# Refloating, removal and dismantling of the D.R. Rodgers barge wreck and removal of the Wabis II tugboat, Ottawa River

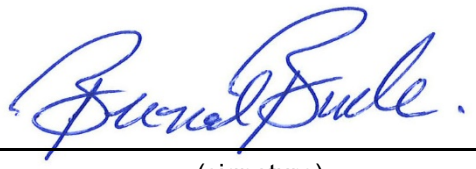
**Report SR3 and SR4**

Presented to:

Public Works and Government Services Canada

18 March 2021

Stantec

Prepared by 

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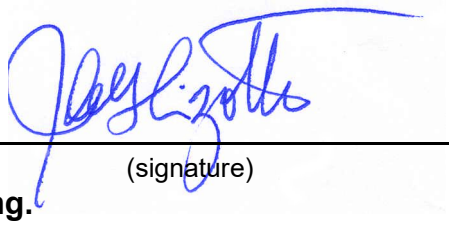
Approved by 

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**Table of Contents**

## Part 1 General

### 1.1 CONTEXT

.1 The Work consists in the refloating, removal, dismantling and disposal of the D.R. Rodgers barge wreck and the removal of Wabis II tugboat, located on te Quebec side of the Ottawa river near Deux-rivières in Ontario. The barge wreck and hauling cables sank in 2017 and is registered as D.R. Rodgers (N.M. 322198). The barge is 21,3 meters long and 7,3 wide. The hauling cable is approx. 250 meters long between the shores of the Ottawa river.

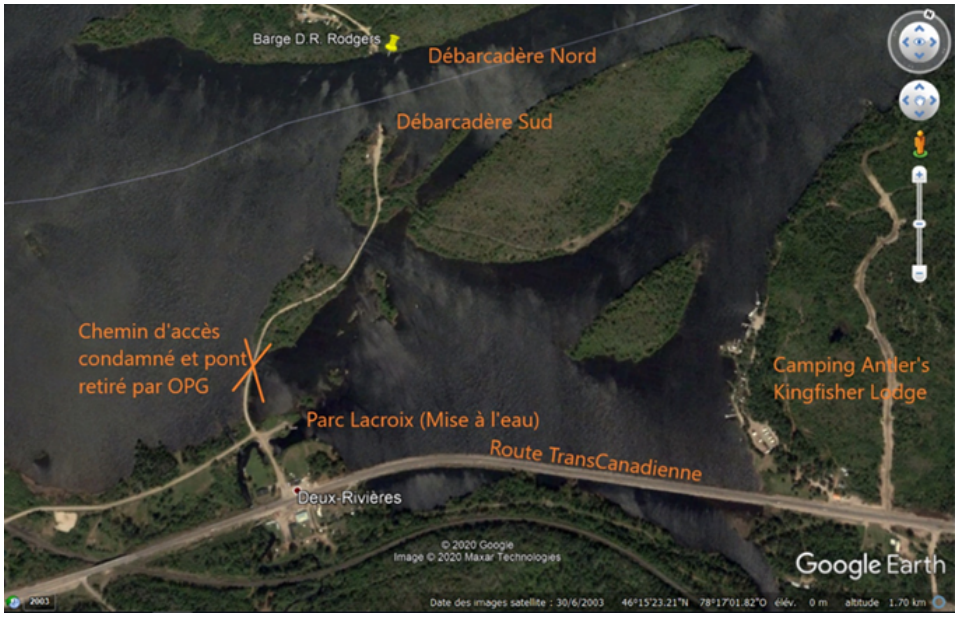
.2 The D.R. Rodgers barge wreck is attached to a hauling cable and sunk near the Quebec shore

.3 The barge and cable are located at approx. latitude 46° 15’ 39,2″ N - longitude : 078° 17’ 20,7″ W in the Ottawa river and represent a risk to navigation, thus the need to have it removed..

.4 The Wabis II tugboat is located on the Quebec shore of the Ottawa river near the D.R. Rodgers barge wreck. The departmental representative reserves the right to remove this item from the scope of the work following the award of the contract.

### 1.2 LOCATION

The site is located near Deux-Rivières, Ontario. The site is located approximately at the following coordinates: Llatitude 46° 15’ 39,2″ N - longitude : 078° 17’ 20,7″ W



## 1.3 DESCRIPTION

.1 The removal will consist of:

- .1 Inspecting the site;
- .2 Locating the barge wreck and the Wabis II tugboat;
- .3 Removing and disposing of the wreck and tugboat,
- .4 Removing and disposing of chains and pieces or sections of structures that may have become detached and ended up on the riverbed; and
- .5 Disposing of the wreck and tugboat safely, in compliance with the environmental standards in effect.

.2 The contractor will be responsible for managing the minor pollutants resulting from the removal of the wreck and tugboat. Furthermore, the contractor agrees to obtain all necessary authorizations from the competent environmental authorities, as needed.

## 1.4 SITE ACCESS

.1 Allow testing and inspection agencies, competent authorities, the site supervisor and the Departmental Representative access to the site.

.2 Provide transportation to the site for testing and inspection agencies, competent authorities, the site supervisor and the Departmental Representative.

.3 Cooperate with these entities and take all reasonable steps to ensure that they can access the site.

.4 The Contractor agrees to obtain authorizations from the property owners along the riverbank to access the area where the structures are located.

.5 Ensure that the work disrupts nearby residents, the general public and normal use of the site as little as possible. Make the necessary arrangements with the Departmental Representative to facilitate the work.

## 1.5 EXECUTION

.1 When creating its schedule, and before tendering its bid, the Contractor must account for factors such as difficulty accessing the site, water levels and weather conditions that may affect the work.

## 1.6 TIMETABLE

.1 Arrange the timetable around times when the site is occupied.

.2 Work so that the general public can continue using the site. Keep the site accessible to the public as long as the work prevents alternate solutions from being offered.

.3 Steps:

.1 Site access
.2 Refloating the D.R. Rodgers barge wreck
.3 Removal of the barge D.R. Rodgers;
.4 Dismantling of the barge D.R. Rodgers;
.5 Disposal of the barge D.R. Rodgers
.6 Removal and disposal of the Wabis II tugboat.

.4 It is up to the Contractor to decide on the work methods. However, the plan will have to be submitted to the Departmental Representative for approval.

.5 The Departmental Representative's approval of the method does not release the Contractor from any of its responsibilities. Furthermore, the Departmental Representative may not be held liable for improper methods or oversight on the part of the Contractor.

## 1.7 METHOD

.1 The Contractor is responsible for establishing a work method that is environmentally responsible and suitable for the water level.

.2 Recommended method, suitable for the water level:

.1 Locate the barge wreck and tugboat.
.2 Install new anchors for safe lifting.
.3 Use equipment (barges, workboats, excavators, etc.) that is in good condition, has an appropriate draught, and is suitable for the task at hand and the site.
.4 Dispose of the barge wreck and tugboat at an authorized site.
.5 Ensure that all other methods respect the environment and the site.

## 1.8 CONTRACTOR'S USE OF THE SITE

.1 The Contractor shall obtain all permits required to access or use the site

.2 Use of the site is restricted to areas needed to do the work and to access areas for:

.1 work by other contractors;
.2 public use of the site; and
.3 use of the waterway.

.3 Coordinate use of the site as directed by the Departmental Representative.

.4 Identify and pay for any additional work or storage areas required to perform the tasks described in this contract.

.5 The Contractor is responsible for obtaining authorizations for the Work under the Canadian Navigable Waters Act for, among other things, the turbidity curtain.

.6 Once the work is completed, the condition of the site must be better than or equal to its original state.

**1.9 EXISTING UTILITIES**

.1 Provide alternate routes for staff, pedestrians and vehicles.

.2 Submit a schedule for the removal and disposal of structures to the Departmental Representative for approval. Adhere to the approved schedule and inform anyone who may be inconvenienced as a result.

**1.10 REQUIRED DOCUMENTS**

.1 Keep a copy of each of the following documents on site:

.1 Contract drawings
.2 Quote
.3 Addenda
.4 Work methods
.5 Change orders
.6 Other changes to the contract
.7 Copy of the approved timetable
.8 Health and safety plan and other safety documents
.9 Other documents indicated

**Part 2 Products**

**2.1 NOT APPLICABLE**

.1 Not used.

**Part 3 Execution**

**3.1 NOT APPLICABLE**

.1 Not used.

**END OF SECTION**

## Part 1 General

### 1.1 DEFINITIONS

.1 Pollution and environmental damage: Presence of chemical, physical or biological agents or elements that are harmful to the health and well-being of humans; that affect ecological balances that are important to humans; that affect species that are important to humans; or that degrade the aesthetic, cultural or historical characteristics of the environment.

.2 Environmental protection: Prevention and/or control of contamination, pollution and disturbances to the habitat(s) and the environment during construction.

### 1.2 PERMITS AND AUTHORIZATIONS

.1 Transport Canada is responsible for issuing authorizations for the Work under the Canadian Navigable Waters Act, the Contractor is responsible for obtaining such authorization for, among other things, the turbidity curtain. Allow 40 days for processing the application and public notice. The procedure for obtaining authorizations is available at https://www.tc.gc.ca/eng/programs-623.html.

.2 The Contractor must issue Notices to Shipping to inform boaters of the work being done. To this end, the Contractor must ensure that the Notices to Shipping (containing a description of the activities, types of equipment and location of the work) are issued and obeyed. Provide this information to the Canadian Coast Guard (telephone: 418-233-2308 or by e-mail at opsavis@dfo-mpo.gc.ca) at least twenty-four (24) hours before work begins for the purpose of issuing Notices to Shipping.

.3 No authorization is required under the Fisheries Act if the measures in these Specifications are followed.

.4 The Contractor is responsible for obtaining any other permits or authorizations (e.g. municipal or RCM) for the portion of the work to be done on land.

### 1.3 DOCUMENTS AND SAMPLES TO SUBMIT FOR APPROVAL/INFORMATION

.1 Fifteen days before construction is to begin on the site, submit an Environmental Protection Plan to the Departmental Representative for review and approval.

.2 The plan should provide a comprehensive overview of known or potential environmental issues to be addressed during construction.

.3 The actions described in the Environmental Protection Plan must provide sufficient detail considering the work to be completed and the environmental problems that may arise.

.4 The Environmental Protection Plan must include the following:

.1 The names of the people responsible for ensuring compliance with the plan

.2 The name and qualifications of the people responsible for the exit manifests for hazardous waste to be removed from the site

.3 The names and qualifications of the people responsible for training on-site personnel

.4 A description of the training program for environmental protection personnel

.5 An erosion and sediment control plan indicating the measures that will be implemented, including monitoring and reporting to verify compliance with federal, provincial and municipal laws and regulations

.6 A plan of the work area, showing the activities planned in each part of the work area and identifying restricted and prohibited areas.

.1 This plan must include ways to indicate the boundaries of usable areas, as well as protective measures for elements that are located inside the authorized work area but require protection.

.7 A spill response plan with procedures to be implemented, instructions to be followed and reports to be made in the event of an unforeseen spill of a regulated substance.

.8 A disposal plan for non-hazardous solid waste with methods and locations for disposing of non-hazardous solid waste and debris from clearance work.

.9 An air pollution prevention plan with measures to contain dust, debris, materials and waste within the site.

.10 A contamination prevention plan that identifies any potentially hazardous substances to be used on the site, the measures that will be taken to prevent these substances from becoming airborne or entering the soil, and details of the measures that will be taken to ensure that the storage and handling of these substances comply with federal, provincial and municipal laws and regulations.

.11 A wastewater management plan describing the methods and procedures for managing the disposal of wastewater directly from construction activities, such as water used for concrete curing, washing/cleaning, drawdown, disinfection, hydrostatic testing and pipe flushing.

## 1.4 FIRES

.1 Fires and burning of waste on the work site are prohibited.

.2 Take the necessary measures to ensure fire protection and supervision of the work, according to the instructions provided.

## 1.5 WORK NEAR WATERCOURSES

.1 No new access or boat launch may be constructed. The Contractor must use existing infrastructure in the vicinity of the work site.

.2 Construction equipment must be operated from shore only.

.3 Watercourses must be kept free of excavated materials, waste and debris.

.4 Operating machinery in a watercourse is prohibited.

.5 Referring to the document “Recommendations for the Management of Suspended Solids (SS) during Dredging Activities (MDDELCC and ECCC, 2016),” the Contractor must present a work method demonstrating that it will respect maximum SS concentrations of 25 mg/L above ambient concentrations, 100 m downstream of the work:

.1 The Contractor must install a silt curtain downstream of the work to limit the spread of particles.

.2 The silt curtain must be installed in compliance with the manufacturer’s data sheet and recommendations. The Contractor is responsible for ensuring that the

placement of the silt curtain is effective in preventing the spread of SS for the duration of the work.

