

ENVIRONMENTAL IMPACT ASSESSMENT

RC NORTHERN ORGANICS INC.

GRANDE-ANSE, NEW BRUNSWICK

Our File No.: 297-19-C

September 2019

Prepared for:

RC NORTHERN ORGANICS INC.

Prepared by:



TABLE OF CONTENTS

i) Table of Contents
ii) Executive Summary

1.	THE PROPONENT	1
1.1	NAME OF PROPONENT	1
1.2	ADDRESS OF PROPONENT	1
1.3	CHIEF EXECUTIVE OFFICERS	1
1.4	PRINCIPAL CONTACT PERSONS FOR THE PURPOSES OF THE ENVIRONMENTAL IMPACT ASSESSMENT	1
1.5	PROPERTY OWNERSHIP	1
2.	THE UNDERTAKING	2
2.1	NAME OF THE UNDERTAKING	2
2.2	BACKGROUND	2
2.3	PROJECT OVERVIEW.....	3
2.4	PURPOSE/RATIONALE/NEED FOR THE UNDERTAKING.....	5
2.5	PROJECT LOCATION	5
2.6	SITING CONSIDERATIONS	5
2.7	PHYSICAL COMPONENTS AND DIMENSIONS OF THE UNDERTAKING	5
2.8	CONSTRUCTION, OPERATION AND MAINTENANCE DETAILS	6
2.8.1	CONSTRUCTION: HATCHERY BUILDING.....	6
2.8.2	CONSTRUCTION: GROW-OUT BUILDING.....	7
2.8.3	CONSTRUCTION: WATER SUPPLIES.....	8
2.8.4	CONSTRUCTION: WASTEWATER TREATMENT SYSTEM	8
2.8.5	CONSTRUCTION: EFFLUENT DISCHARGE	9
2.8.6	OPERATION AND MAINTENANCE	9
2.8.6.1	WATER REQUIREMENTS.....	10
2.8.6.2	EFFLUENT AND WASTE	10
2.8.7	DECOMMISSIONING	11
2.9	REGULATORY APPROVALS.....	11
3.	DESCRIPTION OF THE EXISTING ENVIRONMENT.....	13
3.1	PHYSICAL AND NATURAL FEATURES.....	13
3.1.1	GENERAL.....	13

3.1.2	TOPOGRAPHY	13
3.1.3	GEOLOGY	13
3.1.4	GROUNDWATER	14
3.1.5	SURFACE WATER - WATERCOURSES	15
3.1.6	SURFACE WATER – WETLANDS	15
3.1.1	VEGETATION	15
3.1.1	WILDLIFE AND WILDLIFE HABITAT (TERRESTRIAL)	15
3.1.3	MIGRATORY BIRDS	18
3.1.4	SPECIES AT RISK	19
3.1.5	ENVIRONMENTALLY SIGNIFICANT AREAS	21
3.1.6	IMPORTANT BIRD AREAS	22
3.1.7	ATMOSPHERIC	23
3.1.8	POPULATION AND ECONOMY	23
3.1.9	ARCHAEOLOGICAL RESOURCES	23
3.1.10	LAND USE	23
3.1.11	HERITAGE SITES	24
3.1.12	TRANSPORTATION	24
4.	ENVIRONMENTAL ASSESSMENT OF POTENTIAL IMPACTS	26
4.1	ARCHAEOLOGY	27
4.2	MARINE WATER QUALITY AND FISH HABITAT	28
5.	WASTE.....	30
6.	ACCIDENTS AND UNPLANNED EVENTS	30
7.	PUBLIC INVOLVEMENT	31
8.	FIRST NATIONS	32
9.	APPROVAL OF THE UNDERTAKING	33
10.	FUNDING.....	34
11.	CLOSING STATEMENT.....	35
12.	REFERENCES CITED.....	36

APPENDICES

- Appendix A – Step 1 Water Supply Source Assessment Application
- Appendix B – Site Photos
- Appendix C – Atlantic Canada Conservation Data Centre Report
- Appendix D – Grande-Anse Zoning Map
- Appendix E – Archaeological Probability Mapping

EXECUTIVE SUMMARY

RC Northern Organics Inc. is proposing the construction/installation of an organic Atlantic salmon (*Salmo salar*) hatchery near Grande-Anse, Gloucester County, New Brunswick. The hatchery would be located on the site of a former fish processing plant and utilize the remaining infrastructure where possible, including the existing building for the freshwater hatchery, and saltwater wells for the Grow Out Building. The fish would be hatched from eggs and grown to adult size before being shipped to market.

The proposed fish hatchery would consist of two main buildings: a freshwater hatchery would be built in the existing structure on site, and would utilize fresh water to hatch the eggs and raise the salmon until they are ready for a saltwater environment. A new Grow Out Building would be constructed to house the fish in a saltwater environment, until they are ready for market. Water in each building would be recycled at a rate of between 95% and 97.5%, and any effluent would be treated before being discharged to Chaleur Bay.

Roy Consultants is undertaking an Environmental Impact Assessment for the project as per Item S, Schedule A of the New Brunswick *Environmental Impact Assessment Regulation*, which requires registration of “*all waterworks with a capacity greater than fifty cubic metres of water daily*”.

As with any land-based finfish hatchery, quantity and quality of water available on site are keys to its successful and profitable operation. The feasibility of the proposed fish hatchery will be contingent on the availability and chemistry of the on-site groundwater supplies. As such, the completion of the hydrogeological investigations are required before proceeding to the detailed design of the facility.

This document presents preliminary information available at this time and incomplete sections are identified in bold typeface. The final, detailed project design will be completed based on the results of the evaluation of available water quantity and quality.

Once the Water Supply Source Assessment is complete, the final registration document will be submitted to the Department of Environment and Local Government, including the detailed project design, full assessment of potential impacts and their significance, and a proposed stakeholder consultation program.

1. THE PROPONENT

1.1 NAME OF PROPONENT

The proponent is RC Northern Organics Inc.

1.2 ADDRESS OF PROPONENT

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1.5 PROPERTY OWNERSHIP

The project is located on private property owned by the proponent.

2. THE UNDERTAKING

2.1 NAME OF THE UNDERTAKING

The name of the undertaking is the *RC Northern Organics Inc. Salmon Hatchery*.

2.2 BACKGROUND

The proposed project would involve the development of an organic, land-based Atlantic salmon hatchery on the site of a former fish processing plant in Grande-Anse, New Brunswick. The proposed hatchery would include a freshwater facility for hatching salmon from eggs and growing them to the smolt life stage. The smolts would then be relocated to the saltwater grow-out facility, where they would be grown to market size and harvested. The proposed development would recycle 95% to 97.5% of the process water, thereby reducing the amount of effluent discharged to the environment. The water, before being recycled or discharged, would undergo treatment, including solids removal. Solid waste would be removed and disposed of off-site at an approved disposal facility.



Figure A: Project Location (ArcGIS)

The proposed facility would create long-term, permanent, skilled employment for the area and provide an organic, land-based salmon alternative to consumers, compared to salmon raised in marine cages.



Figure B: Aerial View of Subject Site (ArcGIS, 2019)

2.3 PROJECT OVERVIEW

The proposed project would involve the construction of a freshwater hatchery in an existing building and the construction of a new building to house a saltwater grow-out facility. The proposed hatchery would raise Atlantic salmon (*Salmo salar*) from eggs to market size. Because salmon is an anadromous fish species, it requires both saltwater and freshwater to complete its life cycle; as such, the proposed hatchery would require supply of saltwater and freshwater.

The subject site, a former fish processing plant, has several existing saltwater wells, but no freshwater well; therefore, the project would require drilling and assessment of a freshwater well for the hatchery and an assessment of the existing saltwater wells for the grow-out building, to determine the quantity and quality of water available to the facility. These factors will determine the capacity of the facility and ultimately the feasibility of the project, as water quality affects growth rates, and water quantity will determine the production capacity (and therefore economic feasibility) of the project. The design of the facility will not be completed until RC Northern Organics Inc. has an opportunity to assess the quality and quantity of water (fresh and salt water) available for the project.

The proposed project would be a certified organic facility and would recycle between 95% and 97.5% of its process water to maximize production efficiency and reduce potential environmental impacts of the project.



