



**Natural Resources Canada
Canadian Forest Service**

TECHNICAL SPECIFICATION

FORESTRY PROJECT

**Completion of various forestry operations and related work
Valcartier Base (Base Va)
2022-20XX**

Canadian Forest Service
Natural Resources Canada

May 2022

The purpose of these technical specifications is to provide information on the implementation of the service exchange agreement as well as certain clarifications regarding Natural Resources Canada (NRCan)'s and the Contractor's respective contractual obligations. This document is intended to supplement the information contained in the Request for Proposal.

1. EXECUTION OF WORK OF CATEGORY A AND B

1.1 The Contractor shall have the work done and completed in accordance with this contract and the directives of the Natural resources Canada (NRCan) representative responsible for approving or accepting the work. A meeting with NRCan representatives and officials from Base Va shall be held before the work begins in order to approve the work plan and coordinate the work. If necessary, meetings could be held throughout the duration of the contract. The Contractor must take into account that the territory is used for military purposes first and foremost. The equipment needed to carry out the work shall be chosen taking into account the characteristics of the site and the silvicultural prescription (sensitivity, bearing capacity, soil type, period of operation, number of stems per hectare, spacing of stems) rather than equipment availability. NRCan reserves the right to delay or cease any work, such as mechanized or manual logging, if lumber stocks in the cutting area exceed forwarding capacities. NRCan reserves the right to refuse to use equipment if it deems that the quality of the operation may fall short of the forest management objectives or the equipment or if the equipment poses an environmental risk.

1.2 Before the work begins, the Contractor must inform all its employees and sub-contractors of all the requirements set out in the contract, the plans, the specifications and the appendixes, including compliance with mitigation measures for environmental impacts and safety and security measures. The operations manager must...

1.3 The Contractor shall keep existing roads open at all times and shall be responsible for creating access roads to the work sites and keeping them open while the work is under way. When the work in an area is completed, or upon request, the manager shall be responsible for restoring the road system (road surface finish, shoulders), ditches and infrastructures to their original state, to the satisfaction of NRCan.

1.4 The Contractor shall indicate as soon as possible any changes to the initial work plan (schedule, machinery to be used, number of workers, etc.) or any other changes that may affect the project.

1.5 Due to the primary purpose of the land and training schedules, there may be times during a harvest season when the area where forestry operations are conducted is subject to an unplanned temporary closure. If the closure of the area was not initially planned, NRCan will move the equipment to another area of the Base at its expense, if possible. The Contractor shall also expect that more than one area will be harvested during a season. The Contractor shall budget for these relocation costs in its operating costs.

1.6 Summary of the primary responsibilities of the Contractor:

1. Carry out requested category A and category B work in a manner that respects the environment and in accordance with professional practices and standards.
 2. Establish woodpile sites to meet his needs and subsequently clean them up (both winter and summer roads).
 3. Supervise employees and subcontractors and regularly monitor the quality of work
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performed.

4. Clear the right-of-way (timber harvesting) for winter and summer roads and pay the same stumpage fees for timber volumes from those sectors.
5. Recover all wood volume affected by harvesting operations including wood affected by road construction operations.
6. At the request of NRCan, offer the technical support of a forestry engineer and/or forestry technicians for the realization of different types of forest inventory, the preparation of silvicultural prescriptions, the delimitation of area.
7. Conduct tree marking according to silvicultural prescriptions provided by NRCan
8. Market all merchantable volumes of wood more than 9 centimetres in diameter at the small end (including slasher-generated hardwood ends).
9. Measure the area treated by all category A and category B work when supervised by the Contractor using a GPS with a minimum precision of 2–5 metres.
10. Conduct quality post-work inventories. At the request of NRCan, provide the results of these inventories when billing for work.
11. Mark stream protection strips and stream centers.
12. Produce revenue and expenditure reports using a template approved by NRCan.
13. Apply mitigation measures provided in the projects' environmental evaluation.
14. Obtain up to three separate bids for work not listed in Bid Form B

1.7 Summary of the main responsibilities of NRCan:

1. To carry out forestry planning
2. Using tape, delimit the perimeter of the areas to be treated.
3. Authorize the intervention methods to be used, access to intervention sectors and locations where timber is to be stacked.
4. Provide guidance to the Contractor's operations manager in the performance of assigned tasks. Ensure compliance with the terms and conditions of the contract.
5. Inform the Contractor about any constraints that could interfere with operations.
6. Make sectors accessible based on reasonable skidding distances (horizontal linear distance between the main road and the end of the harvest block of 350 m in summer and 500 m in winter).
7. With regard to the construction of summer and winter roads, NRCan agrees to take care of (payment for work from accumulated credits) the road shaping work (power shovel, bulldozer, sand and gravel if needed). At the end of the road, there will be a turn-around area for trucks that haul timber (NRCan will determine the dimensions).
8. Approve the final survey of treated areas based on the shapefiles provided by the Contractor. Produce the final survey of the sectors (surface area measurements) using the shapefile furnished by the Contractor. Conduct inspections during and after the work is done, to check that the work complies with the technical specification. Conduct the environmental evaluations of projects.

