

Part 1 General

1.1 SUMMARY

- .1 This section specifies the requirements for environmental protection and general protection during the course of the Work. The provisions of this section shall apply to all aspects of the Work.

1.2 REFERENCES

- .1 Definitions:
 - .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.
 - .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction.
- .2 Refer to Appendix B CEAA Memo and Appendix C Awareness Plan in event of discovery of Low Northern Rockcress within the project limits.

1.3 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
 - .1 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29.14 - Health and Safety for Contaminated Sites and 01 35 43 - Environmental Procedures.
- .3 Before commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review and approval by Departmental Representative.
- .4 Environmental Protection Plan must include comprehensive overview of known or potential environmental issues to be addressed during construction.
- .5 Address topics at level of detail commensurate with environmental issue and required construction tasks.
- .6 Include in Environmental Protection Plan:
 - .1 Names of persons responsible for ensuring adherence to Environmental Protection Plan.
 - .2 Names and qualifications of persons responsible for manifesting hazardous waste to be removed from site.
 - .3 Names and qualifications of persons responsible for training site personnel.
 - .4 Descriptions of environmental protection personnel training program.

- .5 Erosion and sediment control plan identifying type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal, Provincial, and Municipal laws and regulations.
- .6 Drawings indicating locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on site.
- .7 Traffic Control Plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather.
 - .1 Plans to include measures to minimize amount of material transported onto paved public roads by vehicles or runoff.
- .8 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use.
 - .1 Plan to include measures for marking limits of use areas and methods for protection of features to be preserved within authorized work areas.
- .9 Spill Control Plan to include procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.
- .10 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.
- .11 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, are contained on project site.
- .12 Contaminant Prevention Plan identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials.
- .13 Waste Water Management Plan identifying methods and procedures for management and discharge of waste waters which are directly derived from construction activities, such as dewatering of ground water.
- .14 Include management and protection procedures, instructions, and reports to be used in event of discovery and/or avoidance of Low Northern Rockcress within the project limits.

1.4 GENERAL

- .1 All Work is to be done in accordance with local, Provincial and Federal environmental regulations (including, but not limited to, the Environmental Protection Act of the Province of Newfoundland and Labrador and the Canadian Environmental Protection Act and applicable regulations) and any specific requirements for this contract are to be strictly adhered to by the Contractor.
- .2 Particular attention is drawn to the requirements of Appendix B CEAA and the Federal Fisheries Act and regulations for works affecting fish habitat as stipulated by the Department of Fisheries and Oceans.
- .3 Work is to be completed in accordance with Species at Risk Act and NL Endangered Species Act.

- .4 The Contractor is responsible for complying with the Environmental Assessment (EA) document attached.

1.5 FIRES

- .1 Fires and burning of rubbish on site is not permitted.

1.6 PRECAUTIONARY MEASURES

- .1 Take every and all precautions to prevent discharge of materials to the environment. This requirement shall be regarded as paramount. All necessary precautions, material, equipment and labour for the prevention of discharges shall be included in the Contract.
- .2 Prior to start-up, provide written loss control procedures for critical operational areas, including but not limited to dewatering (if any), process discharge (if any), vehicles and equipment.
- .3 Report all spills of substances introduced to the site by the Contractor, e.g., fuel, lubricants. Adhere to spill reporting requirements as outlined in Provincial and Federal legislation.
- .4 The Contractor shall take all necessary measures to remedy the effects of any spills, whether of hazardous or non-hazardous substances, and shall assume full financial liability for all such remediation measures.

1.7 DRAINAGE

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water. Water from the excavation will not be released to the environment or to the sewer system unless laboratory tests confirm that the water meets the Newfoundland and Labrador Department of Municipal Affairs and Environment (NLDMAE) discharge criteria and approval is given from NLDMAE.
- .2 Do not pump contaminated water or water containing suspended materials into waterways, sewer or drainage system. Refer to clauses 1.9 and 1.10 for further information.
- .3 Control disposal or run-off of water containing suspended materials or other harmful substances in accordance with local authority requirements.
- .4 Construct temporary silt traps or silt fences with sufficient surface area, as approved by Departmental Representative, prior to commencing excavation of any nature.

1.8 SITE CLEARING AND PLANT PROTECTION

- .1 Protect species at risk including the Low Northern Rockcress, refer to Appendix C - Awareness Plan. Contractor shall not disturb areas identified or allow equipment or vehicular traffic in these areas as per the EA document attached.
- .2 Protect trees and plants on site and adjacent properties as indicated.

- .3 Provide barriers around trees and plants designated to remain. Protect from damage by equipment and construction procedures.
- .4 Protect trees and shrubs adjacent to construction work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 m minimum.
- .5 Protect roots of designated trees to dripline during excavation and site grading to prevent disturbance or damage.
 - .1 Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .6 Minimize stripping of topsoil and vegetation.