Photo No. 1: Existing Building at 710 rue de l'Acadie

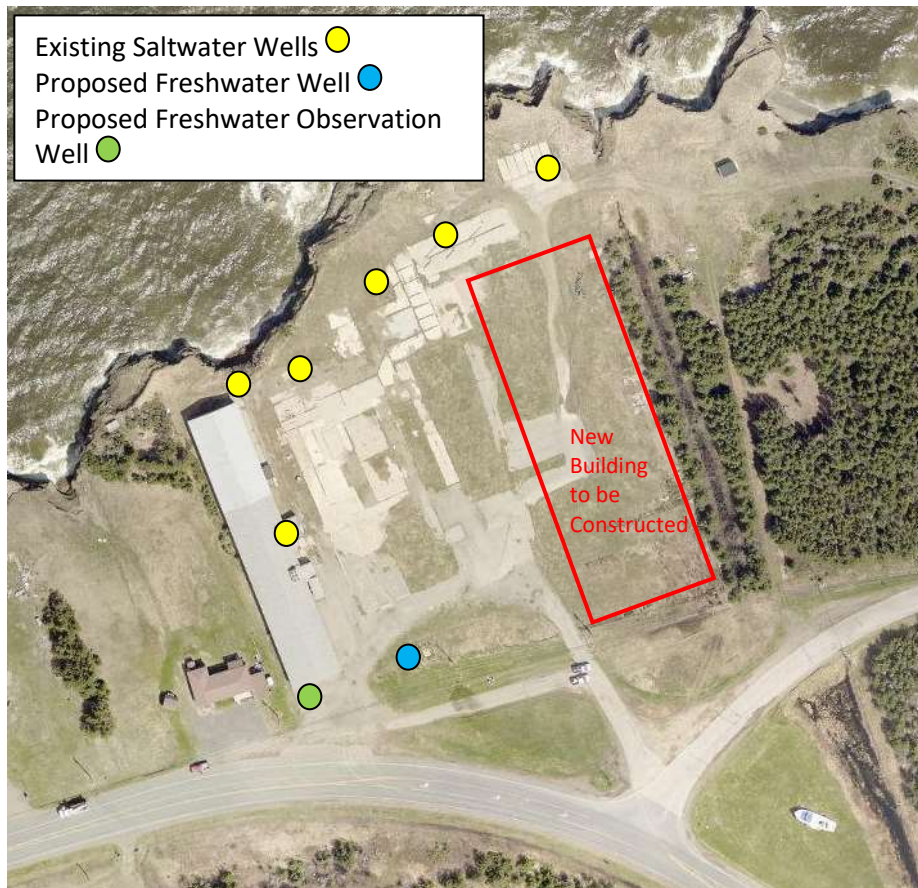


Figure C: RC Northern Organics Inc. Site Plan (Approximate)

2.4 PURPOSE/RATIONALE/NEED FOR THE UNDERTAKING

The proposed project is a business venture by the landowner. The facility would provide revenue for the proponent, as well as up to 10 full-time permanent, skilled jobs for the community of Grande-Anse.

The proponent has invested in the purchase of the subject parcel, the design and the planning for the proposed development to date; therefore the null, or “do-nothing” alternative is not considered an option.

2.5 PROJECT LOCATION

The proposed project is located at civic address 710 rue de l’Acadie (Route 11) in the municipality of Grande-Anse, in Gloucester County, New Brunswick. The current property consists of five (5) parcels owned by the proponent, identified by Service New Brunswick (SNB) as PID Nos. 20093605 20090999, 20090122, 20087581 and 20503108. Per SNB Planet, the total area of the subject site is approximately 2.11 hectares.

The subject site is located within the Grande-Anse municipal limits and is zoned “I” – Industrial.

The centre of the site is geo-referenced at LAT 47°49'30.46"N, LONG 65°07'49.09"W.

The subject site is bordered to the north by the Chaleur Bay and to the south by Route 11. The parcel west of the site contains a home and the properties east of the site are unoccupied, wooded parcels.

2.6 SITING CONSIDERATIONS

The project site has a number of favourable elements:

- a. The subject property is owned by the proponent;
- b. There are no sensitive environmental features located on the subject site;
- c. The site contains useable infrastructure, including saltwater wells, a septic system, production outfall pipes and a suitable hatchery building;
- d. The site is adjacent to Route 11, a major transportation corridor in the region, and
- e. The property is correctly zoned for the intended use.

2.7 PHYSICAL COMPONENTS AND DIMENSIONS OF THE UNDERTAKING

The proposed development would include the following components:

- A. Hatchery Building – This existing concrete, wood and steel-framed structure is approximately 100 metres x 15 metres and is essentially a large warehouse with large divided areas. The building already contains suitable water and electrical infrastructure for a freshwater hatchery. A 6” saltwater well and pump are located within the building for cleaning purposes. This building would be divided into an egg hatchery area, tanks for raising the small fish to smolt size, a depuration area, a staff area for company offices and an area containing a kitchen/lunch room, washrooms and showers for employees’ use;
- B. Grow-out Building – a 100-metre x 40-metre building would be constructed on the eastern side of the property which would house the salmon rearing tanks. This would include four (4) – 8-metre

- juvenile tanks and six (6) – 15-metre grow-out tanks, as well as an electrical/pump room and a water treatment system;
- C. Saltwater Production Wells: The site contains multiple saltwater wells of different diameters. Saltwater wells SW2 and SW3 would be connected to the grow-out building, SW3 would be the primary water supply and SW2 would be the backup supply in the event of a problem with SW3;
 - D. Effluent Outfall Pipes: The site contains existing buried effluent pipes; these would be connected to the proposed hatchery and rearing buildings to discharge liquid effluent that is not recycled;
 - E. Potable Water Well: The hatchery building would be connected to a new freshwater well, to be drilled and evaluated as part of the environmental impact assessment, and
 - F. Other Saltwater Wells: The remaining wells on site would be properly capped and maintained as backup water supplies, with the exception of two of the wells that would be decommissioned per the requirements of the *Water Well Regulation*. Refer to the Step 1 application for more information on existing and proposed wells.



Photo No. 2: Proposed Site of New Salmon Hatchery

2.8 CONSTRUCTION, OPERATION AND MAINTENANCE DETAILS

2.8.1 CONSTRUCTION: HATCHERY BUILDING

The existing hatchery building would be renovated to accommodate the hatchery portion of the facility. This would include repairs to the siding and roof of the building's exterior, installation of incubators, tanks, pumps, water treatment system and various maintenance equipment. The portion at the southern end of the building would be renovated to accommodate company offices, a staff kitchen and washrooms.

The detailed design of the hatchery has not been completed; however, it is expected to house four (4) – 8-metre depuration tanks and a hatchery capacity of up to 100,000 salmon smolts. No heating of the tank areas would be required and office and employee areas would be heated by electric baseboard heaters.

The final design of the freshwater hatchery is pending completion of the Water Supply Source Assessment (WSSA) and water quality results.



Photo No. 3: Interior of Existing Building (Hatchery)

2.8.2 CONSTRUCTION: GROW-OUT BUILDING

The project includes the construction of a 100-metre x 40-metre steel-framed salmon grow-out building on a concrete slab on grade. This building would consist of four separate areas:

- **Juvenile Tanks:** This area, at the north end of the building, would contain four (4) – 8-metre juvenile tanks;
- **Electrical/Pump Room:** A central portion of the building would contain a pump room with electrical infrastructure for the operation of the building's lights, pumps and treatment system;
- **Water and Wastewater Treatment System:** A separate room located across from the electrical/pump room would contain the wastewater and water treatment systems, including a drum filter for solid removal, a filtration system for removing suspended nutrients; a water filtration system would complete the treatment of the water, prior to pumping it back through the facility or discharging to the outfall pipe;
- **Grow-out Tanks:** The south end of the building would contain six (6) – 15-metre grow-out tanks for the final growth stages of the fish, before they are removed and sent to market.

The proposed grow-out building would not be heated: the ambient temperature of the building would be regulated by the water temperature within the tanks.