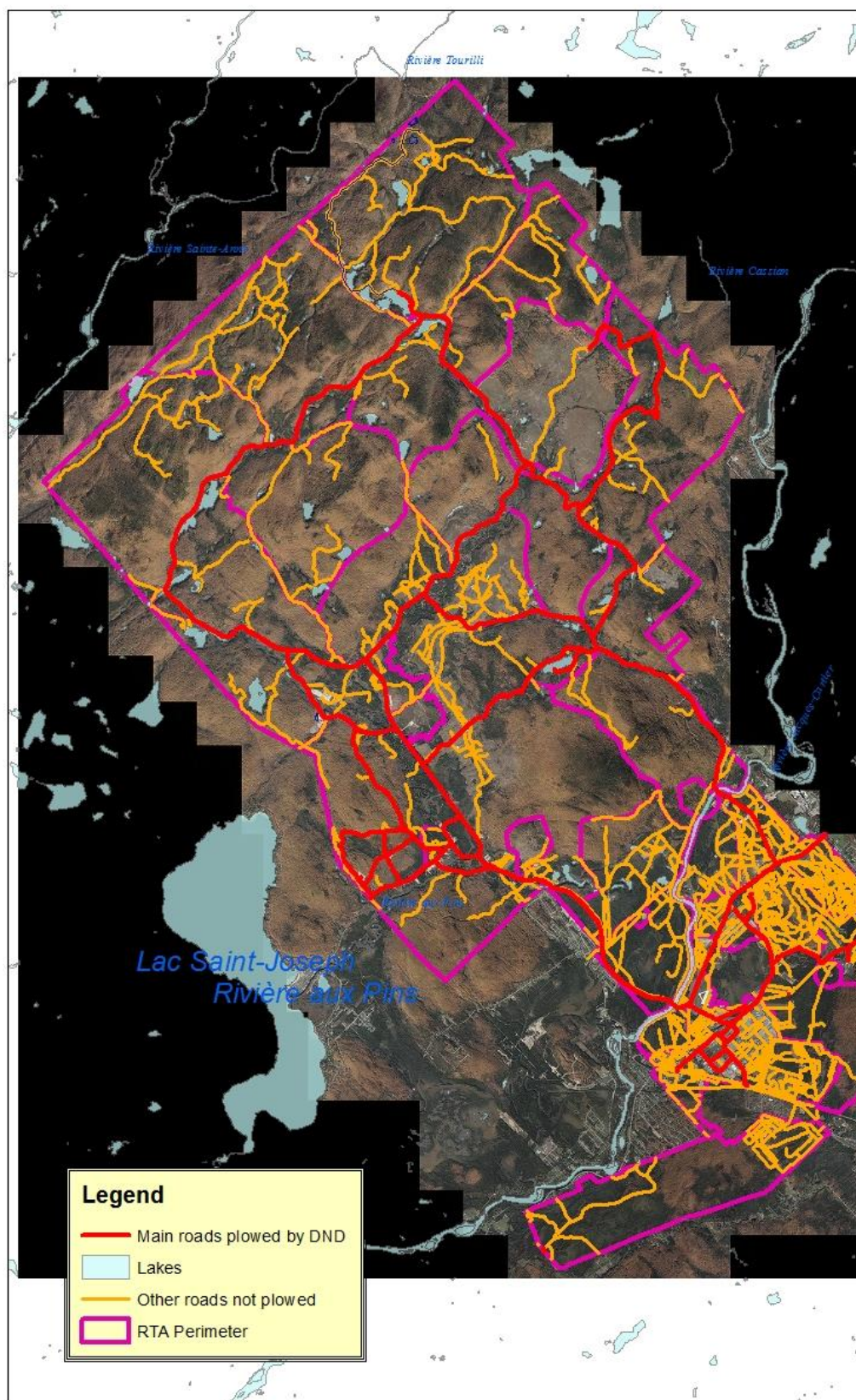
1.8 Silviculture prescriptions will be provided to the Contractor before the beginning of any category A and category B work. The Contractor shall take all necessary measures to achieve the success criteria for each treatment.

For category A work, refer to the *Guide sylvicole du Québec* for a description of treatments and success criteria. The per hectare rates in Bid form B will be paid by NRCan provided that the removal is in accordance with the silvicultural prescription. Penalties will be applied where work is not in compliance.

For category B work, the Technical reference booklet (*Cahier de reference techniques en forêt privée*) ;will serve as a reference document regarding the inventory methods used before and after treatment, the minimum success criteria and applicable penalties in case of unsatisfactory performance.

1.9 The DND's snow removal team ensures complete winter maintenance on the main roads on the Va Base's territory. Roads maintained by DND are shown in red on the attached map. For secondary roads providing specific access to harvesting sites, the Contractor will be fully responsible for snow removal, road sanding and any other operations necessary to ensure that transportation operations are efficient and safe. The Contractor is responsible for providing all the equipment required to enable access to the work site by work crews and timber transportation trucks. Road conditions must remain safe for all users at all times. Snow removal costs will be negotiated annually by mutual agreement by considering the length of the road to be cleared, the duration of the work site, the volume of snow to be collected, the cost of fuel and the difficulty coefficient of the road network to be maintained. Regarding sanding operations, free sand from a borrow pit will be made available to the Contractor on Base Va. The loading site will be designated by NRCan. Sand loading and transportation will be at the Contractor's expense. NRCan may request financial compensation for snow removal operations carried out by DND that exceed the conditions stated above or when the expected timeframe is not respected by the Contractor.