.3 The Contractor must submit its work method, including its method for removing the silt curtains, to the Departmental Representative for approval before work begins.

.4 The silt curtains must be removed entirely once the work ends.

.6 If the SS rises above 25 mg/L over the ambient concentration found at the time of measurement, the Departmental Representative will hold a site meeting with the Contractor to discuss the measures to be taken to correct the situation quickly.

.7 Respect the annual restriction period for work in fish habitats for the Richelieu River, which runs from March 15 to August 1.

## 1.6 POLLUTION PREVENTION

.1 Maintain temporary structures for controlling erosion and pollution that have been installed as part of this contract.

.2 The Contractor must ensure that the tools, machinery and equipment used during the work are safe, well maintained and in good working order. In particular, machinery that must travel or operate within 20 m of the HWM of a watercourse must use biodegradable oil that complies with OECD standard 301-B, with the exception of bulk trucks (at least 80% bio-based content and certified biodegradability according to OECD standard 301-B or equivalent [≥60% biodegradability in 28 days]). The Contractor must provide certificates of analysis from a recognized organization attesting that the machinery is compliant.

.3 Hazardous materials and hydrocarbons may be stored on site provided that a hydrocarbon retention basin has been constructed beforehand.

.1 The retention basin must have a minimum volume equivalent to 110% of the HM or hydrocarbon content of the device or the capacity of the tank or container.

.2 Refuelling of machinery is also permitted above the retention basin.

.3 The location of the retention basins is to be decided jointly between the Contractor and the Departmental Representative.

.4 The basins must be protected from rain and must not collect rainwater.

.5 If bad weather is forecasted, hazardous materials and hydrocarbons must be removed from the site.

.4 Control emissions from equipment and machinery in accordance with the requirements of local authorities.

.5 General maintenance and cleaning of equipment and rolling stock must occur outside of work areas located more than 30 m from the watercourse.

.6 Temporary facilities are not permitted in wetlands. In addition, soil and drainage conditions must be maintained.

.7 For floating equipment, the Contractor must demonstrate that it is free of invasive species:

.1 For equipment that has been cleaned and stored on dry land just prior to the work being done, the Contractor is only required to provide, in writing to the

Departmental Representative, a list of said equipment, photos of the hull, the location where they are stored and the planned launch date. The Departmental Representative must be able to verify that the equipment is in fact clean and has been stored on dry land before the beginning of work.

.2 For equipment that is already in the water, the Contractor must prove that its equipment has remained in the immediate vicinity of the Island of Montreal during the last twelve (12) months or more, otherwise it must:

.1 Provide a written inspection report, certifying that the equipment is free from invasive species, just before it is launched. The inspection report must be prepared by a qualified biologist experienced in the identification of freshwater fauna. Sampling must be performed by divers. The report must contain, at a minimum, the following: a list of equipment inspected (tugboats, scows, etc.), the date and location of inspection, a summary of sampling and identification protocols, a list of samples, the table of results and a statement regarding the presence or absence of invasive species. The report must include photographs and bear the signature of the qualified biologist before it can be submitted to the project manager along with the other contract documents. The report must be submitted before equipment can be mobilized.

.2 If the inspection report confirms the presence of invasive species, the Contractor must replace the equipment or thoroughly clean it at its own expense. A description of the cleaning work must be included in the biologist's new (post-cleaning) inspection report with all of the relevant information mentioned above.

.3 The Departmental Representative reserves the right to seek a second expert opinion at any time.

.4 If invasive species are found, the Contractor must stop work and clean the affected equipment at its own expense, following the procedure described above.

## 1.7 PREVENTION OF ATMOSPHERIC POLLUTION

.1 Control emissions from materials, equipment, vehicles and site facilities in accordance with local, federal and provincial requirements. Provide vehicles with a functional anti-pollution exhaust system. Turn off the engines of gasoline-powered vehicles and equipment when not in use, if possible.

## 1.8 PROCEDURES IN THE EVENT OF A SPILL OF OIL, HAZARDOUS MATERIALS OR OTHER CONTAMINANTS

.1 In the event of a spill, the Contractor must initiate the following response and cleanup procedure:

.1 Ensure the safety of people, interrupt the source and immediately recover the spill.

.2 If the Contractor is unable to immediately contain or recover the spill, or if the spill occurs in water, they must notify, depending on where the work occurred:

.1 Environment Canada Emergency Service (1-866-283-2333);

.2 Urgence Environnement du Québec (1-866-694-5454); or

.3 Transport Canada for marine equipment.

.2 The Contractor must keep one emergency response kit on hand within 30 m of operations at each site, as well as personnel trained to use the kit if an environmental emergency occurs.

.3 The Contractor must then immediately report the spill (regardless of quantity) to the Departmental Representative.

.4 The Contractor must report all spills to the following authorities: Environment Canada Emergency Services (1-866-283-2333) and Urgence Environnement du Québec (1-866-694-5454).

.5 Recover any contaminated materials and dispose of them with a company approved by the MDDELCC.

.6 The Contractor will be held responsible for any spills of products deemed to be environmentally damaging. If such a spill occurs, the Contractor must immediately implement, at its own expense, the corrective measures prescribed by the Departmental Representative.

.7 If the spill cannot be responded to adequately and to the Departmental Representative's satisfaction because of its size or type, the Contractor will bear the costs of any additional responses that require the personnel or machinery of another contractor.

.8 Response report: In the event of a response, the Contractor will be required to immediately complete the event report form (Environmental Incident Report, provided by the Departmental Representative) and submit it to the Departmental Representative.

.9 The event report form will be given at the preliminary meeting before work begins.

**1.9 NOTICE OF NON-COMPLIANCE**

.1 The Departmental Representative will issue a written notice of non-compliance to the Contractor whenever they observe an incident of non-compliance with a provincial, federal or municipal law, regulation or permit or any other element of the Contractor's environmental protection plan.

.2 Upon receipt of a notice of non-compliance, the Contractor must propose corrective measures to the Departmental Representative and implement them with the approval of the Departmental Representative.

.1 The Contractor must receive approval from the Departmental Representative before implementing any of the proposed measures.

.3 The Departmental Representative will issue a stop work order until satisfactory corrective action is taken.

.4 No additional time and no adjustment will be granted for the work stoppage.

## Part 2 Product

**2.1 MATERIALS**

.1 Silt curtain:

.1 Heavy-duty fabric with upper rings connected to floats and lower rings through which a heavy 5 mm metal chain is threaded.

.2 The silt curtain must be long enough to completely surround the working area.

.3 The silt curtain must be tall enough to adjust to changes in the water level while maintaining continuous contact with the riverbed.

.4 Identify the floating portion of the silt curtain with yellow beacons and/or lights to warn boaters, as determined by the Departmental Representative.

## Part 3 Execution

### 3.1 CLEANING

.1 Cleaning during work: Clean in accordance with section 01 74 00 – Cleaning.

.1 Leave the premises clean at the end of each work day.

.2 Burial of waste and scrap materials on the site is not permitted.

.3 Ensure that watercourses and public storm and sanitary sewers remain free of waste and volatile materials.

.4 Final cleaning: Remove excess material/equipment, waste, tools and equipment from the job site in accordance with section 01 74 00 – Cleaning.

.5 Waste management: Sort waste for disposal in accordance with section 01 74 19 - Waste Management and Disposal.

.1 Remove recycling bins and skips from the job site and dispose of materials at the appropriate facilities.

**END OF SECTION**

Approved: 2019-01-30

## Part 1 General

### 1.1 SUMMARY

.1 This Section references to laws, by laws, ordinances, rules, regulations, codes, orders of Authority Having Jurisdiction, and other legally enforceable requirements applicable to Work and that are; or become, in force during performance of Work.

### 1.2 REFERENCES TO REGULATORY REQUIREMENTS

.1 Department of Justice Canada (Jus)

.1 SOR/2018-196 Prohibition of Asbestos and Products Containing Asbestos Regulations.

.2 Perform Work in accordance with the provincial or local codes of application provided that in case of conflict or discrepancy, more stringent requirements apply.

.1 .

### 1.3 HAZARDOUS MATERIAL DISCOVERY

.1 Asbestos: demolition of spray or trowel-applied asbestos is hazardous to health. Stop work immediately when material resembling spray or trowel-applied asbestos is encountered, and notify the Departmental Representative.

### 1.4 QUALITY ASSURANCE

.1 Regulatory Requirements: Except as otherwise specified, the Constractor shall apply for, obtain, and pay fees associated with, permits, licenses, certificates, and approvals required by regulatory requirements and Contract Documents, based on General Conditions of Contract and the following:

.1 Regulatory requirements and fees in force on date of Bid submission, and

.2 A change in regulatory requirements or fees scheduled to become effective after date of tender submission and of which public notice has been given before date of tender submission

## Part 2 Products

### 2.1 NOT USED

.1 Not Used.

### 2.2 EASEMENTS AND NOTICES

.1 The Contractor will obtain easements and rights of servitude that may be required for performance of Work.

.2 The Contractor shall give notices required by regulatory requirements.

**END OF SECTION**

Approved: 2006-06-30

## Part 1 General

### 1.1 REFERENCE STANDARDS

.1 CAN/CSA-S269.2-[M1987 (R2003)], Access Scaffolding for Construction Purposes.

.2 CAN/CSA-Z321-[96 (R2001)], Signs and Symbols for the Occupational Environment.

.2 Public Works Government Services Canada (PWGSC) Standard Acquisition Clauses and Conditions (SACC)-ID: R0202D, Title: General Conditions 'C', In Effect as of: May 14, 2004.

.3 United States Environmental Protection Agency (EPA)/Office of Water

.1 EPA 832R92005, Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.

### 1.2 INSTALLATION AND REMOVAL

.1 Prepare site plan indicating proposed location and dimensions of area to be fenced and used by Contractor, number of trailers to be used, avenues of ingress/egress to fenced area and details of fence installation.

.2 Identify areas which have to be gravelled to prevent tracking of mud.

.3 Indicate use of supplemental or other staging area.

.4 Provide construction facilities in order to execute work expeditiously.

.5 Remove from site all such work after use.

### 1.3 SCAFFOLDING

.1 Scaffolding in accordance with CAN/CSA-S269.2.

.2 Provide and maintain swing staging, [temporary stairs, scaffolding, platforms, ramps and ladders.

### 1.4 HOISTING

.1 Provide, operate and maintain hoists [cranes] required for moving of workers, materials and equipment. Make financial arrangements with Subcontractors for their use of hoists.

.2 Hoists [cranes] to be operated by qualified operator.

### 1.5 SITE STORAGE/LOADING

.1 Do not unreasonably encumber premises with products.

### 1.6 CONSTRUCTION PARKING

.1 Parking will be permitted on site, provided it does not disrupt performance of Work.

.2 Provide and maintain adequate access to project site.

## 1.7 OFFICES

.1 Provide an office to accommodate site meetings.

.2 Provide marked and fully stocked first-aid case in a readily available location.

.3 Subcontractors to provide their own offices as necessary. Direct location of these offices.

## 1.8 EQUIPMENT, TOOL AND MATERIALS STORAGE

.1 Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

.2 Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

## 1.9 SANITARY FACILITIES

.1 Provide sanitary facilities for work force in accordance with governing regulations and ordinances.

.2 Post notices and take precautions as required by local health authorities. Keep area and premises in sanitary condition.

## 1.10 CONSTRUCTION SIGNAGE

.1 Provide and erect project sign, within three (3) weeks of signing Contract, in a location designated by the Departmental Representative.

.2 Indicate on sign, name of Owner, Contractor and Subcontractor.

.3 No other signs or advertisements, other than warning signs, are permitted on site.

.4 Provide a 1200 x 2400 mm project identification signboard. as detailed and as described below.

.1 Signboard: 19 mm Medium Density Overlaid Douglas Fir Plywood to CSA O121.

.2 Paint: alkyd enamel to CAN/CGSB-1.59 over exterior alkyd primer to CAN/CGSB 1.189.

.3 Fasteners: hot-dip galvanized steel nails and carriage bolts.

.5 Locate project identification sign as directed by the Departmental Representative.

.6 Signs and notices for safety and instruction in both official languages Graphic symbols to CAN/CSA-Z321.

.7 Maintain approved signs and notices in good condition for duration of project, and dispose of off site on completion of project or earlier if directed by the Departmental Representative.

## 1.11 PROTECTION AND MAINTENANCE OF TRAFFIC

.1 Maintain and protect traffic on affected roads during the work period except as otherwise specifically directed by the Departmental Representative.

.2 Contractor's traffic on roads selected for hauling material to and from site to interfere as little as possible with public traffic.

