Chemical and Agricultural
Limestone Products

Produits de Chaux
Chimique et Agricole

Elmtree Resources

ENVIRONMENTAL IMPACT ASSESSMENT
FOR
ELMTREE RESOURCES LTD.
SORMANY WEST LIMESTONE

April 2019

Table of Contents

1.0 THE PROPONENT

(i) Name of Proponent: Elmtree Resources Limited

(ii) Address of Proponent: Street: 755 Foley St., Suite 2 Bathurst NB, E2A 4W7 Mailing: PO Box 655, Bathurst, NB, E2A 3Z6

(iii) Chief Executive Officer: Michael Buzas, (506) 546-6382

(iv) Principal Contact Person for purposes of Environmental Impact Assessment: Andrew Rice, Production Engineer (EIT), (506) 655-7237

(v) Property Ownership:

The property is Crown Land owned with surface rights which belong to Elmtree Resources Limited. The total project will span over 11.8 hectares; including all required infrastructure. The affected area of the quarrying will be 7 hectares; where 2 hectares are allocated to the North deposit and 5 hectares to the South deposit. The extent of our mining claims located at Sormany West extend over 218 hectares divided over 10 claim units. Further description on the claim work is discussed in Section 2.0(iv).

2.0 THE PROJECT DESCRIPTION

(i) Name of the Project: Sormany West Limestone – North & South Pit

(ii) Project Overview:

Nature of Undertaking:
Elmtree Resources Limited wishes to commence mining of its Sormany West Limestone deposits located in North East New Brunswick in Restigouche County. The process will consist of:

- Developing 2 new open pit quarries, North and South
- Extension of a haul road to the new deposits
- Extend an existing power line from our existing operation to the

new pits
- Develop 2 settling ponds
- Drilling, blasting and hauling up to 200,000 tonnes per year
- Blasted limestone rock to be transported by trucks to our main existing crushing plant located 2.9 kilometers away. The product will be stored here after being processed.
- Ship the crushed limestone to our warehouse in Petit-Rocher and clients in the province of New Brunswick.

(iii) Purpose/Rationale/Need for the Undertaking:

Elmtree Resources Limited currently supplies approximately 150,000 tonnes of high-grade limestone to NB Power's Belledune power plant, Glencore's Brunswick Smelter and farmers throughout northern New Brunswick. At our current rate of production, the existing deposit will be depleted in approximately 4 years.

The Sormany West deposits contain approximately 3 million tonnes of high-grade limestone. The south pit contains 2 million tonnes whereas the North 1 million tonnes. Mining this deposit will allow us to continue supplying product to our customers for many years to come.

Elmtree Resources Limited has been in operation since 1977 and currently generates approximately $6 Million annually to the local economy and nearly $100 Million since its inception. Elmtree Resources Limited directly employs 28 employees on payroll and indirectly employs another 15 through transportation, exploration, assaying and blasting.

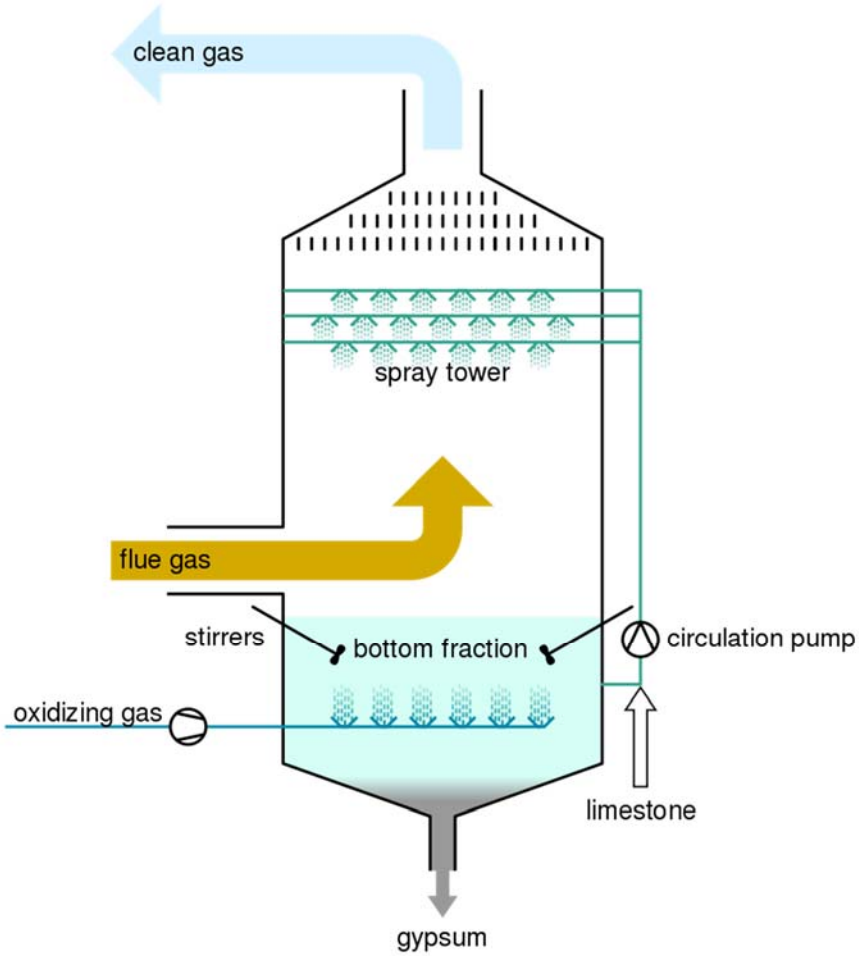
NB Power is Elmtree's biggest limestone customer, consuming 80,000 tonnes annually at the Belledune power plant. Our second largest consumer is the Glencore Canada-Brunswick smelter which uses up to 50,000 tonnes per year. The balance is sold to farmers throughout northern New Brunswick and municipalities.

For NB Power, the limestone is used to reduce the greenhouse gas footprint of the Belledune coal fired plant in a process called "Flue Gas Desulphurization (FGD)." In the FGD process, a limestone slurry is sprayed

directly into the flue gases (a combination of sulfur dioxide, carbon dioxide and water vapor), in order to “scrub” or remove the sulfur prior to it being sent out of the stack and into the atmosphere. This process removes approximately 50,000 tonnes of SO2 per year, dramatically reducing its GHG footprint. Elmtree is also a local supplier which further lowers its GHG footprint by minimizing emissions from transportation of the limestone to our Belledune customers.

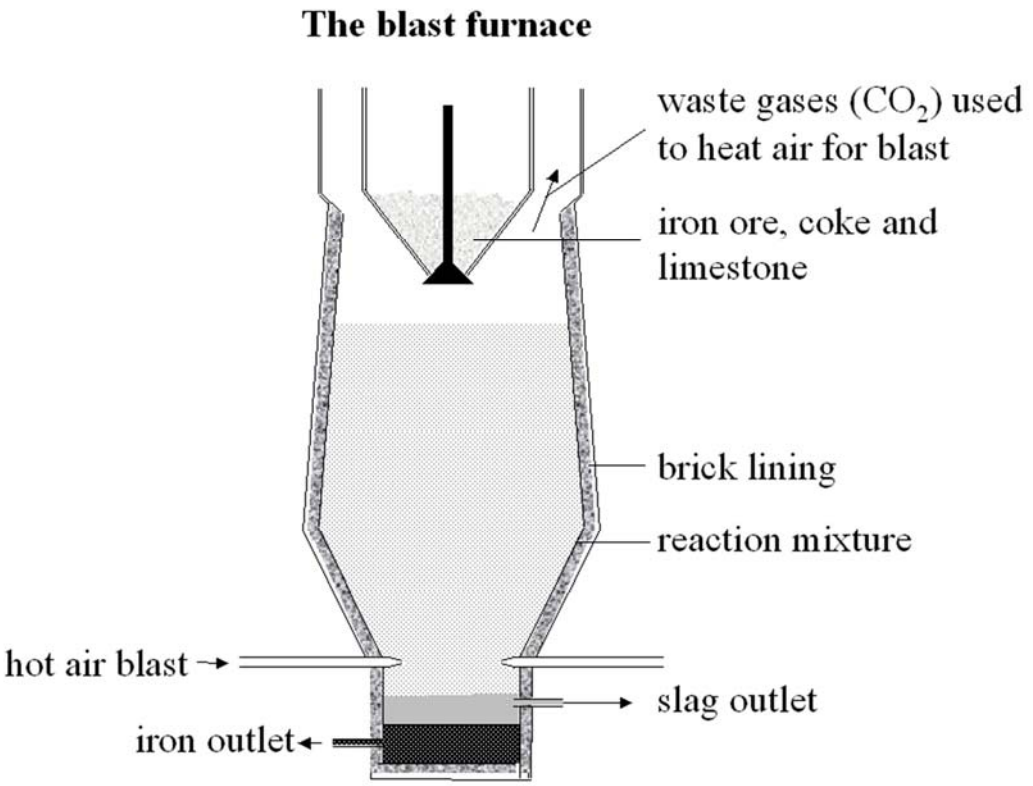
A byproduct of the FGD process is synthetic gypsum which is sold to the Irving wallboard plant in Saint John and the Canadian Gypsum Company (CGC) in Montreal P.Q. where it is made into wallboard. Without this synthetic source, the gypsum would need to be mined to supply both plants. Figure 1.0 illustrates the process:

Figure 1.0



The Glencore Brunswick Smelter uses limestone as a fluxing agent to produce lead metal (uses include automobile batteries) and silver (uses include jewelry). The crushed limestone is mixed with lead concentrate and silica sand and then fed into a sinter machine that produces a metallic sinter. The sinter is in turn fed into a blast furnace where it is mixed with coking coal. As the mixture gets heated to 1500°C, it becomes molten at the bottom of the furnace. The extreme heat decomposes the limestone which reacts with the impurities found in the sinter. As the impurities are lighter, they stratify and float on top of the metal where it is "scrapped off". This layer of impurities is referred to as "slag". Figure 1.1 shows a cross-section of a blast furnace such as the one used in Belledune.

Figure 1.1, Cross-Section of an Iron Ore Blast Furnace



Farmers in northern New Brunswick use limestone as a soil additive to improve crop yields and municipalities use a manufactured limestone product for baseball infields.

Since there are no other economic suppliers of limestone in northern New Brunswick, not having this project go through would force our customers to import limestone from other areas such as Quebec or Newfoundland. This would lead to an increase in the cost of limestone, putting upward pressure on their costs. Importing the product from further away would also cause significantly more impact to the environment; as more fuel would be consumed during transport, also causing adverse impacts on marine habitat through additional marine transport (as would be the case for NB Power and Glencore).

(iv) Project Location:

The proposed site is located on Crown Land approximately 12 km west after the pavement ends on the Sormany road; just west of the Restigouche/Gloucester county line. It is also 14 kilometers from the closest permanent residence. The latitude and longitude coordinates of the sites are as follows: South pit: 47°38'55.35"N, 66° 4'18.93"W and North Pit: 47°39'2.43"N, 66° 3'51.03"W. The current PID is 04873617, which will need to be subdivided once the mining lease is obtained. Different maps showing the site location can be seen below in Figures 2.4.0 through 2.4.3. The site access will use existing logging roads back to our existing facilities and will use our current entrance gate.

Figure 2.4.3 illustrates our claim blocks and individual claim numbers which will be required to apply for our mining lease.

Block 2236 includes these specific claims:

- 1322030D
- 1322030C
- 1322039P
- 1322029M
- 1322029N

And Block 9032 includes these specific claims:

- 1322039N
- 1322039O
- 1322039K
- 1322039J
- 1322039L

Figure 2.4.0 – General Site Location

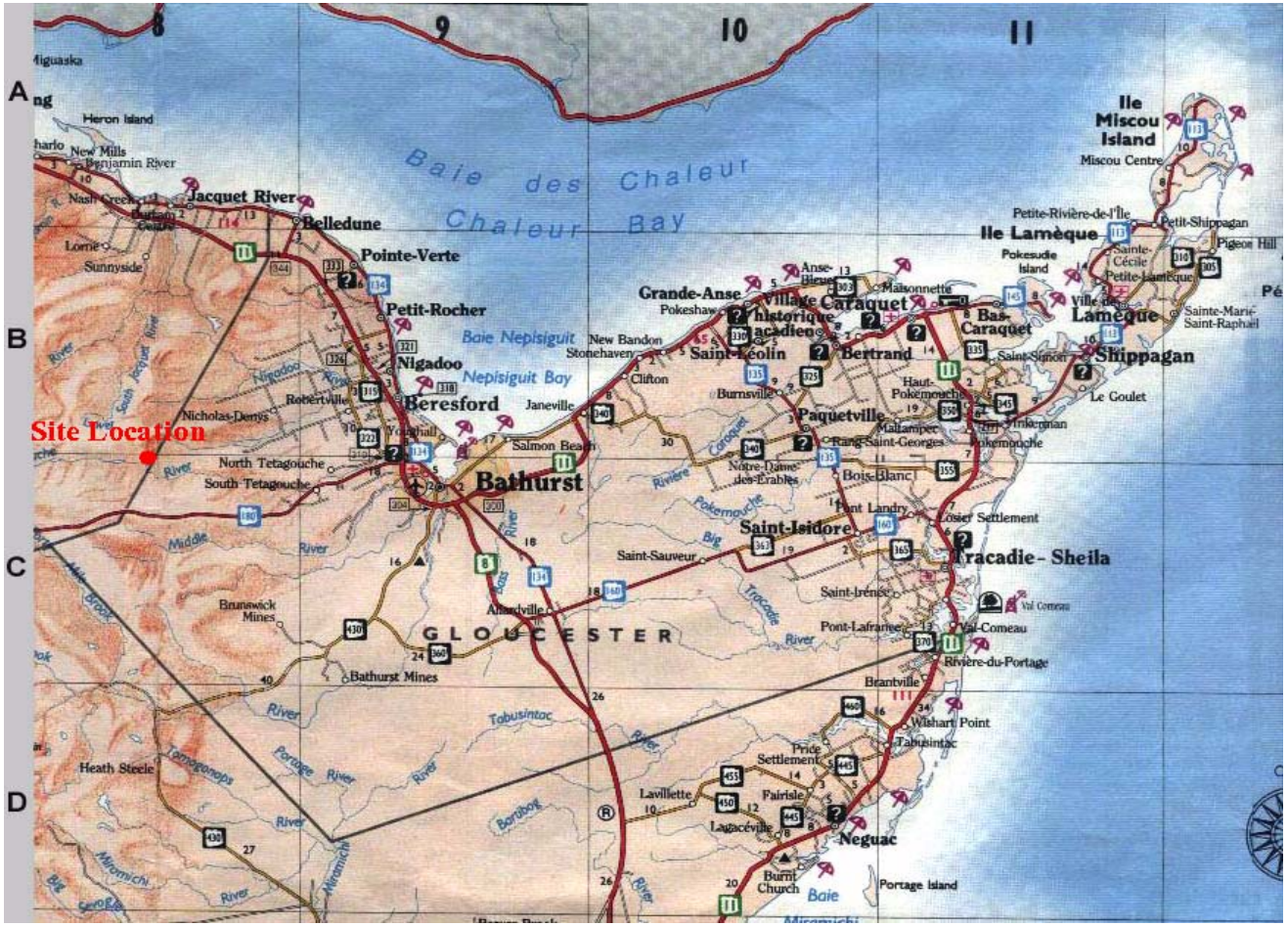


Figure 2.4.1 – Site Location Relative to Existing Rural Communities

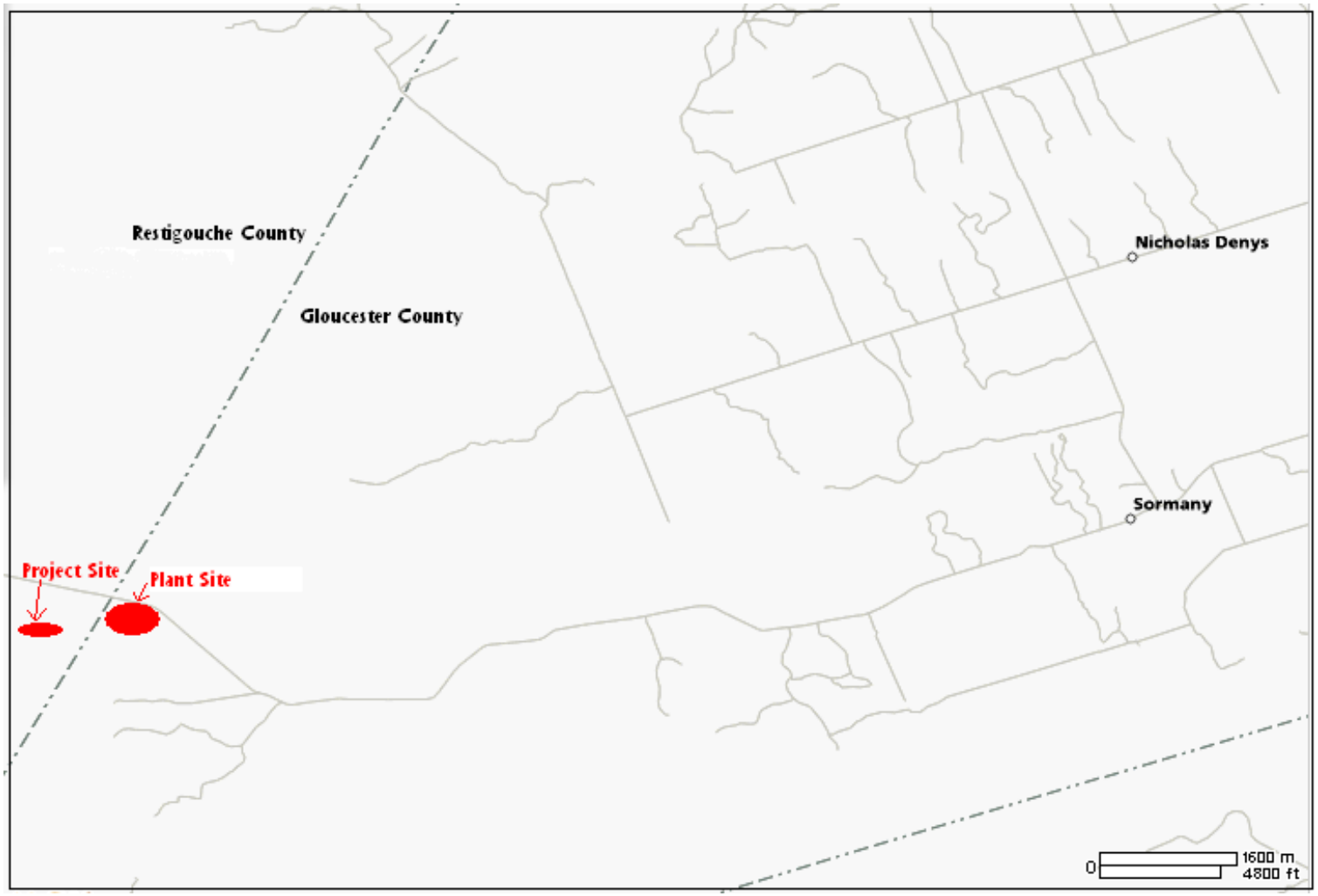


Figure 2.4.2 - Site Location Relative to Surroundings (Google Earth Imagery)