Main roads plowed by DND



2. AVAILABILITY OF WORKERS AND MACHINERY

The Contractor agrees to make available, at an opportune time, the human and material resources required to carry out the forestry operations (category A work) as well as category B work. Unless otherwise specified by NRCan, the Contractor cannot delegate its contractual responsibilities to subcontractors. If necessary, for work that is not described under category A or B operations, NRCan can provide a technical specification describing the tasks to be performed.

In the event that the Contractor fails to make available equipment listed in Part B bid table, after giving 15 working days' advance notice to that effect, NRCan reserves the right to retain a subcontractor of its choice having similar equipment.

In the event that the Contractor has to hire a subcontractor to carry out the work, the Contractor must conduct the necessary research to find a competent subcontractor for the best price and must enter into a formal contract with the subcontractor without shirking its contractual responsibilities. In all cases, NRCan reserves the right of final approval of the subcontractors retained to perform category A and B work.

At the request of a NRCan representative, the Contractor shall take steps to obtain the services of specialized suppliers (e.g., shredder, TRH brush cutter, ATV, trailer for hauling).

3. Machinery, Service Units and Inspections

The Contractor shall provide for the use of machinery that is 10 years old or less as part of this contract and in order to prevent damage to the environment. Equipment older than 10 years shall not be used unless approved by NRCan.

Upon arrival of the equipment on the Valcartier Base, NRCan will perform a visual inspection. The equipment cannot be used until the inspection has been completed and any non-conformities identified have been resolved. The equipment must be in good working order. No oil leaks will be tolerated. Hydraulic hoses shall not show any wear that would indicate a deterioration in their mechanical strength.

The service units will be inspected by the Valcartier Base Fire Department upon their arrival on the military base. The service units shall meet the following minimum standards:

- Canadian Electrical Code
- National Fire Code
- Natural gas and propane installation code
- Transportation of Dangerous Goods Regulations

Following the Fire Department's inspection report, the Contractor shall proceed with corrections as soon as possible. Service units with excessive deficiencies may be denied access.

On the Valcartier Base, any hot work (welding, metal cutting, etc.) requires a permit issued by the Fire Department. NRCan will assist the contractor in obtaining such a permit before the work is being performed.

4. WORK SCHEDULE

Unless stated otherwise, typical business hours are from Monday to Friday, between 6:00 a.m. to 6:00 p.m. Night and weekend work will only be authorized upon request in accordance with NRCan's requirements. No work will be permitted on national holidays.

5. APPLICABLE LAWS, REGULATIONS AND STANDARDS

All work must be carried out in accordance with standard practices and with the laws and regulations applicable in Quebec, particularly the standards and rules of the *Commission des normes, de l'équité, de la santé et de la sécurité au travail* (CNESST), of the *Commission des normes du travail*, and of the *Sustainable Forest Development Act*.

Work must be carried out in compliance with the *Regulation respecting the sustainable development of forests*, the *Environment Quality Act*, the *Forest Protection Regulation*, or with any other applicable forestry standards. Penalties provided for in the *Sustainable Forest Development Act* will be enforced if the Contractor commits any offences under the Act. Penalties specifically provided for in this agreement shall however prevail.

6. OPERATION RULES AND SECURITY

6.1 The Contractor shall comply at all times with the rules and procedures applicable to operation of the Base Va. In addition, every employee assigned to the project shall attend a training session (maximum 1 hour) on safety and security on military property and environmental compliance measures (POL, spills, etc.).

6.2 An operations manager, representing the Contractor, shall be present in the field daily during the performance of Class A work. For non-commercial silvicultural work, supervision of the work shall be performed on a regular basis by the Contractor.

6.3 When the operations manager is present on Va Base property, they must be equipped with a functional communication system in order to remain in constant communication with the range and training area's (RTA) control station and NRCan's representative. A portable radio (Motorola HT 1250) owned by the National Defence will be provided on loan by NRCan (the Contractor is nonetheless entirely responsible for this equipment). This radio must be functional and worn at all times by the operations manager, who should also have a spare battery in his possession at all times.

6.4 The Contractor shall ensure that its employees and equipment comply at all times with the traffic, safety and security regulations specific to Base Va. All personnel required to work in the Ranges and training areas will be required to undergo safety training by the Ranges and Training Areas staff. When travelling by vehicle, in addition to abiding by the speed limits, employees must slow down when they see troops on foot and must pay particular attention to dust.

6.5 The Contractor and all its employees are required to comply with the control and access procedures governing the use of Base Va land, in particular the main entrance and the gates to the ranges and training areas.

6.6 The Contractor shall comply with the regulations of the CSST in carrying out the work in question and shall ensure that workers have and use the proper safety equipment.

6.7 The Contractor shall comply with fire safety regulations (Appendix 2).

6.8 The Contractor shall comply with minimum forest fire prevention standards (Appendix 4).

6.9 The Contractor must comply with the emergency plan (Appendix 3). It must have an emergency plan covering injuries and spills and it must submit the plan to the NRCan representative.