The proposed grow-out building would be a modular, steel-framed building on a concrete slab. **The final detailed design of the building, the tank layout, wastewater treatment system, pumps, etc. would be determined upon completion of the WSSA.**

2.8.3 CONSTRUCTION: WATER SUPPLIES

The proposed facility would require both fresh- and saltwater supplies for the operation of the hatchery and grow-out facilities, respectively.

The hatchery building would require a freshwater supply, which would be obtained from a groundwater supply. This would be drilled near the southern end of the building, but at sufficient distance from the neighbouring home, which is also serviced by a domestic groundwater supply.

The site also contains eight (8) saltwater wells in various states of disrepair, of which two (2), SW2 and SW3, will be assessed under the Water Supply Source Assessment process. SW3 would be the primary saltwater supply for the grow-out facility. SW2 would be the emergency saltwater supply for the building, in the event a disruption of SW3 occurred.



Photo No. 4: Proposed Back-up Well SW2

2.8.4 CONSTRUCTION: WASTEWATER TREATMENT SYSTEM

RC Northern Organics Inc. would make every effort to maximize the quantity of water recirculated in the facility; however, some liquid effluent would be produced and discharged to the environment. Prior to the

water being recycled within the facility, or discharged, it would pass through a wastewater treatment system.

The final design of the wastewater/recirculation system is pending completion of the Water Supply Source Assessment (WSSA) and water quality results.

2.8.5 CONSTRUCTION: EFFLUENT DISCHARGE

The proposed hatchery and grow-out facilities would discharge the liquid effluent not recycled in the facility to the environment via existing discharge pipes. The buried pipes extend to the shoreline and discharge onto the bedrock and then into the Bay. An extension of the existing pipes would be constructed, so that the discharge end-of-pipe would be below the intertidal zone at all times.



Photo No. 5: Existing Effluent Discharge Pipe (Grow-out Building)

2.8.6 OPERATION AND MAINTENANCE

The proposed facility would raise sterile, female Atlantic salmon from eggs in freshwater. These individuals would be raised in tanks in the hatchery building until they reach the smolt stage, at which point they would be manually transferred to the grow-out building. Once in the grow-out building, the smolts would grow until ready for market. Once of market size and weight, they would be harvested and shipped to waiting suppliers. Maximum standing production of the facility is anticipated to be between 300,000 kg and 400,000 kg, pending the results of the WSSA. Maximum daily feed amount would be approximately 3,000 kg.

No butchering or processing would occur on site.

The proposed facility would be certified organic under the Organic Aquaculture Standard [CAN/CGSB-32.312 Organic Production Systems – Aquaculture – General principles, management standards and permitted substances lists](#). This would require that only cleaning products, medicine and food be certified organic by the Canadian Health Food Association, the Canadian Organic Growers and the Canada Organic Trade Association would be permitted.

Chemical use on site would be minimal to meet the criteria of the Organic Aquaculture Standard noted above. These are anticipated to be limited to the following cleaning and disinfection products*:

- Biodegradable dish detergents (< 4 L);
- Peracetic acid (< 60 L);
- Sodium hypochlorite (< 100 L), and
- Sodium bicarbonate or sodium carbonate (1 ton).

**Product volumes estimated.*

The operation would employ between five (5) and ten (10) skilled employees full-time on a permanent basis and would create temporary construction employment for the renovation of the existing building and the construction of the grow-out building.

The proposed facility would adhere to the requirements of a DELG-issued Approval to Operate, as well as to the *Environmental Management Plan for Land-Based Finfish Aquaculture Sites*, the *Industry Code of Practice* and a Waste Management Plan to be developed as a requirement of the Approval to Operate. This would include monitoring requirements for the influent volumes and quality, effluent quality and volumes, mixing zone water quality parameters and reporting to DELG.

2.8.6.1 WATER REQUIREMENTS

The hatchery building would require fresh water from the proposed new water supply FW1 to be used for hatching the salmon eggs, growing the fish to the smolt life stage and for depuration. Additionally, this building would have a minor water requirement for the employees' domestic use, such as a kitchen, washrooms and showers. The anticipated freshwater requirement for the hatchery building is 420 litres per minute.

The grow-out facility would require saltwater for growing the salmon from smolt to market size. The existing saltwater supplies SW3 and backup SW2 would provide the necessary saltwater. The saltwater from these wells is believed to not be derived from saltwater intrusion, but rather from relic seawater at depth; as such, these supplies would be advantageous for the production of salmon, as the water temperature and quality should remain constant throughout the year regardless of ambient temperature or seasonal variations. This would enable the hatchery to operate steadily throughout the year without altering water supplies, thereby maximizing production and salmon growth rates. The anticipated saltwater requirement for the grow-out building is 775 litres per minute.

2.8.6.2 EFFLUENT AND WASTE

The proposed facility will require the discharging of liquid effluent to the Chaleur Bay. The production water (fresh and saltwater) will be recycled (up to 97.5%) to minimize the volume of effluent to be

discharged and to maximize the efficiency and productivity of the facility. The production water will first undergo treatment before being recirculated or released as effluent.

Solid waste will be removed and stored on site in sealed containers until the containers are removed and disposed of at an approved solid waste disposal facility.

Effluent will be required to meet the CCME Guidelines for the Protection of Aquatic Life (Marine) and the limits imposed by the DELG Approval to Operate. Based on the *Environmental Management Program for Land Based Finfish Aquaculture in New Brunswick (V. 1.0)*, the sampling parameters in Table 2.9 (Figure D) would be met or exceeded by the proposed facility.

An effluent mixing zone would be identified at the location of the outfall to determine the size of the potential area of impact from the discharging of effluent into the marine environment.

Effluent characteristics will be determined based on the final design of the facility, pending the results of the WSSA.

2.8.7 DECOMMISSIONING

At this time, there are no plans for the decommissioning or abandonment of the site.

As noted above, the final design of the facility, the wastewater and recirculation system, and the characterization of the effluent (volumes and quality) will be completed and submitted upon completion of the WSSA.

2.9 REGULATORY APPROVALS

- i. A Certificate of Determination will be required for the operation “...*waterworks with a capacity greater than fifty cubic metres of water daily*” per the NB *Environmental Impact Assessment Regulation*.
- ii. A development permit from the Municipality of Grand-Anse will be required.
- iii. An approval for the existing septic system will be required from the Department of Public Safety.
- iv. A Certificate of Approval (Water) from the Department of Environment and Local Government (DELG) will be required.
- v. A licence to operate a land-based aquaculture operation will be required from the NB Department of Agriculture, Aquaculture and Fisheries (DAAF).

Table 2.9: Required sample parameters for facilities with outfalls into estuaries and coastal waters for sample events conducted monthly between June 1st – November 15th (6 times/year).

Sample Location	Level 1	Level 2 ¹
Control station	Lab: TP and TN Self: Temp, DO, pH,	Level 1 plus: TAN
Intake	Self: Flow	Level 1 plus: TP and TN
Before solids filtration		TSS and TP
Immediately after filtration		TSS and TP
Before septic, settling Pond/pit or wetland		TN and TP
Effluent	Lab: TN and TP Self: Temp, DO, pH, flow	Level 1 plus³: TAN & COD
Edge of mixing zone	Lab: TN and TP Self: Temp, DO	Level 1 plus³: TAN and pH
Well ²	Self: Flow, Temp, plus conductivity	Level 1

¹ Level 2 may not be required in instances where Control station TP ≥ 28 ug/L and/or TN ≥ 500 ug/L

² Flow meter required. Full well water chemistry (DELG *1 package or equivalent) encouraged once per year

³ Recirculation facilities may do self-analysis for TAN.

Table 2.10: Regulatory thresholds and Canadian Council of Ministers of the Environment (CCME) guidelines for facilities with outfalls into coastal or estuarine waters.

	Threshold
PBS Variables	
Total Nitrogen (TN)	500 ug/L
Total Phosphorus (TP)	35 ug/L
CCME Guidelines¹	
Un ionized Ammonia (NH ₃)	19 ug/L
Nitrite (NO ₂ ⁻)	60 ug/L
Nitrate (NO ₃ ⁻)	16 mg/L
Reactive Chlorine	0.5 ug/L
Dissolved Oxygen	8.0 mg/L

¹Canadian Water Quality Guidelines for the Protection of Aquatic Life (CCME 2007).

