Canada Conservation Data Centre.
8	Popma, T.M. 2003. Fieldwork 2003. Atlantic Canada Conservation Data Centre. Sackville NB, 113 recs.
7	Benedict, B. Connell Herbarium Specimens. University New Brunswick, Fredericton. 2000.
7	Guignion, M; Ristau, C.; Lemon, D. 1995. The distribution & abundance of the Gulf of St. Lawrence Aster, Aster laurentianus in Prince Edward Island National Park. Can. Field-Nat, 109:462-464. 10 recs.
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7	Hinds, H.R. 1992. Rare Vascular Plants of Fundy National Park. , 10 recs.
7	McNeil, J.A. 2016. Blandings Turtle (Emydoidea blandingii), Eastern Ribbonsnake (Thamnophis sauritus), Wood Turtle (Glyptemys insculpta), and Snapping Turtle (Chelydra serpentina) sightings, 2016. Mersey Tobeatic

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	Research Institute, 774 records.
6	Belland, R.J. 2012. PEI moss records from New York Botanical Garden. NYBG Virtual Herbarium, Web site: http://sciweb.nybg.org/science2/vii2.asp 135 recs.
6	Bredin, K.A. 2001. WTF Project: Freshwater Mussel Fieldwork in Freshwater Species data. Atlantic Canada Conservation Data Centere, 101 recs.
6	Cowie, F. 2007. Electrofishing Population Estimates 1979-98. Canadian Rivers Institute, 2698 recs.
6	Daury, R.W. & Bateman, M.C. 1996. The Barrow's Goldeneye (Bucephala islandica) in the Atlantic Provinces and Maine. Canadian Wildlife Service, Sackville, 47pp.
6	Downes, C. 1998-2000. Breeding Bird Survey Data. Canadian Wildlife Service, Ottawa, 111 recs.
6	Elward, D. 2017. 2015-2016 Freshwater Mussel Inventories in the Bouctouche Watershed. Southeastern Anglers Association, 6 recs.
6	Gowan, S. 1980. The Lichens of Kouchibouguac National Park, Parts I (Macrolichens) & II (Microlichens). National Museum of Natural Sciences. Ottawa, ON, 7 recs.
6	Layberry, R.A. & Hall, P.W., LaFontaine, J.D. 1998. The Butterflies of Canada. University of Toronto Press. 280 pp+plates.
6	Morrison, Annie. 2010. NCC Properties Fieldwork: June-August 2010. Nature Conservancy Canada, 508 recs.
6	Ogden, K. Nova Scotia Museum butterfly specimen database. Nova Scotia Museum. 2017.
6	Oldham, M.J. 2000. Oldham database records from Maritime provinces. Oldham, M.J; ONHIC, 487 recs.
5	Benedict, B. Connell Herbarium Specimens, Digital photos. University New Brunswick, Fredericton. 2005.
5	Dibblee, R.L. 1999. PEI Cormorant Survey. Prince Edward Island Fisheries, Aquaculture & Environment, 1p. 21 recs.
5	Doucet, D.A. & Edsall, J.; Brunelle, P.-M. 2007. Miramichi Watershed Rare Odonata Survey. New Brunswick ETF & WTF Report, 1211 recs.
5	Kennedy, Joseph. 2010. New Brunswick Peregrine records, 2009. New Brunswick Dept Natural Resources, 19 recs (14 active).
5	Neily, T.H. & Pepper, C.; Toms, B. 2018. Nova Scotia lichen database [as of 2018-03]. Mersey Tobeatic Research Institute.
5	Ogden, J. NS DNR Butterfly Collection Dataset. Nova Scotia Department of Natural Resources. 2014.
5	Powell, B.C. 1967. Female sexual cycles of Chrysemy spicta & Clemmys insculpta in Nova Scotia. Can. Field-Nat., 81:134-139. 26 recs.
5	Sollows, M.C. 2008. NBM Science Collections databases: herpetiles. New Brunswick Museum, Saint John NB, download Jan. 2008, 8636 recs.
4	Boyne, A.W. & Grecian, V.D. 1999. Tern Surveys. Canadian Wildlife Service, Sackville, unpublished data. 23 recs.
4	Cameron, R.P. 2014. 2013-14 rare species field data. Nova Scotia Department of Environment, 35 recs.
4	Dept of Fisheries & Oceans. 1999. Status of Wild Striped Bass, & Interaction between Wild & Cultured Striped Bass in the Maritime Provinces. , Science Stock Status Report D3-22. 13 recs.
4	e-Butterfly. 2018. Selected Maritimes butterfly records from 2016 and 2017. Maxim Larrivee, Sambo Zhang (ed.) e-butterfly.org.
4	Edsall, J. 2007. Personal Butterfly Collection: specimens collected in the Canadian Maritimes, 1961-2007. J. Edsall, unpubl. report, 137 recs.
4	Godbout, V. 2000. Recherche de l'Aster du St-Laurent (Aster laurentianus) et du Satyre des Maritimes (Coenonympha nepisiquit) au Parc national Kouchibouguac et a Dune du Bouctouche, N-B. Irving Eco-centre, 23 pp.
4	Hicklin, P.W. 1995. The Maritime Shorebird Survey Newsletter. Calidris, No. 3. 6 recs.
4	Klymko, J.J.D. 2012. Insect fieldwork & submissions, 2011. Atlantic Canada Conservation Data Centre. Sackville NB, 760 recs.
4	Mazerolle, D. 2003. Assessment and Rehabilitation of the Gulf of St Lawrence Aster (Symphyotrichum laurentianum) in Southeastern New Brunswick. Irving Eco-centre, la Dune du Bouctouche, 13 recs.
4	Munro, Marian K. Nova Scotia Provincial Museum of Natural History Herbarium Database. Nova Scotia Provincial Museum of Natural History, Halifax, Nova Scotia. 2014.
4	Popma, K. 2001. Phalarope & other bird observations in Westmorland Co. , Pers. comm. to K.A. Bredin. 5 recs.
4	Prince Edward Island National Park. 2014. Prince Edward Island National Park Herbarium. Parks Canada Agency, PEINP, 39 recs.
4	Sabine, D.L. 2012. Bronze Copper records, 2003-06. New Brunswick Dept of Natural Resources, 5 recs.
3	Basquill, S.P. 2003. Fieldwork 2003. Atlantic Canada Conservation Data Centre, Sackville NB, 69 recs.
3	Cameron, R.P. 2013. 2013 rare species field data. Nova Scotia Department of Environment, 71 recs.
3	Chaput, G. 2002. Atlantic Salmon: Maritime Provinces Overview for 2001. Dept of Fisheries & Oceans, Atlantic Region, Science Stock Status Report D3-14. 39 recs.
3	Cowie, Faye. 2007. Surveyed Lakes in New Brunswick. Canadian Rivers Institute, 781 recs.
3	Ferguson, D.C. 1954. The Lepidoptera of Nova Scotia. Part I, macrolepidoptera. Proceedings of the Nova Scotian Institute of Science, 23(3), 161-375.
3	Gagnon, E. Herbarium from 2017 Plant Systematics class. Université de Moncton. 2017.
3	Gagnon, J. 2003. Prince Edward Island plant records. Societe de la faune et des parcs Quebec, 13 recs.
3	Gautreau-Daigle, H. 2007. Rare plant records from peatland surveys. Coastal Zones Research Institute, Shippagan NB. Pers. comm. to D.M. Mazerolle, 39 recs.
3	Gauvin, J.M. 1979. Etude de la vegetation des marais sales du parc national Kouchibouguac, N-B. M.Sc. Thesis, Universite de Moncton, 248 pp.
3	Giberson, D. 2008. UPEI Insect Collection. University of Prince Edward Island, 157 recs.
3	Giroux, P. 2013. Personal communication concerning species at risk in and around PEI NP, PE. Winter 2013. Pers. comm.
3	Godbout, Valerié. 2010. Étude de l'Aster du Saint-Laurent dans le parc national Kouchibouguac, 2000-04. Parks Canada, 3 recs.
3	Grondin, P. & Blouin, J-L., Bouchard, D.; et al. 1981. Description et cartographie de la vegetation du cordon littoral. Parc National de Kouchibouguac. Le Groupe Dryade, 57 pp.
3	Holder, M. & Kingsley, A.L. 2000. Peatland Insects in NB & NS: Results of surveys in 10 bogs during summer 2000. Atlantic Canada Conservation Data Centre, Sackville, 118 recs.
3	Houle, F; Haber, E. 1990. Status of the Gulf of St. Lawrence Aster, Aster laurentianus (Asteraceae) in Canada. Can. Field-Nat, 104:455-459. 3 recs.
3	Kennedy, Joseph. 2010. New Brunswick Peregrine records, 2010. New Brunswick Dept Natural Resources, 16 recs (11 active).
3	Klymko, J. Univeriste de Moncton insect collection butterfly record dataset. Atlantic Canada Conservation Data Centre. 2017.
3	Klymko, J.J.D. 2012. Insect field work & submissions. Atlantic Canada Conservation Data Centre, 852 recs.
3	MacQuarrie, K. 1991-1999. Site survey files, maps. Island Nature Trust, Charlottetown PE, 60 recs.
3	MacQuarrie, K. and R. Sharkie. 2004. Plant lists for selected areas at Brackley and Dalvay, Prince Edward Island National Park. Island Nature Trust, 168 recs.
3	Majka, C.G. 2008. Lepidoptera at St Patricks, 1993-2007. Pers. comm. to R. Curley, 8 Jan. 29 recs, 29 recs.
3	Nye, T. 2002. Wood Turtle observations in Westmorland, Queens Cos. , Pers. com. to S.H. Gerriets, Dec. 3. 3 recs.
3	Stevens, C. 1999. Cam Stevens field data from PEI vegetation plots. Sent along with specimens to C.S. Blaney. UNB masters research project, 732 recs.
2	Adams, J. & Herman, T.B. 1998. Thesis, Unpublished map of C. insculpta sightings. Acadia University, Wolfville NS, 88 recs.
2	Amirault, D.L. 1997-2000. Unpublished files. Canadian Wildlife Service, Sackville, 470 recs.