.3 Verify adequacy of existing roads and allowable load limit on these roads. Contractor: responsible for repair of damage to roads caused by construction operations.

.4 Construct access and haul roads necessary.

.5 Provide necessary lighting, signs, barricades, and distinctive markings for safe movement of traffic.

.6 Dust control: adequate to ensure safe operation at all times.

.7 Location, grade, width, and alignment of construction and hauling roads: subject to approval by the Departmental Representative..

.8 Lighting: to assure full and clear visibility for full width of haul road and work areas during night work operations.

.9 Remove, upon completion of work, haul roads designated by the Departmental Representative.

**1.12 CLEAN-UP**

.1 Remove construction debris, waste materials, packaging material from work site daily.

.2 Clean dirt or mud tracked onto paved or surfaced roadways.

.3 Store materials resulting from demolition activities that are salvageable.

.4 Stack stored new or salvaged material not in construction facilities.

## Part 2 Products

**2.1 NOT USED**

.1 Not Used.

## Part 3 Execution

**3.1 TEMPORARY EROSION AND SEDIMENTATION CONTROL**

.1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction

.2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

.3 Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

**END OF SECTION**

Approved: 2018-01-29

## Part 1 General

### 1.1 RELATED REQUIREMENTS

.1 Section 01 74 00 - Cleaning

### 1.2 ACTION AND INFORMATIONAL SUBMITTALS

.1 The Contractor shall submit a work schedule before starting the work to the Departmental representative

.2 Submit written request in advance of cutting or alteration which affects:

- .1 Structural integrity of elements of project.
- .2 Integrity of weather-exposed or moisture-resistant elements.
- .3 Efficiency, maintenance, or safety of operational elements.
- .4 Visual qualities of sight-exposed elements.
- .5 Work of Owner or separate contractor.

.3 Include in request:

- .1 Identification of project.
- .2 Location and description of affected Work.
- .3 Statement on necessity for cutting or alteration.
- .4 Description of proposed Work, and products to be used.
- .5 Alternatives to cutting and patching.
- .6 Effect on Work of Owner or separate contractor.
- .7 Written permission of affected separate contractor.
- .8 Date and time work will be executed.

### 1.3 PREPARATION

.1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.

.2 After uncovering, inspect conditions affecting performance of Work.

### 1.4 EXECUTION

.1 Execute cutting, fitting, and patching, including excavation and fill, to complete Work.

.2 Uncover Work to install ill-timed Work.

### 1.5 WASTE MANAGEMENT AND DISPOSAL

.1 Separate waste materials for [recycling] [reuse] in accordance with Section 01 74 19 - Waste Management and Disposal.

**Part 2 Products**

**2.1 NOT USED**

.1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

.1 Not Used.

**END OF SECTION**

## Part 1 General

### 1.1 SITE CLEANLINESS

.1 Keep the site clean and prevent debris and scrap, from accumulating.

.2 Remove debris and scrap from the job site daily or dispose of them as directed by the Departmental Representative. Scrap must not be burned on the construction site.

.3 Keep access routes to the site accessible and free of ice and snow.

.4 Arrange for and obtain permits from the relevant authorities for the disposal of debris and scrap.

.5 Remove debris and scrap material from the site.

.6 Store volatile waste in closed metal containers and remove it from the site at the end of each work period.

### 1.2 FINAL CLEANING

.1 Once the work has been substantially completed, remove excess materials and construction equipment and tools that are no longer required for the remainder of the work.

.2 Remove debris and scrap and leave the premises clean.

.3 Remove excess materials, tools, equipment and construction equipment prior to the final inspection.

.4 Remove debris and scrap.

.5 Remove scrap from the site at predetermined times or dispose of it as directed by the Departmental Representative. Scrap must not be burned on the construction site.

.6 Arrange for and obtain permits from the relevant authorities for the disposal of debris and scrap.

.7 Remove and dispose of garbage around the blocks.

.8 Remove and dispose of any parts near each block that may have become detached from the block.

### 1.3 WASTE MANAGEMENT AND DISPOSAL

Sort waste for disposal in accordance with 01 74 19 – Waste Management and Disposal.

## Part 2 Product

### 2.1 NOT APPLICABLE

.1 Not used.

## Part 3 Execution

### 3.1 NOT APPLICABLE

.1 Not used.

**END OF SECTION**

Approved: 2017-04-25

## Part 1 General

### 1.1 SUMMARY

.1 This Section includes requirements for management of construction waste and disposal, which forms the [Contractor] 's commitment to reduce and divert waste materials from landfill and includes the following:

.1 Preparation of a Waste Management Plan that will be used to track the success of the Waste Management against actual waste diversion from landfill.

.2 Preparation of a Waste Management Plan that provides guidance on a logical progression of tasks and procedures to be followed in a pollution prevention program to reduce or eliminate the generation of waste, the loss of natural resources, and process emissions through source reduction, reuse, recycling, and reclamation.

.2 The Owner has established that this project shall generate the least amount of waste possible and that processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

### 1.2 REFERENCE STANDARDS

.1 ASTM International (ASTM)

.1 ASTM E1609 01, Standard Guide for Development and Implementation of a Pollution Prevention Program

.2 Canada Green Building Council (CaGBC)

.1 LEED Reference Guide for Building Design and Construction, Version 4

.3 Recycling Certification Institute (RCI):

.1 RCI Certification Construction and Demolition Materials Recycling

### 1.3 DEFINITIONS

.1 Clean Waste: Untreated and unpainted; not contaminated with oils, solvents, sealants or similar materials.

.2 Demolition/Dismantling Waste: Solid wastes typically including materials, packaging, trash, debris, and rubble resulting from the work.

.3 Hazardous: Exhibiting the characteristics of hazardous substances including properties such as ignitability, corrosiveness, toxicity or reactivity.

.4 Non hazardous: Exhibiting none of the characteristics of hazardous substances, including properties such as ignitability, corrosiveness, toxicity, or reactivity.

.5 Non toxic: Not poisonous to humans either immediately or after a long period of exposure.

.6 Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

.7 Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.

.8 Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form; recycling does not include burning, incinerating, or thermally destroying waste.

.9 Return: To give back reusable items or unused products to vendors for credit.

.10 Reuse: To reuse a construction waste material in some manner on the project site.

.11 Salvage: To remove a waste material from the project site to another site for resale or reuse by others.

.12 Sediment: Soil and other debris that has been eroded and transported by storm or well production run off water.

.13 Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

.14 Toxic: Poisonous to humans either immediately or after a long period of exposure.

.15 Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

.16 Volatile Organic Compounds (VOC's): Chemical compounds common in and emitted by many building products over time through outgassing:

.1 Solvents in paints and other coatings;

.2 Wood preservatives; strippers and household cleaners;

.3 Adhesives in particleboard, fiberboard, and some plywood; and foam insulation.

.4 When released, VOC's can contribute to the formation of smog and can cause respiratory tract problems, headaches, eye irritations, nausea, damage to the liver, kidneys, and central nervous system, and possibly cancer.

.17 Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

.18 [Construction Waste Management Plan]: A project related plan for the collection, transportation, and disposal of the waste generated at the construction site; the purpose of the plan is to ultimately reduce the amount of material being landfilled.

## 1.4 ADMINISTRATIVE REQUIREMENTS

.1 Coordination: Coordinate waste management requirements with all Divisions of the Work for the project, and ensure that requirements of the Construction Waste Management Plan are followed.

.2 Preconstruction Meeting: Arrange a pre-construction meeting attended by the Departmental Representative to discuss the Waste Management Plan and to develop mutual understanding of the requirements for a consistent policy towards waste reduction and recycling.

## 1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Action Submittals: Provide the following submittals before starting any work of this Section:

.1 Draft Waste Management Plan: Submit to the Departmental Representative a preliminary analysis of anticipated site generated waste. The Departmental Representative will provide commentary before development of the Waste Management Plan.

.2 Waste Management Plan Submit a Wate Management Plan for this project prior to any waste removal from site and that includes the following information on the means of transportation of the recyclable materials, whether materials will be site separated and self hauled to designated centers, or whether mixed materials will be collected by a waste hauler and removed from the site, and destinations of materials.

## 1.6 PROJECT CLOSEOUT SUBMISSIONS

.1 Waste Management Report: Submit a Wate Management Plan for this project in a format acceptable that includes the following information:

.1 Submit information on the disposal site o the D.R. Rodgers barge wreck and Wabis II tugboat., including the total waste produced by the project.

.2 Multiple Waste Hauling: Compile all information into a single [CWM Report] where multiple waste hauling and diversion strategies were used for the project.

.3 Photographs: Submit photographs of waste diversion facilities documenting location and signage describing usage of waste separation containers.

## 1.7 QUALITY ASSURANCE

.1 Resources for Development of [Construction Waste Management Report (CWM Report)]: The following sources may be useful in developing the Draft Construction Waste Management Plan:

.1 Recycling Haulers and Markets: Investigate local haulers and markets for recyclable materials, and incorporate into [CWM Plan].

.2 Certifications: Provide proof of the following during the course of the Work :

.1 Compliance Certification: Provide proof that recycling center is third party verified and is listed as a Certified Facility through the registration and certification requirements of the Recycling Certification Institute.

## 1.8 DELIVERY, STORAGE AND HANDLING

.1 Storage Requirements: Implement a recycling/reuse program that includes separate collection of waste materials as appropriate to the project waste and the available recycling and reuse programs in the project area.

.2 Handling Requirements: Clean materials that are contaminated before placing in collection containers and ensure that waste destined for landfill does not get mixed in with recycled materials:

.1 Deliver materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to recycling process.

.2 Arrange for collection by or delivery to the appropriate recycling or reuse facility.

.3 Hazardous Waste and Hazardous Materials: Handle in accordance with applicable regulations.

## Part 2 Products

### 2.1 NOT USED

.1 Not Used.

## Part 3 Execution

### 3.1 (CWM PLAN) IMPLEMENTATION

.1 The Contractor is responsible for designating an on site party or parties responsible for instructing workers and overseeing and documenting results of the Waste Management plan for the project.

.2 Distribution: Distribute copies of the Waste Management plan to the job site foreman, each Subcontractor, the Departmental Representative and other site personnel as required to maintain the Waste Management plan.

.3 Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, composting and return methods being used for the project to each Subcontractor at appropriate stages of the project.

.4 Separation Facilities: Lay out and label a specific area to facilitate separation of materials for potential recycling, salvage, reuse, composting and return:

.1 Recycling and waste bin areas are to be kept neat and clean and clearly marked in order to avoid contamination of materials.

.2 Hazardous wastes shall be separated, stored, and disposed of in accordance with local regulations.

### 3.2 SUBCONTRACTOR'S RESPONSIBILITY

.1 [Subcontractor] 's shall cooperate fully with the [Contractor] to implement the [CWM Plan].

.2 Failure to cooperate may result in the Owner not achieving their environmental goals, and may result in penalties being assessed by the [Contractor] to the responsible [Subcontractor] 's.

**END OF SECTION**

Approved: 2017-04-25

## Part 1 General

### 1.1 SUMMARY

.1 This Section includes the following:

.1 Removal and dismantling of the D.R. Rodgers barge.

.2 Removal and dismantling of the Wabis II tugboat (optional).

.3 Removal and dismantling of the D.R. Rodgesr barge hoist cable and anchors, used to move the barge.

.4 Removal and dismantling of the accessories, including the WabisII supports.

### 1.2 REFERENCE STANDARDS

.1 Canada Green Building Council (CaGBC)

.1 CSA S350-[M1980 (R2003)], Code of Practice for Safety in Demolition of Structures.

.2 Department of Justice Canada (Jus)

.1 Canadian Environmental Assessment Act (CEAA), 2012

.2 Canadian Environmental Protection Act (CEPA), 2012

.3 National Fire Protection Association (NFPA)

.1 NFPA 241 - 96, Standard for Safeguarding Construction, Alteration, and Demolition Operations

### 1.3 DEFINITIONS

.1 Refloating: work methods to refloat the barge wreck using pneumatic air bags.

.2 Removal: work methods to remove the D.R. Rodgers barge wreck and the Wabis II tug.

.3 Demolition: rapid destruction of building following removal of hazardous materials.

.4 Hazardous Materials: dangerous substances, dangerous goods, hazardous commodities and hazardous products, may include but not limited to: asbestos PCB's, CFC's, HCFC's poisons, corrosive agents, flammable substances, ammunition, explosives, radioactive substances, or other material that can endanger human health or wellbeing or environment if handled improperly.

### 1.4 ADMINISTRATIVE REQUIREMENTS

.1 Coordination: Coordinate with the Departmental Representative for the material ownership including but not limited to:

.1 Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the Departmental Representative 's property, demolished materials shall become the Contractor 's property and shall be removed from the Project site.