Figure D: Table 2.9

3. DESCRIPTION OF THE EXISTING ENVIRONMENT

3.1 PHYSICAL AND NATURAL FEATURES

3.1.1 GENERAL

The subject site consists of parcels PID 20093605, 20090999, 20090122, 20087581 and 20503108. It contains the remnants of a former fish processing plant, including a vacant building, various concrete pads on site, seven (7) saltwater wells, underground discharge pipes and a buried domestic septic system.

The subject site is located within the Caraquet Eco-District, in the Eastern Lowlands Ecoregion of New Brunswick. The Eastern Lowlands Ecoregion is defined as a broad wedge of flat to gently rolling terrain that reaches from Bathurst in the North to Sackville in the South, and is defined by the Chaleur Bay and the Northumberland Strait on its north and eastern fringes.

The Caraquet Eco-District consists of the crescent of land, averaging 10 km-wide, which rims the Acadian Peninsula in northeastern New Brunswick. This eco-district is primarily (70%) forested, with a cool, dry climate that resembles the climate in the adjacent Tabusintac Ecodistrict, but its summer wind velocity is nearly twice the speed of the inland breezes.

The vegetation cover in the area is predominantly spruce species (white spruce and black spruce), with intolerant hardwoods, intolerant softwoods and balsam fir, mixed with farmland along the coastline consisting of pasture land, grain and blueberry production.

The economy of the region relies heavily on natural resources, including commercial fisheries, peat harvesting and agriculture.

Chaleur Bay (and the Gulf of St. Lawrence) is home to a rich and diverse marine environment, including a variety of commercial, recreational and aboriginal fishery species, including Atlantic cod, Atlantic halibut, herring, mackerel, alewife, eel, oyster, crab and American lobster.

3.1.2 TOPOGRAPHY

The subject site is virtually flat, between rue de l'Acadie (Route 11) and Chaleur Bay. The site is a mixture of concrete and asphalt surfaces and ground vegetation left from the previous development. The southeast edge of the property is a steep sandstone cliff, approximately 8 metres in height. Surface and groundwater on the property is assumed to flow north toward the Bay.

3.1.3 GEOLOGY

The bedrock geology of the study site and surrounding area consists of Late Carboniferous-aged bedrock of the Pictou Group (New Brunswick Department of Natural Resources, 2008). According to the New Brunswick Bedrock Lexicon, the Pictou Group is comprised of coarse- to fine-grained, dark red, reddish-

brown and grey, commonly micaceous sandstones, red siltstones and mudstones, and minor grey argillaceous shales.



Photo No. 6: Chaleur Bay Shoreline at Subject Property

3.1.4 GROUNDWATER

No municipal groundwater supplies are located in proximity to the subject site; the nearest municipal wellfield is at Haut-Caraquet, approximately 11 kilometres southeast of the proposed project.

A search of the New Brunswick Department of Environment and Local Government's Online Well Log System (OWLS) was completed. Twenty (20) water well records and six (6) water quality records were returned based on a search within 800 metres of the subject site (PID 20093605). Based on a review of available water well data, most wells obtain drinking water from a fractured sandstone bedrock aquifer. Well depths varied between 35 feet and 255 feet. The driller's estimated safe yield varied between 4 IGPM and 250 IGPM (26 m³/day to 1636 m³/day).

Based on a review of well water quality data, several parameters were noted to exceed the New Brunswick Drinking Water Guidelines. Three (3) wells exceed the guideline of 0.01 mg/L for arsenic. Two (2) wells exceed the barium guideline of 1.0 mg/L. Lead exceeded the guideline of 0.01 mg/L in one well. Commercial water treatment systems are available to reduce metal concentrations in groundwater to acceptable levels.

Iron and manganese concentrations exceed guideline values in three (3) wells. The guidelines of 0.3 mg/L and 0.05 mg/L for iron and manganese, respectively, are based on aesthetic objectives and are not considered potential risks to human health. High levels of iron and manganese can stain plumbing fixtures and clothes.

Commercial water treatment systems are available to reduce iron and manganese concentrations in groundwater to acceptable levels.

Four (4) wells had a presence of total coliforms which exceed the guideline of none detectable per 100 mL for private wells. The presence of total coliforms is treated by shock chlorination of the well followed by re-sampling. If the presence of total coliforms persists, commercial water treatment systems may be installed.

Turbidity values above the guideline of 1.0 NTU was exceeded in four (4) wells. Elevated turbidity is common in newly drilled wells. Turbidity is expected to decrease over time with increased well use. If turbidity levels remain high, commercially available water treatment systems may be used to reduce turbidity levels.

3.1.5 SURFACE WATER - WATERCOURSES

The nearest named freshwater watercourse is located approximately 3,700 metres south of the subject site and the nearest watercourses are unnamed watercourses 720 metres west and 1,250 metres east of the site.

No watercourses or wetlands (mapped or unmapped) are located on the subject site. A ditch, which appears on the GeoNB Hydrographic layer, is located on the adjacent property, east of the subject site and did not contain water during the site visit. Due to the lack of freshwater watercourses on the subject property, no interaction between the project and freshwater watercourses or water quality is anticipated.

3.1.6 SURFACE WATER – WETLANDS

As shown in Figure 4, one (1) regulated wetland is located in proximity to the subject site, approximately 480 metres northwest. No Provincially Significant Wetlands (PSW) are located in the vicinity of the subject site. No unmapped wetlands are located within 30 metres of the subject site. Due to the nature of the project and the distance to the wetland, no interaction between the project and any wetland is anticipated.

3.1.1 VEGETATION

The proposed site is presently a semi-vacant commercial site, consisting of a large vacant building, various hard surfaces and areas regrowing with low vegetation consisting of common grasses and wildflower species, including goldenrod (*Solidago* spp), thistle (*Cirsium* spp), clover (*Trifolium* spp), Black Raspberry (*Rubus occidentalis*), etc. Additionally, the eastern edge of the site is bounded by a narrow strip of black spruce (*Picea glauca*) and balsam fir (*Abies balsamea*) trees.

3.1.1 WILDLIFE AND WILDLIFE HABITAT (TERRESTRIAL)

The subject site is a commercial site, approximately 50% of which is hard surface. The remaining area consists of ground cover vegetation, mainly native grass and wildflower species. No evidence of terrestrial wildlife was observed on site and vegetation is sparse throughout the majority of the vegetated area. Based on site characteristics, it is considered marginal wildlife habitat and it is unlikely the proposed project will significantly impact terrestrial wildlife.

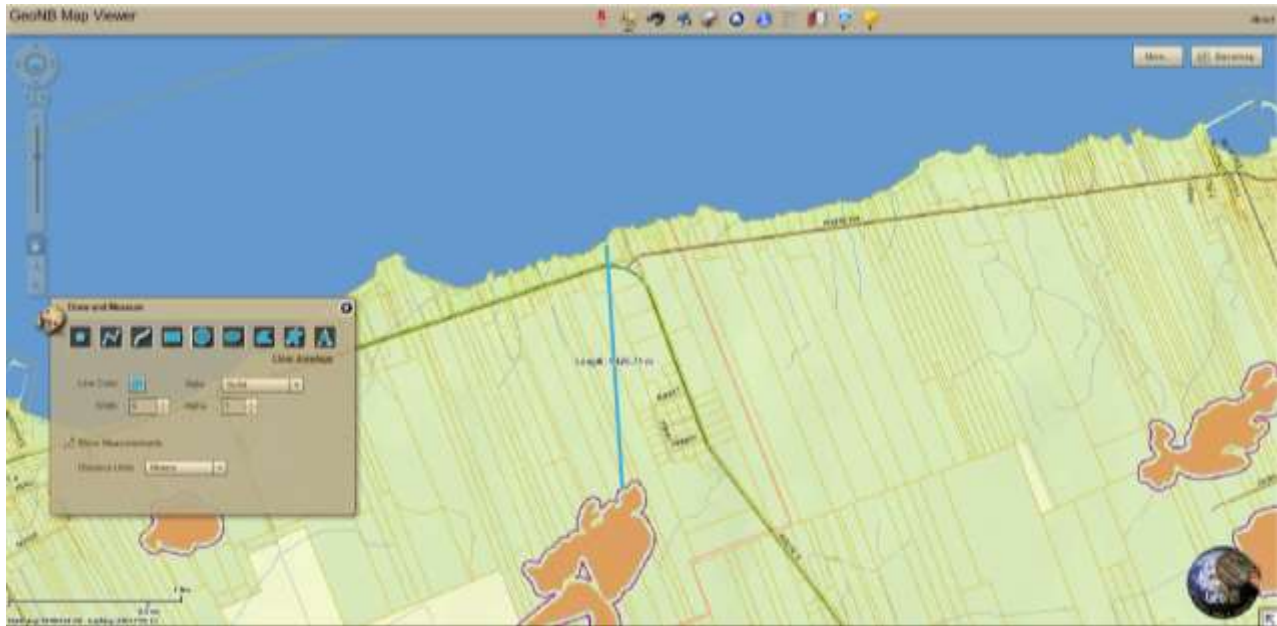


Figure E: Regulated Wetlands in Proximity to the Proposed Project (GeoNB, 2019)