6.10 The Contractor must comply with the environmental protection guidelines (Appendix 5).

6.11 Signs indicating that forestry operations are under way shall be placed along the road facing both directions at the start of each crew's work area. Special attention shall be paid to strategic locations or locations that pose a high accident risk (curve, narrowing of road, crossroads, etc.) and parking shall be avoided at those locations.

6.12 Any equipment used on Va Base property shall be in good working condition and free of oil or gas residues. The Contractor must place a tank and absorbent padding under the equipment that is prone to leak oil or gas when idle. All operators must have a sufficient supply of absorbent padding on board their equipment to soak up any minor spillage. Parking vehicles Va Base property for extended periods is prohibited.

6.13 Clean-up of ditches and woodpile sites and restoration of road system: As needed and at the end of operations in a given area:

- a) remove branches from ditches.
 - b) restore ditches damaged by machinery (damage to grade, original drainage).
 - c) restore the road system to its original condition before work began (roadway, shoulders) to the satisfaction of NRCan.
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- d) clean up woodpile sites to the satisfaction of NRCan no more than 30 days after the timber is removed. In winter areas, clean-up shall be completed by June 1st. All merchantable timber in those areas shall be sold (firewood, etc.). Timber (branches and ends 1 inch or more in diameter or 24 inches long or longer) that cannot be sold shall be spread evenly over the cutting area (around the woodpile sites). If there is too much logging debris in the woodpile sites, NRCan will require that it be buried. If clean-up is not done to the satisfaction of NRCan, NRCan will carry out the work at the Contractor's expense.
- e) restore natural drainage in cutting areas.

6.14 Any hourly-paid work must be approved on a daily basis by submitting a work order to be signed at the end of the day by the NRCan supervisor. NRCan will only pay for duly approved work orders. If the work order cannot be signed on the same day, it must be sent for approval by email the following day. Failure to comply with this rule will result in the non-payment of any work orders that the NRCan representative has not approved.

6.15 Where work is performed on an hourly basis, billable hours shall commence at the location where the work is being carried out. Personal travelling time is not billable. However, daily billing for bulk material transportation truck hours will begin and end at the control station for the range and training area.

7. HANDLING AND STORAGE OF HAZARDOUS MATERIALS

7.1 Refuelling stations for machinery, saws and brush cutters must be located at least 30 metres away from the nearest watercourse. Oil tanks and fuel tanks must be kept in the box of a truck or in a trailer.

7.2 Elimination of waste and oil: Dirty oil and other waste generated by the use of machinery shall not be disposed of in the forest. Containers of used hazardous materials shall be picked up and removed daily and placed in designated storage areas.

7.3 In the event that corrective action is not taken, NRCan will ask the operations manager to stop the machinery in question and, if necessary, remove it from the site. NRCan reserves the right to reject any machinery that is deemed to be defective. Spills of hazardous materials shall be the responsibility of the Contractor, and the Contractor shall clean them up immediately and dispose of the soiled material in an appropriate manner. The Contractor must have at least one emergency response kit on hand at all times. The spill response procedures and the contents of the spill kit are described in Appendix 5.

Spill report:

- a) The Contractor shall complete a spill report (available at the RTA) when the quantity spilled exceeds 20 litres.
 - b) The spill report must be sent to the Env O Va Base within 24 hours (submit the report to the NRCan representative, who will forward it to the Env O Va Base).
 - c) A spill report is not required for petroleum product spills of less than 20 litres on land. However, a spill report must be produced for any spill into a watercourse, even if the spill does not exceed 20 litres.
 - d) Provide evidence that contaminated soil and absorbent materials have been disposed of
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at a treatment facility.

7.4 All sites used to store material and equipment shall be cleared of waste and restored to their original condition. The areas where work is carried out shall be cleared of all waste resulting from the use of material and equipment. No waste (e.g., water bottles, cans, motor oil containers) will be tolerated at any time. The operation manager shall be responsible for enforcing this provision.

8. IMPLEMENTATION OF CONTRACT OPTIONS

8.1 Variations of the price of fuel

Under this contract, the Contractor is responsible for negotiating selling prices with its timber buyers that will enable it to offset the impact of fuel costs variation on its operating and transportation costs.

During negotiations for the inclusion of a contract option, NRCan may consider the impact of fuel prices when determining stumpage fees for the year covered by any such option. For such a scenario to be considered, an increase or decrease of fuel pump prices of at least 10% must be registered between the deposit date of the bid and the time of negotiations. In such a case, the average consumption in litres (L) per productive machine hour (PMH) and an average production of cubic metres (m³) of timber per PMH under a partial or total cutting regime will be used to determine the impact on the admissible stumpage fee. In the event of an increase or decrease of more than 10% from the initial selling price, the amount declared by the Contractor in the "Contract Information" section shall be adjusted for felling, skidding and crosscutting rates and for timber transportation to the processing mill. You will find below the consumption and production ratings that will be used to adjust the contract option rates, if applicable:

Tracked harvester:	Average consumption: 28 L/PMH CPRS productivity: 14.33 m ³ /PMH Partial cutting productivity: 10.33 m ³ /PMH
Forest forwarder:	Average consumption: 15 L/PMH CPRS productivity: 26.07 m ³ /PMH Partial cutting productivity: 19.55 m ³ /PMH
Chainsaw:	Average consumption: 5.87 L/PMH Productivity: 14.7 m ³ /PMH
Feller-buncher:	Average consumption: 35 L/PMH CPRS productivity: 31.8 m ³ /PMH Partial cutting productivity: 18.5 m ³ /PMH
Grapple skidder:	Average consumption: 25 L/PMH CPRS productivity: 26.3 m ³ /PMH Partial cutting productivity: 22.6 m ³ /PMH
Delimbing machine:	Average consumption: 25 L/PMH Productivity: 16 m ³ /PMH

Hauling truck: Average consumption of 65 L/100 km
Productivity: Varies according to destination and truck

Calculation example for a tracked harvester working on CPRS:

Fuel price at time of bidding: \$1.20/L
Fuel price for option year: \$1.50/L
Fuel price variation: \$0.30/L

Adjustment of harvest rate: $\$0.30/\text{L} \times 28 \text{ L/PMH} \div 14.33 \text{ m}^3/\text{PMH} = + \$0.59/\text{m}^3$

8.2 Snow removal

Snow removal costs will be negotiated annually by mutual agreement by considering the length of the road to be cleared, the duration of the work site, the harvest volume, the fuel price and the difficulty coefficient of the road network to be maintained. The Contractor is ultimately responsible for ensuring that road conditions remain safe for its operations and will not hold NRCan or DND liable in case of an accident. NRCan may request financial compensation for snow removal operations carried out by DND that exceed the conditions set out in the Request for Proposal or when the expected timeframe is not respected by the Contractor.

9. CUTBLOCK ACCESSIBILITY

Harvesting as part of this project will be carried out on slopes ranging from 0% to 40%. The Contractor is responsible for carrying out the necessary work to ensure that the machinery can safely access the cutblocks in an environmentally friendly manner. The costs related to these operations are the Contractor's responsibility. The Contractor shall take all necessary precautions to ensure that skid trails and temporary bridging will not harm the environment during their construction and shall also carry out all work necessary to limit potential future damage. To do so, the Contractor shall observe the following requirements during the construction of such structures.

9.1 Leveling skid trails

- Before starting any work, obtain prior approval from NRCan's representative for desired skid trail locations requiring ground levelling.
- Use wood debris in the skid trail's structure to divert runoff water toward areas of vegetation.
- Create water diversion dykes at an angle of 30–45 degrees to direct runoff water away from the skid trail. These dykes should include a depression of approximately 30 cm in depth and downstream mound of approximately 30 cm in height. Whenever possible, tree trunks (stumps) should be included in the construction of diversion dykes to ensure their long-term efficiency. Deviation dykes must exceed skid trails by 50 cm on each side.
- Place wood debris at the deviation dykes downstream extremity, or construct settling ponds when wood material is insufficient.
- Structures aiming to divert runoff water (wood debris and deviation dykes) should be separated from one another by no more than 20 metres.

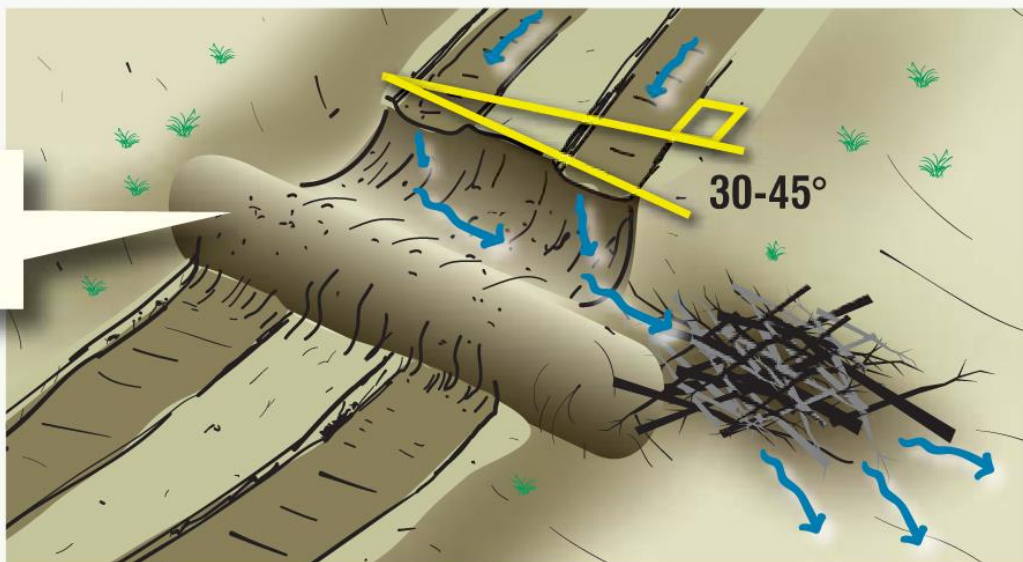
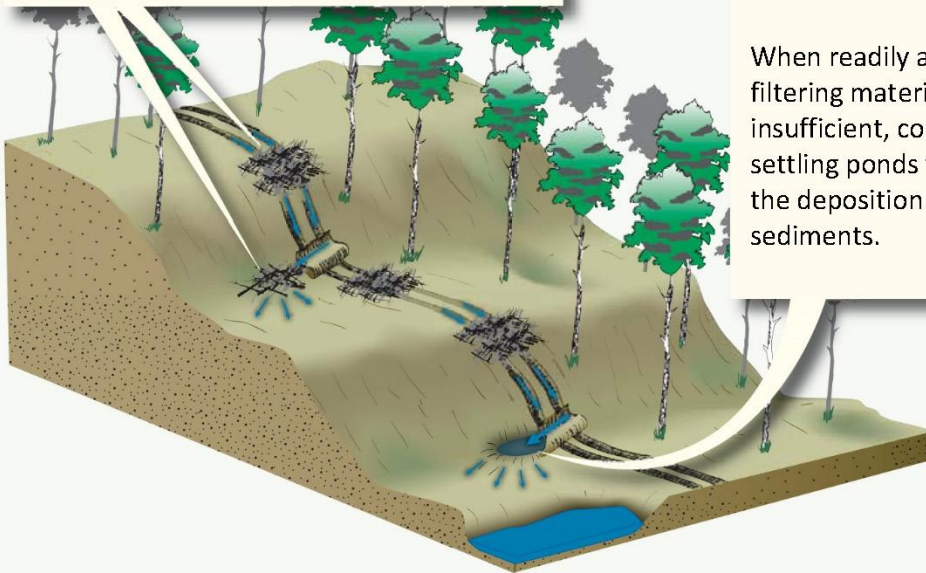
Upon closing the work site, NRCan may require that the Contractor restore levelled skid trails if the precautions taken by the Contractor are deemed ineffective or insufficient