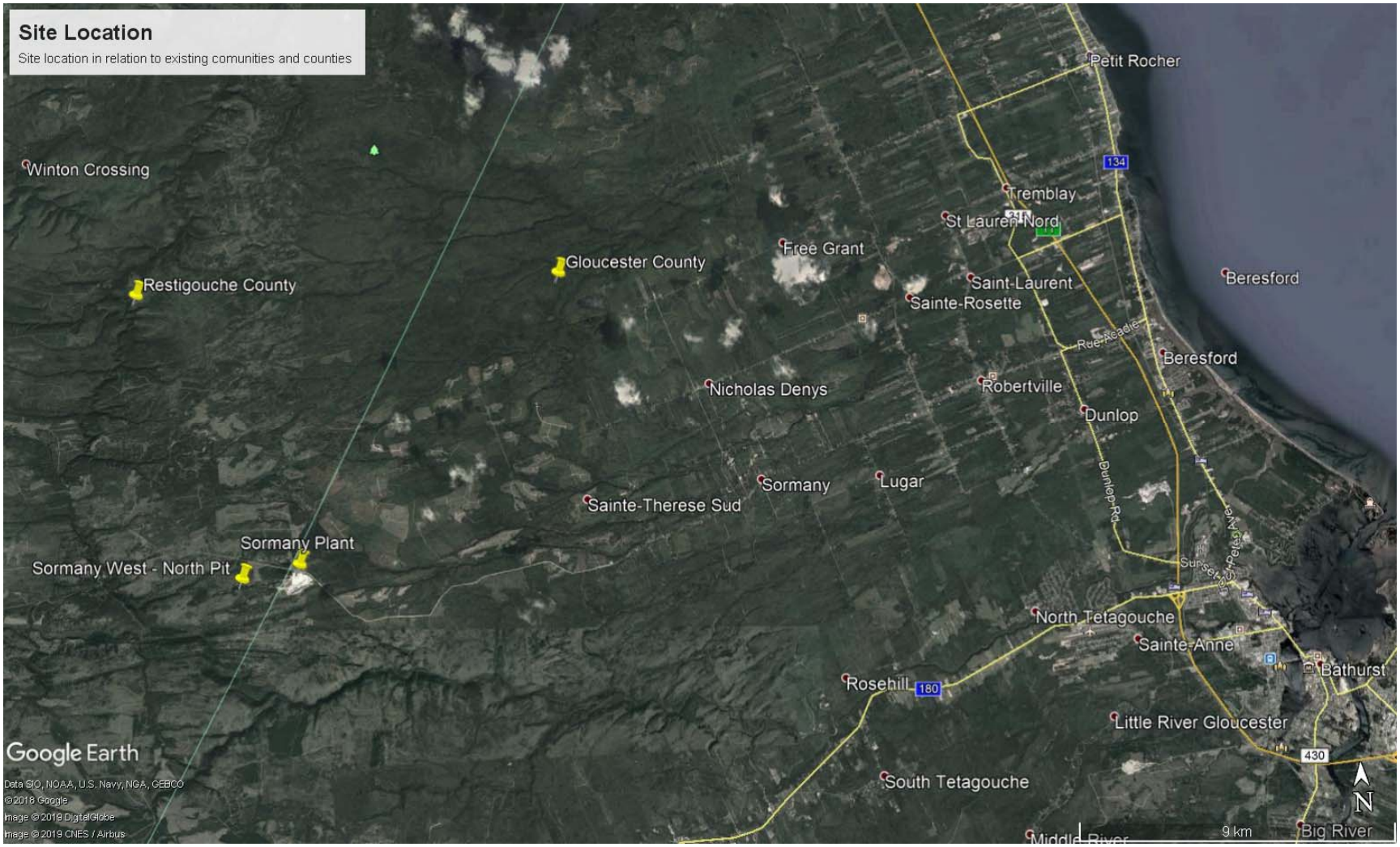
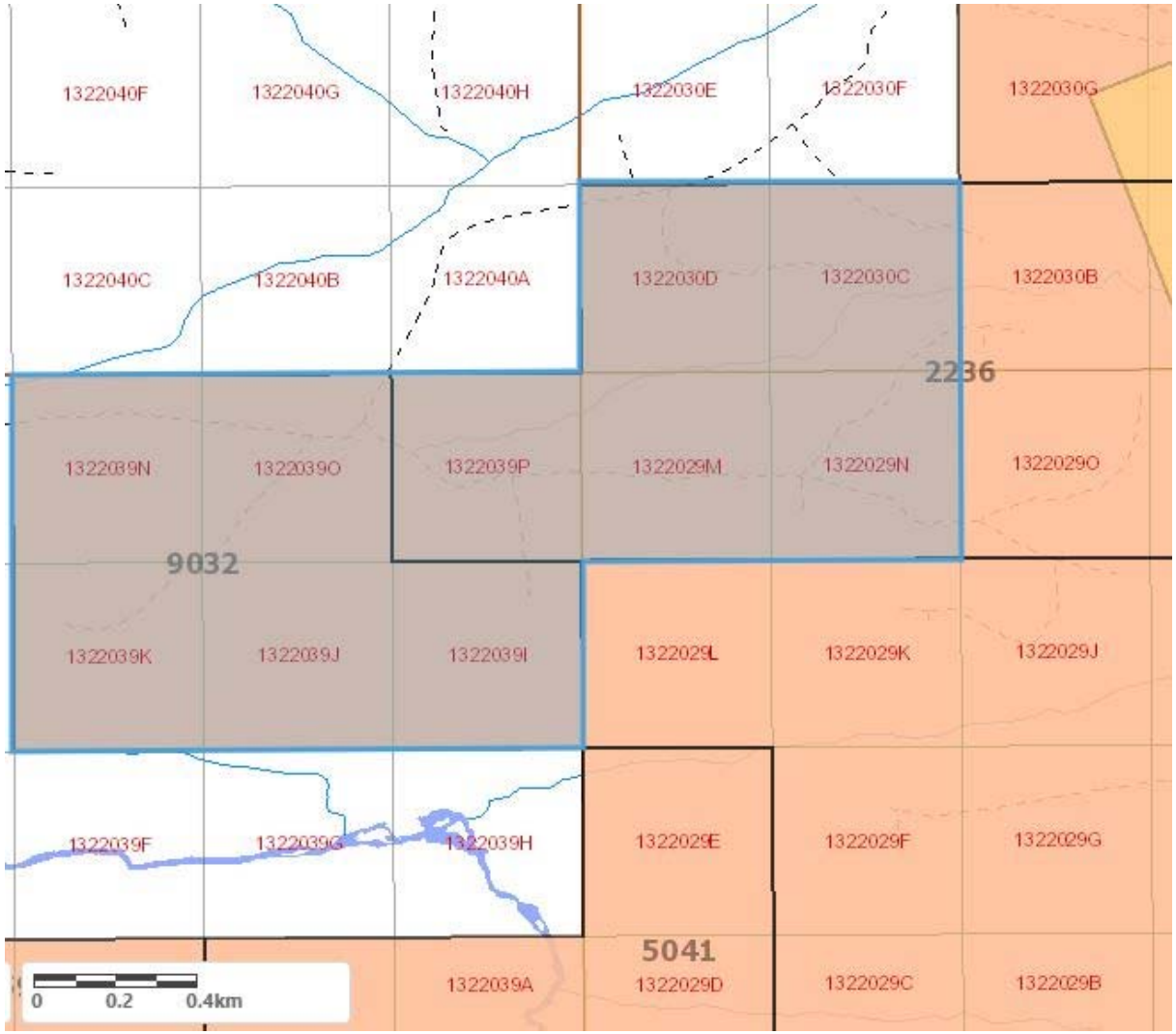


Figure 2.4.3 – NB e-Claim Site Location (Elmtree Highlighted in Blue)



(v) Siting Considerations:

This Sormany West site was chosen because of its known limestone deposits, close proximity to our current crushing plant, forestry road infrastructure and relatively benign environmental setting. As the entire area was clear-cut intermittently over the past 10 years, existing logging roads will provide access and only need minimal changes to accommodate the mining traffic. Power lines will use the same logging road access corridor. This eliminates a 3.5-kilometer powerline right-of-way cut through the forest and along the Sormany road had we extended along the existing forestry haul road.

This site is also favorable as the impact on the environment will be minimal compared to Elmtree developing an entirely new facility. This would involve larger roads, infrastructure and possibly impacting greater numbers of species and watercourses while trying to reach more complex deposits. Significant environmental work has been undertaken to operate the main Sormany operation and the knowledge gained over the years will be applied to the Sormany West Project.

Evidence of the thought process is as follows:

- To minimize environmental and potential cultural impacts, the proposed site location was selected due to its similar physical and geological setting;
- Biophysical surveys were completed to avoid interaction with potential species at risk or species of conservation concern;
- Knowledge of hydrological aspects of the entire region
- Elmtree is intimately familiar with rock mechanics of the host geology;
- Elmtree has facilities near the site;
- Mineral exploration including mapping, trenching and diamond drilling has been done on the claim units intermittently since 1991 so the geology is very well understood;
- The project will ensure a constant supply of local limestone and is “sized” to achieve this goal

(vi) Physical Components and Dimensions of the Project:

(vi)a) Operations

There are currently 14 registered claims in the area that belong to Elmtree, within these claims there is an area which contains high-grade limestone ($CaCO_3$) deposits. There are currently two well-known deposits which are divided by a small wooded lot. The Southern deposit has an estimated reserve of 2 million tonnes whereas the Northern pit is estimated at 1 million tonnes. After development of the area, it is estimated this project will span over 12 hectares of land. Both pits are highlighted in green in figure 2.6.1.

Physical components and infrastructure of the site will consist of access roads, open pit quarries, waste rock & overburden fill areas, settling pond, and dewatering infrastructure.

The South pit will have an approximate footprint of 8.2-hectares; while the North pit area will be 2 hectares. Each site is to be developed in 2 different phases.

South Pit Overview (Phase 1):

- Road Widening from Sormany to South Pit
- Grubbing and tree removal
- Installation of power lines to the site
- Development and commencement of South Pit mining
- Development of South Settling pond as we approach water table (6 m below surface)
- Mine reclamation

North Pit Overview (Phase 2):

- Road Widening to reach proposed site
- Grubbing and tree removal
- Installation of power lines to the site
- Development and commencement of North Pit mining
- Development of North Settling pond as we approach water table (6 m below surface)

- Mine reclamation

Further explanation of the operational plan is detailed in Section (vii)d).

(vi)b) Environmental Settings

A Species At Risk Assessment (SARA) report was conducted on the property in 2005. This report has determined that there are no species at risk currently present within the footprint of the proposed project. The closest species of special interest is the spotted coralroot plant (*Corallorhiza maculata*), which has been seen on some parts of the property but away from any impacted areas. Co-ordinates for locations of spotted coralroot are provided in the SARA document in Appendix C and can also be seen on Figure 3.1.1. Elmtree's operations will be over 30 m away from the closest coral-root plants to ensure they are not disturbed.

(vi)c) Watersheds & Settling Ponds

The Sormany West project has 2 delineated watersheds, North and South and both are affecting the North and South deposits.

It is important for Elmtree to know the extent of the watersheds as these measurements are used to calculate peak watershed discharge volumes and within the watershed, the expected amount of the water entering the pits. These values are critical during the spring when snow is melting or after heavy rains. Using these water volumes, Elmtree can then have a safe design for the settling ponds; ensuring the effluents have a sufficient retention time before discharge.

The Northern watershed has an area of 0.539 km^2 whereas the Southern one is smaller at 0.06 km^2. The affected watersheds are delineated by the pit outline as both new limestone deposits are slightly elevated compared to all surrounding topography. The Northern affected watershed has an area of 0.016 km^2 (16,000m^2) whereas the Southern is at 0.043 km^2 (43,000m^2). All of the mapping for these watersheds uses LIDAR topographic data and Geographic Information System (GIS) software; enabling highly accurate topographic modelling for both deposits. These tools identify contours and

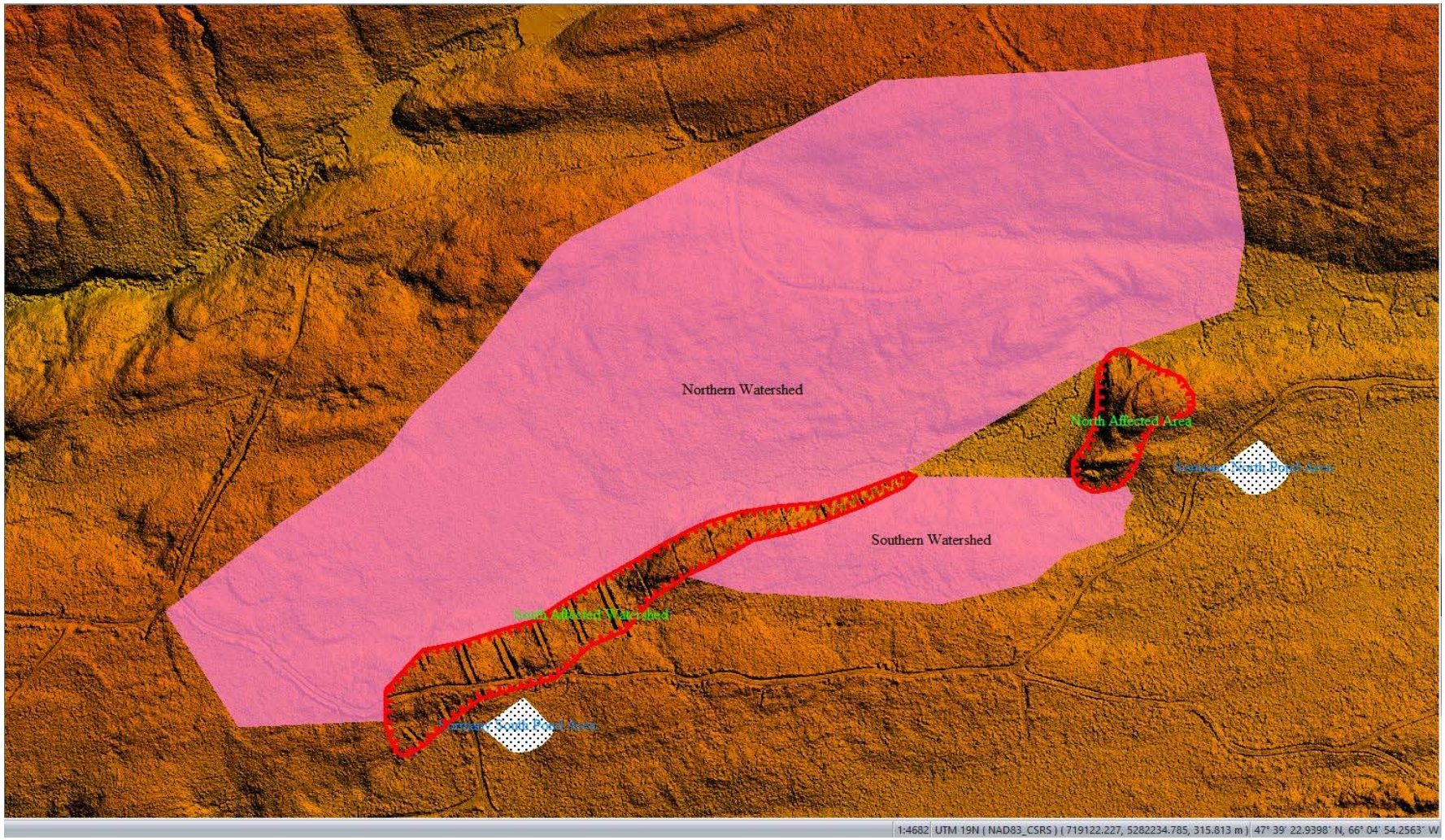
thus directional ground flows and provided the siting options for our settling ponds. This ensures proper groundwater flow while confirming the ponds are located far enough away from the pits; eliminating the possibility of recirculation. Figure 2.6.0 illustrates all watersheds and two settling ponds located on the proposed site.

(vi)d) Truck Transport & Haulage Routes

As the Sormany West project is an extension of the Sormany main operation, we do not anticipate any change in truck traffic. The current and future trucking operations remain at 340 days per year, and approximately 16 truckloads per day (32 round trips daily) using our currently prescribed route: Sormany => Trois Canton => Nicholas Denys. This frequency of travel allows Elmtree to adhere to New Brunswick Department of Transport gross vehicle weights requirements; while ensuring delivery of the required annual volumes.

Depending on inventory at the Glencore Smelter or NB Power, the trucks are either delivering product to Belledune or to our storage facility on the Alphonse Road in Petit-Rocher.

Figure 2.6.0 Sites Watersheds and Settling Ponds



2.6.1 Preliminary site plan drawing showing the location of various physical components and infrastructure required for the project.

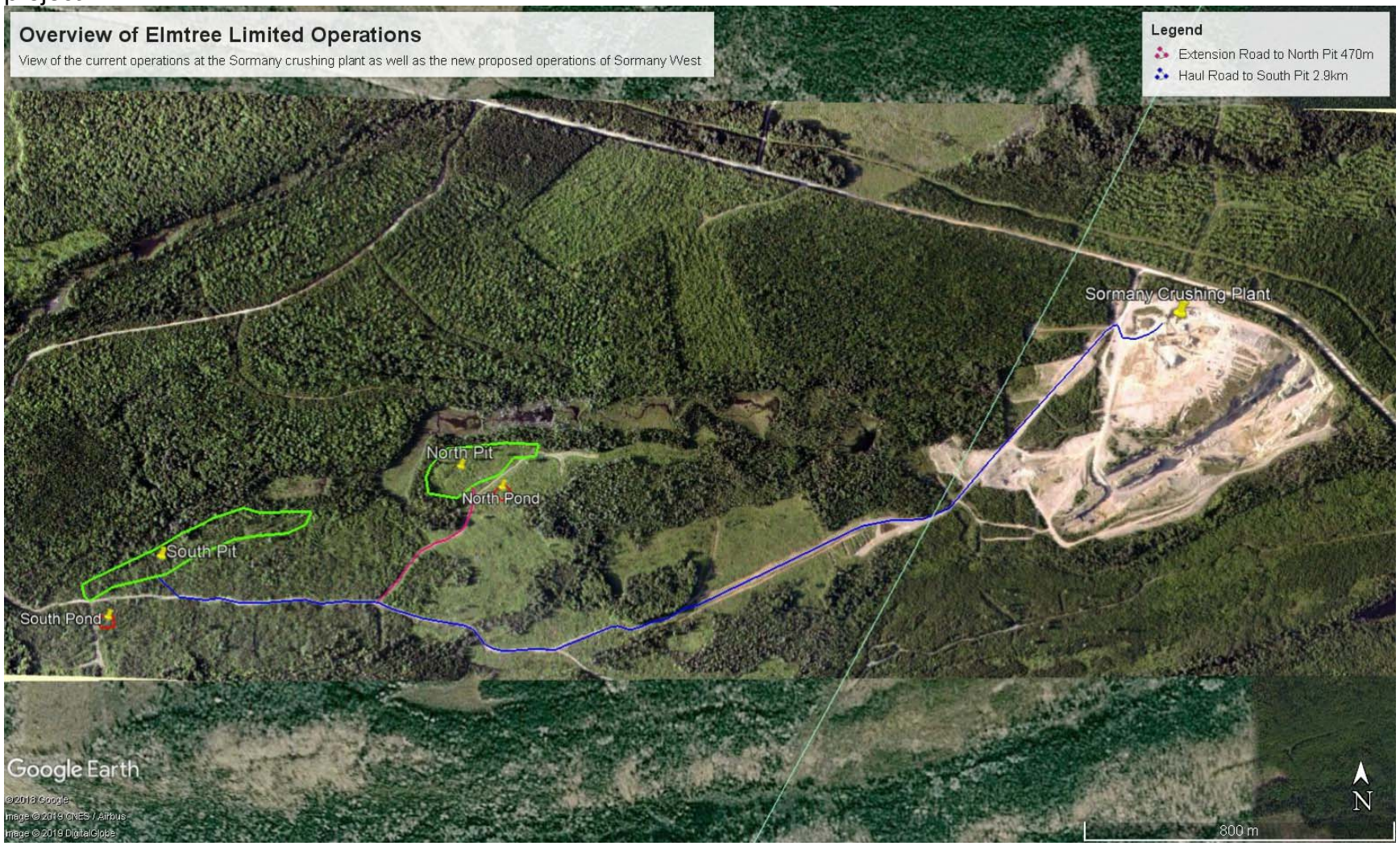
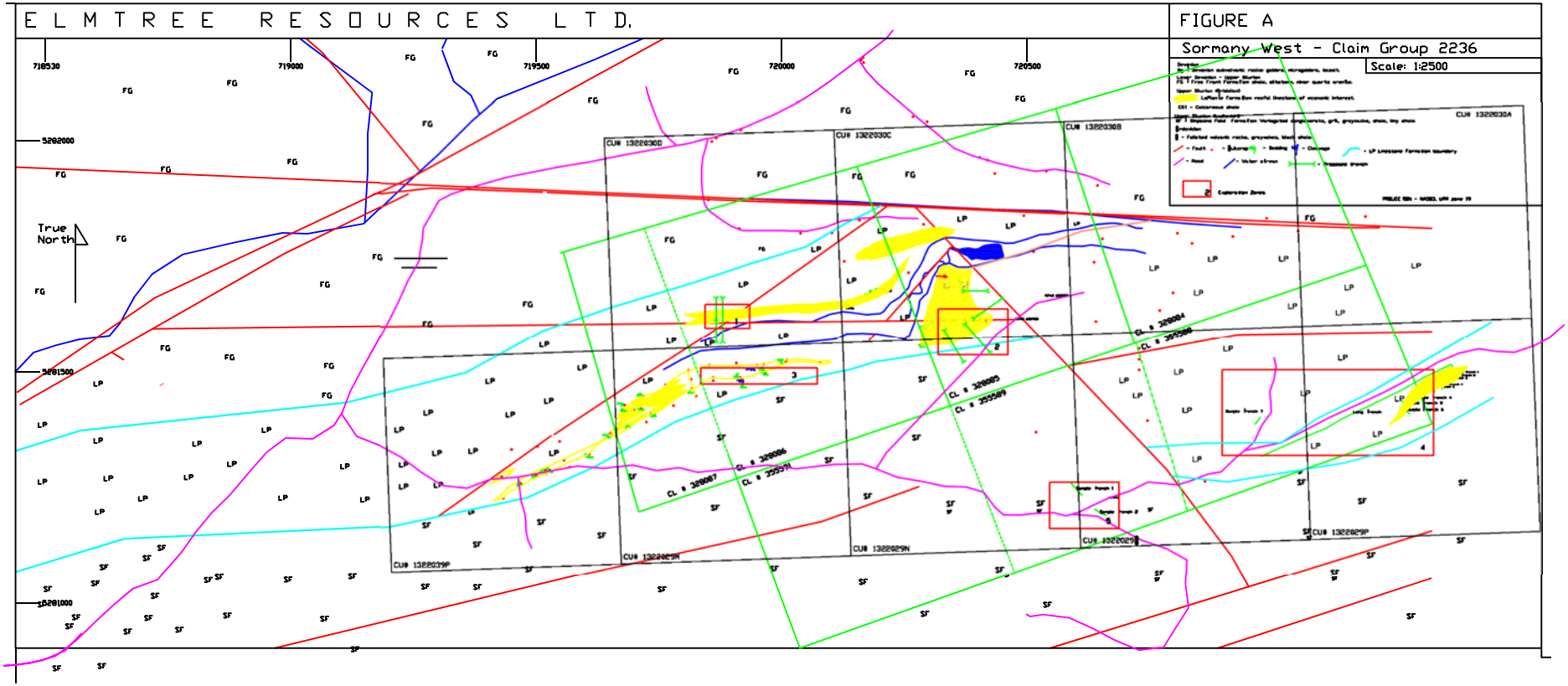