Photo No. 7: Vegetation at Proposed Grow-out Building Location



Photo No. 8: Typical Ground Vegetation on Site

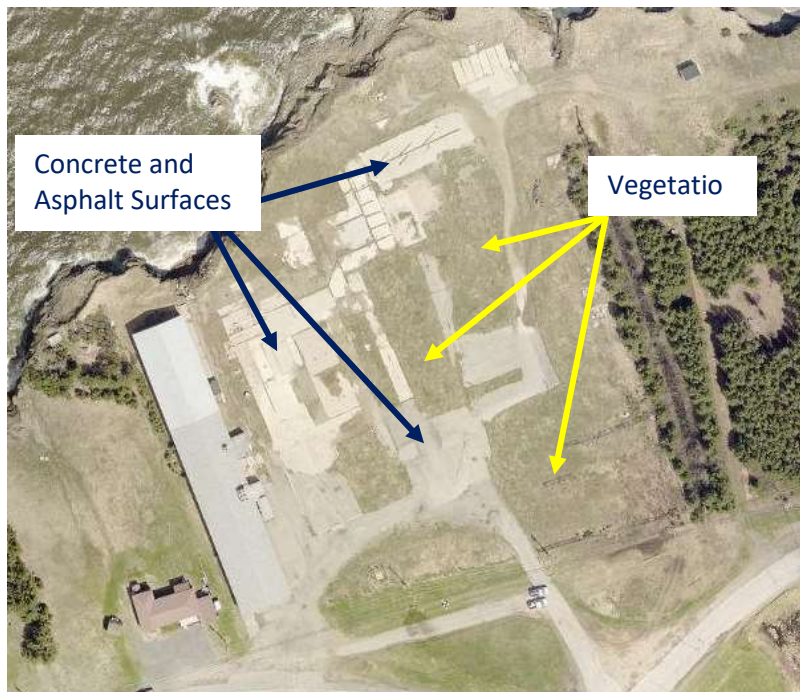


Figure F: Aerial View of Hard and Vegetated Surfaces

3.1.2 Aquatic Wildlife and Marine Water Quality

Chaleur Bay and the waters that feed into it are considered highly productive. Rainbow smelt (*Osmerus mordax*) and alewife (i.e.: gaspereau) (*Alosa pseudoharengus*) occur throughout the near-shore marine

environment of the Acadian Peninsula, with smelt traps common to bays. Soft-shell clams are present, while razor clams and bar clams (*Spisula solidissima*) are present in patches throughout near-shore waters. Blue mussels (*Mytilus edulis*) and American oysters (*Crassostrea virginica*) are also common within the bays of the Acadian Peninsula.

Atlantic mackerel (*Scomber scombrus*), dogfish (*Squalus acanthias*) and Atlantic herring (*Clupea harengus*) are noted as occurring within the inshore marine environment. Atlantic lobster (*Homarus americanus*) and rock crab (*Cancer irroratus*) are prevalent.

3.1.3 MIGRATORY BIRDS

Environment Canada regulates the protection of migratory birds through the Migratory Birds Convention Act (MBCA), which protects migratory birds, their eggs, nests and young through the *Migratory Birds Regulations* (MBR).

“Under Section 6 of the *Migratory Birds Regulations* (MBR), no person shall disturb, destroy or take a nest or egg of a migratory bird; or to be in possession of a live migratory bird, or its carcass, skin, nest or egg, except under authority of a permit. It is important to note that under the current MBR, no permits can be issued for the incidental take of migratory birds caused by development projects or other economic activities. Furthermore, Section 5.1 of the MBCA describes prohibitions related to deposit of substances harmful to migratory birds:

Migratory birds protected by the MBCA include all seabirds except cormorants and pelicans, all waterfowl, all shorebirds and most land birds (birds with principally terrestrial life cycles). Most of these birds are specifically named in the Environment Canada publication, *Birds Protected in Canada under the Migratory Birds Convention Act*, Canadian Wildlife Service Occasional Paper No. 1.

“5.1 (1) No person or vessel shall deposit a substance that is harmful to migratory birds, or permit such a substance to be deposited, in waters or an area frequented by migratory birds or in a place from which the substance may enter such waters or such an area.

(2) No person or vessel shall deposit a substance or permit a substance to be deposited in any place if the substance, in combination with one or more substances, results in a substance — in waters or an area frequented by migratory birds or in a place from which it may enter such waters or such an area — that is harmful to migratory birds.”

The majority of migratory birds in this ecodistrict nest between April 15 and August 15, according to Bird Studies Canada’s Nesting Calendar Query Tool (with the exception of some early-nesting raptor and woodpecker species).

The subject site does not contain significant bird breeding habitat, with the exception of the spruce and fir on the eastern edge of the property, which will not be impacted by the project. Rock pigeons were observed exiting and entering a hole in the gable end of the existing structure, but were not observed inside the finished structure. No swallow nests were observed in the building, its eaves, or in the shoreline cliffs and no other migratory birds were observed on site. Shorebirds and waterfowl are assumed to forage along the shoreline for food. However, in general, the site is not considered migratory bird breeding habitat and no interaction between the project and migratory birds is anticipated.

3.1.4 SPECIES AT RISK

Canada's Species at Risk Act (SARA) is one of three (3) major components in the Government of Canada Strategy for the Protection of Species at Risk. It is designed as a key tool for the conservation and protection of Canada's biological diversity and fulfills an important commitment under the United Nations Convention on Biological Diversity. New Brunswick also has a Species at Risk Act, which complements the federal Act.

The purpose of **SARA** is to:

- Prevent wildlife species from becoming extinct or extirpated (lost from the wild in Canada);
- Help in the recovery of extirpated, endangered or threatened species; and
- Ensure that species of special concern do not become endangered or threatened.

A request for Species at Risk Information was submitted to the Atlantic Canada Conservation Data Centre. Table 1 identifies the S-Rank and Rarity Definitions described in the ACCDC report (Appendix C).

Table 1: ACCDC S-rank and Rarity Definitions

Atlantic Canada Conservation Data Centre (ACCDC) S-Rank www.accdc.com/en/rank-definitions.html	
S-RANK DEFINITIONS	
SX	Extinct or extirpated in province.
SH	Historically occurring but currently undetected in province.
S1	Extremely rare in province.
S2	Rare in province.
S3	Uncommon in province.
S4	Widespread, common and apparently secure in province.
S5	Widespread, abundant and demonstrably secure in province.
SE	Exotic in province.
SA	Accidental, infrequent and outside of range within province.
SNA	Ranking not applicable in province.
SNR	Not yet assessed in province.
BREEDING STATUS QUALIFIERS	
N	Nonbreeding - Conservation status refers to the non-breeding population of the species in the province.
B	Breeding - Conservation status refers to the breeding population of the species in the province.
M	Migrant - Migrant species occurring regularly on migration at particular staging areas or concentration spots where the species might warrant conservation attention. Conservation status refers to the aggregating transient population of the species in the province.
?	Inexact or uncertain: Denotes inexact or uncertain numeric rank.
SPECIES AT RISK (SARA) (CANADA AND NEW BRUNSWICK)	
Extirpated	A wildlife species that no longer exists in the wild in Canada, but exists elsewhere in the wild.