1.9 WORK ADJACENT TO WATERWAYS

- .1 All work must comply with NLDMAE and PWGSC requirements.
- .2 Do not dump excavated material, waste material or debris near waterways.
- .3 Design and construct temporary crossings to minimize erosion to waterways.
- .4 Do not skid logs or construction materials across waterways.
- .5 Intercept sediment laden surface water run-off during cut operations and direct to silt traps before entry into waterways.
- .6 If required by permits through Clause .7 below, sandbags to be used to construct sediment traps near active streams.
- .7 Cofferdams, if required, must be constructed of non-erodible materials. Water from work areas must be pumped a minimum of 50 metres from waterway into sediment traps, or as approved by the Departmental Representative. Contaminated water from the excavation will be collected and will not be discharged to the surrounding water bodies without NLDMAE approval, as per Clause 1.15.
- .8 Works performed in and around waterways will be carried out in accordance with regulations of authorities having jurisdiction.
- .9 Cuts and fills adjacent to waterways are to be stabilized, and ditch run-offs constructed to prevent entry of silt into waterway.
- .10 On conclusion of construction, debris must be disposed of to prevent its entry into waterways, and stream bed returned to its original configuration or as approved by the Departmental Representative.
- .11 Do not use waterway beds for borrow material.

1.10 POLLUTION CONTROL

- .1 Maintain temporary erosion and pollution control features installed under this contract.

- .2 Control emissions from equipment and plant to local authorities emission requirements. The Departmental Representative may conduct periodic air sampling during periods of contaminated soil excavation.
- .3 Cover or wet down dry materials and rubbish as approved by Departmental Representative to prevent blowing dust and debris. Provide dust control for temporary roads and open excavations.
- .4 Work shall not proceed until all applicable permits are obtained by the Contractor from NLDMAE and other authorities having jurisdiction.
- .5 All Work shall be conducted in a manner to cause minimal siltation and disturbance.
- .6 Silt curtains shall be installed prior to commencement of work near watercourses.
- .7 Work site runoff will be adequately contained to prevent siltation or discharge of contaminated material.

1.11 WASTE DISPOSAL AREAS

- .1 No on site disposal of waste will be permitted.

1.12 VEHICULAR MOVEMENTS

- .1 Confine vehicles and equipment to existing disturbed areas (access roads, borrow pits, disposal areas, highways and future right-of-ways).

1.13 PROTECTION

- .1 Prevent movement, settlement or damage of adjacent structures, pipelines, services, walks, trees, landscaping, adjacent grades and parts of existing buildings to remain. Provide bracing, shoring and underpinning where required. Make good damage and be liable for injury caused by demolition.
- .2 Take precautions to support structures/pipelines and, if safety of the structures, pipelines, or services appears to be endangered, cease operations and notify Departmental Representative.
- .3 Prevent debris from blocking surface drainage system which must remain in operation.
- .4 Prevent damage to fencing, trees, landscaping, natural features, bench marks, existing buildings, existing pavement, utility lines, site appurtenances, water courses, and root systems of trees which are to remain. Make good damage.
- .5 Apply approved tree paint to cuts or scars suffered by vegetation designated to remain.
- .6 Before commencing Work the Contractor shall check locations of all services, whether above ground or underground, whether shown on drawings or not, with public utility authorities, and arrange to remove, protect or cut off utilities that may be encountered.

- .7 Provide all shoring and bracing to support banks of excavation. The Contractor will be held responsible for any injury or damage caused as a result of inadequate shoring or inadequate protective measures during the execution of the Contract and will be required to make good all damage and injury without extra cost to the Departmental Representative. If in the opinion of the Departmental Representative shoring and bracing is necessary, he will order their use, at the same time specifying his requirements, but no such orders, or absence of any such orders shall relieve the Contractor of any responsibilities under the Contract. Bear all expenses in connection with the use of close-sheeting whether used in accordance with the instructions of the Departmental Representative or otherwise.
- .8 Whenever shoring, sheeting, timbering and bracing of excavation is required, engage services of a professional engineer, registered or licensed to practice in the Province of Newfoundland and Labrador, to design and assume responsibility for adequacy of shoring and bracing. When requested submit for review drawings and calculations signed and stamped by the Engineer responsible for their preparation.
- .9 Shoring and bracing shall be inspected by the Professional Engineer responsible for their preparation.
- .10 Protect persons from injury and avoid property damage, by means of adequate barricades, construction signs, torches, lanterns and guards as required.
- .11 Grade around excavations to prevent surface water run-off into excavated area.

1.14 ENVIRONMENTAL REQUIREMENTS AND APPROVALS

- .1 Hydrocarbon storage shall be in accordance with "Storage and Handling of Gasoline and Associated Products Regulations" under the Provincial Environment Protection Act. The Contractor shall follow the procedure for spill reporting.
- .2 All storage tanks for fuel must be drained within one week after production has been completed. Fuel tanks must not remain on site over the winter.