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2	Amirault, D.L. 2003. 2003 Peregrine Falcon Survey. Canadian Wildlife Service, Sackville, unpublished data. 7 recs.
2	Belliveau, A.G. 2014. Plant Records from Southern and Central Nova Scotia. Atlantic Canada Conservation Data Centre, 919 recs.
2	Boyne, A.W. 2000. Tern Surveys. Canadian Wildlife Service, Sackville, unpublished data. 168 recs.
2	Cameron, R.P. 2009. Cyanolichen database. Nova Scotia Environment & Labour, 1724 recs.
2	Donelle, R. 2007. Bouctouche Dune Rare Coastal Plant Data. Irving Eco-centre, la Dune du Bouctouche, 2 recs.
2	Fernald, M.L. 1914. Some annual halophytic asters of the maritime provinces. Rhodora, 16:57-61. 2 recs.
2	Gautreau, R. 2005. Betula michauxii occurrence on Bog 324, near Baie-Ste-Anne, NB. Pers. comm. to C.S. Blaney, 3 recs.
2	Gilhen, J. 1984. Amphibians & Reptiles of Nova Scotia, 1st Ed. Nova Scotia Museum, 164pp.
2	Godbout, V. 2001. Recherche de l'Aster du St-Laurent (Symphyotrichum laurentianum) dans les marais sales du sud-est du Nouveau-Brunswick. Irving Eco-centre, la Dune du Bouctouche, 23 pp.
2	Harding, R.W. 2008. Harding Personal Insect Collection 1999-2007. R.W. Harding, 309 recs.
2	Houle, F. & Haber, E. 1990. Status of the Gulf of St. Lawrence Aster, Aster laurentianus (Asteraceae) in Canada. Canadian Field-Naturalist, 104:455-459. 2 recs.
2	Klymko, J. Partial database of the Agriculture Canada Charlottetown Research Station Insect Collection butterfly specimens. Atlantic Canada Conservation Data Centre. 2016.
2	Macaulay, M. Notes on newly discovered Hepatica nobilis var. obtusa population in Cumberland Co. NS. Pers. comm. to S. Blaney, 1 rec.
2	NatureServe Canada. 2018. iNaturalist Maritimes Butterfly Records. iNaturalist.org and iNaturalist.ca.
2	O'Neil, S. 1998. Atlantic Salmon: Northumberland Strait Nova Scotia part of SFA 18. Dept of Fisheries & Oceans, Atlantic Region, Science. Stock Status Report D3-08. 9 recs.
2	Porter, C.J.M. 2014. Field work data 2007-2014. Nova Scotia Nature Trust, 96 recs.
2	Smith, M.E.M. 2008. AgCan Collection. Agriculture Canada, Charlottetown PE, 44 recs.
2	Speers, L. 2001. Butterflies of Canada database. Agriculture & Agri-Food Canada, Biological Resources Program, Ottawa, 190 recs.
2	Toner, M. 2001. Lynx Records 1973-2000. NB Dept of Natural Resources, 29 recs.
2	Webster, R.P. Database of R.P. Webster butterfly collection. 2017.
1	Amirault, D.L. 2005. 2005 Peregrine Falcon Survey. Canadian Wildlife Service, Sackville, unpublished data. 27 recs.
1	Basset, I.J.; Crompton, C.W. 1978. The Genus Suaeda (Chenopodiaceae) in Candaa. Canadian Journal of Botany, 56: 581-591.
1	Belliveau, A.G. 2018. E.C. Smith Herbarium and Atlantic Canada Conservation Data Centre Fieldwork 2018. E.C. Smith Herbarium.
1	Benjamin, L.K. (compiler). 2001. Significant Habitat & Species Database. Nova Scotia Dept of Natural Resources, 15 spp, 224 recs.
1	Blaney, C.S. 1999. Fieldwork 1999. Atlantic Canada Conservation Data Centre. Sackville NB, 292 recs.
1	Blaney, C.S. 2014. 2014 Bank Swallow colony observation, Westcock, NB. Atlantic Canada Conservation Data Centre.
1	Bouchard, A. Herbier Marie-Victorin. Universite de Montreal, Montreal QC. 1999.
1	Bredin, K.A. 2000. NB & NS Bog Project, fieldwork. Atlantic Canada Conservation Data Centre, Sackville, 1 rec.
1	Bredin, K.A. 2002. NB Freshwater Mussel Fieldwork. Atlantic Canada Conservation Data Centere, 30 recs.
1	Chaput, G. 1999. Atlantic Salmon: Miramichi & SFA 16 Rivers. Dept of Fisheries & Oceans, Atlantic Region, Science Stock Status Report D3-05. 6 recs.
1	Christie, D.S. 2000. Christmas Bird Count Data, 1997-2000. Nature NB, 54 recs.
1	Clavette, A., and others. 2013. Peregrine Falcon nesting information from NatureNB listserv. NatureNB.
1	Clayden, S.R. 2005. Confidential supplement to Status Report on Ghost Antler Lichen (Pseudevernia cladonia). Committee on the Status of Endangered Wildlife in Canada, 27 recs.
1	Clayden, S.R. 2012. NBM Science Collections databases: vascular plants. New Brunswick Museum, Saint John NB, 57 recs.
1	Curley, F.R. Two rare aquatic plant specimens collected by F.R. Curley in PEI and given to D.M. Mazerolle. retired provincial biologist. 2015.
1	Doucet, D.A. 2007. Fieldwork 2007: Insects (minus Odonata). ACCDC Staff, 1 rec.
1	Doucet, D.A. 2007. PEI National Park Odonata Survey. Parks Canada, PEI National Park, 1 rec.
1	Doucet, D.A. 2008. Fieldwork 2008: Odonata. ACCDC Staff, 625 recs.
1	Doucet, D.A. 2008. Wood Turtle Records 2002-07. Pers. comm. to S. Gerriets, 7 recs, 7 recs.
1	Doucet, D.A. ACCDC Reference Collection. Atlantic Canada Conservation Data Centre, Sackville NB. 2008.
1	Duffy, L.-A. 2002. Prince Edward Island National Park Butterfly Survey. Heritage Protection, Prince Edward Island National Park.
1	Edsall, J. 2007. Lepidopteran Records from Halls Creek, 1994-2000. Edsall, 43 recs.
1	Freudenstein, John V. 1997. A Monograph of Corallorhiza (Orchidaceae). Harvard Papers in Botany, 1:5-51.
1	Gerriets, S.H. 1997-2001. Element Occurrence Database. Atlantic Canada Conservation Data Centre, Sackville NB, 1 rec.
1	Glen, W. 1991. 1991 Prince Edward Island Forest Biomass Inventory Data. PEI Dept of Energy and Forestry, 10059 recs.
1	Goltz, J.P. 2007. Field Notes: Listera australis at Kouchibouguac National Park. , 7 recs.
1	Hill, N.M. 1994. Status report on the Long's bulrush Scirpus longii in Canada. Committee on the Status of Endangered Wildlife in Canada, 7 recs.
1	Hinds, H.R. 2000. Rare plants of Fundy in Rare Plants of Fundy: maps. Wissink, R. (ed.) Parks Canada, 2 recs.
1	Kelly, Glen 2004. Botanical records from 2004 PEI Forestry fieldwork. Dept of Environment, Energy & Forestry, 71 recs.
1	Kirkland, G.L. Jr. & Schmidt, D.F. 1982. Abundance, habitat, reproduction & morphology of forest-dwelling small mammals of NS & south-eastern NB. Can. Field-Nat., 96(2): 156-162. 1 rec.
1	Kirkland, G.L. Jr., Schmidt, D.F. & Kirkland, C.J. 1979. First record of the long-tailed shrew (Sorex dispar) in New Brunswick. Can. Field-Nat., 93: 195-198. 1 rec.
1	Klymko, J.J.D. 2010. Miscellaneous observations reported to ACCDC (zoology). Pers. comm. from various persons, 3 recs.
1	Klymko, J.J.D.; Robinson, S.L. 2012. 2012 field data. Atlantic Canada Conservation Data Centre, 447 recs.
1	LaFlamme, C. 2008. Disovery of Goodyera pubescens at Springdale, NB. Amec Earth and Environmental. Pers. comm. to D.M. Mazerolle, 1 rec.
1	Lajeunesse, D. et al. 2002. PEINP Collection. Parks Canada, PEI National Park, 9 recs.
1	Lantz, Joan; Lantz, Keith . 2015. eBird record of Sandhill Crane from Chapman Settlement, NS. eBirg.org.
1	Layberry, R.A. 2012. Lepidopteran records for the Maritimes, 1974-2008. Layberry Collection, 1060 recs.

# recs	CITATION
1	Loo, J. & MacDougall, A. 1994. GAP analysis: Summary Report. Fundy Model Forest, 2 recs.
1	MacPhail, V. Bee and syrphid specimens from MSc research. Pers. comm., J. Klymko. 2006.
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	Majka, C.G. 1967. The butterflies of Albert County. Bulletin of the Moncton Naturalists Club, 13-20.
1	McAlpine, D.F. & Collingwood, L. 1989. Rare Salamander Survey in Fundy National Park. Fundy National Park, Internal Documents, 1 rec.
1	McAlpine, D.F. 1983. Species Record Cards. Fundy National Park, Library, 1 rec.
1	Miller, D.G. 2013. Peregrine Falcon nesting information from birdingnewbrunswick.ca. birdingnewbrunswick.ca.
1	Mills, E. Connell Herbarium Specimens, 1957-2009. University New Brunswick, Fredericton. 2012.
1	Novak, Pam. 2017. Email to John Klymko regarding Chelydra serpentina record.
1	Olsen, R. Herbarium Specimens. Nova Scotia Agricultural College, Truro. 2003.
1	Rankin, Andrew. 2017. Second-ever N.S. sighting: Big brown bat turns up in Oxford. The Chronicle Herald online edition (Herald News).
1	Sabine, D.L. 2005. 2001 Freshwater Mussel Surveys. New Brunswick Dept of Natural Resources & Energy, 590 recs.
1	Smith, M. 2013. Email to Sean Blaney regarding Schizaea pusilla at Caribou Plain Bog, Fundy NP. pers. comm., 1 rec.
1	Sollows, M.C,. 2009. NBM Science Collections databases: Coccinellid & Cerambycid Beetles. New Brunswick Museum, Saint John NB, download Feb. 2009, 569 recs.
1	Spicer, C.D. 2004. Specimens from CWS Herbarium, Mount Allison Herbarium Database. Mount Allison University, 5939 recs.
1	Standley, L.A. 2002. Carex haydenii in Nova Scotia. , Pers. comm. to C.S. Blaney. 4 recs.
1	Steeves, R. 2004. Goodyera pubescens occurrence from Colpitts Brook, Albert Co. , Pers. comm. to C.S. Blaney. 1 rec.
1	te Raa, J. 2016. Island Naturalist. Nature PEI, 219.
1	Tremblay, E., Craik, S.R., Titman, R.D., Rousseau, A. & Richardson, M.J. 2006. First Report of Black Terns Breeding on a Coastal Barrier Island. Wilson Journal of Ornithology, 118(1):104-106. 1 rec.
1	Wilson, G. 2013. 2013 Snapping Turtle email report, Wentworth, NS. Pers. comm.
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1	Young, A.D., Titman, R.D. 1986. Costs and benefits to Red-breasted Mergansers nesting in tern and gull colonies. Can. J. Zool., 64: 2339-2343.