Endangered (E)	A wildlife species facing imminent extirpation or extinction.
Threatened (T)	A wildlife species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction.
Special Concern (SC)	A wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.
NBERD GENERAL STATUS OF WILDLIFE	
At risk	Species for which a formal assessment has been completed, and determined to be at risk of extirpation or extinction. To be described by this category, a species must be either listed as endangered or threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), or the New Brunswick equivalent.
May be at risk	Species or populations that may be at risk of extirpation or extinction, and are therefore candidates for a detailed risk assessment by COSEWIC or the New Brunswick equivalent.
Sensitive	Species which are not believed to be at risk of extirpation or extinction, but which may require special attention or protection to prevent them from becoming at risk.
Secure	Species that are not believed to be at risk, may be at risk, or sensitive. These are generally species that are widespread and/or abundant. Although some secure species may be declining, their level of decline is not felt to be a threat to their status in the province.
COSEWIC	
X	Extinct in Canada and elsewhere.
XT	Extirpated in Canada but surviving elsewhere.
E	Endangered in Canada.
T	Threatened in Canada.
V	Vulnerable in Canada.
SC	Special Concern in Canada.
DD	Data Deficient: data inadequate for assessment.
NAR	Not At Risk in Canada.

The ACCDC provided a list of rare or uncommon plant and wildlife species within a 5-km buffer zone of the subject site. All species were cross-referenced with Schedule 1 of the Species at Risk Act (SARA), the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and the Schedule A prohibitions of the New Brunswick Species at Risk Act (*Prohibitions Regulation – Species at Risk Act 2013*).

Three (3) legally listed species of fauna were identified by the ACCDC scan as being present within a 5-km radius of the project site: Barn swallow (*Hirundo rustica*), Bank swallow (*Riparia riparia*) and Evening grosbeak (*Coccothrustes vespertinus*).

Barn swallow (*Hirundo rustica*), has a COSEWIC, SARA and Provincial Status of Threatened. Barn Swallows typically require open areas such as fields and grassland for feeding and nest under the eaves of structures like barns and in trees. Based on the spatial extent of the proposed project and the Barn swallow’s habitat requirements, no interaction with this species is anticipated as a result of the project.

Bank swallow (*Riparia riparia*), has a COSEWIC and SARA status of Threatened, and is not listed provincially. Bank swallows typically require steep banks, such as riverbanks or ocean bluffs, stockpiled soil or gravel pits as nesting habitat, preferably near open terrestrial habitat (grassland, meadows, pastures, etc.) for hunting flying insects. Based on the spatial extent of the proposed project and the Bank Swallow’s habitat requirements, no interaction with this species is anticipated as a result of the project.

Evening grosbeak (*Coccothraustes vespertinus*) has a COSEWIC status of Threatened. These birds breed in open, mature mixed wood forests, where fir and spruce trees dominate, and spruce budworm is abundant. Taking into account the scope of work and the temporal and spatial extent of the project, as well as the habitat requirements of this species, the project is not anticipated to adversely impact this species.

Location-sensitive Species: The ACCDC report did not identify any location-sensitive species, which are known to occur within a 100-km radius of the project site.

Aquatic Species at Risk: Per the Department of Fisheries' Aquatic Species at Risk Website, the Chaleur Bay does not contain critical habitat for any aquatic Species at Risk (<http://www.dfo-mpo.gc.ca/species-especies/sara-lep/map-carte/index-eng.html>) at the proposed project location. However, the following Aquatic Species at Risk were identified for the area:

Blue whale (*Balaenoptera musculus*) is the largest mammal known to have ever existed and is found in all oceans of the world; it is listed as Endangered under SARA. Between 20 and 105 individuals of the Atlantic population of the Blue whale are observed annually in the Gulf of St. Lawrence during the summer, spring and fall. They range widely, inhabiting coastal waters and the open ocean, and are frequently observed in estuaries and shallow coastal zones where the mixing of waters ensures high productivity of their main food source, krill.

North Atlantic right whale (*Eubalaena glacialis*) is a large, relatively rotund whale listed as Endangered under SARA. This whale is a migratory species that frequents coastal waters, between the cool, temperate waters of the north Atlantic (summer) and the subtropical waters of the southern United States (winter).

Leatherback sea turtle (*Dermochelys coriacea*), one of seven sea turtle species in the world, is listed as Endangered under SARA. It is found in temperate, subtropical and tropical waters of the Atlantic, Pacific and Indian Oceans, and is migratory. Atlantic Canada has one of the highest densities for foraging Leatherback sea turtles in the North Atlantic during the summer, particularly due to the amount of jellyfish. While in Canada, they are found in coastal, shelf and offshore waters.

White shark (*Carcharodon carcharias*), the most famed of shark species, has been recorded throughout waters off Atlantic Canada and is listed as Endangered under SARA. It is found in both offshore and inshore waters and readily enters enclosed bays, lagoons, harbours and estuaries, but does not penetrate brackish environments.

No critical habitat for these species was identified near the shore of the subject site.

Based on the habitat requirements of these aquatic species, and the temporal and spatial scale of the project, no interaction between these species and the proposed project is anticipated.

3.1.5 ENVIRONMENTALLY SIGNIFICANT AREAS

A review of the Nature Trust NB Environmentally Significant Area (ESA) database found two (2) ESAs within a 5-km radius of the subject site:

ESA #077 Grande-Anse Saltmarsh: Located just northwest of Grande-Anse, west of this community's wharf, between Pokeshaw and Anse-Bleue, on Chaleur Bay, this is an area of moderate to high sea cliffs (10 metres to 30 metres); softer rock at the base of cliffs allows wave undermining, creating a scalloped shoreline with pocket beaches. The cliff-top backshore is well drained with interim peatlands. Sandy

openings in the salt marsh are the only known location for *Puccinellia ambigua* Soer in the province.

ESA #080 Village Acadien/Rivière-du-Nord Saltmarsh: Located between Pokeshaw and Grande-Anse on the Baie de Caraquet, the Rivière-du-Nord/Village Acadien complex is a large, highly productive, relatively undisturbed fresh and salt marsh behind a mostly forested shoreline, representing some of the best high tidal marsh habitat in northeastern New Brunswick. It was previously used primarily by migrating waterfowl, as there was no permanency of brood-rearing habitat due to tidal influence. The area received a CLI rating of 7 and a Golet score of 62.5. The remaining salt marsh area is rated Class I; recommended that it be maintained with no new impoundments.

Based on the distance from the proposed project, no interaction between the project and these sites is anticipated.



Figure G: ESA Locations within a 5-km Radius
Subject site is shown in red (GeoNB, 2019).

3.1.6 IMPORTANT BIRD AREAS

IBACanada.ca was consulted to determine which, if any, Important Bird Areas (IBA) were located near the proposed project. IBA NB005, Pokeshaw Rock, is located approximately 10 km west of the subject site. Per the IBA Canada Website description:

“The Rock is a sea stack that possesses steep, sheer cliffs that rise approximately 16 m from the sea, with the cap being only 30 by 40m in diameter. This long-persisting stack is likely comprised of more resistant rock than that of the nearby (60 m away) shoreline, which has eroded at a faster rate. The tidal range at this site is 2 metres to 3 metres. Pokeshaw Rock is found in the southern region of Chaleur Bay. As the French word Chaleur suggests, this region has one of the warmer summer climates in New Brunswick.

In 1986, a total of 1371 pairs of nesting Double-crested cormorants was recorded on Pokeshaw Rock. This represents about 1.5% of the Atlantic coast population. No recent surveys have been completed. Double-crested cormorants prefer nest sites that are within commuting range of adequate food resources and safe from terrestrial predators. As a result, isolated islands are favoured as nesting sites and cormorants will take advantage of both forested and rocky islands. On Pokeshaw Rock, which is devoid of vegetation, the cormorants nest on the rocky ledges and on the flat cap.

Based on the scope of work and its location, and the spatial extent of the project, the proposed project is not anticipated to interact with this Important Bird Area.