.2 Pre-Demolition Meetings:

.1 Convene pre-installation meeting one (1) week prior to beginning the refloating and removal of the D.R. Rodgers barge wreck and the Wabis II tugboat with the Departmental Representatives.

.2 Scheduling: Employ necessary means to meet project timelines without compromising specified minimum rates of material diversion.

.3 In event of unforeseen delay notify in writing the Departmental Representative.

## 1.5 ACTION AND INFORMATIONAL SUBMITTALS

.1 Documents / samples to be submitted: Provide the following documents / samples before starting the work provided for in this section:

.1 Schedule of demolition activities

.2 Health and safety plan

.3 Mechanical inspection report of motorized equipment

.2 Before final payment, submit the following.

.1 Waste disposal report indicating final quantities by type of material disposed of in landfills, recycling centers, reuse depots and other waste treatment facilities.

.1 Evidence of disposal of hazardous materials, if applicable, such as asbestos or others.

## 1.6 QUALITY ASSURANCE

.1 Regulatory Requirements: Ensure Work is performed in compliance with the applicable Provincial/Territorial and Municipal regulations.

.2 Comply with hauling and disposal regulations of Authority Having Jurisdiction.

.3 Standards: Comply with ANSI A10.6 and NFPA 241.

## 1.7 SITE CONDITIONS

.1 If material resembling spray or trowel-applied asbestos or other designated substance listed as hazardous be encountered, stop work, take preventative measures, and notify the Departmental Representative immediately.

.1 Proceed only after receipt of written instructions have been received from the Departmental Representative.

.2 Notify the Departmental Representative before disrupting [building] access or services.

.3 Environmental protection:

.1 Ensure Work is done in accordance with Section 01 35 43 - Environmental Procedures.

## 1.8 EXISTING CONDITIONS

.1 Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

.1 Hazardous materials will be as defined in the Hazardous Materials Act.

.2 Hazardous materials will be removed by the Contractor before start of the Work.

## Part 2 Products

### 2.1 EQUIPMENT

.1 Equipment and heavy machinery:

.2 On-road vehicles to: CEPA-SOR/2003-2, On-Road Vehicle and Engine Emission Regulations and CEPA-SOR/2006-268, Regulations Amending the On-Road Vehicle and Engine Emission Regulations.

.3 Off-road vehicles to: EPA CFR 86.098-11 and EPA CFR 86.098-10.

.4 Machinery running only while in use, except where extreme temperatures prohibit shutting machinery down.

## Part 3 Execution

### 3.1 EXAMINATION

.1 Survey existing conditions and correlate with requirements indicated to determine extent of demolition required.

.2 Review Project Record Documents of existing construction provided by the Departmental Representative.

.3 The Departmental Representative does not guaranty that existing conditions are the same as those indicated in Project Record Documents.

.4 Inventory and record the condition of items being removed and salvaged.

.5 When unanticipated mechanical, electrical, or structural elements are encountered, investigate and measure the nature and extent of the element.

.6 Promptly submit a written report to Consultant.

.7 [Perform or engage a professional engineer to perform an engineering survey of the D.R. Rodgers wreck and the Wabis II tug conditions to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during demolition operations.

.8 Verify that hazardous materials have been removed and remediated before proceeding with demolition operations.

### 3.2 PREPARATION

.1 Temporary Erosion and Sedimentation Control:

.1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to the requirements of authorities having jurisdiction.

.2 Protection of In-Place Conditions:

.1 Prevent movement, settlement, or damage to adjacent [utilities,] [structures,] [and parts of building] [and landscaping features] to remain in place. Provide bracing and shoring required.

.2 Keep noise, dust, and inconvenience to occupants to minimum.

.3 Protect building systems, services and equipment.

.4 Provide temporary dust screens, covers, railings, supports and other protection as required.

.5 Do Work in accordance with Section 01 35 29.06 - Health and Safety Requirements.

.3 Demolition/Removal:

.1 Dismental and dispose of the D.R. Rodgesr barge wreck.

.2 Removal of Pavements, Curbs and Gutters:

.1 Square up adjacent surfaces to remain in place by saw cutting or other method approved by the Departmental Representative.

.2 Protect adjacent joints and load transfer devices.

.3 [Protect underlying and adjacent granular materials].

.3 At end of each day's work, leave Work, the D.R. Rodgers barge wreck and the Wabis II tug in safe and stable condition.

.4 Demolish to minimize dusting. Keep materials wetted as directed by the Departmental Representative.

.5 Only dispose of material specified by selected alternative disposal option as directed by the Departmental Representative.

## 3.3 SITE RESTORATION & REPAIRS

.1 Site Grading: Uniformly rough grade area used for the dismantling of the D.R. Rodgers barge wreck to a smooth surface, free from irregular surface changes.

.2 Provide a smooth transition between adjacent existing grades and new grades.

.3 General: Promptly repair damage to adjacent construction caused by dismentling operations.

.4 Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.

.5 Restore exposed finishes of patched areas and extend restoration into adjoining construction in a manner that eliminates evidence of patching and refinishing.

## 3.4 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.

.1 Leave Work area clean at end of each day.

.2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section [01 74 00 - Cleaning].

.3 Waste Management: separate waste materials for reuse/recycling in accordance with Section 01 74 19 - Waste Management and Disposal.

.1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

**END OF SECTION**

Approved: 2019-04-24

## Part 1 General

### 1.1 DEFINITIONS

.1 Erosion: deterioration, displacement, or transportation of land surface by wind or water, intensified by land clearing practices related to construction work.

.2 Sediment: particulate matter transported and deposited as a layer of solid particles within a body of water.

### 1.2 REFERENCE STANDARDS

.1 Refer to laws, by laws, ordinances, rules, regulations and orders or authority having jurisdictions, and other legally enforceable requirements applicable to Work at that area, or become in force during Work performance

.2 Canada Water Act (R.S.C., 1985, c. C-11)

.1 Comprehensive Water Resource Management

.3 Canada Labour Code, Part 2, Canada Occupational Health and Safety Regulations.

.1 Canadian Centre for Occupational Health and Safety (CCOHS), OSH Answers Fact Sheets, Working on or near water.

.4 Fisheries Act (R.S.C., 1985, c. F-14)

.1 Fisheries and Oceans Canada (DFO)

.5 Species at Risk Act (S.C. 2002, c. 29)

.6 Migratory Birds Convention Act, p [1994], S.C. 1994, c. 22.

.7 Canadian Environmental Protection Act, [1999] (CEPA 1999).

.8 Canada National Parks Act (S.C. [2000], c. 32).

.9 Canadian Society of Landscape Architects (CSLA)/Canadian Nursery Landscape Association (CNLA)

.1 Canadian Landscape Standard [2016], First Edition

.2 Canadian Nursery Stock Standard [2017], Ninth Edition

.10 United States Environmental Protection Agency (EPA)

.1 EPA-833-R-06-004, Developing Your Stormwater pollution Prevention Plan: A Guide for Construction Sites

### 1.3 COORDINATION

.1 Coordinate the requirements by authority having jurisdictions of each province/territory to the Departmental Representative, as applicable, to achieve compliance during work performance.

.2 Province of Ontario

.1 Occupational Health and Safety Act and Regulations for Construction Projects, R.S.O. [1990, c.0.1, as amended and O. Reg. 213/91 as amended] - Updated [2018].

.2 Toxics Reduction Act, [2009], S.O. 2009, c. 19.

.3 Ontario Restricted Activity Timing Windows for the Protection of Fish and Fish Habitat

.3 Province of Quebec

.1 Freshwater timing windows for carrying out work in fish habitat (Government of Quebec)

.2 Periods of low risk to fish and fish habitat in marine and estuarine environments.

**1.4 PRE-INSTALLATION MEETINGS**

.1 Arrange for a Site visit, before Work starts, with the Departmental Representative to:

.1 Verify project requirements.

.2 Examine existing Site conditions and adjacent areas to construction's work, before start.

.3 Identify potential impact on existing aquatic and riparian habitats and water quality.

**1.5 ACTION AND INFORMATIONAL SUBMITTALS**

.1 Provide copy of erosion and sedimentation control plan in accordance with authorities having jurisdiction.

**1.6 ENVIRONMENTAL REQUIREMENTS**

.1 Constructing temporary crossings of watercourses where spawning beds are indicated is prohibited.

.2 Dumping excavated fill, waste material, or debris in watercourse or wetland is prohibited.

.3 Underwater blasting within 100 m of indicated spawning beds is not permitted.

.4 Running/idling equipment or trucks must be reduced to prevent damage from exhaust fumes and mitigate risk of fire from exhaust heat.

**Part 2 Products**

**2.1 MATERIALS**

.1 Silt Fencing:

.1 Consisting of non-woven geotextile with manufactured seams as resistant as the geotextile material itself. The geotextile shall be in one piece.

.2 Stakes to be natural wood, minimum 1.5 metres in length, sized to withstand peak flows.

.2 Turbidity or Floating Silt Curtain:

.1 Consisting of a heavy duty woven fabric with top loops connected to floats and bottom loops woven through a 5 mm diameter heavy metal chain.

.2 Length of silt curtain to be sufficient to fully contain the work area.

.3 Height of silt curtain to be sufficient to adjust to variable water levels while maintaining continuous contact with the watercourse bed.

.4 Mark floating surface of curtain with yellow buoys and/or yellow lights to alert boaters as determined by the Departmental Representative.

.3 Pumps:

.1 The inlet and outlet of pumps and hoses for use in-water to be screened to prevent aquatic fauna from entering the equipment.

## Part 3 Execution

### 3.1 EXISTING CONDITIONS

.1 Maintain existing flow pattern in natural watercourse systems.

.2 Maintain existing hydrological conditions.

### 3.2 SITE CLEARING AND PLANT PROTECTION

.1 Temporary Erosion and Sedimentation Control:

.1 Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to [sediment and erosion control plan, specific to site, that complies with EPA-833-R-06-004 or requirements of authorities having jurisdiction, whichever is more stringent] [requirements of authorities having jurisdiction] [sediment and erosion control drawings].

.2 Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

.3 Remove erosion and sedimentation controls once disturbed areas have been restored and stabilized.

.2 Minimize disturbance to vegetated buffer zones and protect trees and plants on site and adjacent properties where indicated.

.3 Existing saturated logs along base of shoreline to be disturbed to be collected and secured within a floating boom system. Logs to remain saturated at all times. Upon completion of watercourse alterations, reinstate logs along base of slope in a manner similar to existing conditions.

.4 Wrap trees and shrubs adjacent to construction work, storage areas and trucking lanes in burlap.

.5 Protect roots of designated trees to dripline or as instructed by the Departmental Representative during excavation and site grading to prevent disturbance or damage.

.1 Avoid unnecessary traffic, dumping and storage of materials over root zones.

.6 Leave cuttings from trees and other vegetation on site as brush piles to allow for natural degradation.

.1 Secure large piles with degradable materials to prevent interference with watercourse.

.7 Remove only trees that may offer future blockage problems as instructed by the Departmental Representative.

.8 Leave roots mass and stumps in place.

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

**3.3 DRAINAGE**

.1 Pumping water containing suspended materials into watercourse is prohibited.

.2 Establish rock chute spillways to accommodate safe surface water entry to watercourse as directed by the Departmental Representative.

.3 Install drop pipe inlet system as directed by the Departmental Representative.

**3.4 REMOVAL OF SEDIMENT CONTROL MEASURES**

.1 Sediment control measures to remain in place at all times during the work in order to catch and filter any run-off from the worksite before it reaches the watercourse.

.2 Measures to remain in place until the growth of seed, sod or other surface cover is sufficient to retain sediments from being mobilized in runoff.

.3 Method of removal of sediment control measures to be submitted for approval by the Departmental Representative.

.4 For in-water sediment control measures, allow minimum 1 day for settlement of suspended sediments before removal.

**3.5 SITE RESTORATION**

.1 Restore the original watercourse bed grades and materials upon completion of in-water works.

.2 Establish vegetated buffer zones with suitable vegetation to minimum [3] m along edge of watercourse banks as determined by the Departmental Representative.

.3 Plant non-invasive, locally native or naturalized vegetation natural to area, suitable for application without requirement for fertilizers, pesticides and other chemicals.

.4 Control stream bank erosion in lower section of watercourse with irregular shaped rip rap underlain with non-toxic filter cloth of size determined by the Departmental Representative.

.5 Control stream bank erosion in upper section of watercourse by planting suitable vegetation as directed by the Departmental Representative.

.1 Ensure planting occurs within 5 days after work on watercourse is complete. Ensure stabilization of exposed soils occurs within 5 days of completion of watercourse works.