Appendix 3 –
Results of NBDELG Property-based Environmental Records Review

New Nouveau
Brunswick
CANADA

Environment and Local Government
Environnement et Gouvernements locaux
P.O. Box/C.P. 6000
Fredericton, NB E3B 5H1
Tel/Tél. (506) 453-2851
Fax/Téléc. (506) 453-2390

To/Dest.	Robert Gallagher	**From/Exp.**	Lori Ramsay		
Tel./Tél.		**Copies**			
Email/Courriel	robert.gallagher@exp.com	**Date**	Apr 12 2019	**Pages**	33
Subject / Objet	Property-Based Environmental Information / Information environnementale foncière				

****

NOTES

****

Have a Great Day/Bonne Journée
Lori Ramsay

New Nouveau Brunswick
CANADA

March 12, 2019
File No.: 100-05-R3

EXP Services Inc.
40 Henri Dunant St.
Moncton, NB E1E 1E5
Attention: Robert Gallagher

RE: PID#: 00844829 & 70622600

In response to your request for property-based environmental information regarding the above noted properties, 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 these PID numbers, using our current search process.

Petroleum storage tank information related to **PID# 00844829** is attached. With respect to the remaining PID number, our records indicate that there are no petroleum storage tanks registered with the Department, under the Petroleum Product Storage and Handling Regulation.

Our records indicate that there has been contamination found at **2614 ch. Acadie, Cap Pele, East Coast Convenience Store (PID# 00844829)**. See attached information report, and Record of Site Condition.
Our records indicate that there has been 3rd party contamination found at **(PID# 70622600)**. See attached information report, and Record of Site Condition.

These PID numbers are not registered with the Department as a PCB Storage site.

We have no records of landfill sites or former dumpsites located near these PID numbers.

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

SIRS Search Result

Petroleum Storage (PID 00844829)

PID #: 844829 Site #: 1198 Address: EAST COAST CONVENIENCE STORES LTD
84 ACADIA STREET WEST
CAP-PELE

Tank Information

Current Status	Removed
Date Out of Service	1999-09-14
Installation Date	1984
Tank Size	14000 L
Location	Under Ground
Constructed Of	Single Wall FRP
Substance Stored	Gasoline

Current Status	Removed
Date Out of Service	1999-09-14
Installation Date	1984
Tank Size	14000 L
Location	Under Ground
Constructed Of	Single Wall FRP
Substance Stored	Gasoline

Current Status	Removed
Date Out of Service	1999-09-14
Installation Date	1984
Tank Size	14000 L
Location	Under Ground
Constructed Of	Single Wall FRP
Substance Stored	Gasoline

Current Status	Removed
Date Out of Service	1989-11-22
Installation Date	Unknown
Tank Size	14000 L
Location	Under Ground

Constructed Of	Single Wall Steel
Substance Stored	Unknown

Current Status	Removed
Date Out of Service	1989-11-22
Installation Date	Unknown
Tank Size	14000 L
Location	Under Ground
Constructed Of	Single Wall Steel
Substance Stored	Unknown

Current Status	Removed
Date Out of Service	1988-11-04
Installation Date	Unknown
Tank Size	2270 L
Location	Under Ground
Constructed Of	Single Wall Steel
Substance Stored	Unknown

ENV Remediation Sites Management System Information Report

File #:	6515-3-0160
Parcel Identifier (PID)	00844829
Site Name	East Coast Convenience Store
Civic Address	2614 ch. Acadie, Cap Pele
Site Management File Opened	September 08, 1999
Contamination Type	Petroleum
Site Management File Status	Closed
	1999 - RBCA Tier 2 Site Specific Remedial Criteria achieved - Conditional closure.
Party Responsible for Remediation	Irving Oil Limited
Consultant	CRA World

Order(s) Specific to Remediation Issued No **Issued:** **Rescinded:**

A translated version of this report is available on request. Please contact:

Remediation Database Administrator
20 McGloin St.
Fredericton, NB
E3C 5T8
Phone: (506) 453-7945
Fax: (506) 453-2390
E-mail: pbei-iebb@gnb.ca

Une version traduite de ce rapport est disponible sur demande. S'il vous plaît contacter:

Remediation Database Administrator
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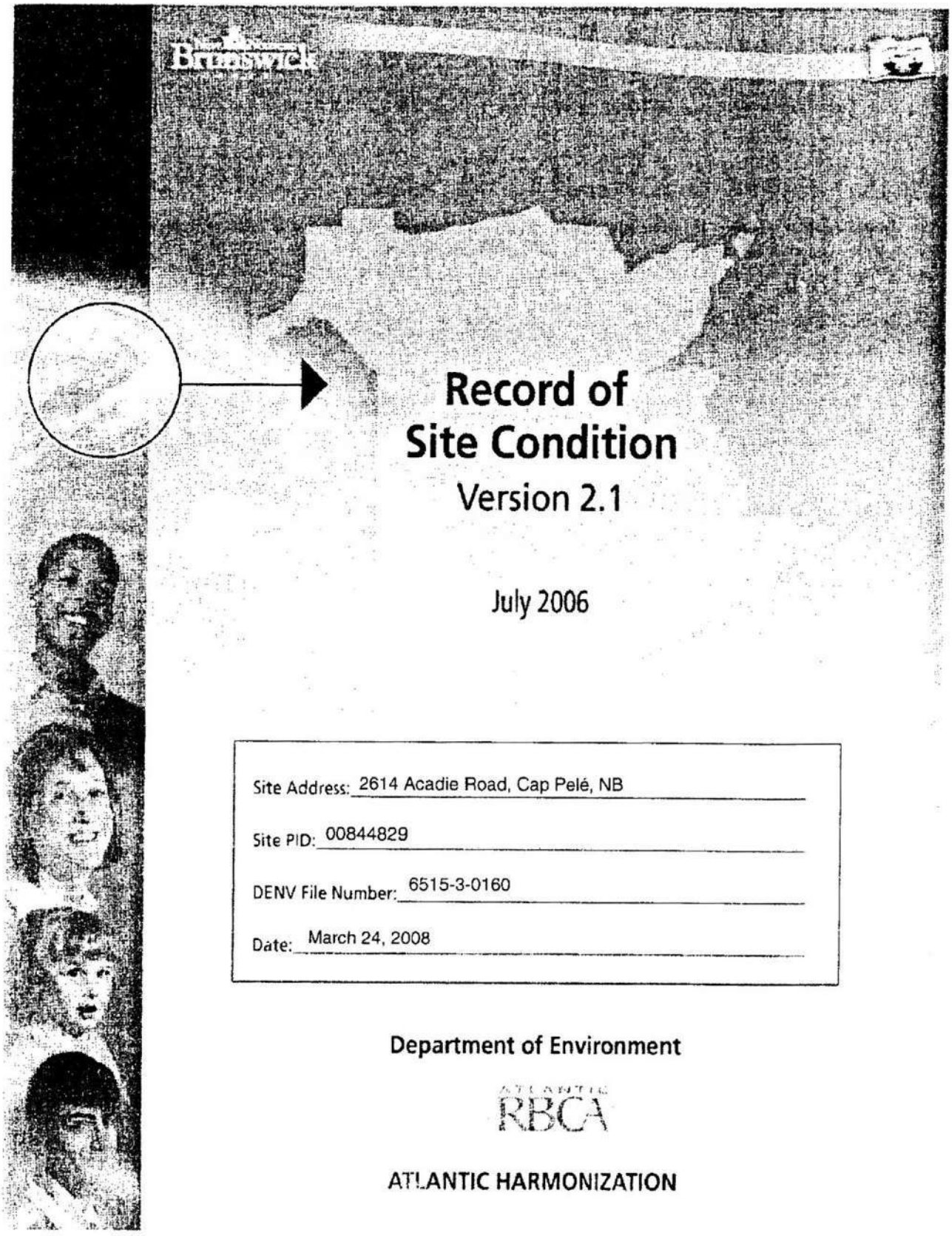
Fredericton, NB
E3C 5T8
Téléphone: (506) 453-7945
Télécopieur: (506) 453-2390
Courriel: pbei-iebb@gnb.ca



Record of Site Condition

Version 2.1

July 2006

Site Address: 2614 Acadie Road, Cap Pelé, NB

Site PID: 00844829

DENV File Number: 6515-3-0160

Date: March 24, 2008

Department of Environment

ATLANTIC RBCA

ATLANTIC HARMONIZATION

Record of Site Condition Form

New Brunswick Department of Environment

This form is provided by the New Brunswick Department of Environment (ENV) to facilitate the preparation of the Record of Site Condition in the final stages of remediation of a contaminated site, as presented in the ***Guidelines for the Management of Contaminated Sites*** (ENV, November 2003).

- This form contains macros. The security level in Word should be set to enable macros to execute. In the **Tools/Options** dialogue box, choose the **Security** tab, click on the **Macros Security** button and choose **Medium**. Following this, you will be invited to activate macros in this and other documents. If your security level is already set to enable macros, you may not see any message.

- Each part of the form, including the cover, contains shaded boxes where information can be entered. The shaded boxes expand as information is added, to a maximum of one page of information. Get help filling out any of the information entry boxes by clicking on the box and then pressing the F1 key.