3.1.7 ATMOSPHERIC

Canadian Climate Normals (1981-2010) for the Bathurst climate station (47°37'45.050''N and -65°44'54.020''W), the station located closest to the project, indicate a mean annual temperature of 4.8°C with extremes ranging from -35.6°C to 37.4°C. Measurable precipitation per year is approximately 1110.1 mm. Extreme daily precipitation of up to 96.3 mm has been recorded (Environment Canada, 2015).

The Department of Environment and Local Government (DELG) monitors air quality parameters at various sites throughout New Brunswick, particularly in proximity to industrial emitters. This monitoring can identify localized air quality degradation, establish ambient (background) air quality, or can be conducted in response to specific concerns from the public. There are no DELG air quality monitoring stations located in proximity to the proposed development, as there are no large industrial emitters nearby. Air emissions are typically from peat production (dust), proximity to the coast (“fishy” odours) or from internal combustion engines (VOCs, particulate matter, greenhouse gases). In general, air quality in the region can be considered good.

Due to the nature of the project, no interaction between the project and air quality in the region is anticipated.

3.1.8 POPULATION AND ECONOMY

According to the 2016 Statistics Canada census data, the population of Grande-Anse is 899, up from 738 in 2011, with a median age of 57.5. The unemployment rate is 19.4%, with the majority of the workforce in the Trades, Transport and Equipment Operator and related occupations.

The proposed project is anticipated to contribute between 5 and 10 skilled, long-term positions in the area.

3.1.9 ARCHAEOLOGICAL RESOURCES

A request for archaeological probability mapping to the Department of Tourism, Heritage and Culture’s Archaeological Services Branch was obtained and reviewed for the proposed site. No mapped archaeological sites are within 500 metres of the subject site. The area along the coastal shoreline is considered high probability due to the proximity to water. Refer to Appendix E for the map.

3.1.10 LAND USE

The project is on private land owned by the proponent. The subject site is located within the municipality of Grande-Anse and is classified as “I – Industrial Use”. The proposed development is a permitted use in this area. Refer to the zoning map in Appendix D.

Neighbouring land uses are primarily residential or forested, with the exception of four (4) industrial sites within 5 km of the proposed project:

1. Gardenscape Peat Production Facility: A 200-hectare peat bog located approximately 2.5 km southwest of the project site;
2. Chaleur Ready-Mix: Located approximately 0.4 km south of the site on Route 11, this concrete plant does not appear to be operating at present;
3. Northeast Taste Flavourings Inc.: Located approximately 0.4 km to the east, this seafood processing plant produces pastes for preparing seafood dishes, and
4. Pêcheries LeBreton et Fils ltée: Located 0.4 km west of the site on Route 11, this is a lobster processing plant.

The nearest home is immediately adjacent to the existing building and is serviced by a domestic water well. Based on the lack of air emissions (noise, odours) anticipated from the proposed project, atmospheric quality is not anticipated to affect this residence. The proposed pump test would address potential groundwater supply impacts on this property and establish a sustainable pumping rate for the proposed hatchery that would protect the neighbouring groundwater supply.

A Land Gazette flag for petroleum storage tanks was identified for the subject property; however, the site visit and interview with the property owner (the proponent) confirmed that all petroleum storage tanks were previously removed from the site.

3.1.11 HERITAGE SITES

A review of information provided by www.Historicplaces.ca and the New Brunswick Register of Historic Sites Website (<https://www.rhp-rlp.gnb.ca/PublicSearch.aspx?blnLanguageEnglish=True>) showed there are no heritage sites in proximity to the proposed project.

3.1.12 TRANSPORTATION

The project site is located on rue de l'Acadie (Route 11), a provincial arterial highway with an annual average daily traffic of 2270 (NB DTI Traffic Map, 2015) and a speed limit at this location of 80 km/h.

The subject property is at the mouth of Route 320, on a sweeping 90^o turn, and has two existing entrances, one onto Route 11 and one onto Route 320. No new access will be required and no significant increase in traffic is anticipated as a result of the project.



Figure H: Route 11, Route 320 and Site Access

4. ENVIRONMENTAL ASSESSMENT OF POTENTIAL IMPACTS

Based on the project description and the existing environment, the following potential Valued Environmental Components (VECs) were identified and assessed for the proposed project:

- a) Archaeological Resources;
- b) Atmosphere;
- c) Economy;
- d) Environmentally Significant or Sensitive Areas;
- e) Groundwater Quality;
- f) Land Use;
- g) Marine Water Quality/Aquatic Habitat;
- h) Migratory Birds;
- i) Species at Risk;
- j) Surface Water Quality – Freshwater;
- k) Transportation;
- l) Wetlands, and
- m) Terrestrial Wildlife Habitat.

A qualitative rating system is used to evaluate the potential for interactions between the project and the VECs above. A rating was given to each Valued Environmental Component (VEC) based on the potential interaction between the project and each VEC, and a rating was applied to each according to the information gathered and the professional judgment and experience of the consultant.

0 = No interaction anticipated.

1 = Interaction occurs; however, it is unlikely to result in a significant environmental effect even without mitigation, or it is unlikely to be significant because of mitigation measures.

2 = Interaction could potentially result in an environmental effect.

Where there is a potential for project-VEC interaction (ratings of 1 or 2), further discussion is provided in the following sections. For issues where there is limited interaction (ratings 0 or 1), a rationale is provided and the issue is not discussed further in the present report. Potential project-environment interactions are presented in Table 6.

The potential VECs that have a rating of zero for all activities indicate that particular VEC is not present within or in proximity to the project's footprint. The rationales for excluding these VECs from further assessment are discussed in the present report.

Significance of potential environmental effects is also evaluated in this section, based on a consideration of four (4) characteristics of the project-VEC interaction:

- Likelihood: What is the likelihood of the impact on the VEC?
- Duration: How long will the impact last?
- Severity of the Impact (Spatial and Temporal Scales): How severe are the impacts on the VEC, and
- Mitigation: What mitigation measures can be employed to minimize the impact and how efficient are they?

Table No. 2: Potential Project-Environment Interactions Matrix

Potential VEC \ Activities	Construction/ Installation of the Physical Work	Operation/ Maintenance of the Physical Work	Decommissioning/ Abandonment of the Physical Work	Accidents and Unplanned Events
Biophysical				
Archaeological Resources	1	0	0	0
Atmosphere	0	0	0	0
Economy	+1	+1	0	0
Environmentally Significant or Sensitive Areas	0	0	0	0
Groundwater Quality	To be determined	To be determined	0	1
Land Use	0	0	0	0
Marine Water Quality / Aquatic Habitat	0	To be determined	0	1
Migratory Birds	0	0	0	0
Species At Risk	0	0	0	0
Surface Water – Freshwater	0	0	0	0
Transportation	0	0	0	0
Wetlands	0	0	0	0
Wildlife Habitat – Terrestrial	0	0	0	0

4.1 ARCHAEOLOGY

The subject site is located adjacent to Chaleur Bay and will require excavation of the existing site for the construction of the proposed development. The site has previously been excavated/heavily disturbed from the previous development. A portion of the proposed construction is within the 80-metre high probability zone along the coast/shoreline; however, the majority of construction/ground disturbance will be outside of this zone.

In the event that excavation uncovers suspected archaeological resources or human remains, all work will immediately cease and the Archaeological Services Branch will be contacted for directions.

Based on the fact that the site was previously excavated and the majority of the proposed project will be outside the 80-metre high probability zone, potential impacts to archaeological resources are considered unlikely and not significant.

4.2 GROUNDWATER

Existing Conditions:

Residential and commercial properties in the area obtain their potable water from private wells. At present, the subject site contains seven (7) saltwater production wells.

Project – VEC Interactions, Potential Environmental Effects:

The proposed development would require the installation of a freshwater production well and pumping of a saltwater production well (and a backup saltwater production well) to supply the hatchery and grow-out facilities.

Potential Environmental Impact – Impacts at End-of-Pipe:

The installation and operation of the freshwater production well, or the operation of the saltwater production well, could adversely impact nearby private water supplies or cause saltwater intrusion into the aquifer.