1.15 WASTEWATER MANAGEMENT

- .1 The Contractor should expect to encounter water and may encounter free phase floating petroleum product ("free product") during the excavation and removal of contaminated soil from various sites.
- .2 Removal, disposal and/or treatment of groundwater from the remedial excavation shall be approved by the Departmental Representative. All free product observed on water or encountered in the excavations shall be collected by means of skimming equipment, vac trucks, oil/water separators or sorbent materials suitable for oil based products.
- .3 If approved by the Departmental Representative, dewatering of soil from the remedial excavation shall be carried out by stockpiling the soil above the groundwater level within an area of the remedial excavation and allowing the soil to drain into the remedial excavation. Areas of soil should be excavated in lifts to minimize contact with groundwater.

- .4 No discharge of water is to take place from the remedial excavation until all permits and confirmatory laboratory analysis have been approved by the Departmental Representative and the NLDMAE.
- .5 The surrounding environment shall be protected at all times from the release of free product from the work area.
- .6 Do not allow discharge of contaminated wastewater into down-gradient bog/marsh areas and drainage streams.
- .7 Contractor shall be responsible for obtaining all permits required to undertake the Work.
- .8 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.
- .9 No on-site sanitary wastewater servicing is available. The Contractor will arrange for all necessary temporary sanitary wastewater servicing during the duration of the Work. Grey water and sanitary wastewater generated by the Contractor shall be treated in an off-site sewage treatment facility approved by NLDMAE. Untreated wastes shall not be permitted to enter water bodies.

1.16 SOLID WASTE

- .1 Provide adequate equipment and materials necessary to control contaminated materials including PCB-contaminated soil, equipment residues, etc.
- .2 Prevent PCB-impacted soils or any other impacted materials generated under this contract from contaminating soil, groundwater, or entering marsh/bog areas.
- .3 Any debris and/or soil encountered in the excavation will be placed in the laydown area as approved by the Departmental Representative for confirmatory testing before disposal. Size and location of the temporary laydown to be approved by Departmental Representative. The laydown area shall be covered with an impermeable liner onto which debris and/or soil will be temporarily placed to prevent infiltration or runoff of potential contaminants into subsurface soil. The Contractor will be responsible for the removal of all debris and/or soil encountered in the remedial excavations and proper disposal at the local landfill or at an approved facility if the debris and/or soil is found to be contaminated.
- .4 Garbage shall be collected daily. Wastes generated within the remediation area shall be stored on site in a secure area and disposed of in a licensed waste disposal facility at the end of the project as approved by the Departmental Representative.
- .5 Work areas shall be kept clean and free of garbage. Provide acceptable animal proof garbage containers appropriately distributed throughout the project work area.
- .6 Other solid wastes, such as used personal protective clothing, spent sampling materials, will be containerized. This material will be placed in an on-site refuse bin for subsequent off-site disposal by the Contractor.

1.17 EQUIPMENT AND VEHICLES

- .1 Vehicle and equipment maintenance shall occur in designated areas at the work site. All maintenance fluids shall be contained, handled and disposed of in accordance with NLDMAE regulations. Spillage of vehicle fluids on the ground is prohibited. Spill volumes in excess of 70 litres must be reported to NLDMAE through the Provincial 24 hour emergency spill number 1 800 563 9089 and to PWGSC.
- .2 All equipment and vehicles shall be equipped with a suitable dry chemical fire extinguisher.
- .3 Refuelling of on-site vehicles and equipment, shall be undertaken at a location approved by the Departmental Representative.
- .4 Contaminated material shall be cleaned from truck tires and equipment before travelling on non-contaminated areas such as public highways, temporary access roads and within clean site areas. The Contractor will dispose of all removed contaminated materials in areas as approved by the Departmental Representative.

1.18 FUEL AND OTHER HAZARDOUS SUBSTANCES

- .1 Vehicles transporting fuel shall travel on approved access roads only, at safe operating speeds for the road conditions. Vehicles shall be equipped with a suitable dry chemical portable fire extinguisher.
- .2 Reinforced rubber hoses for fuel transfer shall be in sound, leak free condition and be equipped with properly functioning nozzles and check valve assemblies.
- .3 Fuel transfers shall be attended by a qualified person for the duration of the operation and performed in a manner that avoids spilling of fuel on the ground or into adjacent waterways.
- .4 Provide adequate emergency equipment, including sorbants, booms, etc. necessary to control accidental loss of hydrocarbon product around vehicles or from areas adjacent to waterways.
- .5 Contractor to ensure that all equipment be free of contaminants before arrival at the site.

1.19 REMOVAL OF TEMPORARY STRUCTURES AND EQUIPMENT

- .1 The Contractor will be responsible for the disposal and/or decontamination of safety equipment used during the work program.

1.20 METHOD OF PAYMENT

- .1 No payment for other items noted in this section shall be made. All cost for other items associated with Environmental Requirements shall be included in the unit or lump sum prices for the item in which the protection is required.

Part 2 Products

2.1 NOT USED

.1 Not Used.

Part 3 Execution

3.1 NOT USED

.1 Not Used.

END OF SECTION