**END OF SECTION**

## Partie 1 General

### 1.1 CALCULATION METHOD

.1 The Contractor must provide, no later than ten (10) days after the Notice of Acceptance of Offer, a breakdown of the cost of the aggregate lump sum prices.

.2 The Contractor must provide, no later than ten (10) days after the Notice of Acceptance of Offer, a list of equipment and the hourly rate for each piece of equipment available for the work.

.3 The Contractor must provide, not later than ten (10) days after the Notice of Acceptance of Offer, a list of hourly rates for its employees.

.4 Lump sum prices include, but are not limited to, all materials, transportation, rental, equipment installation, equipment, tools, labour, administration fees, profits, financing and expenses to do work not specifically described in the specifications or other tender documents but deemed necessary for good workmanship and to make the work compliant with the specifications.

.5 Lump sum prices will include but not be limited to all costs related to worker health and safety and environmental protection measures.

.6 Lump sum prices will include but not be limited to, all costs related to the identification of materials deemed hazardous, the handling and transportation of waste and residual materials by land and sea, the treatment of waste and residual materials, and the disposal of waste and residual materials from the project, such as hazardous materials and other non-hazardous waste and residual materials (demolition waste, clean-up waste, etc.). All waste and residual materials from the project will have to be disposed of at one or more authorized sites depending on their nature and according to the regulations and laws in effect.

.7 All work described in these specifications or required to complete said work, but not defined as a separate item that is eligible for a lump sum or unit payment, shall be considered directly or indirectly related to the overall subject of the contract. No separate payment shall be made for such work. However, the cost of any work that is directly or indirectly related to the subject of this contract must be included in the unit prices quoted in the tender.

.8 The following methods must be used to calculate the costs of labour, tools or materials involved in the work:

.1 Lump sum work: this work is subject to a lump sum arrangement. The work consists of, but is not limited to:

.1 **Item 1 – Mobilisation and Demobilisation**

.1 This item will be measured as a lump sum unit. It includes all costs associated with the transportation and handling of all site equipment and facilities.

.2 50% of this item will be paid at the beginning of the work, with the other 50% being paid upon restoration of the premises and the final cleaning. If some equipment must be taken down before the

work is completed, payment may be made upon presentation of supporting documentation, subject to approval by the Departmental Representative.

.2 **Item 2 – Site organization**

.1 This item will be calculated as an overall lump sum unit and will include, but not be limited to:

.1 Bonding and administrative fees;

.2 All investigative, planning, management and supervisory work;

.3 All permits and applications (municipal, provincial and federal);

.4 All requests for authorization and access (riverbank, municipal, provincial and federal);

.5 General waste management not included in other items;

.6 Fees for temporary utilities (electricity, telephone, Internet, water, etc.);

.7 Temporary construction site facilities;

.8 Keeping the site in order and final cleaning;

.9 Costs for winter conditions;

.10 Docking and/or access fees;

.11 Transportation service for workers between the shore and the site;

.12 Transportation service for the site supervisor and the Departmental Representative between the shore and the site; and

.13 All elements in division 01 of the quote. It also includes the work indicated on the plans and specifications and for which payment is not provided in another item.

.2 Unit price work: Work to which a Unit Price Arrangement applies:

.1 **Item 3 – Refloating, dismantling and disposal of the D. R. Rodgers barge wreck**

.1 This item will be calculated at a unit rate and will include, but not be limited to:

.1 Refloating, dismantling and diposal of the D.R. Rodgers barge wreck, including the anchors, the hauling cables, chains and debris;

.2 Salvage and transportation costs, if applicable;

.3 Scrapping of all elements (structures, chains, etc.);

.4 Disposal of all elements within the perimeter of the works that may have become detached from the

structures and that constitute waste or a hazard to the environment or navigation;

.5 Management, recovery and disposal of structures;

.6 Transportation and handling of structures, waste and scrap to the disposal site;

.7 Treatment of waste and scrap at the disposal site; and

.8 Disposal, according to the regulations in effect, of all scrap resulting from the removal of the structures and the waste contained therein.

.2 The work included in and related to this item is described in section 01 11 01 - General Information.

.3 **Item 3 – removal and disposal of the Wabis II tugboat**

.1 This item will be calculated at a unit rate and will include, but not be limited to:

.1 Removal and disposal of the wabis II tugboa, including the supports, anchors, chains and debris;

.2 Salvage and transportation costs, if applicable;

.3 Scrapping of all elements (structures, chains, etc.);

.4 Disposal of all elements within the perimeter of the works that may have become detached from the structures and that constitute waste or a hazard to the environment or navigation;

.5 Management, recovery and disposal of structures;

.6 Transportation and handling of structures, waste and scrap to the disposal site;

.7 Treatment of waste and scrap at the disposal site; and

.8 Disposal, according to the regulations in effect, of all scrap resulting from the removal of the structures and the waste contained therein.

.2 The departmental representative reserves the right to remove this item from the scope of the work following the award of the contract.

.3 The work included in and related to this item is described in section 01 11 01 - General Information.

**END OF SECTION**

## Partie 1 General

**GENERAL NOTE:** in this section the term “site” includes all the facilities located at the site where the work is taking place (Ottawa river, banks, dismantling site, access, infrastructure, parkings, bays, etc.).

### 1.1 REFERENCES

.1 Province of Québec

.1 Loi sur la santé et la sécurité du travail L.R.Q., c. S-2.1 (Act respecting occupational health and safety).

.2 Code de sécurité pour les travaux de construction L.R.Q., c. S-2.1, r.4 (Safety code for the construction industry).

.2 Province of Ontario

.1 Occupational Health and Safety Act and Regulations for Construction Projects, R.S.O. [1990, c.0.1, as amended and O. Reg. 213/91 as amended] - Updated [2005].

.3

### 1.2 ACTION AND INFORMATIONAL SUBMITTALS

.1 Make submittals in accordance with Section [01 33 00 - Submittal Procedures].

.2 Submit to Departmental representative, and the CNESST the site-specific prevention program, as outlined in the article “GENERAL REQUIREMENTS”, at least 10 days prior to the start of work.

.3 Departmental representative will review Contractor’s site-specific prevention program and provide comments to Contractor within 10 days after receipt of the document. Revise plan as appropriate and resubmit to Departmental representative within 5 days after receipt of comments from Departmental representative. Departmental representative reserves the right not to authorize the start of work on the construction site as long as the content of the prevention program is not satisfactory. The Contactor shall then update his prevention program and resubmit it to the Departmental representative if the scope of work changes or if the working methods of the Contractor differ from his initial plans or for any other applicable new condition.

.4 Departmental representative’s review of Contractor’s site-specific prevention program should not be construed as approval of the program and does not reduce the Contractor’s overall responsibility for construction Health and Safety during the work.

.5 Submit copies of Contractor’s authorized representative’s construction site health and safety inspection reports to Departmental representative, at least once a week.

.6 Submit to Departmental representative within 24 hours a copy of any inspection report, correction notice or recommendation issued by Federal, Provincial and Territorial health and safety inspectors.

.7 Submit to Departmental representative within 24 hours an investigation report for any accident involving injury and any incident exposing a potential hazard.

The investigation report shall contain at least the following:

1. date, time and place of accident;
2. name of sub-contractor involved in the accident;
3. number of persons involved and condition of wounded;
4. witness identification;
5. detailed description of tasks performed at the time of the accident;
6. equipment being used to accomplish the tasks performed at the time of the accident;
7. corrective measures taken immediately after the accident;
8. causes of the accident;
9. preventive measures that have been put in place to prevent a similar accident.

.8 Submit to Departmental representative WHMIS MSDS - Material Safety Data Sheets. Contractor must also keep one copy of these documents on the construction site.

.9 Medical Surveillance: where prescribed by legislation, regulation or prevention program, submit certification of medical surveillance for construction site personnel prior to commencement of Work, and submit additional certifications for any new construction site personnel to Departmental representative.

.10 Submit to Departmental representative an on-site Emergency Response Plan at the same time as the prevention program. The Emergency Response plan must contain the elements listed in the article “GENERAL REQUIREMENTS” of this section.

.11 Submit to Departmental representative copies of all training certificates required for the application of the prevention program, in particular (if applicable) for the following:

.1 first aid in the workplace and cardiopulmonary resuscitation;
.2 work likely to release asbestos dust (mandatory for all work where asbestos is present);
.3 work in confined spaces (mandatory for all work in confined spaces);
.4 lockout-tagout procedures (mandatory for all work requiring lockout);
.5 safely operating forklift trucks (mandatory for all forklift usage);
.6 safely operating elevating work platforms (mandatory for the use of all elevating platforms);
.7 any other requirement of Regulations or the safety program.

In addition, the certifications of the *Cours de santé et sécurité générale pour les chantiers de construction* (General Health and Safety Training for Construction Sites) shall be available on demand on the construction site.

.12 Engineer's plans and certificates of compliance: Contractor must submit to the Departmental representative and to the *Commission des normes, de l'équité, de la santé et de la sécurité du travail* (CNESST) a copy signed and sealed by engineer of all plans and certificates of compliance required pursuant to the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the construction industry) or by any other legislation or regulation or by any other clause in the specifications or in the contract. The Contractor must also submit a certificate of conformity signed by an engineer once the facility for which these plans were prepared has been completed and before a person uses the facility. A copy of these documents must be available on site at all times.

## 1.3 FILING OF NOTICE OF CONSTRUCTION SITE OPENING

.1 Notice of construction site opening shall be submitted to the CNESST before work begins. A copy of such notice and acknowledgment of receipt from the CNESST shall be submitted to Departmental representative.

At the completion of all the work, a notice of construction site closing shall be submitted to the CNESST, with a copy to Departmental representative.

.2 The Contractor shall assume the role of being the Principal Contractor in the limits of the construction site and elsewhere where he must execute work within the framework of this project. The Contractor shall recognize the responsibility of being the Principal Contractor of the project and identify himself as such in the notice of the construction site opening he provides to the CNESST.

.3 The Contractor shall accept to divide and identify the construction site adequately in order to define time and space at all times throughout the course of the project.

## 1.4 HAZARD ASSESSMENT

.1 The contractor must perform construction site specific safety hazard assessment related to project.

## 1.5 MEETINGS

.1 Schedule and administer Health and Safety meeting with Departmental representative prior to commencement of Work.

.2 Contractor's representative with decision power must attend any meetings at which construction site safety and health issues are to be discussed.

.3 If it is anticipated that there will be 25 workers or more on the construction site at any given time, the Contractor shall set up a worksite committee and hold meetings as required by the *Code de sécurité pour les travaux de construction* (S-2.1, r. 4) (Safety code for the construction industry). A copy of the minutes of the meetings of the committee shall be provided to the Departmental representative no later than 5 days after the committee meeting.

## 1.6 REGULATORY REQUIREMENTS

.1 Do the Work in accordance with Section [01 41 00 - Regulatory Requirements].

.2 Comply with all legislation, regulations and standards applicable to the construction site and its related activities.

.3 Comply with specified standards and regulations to ensure safe operations on a site containing hazardous or toxic materials.

.4 Always use the most recent version of the standards specified in the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the construction industry), notwithstanding the date indicated in that *Code.*

## 1.7 COMPLIANCE REQUIREMENTS

.1 Comply with the *Loi sur la santé et la sécurité du travail* (L.R.Q., c. S-2.1) (Act Respecting Occupational Health and Safety) and the *Code de sécurité pour les travaux de construction* (S-2.1, r. 4.) (Safety code for the construction industry) in addition to respecting all the requirements of this specification manual.

## 1.8 RESPONSIBILITIES

.1 The Contractor must acknowledge and assume all the tasks and obligations which customarily devolve upon a principal Contractor under the terms of the *Loi sur la santé et la sécurité du travail* (L.R.Q., ch. S-2.1) (Act Respecting Occupational Health and Safety) and the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the construction industry).

.2 The Contractor must be responsible for health and safety of persons on construction site, safety of property on construction site and for the protection of persons adjacent to construction site and the environment to the extent that they may be affected by conduct of the work.

.3 No matter the size or location of the construction site, the Contractor must clearly define the limits of the construction site by physical means and respect all specific regulation requirements applicable in this regard. The means chosen to define the limits of the construction site must be submitted to the Departmental representative.

.4 Comply with and enforce compliance by employees with safety requirements of Contract Documents, applicable federal, provincial, territorial and local statutes, regulations, and ordinances, and with site-specific prevention Plan.