Recommended Mitigation:

The proponent has contracted Modern Well Drilling and Roy Consultants to complete a Water Supply Source Assessment for the proposed project. **The WSSA and pump test report will provide recommendations for mitigation and a sustainable pumping rate for each well. It will be submitted to the DELG for review and approval upon completion.**

4.2 MARINE WATER QUALITY AND FISH HABITAT

The proposed hatchery will require the discharge of treated effluent to the Chaleur Bay, via an existing discharge pipe.

Existing Conditions:

At present, there is no effluent discharge at the site. Two underground discharge pipes are already installed at the site and will be connected to the facility during construction.

Project – VEC Interactions, Potential Environmental Effects:

Section 35(1) of the Fisheries Act states: *No person shall carry on any work, undertaking or activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery.*

The proposed pre-treatment effluent is anticipated to contain dissolved nutrients, bacteria and fish food.

Potential Environmental Impact 1 – Impacts at End-of-Pipe:

Fish hatchery wastewater can create localized, adverse environmental impacts if the end-of-pipe is not properly located and regular flushing of the mixing zone does not occur. These can include floral/faunal changes, low-oxygen conditions, nutrient loading and bacterial growth.

Recommended Mitigation 1 – Reduction of Effluent Volume:

The proposed development will include the installation and operation of a water treatment and recycling system. The system is anticipated to recycle between 95% and 97.5% of the water used in the facility, in an effort to reduce the volume of effluent discharged to the environment.

Recommended Mitigation 2 – Effluent Treatment:

The facility would contain a wastewater treatment system, which would include a drum filter for solid removal. **The final design of the wastewater treatment system will be completed based on the results of the WSSA and the final facility design.**

Recommended Mitigation 3 – Monitoring Program:

The proponent would also conduct regular monitoring of the effluent, per the requirements of the DELG Certificate of Approval to Operate (refer to Figure D), to ensure the regulatory limits for BOD, TSS and nutrients are met. Results would be submitted to the DELG in an annual report.

Recommended Mitigation 4 – Environmental Protection Plan:

The proponent would prepare and implement an Environmental Protection Plan for the facility, which would be enacted in the event of a significant malfunction or accidental release within the facility. This plan would include physical barriers to immediately cease the flow of effluent to the discharge pipe and operational protocols for monitoring and reporting such events.

Recommended Mitigation 5 – Mixing Zone Study:

The proponent would commission a mixing zone study for the end-of-pipe to identify the mixing zone of the effluent and the potential zones of impact from the effluent.

The final design of the wastewater treatment, recirculation system and mixing zone will be submitted to the DELG upon completion of the WSSA and final project design. A detailed mitigation and monitoring plan would be determined at that time.

5. WASTE

The project proponent will prepare a Waste Management Plan, as recommended by the DELG Environmental Management Program for Land Based Finfish Aquaculture in New Brunswick guidelines. This would address domestic waste derived from the operation of the facility, fish waste removed from the drum filter in the water treatment plant and any hazardous waste (chemicals) derived from the operation of the facility. As part of the Plan, the following mitigation measures would be implemented:

- Staff would be trained in WHMIS (if applicable), and in the handling and clean-up of chemical spills on site.
- Chemicals would be kept in a locked room with secondary containment to prevent accidental spills within the facility.
- Solid waste would be stored on site in sealed containers until removed and disposed at an approved waste disposal facility.

6. ACCIDENTS AND UNPLANNED EVENTS

Accidents can occur during the operation of motorized equipment on site, or during the drilling of observation wells. Accidents involving motorized equipment can often result in an unplanned release of hydrocarbons into the environment which can impact soil and groundwater.

There are no petroleum storage tanks on site; however, the well drilling and pump test will require the use of a drill rig, which employs hydraulics and internal combustion engines. Petroleum contamination of soil and groundwater can result in contamination of an aquifer or nearby water supplies, rendering the water non-potable.

Recommended Mitigation

- Drilling of the wells will be performed by an experienced, licensed water well driller.
- The well driller on site will be responsible for visually inspecting equipment prior to beginning work on site.
- The driller will maintain a spill kit on site at all times.
- In the event of an unplanned release, drilling or construction operations would cease, the leak would be stopped and the petroleum product cleaned up using a spill kit.
- The Bathurst Department of Environment and Local Government would be contacted and advised of the spill, regardless of the volume spilled; the office can be reached at 506-547-2092. In the event that the spill occurred after normal business hours, the 24-hour emergency reporting number would be called at 1-800-565-1633.

7. PUBLIC INVOLVEMENT

The public involvement activities proposed for this project registration will be conducted as per the requirements of Schedule C of the *Guide to Environmental Impact Assessment in New Brunswick (2012)*, and will involve the following public involvement activities, based on a program submitted to and approved by the DELG project manager:

1. The proponent shall communicate directly with elected officials (i.e.: the MLA and mayor), local service districts, community groups, environmental groups, other key stakeholder groups (companies, agencies, interest groups, etc.) and First Nations as appropriate, enabling them to become familiar with the proposed project and ask questions and/or raise concerns.
2. The proponent shall provide direct, written notification (letter, information flyer, etc.) about the project and its location to potentially affected area residents, landowners and individuals (to be determined in consultation with Sustainable Development, Planning and Impact Evaluation Branch). The notification must include the following:
 - a. A brief description of the proposed project;
 - b. Information on how to view the Registration Document;
 - c. A description of proposed location (map is desirable);
 - d. The status of the Provincial approvals process (i.e.: “The project is currently registered for review with the Department of Environment and Local Government under the Environmental Impact Assessment Regulation, Clean Environment Act”);
 - e. A statement indicating that people can ask questions or raise concerns with the proponent regarding the environmental impacts; proponent contact information (name, address, phone number, E-mail); and
 - f. The date by which comments must be received (See Section 6.0 of the Registration Guide).
3. Once the EIA report is completed, it will be submitted to DELG and placed on the DELG Website at <http://www.gnb.ca/0009/0377/0002/0016-e.pdf> and the Registration Document (and any subsequent submissions in response to issues raised by the Technical Review Committee) shall be made available for public review at 20 McGloin Street, 2nd Floor, Fredericton, NB.
4. The proponent shall make copies of the project registration document (and any subsequent submissions in response to issues raised by the Technical Review Committee) available to any interested member of the public, stakeholder or First Nation and shall deposit a copy of this document along with any subsequent revisions with the Bathurst DELG regional office where it will be available for public review.
5. Within 60 days of project registration, the proponent shall prepare and submit to the Department of Environment and Local Government a report documenting the above public involvement activities and shall make this report available for public review.

The public involvement program will be submitted separately to the DELG Project Manager for approval (including First Nations) upon completion of the WSSA and the detailed project design. The summary report outlining the strategy and its results would be submitted for review within 60 days of initiation of the program.

8. FIRST NATIONS

The proposed project is located on private land, owned by the proponent. The nearest First Nation is located in Pabineau, approximately 50 km southwest of the subject site.

Potential impacts to Aboriginal Rights or traditional land use (or fisheries) will be assessed upon completion of the WSSA and the detailed project design, and included in the proposed Stakeholder Involvement Program.

9. APPROVAL OF THE UNDERTAKING

The following permits, approvals and authorizations are anticipated for the project to include, but not be limited to:

Municipal

- A development permit from the Municipality of Grand-Anse will be required.

Provincial

- A Certificate of Determination per the NB EIA Regulation;
- An approval for the existing septic system will be required from the Department of Public Safety;
- An Approval to Construct/Operate (Water) from DELG will be required per the *Water Quality Regulation*;
- A licence to operate a land-based aquaculture operation will be required from the NB Department of Agriculture, Aquaculture and Fisheries (DAAF).

Federal

At this time, no federal authorization is anticipated.

10. FUNDING

At present, the project is a privately-funded venture.

11. CLOSING STATEMENT

This environmental impact assessment is presented in conformity with the NB Environmental Impact Assessment Regulation and the DELG Water Supply Source Assessment guidelines. The environmental assessment is based on a conceptual facility design – the final design cannot be completed until the water supplies on site are fully assessed for available quantities and quality, to ensure the financial feasibility of the project.

Valued Environmental Components, which may potentially be impacted by the water supply assessment and operation of the proposed development were identified based on available information on the region and site observations. Where possible, *significance* was determined based on the criteria of *likelihood*, *scale*, *duration* and proposed *mitigation*.

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