Figure 2.6.2 – Geology and Claim Outlines for the Sormany West Project



(vii) Construction Details:

Construction will be split into two phases approximately 1 year apart. The first phase will bring the south pit into production and the second phase the north.

The activities required for both phases are identical, only the sizes differ. The construction details are listed below and Table 2.1 Preliminary Construction Schedule identifies the activities and their specific differences.

Much of the construction plan centered around the utilization of existing logging roads previously constructed by various companies with some modifications. This approach allows for controlled access to the construction site using the existing security gate located at the current Sormany property entrance. No roads on site are to be paved.

It should also be noted that our preliminary assessment work identified two key items:
a) It identified the presence of several small colonies of the coralroot plant. Although not endangered, they are listed as “special concern”. These colonies have been mapped (see Figure 3.1.3) and documented in appendix A. Since they are in the watercourse buffer zone, no construction activities will be undertaken within 30 meters of the plants. Black ash has also been identified in the area and their harvest may be of interest to First Nations.
b) It failed to uncover any archaeological potential and successive clear-cutting activities also failed to yield anything of significance so we do not anticipate it. However, should this change, we will cease operations, notify the Dept. of Environment and Local Government and will only proceed once the appropriate actions are taken.

1. Upgrading Roads:
   The nature of the work will consist of extending and widening the old road to specifications. The road will be widened to 4.85 m symmetrically from the crest for a total of 9.7 m. The total footpath of the road will be 18 m to ensure safe transport with no vegetation in the way of the travelling equipment during regular mining operations. Figure 2.7.1 illustrates a cross section of the haul road design.

   The widening will extend 2 km from the south pit to reach our existing road infrastructure, and 470m to join the north and south pits. Each side of the haul road will be banked at 30 degrees to ensure proper drainage during wet periods. Two existing 50cm ditch culverts will need to be extended 8 meters to ensure adequate width, one on the main road and one joining the two pits.

As we advance with the widening of the road, we will be final grading using crushed ¾" minus (<20mm) aggregate to a thickness of 0.1 m. Because of the chosen route and the availability of aggregate materials on site, there will be no additional traffic on the Sormany road during the construction phase.

Erosion and sedimentation control practices will be implemented with all physical works to reduce erosion of exposed areas and sedimentation of surface water. Dust control measures will be taken, where necessary, during site preparation to minimize the potential environmental effects of fugitive dust.

It should be noted that a second haul road option was also considered. It involved building a completely new haul road from the North deposit, due North, a distance of 1.2 km, until we reached the Sormany Road and then following that route for an extra 2.4 to our existing crushing plant. We decided against this option as a brook crossing and additional right of way tree-cutting would have been required. This would have created a longer travel route and more interaction with logging trucks, automobiles and all terrain vehicles.

2. Logging of non-merchantable wood on Deposits: With the main haul road completed, it will be necessary to clear-cut regrowth from the top of the pits. All clearing activities will be conducted outside watercourses and wetlands using mechanical harvesting equipment. Although not planned, should work be required within 30 m of a watercourse or wetland, it will be executed with a Watercourse Alteration Permit and clearing conducted by hand. Grubbing (removal of stumps, roots, shrubs, etc.) will be done with an excavator equipped with a combed tooth bucket attachment. The total area to be cleaned will not exceed 5 hectares for the south pit and 3 hectares for the north. All of the removed material will be stock piled nearby in piles not exceeding 1 m in height. These piles will then be covered by limey tills which are non-acid generating that will be from the removal of the overburden described in the next section. Figure 2.7.2 shows a cross-section of the overburden piles which will be located adjacent to the operational pits. To prevent disturbance of birds and their nests, the timing of clearing will be planned for outside of the breeding bird season for most species (April 1 to August 31) to the extent possible.

3. Removal of the overburden: The removal of the overburden will consist of relocating a layer of glacial till over the limestone deposit. Note that all of

this rock is non-acid generating and does not cause any impact to the surrounding environment once exposed to oxygen and water. The overburden area will be the same size as the grubbed areas described above. We will be removing a thickness of overburden varying from 0 to 2 m until the limestone is exposed. The overburden material will then be layered on top of the 1 m of non-merchantable piles around the pit with edges sloped at an 18-degree angle ensuring the angle of repose is not exceeded. Figure 2.7.2 shows a cross-section of the overburden piles which will be located adjacent to the operational pits.

4. Construction of the settling pond: They are to be constructed as we approach the water table. Based on the work which has been done on the site so far, our studies show that the water table lies at around 6 m below the surface. The pond for the South Pit will be located 50 meters south of the pit while the North Pit settling pond will be located 40 m east. In both cases the design ensures that the runoff is redirected away from the workings and a safe buffer zone is kept from potential watercourses. The settling ponds will be in the following dimensions; 30 m wide by 30 m long by 1 m high. The 1 m perimeter banks will be constructed of a mixture of half clay and half ¾ aggregate described as an impervious gravel/clay mixture shown on the provided technical drawing in appendix B. The embankments surrounding will be graded to 30-degrees again, ensuring the angle of repose is not exceeded. All settling pond discharge points will have energy dissipating structures consisting of rip rap to eliminate channel erosion. The settling ponds are designed with a minimum settlement time of 6 hours and hold up to 845,000 liters of water where 500,000 liters are within the design capacities and 345,000 liters are in freeboard capacity. The settling pond will be self draining over time through percolation through the cap rock. Figure 2.7.3 illustrates a cross-section of the settling pond which is to be built near the pit. Figure 2.7.4 and 2.7.5 are pictures of the finished settling pond which was built in the late 90's for the Sormany Main Pit. As time passed, the regrowth of aquatic plants and shore shrubs have surrounded the extent of the pond. The pond at Sormany West – South Pit is to be built on the same basis.

5. Extend existing power lines: Operations will necessitate power for pumps and lights, therefore we will utilize an electrical contractor to construct a 2.7 kilometer power line (standard NB Power 12kV 3 phase distribution) from our current operation to the both pits. After reviewing our options, it was decided that the best way to bring power was with overhead lines following the newly built haul road described above. The 18 m road right of way will leave ample space to install the poles and run the wires to the pumping and lighting systems.

As an alternative to this, we considered extending the power line (which terminates at the main entrance to our Sormany facility) by following the Sormany road until reaching our deposit and then running a line through the woods all the way to the deposit. This option was abandoned for several reasons.

- An extra 2 kilometers of power line would have had to be installed
- Up to 1.2 km of forest would have been impacted.
- An additional watercourse crossing would be required with utility poles installed within a defined watercourse
- Necessitated construction along a busy forestry corridor

As indicated above, Elmtree plans on initially producing from the South deposit and will start Phase 2 (mining the North Deposit) approximately 1 year later. This will ensure that both of the deposits are available after the third year of mining. Having both deposits open at the same time will help optimize limestone grades by mixing products from both deposits.

Potential sources of pollutants during the construction will consist of noise from heavy equipment, dust generated from traffic on the dirt roads and excavated overburden material. Noise and dust will have minimal effect on neighboring communities given the closest residence is 14 km away. The removed overburden will be placed in the vicinity of the areas designated for waste rock. As mentioned earlier, none is acid generating. The haul road between the site and the plant will be sprayed with a calcium solution should it become too dusty.

There will be no construction performed within any environmentally significant areas or other significant areas as described under Section 3.0 of this document without the proper permits or recommendations. As we are familiar with the land, we do not foresee encountering any wetlands or watercourses. If we were to encounter the following, it would be imperative for us to avoid going through the wetland, rather going around it. If we cannot avoid the above, our next step would be to mitigate the impacts on a 2:1 basis. Meaning if we disturbed 1 acre of wetland, it would be our duty to re-create an artificial wetland twice as big (2 acres).

Figure 2.7.1

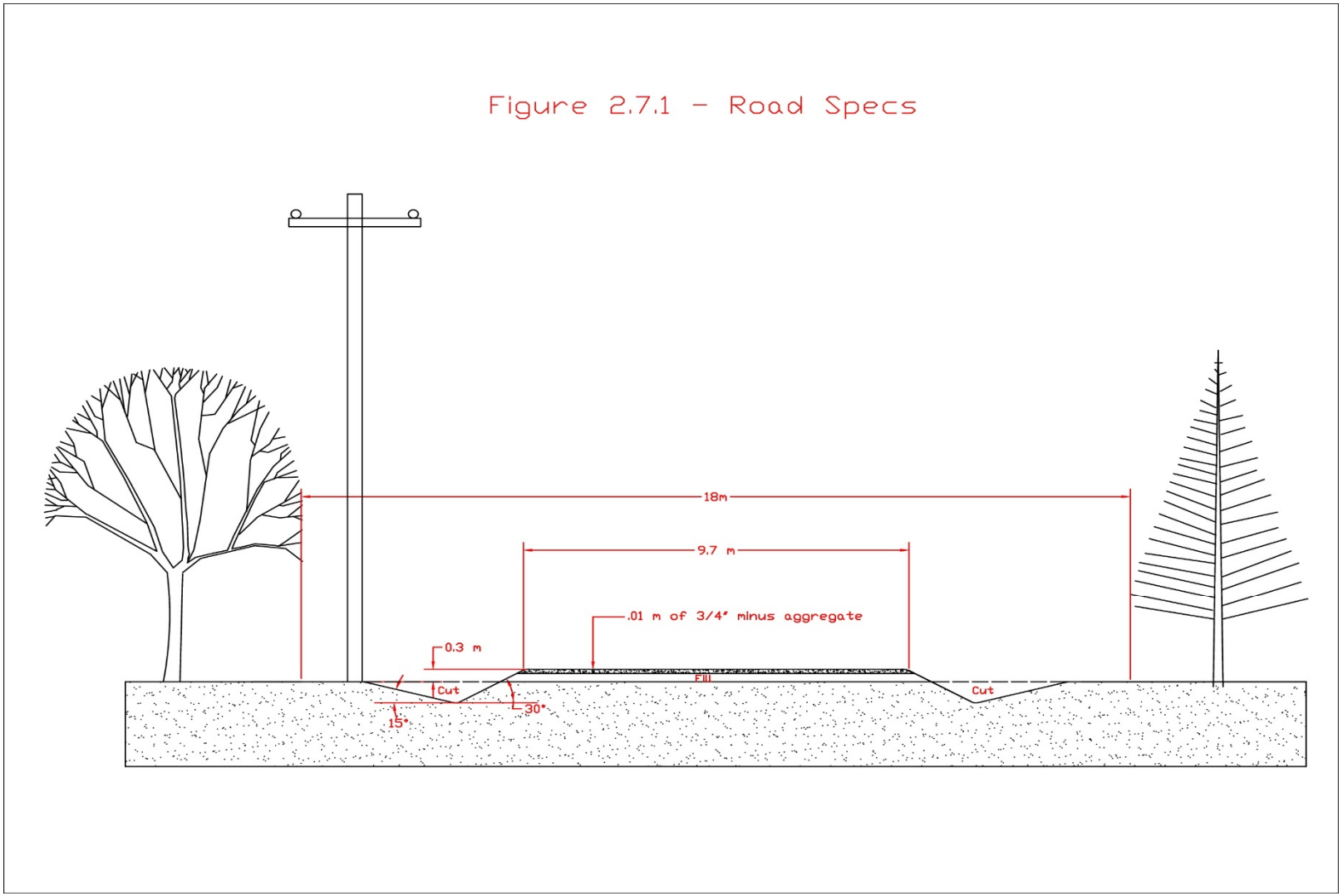


Figure 2.7.1 - Road Specs
18m
9.7 m
.01 m of 3/4" minus aggregate
0.3 m
Cut
Fill
Cut
15°
30°

Figure 2.7.2

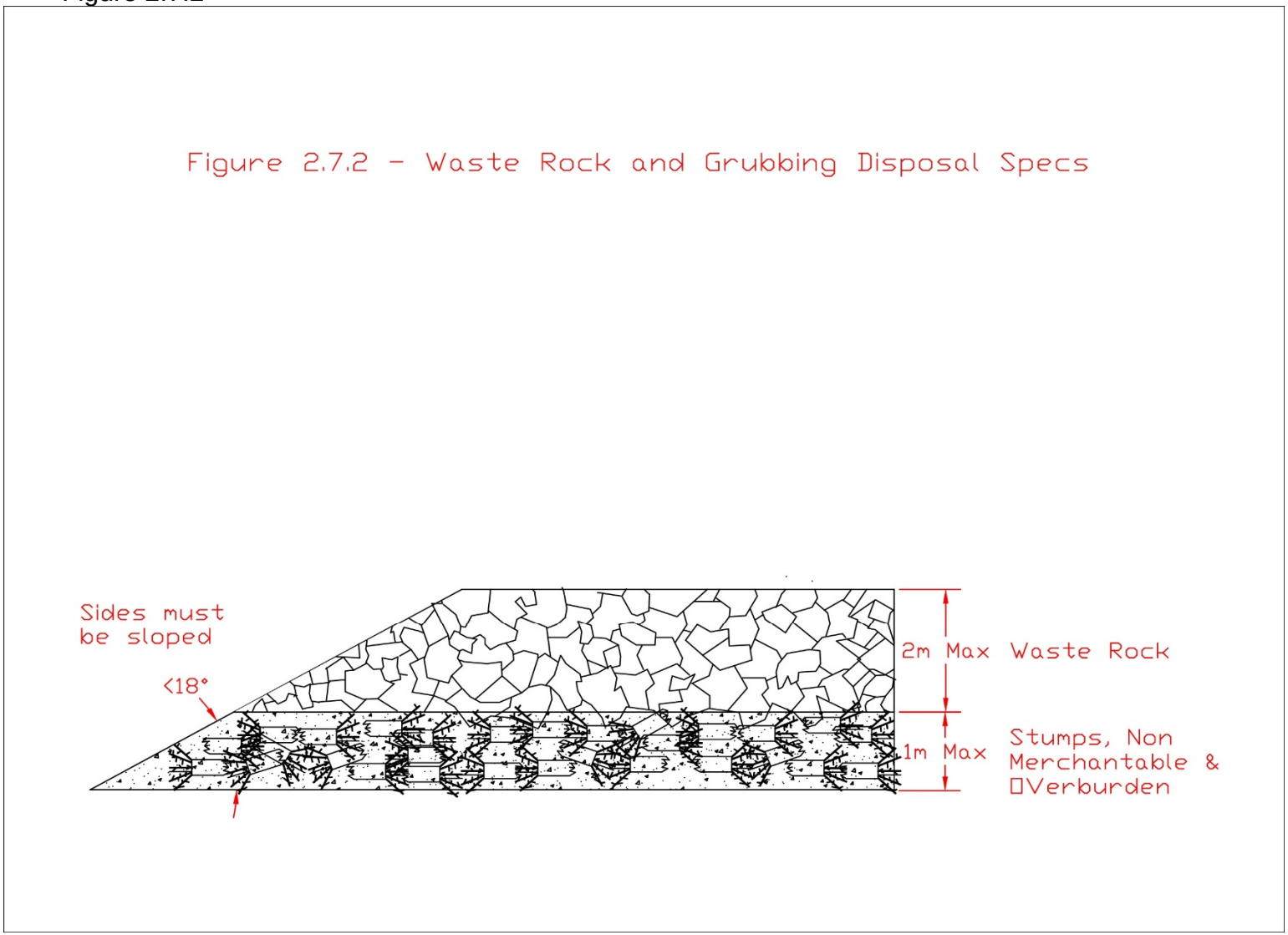


Figure 2.7.2 - Waste Rock and Grubbing Disposal Specs
Sides must be sloped
<18°
2m Max Waste Rock
1m Max
Stumps, Non Merchantable & Verburden