## 1.9 WORK PERFORMED BY EXTERNAL CONTRACTORS

.1 On this construction site, it is anticipated that work will be performed by an external contractor that has not been hired by the Contractor:

.2 The Contractor must take the necessary steps to protect the health and safety of external contractors that have no contractual link with the Contractor but have been mandated by the Departmental representative to perform certain work. In return, these external contractors are obligated to submit to the authority of the Contractor (Principal Contractor). A subordination agreement must be signed by the Contractor and by each external contractor to this effect and submitted to the Departmental representative prior to the start of the work of each contractor (see the wording in the article HEALTH AND SAFETY SUBORDINATION AGREEMENT)

## 1.10 GENERAL REQUIREMENTS

.1 Before undertaking the work, prepare a site-specific prevention program based on the hazards identified according to the article “HAZARD ASSESSMENT” and the article “RISKS INHERENT TO THE WORKSITE” in this section. Apply this program in its totality from the start of the project until demobilization of all personnel from the construction site. The prevention program shall take into consideration the specific characteristics of the project and cover all the work to be executed on the construction site.

The safety program must include at least the following:

- .1 company safety and health policy;
- .2 description of the stages of the work;
- .3 total costs, schedule and projected workforce curves;
- .4 flow chart of safety and health responsibilities;
- .5 physical and material layout of the construction site;
- .6 risk assessment for each stage of the work, including preventive measures and the procedures for applying them;
- .7 identification of the preventive measures relative to the specific risks inherent to the worksite indicated in the article “RISKS INHERENT TO THE WORKSITE”;
- .8 identification of preventive measures for health and safety of employees and / or public works site as indicated in the article “SPECIFIC REQUIREMENTS FOR THE HEALTH AND SAFETY OF OCCUPANTS AND PUBLIC”;
- .9 training requirements;
- .10 procedures in case of accident/injury;
- .11 written commitment from all parties to comply with the safety program;
- .12 construction site inspection cheklist based on the preventive measures;
- .13 emergency response plan which shall contain at least the following:
  - .1 construction site evacuation procedures;
  - .2 identification of resources (police, firefighters, ambulance services, etc.);
  - .3 identification of persons in charge of the construction site;
  - .4 identification of the first-aid attendants;
  - .5 communication organizational chart (including the person responsible for the site and the Departmental representative);

.6 training required for those responsible for applying the plan;

.7 any other information needed, in the light of the construction site's characteristics.

If available the Departmental representative will provide the evacuation procedures to the Contractor who shall then coordinate the construction site procedure with that of the site and submit it to the Departmental representative.

.2 Departmental representative may respond in writing, where deficiencies or concerns are noted in the prevention program and may request resubmission with correction of deficiencies or concerns.

.3 In addition to the prevention program, during the course of the work the Contractor shall elaborate and submit to the Departmental representative specific written procedures for any work having a high risk factor of accident (for example: demolition procedures, specific installation procedures, hoisting plan, procedures for entering a confined space, procedures for interrupting electric power, etc.) or at the request of the Departmental representative.

.4 The Contractor shall plan and organize work so as to eliminate the danger at source or ensure collective protection, thereby minimizing the use of personal protective equipment.

.5 Equipment, tools and protective gear which cannot be installed, fitted or used without compromising the health or safety of workers or the public shall be deemed inadequate for the work to be executed.

.6 All mechanical equipment (for example, but not limited to: hoisting devices for persons or materials, excavators, concrete pumps, concrete saws) shall be inspected before delivery to the construction site. Before using any mechanical equipment, the Contractor shall obtain a certificate of compliance signed by a qualified mechanic dated less than a week prior to the arrival of each piece of equipment on the construction site; the certificate shall remain on the construction site and transmitted to the Departmental representative on demand.

.7 Ensure all inspections (daily, periodic, annual, etc.) for the hoisting devices for persons or materials required by the current standards are carried out and be able to provide a copy of the inspection certificates to the Departmental representative on demand.

.8 The Departmental representative can at all times, if he suspects a malfunction or the risk of an accident, order the immediate stop of any piece of equipment and require an inspection by a specialist of his choice.

.9 The Departmental representative must be consulted for the location of storing gas cylinders and tanks on the construction site.

## 1.11 RISKS INHERENT TO THE WORKSITE

.1 In addition to the risks related to the tasks to be carried out, personnel responsible for the execution of the work on the construction site will be exposed to the following risks, inherent to the area where the work will be executed..

At the worksite there is in particular the presence of the following:

.1 materials containing asbestos;
.2 materials containing lead;
.3 moulds;
.4 other dangerous materials (specify);
.5 confined spaces;
.6 overhead power lines;
.7 underground services (electric, gas, vapour, water system, etc.);
.8 laboratories;
.9 trees and landscaping to preserve and protect;
.10 potentially unstable ground;
.11 barbed wire fences;
.12 body of water close by;

The Contractor shall process to a risk assessment of the site to validate this information and see if other risks are present on the site. He must include in its prevention program all risks that have been identified.

## 1.12 SPECIFIC REQUIREMENTS FOR THE HEALTH AND SAFETY OF OCCUPANTS AND PUBLIC

.1 The worksite is occupied by employees and/or the public The Contractor shall consider the following specific requirements for the protection of employees and / or the public:

.1 Outdoor weather (such as rain, cold, wind, snow)
.2 Work on or near a body of water
.3 Work near the waterway

These requirements must be included in the Contractor’s site-specific safety plan as well as any other measures provided by the Contractor to protect the health and safety of employees and / or the public on the site.

## 1.13 UNFORESEEN HAZARDS

.1 Whenever a source of danger not defined in the specifications or identified in the preliminary construction site inspection arises as a result of or in the course of the work, the Contractor must immediately suspend work, notify the person responsible for health and safety on the construction site, take appropriate temporary measures to protect the workers and the public and notify Departmental representative, both verbally and in writing. Then the Contractor must do the necessary modifications to the prevention program or apply the security measures required in order to resume work.

## 1.14 PERSON IN CHARGE OF HEALTH AND SAFETY

.1 If the construction site meets the requirements of article 2.5.3 of the *Code the sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the construction industry), the Contractor needs to hire a competent person authorized as a safety officer and appoint this person full time from the beginning of the work. This person's tasks shall solely be dedicated to the management of health and safety on the construction site. This safety officer must have the following qualifications:

- .1 have a safety officer certificate issued by the CNESST;
- .2 have site-related working experience of at least five (5) years specific to the activities associated with the present project;
- .3 have working knowledge of occupational health and safety regulations in the workplace;
- .4 be responsible for completing Contractor's Health and Safety Training Sessions and ensuring that personnel not successfully completing required training are not permitted to enter the construction site to perform work;
- .5 be responsible for implementing, enforcing in detail and monitoring site-specific Contractor's Health and prevention program;
- .6 be on construction site at all times during execution of work;
- .7 inspect the work and ensure compliance with all regulatory requirements and those indicated in the contract documents or the site-specific prevention program.
- .8 Keep a daily log of actions taken and submitting a copy to Departmental representative each week.

The safety officer's certificate shall be submitted to the Departmental representative before the start of the work.

.2 When the hiring of a safety officer is not required or if this person is hired by the Departmental representative, the Contractor shall designate a competent person to supervise and take responsibility for health and safety, no matter the size of the construction site or how many workers are present at the workplace. This person shall be on construction site at all times and be able to take all necessary measures to ensure the health and safety of persons and property at or in the immediate vicinity of the construction site and likely to be affected by any of the work. The Contractor shall submit the name of this person to the Departmental representative before the start of work.

## 1.15 POSTING OF DOCUMENTS

.1 Ensure applicable items, articles, notices and orders are posted in conspicuous location on construction site in accordance with Acts and Regulations of the Province, and in consultation with Departmental representative.

.2 At a minimum, the following information and documents must be posted in a location readily accessible to all workers:

- .1 notice of construction site opening;
- .2 identification of principal Contractor;
- .3 company OSH policy;

.4 site-specific prevention program;

.5 emergency plan;

.6 minutes of worksite committee meetings;

.7 names of worksite committee representatives;

.8 names of the first-aid attendants;

.9 action reports and correction notices issued by the CNESST.

## 1.16 INSPECTION OF THE CONSTRUCTION SITE AND CORRECTION OF NON-COMPLIANCES

.1 Inspect the construction site and complete the construction site inspection checklist and submit it to the Departmental representative in accordance with the article "ACTION AND INFORMATIONAL SUBMITTALS" in this section.

.2 Immediately take all necessary measures to correct any situations deemed non-compliant during the inspections mentioned in the previous paragraph or noticed by the authorities having jurisdiction or the Departmental representative or his agent.

.3 Submit to Departmental representative written confirmation of all measures taken to correct the situation in case of non-compliance in matters pertaining to health and safety.

.4 The Contractor shall give the safety officer or, where there is no safety officer, the person assigned to safety and health responsibilities, full authority to order cessation and resuming of work as and when deemed necessary or desirable in the interests of safety and health. This person should always act so that the safety and health of the public and construction site workers and environmental protection take precedence over cost and scheduling considerations.

.5 The Departmental representative or his agent may order cessation of work if the Contractor does not make the corrections needed to conditions deemed non-compliant in matters pertaining to health and safety. Without limiting the scope of the preceding articles, the Departmental representative may order cessation of work if, in his view, there is any hazard or threat to the safety or health of construction site personnel or the public or to the environment.

## 1.17 PREVENTION OF VIOLENCE

.1 Health and safety management of Public Works and Government Services Canada construction sites includeS the implementation of measures designed to protect the psychological health of all persons who access the construction site where the work is taking place. Consequently, in addition to physical violence, verbal abuse, intimidation and harassment are not tolerated on the construction site. Any person who demonstrates such actions or behaviors will receive a warning and/or could be definitely expelled from the construction site by the Departmental representative.

## 1.18 BLASTING

.1 Blasting or other use of explosives is not permitted without prior receipt of written instruction by Departmental representative.

.2 Do blasting operations in accordance with Section [31 23 16.26 - Rock Removal].

.3 Any operation involving explosives must be carried out under the supervision of a qualified shot-firer.

.4 The purchase, carriage, storage and use of explosives must comply with all applicable federal and provincial legislation:

.1 Canada: *Explosives Act* (E-17)1, *Explosives Regulations* (C.R.C. CH. 599), Standard for Storage of Blasting Charges and Detonators, *Transportation of Dangerous Goods Act and Regulations*.

.2 Québec: *Loi sur les explosifs* (Explosives Act) (E-22), *Règlement d'application sur les explosifs* ((E-22, r.1), *Code de sécurité pour les travaux de construction* (S-2.1, r.4), (Safety code for the Construction Industry) *Règlement sur le transport des matières dangereuses* (Transportation of Dangerous Goods Regulations).

.5 Contractor shall obtain all permits required pursuant to the legislation and regulations referred to above and keep copies on hand at the construction site.

.6 Contractor shall facilitate inspection of the construction site, stored explosives and vehicles used to transport explosives by any government representatives or police officers whose jurisdiction encompasses explosives.

## 1.19 POWDER ACTUATED DEVICE

.1 Use powder actuated devices only after receipt of written permission from Departmental representative.

.2 Any person using an explosive actuated tool shall hold a training certificate and meet all requirements of Section 7 of the *Code the sécurité pour les travaux de construction* (S- 2.1, r. 4). (Safety code for the construction industry)

.3 Any other explosive-actuated device shall be used in accordance with the manufacturer's directions and applicable standards and regulations.

## 1.20 USE OF PUBLIC ROADS

.1 Where it is necessary to encroach on a public road for operational reasons or to ensure the security of the workers, the occupants or the public (for example: the use of scaffolding,

cranes, excavation work, etc.), the Contractor shall obtain at his own expense any authorizations and permits required by the competent authority.

.2 The Contractor shall install at his own expense any signage, barricades or other devices needed to ensure the safety and security of the public and the Contractor's own facilities.

## 1.21 LOCKOUT-TAGOUT

.1 For all work on electrically or otherwise energized equipment, the Contractor shall draw up and implement a general lockout-tagout procedure and submit it to the Departmental representative.

.2 Supervisors and all workers concerned by work requiring lockout-tagout must have received training on lockout-tagout procedures by a recognized organization; Contractor shall submit training certificates to the Departmental representative.

.3 Before starting the lockout-tagout procedure of a piece of equipment on an occupied site, Contractor must coordinate his work with the representative of the site if the interruption of the power sources can have an impact on the operations of the site or on its occupants.

.4 Contractor must designate a qualified person as responsible for the lockout-tagout and must make sure that that person prepares a lockout-tagout data sheet for each piece of equipment involved. The lockout-tagout data sheet must be submitted to the Departmental representative at least 48 hours before the beginning of the work. The Departmental representative will review the data sheet with the representative of the site if the work takes place in an existing building. The data sheets for lockout-tagout must contain at least the following information:

.1 description of work to carry out;

.2 identification, description and location of the circuit and/or ~~piece of~~ equipment to lockout-tagout;

.3 identification of energy sources that feeds the ~~piece of~~ equipment;

.4 identification of each cutout point;

.5 sequence of lockout-tagout and the release of residual energy as well as the sequence of unlocking;

.6 list of material needed for the lockout-tagout;

.7 method of verification of zero energy implementation;

.8 name and signature of the person who prepared the data sheet.