Short-term soil stabilization

Limit erosion and sedimentation during operations by using barriers.

Use wood debris from cutting operations to slow down or disperse the flow along a trail or at a pond's outflow.

When readily available filtering material is insufficient, construct settling ponds to allow the deposition of sediments.



Source: FPInnovations

9.2 Temporary bridging for intermittent streams

- The use of 16-foot wood logs is permitted for bridges over intermittent streams. Wood log placement must enable water to flow freely.
- Bridge approaches should be paved using branches or wood debris or have a plate sill plate placed on either side of the stream in the area prone to soil rutting.
- The use of a geotextile membrane over the logs is required to limit sediment deposition in the water stream.
- Wood beams must be removed as soon as the skid trail is no longer used.
- A water barrier should be constructed at a minimum distance of 5 metres from any intermittent stream.

9.3 Temporary bridging for permanent streams

The bridge should be installed at least 60 cm above water level and be set on wooden or rock diverts.

- Where permanent streams are to be crossed with temporary infrastructure, the Contractor shall comply with Section 112 of the RADF.
 - The use of a portable skidding bridge made of wooden beams is permitted when it is supported outside the stream banks.
 - The dimensions of the wooden beams used must be sufficiently strong for the load they will support.
 - The bridge must be installed at least 60 cm above the water level and be placed on wooden or rock diverts.
 - Bridge approaches should be paved using branches or wood debris or have a plate sill plate placed on either side of the stream in the area prone to soil rutting.
 - Special care must be taken to avoid damaging the banks during the installation and removal of the bridge's sections.
 - Other methods may be accepted by NRCAN, provided that they offer water quality protection that is equivalent or superior to the method proposed above. A request must be made to NRCAN if the Contractor's preferred method differs from that of NRCAN.
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Source : Rutland Natural Ressources Conservation District

10. GENERAL CLAUSES

10.1 The Contractor should be aware that he will be performing forestry work on federal land where various military exercises are being conducted. It is possible that objects used for training may cause damage to the Contractor's equipment and consequently losses in productivity. For example, punctures are more frequent on a military base than on non-military forest land. The Contractor must take this risk factor into account when calculating his costs and he must also be able to compensate the subcontractors associated with the realization of the category A and B work. At no time shall the Contractor and/or its subcontractors be liable to NRCan and DND for payment of compensation, favours, etc.

At the time the work is delivered and carried out, any damage to public or private property caused by employees or by equipment provided by the Contractor or subcontractors shall be the responsibility of the Contractor.

Any work carried out by DND as a result of damage caused by the Contractor or any clean-up resulting from non-compliant work by the Contractor shall be at the Contractor's expense.

Since 1994, no timber from Base Va has been found to be contaminated except for timber from two areas (areas 26 and 24) near the shooting range. This means there is a possibility of contamination by metal objects. NRCan and National Defence cannot be held liable. NRCan recommends that the Contractor advise timber purchasers of the potential contamination of the timber by metal splinters. In the event metals are found in the logs coming from the job site, the Contractor shall notify NRCan as soon as possible.

10.2 NRCan and National Defence point out that military activities take precedence over all other activities. Access to the training areas is limited by military exercises that are included in the

shooting range schedule. Military activities can therefore lead to conflicts or operational constraints resulting in restriction of access to or a temporary prohibition from entering certain areas, for which NRCan and National Defence cannot be held liable.