- You can navigate through the form using the Tab key.

- The **Site Address** or **Project Name** *(entered on a single line with no returns)*, the principal project **PID** (Property Identification) number, the **ENV File Number** and the final **Date** of your report, should be entered in the shaded box in Part 1 of the report. This information will appear in the header at the top of each page. The page headers update automatically when new information is entered in the shaded box in Part 1. The same information should be entered on the cover of this report.

- More information about how to fill out any of the Parts of the form can be obtained in the ENV *Instructions for Completing the Record of Site Condition found* on the Atlantic RBCA website www.atlanticrbca.com

If you would like to re-use this form, it is advised that you save your work with a new filename before exiting.

This form can be downloaded from the Atlantic RBCA web site at:
www.atlanticrbca.com.

Hard copies of this form are available by mail from:

Remediation Branch - Environmental Management Division
NB Department of Environment
P.O. Box 6000,
Fredericton N.B.
E3B 5H1

or phone:

(506) 444-5119.

RECORD OF SITE CONDITION

Part 1 of 7: Source Property Information

Data entered in this box will appear in the header at the top of subsequent pages.

Site Address / Project Name: Former East Coast Convenience, 2614 Acadie Road, Cap Pelé, NB

PID Number: 00844829

ENV File no: 6515-3-0160 Submission Date: March 24, 2008

Additional PIDs

Responsible Party: Irving Oil Limited

Current Owner: East Coast Convenience Stores Ltd. (An Irving Oil Limited owned company)

GPS Co-ordinates: (When only a portion of a PID is addressed)
Attach a site plan showing coordinates and boundaries of portion. ☐

Part 2 of 7: List of Environmental Documentation

A. The following documentation, **prepared by others** (including peer review reports, if any), pertain to the Source Property cited in Part 1 and/or any other impacted Third Party properties:

Title	Company	Date
2005 Groundwater Monitoring Results, Former Daly's C/S Gas Bar, 84 Acadie Road, Cap Pelé, NB	Dillon Consulting	January 2006

Additional documentation prepared by others:

B. The following documentation, including closure documents, pertaining to the Source Property cited in Part 1 and/or other related impacted properties has been **prepared by and/or overseen by the Site Professional:**

Document Title	**Date**
Environmental Assessment, Daly's Convenience Store and Gas Bar, Cap Pelé, New Brunswick	July 1995
Supplemental Environmental Assessment, Daly's Convenience Store and Gas Bar, Cap Pelé, New Brunswick	November 1995
Site Decommissioning and Soil Sampling Program, East Coast Convenience Property, Cap Pelé, New Brunswick	October 1999
Phase II Environmental Site Assessment, Former East Coast Convenience Store Property (PID #00844829), 84 Acadia Road, Cap Pelé, New Brunswick, Final Report, Conestoga-Rovers & Associates	August 2006
2007 Groundwater Monitoring Report, Former East Coast Convenience (IOL #00000), 84 Acadie Road, Cap Pelé, New Brunswick	December 2007
Groundwater Monitoring Reports	1998 to 2002
Closure Report, Former East Coast Convenience Store Property, 2614 Acadie Road, Cap Pelé, NB (PID #00844892)	March 24, 2008

Additional documentation prepared by/overseen by Site Professional :

Part 3 of 7: Tier I-III Environmental Criteria: Source Property

Products/contaminants
(e.g. gasoline, lead, waste oil, etc.) that have been identified at the Source Property:

☒ Gasoline ☒ Diesel /#2 ☐ #6 Oil ☐ Other (Specify)

Current land use:

☐ Residential ☒ Commercial ☒ Other (Specify) Currently vacant and used for parking

Drinking water use:

☒ On-site potable water ☐ Within a wellfield or watershed protected area ☐ Non-potable water

Affected soil composition:

☒ Coarse-grained ☐ Fine-grained ☐ Bedrock (Specify)

Site closure criteria (Check all that apply):

☒ Tier I Risk Based Screening Level Criteria

☒ Tier II Site Specific Target Level Criteria

☐ Tier III Site Specific Target Level Criteria

Description of methodology and comments:

No free phase product was identified on the subject property during the assessments completed between 1995 and 2006. A well exclusion zone was designated in the southeastern portion of the property (in vicinity of former pump island and tank field; see attached figure). Hydrocarbon levels in groundwater within the well exclusion zone were compared to Tier II SSTLs calculated for commercial redevelopment of the property with a slab on-grade building and non-potable water. Hydrocarbon levels in groundwater for the remainder of the property were compared to Tier I RBSLs for commercial property with potable water and coarse grained soil. All hydrocarbon concentrations in soil on the property were compared to Tier I RBSLs for a commercial property with potable water and coarse-grained soil (including the well exclusion zone area).

Part 3 of 7 (continued): Tier I-III Environmental Criteria: Source Property

Tier I-II Criteria

Chemicals of Concern (COC)	Tier I-II Criteria Applied for Soil	Units	* Reference	Tier I-II Criteria Applied for Groundwater	Units	* Reference
Commercial, Potable Criteria – Entire Property Except Groundwater in Well Exclusion Zone (see attached Figure)						
Benzene	0.03	mg/kg	Tier I RBSLs (commercial, potable and coarse grained soil-Atlantic RBCA User Guidance (2007))	0.005	mg/L	Tier I RBSLs (commercial, potable and coarse grained soil-Atlantic RBCA User Guidance (2007))
Toluene	0.38			0.024		
Ethyl Benzene	0.08			0.0024		
Xylenes	11			0.3		
TPH	450			19		
MTBE	Not applicable			0.015	mg/L	NB Department of Health and Wellness Advisory Level
Commercial, Non-Potable Criteria – Well Exclusion Zone (see attached Figure)						
Benzene	Not applicable			7.8	mg/L	Tier II SSTLs (Atlantic RBCA computer Model Version 2.1)
TPH	Not applicable			1400		

Other Chemicals evaluated with criteria for Tiers I and II :

** Provide reference for Screening Level criteria and/or Tier I-II Site Specific Target Level criteria developed using Atlantic RBCA v. 2.1.*

Tier III Criteria

Chemicals of concern (COC)	Medium to which criteria apply	Tier III criteria applied	Units	* Reference

Other Chemicals evaluated with criteria for Tiers III :

** Provide reference for Tier III criteria (when using criteria other than Risk-Based Screening Level criteria or Tier II Atlantic RBCA V.2.1 Site Specific Target Level criteria.)*

Part 4 of 7: Tier I-III Environmental Criteria - Third Party Property(s)

Based on the work completed, the following Third Party properties (identified by PID number) were identified as being affected at any concentration by the products/contaminants of the Source Property:

PID Number	Chemicals of Concern (COC)	Land use	Potable or Non-potable	Affected soil type
Not applicable				
Other Third Party properties :				

Site closure criteria (check all that apply)

☐ Tier I Risk Based Screening Level Criteria

☐ Tier II Site Specific Target Level Criteria

☐ Tier III Site Specific Target Level Criteria

Description of methodology and comments

Not applicable

Part 4 of 7 (continued): Tier I-III Environmental Criteria - Third Party Property(s)

Summary of Clean-up Criteria

PID of Third Party Property(s)

Not applicable

Tier I-II Criteria

Chemicals of Concern (COC)	Tier I-II Criteria Applied for Soil	Units	* Reference	Tier I-II Criteria Applied for Groundwater	Units	* Reference
Commercial, Non-Potable Criteria						
Other Chemicals evaluated with criteria for Tiers I and II :						

** Provide reference for Screening Level criteria and/or Tier I-II Site Specific Target Level criteria developed using Atlantic RBCA v. 2.1.*

Tier III Criteria

Chemicals of concern (COC)	Medium to which criteria apply	Tier III criteria applied	Units	* Reference
Other Chemicals evaluated with criteria for Tier III :				

** Provide reference for Tier III criteria (when using criteria other than Risk-Based Screening Level criteria or Tier II Atlantic RBCA V.2.1 Site Specific Target Level criteria.)*

Part 5 of 7: Corrective Actions

SOURCE PROPERTY

Describe the remedial objectives and the basic corrective actions of the Remedial Action Plan employed for the Source Property.

The site was decommissioned in 1999 with all petroleum infrastructure, service station building and hydraulic hoists removed from the Property at this time. A total of 92.20 tonnes of hydrocarbon impacted soil was removed from the pump island area of the site during the decommissioning program for off-site disposal. In 2004 an additional 1229.65 tonnes of hydrocarbon impacted soil was removed from the pump island area and transported off-site for disposal. A groundwater pump and treat system and soil vapour extraction system was subsequently installed on the property in August 2004. The remediation system operated on the property between 2004 and 2006. The remediation system was decommissioned and removed from the property in the fall of 2006.

Describe the current use of the Source Property (buildings, operations, etc.).

The property is currently vacant and is often used as parking by adjacent businesses.

Other comments

Based on the work completed, the Source Property (cited in Part 1) is suitable for the following current, or reasonably foreseeable future, site activity(s).

☐ Residential

☒ Commercial

Conditional closure

If site closure is **conditional**, list site-specific engineered or institutional controls that apply to the Source Property complete with a description of the objectives of each control. Attach written agreements to the control(s) from all affected stakeholders and a site plan indicating the limits of the control(s).

A Well Exclusion Zone on the site in the area of the former pump island and tank field as identified on the attached Figure.

Part 5 of 7 (continued): Corrective Actions

THIRD PARTY PROPERTIES

Describe the remedial objectives and the basic corrective actions of the Remedial Action Plan employed for each of the Third Party Properties.

Not applicable.

Other comments

Describe the current use of the Third Party Property(s) (buildings, operations, etc.)

Based on the work completed, the **Third Party properties** (cited in Part 4) are suitable for the following current or reasonably foreseeable future site activity(s).

☐ Residential (list PID numbers)

☐ Commercial

Conditional Closure

If site closure is **conditional**, list site-specific engineered or institutional controls that apply to the Third Party Property(s) complete with description of the purpose of each control. Attach written agreements to the control(s) from all affected stakeholders and a site plan indicating the limits of the control(s).