When required by the Departmental representative, Contractor must record all this information on the site's representative form.

.5 At the time of lockout-tagout, the person responsible must date the data sheet and ensure that each worker involved in the work on the circuit/~~piece of~~ equipment to lockout-tagout puts his name on the data sheet and signs it.

## 1.22 ELECTRICAL WORK

.1 Contractor shall ensure that all electrical work is executed by qualified employees in accordance with the provincial regulation respecting vocational training and qualification.

.2 Contractor shall respect all requirements of standard CSA Z462 *Workplace Electrical Safety Standard*.

.3 No repairs or alterations shall be carried out on any live equipment except where complete disconnection of the equipment is not feasible.

.4 Contractor shall respect all requirements prescribed in paragraph "LOCKOUT-TAGOUT" in this section.

.5 Contractor shall advise in writing the Departmental representative of all the work that cannot be done with de-energized equipment and obtain his authorization. Contractor shall demonstrate to the Departmental representative that it is impossible to do the work with de-energized equipment and provide all the information necessary to request and obtain an energized electrical work permit (indicate working procedures, arc flash hazard analysis, protective perimeter, protective equipment, etc.) before the beginning of the work, excluding for the exceptions indicated in standard CSA Z462 Workplace electrical safety.

.6 The energized electrical work permit on must contain at least the following elements:

- description of the circuit and equipment and its location;
- justification for having to do the work in an energized condition;
- description of safe work practices to apply;
- results of the shock hazard analysis;
- limit of the protective perimeter against electric shocks;
- results of the arc flash hazard analysis;
- description of the arc flash protection boundary;
- description of the personal protective equipment required;
- description of the means to limit access to unqualified persons;
- proof that an information session has been carried out;
- approval signature of the energized electrical work (by a person in authority or by the owner).

.7 If for the operational requirements of the occupants of the site the representative of the site requires that the Contractor performs work in an energized condition, the Contractor shall obtain all the information required to request and obtain obtain an energized electrical work permit (indicate working procedures, arc flash hazard analysis, protective perimeter, protective equipment, etc.) and have it signed by the representative of the site assigned by the Departmental representative before the beginning of the work.

## 1.23 ASBESTOS EXPOSURE

It is not anticipated that the work covered by the present specifications involves the manipulation of materials containing asbestos; however, if the Contractor or the Departmental representative or his agent discover materials which are susceptible of containing asbestos, the Contractor must immediately stop the work and advise the Departmental representative. If more investigation demonstrates that the materials do contain asbestos, the Contractor shall comply with the following requirements.

Prior to starting any work likely to emit asbestos dust, the Contractor must:

1. Provide a written procedure for the work, identifying the risk level of the work (low, moderate, high), as defined in section 3.23 of the *Code the sécurité pour les travaux de construction* S-2.1, r- 4, (Safety code for the construction industry). This procedure must take into account all the requirements of that section 3.23.

2. Submit certificates that demonstrate that all workers involved in the work have received training on asbestos hazards and on the procedure required in the preceding paragraph.

3. Demonstrate that he has all the material and equipment required on hand to respect the procedure and for safely conducting the work.

## 1.24 FUNGAL CONTAMINATION

It is not anticipated that the work covered by the present specifications involves the manipulation of materials contaminated by mould; however, if the Contractor or the Departmental representative or his agent discover materials which are susceptible of being contaminated by mould, the Contractor must immediately stop the work and advise the Departmental representative. If more investigation demonstrates that the materials do contain mould, the Contractor shall comply with the following requirements.

Prior to starting any work where workers are likely to be in contact with materials contaminated by mould, the Contractor must:

1. Provide a written procedure for the work which respects all the requirements of the *Code the sécurité pour les travaux de construction* S-2.1, r- 4, (Safety code for the construction industry), as well as the requirements indicated in the document "*Mould Guidelines for the Canadian Construction Industry*" published by the Canadian Construction Association (http://www.cca-acc.com/documents/electronic/cca82/cca82.pdf).

2. Demonstrate that he has all the material and equipment required on hand to respect the procedure and for safely conducting the work.

## 1.25 EXPOSURE TO SILICA

For any interior or exterior work generating silica, the Contractor must respect the following requirements, in addition to those in the *Code de sécurité pour les travaux de construction* S-2.1, r.4 (Safety code for the construction industry).

1. Work in wet environment or use tools with the inflow of water in order to reduce dustiness, if not, collect dust at the source and retain it with a high-efficiency filters not to propagate dust in the environment.

2. Clean surfaces and tools with water, never with compressed air.

3. Sand and pickle surfaces by using an abrasive containing less than 1% of silica (also called amorphous silica).

4. Install shields or other containment device to prevent silica dust from migrating toward other workers or the public.

5. Wear individual respiratory and ocular protection equipment during all the operations that could generate silica dust in accordance with the requirements of the *Code de sécurité pour les travaux de construction, S-2.1, r.4* (Safety code for the construction industry).

6. Wear coveralls to prevent contamination outside the construction site.

7. Do not eat, drink, or smoke in a dusty environment.

**8.** Wash the hands and the face before drinking, eating or smoking.

## 1.26 SANDBLASTING

Prior to starting any sandblasting work, the Contractor must:

1. Provide a written procedure of the work that meets the requirements of section *3.20.*of the *Code de sécurité pour les travaux de construction, S-2.1, r.4* (Safety code for the Construction Industry).

2. Demonstrate that he has all the material and equipment required on hand to respect the procedure and for safely conducting the work.

3. All sanding and sandblasting work shall be done by using an abrasive containing less than 1% of silica.

## 1.27 LEAD-BASE PAINT REMOVAL

Prior to all work where workers are likely to handle materials containing lead-base paint or other substances containing lead, the Contractor must:

1. Provide a written procedure for the work which respects all the requirements of the *Code de sécurité pour les travaux de construction* S-2.1, r- 4, (Safety code for the construction industry), as well as the requirements indicated in the document "*Guideline for Lead on Construction Projects*" published by the Ontario Ministry of Labour (http://www.labour.gov.on.ca/english/hs/pdf/gl_lead.pdf). If there is a discrepancy between the Québec regulation and the Ontario document, the most stringent requirement shall apply.

2. Demonstrate that he has all the material and equipment required on hand to respect the procedure and for safely conducting the work.

## 1.28 EXPOSURE TO ANIMAL'S FECAL DROPPINGS

Prior to all work where workers are likely to come in contact with materials contaminated by animal's fecal droppings, the Contractor must:

1. Provide a written procedure for the work which respects all the requirements of the *Code the sécurité pour les travaux de construction* S-2.1, r- 4, (Safety code for the construction industry), as well as the requirements indicated in the document "*Des fientes de pigeons dans votre lieu de travail: méfiez-vous"* (Pigeon droppings in your workplace: Beware" published by the CNESST (http://www.csst.qc.ca/publications/100/Documents/DC100_1331_1web2.pdf)

2. Demonstrate that he has all the material and equipment required on hand to respect the procedure and for safely conducting the work.

## 1.29 RESPIRATORORY PROTECTION

1. Contractor must ensure that all workers who must wear a respirator as part of their duties have received training for that purpose as well as fit testing of their respirator, in accordance with CSA Standard Z94.4 *Selection, use and care of respirators.* Submit the certificates of the fit testingS to the Departmental representative on demand.

## 1.30 FALL PROTECTION

1. Plan and organize work so as to eliminate the risk of fall at the source or ensure collective protection, thereby minimizing the use of personal protective equipment. When personal fall protection is required, workers must use a safety harness that complies with CSA standard CAN/CSA Z-259.10 M90. A safety belt must not be used as fall protection.

2. Every person using an elevating platform (scissors, telescopic mast, articulated mast, rotative mast, etc.) must have a training regarding this equipment.

3. The use of a safety harness is mandatory for all elevating platforms with telescopic, articulate or rotative mast.

4. Define the limits of the danger zone around each elevating platform.

5. All openings in a floor or roof must be surrounded by a guardrail or provided with a cover fixed to the floor able to withstand the loads to which it could be exposed, regardless of the size of the opening and the height of the fall it represents.

6. Everyone who works within two metres from a fall hazard of three metres or more must use a safety harness in accordance with the requirements of the regulation, unless there is a guardrail or another device offering an equivalent safety.

7. Despite the requirements of the regulation, the Departmental representative may require the installation of a guardrail or the use of a safety harness for specific situations presenting a risk of fall less than three metres.

## 1.31 SCAFFOLDINGS

In addition to the requirements of the *Code de sécurité pour les travaux de construction* (Safety code for the construction industry), the Contractor who uses scaffolding**S** must respect the following requirements:

**Foundation**

1. Scaffolding**S** shall be installed on a solid foundation so that it does not slip or rock.
2. Contractors wishing to install scaffolding**S** on a roof, overhang, canopy or awning shall submit their calculations and loads, as well as plans signed and sealed by an engineer to the Departmental representative and obtain his authorization before beginning installation.

**Assembly, bracing and mooring**

1. All scaffolding**S** shall be assembled, braced and moored in accordance with the manufacturer's instructions and the provisions of the *Code de sécurité pour les travaux de construction* (Safety code for the construction industry).
2. Where a situation requires the removal of part of the scaffolding**S** (e.g., crosspieces), the Contractor shall submit to the Departmental representative an assembly procedure signed and sealed by an engineer certifying that the scaffolding assembled in that manner will allow the work to be done safely given the loads to which it will be subject.

3. For scaffolding**S** where the span between two supports is greater than three metres, the Contractor shall provide the Departmental representative an assembly plan signed and sealed by an engineer.

**Protection against falls during assembly**

1. Workers exposed to the risk of falling more than three metres shall be protected against falls at all times during assembly.

**Platforms**

1. Scaffolding platforms shall be designed and installed in accordance with the provisions of the *Code de sécurité pour les travaux de construction* (Safety code for the construction industry).
2. If planks are used, they shall be approved and stamped in accordance with section 3.9.8 of the *Code de sécurité pour les travaux de construction* (Safety code for the construction industry)
3. Scaffolding**S** of four sections (or six metres) high or more shall have a full platform covering the entire surface between the putlogs every three metres high or fraction thereof, and the components of that platform shall not be moved at any time to create an intermediate landing.

**Guardrails**

1. A guardrail shall be installed on every landing.
2. Cross braces shall not be considered as guardrails.
3. If the platforms are not covering the entire surface between the putlogs, the guardrail must be installed just above the edge of the platform so that there is no empty horizontal space between the platform and the guardrail.
4. Where scaffolding**S** has four sections (or six metres) high or more and full platforms are required, the guardrails shall be installed on each landing at the start of work and shall remain in place until the work is completed.

**Access**

1. The Contractor shall ensure that access to the scaffolding**S** does not compromise worker safety.
2. Where the platforms of the scaffolding**S** are comprised of planks, ladders shall be installed in such a way that planks extending beyond the platform do not block the way up or down.
3. Notwithstanding the provisions of the *Code de sécurité pour les travaux de construction* (Safety code for the construction industry), stairs shall be installed on all scaffolding**S** that have six or more rows of uprights or is six sections (or nine metres) high or higher.

**Protection of the public and occupants**

1. When scaffolding**S** are installed in a zone accessible to the public, the Contractor shall take the necessary measures to prevent the public from having access to them and, if applicable, to the work or storage area located in the vicinity of these scaffolding.

2. Contractor must install covered walkways, nets or other similar devices to protect workers, the public and the occupants against falling objects. The means of protection must be approved by the Departmental representative.

**Engineering plans**

**1.** In addition to those required by the *Code de sécurité pour les travaux de construction* (Safety code for the construction industry), the Departmental representative reserves the right to require engineering plans for other types or configurations of scaffolding**s**.
**2.** A plan signed and sealed by an engineer is required for all scaffolding**s** that will be covered with a canvas, a tarpaulin or any other material that has wind resistance.
3. A certificate of conformity signed by an engineer is required in all cases where an engineering plan is required ~~for the installation~~ and this, before anybody uses the facility. A copy of these documents must be available on the construction site at all times.

## 1.32 CONFINED SPACES

In addition to the requirements of the provincial regulation applicable to confined spaces, the Contractor must respect the requirements in the following paragraphs.

The Departmental representative reserves the right, depending on the nature of the risk of the confined spaces, of the work to be done and/or of the level of competence in confined spaces demonstrated by the Contractor, to require from the latter that he use the services of a firm specialized in health and safety or in confined space work to perform the analysis of the risks inherent to the confined spaces, to complete the entry permit, to conduct surveillance of the work or for any other task related to the work in confined spaces.