Figure 2.7.3

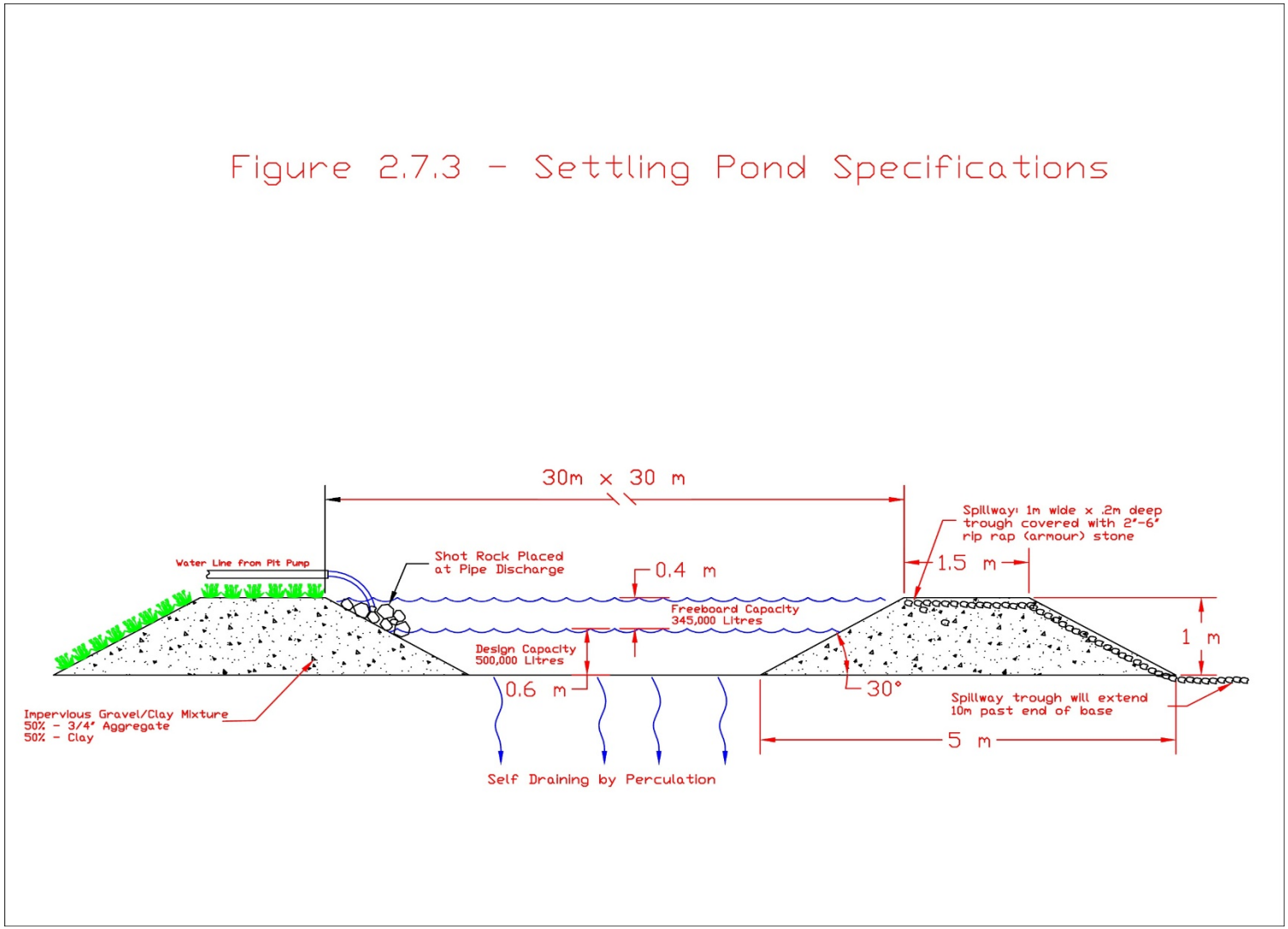


Figure 2.7.3 - Settling Pond Specifications
30m x 30 m
Spillway: 1m wide x .2m deep trough covered with 2"-6" rip rap (armour) stone
Water Line from Pit Pump
Shot Rock Placed at Pipe Discharge
0.4 m
1.5 m
Freeboard Capacity 345,000 Litres
Design Capacity 500,000 Litres
1 m
0.6 m
30°
Impervious Gravel/Clay Mixture
50% - 3/4" Aggregate
50% - Clay
Spillway trough will extend 10m past end of base
5 m
Self Draining by Perculation

Figure 2.7.4 View of Settling Pond at Sormany Main

Figure 2.7.5

Table 2.1 – Preliminary Construction Schedule

		Task	Details	Equipment Used	Start Date	Time
Phase 1	South Deposit	Road Upgrade	2 km from existing haul road to South Deposit	Excavator, Loader, Haul Truck, Grader	2022	4 Weeks
		Cutting	5 Hectares	Feller Buncher, Processor, Porter, Logging Trucks	2022	2 Weeks
		Removal of Overburden	5 Hectares	Excavator, Truck	2022	5 Weeks
		Construction of Settling Pond	1000 m^2	Excavator, Loader, Haul Truck	2022	2 Weeks
		Extend Ditch Culvert	8m x 50cm plastic culvert	Excavator, Truck	2022	1 Day
Phase 2	North Deposit	Road Upgrade	470 m from North deposit to New haul road at South deposit	Excavator, Loader, Haul Truck, Grader	2023	2 Weeks
		Cutting	3 Hectares	Feller Buncher, Processor, Porter, Logging Trucks		1 Week
		Removal of Overburden	5 Hectares	Excavator, Truck	2023	5 Weeks
		Construction of Settling Pond	1000 m^2	Excavator, Loader, Haul Truck	2023	2 Weeks
		Extend Ditch Culvert	8m x 50cm plastic culvert	Excavator, Truck	2023	1 Day

(viii) Operation and Maintenance Details:

The extraction process for the limestone will then begin once all the proper infrastructure has been completed. By following this plan closely, any negative impacts to the environment will be avoided. Mining and Crushing Operations at the site are seasonal, operating from June to November. They consist of drilling, blasting and hauling up to 200,000 tonnes of limestone per season to the existing crushing plant.

The drilling will be performed by a hydraulically driven crawler drill and blasting by a federally certified blasting company using bulk explosives discharged from a transport truck directly to the blast hole. Explosives are brought on site by the blasting supplier the day of blasting and any excess returned with them. No explosive materials will ever be stored at the quarry or the mine site. The average size of a blast will approximately be 30,000 tonnes; therefore, should be around 4-6 blasts per season. We will continue to follow the same federal blasting regulations currently enforced.

A concern we also evaluated was the proximity of hunting/fishing cabins within the area. The closest cabin to the middle of both pits is 2.8 km away. As the ground in the area is heavily faulted and fractured, the blasting occurrences in the pit will have no effect on these facilities. These geologic faults and fractures are situated to act as vibration barriers ensuring these cabins are not reached. The geological alignment (stratigraphy) is also beneficial.

As further support, our current operation at Sormany Main, which is only 845 meters away from those same camps, has been in operation for 30 years. Over this period, vibration monitoring showed no results and no concerns, issues nor complaints were ever brought to Elmtree's attention. We are also committed to ensuring no adverse ground disturbance occurs at the new quarries hence on our first blasting operations, we will install seismographs on the Sormany road ensuring we are within regulations for our blasts. Nonetheless, these camp owners will be invited to attend our information sessions to ensure their questions and concerns are addressed.

After each blast an excavator will remove and load the blasted rock onto haul trucks where it will be sent to the crushing plant. We will use 50 tonne

off-highway haul trucks to carry the material.

Once the blasted rock arrives to the crushing plant it will be crushed and stockpiled into various product sizes such as ¾" minus (<20mm), ¼" x ¾" (6mm x 20mm) and ¼" minus (<6mm), as specified by our customers. The crushing plant operates 9-18 hours per day, 5 days per week for 6-8 months per year (May through October/November). The following table shows the typical operations with the equipment used and the number of workers needed.

Table 2.2 – Operation Activities

Task	Equipment Used	# Workers
Drilling	Hydraulic Drill	1 per Shift
Blasting	Explosives Truck	6 per Blast
Loading of Raw Material	Excavator	1 per Shift
Hauling of Raw Material	Haul Trucks	2 per Shift
Crushing into Finished Product	Crushers, Screens and Conveyors	3 per Shift
Mine Development/Remediation	Excavator, Haul Truck and Dozers	1 Per Shift

Raw materials used during basic operations will consist mainly of fuel for vehicles and bulk emulsion during blasting. Fuel for all the machinery will be supplied from the main plant site where there are certified double-walled tanks installations. Equipment such as the drill and excavators will be fueled onsite with a 1/2 tonne truck that has a portable Intermediate Bulk Container (IBC) fuel tank in the box of the truck. All other equipment will be fueled at the main plant site. All bulk emulsion explosives used are brought onsite the day of the blast via a contracted explosives truck. No explosives remain on site once blasting is completed.

The main sources of pollution during the operations will consist of dust, laden water, and airborne emissions (dust).

It should be noted that the limestone dust sources of pollution are in fact soil and water quality enhancers thus the reason why we sell to farmers. Limestone is both a soil nutrient and pH enhancer. For example, airborne dust from particle size PM 2.5 (2.5 micrometers) up to 300 microns that came to rest on adjacent vegetation will ultimately wash into the soils via

rain events. The limestone helps supply nutrients to the soils thus improving growth. It is similar with mine discharge water. Since surrounding watercourses are typically acidic (pH of 5 – 6), the fine fraction of limestone (PM2.5 to 50 microns) will easily dissolve in discharge water and the larger fractions tend to settle out quickly. With proper residence time in the settling ponds and stripped of suspended solids, the discharge water helps to increase groundwater pH.

Once mining operations are within reach of the water table, the dewatering process will commence. A 4” submersible water pump will be strategically placed in a low-lying area of the pit where it will pump the water to the settling pond. The 4” pump is capable of pumping up to 2000 liters per minute; and is the exact size of pump currently dewatering the existing pit which is much larger. The effluent being pumped will consist of water with limestone fines. The retention time of the pond will ensure that all solid particles of the effluent settle gravitationally before returning to adjacent waterways. It should also be noted that there is a significant vegetated buffer beyond the discharge of the settling ponds that allows the majority of discharge water to seep into the ground before entering any defined watercourse.

The solid waste produced will be in the form of solid rock, this waste is usually coming from shale bands within the limestone or from the edges of the deposits where the limestone quality is not to our standards. The amount of waste rock produced is typically under 3% of the total volumetric production. This rock is removed with an excavator and trucked to a designated nearby waste rock location where it will be stockpiled and used for land reclamation/road repair/etc.

Airborne emissions will consist of exhaust form the heavy equipment used and from the dust generated for the haul truck traveling on a dirt road.

(ix) Future Modifications, Extensions, or Abandonment:

Elmtree will start bringing the land back to a natural habitat at the 17th year

or three years prior to the completion of the mine life. Once all mining activities have ended the site will be returned to its original state. A Reclamation and Remediation plan will be created as part of the Mining Lease application process.

(x) Project-Related Documents:

- Species at Risk Survey conducted AMEC Earth & Environmental
- Sormany West EMP
- Sormany West Mining Proposal
- Sormanty West Crown Land Lease Application

3.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

(i) Physical and Natural Features:

Site surveys were carried out in November 2005. The surveys consisted of a topographical and environmental aspect review focused on identifying the existing environment and potential environmental constraints. Characterization of the existing conditions included:

- Watercourses/wetlands within the study area;
- Forest habitat and vegetation assessment;
- Migratory birds;
- Wildlife and wildlife habitat;
- Species at risk and of conservation concern; and,
- Land use, topography and existing structures.

A watercourse runs west to east through the middle of the Project area, which has an associated wetland distributed along it. The wetland and the steep slopes within 30 m are not considered to be within the Project footprint, therefore, the watercourse and the interior of the wetland were not investigated. The wetland margin and surrounding slopes were included in the field survey. It is important to note that the valley adjacent to the two pits constitutes the “headwaters” of the unnamed tributary and has no

defined water channel until it passes east of the North deposit. It is regarded as wetlands only and deemed intermittently wet.

Habitats occurring within the Project footprint include shrubby regenerating clear-cut (southwest of the wetland), mature coniferous forest (southeast of the wetland), and young mixed forest and immature softwood forest – both regenerating from past clear-cutting (north of the wetland). The terrain is gently rolling with low to moderate slopes. Soils are well drained except where groundwater seeps out on mid- to lower slopes. Also, short bedrock (limestone) cliffs (2-3 m high) outcrop in an area of elevated terrain southeast of the wetland, which were carefully explored for the presence of rare cliff ferns or similar plants.

Shrubby regenerating clear-cut areas cover the southwestern part of the Project footprint (approximately 5 ha; 25% of total area). This habitat is dominated by tall shrubs such as speckled alder (*Alnus incana*), willows (*Salix species*), and sapling trees (mainly white birch (*Betula papyrifera*) and trembling aspen (*Populus tremuloides*)). There are small open areas dominated by low shrubs such as blueberries (*Vaccinium myrtilloides*), sweet fern (*Comptonia peregrina*), and meadowsweet (*Spirea alba*). Ground cover such as rattlesnake fern (*Botrychium virginianum*) and Princes' Pine (*Chimaphila umbellata*) reflect the relatively rich nature of the calcareous soils.
Young mixed forest and immature softwood forest covers the Project footprint north of the wetland (approximately 10 ha; 50% of total area). These habitats are intermingled. Areas that are slightly more mature tend to have a higher proportion of softwood species, mainly balsam fir (*Abies balsamia*) and red spruce (*Picea rubens*). More recent clear-cut areas have a higher proportion of hardwood species such as white birch, red maple (*Acer rubrum*), striped maple (*Acer pensylvanicum*), and white ash (*Fraxinus americana*).

The young mixed forest habitat is dominated by young hardwood and softwood tree species 25 to 35 years in age. Ground cover in this habitat is typical of boreal forest with carpets of bunchberry (*Cornus canadensis*), star-flower (Trientalis borealis), yellow clintonia (*Clintonia borealis*), and star-flowered false Solomons' seal (*Maianthemum stellatum*). Again, the highly nutritious calcareous soil can support a number of less common plants such as grape fern (*Botrychium matricarifolium*), and a large number of orchids including Hookers orchid (*Platanthera hookeri*), tall northern

green orchid (*Platanthera aquilonis*), and large round-leaved orchid (*Platanthera orbiculata*). The provincially uncommon plant pine-sap (Monotropa hypopithys) was observed in this habitat. It is ranked as S3 (fewer than 100 occurrences in NB) by the Atlantic Canada Conservation Data Centre (AC CDC) but is considered Secure by the Province, indicating that no special management practices are required.

Also, a small group of black ash (*Fraxinus nigra*) trees were observed in this habitat (see Figure 3.1.1 below). As located on Figure 3.1.1, the Black Ash species are located 130 m away from the South deposit. This species is not rare but is sometimes of concern to local aboriginal communities as a source of material for traditional crafts. Typically, if this becomes an issue, the concerned Aboriginal group (Pabineau First Nations) is given the opportunity to harvest the material prior to Project clearing. We plan on having this concern discussed at our meetings held with the First Nations.

The immature softwood habitat is composed of 25 to 35-year-old spruce/fir forest. The trees are densely crowded and the crown closure is complete, blocking out most sunlight. Ground cover is sparse on the forest floor but is consistent with boreal forest habitat. The vegetative diversity is much lower in the pure softwood stands due probably to the diminished light and possibly to acidification of the upper soil by acids leaching through the needle layer, which covers the forest floor.

The wetland is composed mainly of beaver impounded open water and shrub-swamp. It is part of a larger wetland which stretches up- and downstream along the watercourse. It has been mapped on the NB Wetland Atlas (ID Number: 102-39-2) and was given a Golet score of 69.5. The Golet score is a measure of suitability to wildlife. A score above 60 is good, while a score above 80 is exceptional. The wetland is sharply confined within a steep sided stream valley.

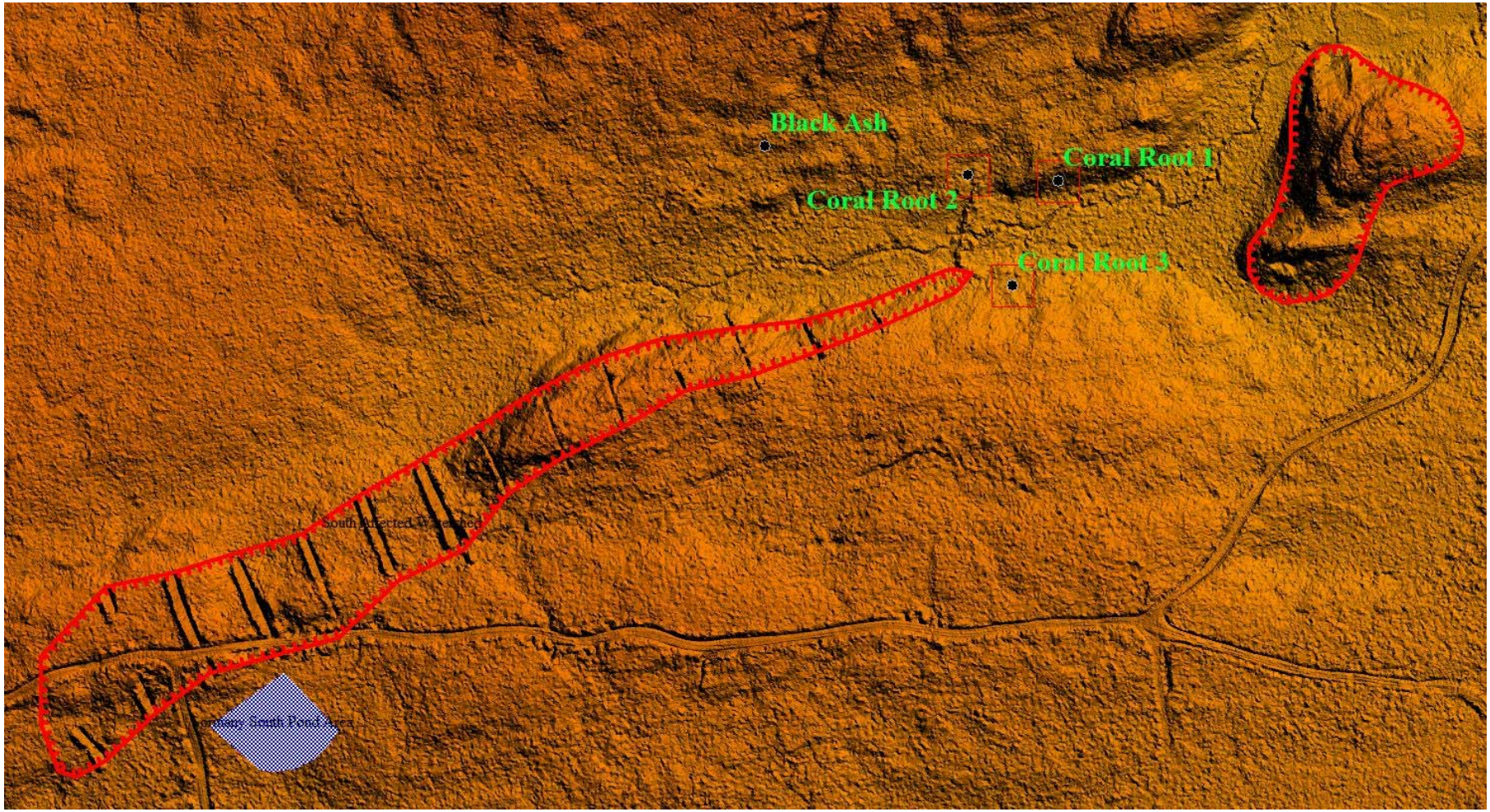
The slope around the wetland rises (3-4 m) within approximately 30 m from the wetland edge. This steep slope has experienced little disturbance from surrounding timber harvesting activities and the forest is mature softwood. Several small colonies of a plant species of special concern, spotted coralroot, were observed on this slope with the greatest concentration on the north side of the wetland. Spotted coralroot is considered Sensitive by the Province, indicating this species may require special attention or protection to prevent it from becoming “at risk”. Also, the uncommon plant, broad-lipped twayblade (*Listera convallarioides*) was observed in this

habitat. It is ranked as S3 (fewer than 100 occurrences in NB) by the AC CDC but is considered Secure by the Province, indicating that no special management practices are required.