Not applicable

Part 6 of 7: Summary Statement of Site Professional

The Minister considers the pre-checked statements below to be mandatory for acknowledging receipt of the Record of Site Condition. The signature of the Site Professional on this form indicates the fulfillment of these mandatory requirements as well as the requirements of all other checked statements.

Please check appropriate statements:

Mandatory Statements

☑ 1. All work on which this Record of Site Condition is based was prepared, overseen and/or reviewed by the Site Professional.

☑ 2. The site was managed in accordance with the current version of the New Brunswick Department of Environment *Guideline for the Management of Contaminated Sites.*

☑ 3. *This Record of Site Condition form is identical to the one provided by the ENV and the content of the form has not been altered.*

LRA Statement *(if LRA process used)*

☐ 4. The Limited Remedial Action Process was applicable for this site as per the current version of the Limited Remedial Action Reference Documentation for Site Professionals.

Source Property Statements

☐ 5. Based on the results of the environmental site assessment, the applicable Tier I Risk Based Screening Level criteria or Tier II/Tier III Site Specific Target Level criteria were not exceeded on the Source Property (as described in Part I) and therefore, remedial action and/or site-specific engineered or institutional controls are not required for the current or reasonably foreseeable future site activities (as cited in Part 5).

☐ 6. The Source Property (as described in Part I) has been remediated to an acceptable level for the current or reasonably foreseeable future site activities (as cited in Part 5) and therefore, *unconditional closure* is recommended.

☒ 7. The Source Property (as described in Part I) requires site-specific engineered or institutional controls to satisfy the current or reasonably foreseeable future site activities (as cited in Part 5) and therefore, *conditional closure* is recommended.

Third-Party Property Statements

Ray Small CRA April 2, 2008

☐ 8. Based on the results of the environmental site assessment, the applicable Tier I Risk Based Screening Level criteria or Tier II/Tier III Site Specific Target Level criteria were not exceeded on the Third Party properties (as cited in Part 4) and therefore, remedial action and/or site-specific engineered or institutional controls are not required for the current or reasonably foreseeable future site activities (as cited in Part 5).

☐ 9. Third Party properties (as cited in Part 4) affected by the contamination of the Source Property (as described in Part I) have been remediated to an acceptable level for the current or reasonably foreseeable future site activities (as cited in Part 5) and therefore, *unconditional closure* is recommended.

☐ 10. Third Party properties (as cited in Part 4) affected by the contamination of the Source Property (as described in Part I) require site-specific engineered or institutional controls to satisfy the current or reasonably foreseeable future site activities (as cited in Part 5) and therefore, *conditional closure* is recommended.

Company: Conestoga-Rovers & Associates

Address: 466 Hodgson Road, Fredericton, NB, E3C 2G5

Tel: 506 458 1248

Fax: 506 462 7646

E-mail: kemenau@craworld.com

Kevin Emenau

Professional Seal Here

Part 7 of 7: New Brunswick Department of the Environment and Local Government - Acknowledgement of Receipt

The Minister acknowledges receipt of this Record of Site Condition. The Minister has processed the report(s) cited in Part 2 of this Record of Site Condition for the purpose of ensuring the site has been managed in accordance with the current version of the New Brunswick Department of the Environment and Local Government *Guideline for the Management of Contaminated Sites*.

Based upon the reports cited in Part 2 and conclusions of the Site Professional stated in Part 6 of this Record of Site Condition, the Site Professional is of the opinion that the stated level of contamination remaining on the property will not adversely affect the quality of the environment. Notwithstanding this, the Minister reserves the right to evaluate the site should site activities change, or should circumstances change, which result in an increase in contamination or changes in site conditions which may pose a risk to the quality of the environment.

The Minister has not supervised the work undertaken at the site and does not assume any responsibility or liability for this work, or for notifying future owners, or present or future occupants of the property, of the work completed. 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, which may arise from taking ownership or occupancy.

Unconditional Closure

☐ It is understood from the information provided that the site has been managed in accordance with the current version of the New Brunswick Department of Environment *Guideline for the Management of Contaminated Sites* and that **further remedial action and/or site-specific engineered or institutional controls are not required** to ensure compatibility with the current or reasonably foreseeable future site activities (as cited in Part 5).

Conditional Closure

April 2, 2008 ☒ It is understood from the information provided that the site has been managed in accordance with the current version of the New Brunswick Department of Environment *Guideline for the Management of Contaminated Sites* and that **site-specific engineered or institutional controls are required** to ensure compatibility with the current or reasonably foreseeable future site activities (as cited in Part 5).

/Jamie C. Clark/ for — April 2, 2008

Minister of Environment — Date

ENV Remediation Sites Management System Information Report

Property Identification Number (PID #) 70622600

Site Name

Civic Address

The above-noted property has been registered as a third party property in association with the release of a contaminant on an adjacent property. Information relevant to the remediation of a contamination caused by the release and the status of the ENV Site Management File is as follows:

INFORMATION REPORT

File #:	6515-3-0022
Parcel Identifier (PID)	70308580
Site Name	Former Ecole Aboiteau
Civic Address	40 Acadie Rd., Cap Pele
Site Management File Opened	July 28, 1987
Contamination Type	Petroleum
Site Management File Status	Closed
	2003 - Tier 3 Site Specific Remedial Criteria Achieved - Conditional Closure
Party Responsible for Remediation	NB Department of Supply & Serv
Consultant	CRA World

Order(s) Specific to Remediation Issued No **Issued:** **Rescinded:**

A translated version of this report is available on request. Please contact:

Remediation Database Administrator
20 McGloin St.
Fredericton, NB
E3C 5T8
Phone: (506) 453-7945
Fax: (506) 453-2390
E-mail: pbei-iebb@gnb.ca

Une version traduite de ce rapport est disponible sur demande. S'il vous plaît contacter:

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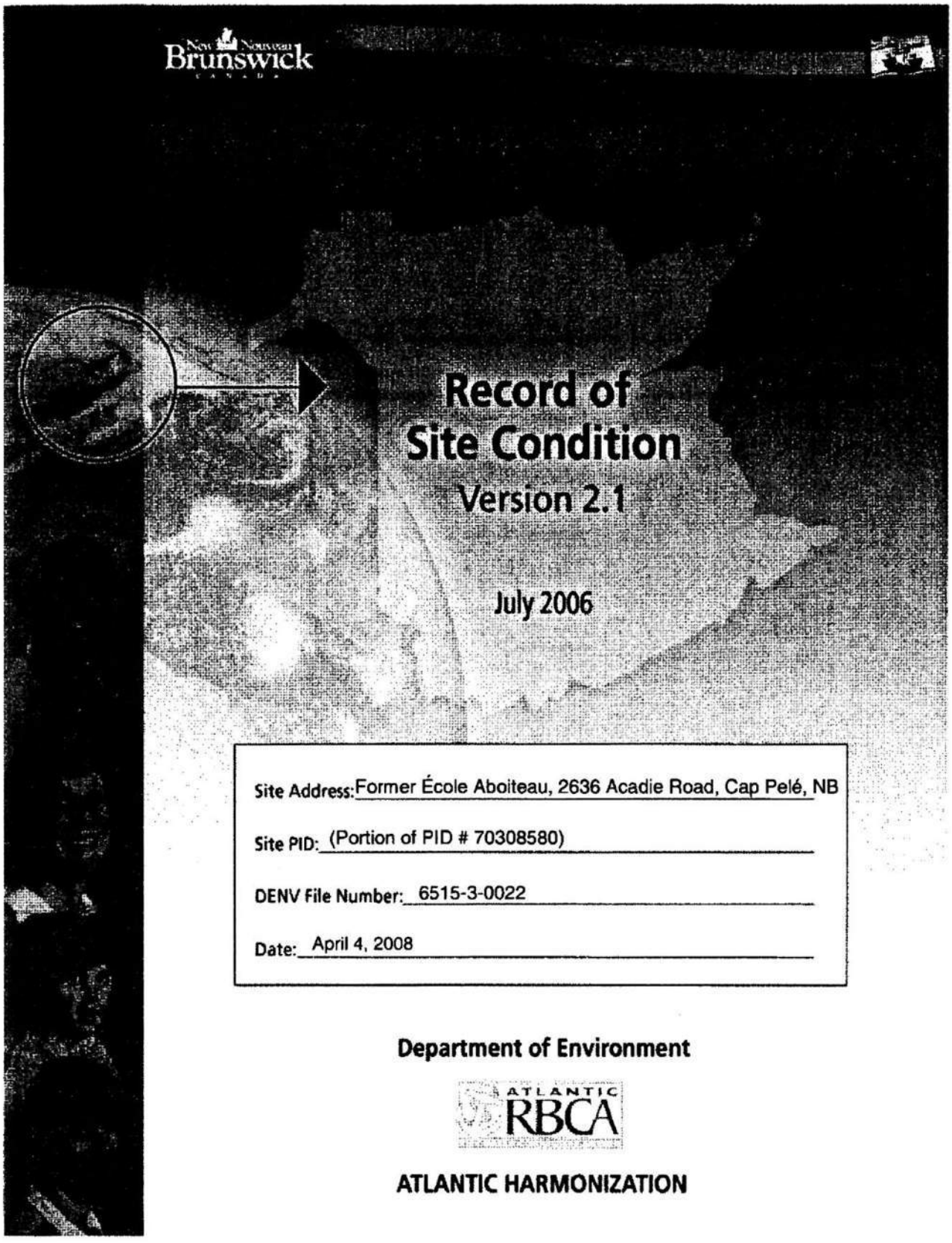
20, rue McGloin
Fredericton, NB
E3C 5T8
Téléphone: (506) 453-7945
Télécopieur: (506) 453-2390
Courriel: pbei-iebb@gnb.ca



Record of Site Condition

Version 2.1

July 2006

Site Address: Former École Aboiteau, 2636 Acadie Road, Cap Pelé, NB

Site PID: (Portion of PID # 70308580)

DENV File Number: 6515-3-0022

Date: April 4, 2008

Department of Environment

ATLANTIC RBCA

ATLANTIC HARMONIZATION

Record of Site Condition Form

New Brunswick Department of Environment

This form is provided by the New Brunswick Department of Environment (ENV) to facilitate the preparation of the Record of Site Condition in the final stages of remediation of a contaminated site, as presented in the ***Guidelines for the Management of Contaminated Sites*** (ENV, November 2003).