NRCan and National Defence reserve the right to suspend all or part of the work at any time before or after work begins and for any reason; in such cases, the Contractor shall be given clear notice in writing stating the scope, date and duration of such suspension if the information is known at the time. Upon receiving such notice, the Contractor shall stop work on the date, in the manner and within the limits specified in the notice. The Contractor shall resume and continue the work as soon as the suspension ends.

10.3 If the Contractor fails to comply with the provisions of the contract or directions given by the NRCan representative and, in particular, if it:

- a) delays the start of work;
- b) does not use personnel, machinery and methods that are likely to ensure that the quality requirements are met or the work is completed within the time frame specified in the contract;
- c) makes felling errors that reduce log quality and lead to volume reductions and/or a decrease in cutting rights;
- d) does not attain adequate productivity in the work carried out;
- e) compromises the security of personnel or the operations;
- f) interrupts or slows the pace of work;
- g) fails to produce the revenue and expenditure reports specified in the contract;

NRCan shall give a written notice and prescribe appropriate corrective measures to be taken within a set time frame.

The Contractor understands that if it does not comply with the written notice in the prescribed time frame, NRCan will ask it to pay to the Receiver General for Canada damages in the amount of \$300 for every full calendar day in which the Contractor is in default (maximum \$27,000) between the date the default identified in the notice begins and the date on which the Contractor rectifies the situation to the satisfaction of NRCan.

Where the Contractor does not comply with the written notice within the prescribed time frame or transfers its property, declares bankruptcy, files a holding proposal or becomes insolvent, the Contractor is in default and NRCan may also terminate the contract without prior notice.

Damages or termination of contract directly related to non-compliance with the schedule (start of work, completion of work) does not apply where NRCan or National Defence reduces by more than 20% the number of potential harvesting days.

Where the Contractor is in default under the contract, NRCan may terminate the contract in whole or in part. The Contractor is not entitled to damages. The Contractor continues to be liable to NRCan for any loss or damage caused by its default.

Where NRCan terminates the contract in whole or in part, it shall give the Contractor written notice. Upon receiving such notice, the Contractor shall immediately:

- a) stop work on the date, in the manner and within the limits specified in the notice;
 - b) take any measures deemed necessary by NRCan representative to preserve the state of the completed work or finalize specific tasks.
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On the date indicated in the notice of termination, NRCan and the duly notified Contractor jointly take an inventory of all completed work and the volume of timber (cut and not transported). A detailed report of revenue and expenditures shall then be produced after the last timber sale slips are received. The balance of credits shall be retained by the Contractor until NRCan determines the procedure for transfer.

10.4 In the event the Contractor does not, for example, respect the environment and the forest, penalties or sanctions commensurate with those set out in the Sustainable Forest Development Act (Quebec) or the *Environment Quality Act* may be imposed.

10.5 If the Contractor is unable to haul the timber on a winter road as a result of a failure on its part, the Contractor shall pay the value of the credits associated with the volume of timber thus lost. If, however, the Contractor decides to recover the timber after the snow has melted, it shall pay the entire cost of road works necessary to make the timber accessible. This includes repairing the winter road's structure in the event that a carrier is used to haul the wood.

11. Specific standards for silvicultural work

General note: The various forestry operations to be carried out shall abide by the silvicultural prescriptions provided to the Contractor before the work begins. Silvicultural prescriptions are based on the established forestry sector standards in the province of Quebec.-

11.1 Specific standards for partial cuttings

- 1) When the objective of the treatment is to promote the regeneration of yellow birch, Eastern white pine or spruce, stems must be preferably skidded at a time when this will result in light scarification of the soil by the machinery. If cutting is done at a time that does not promote soil disturbance, the Contractor should expect that scarification work will be requested by NRCan. This work will be paid for in accordance with the terms of Bid form B.
 - 2) In carrying out the required work, the Contractor must respect the boundaries of the treatment blocks established by NRCan.
 - 3) The boundaries of the areas to be treated are marked with **orange tape**.
 - 4) Stems to be harvested may be marked at NRCan's discretion.
 - 5) The Contractor must also skid felled marked stems in protected areas without using heavy equipment in these areas.
 - 6) Skid trails shall not occupy more than 20% of the stand area. Wounded stems at the edges of the trails must be salvaged and must not exceed 10% of the stems at the edge of the skid trail.
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- 7) Separation between two silvicultural treatments will be delineated with **pink tape** as will delineation of permanent watercourse protection strips.
- 8) Intermittent streams marked with **blue tape** cannot be crossed by machinery.
- 9) The delimbing of trees is done on the cutting area. If a full-tree harvesting process is used, the grapple skidder shall return the maximum number of branches to the forest.

11.2 Specific standards for clear cuttings

- 1) In carrying out the work, the Contractor must respect the boundaries of the treatment blocks established by NRCan.
- 2) The boundaries of the areas to be treated are marked with **orange tape**.
- 3) Delimbing must be done at the stump and piles of branches should be avoided.
- 4) Skid trails shall not occupy more than 20% of the stand area. Wounded stems at the edges of the trails must be salvaged and must not exceed 10% of the stems at the edge of the skid trail.
- 5) Separation between two silvicultural treatments will be delineated with **pink tape** as will delineation of permanent watercourse protection strips.
- 6) Intermittent streams marked with **blue tape** cannot be crossed by machinery.
- 7) Special attention should be paid to protecting natural regeneration and saplings, particularly in the case of cutting with protection of regeneration and soils. All recognized methods for protecting natural regeneration and saplings must be used during harvesting.