Bird species observed in the Project footprint included small passerine species such as boreal chickadee (*Parus hudsonicus*), white-throated sparrow (*Zonotrichia leucophrys*), common crow (*Corvus brachyrhynchos*), and downy woodpecker (*Dendrocopos pubescens*). No nests were observed. Some potential nesting cavities were identified in old trees around the wetland margin but no nesting activity was observed. Numerous tracks were observed including deer (*Odocoileus virginianus*), moose (*Alces alces*), bear (*Ursus americanus*), and porcupine (*Erithizon dorsatum*). Red squirrels (*Tamiasciurus hudsonicus*) were abundant. No critical habitat for herptiles was observed within the Project footprint.

Vegetative diversity overall is relatively high due mainly to the calcareous soil but past and recent disturbance from timber harvesting activities have significantly reduced the potential for critical habitat of species at risk to be present within the Project footprint. It should also be noted that there is a large area of similar habitat types in the region surrounding the Project. No species at risk were observed within the Project footprint, however, the presence of a plant species of special concern in close proximity to the Project will require special consideration. It is recommended that locations of spotted coralroot be avoided by a buffer of 20 m. This is to ensure that the existing habitat is not changed through direct disturbance, site run-off, or increased sunlight caused by Project clearing. Co-ordinates for locations of spotted coralroot are provided in the SARA document in Appendix and can also be seen on Figure 3.1.1. We will be conducting mining operations close to the spotted coralroot plants but the closest cluster of endangered plants will be 30 m away.

Figure 3.1.1 Showing a cluster of Spotted Coralroot plants 30m east of South Deposit (Coralroot 3) and Black Ash 200 meters north of South Deposit



(ii) Cultural Features:

There are no federally, provincially recognized recreational sites or features on the subject property of adjacent lands.

There are no federally, provincially or locally recognized heritage resources/areas on the subject property or adjacent lands.

As mentioned in the previous section; the Pabineau First Nation Group will be offered, if found, any black ash located on site.

(iii) Existing and Historic Land Uses:

Existing uses for the land are typical of most crown land in the province, it is utilized as a forest resource and for recreational purposes such as hunting and trapping.

4.0 SUMMARY OF ENVIRONMENTAL IMPACTS

Accidental events may include but are not limited to:

- Fuel spill from heavy machinery
- Sediment runoff into a watercourse
- Erosion of ditches and settling ponds spillway
- Improper disposal of solid waste
- Settling pond discharge via spillway
- Non-conforming settling pond discharge PH & TSS levels
- Excess dust generated
- High noise levels from heavy equipment and blasting
- Elevated ground vibrations from blasting
- Discovery of archeological resources
- Activities within 30m of a watercourse
- Activities within 20m of the Spotted Coralroot locations (as shown above

in Figure 3.1.1, the Spotted Coralroot 3 is at least 30 m away from the proposed South Pit location)

The project components will be designed or implemented in accordance with applicable Acts, regulations, guidelines, codes and standards for industrial plant; however, accidental events may still occur and some accidents may have significant consequences. To minimize environmental emergencies and health and safety risks, an Environmental Management Plan (EMP) and Emergency Response Plan (ERP) will be developed and implemented as part of the pre-construction planning.

Elmtree Resources is committed in respecting the following aspects of these provincial and federal acts:

Migratory Birds Convention Act:

The Migratory Birds Convention Act (MBCA) protects and conserves migratory bird populations, individuals, and their nests within all lands in Canada. Enabled under the MBCA, section 6 of the Migratory Birds Regulations states that without the authorization of a permit, the disturbance, destruction, or taking of a nest, egg, nest shelter, eider duck shelter, or duck box of a migratory bird, or possession of a migratory bird, carcass, skin, nest, or egg of a migratory bird are prohibited. As there are no authorizations to allow construction-related effects on migratory birds and their nests, best management practices and guidelines are used to facilitate compliance with the MBCA.

Species at Risk Act:

The federal Species at Risk Act (SARA) is administered by Environment Canada with the intent to protect species from extirpation or extinction as a result of human activity. The purpose of provisions under SARA are to prevent species of conservation concern (SOCC) from becoming threatened or endangered and to allow for recovery of species who are considered threatened, endangered or extirpated. Section 32(1) states “no person shall kill, harm, harass, capture or take an individual of a wildlife species that is listed as an extirpated species, an

endangered species or a threatened species". Section 33 states "no person shall damage or destroy the residence of one or more individuals of a wildlife species that is listed as an endangered species or a threatened species, or that is listed as an extirpated species if a recovery strategy has recommended the reintroduction of the species into the wild in Canada".

Fisheries Act:

Section 35(1) of the federal 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 (CRA) fishery, or to fish that support such a fishery". Marine-based activities for the Project have the potential to result in serious harm to fish, although a determination will be required from Fisheries and Oceans Canada (DFO). Section 36(3) states "subject to subsection (4), no person shall deposit or permit the deposit of a deleterious substance of any type in water frequented by fish or in any place under any conditions where the deleterious substance or any other deleterious substance that results from the deposit of the deleterious substance may enter any such water". Deleterious substances are defined by the Fisheries Act as: a) any substance that, if added to any water, would degrade or alter or form part of a process of degradation or 2.62alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man of fish that frequent that water, or b) any water that contains a substance in such quantity or concentration, or that has been so treated, processed or changed, by heat or other means, from a natural state that it would, if added to any other water, degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man of fish that frequent that water.

5.0 SUMMARY OF PROPOSED MITIGATION

Mitigation measure for all the potential environmental impacts mentioned in the previous section can be found in a document entitled “Sormany West Environmental Management Plan” in Appendix B.

6.0 PUBLIC INVOLVEMENT

Steps 1 through 4 and step 8 of Appendix C of the “A GUIDE TO ENVRONMENTAL IMAPACT ASSESSMENT IN NEW BRUNSWICK” will be performed as soon as the application is registered.

As it is our Duty to Consult, we are planning on hosting some meetings with the closest local aboriginal community; the Pabineau First Nation but anyone from other communities are welcome to assist and voice their concerns with the project. As we want to keep a good relationship with the First Nations, we believe that their concerns and recommendations are greatly valued and will be heard. We are committed in hosting a sufficient number of meetings for all communities which have questions and/or concerns about this project. All of our meetings will be voice recorded in order for us to track all questions coming from the communities. These meetings shall be held within the Pabineau community which will ensure we achieve maximum attendance. We are aware that some people may be intimidated by public speaking, therefore we will leave some informational pamphlets as well as a copy of this document at the Pabineau Gas Bar & Smoke Shop and the Pabineau First Nation Community Center and encourage any questions or concerns to be submitted by phone or email

Draft copies of all of the documentation that will be sent out to various groups can be seen in Appendix C of this document. We are planning on contacting the Local Service District, to ensure they are aware of the project and that they have a full copy of the documents relating to our project. All residences and camps within a 20 km radius will be invited to a public information session ensuring all questions and concerns are answered. We are also planning on leaving some informational pamphlets as well as a copy of this document at the local gas station, which will ensure that our due diligence is done and that we reach out to everyone who may

be impacted by the project.

7.0 APPROVAL OF THE UNDERTAKING

In order to have access to the mineral and the land a Mining Lease and a Crown Land Lease will need to be obtained. The preliminary boundary lines for both leases are shown in Figure 2.4.3, the approximate areas for the Mining and Crown Land leases will be 218 hectares.

Here is a list of the permits that will be required for the undertaking:

- Mining Lease
- Crown Land Lease (subdivision plan will require approval from Belldune District Planning Commission)
- Approvals to Construct and Approvals to Operate issued by DELG under the *Water Quality Regulation* of the Clean Environment Act
- Environmental Impact Assessment (EIA) Certificate of Determination
- If watercourses are encountered and Elmtree has to do work within 30 m of the buffer zone, a wetland alteration (WAWA) will be obtained from the local government

8.0 FUNDING

There will be no funding from any government agencies for the proposed project.

9.0 SIGNATURE

_____

_____

Date and Signature of Chief
Executive Officer

APPENDIX A

Species at Risk Survey Results

APPENDIX B

Sormany West Environmental Management Plan (EMP)

APPENDIX C

Public Involvement Draft Documentation

November 04, 2005

TE51064

Mark Brown, EIT
Elmtree Resources Limited
1370 Johnson Ave
Bathurst, NB, E2A 3T7

Dear Mr. Brown:

Re: Species at Risk Survey Results for the Sormany West Property near Bathurst, NB

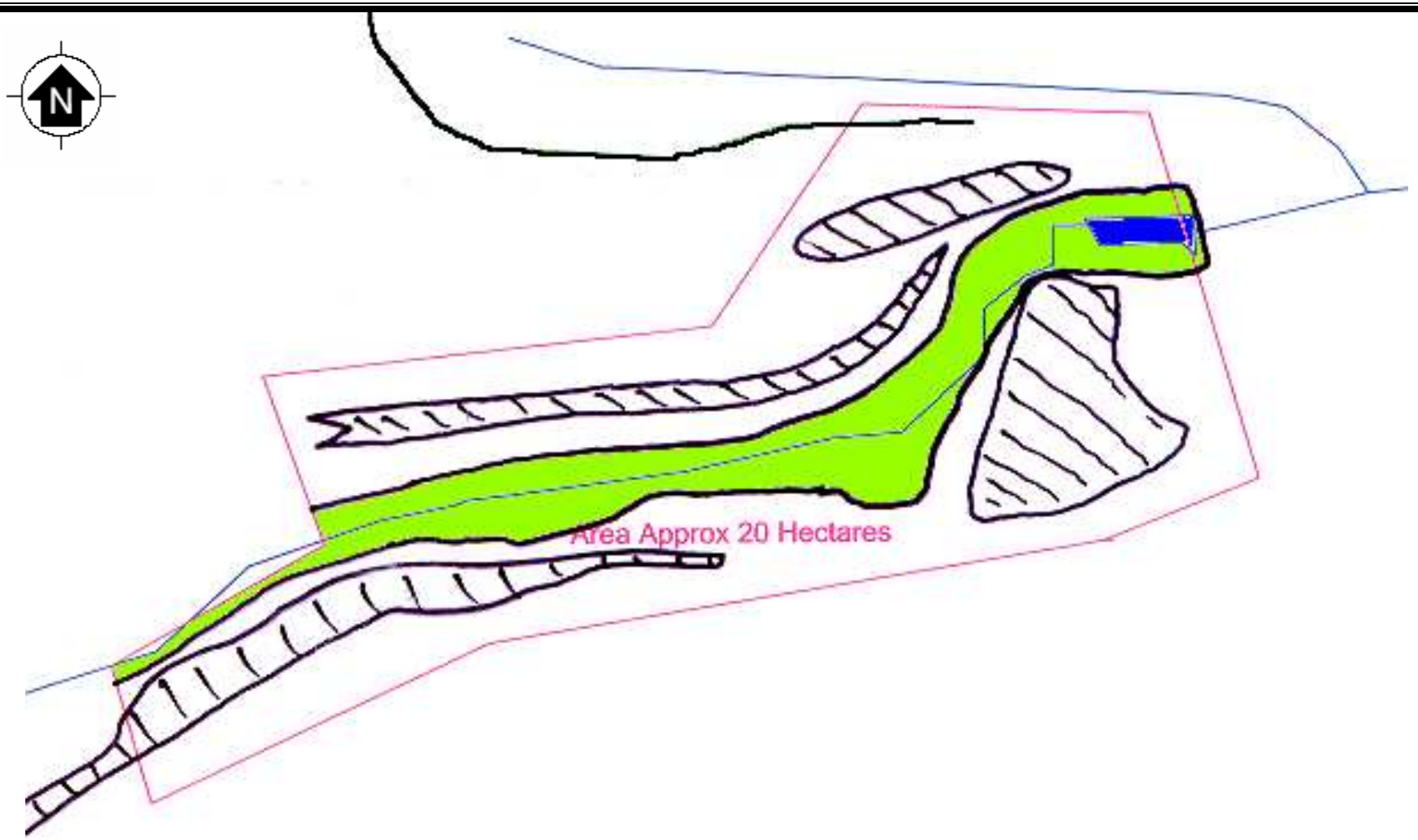
On July 13th and 14th, 2005, AMEC staff members conducted species at risk surveys within an approximately 20 ha survey area at the Sormany West Property near Bathurst, New Brunswick (NB) in preparation for proposed mining exploration activities and potential quarry development. We have determined that there are no species at risk currently present within the footprint of the proposed Project. The Project footprint is assumed to be the areas of potential mineral occurrence as identified in Figure 1, excluding portions that are within 30 m from the wetland boundary. There is, however, one plant species of special concern in close proximity to the Project footprint; spotted coral-root (*Corallorhiza maculata*). It was on the lower slopes surrounding the wetland (See Figure 1).

Field Survey Methodology

The field survey methodology included focussed observation by a biologist and an environmental technologist in areas of moderate to high potential for species at risk to occur, including wet groundwater seeps on mid- to lower slopes, habitat margins (i.e., wetland margin, forest/clear-cut, forest/road) and gypsum rock cliff faces. Areas of relatively low potential (i.e., regenerating clear-cut and young to immature forest) were crossed randomly in order to confirm the nature of the habitat and presence or absence of species at risk. The interior of the wetland was not surveyed. Survey time was 12 hours within the approximately 20 hectare site. The weather conditions during the survey were windy with light rain.

For the purpose of this survey, species at risk include all species listed in Schedule 1 of the Canadian *Species at Risk Act* (SARA), the NB *Endangered Species Act*, and those identified in the NB Department of Natural Resources' General Status List, ranked as At Risk, May be at Risk, Sensitive, and Status Undetermined.

Existing species at risk data was requested from the Atlantic Canada Conservation Data Centre (AC CDC) for all occurrences of species ranked S1 (fewer than 6 occurrences in NB), S2 (fewer than 60 occurrences in NB), and S3 (fewer than 100 occurrences in NB) within 5 kilometres of the Project footprint. The AC CDC data search results are included in Attachment 1. These data were used to identify any species at risk known to inhabit areas surrounding the Sormany West Property and special effort was made to identify habitat for these species within the Project footprint.



Elmtree Resources Limited **Sormany West Property** **Bathurst, NB**	**Potential Mineral Occurrence** **Wetland** **Watercourse** **Survey Boundaries**	**Figure 1** **SITE SKETCH** **(All boundaries are approximate)**

Survey Results

Following is a description of the survey results including the habitat types present as well as plant and wildlife observations. Table 1 contains a list of observed vegetation. Site photos are presented in Attachment 2.

A watercourse runs west to east through the middle of the Project area, which has an associated wetland distributed along it. The wetland and the steep slopes within 30 m are not considered to be within the Project footprint, therefore, the watercourse and the interior of the wetland were not investigated but the wetland margin and surrounding slopes were included in the field survey.

Habitats occurring within the Project footprint include shrubby regenerating clear-cut (southwest of the wetland), mature coniferous forest (southeast of the wetland), and young mixed forest and immature softwood forest – both regenerating from past clear-cutting (north of the wetland). The terrain is gently rolling with low to moderate slopes. Soils are well drained except where groundwater seeps out on mid- to lower slopes. Also, short bedrock (gypsum) cliffs (2-3 m high) outcrop in an area of elevated terrain southeast of the wetland, which were carefully explored for the presence of rare cliff ferns or similar plants.

Shrubby regenerating clear-cut areas cover the southwestern part of the Project footprint (approximately 5 ha; 25% of total area). This habitat is dominated by tall shrubs such as speckled alder (*Alnus incana*), willows (*Salix species*), and sapling trees (mainly white birch (*Betula papyrifera*) and trembling aspen (*Populus tremuloides*)). There are small open areas dominated by low shrubs such as blueberries (*Vaccinium myrtilloides*), sweet fern (*Comptonia peregrina*), and meadowsweet (*Spirea alba*). Ground cover such as rattlesnake fern (*Botrychium virginianum*) and Princes' Pine (*Chimaphila umbellata*) reflect the relatively rich nature of the calcareous soils.

Young mixed forest and immature softwood forest covers the Project footprint north of the wetland (approximately 10 ha; 50% of total area). These habitats are intermingled. Areas that are slightly more mature tend to have a higher proportion of softwood species, mainly balsam fir (*Abies balsamia*) and red spruce (*Picea rubens*). More recent clear-cut areas have a higher proportion of hardwood species such as white birch, red maple (*Acer rubrum*), striped maple (*Acer pensylvanicum*), and white ash (*Fraxinus americana*).

The young mixed forest habitat is dominated by young hardwood and softwood tree species 15 to 25 years in age. Ground cover in this habitat is typical of boreal forest with carpets of bunchberry (*Cornus canadensis*), star-flower (Trientalis borealis), yellow clintonia (*Clintonia borealis*), and star-flowered false Solomons' seal (*Maianthemum stellatum*). Again, the highly nutritious calcareous soil can support a number of less common plants such as grape fern (*Botrychium matricarifolium*), and a large number of orchids including Hookers orchid (*Platanthera hookeri*), tall northern green orchid (*Platanthera aquilonis*), and large round-leaved orchid (*Platanthera orbiculata*). The provincially uncommon plant pine-sap (Monotropa hypopithys) was observed in this habitat. It is ranked as S3 (fewer than 100 occurrences in NB) by the Atlantic Canada Conservation Data Centre (AC CDC) but is considered Secure by the Province, indicating that no special management practices are required.