- This form contains macros. The security level in Word should be set to enable macros to execute. In the **Tools/Options** dialogue box, choose the **Security** tab, click on the **Macros Security** button and choose **Medium**. Following this, you will be invited to activate macros in this and other documents. If your security level is already set to enable macros, you may not see any message.

- Each part of the form, including the cover, contains shaded boxes where information can be entered. The shaded boxes expand as information is added, to a maximum of one page of information. Get help filling out any of the information entry boxes by clicking on the box and then pressing the F1 key.

- You can navigate through the form using the Tab key.

- The **Site Address** or **Project Name** *(entered on a single line with no returns)*, the principal project **PID** (Property Identification) number, the **ENV File Number** and the final **Date** of your report, should be entered in the shaded box in Part 1 of the report. This information will appear in the header at the top of each page. The page headers update automatically when new information is entered in the shaded box in Part 1. The same information should be entered on the cover of this report.

- More information about how to fill out any of the Parts of the form can be obtained in the ENV *Instructions for Completing the Record of Site Condition found* on the Atlantic RBCA website www.atlanticrbca.com

If you would like to re-use this form, it is advised that you save your work with a new filename before exiting.

This form can be downloaded from the Atlantic RBCA web site at:
www.atlanticrbca.com.

Hard copies of this form are available by mail from:

Remediation Branch - Environmental Management Division
NB Department of Environment
P.O. Box 6000,
Fredericton N.B.
E3B 5H1

or phone:

(506) 444-5119.

RECORD OF SITE CONDITION

Part 1 of 7: Source Property Information

Data entered in this box will appear in the header at the top of subsequent pages.

Site Address / Project Name: Former École Aboiteau, 2636 Acadie Road, Cap Pelé, NB

PID Number: (Portion of PID # 70308580)

ENV File no: 6515-3-0022 Submission Date: April 4, 2008

Additional PIDs

Responsible Party: New Brunswick Department of Supply and Services

Current Owner: Town of Cap Pelé, NB

GPS Co-ordinates: (When only a portion of a PID is addressed)
Attach a site plan showing coordinates and boundaries of portion. [X]

Part 2 of 7: List of Environmental Documentation

A. The following documentation, **prepared by others** (including peer review reports, if any), pertain to the Source Property cited in Part 1 and/or any other impacted Third Party properties:

Title	Company	Date
Bibliothèque Publique Construction Drawings	Prodel Design Inc. Architects and Planners	November 6, 2007
Additional documentation prepared by others:		

B. The following documentation, including closure documents, pertaining to the Source Property cited in Part 1 and/or other related impacted properties has been **prepared by and/or overseen by the Site Professional:**

Document Title	**Date**
Maritime Groundwater Inc., Investigation of Groundwater Contamination, Camille Leger Arena, Cap Pelé, NB., prepared for NB Department of Supply and Services	April 1991
Maritime Groundwater Inc., Investigation of Groundwater Contamination, Camille Leger Arena, Cap Pelé, NB., prepared for NB Department of Supply and Services	July 1991
Maritime Groundwater Inc., Clean-up proposal for Pere Camille Leger Arena area in Cap Pelé, N.B.	July 26, 1991

Document Title	Date
Maritime Groundwater Inc., Well Replacement for the Camille Leger Arena area in Cap Pele, NB.	October 7, 1991
Maritime Groundwater Inc., Remediation System, École Aboiteau, Cap Pelé, N.B., Project No. YE1167	October 22, 1993
Maritime Groundwater Inc., Remediation System, École Aboiteau, Cap Pelé, N.B., Project No. YE1167	November 23, 1993
MGI Limited, Remediation System, École Aboiteau, Cap Pelé, N.B., Project No. YE1167	July 17, 1995
MGI Limited, Site Monitoring, October 1995, École Aboiteau, Cap Pelé, NB, Project No. YE1167	November 25, 1996
MGI Limited, Monitoring Report Requirements, École Aboiteau Remediation System, Cap Pelé, NB, Project No. YE1167	January 31, 1996
MGI Limited, Site Monitoring, February 1996, École Aboiteau, Cap Pelé, NB, Project No. YE1167	April 17, 1996
MGI Limited, Site Monitoring, May 1996, École Aboiteau, Cap Pelé, NB, Project No. YE1167	June 17, 1996
MGI Limited, Site Monitoring, June 1996, École Aboiteau, Cap Pelé, NB, Project No. YE1167	August 5, 1996
MGI Limited, Site Monitoring, July 1996, École Aboiteau, Cap Pelé, NB, Project No. YE1167	August 16, 1996
MGI Limited, Site Monitoring, August 1996, École Aboiteau, Cap Pelé, NB, Project No. YE1167	October 4, 1996
MGI Limited, Site Monitoring, September 1996, École Aboiteau, Cap Pelé, NB, Project No. YE1167	November 13, 1996
MGI Limited, Site Monitoring, October 1996, École Aboiteau, Cap Pelé, NB, Project No. YE1167	December 4, 1996
MGI Limited, Site Monitoring, November 1996, École Aboiteau, Cap Pelé, NB, Project No. YE1167	January 20, 1997
MGI Limited, Site Monitoring, January 1997, École Aboiteau, Cap Pelé, NB, Project No. YE1167	February 14, 1997
MGI Limited, Site Monitoring, April 1997, École Aboiteau, Cap Pelé, NB, Project No. YE1167	May 2, 1997
MGI Limited, Site Monitoring, May and June 1997, École Aboiteau, Cap Pelé, NB, Project No. YE1167	July 15, 1997
MGI Limited, Site Monitoring, July 1997, École Aboiteau, Cap Pelé, NB, Project No. YE1167	August 15, 1997
MGI Limited, Site Monitoring, August 1997, École Aboiteau, Cap Pelé, NB, Project No. YE1167	September 10, 1997
MGI Limited, Site Monitoring, September 1997, École Aboiteau, Cap Pelé, NB, Project No. YE1167	October 28, 1997
MGI Limited, Site Monitoring, November 1997, École Aboiteau, Cap Pelé, NB, Project No. YE1167	February 26, 1998
MGI Limited, Site Monitoring, April 1998, École Aboiteau, Cap Pelé, NB, Project No. YA6038	June 1, 1998

Document Title	Date
MGI Limited, Site Monitoring, May 1998, École Aboiteau, Cap Pelé, NB, Project No. YA6038	July 27, 1998
MGI Limited, Site Monitoring, October 1998, École Aboiteau, Cap Pelé, NB, Project No. YA6038	December 18, 1998
MGI Limited, Site Monitoring, January 1999, École Aboiteau, Cap Pelé, NB, Project No. YA6038	March 1, 1999
MGI Limited, Site Monitoring, April 1999, École Aboiteau, Cap Pelé, NB, Project No. YA6038	June 9, 1999
MGI Limited, Options for Free Product Recovery at TH-5, École Aboiteau, Cap Pelé, N.B., Project No. YE1167	June 9, 1999
MGI Limited, Anticipated Requirements for the Discontinuation of Groundwater Pump and Treat System (Project No. YA6038), École Aboiteau, Cap Pelé, NB	August 24, 1999
MGI Limited, Site Monitoring, July 1999, École Aboiteau, Cap Pelé, NB, Project No. YA6038	August 24, 1999
MGI Limited, Site Monitoring, September 1999, École Aboiteau, Cap Pelé, NB, Project No. YA6038	October 28, 1999
MGI Limited, Environmental Remedial Action Plan, École Aboiteau, Cap Pelé, NB, Project No. YA6038	January 20, 2000
MGI Limited, Test Pit Program and Human Health Risk Assessment, École Aboiteau, Cap Pelé, NB, Project No. YA6038	February 22, 2001
MGI Limited, Site Monitoring, October 2001 and April 2002, École Aboiteau, Cap Pelé, NB, Project No. YA6038	June 6, 2002
MGI Limited, October 2003 Groundwater Monitoring Report and Closure Plan, École Aboiteau, Cap Pelé, NB, Project No. YA6038	January 22, 2004
MGI Limited, February 2004 Groundwater Monitoring Report, Former École Aboiteau, Cap Pelé, NB, Project No. YA6038	April 12, 2004
MGI Limited, May 2004 Groundwater Monitoring Report, Former École Aboiteau, Cap Pelé, NB, Project No. YA6038	June 29, 2004
MGI Limited, July 2004 Groundwater Monitoring Report, Former École Aboiteau, Cap Pelé, NB, Project No. YA6038	August 23, 2004
MGI Limited, May 2005 Groundwater Monitoring Report, Former École Aboiteau, Cap Pelé, NB, Project No. YA6038	May 19, 2005
CRA, October 2006 Groundwater Monitoring Report, Former École Aboiteau, Cap Pelé, NB, Project No. YA6038	November 9, 2006
CRA, March 2008 Risk Assessment Evaluation, Former École Aboiteau Site, 2636 Acadie Road, (Portion of PID # 70308580), Cap Pelé, NB, Project No. YA6038	March 31, 2008
CRA, April 2008 Site Closure Addendum Letter, Former École Aboiteau Site, 2636 Acadie Road, (Portion of PID # 70308580), Cap Pelé, NB, Project No. YA6038	April 4, 2008
Additional documentation prepared by/overseen by Site Professional :	

Part 3 of 7: Tier I-III Environmental Criteria: Source Property

Products/contaminants
(e.g. gasoline, lead, waste oil, etc.) that have been identified at the Source Property:

☐ Gasoline ☒ Diesel /#2 ☐ #6 Oil ☐ Other (Specify)

Current land use:

☐ Residential ☒ Commercial ☐ Other (Specify) (Commercial and Institutional)

Drinking water use:

☒ On-site potable water ☐ Within a wellfield or watershed protected area ☐ Non-potable water

Affected soil composition:

☒ Coarse-grained ☐ Fine-grained ☐ Bedrock (Specify)

Site closure criteria (Check all that apply):

☒ Tier I Risk Based Screening Level Criteria

☒ Tier II Site Specific Target Level Criteria

☒ Tier III Site Specific Target Level Criteria

Description of methodology and comments:

Excavation of fuel oil impacted soils from UST/source area (Nov. 1992), followed by Pump and Treat RAP to address dissolved petroleum hydrocarbons in groundwater (1994 - 1999). Monitoring groundwater and potable wells (1991 - 2008). Risk Assessment to develop Tier II SSTLs (2001, 2008) for a building with 1.8 m basement, slab-on-grade building, and outdoor air exposure scenarios. Tier II SSTLs included in Tables for most conservative scenarios. Tier III soil vapour testing in area of proposed new Library building.