11.3 Specific standards for reforestation

1. The Contractor must carry out the requested work while respecting the boundaries of the treatment blocks established by NRCan. Unless otherwise notified, Contractors are not to plant seedlings along roadsides or ditches.
 2. The boundaries of the areas to be treated are marked with **orange tape**.
 3. The care of the seedlings is the responsibility of the Contractor. The seedlings must be kept sufficiently moist and the Contractor must appoint a person to be responsible for this. Bareroot seedlings shall be delivered according to the number of plants planted daily. No bareroot seedlings shall be left in the field beyond one day provided it is gauged.
 4. The Contractor shall be responsible for transporting the plants from the nursery to the planting site. The Contractor shall expect that reforestation will be done in areas served by winter roads. The Contractor shall use proper and safe equipment to transport the seedlings to the cutting site.
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5. The work shall be done between spring, as soon as the ground has thawed, and early July upon seedlings availability.
6. Reforestation must be done with the appropriate tools and equipment.
7. NRCan may impose penalties where a violation related to the storage, handling or use of plants is identified.

12. Evaluation of work and penalties

The evaluation of the quality of execution will be based on the same documents used by the Ministère des forêts, de la faune et des parcs (MFFP), in particular the documents entitled **Cahier de références techniques en forêt privée (Technical reference book for private forests)** and the **Manuel sur la gestion des volumes récoltés (Manual on the management of harvested volumes)**. These documents can be downloaded from the MFFP website at the following address: <https://mffp.gouv.qc.ca/>

In the event that the silvicultural treatments do not meet the criteria listed in these reference documents, a reduction in the per hectare rate submitted by the Contractor in Bid form B will be applied.

13. Modality of intervention in the forest environment

Without being legally subject thereto, NRCan shall enforce all the terms and conditions set out in the *Sustainable Forest Development Act* (Règlement sur l'aménagement durable du territoire forestier) for this project. At all times, the Contractor shall carry out its operations in accordance with this Act. The Contractor is responsible for providing the necessary training to its employees and subcontractors regarding the terms and conditions that apply to VA Base pursuant to this contract. The Contractor should pay particular attention to the following.

- **Stacking and bucking areas**
 - The locations of stacking areas must be approved by NRCan representative and these areas must have a minimum size. Wood must not be skidded or yarded over main roads without special authorization.
 - Should be located to minimize the number of stream crossings, erosion and release of forest biomass into the water;
 - A 20-m-wide strip of vegetation must be preserved along the edge of watercourses;
 - Must conform to the provisions of the *Environmental Quality Act*;
 - Runoff must be channelled towards an area of vegetation at least 20 m from watercourses;
 - To limit encroachment on roads, stacking areas may be created at the roadside with the authorization of NRCan representative;
 - When wood is stacked in drainage ditches, stringers under the stacks are required.
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- **Skidding and hauling trails**

- Surface water to be channeled to a zone of vegetation (diagonal trenches, felling of non-merchantable stems across trails) at least 20 m from a lake or watercourse;
- Stream crossings according to the Sustainable Forest Development Act.

- **Bridges, culverts and ditches**

- Of adequate size to accommodate flood flows;
- Respect the initial width of the river or stream bed;
- Stabilization of fill used next to culvert with vegetation or riprap;
- Channelling of runoff to vegetated area more than 20 m from watercourse.

- **Stump height**

- the trees must be cut at a height not exceeding 15 cm above the highest ground level, except when the snow cover reaches a height equivalent to a water column at least 20 cm high; in the latter case, stump height should not exceed 60 cm;
- within a given intervention sector, the Contractor may harvest only trees with a diameter greater than or equal to that authorized in the forest management permit.

14. Method for evaluating treated area

The boundaries of treated areas are to be mapped so that these areas can be included in the forest data bank and to ensure that a follow-up of the mapping of the management plan is being done. The position of perimeters is determined by GPS (nad 83 data, MTM projection zone 7). The Contractor is responsible for providing the requested data according to NRCan criteria (shapefile names, work categories, etc.).

When the Contractor deems that a sector has been completed, the Contractor shall notify NRCan representative at the latest 2 working days after the work is finished so that the evaluation of the quality of the work and verification of the treated area can be done as the work progresses. If NRCan deems that the area does not correspond to the area delimited, the Contractor must return to the site to correct the situation to the satisfaction of NRCan representative. Before moving any machinery outside the Garrison, the Contractor must receive authorization from the NRCan representative certifying that the work has been completed to the representative's satisfaction.

15 Timber sales report

A sample timber sales report (Excel format) will be provided to the Contractor selected. The report must show, by type of product and for a given period, only one datum per line including the trip ticket numbers, the units delivered, the volume in m³ (applying conversion factors), stumpage dues (\$/m³) granted and equivalent credits (\$).

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