Table 1: Observed Vegetation

Scientific Name	Common Name
Abies balsamia	Balsam Fir
Acer pensylvanicum	Striped Maple
Acer rubrum	Red maple
Acer sacharinum	Sugar Maple
Acer spicatum	Mountain maple
Achillea millifolium	Yarrow
Actaea rubra	Red Baneberry
Agrostis gigantea	Red Top Grass
Alnus incana	Speckled alder
Alopecurus aequalis	Short-awned Foxtail Grass
Amelanchier humilis	Serviceberry
Anaphalis margaritacea	Pearly Everlasting
Apocynum androsaemifolium	Spreading Dogbane
Aster acuminatus	Worled Wood Aster
Aster cordifolius	Heart leaved Aster
Aster macrophyllus	Large-leaved aster
Athyrium felix-femina	Lady fern
Betula cordifolia	Heart-leaved Birch
Betula papyrifera	White birch
Botrychium matricariifolim	Grape Fern
Botrychium virginianum	Rattlesnake Fern
Calamagrostis canadensis	Blue-joint (a grass)
Caltha palustris	Marsh Marigold
Carex aurea	Golden Sedge
Carex crinita	Fringed Sedge
Carex echinata	Star Sedge
Carex flava	Yellow Sedge
Carex gracillima	Graceful Sedge
Carex houghtoniana	Houghtons' Sedge
Carex intumescens	Bladder Sedge
Carex tribuloides	Blunt-broom Sedge
Carex utriculata	Beaked Sedge
Chimaphila umbellata	Princes Pine
Circaea alpina	Small Enchanters' Nightshade
Cirsium arvense	Canada Thistle
Clintonia borealis	Yellow Clintonia
Corallorhiza maculata	Spotted Coral-root
Corallorhiza trifida	Early Coral-root
Cornus alterniflora	Alternate-leaved Dogwood
Cornus canadensis	Bunchberry
Cornus stolonifera	Dogwood
Corydalis sempervirens	Pale Corydalis
Corylus cornuta	Hazelnut
Daucus carota	Queen-Anne's Lace
Diervilla lonicera	Bush Honeysuckle

Scientific Name	Common Name
Diphasiastrum complanatum	Ground Cedar
Diphasiastrum sabinifolium	Savin-leaved Clubmoss
Dryopteris carthusiana	Spinulose Wood-fern
Dryopteris cristata	Crested Shield-Fern
Echinocystis lobata	Prickly Cucumber
Eleocharis obtusa	Blunt Spikerush
Epilobium angustifolium	Fireweed
Equisetum arvense	Common Field Horsetail
Equisetum fluviatile	Water Horsetail
Equisetum pratense	Meadow Horsetail
Equisetum sylvaticum	Woodland Horsetail
Erigeron annuus	Daisy fleabane
Eupatorium maculatum	Joe-pye-weed
Euthamia graminifolia	Grass-leaved Goldenrod
Fagus grandifolia	Beech
Fallopia scandens	Climbing False Buckwheat
Festuca rubra	Red Fescue Grass
Fraxinus americana	White Ash
Fraxinus nigra	Black Ash
Gallium aperine	Cleavers
Gallium triflorum	Sweet-scented Bedstraw
Gaultheria hispidula	Creeping Snowberry
Geum allepicum	Yellow Avens
Glyceria striata	Fowl Manna Grass
Gymnocarpium dryopteris	Northern Oak Fern
Heracleum maximum	Cow Parsnip
Hieracium canadense	Hawkweed
Hypericum canadense	Canada St. Johns-wort
Impatiens capensis	Touch-me-not
Iris versicolor	Blue flag
Juncas alpinoarticulatus	Alpine Rush
Juncas brevicaudatus	Narrow-panicled Rush
Juncas canadensis	Canada Rush
Juncas dudleyi	Dudleys' Rush
Juncas effusis	Soft Rush
Lactuca biennis	Tall Blue Lettuce
Linnaea borealis	Twin-flower
Listera convallarioides	Broad-lipped Twayblade
Lonicera canadensis	American Fly-honeysuckle
Lycopodium anotinum	Stiff Clubmoss

Table 1: Observed Vegetation (Continued)

Scientific Name	Common Name
Lycopodium obscurum	Ground-pine (a moss)
Maianthemum stellatum	Star-flowered false Solomon's seal
Matteuccia struthiopteris	Ostrich fern
Mitella nuda	Naked Mitrewort
Moneses uniflora	One-flowered Pyrola
Monotropa hypopithys	Pine Sap
Monotropa uniflora	Indian Pipe
Myosotis laxa	Small Forget-me-not
Nemopanthus mucroatus	Mountain Holly
Onoclea sensibilis	Sensitive fern
Orthilia secunda	One-sided Pyrola
Osmunda clintoniana	Interupted fern
Phleum pratense	Timothy
Picea rubens	Red spruce
Pinus strobes	White Pine
Plantago major	Common plantain
Platanthera aquilonis	Tall Northern Green Orchid
Platanthera clavelata	Green Woodland Orchid
Platanthera Hookeri	Hookers' Orchid
Platanthera orbiculata	Large round-leaved orchis
Poa compressa	Canada Blue-grass
Populus tremuloides	Trembling aspen
Potentilla argentea	Silvery Cinquefoil
Prunus pennsylvanica	Chokecherry
Prunus virginiana	Pin Cherry
Pteridium aquillinum	Bracken Fern
Pyrola asarifolia	Pink Pyrola

Scientific Name	Common Name
Pyrola elliptica	Shinleaf
Ranunculus hispidus	Swamp buttercup
Ribes glandulosum	Skunk Current
Ribes lacustre	Swamp Currant
Rubus hispidus	Dewberry
Rubus idaeus	Raspberry
Rumex acetosella	Sheep sorel
Sagittaria cuneata	Arrowhead
Salix exigua	Small Pussywillow
Salix humilis	Sandbar Willow
Sambucus racemosa	Red berried elder
Scirpus hattorianus	Mosquito Bulrush
Senecio aurius	Golden Ragwort
Sonchus arvensis	Field Sow-thistle
Sorbus Americana	Mountain Ash
Stellaria graminea	Common Stichwort
Streptopus lanceolatus	Twisted-stalk
Thalictrum pubescens	Tall meadow rue
Trientalis borealis	Star-flower
Trifolium aureum	Hop clover
Trifolium hybridum	Alsike clover
Trifolium pratense	Red clover
Trillium cernuum	Nodding Trillium
Trillium undulatum	Painted Trillium
Tussilago farfara	Colts foot
Typha angustafolia	Narrow-leaved Cattail
Typha latifolia	Common Cattail
Vaccinium angustifolium	Lowbush Blueberry
Vaccinium myrtilloides	Velvet-leaf Blueberry
Vaccinium oxycocos	Small Cranberry
Vicia cracca	Cow vetch

Also, a small group of black ash (*Fraxinus nigra*) trees were observed in this habitat (see Figure 1). This species is not rare but is sometimes of concern to local aboriginal communities as a source of material for traditional crafts. The co-ordinates of this occurrence is included in Attachment 3, so that if Aboriginal consultation is required during the Project permitting process, the presence and location will be available. Typically, when this becomes an issue, the concerned Aboriginal group is given the opportunity to harvest the material prior to Project clearing.

The immature softwood habitat is composed of 25 to 35 year old spruce/fir forest. The trees are densely crowded and the crown closure is complete, blocking out most sunlight. Ground cover is sparse on the forest floor but is consistent with boreal forest habitat. The vegetative diversity is much lower in the pure softwood stands due probably to the diminished light and possibly to acidification of the upper soil by acids leaching through the needle layer, which covers the forest floor.

The wetland is composed mainly of beaver impounded open water and shrubswamp. It is part of a larger wetland which stretches up- and downstream along the watercourse. It has been mapped on the NB Wetland Atlas (ID Number: 102-39-2) and was given a Golet score of 69.5. The Golet score is a measure of suitability to wildlife. A score above 60 is good, while a score above 80 is exceptional. The wetland is sharply confined within a steep sided stream valley.

The slope around the wetland rises (3-4 m) within approximately 30 m from the wetland edge. This steep slope has experienced little disturbance from surrounding timber harvesting activities and the forest is mature softwood. Several small colonies of a plant species of special concern, spotted coralroot, were observed on this slope (see Figure 1) with the greatest concentration on the north side of the wetland. Spotted coralroot is considered Sensitive by the Province, indicating this species may require special attention or protection to prevent it from becoming “at risk”. Also, the uncommon plant, broad-lipped twayblade (*Listera convallarioides*) was observed in this habitat. It is ranked as S3 (fewer than 100 occurrences in NB) by the AC CDC but is considered Secure by the Province, indicating that no special management practices are required.

Bird species observed in the Project footprint included small passerine species such as boreal chickadee (*Parus hudsonicus*), white-throated sparrow (*Zonotrichia leucophrys*), common crow (*Corvus brachyrhynchos*), and downy woodpecker (*Dendrocopos pubescens*). No nests were observed. Some potential nesting cavities were identified in old trees around the wetland margin but no nesting activity was observed. Numerous tracks were observed including deer (*Odocoileus virginianus*), moose (*Alces alces*), bear (*Ursus americanus*), and porcupine (*Erithizon dorsatum*). Red squirrels (*Tamiasciurus hudsonicus*) were abundant. No critical habitat for herpetiles was observed within the Project footprint.

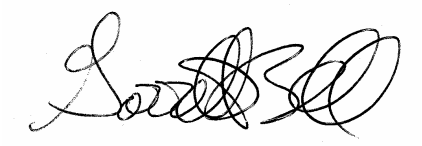
Vegetative diversity overall is relatively high due mainly to the calcareous soil but past and recent disturbance from timber harvesting activities have significantly reduced the potential for critical habitat of species at risk to be present within the Project footprint. It should also be noted that there is a large area of similar habitat types in the region surrounding the Project. No species at risk were observed within the Project footprint, however, the presence of a plant species of special concern in close proximity to the Project will require special consideration. It is recommended that locations of spotted coralroot be avoided by a buffer of 20 m. This is to

ensure that the existing habitat is not changed through direct disturbance, site run-off, or increased sunlight caused by Project clearing. Co-ordinates for locations of spotted coralroot are provided in Attachment 3.

We wish to point out that a Watercourse and Wetland Alteration (WAWA) permit must be obtained from the New Brunswick Department of Environment and Local Government before any ground disturbing activities take place within 30 m of the wetland.

If you have any questions or concerns, or if we can be of any more assistance to you in this matter, please do not hesitate to contact us.

Sincerely,



Garrett Bell, CET
Environmental Technologist
Direct Tel.: +1(506) 450-8855
Direct Fax: +1(506) 450-0829
E-mail: garrett.bell@amec.com

GB/gb

ATTACHMENT 1

AC CDC Data Response

Bell, Garrett

From: S. Gerriets, Data Manager [sgerriets@mta.ca]
Sent: Wednesday, July 20, 2005 3:06 PM
To: Garrett Bell
Cc: 'Kate Bredin'; 'Sean Blaney'; 'Cindy Spicer'
Subject: ACCDC DATA RESPONSE 0000: <Elmtree NB> (ZAP=ZIP)
Importance: High
Attachments: INVOICEaccdc.doc; BACKGROUND.zap; Elmtree.zap

<SPECIAL NOTICE> Due to current Virus Alerts, the attached ZIP files have had their extensions changed to ZAP. Please copy to your hard-drive and then change the ".zap" back to ".zip" before unzipping the archive with WinZip.

Mr Bell,

Attached here are the data found in our GIS scan of the specified study area; the results are summarised below. Sorry this didn't get answered last week: vacations and AGMs intervened. Good thing you asked for 10km….

Sincerely,

Stefen Gerriets, Senior Data Manager
Atlantic Canada Conservation Data Centre
Box 6416, Sackville NB E4L 1G6
tel: 506-364-2657 fax: 506-364-2656

NOTE: Invoice attached.
NOTE: As per instructions, we have buffered the Study Area with a radius of 10km.

PLEASE READ CAVEATS (Section 5).

---

1. INTRODUCTION

1.1 DATA PRODUCTS
The ACCDC provides two categories of information concerning rare biota:
S-RANKs: The expert consensus on the rarity of a taxon in a jurisdiction;
EOs: Places in the natural landscape, which were observed to be utilised in a significant way by a rare taxon.

1.2 BILLABLE COSTS
NON-GOVERNMENT
FOR-PROFIT CLIENTS will be billed for ACCDC personnel time at the rate of $100/hr, 1 hr minimum.

1.3 DATA REPORT DOCUMENTS
Attached to this summary document is a compressed .ZIP archive with
2 map(s) (EO, MA+SA) in BMP format (see below for map symbology);
3 table(s) (EO, MA, SA) in DBF format (taxon ranks included in tables).
NOTE: DBFs may be opened from within most data applications, e.g. Excel.

1.4 SUPPLEMENTARY TEXTS
See attached Ranking document for explanation of S-Ranks.
See attached Data Dictionary for definition of data fields.
See attached Threat-Profile Texts for sensitive taxa.

---

2. STUDY AREA RESULTS

2.1 DATA DENSITY
A 10km buffer around the Study Area contains a relatively SMALL (quintile 1) number of rare taxa records: 7 records of 7 taxa from 4 sources. (Data Density: 0.02 rec/km2).

2.2 FLORA
A 10km buffer around the Study Area contains 5 records of 5 rare vascular flora, no records of 0 rare nonvascular flora (see attached *EO.dbf). It is reasonable to assume on ecological grounds that these rare flora taxa are likely to occur nearer to the site than shown. Please direct any specific questions to our botanist, Sean Blaney: (506) 364-2658.

2.3 FAUNA
A 10km buffer around the Study Area contains 2 records of 2 rare vertebrate fauna, no records of 0 rare invertebrate fauna (see attached *EO.dbf). Please direct faunal questions to our zoologist, Kate Bredin: (506) 364-2660.

2.4 SPECIAL AREAS
The GIS scan identified 3 Managed Areas with some degree of protected status, in the vicinity of the Study Area (see attached
The GIS scan also identified 4 Special Areas in the vicinity of the Study Area; such sites are known for exceptional biotic richn
*SA.dbf).

---

3. MAP SYMBOLOGY

3.1 BIOTA
- Vascular Flora occurrences are shown as yellow-green symbols;
- Nonvascular Flora occurrences are shown as blue-green symbols;
- Vertebrate Fauna occurrences are shown as red symbols;
- Invertebrate Fauna occurrences are shown as orange symbols;
- Wood Turtle watersheds shaded diagonally in green by number of sightings.
- COSEWIC Range Maps coloured by taxon.
- Marine Mammal observations: see attached legend (Background.zip);

Symbol shape indicates precision of geolocation:
- circle: within 100s of meters;
- triangle: within kilometers;
- square (small): within 5 kilometer grid,
  (medium): within 10 kilometer grid,
  (large): within 50 kilometer grid,
- diamond: within 100s of kilometers (also "in county").

Taxa are labeled on bitmap and in tables by Museum Code:
4 letters of genus, 4 of species (or 2 of sp, 2 of ssp).

3.2 ENVIRONMENT
- Buffer(s) around the Study Area is marked with a heavy red circle;
- Watersheds are shaded green for presence of Wood Turtle
- Rivers with fish are shaded light magenta;
- Wetlands are shown as light blue shaded circles;
- Peatlands are shown as light brown shaded circles;
- Saltmarshes are shown as yellow shaded circles;
- Roads are shown as light grey double-lines;
- Urban areas are shown as light grey grid-fill.

3.3 SPECIAL AREAS
- Managed/Protected Areas are shown as yellow polygons or shadowed yellow squares,
  point objects are surrounded by a magenta diamond representing size;
- Environmentally Significant Areas are shown as shadowed green squares;

---

4. DATA SOURCES

4.1 SOURCE ACKNOWLEDGEMENT
The recipient of this data shall acknowledge the ACCDC's collaboration and the Sources of the dataset in any documents, reports, publications or presentations by the Recipient in which the dataset makes a major contribution. Sources are defined as those persons or institutions listed in the CITATION field of each data record (see list below):

recs	source
1	Clayden, S.R. 1998. NBM Science Collections databases to 1998. New Brunswick Museum, Saint John NB.
3	Connell Herbarium Specimens. University New Brunswick, Fredericton. 2003.
2	Erskine, A.J. 1992. Maritime Breeding Bird Atlas Database. NS Museum & Nimbus Publ., Halifax. 82,125 recs.
1	Hinds, H.R. 1986. Notes on New Brunswick plant collections. Connell Memorial Herbarium, unpubl.

4.2 PROVINCIAL DATA SOURCES
For additional information on rare taxa and protected areas, or information on game animals, deer yards, old growth forest, archeological sites, fish habitat etc, please refer to:

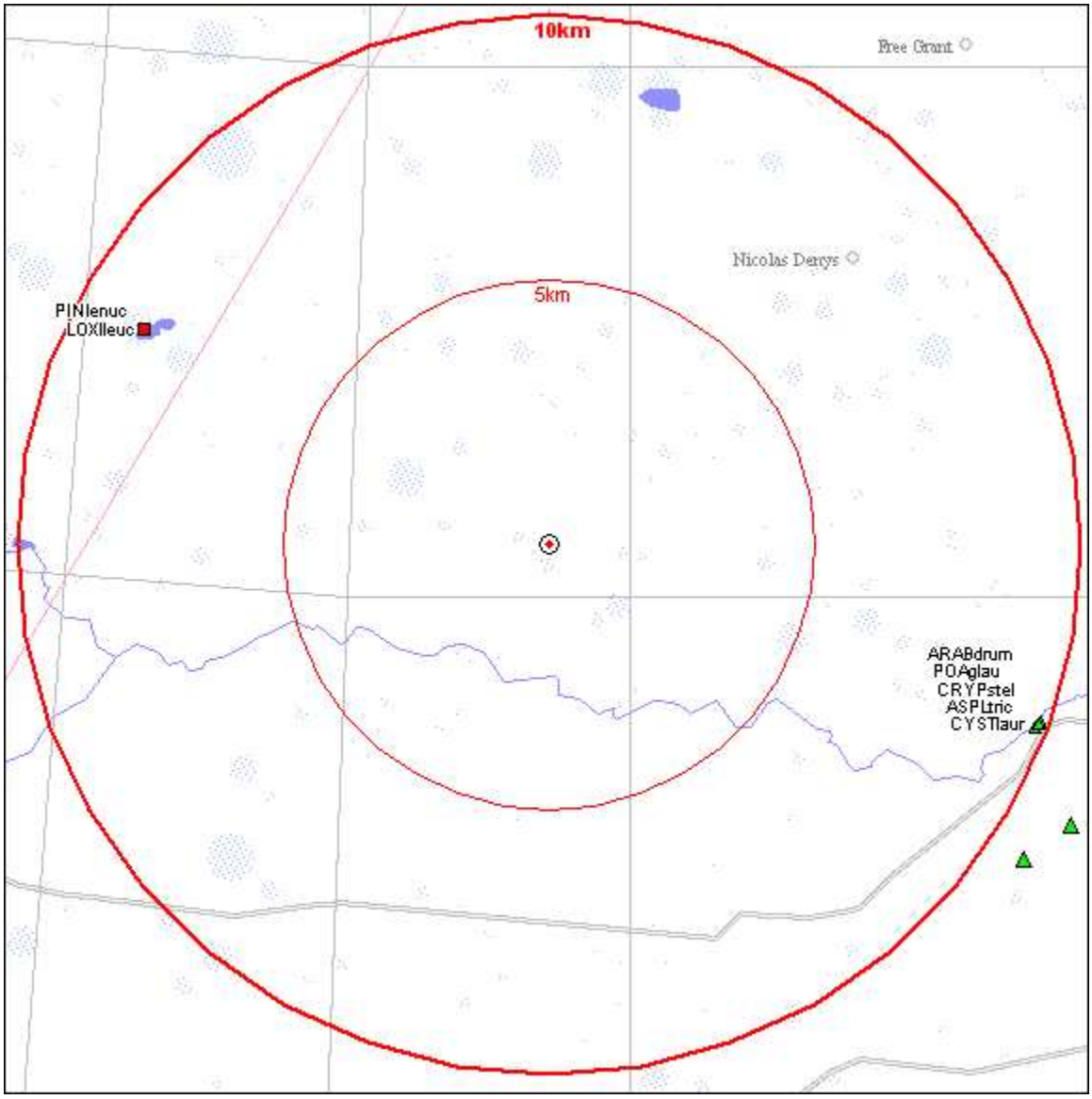
NB DNRE: Maureen Toner (506) 453-2440

---

5. CAVEATS

While the ACCDC makes a strong effort to verify the accuracy of all the data it obtains, generates and manages, it shall not be held responsible for any inaccuracies in any data that it provides. The following CAVEATS apply:

a.) ACCDC data is restricted to use by the specified Data User; any third party requiring data must make its own data request.
b.) To ensure the currency of data, the ACCDC requires Data Users to destroy all copies of data **12 months** after receipt; if data is still needed after that term, the ACCDC will supply current data as a replacement.
c.) ACCDC data responses are restricted to that data in our Data System at the time of the data request.
d.) Data is qualified as to location (Precision) and time (SurveyDate); cf attached Data Dictionary for details.
e.) ACCDC data reports are not to be construed as exhaustive inventories of taxa in an area.
f.) The non-occurrence of a taxon cannot be inferred by its absence in an ACCDC data report.


10km
Free Grant
Nicolas Denys
5km
PINlenuc
LOXIleuc
ARABdrum
POAglau
CRYPstel
ASPLtric
CYSTlaur

MCODE	GNAME	GCOMNAME	FRANCAIS	GRANK	SRANK	SURVEYSITE	LASTOBS
PINIenuc	Pinicola enucleator	Pine Grosbeak	Durbec des sapins	G5	S3	Millstream Lake	1989 07 19
LOXIleuc	Loxia leucoptera	White-winged Crossbill	Bec-croisÄ bifasciÄ	G5	S3S4	Millstream Lake	1989 07 19
ARABdrum	Arabis drummondii	Drummond Rockcress	Arabette de Drummond	G5	S2	Tetagouche Falls	1965 08 05
POAglau	Poa glauca	White Bluegrass	Paturin ê fleurs bleues	G5	S2	Tetagouche Falls	1981 08 15
CRYPstel	Cryptogramma stelleri	Fragile Rockbrake	Cryptogramme de Steller	G5	S3	Tetagouche Falls	1876 07 16
ASPLtric	Asplenium trichomanes-ramosum	Green Spleenwort	AsplÄnium vert	G4	S3	Tetagouche Falls	1981 08 15
CYSTlaur	Cystopteris laurentiana	Laurentian Bladder Fern	CystoptÅre Laurentienne	G3	S1	Tetagouche Falls	1965 08 05

EODATA	GENDESC
Activity: seen in suitable nesting habitat or ca.	
Activity: seen in suitable nesting habitat or ca.	
	Habitat: rocky gorge cliffs.
Abundance: rare.	Habitat: crevices of calcareous cliffs.
	Soil: NB130380.
Abundance: rare. Pheno.: fertile fronds.	Habitat: exposed rock crevices/ calcareous rock ledges. Soil: NB130380.
	Habitat: rocky gorge cliffs.