Part 3 of 7 (continued): Tier I-III Environmental Criteria: Source Property

Tier I-II Criteria
(Tier I RBSLs - Commercial non-potable receptor, coarse-grained soil, Fuel Oil impacts)

Chemicals of Concern (COC)	Tier I-II Criteria Applied for Soil	Units	* Reference	Tier I-II Criteria Applied for Groundwater	Units	* Reference
Benzene	1.8	mg/kg	*Atlantic RBCA v. 2.1*	6.9	mg/L	*Atlantic RBCA v. 2.1*
Toluene	160	mg/kg	*Atlantic RBCA v. 2.1*	20	mg/L	*Atlantic RBCA v. 2.1*
Ethyl Benzene	430	mg/kg	*Atlantic RBCA v. 2.1*	20	mg/L	*Atlantic RBCA v. 2.1*
Xylenes	200	mg/kg	*Atlantic RBCA v. 2.1*	20	mg/L	*Atlantic RBCA v. 2.1*
TPH (as gasoline)	450	mg/kg	*Atlantic RBCA v. 2.1*	20	mg/L	*Atlantic RBCA v. 2.1*
TPH (as #2 fuel oil)	7400	mg/kg	*Atlantic RBCA v. 2.1*	20	mg/L	*Atlantic RBCA v. 2.1*
TPH (as #6 oil)	10,000	mg/kg	*Atlantic RBCA v. 2.1*	20	mg/L	*Atlantic RBCA v. 2.1*
MTBE	na	na	na	0.015	mg/L	NBHAL
Other Chemicals evaluated with criteria for Tiers I and II :						

** Provide reference for Screening Level criteria and/or Tier I-II Site Specific Target Level criteria developed using Atlantic RBCA v. 2.1.*

Tier I-II Criteria
(Tier II SSTLs - Commercial non-potable receptor, coarse-grained soil, Fuel Oil source (fresh), building with (slab-on-grade, or 1.8 m basement) fuel oil impacted areas

Chemicals of Concern (COC)	Tier I-II Criteria Applied for Soil	Units	* Reference	Tier I-II Criteria Applied for Groundwater	Units	* Reference
Benzene	3.3	mg/kg	*CRA, March 2008*	6.2	mg/L	*CRA, March 2008*
Toluene	-	mg/kg	*CRA, March 2008*	-	mg/L	*CRA, March 2008*
Ethyl Benzene	-	mg/kg	*CRA, March 2008*	-	mg/L	*CRA, March 2008*
Xylenes	-	mg/kg	*CRA, March 2008*	-	mg/L	*CRA, March 2008*
TPH	8600	mg/kg	*CRA, March 2008*	370,000	mg/L	*CRA, March 2008*
MTBE	na	na	na	0.015	mg/L	NBHAL
Other Chemicals evaluated with criteria for Tiers I and II :						

** Provide reference for Screening Level criteria and/or Tier I-II Site Specific Target Level criteria developed using Atlantic RBCA v. 2.1.*

Tier III Criteria

(Tier III SSTLs - Commercial non-potable receptor, coarse-grained soils, Fuel Oil source (fresh) - Soil Vapour to Indoor Air Pathway

Chemicals of concern (COC)	Medium to which criteria apply	Tier III criteria applied	Units	* Reference
Benzene	Indoor Air	0.00012	mg/m³	*CRA, March 2008; Atlantic PIRI Guidance for Soil Vapour and Indoor Air Monitoring Assessments, July 2006*
Toluene	Indoor Air	0.00032	mg/m³	*CRA, March 2008; Atlantic PIRI Guidance for Soil Vapour and Indoor Air Monitoring Assessments, July 2006*
Ethyl Benzene	Indoor Air	0.00004	mg/m³	*CRA, March 2008; Atlantic PIRI Guidance for Soil Vapour and Indoor Air Monitoring Assessments, July 2006*
Xylenes	Indoor Air	0.00012	mg/m³	*CRA, March 2008; Atlantic PIRI Guidance for Soil Vapour and Indoor Air Monitoring Assessments, July 2006*
Ar C7 - C8	Indoor Air	0.0001	mg/m³	*CRA, March 2008; Atlantic PIRI Guidance for Soil Vapour and Indoor Air Monitoring Assessments, July 2006*
Ar C8 – C10	Indoor Air	0.00042	mg/m³	*CRA, March 2008; Atlantic PIRI Guidance for Soil Vapour and Indoor Air Monitoring Assessments, July 2006*
Ar C10 – C12	Indoor Air	0.00012	mg/m³	*CRA, March 2008; Atlantic PIRI Guidance for Soil Vapour and Indoor Air Monitoring Assessments, July 2006*
Ar C12 – C16	Indoor Air	0.0001	mg/m³	*CRA, March 2008; Atlantic PIRI Guidance for Soil Vapour and Indoor Air Monitoring Assessments, July 2006*
Al C5 – C6	Indoor Air	0.00022	mg/m³	*CRA, March 2008; Atlantic PIRI Guidance for Soil Vapour and Indoor Air Monitoring Assessments, July 2006*
Al C6 – C8	Indoor Air	0.00088	mg/m³	*CRA, March 2008; Atlantic PIRI Guidance for Soil Vapour and Indoor Air Monitoring Assessments, July 2006*
Al C8 - C10	Indoor Air	0.0005	mg/m³	*CRA, March 2008; Atlantic PIRI Guidance for Soil Vapour and Indoor Air Monitoring Assessments, July 2006*
Al C10 – C12	Indoor Air	0.0028	mg/m³	*CRA, March 2008; Atlantic PIRI Guidance for Soil Vapour and Indoor Air Monitoring Assessments, July 2006*
Al C12 – C16	Indoor Air	0.00152	mg/m³	*CRA, March 2008; Atlantic PIRI Guidance for Soil Vapour and Indoor Air Monitoring Assessments, July 2006*
Other Chemicals evaluated with criteria for Tiers III :				

** Provide reference for Tier III criteria (when using criteria other than Risk-Based Screening Level criteria or Tier II Atlantic RBCA V.2.1 Site Specific Target Level criteria.)*

Part 4 of 7: Tier I-III Environmental Criteria - Third Party Property(s)

Based on the work completed, the following Third Party properties (identified by PID number) were identified as being affected at any concentration by the products/contaminants of the Source Property:

PID Number	Chemicals of Concern (COC)	Land use	Potable or Non-potable	Affected soil type
00848861	BTEX / TPH	Residential	Potable	Coarse
00845685	BTEX / TPH	Commercial/Institutional	Potable	Coarse
00846311	BTEX / TPH	Commercial/Institutional	Potable	Coarse
00845628	BTEX / TPH	Commercial	Potable	Coarse
70143763	BTEX / TPH	Commercial	Potable	Coarse
01046374	BTEX / TPH	Commercial	Potable	Coarse
Other Third Party properties :				

Site closure criteria (check all that apply)

[X] Tier I Risk Based Screening Level Criteria

[ ] Tier II Site Specific Target Level Criteria

[ ] Tier III Site Specific Target Level Criteria

Description of methodology and comments

Monitoring groundwater and potable wells (1991 - 2008) - results compared to Residential potable criteria to provide the most conservative screening values.

Part 4 of 7 (continued): Tier I-III Environmental Criteria - Third Party Property(s)

Summary of Clean-up Criteria

PID of Third Party Property(s)

List all PID numbers : 00848861, 00845685, 00846311, 00845628, 70143763, 01046374

Tier I-II Criteria

(Tier I RBSLs - Residential potable receptor, coarse-grained soil, Fuel Oil impacts, used to provide most conservative screening values)

Chemicals of Concern (COC)	Tier I Criteria Applied for Soil	Units	* Reference	Tier I Criteria Applied for Groundwater	Units	* Reference
Benzene	0.03	mg/kg	*Atlantic RBCA v. 2.1*	0.005	mg/L	*Atlantic RBCA v. 2.1*
Toluene	0.38	mg/kg	*Atlantic RBCA v. 2.1*	0.024	mg/L	*Atlantic RBCA v. 2.1*
Ethyl benzene	0.08	mg/kg	*Atlantic RBCA v. 2.1*	0.0024	mg/L	*Atlantic RBCA v. 2.1*
Xylenes	11	mg/kg	*Atlantic RBCA v. 2.1*	0.300	mg/L	*Atlantic RBCA v. 2.1*
TPH	140	mg/kg	*Atlantic RBCA v. 2.1*	3.2	mg/L	*Atlantic RBCA v. 2.1*
MTBE	na	na	na	0.015	mg/L	NBHAL
Other Chemicals evaluated with criteria for Tiers I and II :						

** Provide reference for Screening Level criteria and/or Tier I-II Site Specific Target Level criteria developed using Atlantic RBCA v. 2.1.*

Tier III Criteria

Chemicals of concern (COC)	Medium to which criteria apply	Tier III criteria applied	Units	* Reference
Other Chemicals evaluated with criteria for Tier III :				

** Provide reference for Tier III criteria (when using criteria other than Risk-Based Screening Level criteria or Tier II Atlantic RBCA V.2.1 Site Specific Target Level criteria.)*

Part 5 of 7: Corrective Actions

SOURCE PROPERTY

Describe the remedial objectives and the basic corrective actions of the Remedial Action Plan employed for the Source Property.

Excavation of fuel oil impacted soils from UST/source area (Nov. 1992), followed by Pump and Treat RAP to address dissolved petroleum hydrocarbons in groundwater (1994 - 1999). Monitoring groundwater and potable wells (1991 - 2008). Risk Assessment to develop Tier II SSTLs (2001, 2008) for a building with 1.8 m basement, slab-on-grade building, and outdoor air exposure scenarios. Tier II SSTLs included in Tables for most conservative scenarios.

Describe the current use of the Source Property (buildings, operations, etc.).

Commercial Use - Municipal offices, RCMP Headquarters, Tourism kiosk, and future Public Library

Other comments

Based on the work completed, the Source Property (cited in Part 1) is suitable for the following current, or reasonably foreseeable future, site activity(s).