CITATION

Erskine, A.J. 1992. Maritime Breeding Bird Atlas Database. NS Museum & Nimbus Publ., Halifax. 82,125 recs.
Erskine, A.J. 1992. Maritime Breeding Bird Atlas Database. NS Museum & Nimbus Publ., Halifax. 82,125 recs.
Connell Herbarium Specimens. University New Brunswick, Fredericton. 2003.
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Clayden, S.R. 1998. NBM Science Collections databases to 1998. New Brunswick Museum, Saint John NB.
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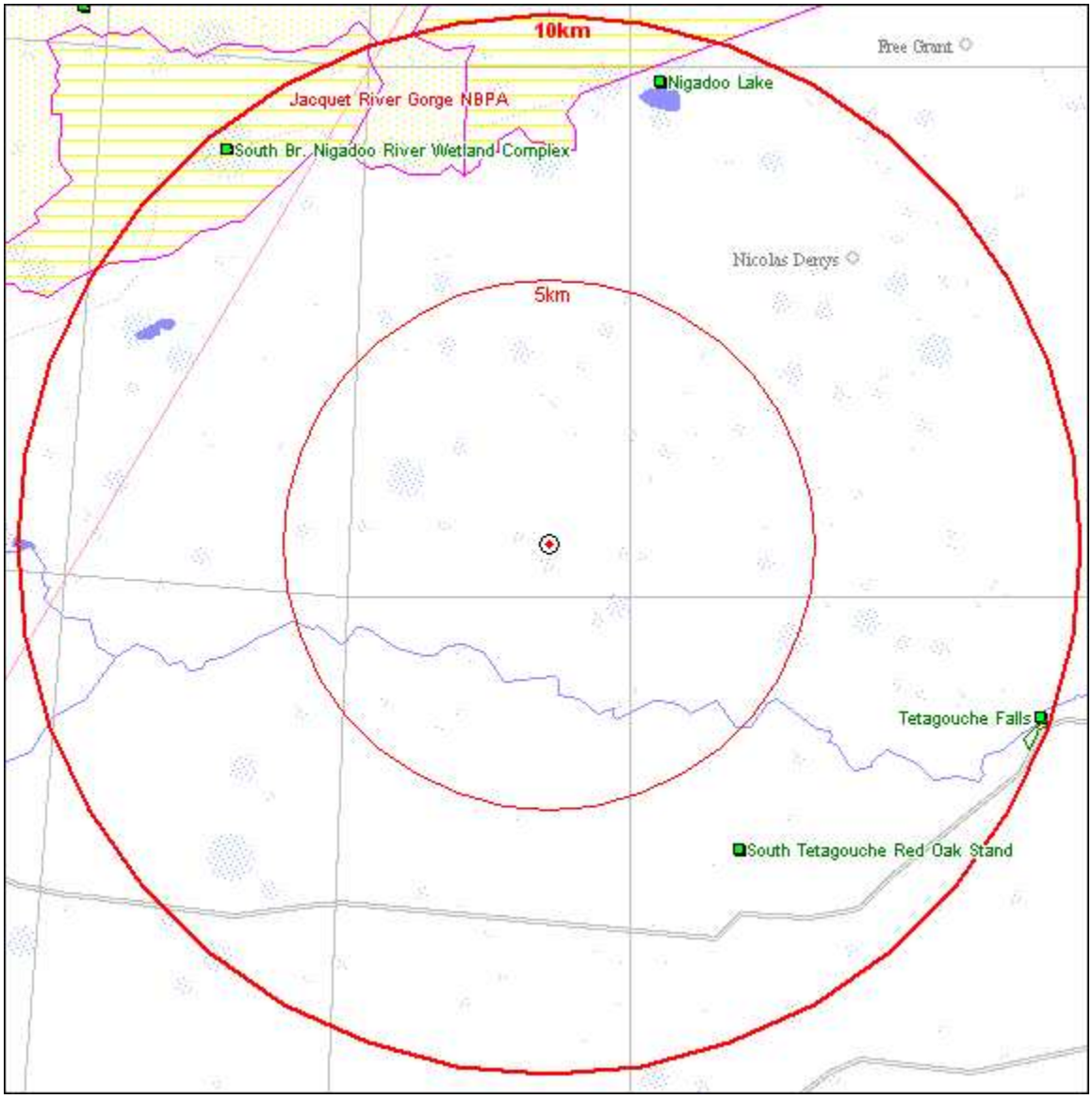
Hinds, H.R. 1986. Notes on New Brunswick plant collections. Connell Memorial Herbarium, unpubl.


10km
Free Grant
Nigadoo Lake
Jacquet River Gorge NBPA
South Br. Nigadoo River Wetland Complex
Nicolas Denys
5km
Tetagouche Falls
South Tetagouche Red Oak Stand

MANAME	SITECODE	LOCATION
South Br. Nigadoo River Wetland Complex	esa150	Southwest of Antinouri Lake and northeast of Millstream Lake, just west of the county line.
Nigadoo Lake	esa162	Approximately 15 km. west of Nigadoo.
South Tetagouche Red Oak Stand	esa168	On logging road that runs north and west from Route 180, west of South Tetagouche.
Tetagouche Falls	esa169	10km. west along South Tetagouche Road off Exit 310 from Route 11.

ADDTLTOPIC	DESCRIPTIO	CAT1	CAT2	CRIT1	CRIT2
Significant for wetland fish	one of the largest wetlands in the Region, traversed by several small brooks and dominated by shrub swamp.	WETLAND	FISH	6	
Significant for wetland	classic oligotrophic lake over 90 feet deep, only lake in the eastern NB deep enough to have a hypolimnion.	WETLAND		7	
Significant for forest	Red Oak stands are rare in the northern part of the province.	FOREST		7	
Significant for geology plant	Tetagouche River flows through very steep canyon with waterfalls and old dam. red slate with grey volcanic tuff	GEOLOGY	PLANT	6	2

CRIT3	PARISH	REGION	NBMAPS	ECOTYPE1	ECOTYPE2	RAREPLANT1
	DURHAM	Bathurst	15	STREAM	LAKE	
	BERESFORD	Bathurst	16	LAKE		
	BATHURST	Bathurst	16	AFBROAD		
14	BATHURST	Bathurst	16	RIVER	RIPBANK	Poa glaucantha Gaud.

MANAME	PROTSTAT	OWNER	DESCRIPT
Jacquet River Gorge NBPA	Limited Timber Harvest	Govt of NB	Hilly plateau and river gorges typical of Northern Uplands. Major regional watershed with low fragmentation
Jacquet River Gorge NBPA	Limited Timber Harvest	Govt of NB	Hilly plateau and river gorges typical of Northern Uplands. Major regional watershed with low fragmentation
Jacquet River Gorge NBPA		Govt of NB	Hilly plateau and river gorges typical of Northern Uplands. Major regional watershed with low fragmentation

ATTACHMENT 2

Site Photos

Immature softwood covers disturbed areas north of the wetland including the access road.

Young mixed forest covers much of the former clear-cut area to the north of the wetland.

Looking west across the beaver pond at the eastern edge of the survey area.

Marsh habitat along the watercourse in the western part of the survey area.

Roadway is typically 5 to 6 m wide with variable degrees of overgrown vegetation.

Shrubby regenerating (recent) clear-cut covers large areas to the southwest of the wetland where only a narrow (30 – 50m) buffer zone of forest now borders the wetland.

Immature to mature hardwood covers the north (south facing) slope above the wetland.

Mostly mature softwood covers the south (north facing) slope above the wetland.

Hundreds of spotted coral-root (Corallorhiza maculata) plants are scattered in small groups along the lower slope adjacent to the wetland.

Close-up of spotted coral-root (*Corallorhiza maculata*) flowers.

ATTACHMENT 3

Selected Plant Locations

Selected Plant Locations

Plant Species	Co-ordinates	
	Longitude	Latitude
Spotted coralroot (Corallorhiza maculata)	-66.0685105	47.6505858
Spotted coralroot (Corallorhiza maculata)	-66.0693849	47.6506501
The above two locations represent the east and west edge of a large concentration of individuals		
Spotted coralroot (Corallorhiza maculata)	-66.0689933	47.6499152
Black Ash (Fraxinus nigra)	-66.0713375	47.6508862

Longitude & Latitude in decimal degrees. Datum is WGS84.

Chemical and Agricultural
Limestone Products

Produits de Chaux
Chimique et Agricole

Elmtree Resources

ENVIRONMENTAL MANAGEMENT PLAN
FOR
ELMTREE RESOURCES LTD.
SORMANY WEST PROPERTY

April 2019

The following is an Environmental Management Plan for our Sormany West site. This plan addresses erosion, sediment control, material management/spill prevention and monitoring to be implemented during construction and operation. Also included in the EMP is a contingency plan to ensure that the proper steps are taking in the event of an emergency situation or an adverse condition.

Copies of the EMP will be kept at the main plant site at all times. The EMP will be reviewed with all employees and contractors working at the site. Construction and operation activities will be supervised to make sure that proper procedures are followed as described in this document.

Section 1: Project Description

The Sormany West site will consist of an open pit quarry operation where up to 200,000 tonnes per year of limestone will be extracted. Operations at the site will consist of drilling, blasting and hauling the limestone to the main crushing plant which is located approximately 2.5km east of the site. The site consists of two deposits which will be mined in two phases. The first phase will be for the South deposit and the second for the North. Within these phases, construction will be spilt up into sections as follows: Phase 1 will be the completion of the haul road to pit 1 followed by the logging of non-merchantable wood to finish with the removal of the overburden. Phase 2 will be a copy of phase 1 but for the Northern deposit which we will start on the second year of the project. The construction of each phase will consist of an upgrade of the access roads, clearing of woodlands, grubbing of the areas around the deposits, construction of settling ponds and installation of transmission lines. The power lines are to follow the upgraded routes leading to the new deposits. See Figure 1.0 for a site overview.

Note: There is no work to be performed within the 30m of a watercourse or within the Spotted Coral Root plant buffer zones seen in Figure 1.1 without the proper permits.

Section 2: Construction

Onsite construction will consist of an upgrade of the access roads, clearing of woodlands, grubbing of the areas around the deposits, construction of settling ponds and installation of power transmission lines.

2.1 Clearing

Prior to any clearing proper permits must be obtained from the Department of Natural Resources; cutting will take place in the months that are acceptable by the department. After each section is clear-cut all merchantable lumber will be removed from the property and the non-merchantable lumber will be spread out in the area designated

for the waste rock. As the Spotted Coral Root plants are at least 30 m away from the deposit, they will not cause any issues while the clearing of the deposit is happening.

2.2 Grubbing/Overburden Removal

The roots and stumps as well as the overburden will be removed with an excavator and sent to the waste rock locations where it will be spread and compacted in lifts of no more that 1m throughout the area. A slope of 18 degrees or less will be kept around the perimeter of the pile. See Figure 2.0 for more details.

2.3 Road Upgrade

Access roads will be built as per the specs shown in Figure 2.1. Any clearing/grubbing will be performed as described in sections 2.1 and 2.2.

2.4 Construction of Settling Ponds

The settling ponds will be constructed as per the specifications seen in Figure 2.2. The settling ponds will be located at the areas shown on the Figure 1.0; clearing of the areas will be carried out as described in Section 2.1. Once the construction of the settling ponds is completed the pond walls as well as the disturbed area around them will be seeded with a grass seed mix which we have successfully used in the past for erosion control.

Section 3: Operations and Maintenance

Operations onsite will consist of drilling, blasting, removing the limestone from the site and dewatering of the pits.

3.1 Operations of Heavy Machinery

Preventative maintenance will be performed on all machinery at the suggested hours. Operators will always inspect the machines prior to operating them. Trucks used to haul the rock will be in good operation conditions, have preventative maintenance done on a regular basis, inspected prior to operation, not be overloaded and driven within their limits. Any working equipment will be free of any loose petroleum fluid or lubricants harmful to the aquatic environment. No petroleum products or lubricants will be stored in close proximity to any watercourse.

3.2 Fuelling of Heavy Machinery

All heavy machinery will be fueled at the main plant site whenever possible. Equipment that will need to be fueled onsite (mostly track equipped machinery) will be done via a portable Intermediate Bulk Container (IBC) fuel tank which sits on the back of a ½ ton truck.

3.3 Blasting Operations

Blasting at the facility will be conducted as described below:

(a) An insurance policy, as described in Section 4(1) of the Blasting Code will be in force, and copy will be provided to the Approvals Branch upon request;

(b) Prior to a blast a warning by means of an audible signal will be performed as described in Section 9(b) of the Blasting Code;

(c) Blasting will be conducted such that ground vibration at any building, residence, or structure subject to blast effects does not exceed a peak vector sum particle velocity of 1.25 cm/sec and that the air-blast does not exceed 128 decibels on the linear scale as generally described in the Section 11 and 12 of the Blasting Code;

(d) Blasting will be conducted such that that fly-rock lands within the Elmtree property.

(e) Blasts will be monitored for ground vibration and air-blast in the manner and at the locations as directed by the Approvals Branch.

(f) In order to prevent ammonia residue from reaching a water course, a water-resistant bulk emulsion will be used as apposed to a non-water-resistant ANFO / AMEX. Any remaining emulsion (dripping/spilling) at the top of the hole during filling will be put back into the column prior to stemming.

3.4 Pit Pumping

Once water builds up in the pits becomes a problem, the water will be pumped out to the settling ponds. During the operating season, periods of heavy rain and / or spring runoff the pumps will run on a continuous basis. During the off-season water will be pumped intermittently in order to keep the water levels low enough to safely operate.

3.5 Settling Ponds

The settling ponds will be operated as follows:

(a) If possible, the facility will be operated such that there is no *direct* discharge of quarry water into any surface watercourse. *Indirect* discharge by percolation into the groundwater system, after suitable residence time in the sedimentation ponds, is acceptable; As the terrain is relatively flat, the water will slowly make its way through the porous rock over time, making its way back to the non-adjacent watercourse.

(b) In the event that the percolation rate of the ponds is not fast enough and the ponds have to discharge by means of a spill way, the spill way will be equipped with an energy dissipation structure such that excessive erosion outside the pond is prevented;

(c) If direct discharge to any watercourse is necessary, a grab sample will be taken on a daily basis at the quarry sump, the discharge point of the sedimentation ponds, and the point where the discharge enters the watercourse and the samples will be tested for pH and total suspended solids (TSS);

(d) The pH of a grab sample of any water directly discharged to a surface watercourse shall be between 6.0 and 9.5 and the total suspended solids must not exceed 15 mg/L at the point of discharge to the watercourse;

(e) In the event that the pH or TSS levels are not within the required limits, pumping activities will be ceased for 24 hours after which pumping will resume and the effluent will be retested;

(f) Whenever necessary, to maintain operating efficiency, the accumulated silt in the settling ponds and the quarry sumps shall be removed and disposed of in a manner and at a location acceptable to the Approvals Branch.

3.6 Waste Rock

Waste rock will be stockpiled onsite in the designated areas in lifts of 1-2 meters throughout the area with slopes of 18 degrees or less around the perimeter as shown in Figure 2.1**.** The waste rock piles will be limited to 3 to 4 meters in height making it easier to revegetate and bring the area back to a natural landscape.

3.7 Dust Control

The haul road between the site and the plant will be sprayed with calcium if it becomes too dusty.

3.8 Road Maintenance

All access roads will be graded as often as needed during the production season.

3.9 Solid Waste

All the solid waste generated at the site will be brought back to the main plant site and placed in the dumpster which is emptied on a regular basis.

3.10 Noise Control

The facility will be operated in such a way that noise emission does not adversely impact off-site receptors. In the event noise emission impacts do occur, Elmtree will mitigate the noise emission at such a time and in such a manner as directed by the Approvals Branch. Over the 20+ years of operation at the Main Sormany deposit, no noise complaints have ever been filed.

Section 4 – Contingency Plan

4.1 Emergency Response Measures

In the event of a spill the plant manger will be contacted.

Plant Manager: Todd Kenney
Phone #: 506-546-6017
CB channel: 12

4.2 Spill Clean-UP

The following is the clean up procedures which are to be implemented in the event of a spill:

1) fuel/oil spill from a piece of heavy machinery or tractor trailer

   In the even of an accidental fuel/oil spill absorbent pads will be placed to absorb the spill. If any soil becomes contaminated it will be removed and replaced with

clean fill. The contaminated absorbent pads and contaminated soil will be disposed of at the Nepisiguit – Chaleur Solid Waste Site.

Oil absorbent materials will be kept in the warehouse at the main plant site. If additional spill clean-up materials are needed, they will be procured from North Shore Welding Supplies (506-546-9834) or Source Atlantic Bathurst (506-548-4411).

2) Tractor Trailer Spill

In the event of a tractor trailer roll over the material will be picked up with a loader or an excavator and any fluid from the tractor will be dealt with as previously mentioned.

4.2 Emergency Reporting

Elmtree Resources Limited will immediately report to the Department of Energy and Resources Development, emergencies or situations where there has been a violation of the *Clean Air Act*, the *Air Quality Regulation, the Clean Environment Act*, the *Water Quality Regulation*, or of the Approval to Operate (I-5305), or where Elmtree Resources Limited has received complaints from the public regarding the facility, by phone to the Bathurst Regional Office at (506) 547-2080.

The Emergency Report shall include:

a) a description of the source, including the name of the owner or operator;
b) the nature, extent, duration end environmental impact of the environmental emergency, situation, or public complaint;
c) the cause or suspected cause of the environmental emergency, situation, or public complaint; and,
d) any remedial action taken, or to be taken, to prevent a recurrence of the environmental emergency, situation, or public complaint.

4.3 Discovery of Archeological Resources

In the event that archaeological resources are discovered, all work will cease near the find and the Tourism, Heritage and Culture Department will be contacted immediately at (506) 453-2738.

List of Figures

Figure 1.0 – Site Overview

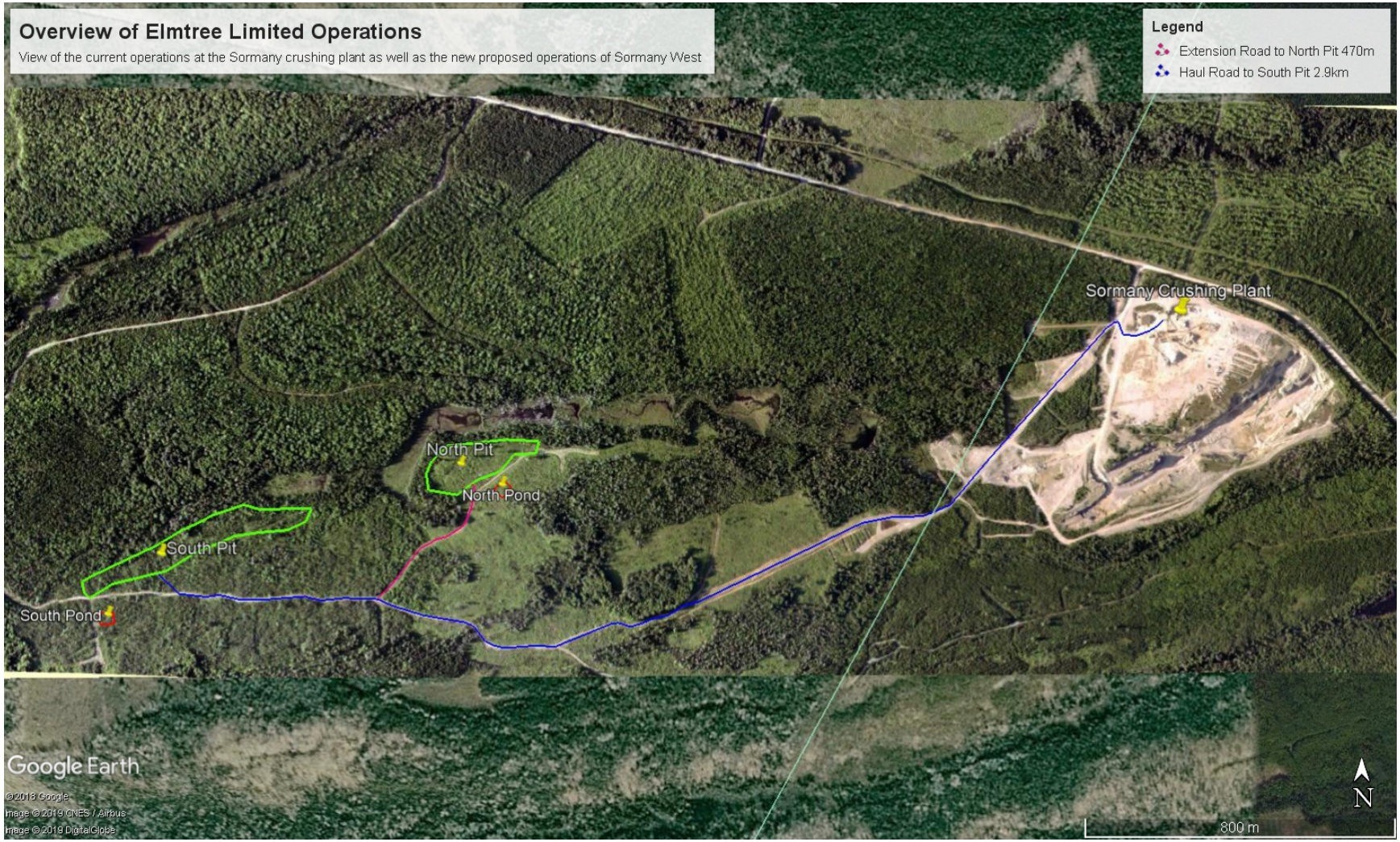


Figure 1.1 Location of provincially monitored species (Spotted Coral Root plant)

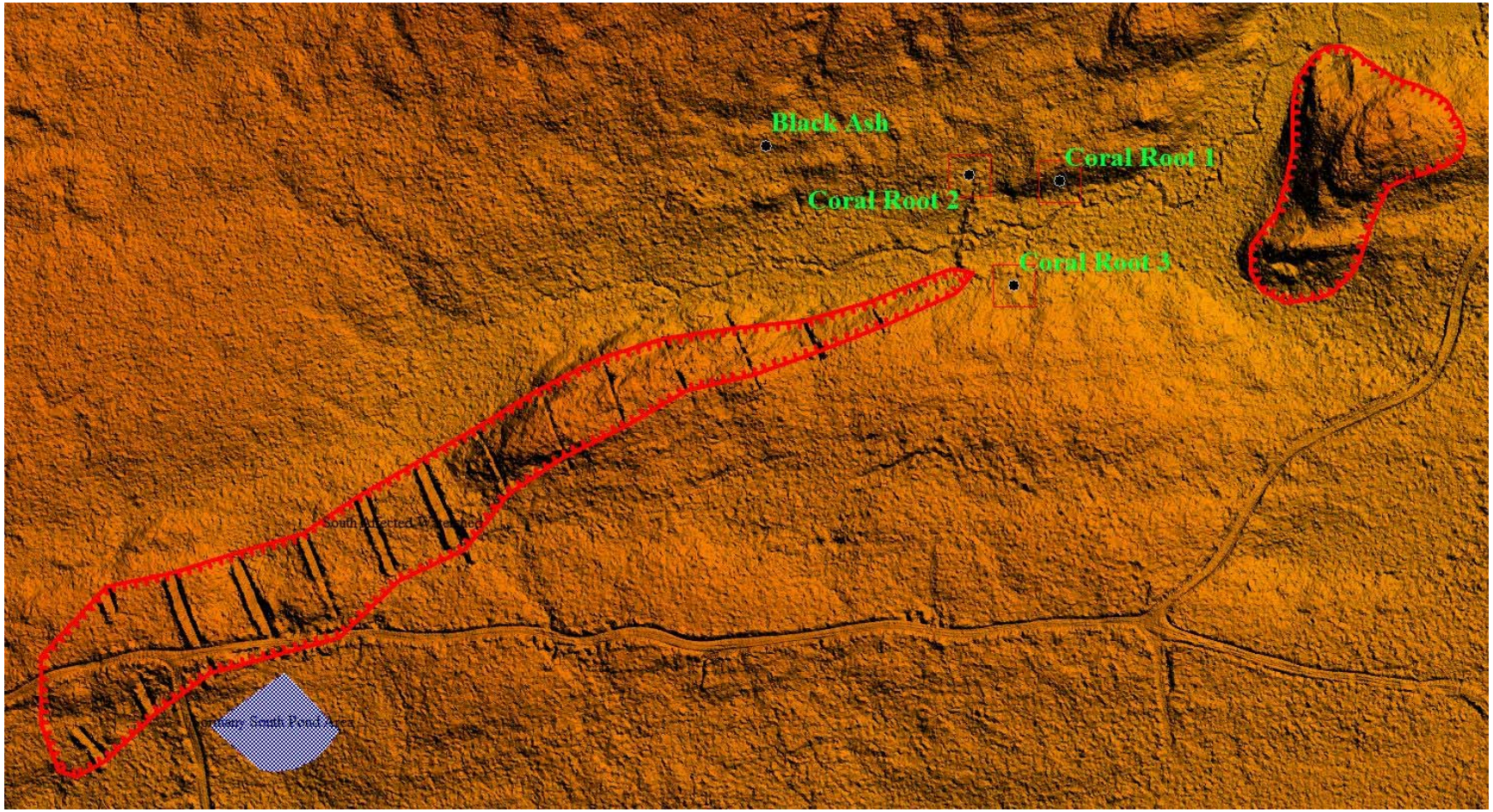


Figure 2.7.1 – Road Specifications

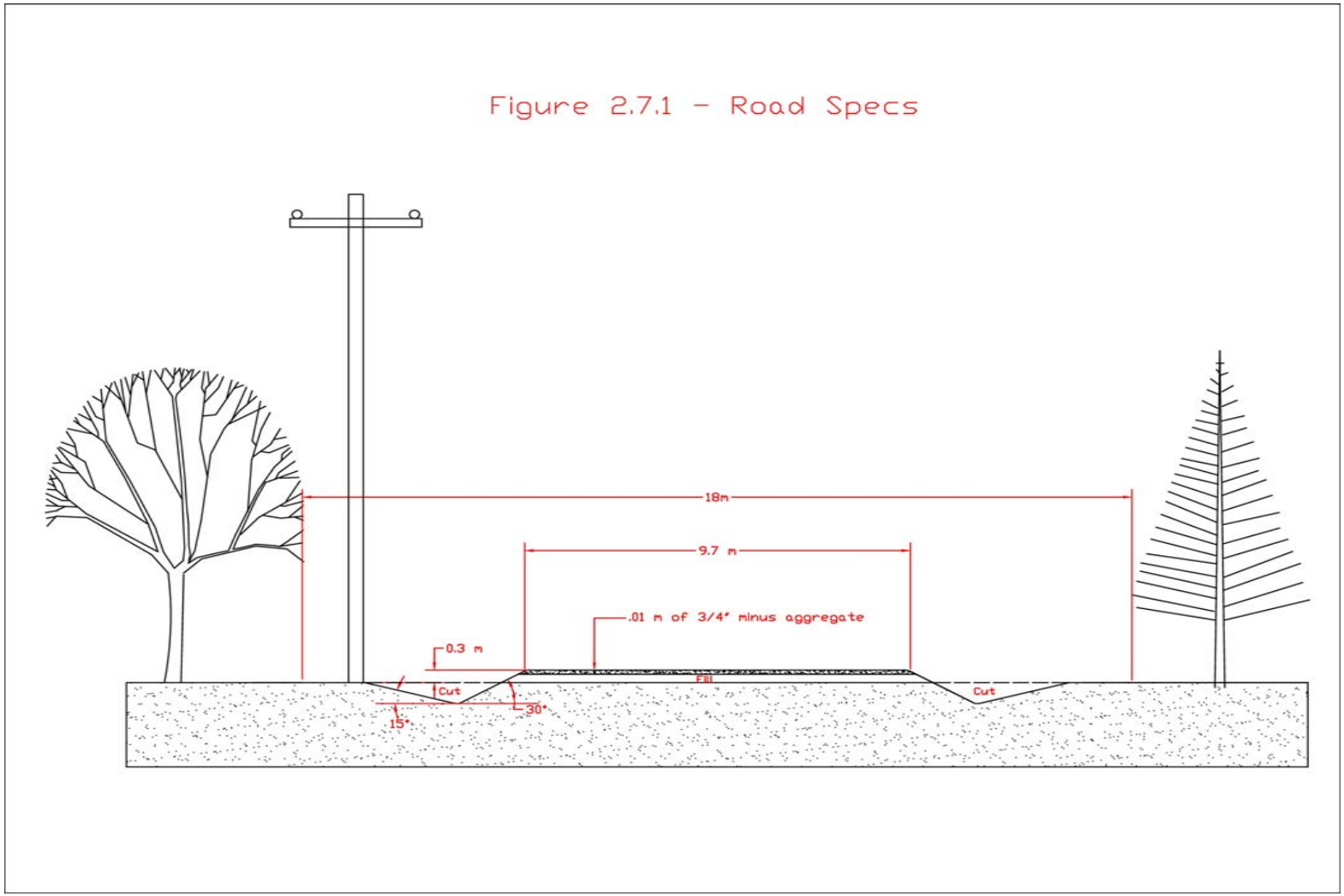


Figure 2.7.2 – Waste Rock and Grubbing Disposal Specifications

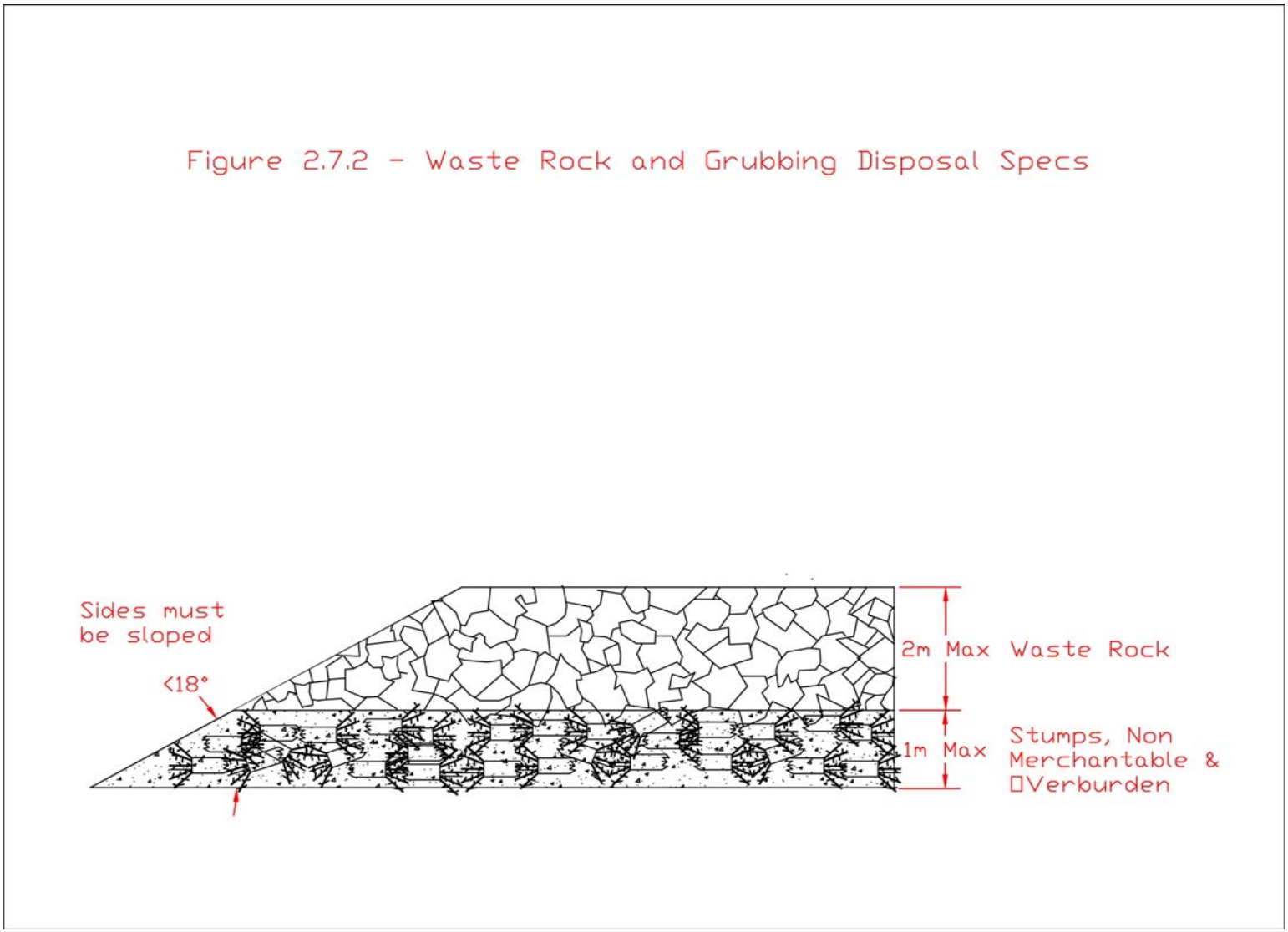
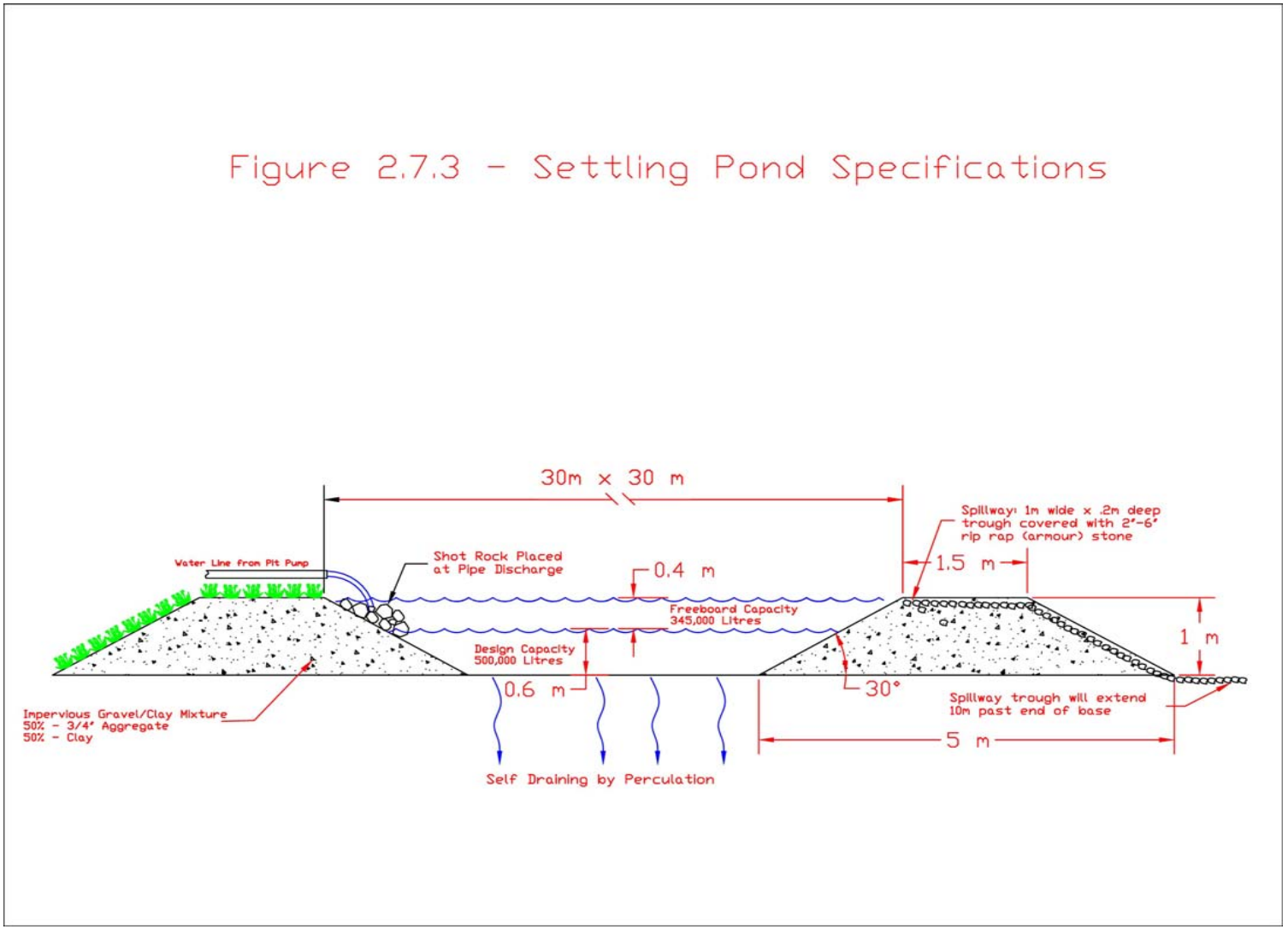


Figure 2.7.3 – Settling Ponds Specifications



Chemical and Agricultural
Limestone Products

Produits de Chaux
Chimique et Agricole

Elmtree Resources

Notice

Registration of Undertaking
Environmental Impact Assessment Regulation
Clean Environment Act
Opportunity for Public Comment

On 2019-xx-xx, Elmtree Resources Limited registered the following project with the Department of the Environment and Local Government under the *Environmental Impact Assessment Regulation, Clean Environment*: ***Sormany West Limestone***

Elmtree Resources Ltd. currently operates an open pit limestone mining operation located approximately 12 km west of the Chaleur Snowmobile Club in Sormany, NB. The current deposit that is being mined is nearing the end of its life. There is another known limestone deposit approximate 2km west of the mine that we would like to develop once our current deposit is depleted. A map of the project site location with respect to nearby communities can be seen on the back of this page.

The project will consist of mining up to 200,000 tonnes of limestone each year and sending it to the existing crushing plant. Activities at the site will consist of drilling, blasting, loading and trucking. The new project will keep the current trucking / hauling traffic as is.

A copy of the registration document can be examined at the following locations: Elmtree Resources Limited main office, 155 Foley Street, Bathurst NB; Department of the Environment and Local Government, Bathurst, Suite 202, 159 Main Street, Bathurst; Department of the Environment and Local Government, EIA Branch, 2nd floor, 20 McGloin Street, Fredericton.

A copy of this projects description can also be viewed on the governments website on the following link:
https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment/registrations/2018.html

Any questions or concerns regarding the project purpose should be submitted to the proponent by xx-xx, 2019 to the attention of:

Andrew Rice
Production Engineer (EIT)
Elmtree Resources Ltd
755 Foley Street,
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Phone: (506) 655-7237
Fax: (506) 548-3137
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Site Location with Respect to Near by Communities