☐ Residential

☒ Commercial

Conditional closure

If site closure is **conditional**, list site-specific engineered or institutional controls that apply to the Source Property complete with a description of the objectives of each control. Attach written agreements to the control(s) from all affected stakeholders and a site plan indicating the limits of the control(s).

Figure 1 attached illustrates the areas on site that are proposed to be managed through institutional controls to eliminate risk to human health. The area outlined in yellow is the area to be designated as a "no potable well" zone. It is recommended that any new wells that may be drilled at this site be required to incorporate best management procedures to prevent creating a pathway which could allow possible residual petroleum hydrocarbon impacts to migrate from the shallow groundwater aquifer into the deeper potable aquifer. This condition will apply to the drilling of proposed heat pump wells or a new potable water supply well for the Bibliothèque Publique. The proposed installation procedure should include grouted steel casing.

The building construction activities are likely to encounter soils or bedrock that have residual petroleum hydrocarbon impacts. An Environmental Plan and a Health and Safety Plan should be implemented by the contractor that will provide proper working procedures where impacted materials will be disturbed by the construction activities.

Part 5 of 7 (continued): Corrective Actions

THIRD PARTY PROPERTIES

Describe the remedial objectives and the basic corrective actions of the Remedial Action Plan employed for each of the Third Party Properties.

Groundwater and potable wells monitoring conducted, to confirm source area remediation was effective in removing potential impacts to Third Party water wells.

Other comments

[redacted]

Describe the current use of the Third Party Property(s) (buildings, operations, etc.)

Education institution (school), commercial properties, funeral home, arena, Parish Convent.

Based on the work completed, the **Third Party properties** (cited in Part 4) are suitable for the following current or reasonably foreseeable future site activity(s).

- [X] Residential (list PID numbers) PID # 00848861
- [X] Commercial (list PID numbers) PID #s 00845685, 00846311, 00845628, 70143763, 01046374

Conditional Closure

If site closure is **conditional**, list site-specific engineered or institutional controls that apply to the Third Party Property(s) complete with description of the purpose of each control. Attach written agreements to the control(s) from all affected stakeholders and a site plan indicating the limits of the control(s).

No controls recommended at the Third Party properties.

Part 6 of 7: Summary Statement of Site Professional

The Minister considers the pre-checked statements below to be mandatory for acknowledging receipt of the Record of Site Condition. The signature of the Site Professional on this form indicates the fulfillment of these mandatory requirements as well as the requirements of all other checked statements.

Please check appropriate statements:

Mandatory Statements

☑ 1. All work on which this Record of Site Condition is based was prepared, overseen and/or reviewed by the Site Professional.

☑ 2. The site was managed in accordance with the current version of the New Brunswick Department of Environment *Guideline for the Management of Contaminated Sites.*

☑ 3. *This Record of Site Condition form is identical to the one provided by the ENV and the content of the form has not been altered.*

LRA Statement *(if LRA process used)*

☐ 4. The Limited Remedial Action Process was applicable for this site as per the current version of the Limited Remedial Action Reference Documentation for Site Professionals.

Source Property Statements

☐ 5. Based on the results of the environmental site assessment, the applicable Tier I Risk Based Screening Level criteria or Tier II/Tier III Site Specific Target Level criteria were not exceeded on the Source Property (as described in Part I) and therefore, remedial action and/or site-specific engineered or institutional controls are not required for the current or reasonably foreseeable future site activities (as cited in Part 5).

☐ 6. The Source Property (as described in Part I) has been remediated to an acceptable level for the current or reasonably foreseeable future site activities (as cited in Part 5) and therefore, *unconditional closure* is recommended.

☒ 7. The Source Property (as described in Part I) requires site-specific engineered or institutional controls to satisfy the current or reasonably foreseeable future site activities (as cited in Part 5) and therefore, *conditional closure* is recommended.

Third-Party Property Statements

☒ 8. Based on the results of the environmental site assessment, the applicable Tier I Risk Based Screening Level criteria or Tier II/Tier III Site Specific Target Level criteria were not exceeded on the Third Party properties (as cited in Part 4) and therefore, remedial action and/or site-specific engineered or institutional controls are not required for the current or reasonably foreseeable future site activities (as cited in Part 5).

☐ 9. Third Party properties (as cited in Part 4) affected by the contamination of the Source Property (as described in Part I) have been remediated to an acceptable level for the current or reasonably foreseeable future site activities (as cited in Part 5) and therefore, *unconditional closure* is recommended.

☐ 10. Third Party properties (as cited in Part 4) affected by the contamination of the Source Property (as described in Part I) require site-specific engineered or institutional controls to satisfy the current or reasonably foreseeable future site activities (as cited in Part 5) and therefore, *conditional closure* is recommended.

Company: Conestoga-Rovers & Associates

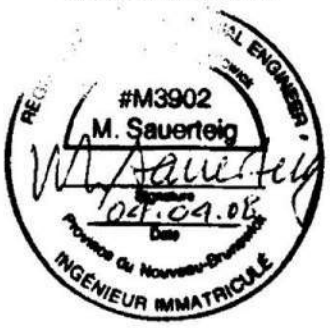
Address: 466 Hodgson Road, Fredericton, NB E3C 2G5

Tel: (506) 458-1248

Fax: (506) 462-7646

E-mail: msauerteig@craworld.com

Professional Seal Here



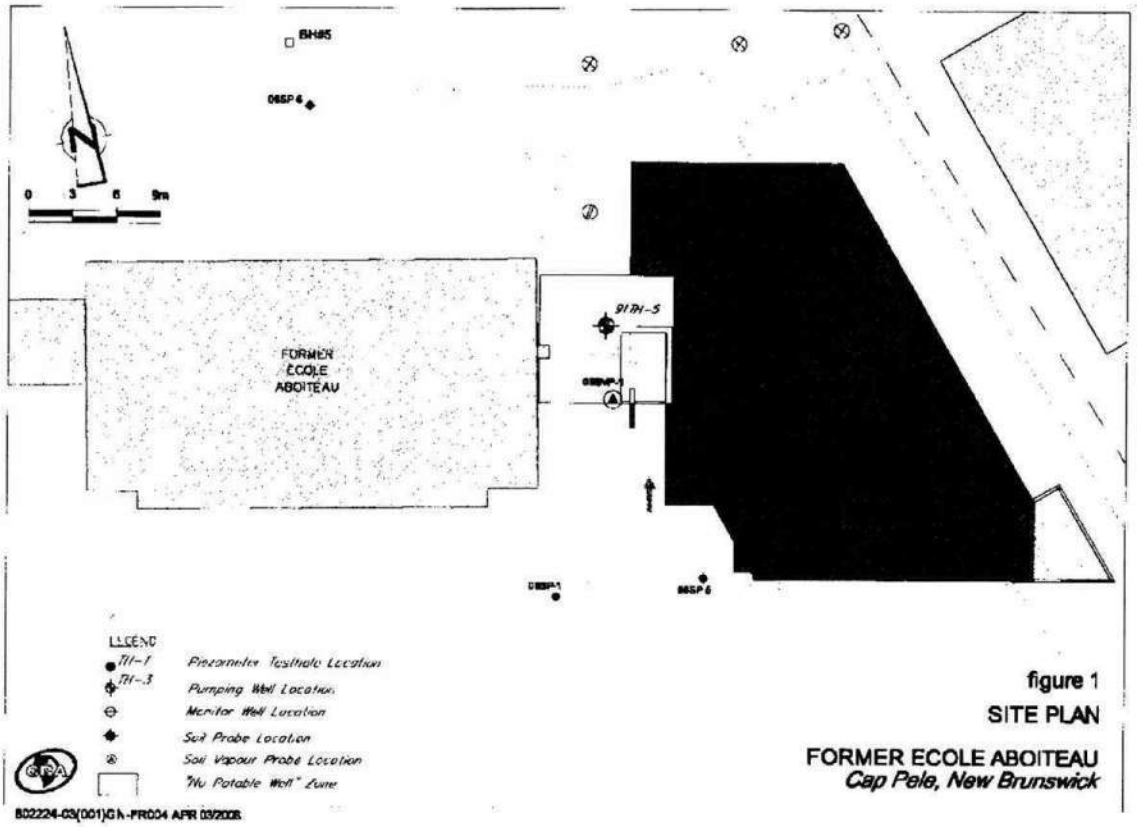


figure 1
SITE PLAN
FORMER ECOLE ABOITEAU
Cap Pele, New Brunswick

Part 7 of 7: New Brunswick Department of the Environment and Local Government - Acknowledgement of Receipt

The Minister acknowledges receipt of this Record of Site Condition. The Minister has processed the report(s) cited in Part 2 of this Record of Site Condition for the purpose of ensuring the site has been managed in accordance with the current version of the New Brunswick Department of the Environment and Local Government *Guideline for the Management of Contaminated Sites.*

Based upon the reports cited in Part 2 and conclusions of the Site Professional stated in Part 6 of this Record of Site Condition, the Site Professional is of the opinion that the stated level of contamination remaining on the property will not adversely affect the quality of the environment. Notwithstanding this, the Minister reserves the right to evaluate the site should site activities change, or should circumstances change, which result in an increase in contamination or changes in site conditions which may pose a risk to the quality of the environment.

The Minister has not supervised the work undertaken at the site and does not assume any responsibility or liability for this work, or for notifying future owners, or present or future occupants of the property, of the work completed. 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, which may arise from taking ownership or occupancy.

Unconditional Closure

☐ It is understood from the information provided that the site has been managed in accordance with the current version of the New Brunswick Department of Environment *Guideline for the Management of Contaminated Sites* and that **further remedial action and/or site-specific engineered or institutional controls are not required** to ensure compatibility with the current or reasonably foreseeable future site activities (as cited in Part 5).

Conditional Closure

May 23/08 ☒ It is understood from the information provided that the site has been managed in accordance with the current version of the New Brunswick Department of Environment *Guideline for the Management of Contaminated Sites* and that **site-specific engineered or institutional controls are required** to ensure compatibility with the current or reasonably foreseeable future site activities (as cited in Part 5).

Greg Thonk
for Minister of Environment

May 23, 2008
Date