**Information on confined spaces existing on the construction site**

1. The following presents a non-exclusive list of the confined spaces that the Contractor will likely have to access during this project:

   *List of confined spaces*

2. The Contractor shall take into consideration each of these confined space**S** and must also add to this list the confined spaces that he is likely to build/install during this project.

**Person in charge of the health and safety for the work in confined spaces**

1. The Contractor shall designate a person to be in charge of the health and safety for the work in confined spaces. This person shall be qualified, as defined in the article 297 of the *Règlement sur la santé et la sécurité du travail* (S-2.1, r.13) (Occupational Health and Safety Regulation). This person must be present at all times during work in confined spaces and must make sure that all the requirements of the regulation and the ones specified in this

section are respected. This person must amongst other things fill out and issue the entry permit for the confined spaces.

**Training**

1. All persons having access to a confined space, including the person in charge and the watcher of the confined space shall have completed training on entry in confined spaces.

2. All persons who have to use supplied-air respirator to access the confined spaces shall have completed training on the use of these apparatus.

3. All persons identified as rescuers for confined spaces shall have completed training on confined spaces rescue.

4. Each training required in the preceding paragraphs must be provided by a firm specialized in health and safety or in confined spaces.

5. The training certificates of the persons mentioned above must be submitted to the Departmental representative before the beginning of the work in confined spaces.

**Risk assessment of confined spaces**

1. For each of the confined spaces listed at the beginning of this article, the Contractor must obtain the necessary information from the site representative and proceed to the assessment of the risk inherent to each confined space and relative to:
   a. the prevailing internal atmosphere, namely the concentration of oxygen, inflammable gases and vapours, combustible or explosive dusts as well as the categories of contaminants likely to be present in this enclosed area or nearby;
   b. the fact that the natural or mechanical ventilation is insufficient
   c. The materials that are present there and that can cause the worker to sink, to be buried or to drown, such as sand, grain or a liquid;
   d. the interior configuration;
   e. pipes and conduits penetrating the confined space;
   f. energies such as electricity, moving mechanical parts, heat stress, noise and hydraulic energy;
   g. ignition sources such as open flames, lighting, welding and cutting, static electricity or sparks;
   h. all other particular circumstances, such as the presence of vermin, rodents or insects.

   These risk assessments must be done by the person in charge of the health and safety of the work in confined spaces. They must be submitted to the Departmental representative for analysis at least 10 days before the proposed date for the work in confined spaces and they must also include the following information:
      a. location of the confined space;
      b. description of the confined space;
      c. dimensions of the confined space;

d. number, location and dimension**S** of the openings;
e. content of the confined space (material, substances, etc.)
f. date of the assessment;
g. name and signature of the person who conducted the assessment and the name of his employer.

The Contractor must repeat the same process for each of the confined spaces that he will build/install during this project.

**Confined spaces entry permits**

1. At least 5 days before the scheduled date for the work in a confined space the Contractor must submit for analysis to the Departmental representative a copy of each entry permit specific to the confined spaces where he must access. The entry permits must be completed by the person in charge of the health and safety of the work in confined spaces, and must contain the following information as a minimum:

    a. description of the work that will be carried out and the method of work, including the materials and tools needed to do this work;
    b. description of the risks and corresponding preventive measures according to the risk assessment inherent to the confined space done previously and according to the work to be carried out;
    c. safety equipment that will be used to control the risks of confined spaces (e.g.: fan, gas detectors, local exhaust ventilation, personal protective equipment, etc.);
    d. rescue procedure covering at least the following:
    e. means of communication between the supervisor of the confined space and the workers in the confined space;
    f. lifesaving equipment specific to each confined space;
    g. confirmation that the municipal emergency response service has been advised that work in confined spaces would be going on at this specific construction site and that they may intervene do to a confined space rescue; otherwise, the Contractor must identify the workers on the construction site that will act as rescuers in a confined space in the case where such rescuers must enter the confined space (rescue training is mandatory);
    h. location of telephone and phone number of the municipal emergency response service (if applicable);
    i. date of entry permit;
    j. name of person who issued the permit and the name of his employer;
    k. name of the confined space safety watcher and the name of his employer;
    l. name of the workers who must enter the confined space and the name of each one's employer.

2. In cases where the site representative requires the use of a confined space entry permit specific to his site, the Contractor must comply with the requirements of that permit.

**Medical surveillance**

1. The Contractor must submit to the Departmental representative a medical certificate dated in the last two years for all persons who must use a supplied-air respirator. The certificate must confirm the ability of each person to use this type of apparel.

2. It is recommended that the persons who have to work in sewer collection systems or other similar systems be vaccinated against diphtheria, tetanus and hepatitis "B".

**Requirements while working in confined spaces**

1. Before each entry into a confined space, the person in **charge** of the health and safety for the work in confined spaces shall take readings of oxygen concentration, flammable gases and all toxic gases likely to be present and record these readings on the entry permit required earlier.

2. No worker can access the confined space if the following requirements are not respected:
    a. the concentration of oxygen shall be greater than or equal to 19.5% and less than or equal to 23%;
    b. the concentration of inflammable gases or vapours shall be less than or equal to 10% of the lower explosion limit;
    c. the concentration of other gases must not exceed the standards prescribed in annex I of the *Règlement sur la santé et la sécurité du travail* (S-2.1, r.13) (Occupational Health and Safety Regulation).

3. If the oxygen and gas concentrations measured respect the regulatory values, the person in charge of the health and safety for the work in confined spaces must ensure that all preventive measures indicated on the permit are in place and then must complete the entry permit (date, time, signatures, etc.) before issuing the permit and allow entry into the confined space.

4. A permit is only valid for one work shift; the Contractor must submit a new permit for each extra shift.

5. During the work inside the confined space, the gas concentration must be measured continuously and the gas detector must be installed at ~~the level of the~~ breathing area of the workers. If the conditions inside the confined space are such that the workers might not hear/see the detector's alarm, the Contractor must find a way for the confined space safety watcher to watch the concentration measures while maintaining the measurements at the level of the breathing zone of the workers.

6. If the work is organized in a way that the workers are scattered far away from each other in a large confined space, the Contractor needs to provide additional gas detectors.

7. The Contractor must provide the gas detectors and maintain them in good condition. He must be able to show that the gas detectors used have been calibrated and adjusted by the person in **charge** of the health and safety for the work in confined spaces or by a qualified person, in accordance with the manufacturer's recommendations. The Departmental representative can at all times have the accuracy of the measuring devices checked. In the event of the failure of a

detection device, the work must be stopped immediately and all workers must leave the confined space.

8. The manufacturer's manual of the gas detectors must be available on the construction site.

9. The Contractor shall provide a ventilation system to keep concentrations of contaminants below the regulatory limits.

10. If work generating contaminants are performed (welding, use of products, etc.), the Contractor must, if needed, install an aspiration system for the contaminants so that the regulatory values of air quality can be maintained at all times.

11. If a detecting device alarm goes off, all workers shall leave the confined space. The measured levels of concentration must then be recorded on the entry permit. The Contractor shall then find the source of contamination, neutralize it, ventilate the confined space to eliminate contaminant residues and authorize access to the confined space only when concentrations of oxygen and gas have returned to normal.

12. Compressed gas cylinders or welding equipment shall not be brought into confined spaces: this equipment shall remain outside and shall not block entrances or exits; all cylinders shall be properly secured.

13. Tools and electrical devices used to work in the confined spaces shall be grounded and, when necessary, designed to be explosion-proof. All equipment must be connected to a ground fault interrupter outlet or to a step-down transformer. The Contractor shall, at his own cost, hire a qualified electrician to adjust power receptacles and/or circuit breakers that he intends to use which do not meet these criteria.

14. The Contractor shall obtain a Hot Work Permit and respect the requirements to that effect when the work to be carried out includes hot work.

15. The Contractor must assign a competent person to assume the duties of confined space safety watcher. The supervisor shall be exclusively dedicated to these duties and must constantly remain outside of the confined space as long as there is a worker in it. He must also:

    a. ensure that the entry permit has been filled, signed and posted near the confined space;
    b. be familiar with the work procedure specific to the confined space and ensure that it is respected;
    c. ensure continuous communication with all the workers in the confined space and ensure that all the equipement required in case of emergency is present;
    d. have a good knowledge of the ~~backup~~ ventilation systems and ensure their proper functioning for the duration of the work;
    e. prevent access to unauthorized persons;
    f. ensure that the conditions around the confined space zone is not a health or security risk for the workers inside the confined space;
    g. initiate the emergency procedure if needed.

16. The same person may act as a confined space safety watcher and as the person in charge of the health and safety of the work in confined spaces, provided all requirements of both functions are met.

## 1.33 LIFTING LOADS WITH CRANE OR BOOM TRUCK

1. Unless specified otherwise, the Contractor must prepare a hoisting plan and submit it to the Departmental representative for all lifting operations done with a crane or a boom truck at least 5 days before these lifting operations begin. The hoisting plan must contain at a minimum the information listed at the end of this article.

2. The hoisting plan must be signed and sealed by an engineer for the following lifting operations:
   a. lifting of concrete panels;
   b. lifting mechanical/electrical equipment on a roof or on the floor of a building;
   c. lifting of loads encroaching on the public road;
   d. lifting large dimensions or very heavy loads;
   e. all other lifting operation, in accordance with the requirements of the Departmental representative.

3. In addition to the above requirements, the Contractor must plan the hoisting operations in a way as to avoid that the loads pass over the occupied zones on the site. When there is no alternative, the hoisting plan must absolutely be signed and sealed by an engineer and must guarantee the security of the occupants in that zone; the plan must also be approved by the Departmental representative. The Departmental representative can, if he deems necessary, require that the work be done at night or on weekends.

4. Upon the beginning of the work on the construction site, the Contractor must submit the list of the hoisting plans anticipated for the whole project to the Departmental representative. That list shall be updated as needed if changes occur during the work.

5. In addition to the mechanical service inspection certificate, the annual inspection certificate and the crane logbook must be aboard all cranes and boom truck cabs.

6. The entire lifting area shall be marked off to prevent the entry of non-authorized persons.

7. The Contractor shall carefully inspect all of the slings and lifting accessories and make sure that those in poor condition are destroyed and scrapped.

8. Compressed-gas cylinders shall be lifted with a basket specially designed for this purpose.

### MINIMUM CONTENT OF HOISTING PLAN

- Sketch indicating at a minimum, the location of the crane, the surrounding facilities, the zone covered by the hoisting operations, the pedestrian’s pathways and vehicular routes, the security perimeter, etc.

- Weight of loads
- DimensionS of loads
- List of hoisting devices and weight of each
- Total weight lifted
- Maximum height of obstacles to clear
- Height of loads lifting relative to the surface of the roof (in the case of loads to be placed on roofs)
- Use of guide cables
- Type of crane used
- Crane capacity
- Boom length
- Boom angle
- Crane's radius of action
- Deployment of stabilizers
- Percentage usage of the crane's capacity
- Verification confirmation of hoisting equipment
- Identification of the crane operator and the person responsible for the hoisting operations with date and signatures

## 1.34 HOT WORK

Hot work means any work where a flame is used or a source of ignition may be produced, i.e., riveting, welding, cutting, grinding, burning, heating, etc.

1. Before the beginning of each shift of work and for each sector, the Contractor must obtain a "Hot Work Permit" emitted by the person responsible for the site.
2. A working portable fire extinguisher suitable to the fire risk shall be available and easily accessible within a 5 m radius from any flame, spark source or intense heat.

3. The Contractor must appoint an individual to do continuous monitoring of the fire risks for a period of one (1) hour after the end of the shift of hot work. This individual shall sign the section for this purpose on the permit and give it to the person in charge of the construction site after the one-hour period.

4. When the hot work is done in areas where there is combustible materials or where the walls, ceilings or floors are made of or covered with combustible materials, a final inspection of the work area must be scheduled four (4) hours after the work has finished. Unless specified otherwise by the Departmental representative, the Contractor must assign a person to carry out this monitoring.

**Welding and cutting**

In addition to the requirements prescribed in the preceding paragraphs, the Contractor must respect the following requirements:

1. Welding and cutting work must be carried out in accordance with the requirements of the *Code de Sécurité pour les travaux de construction, S-2.1, r.4* (Safety code for the construction industry) and CSA standard W117.2, Safety in Cutting, Welding and Allied Processes.
2. Air extraction system with filters must be used for all welding and cutting work performed inside.
3. Stop all activities producing flammable or combustible gas, vapours or dust in the vicinity of the welding or cutting work.
4. Store all compressed gas cylinder on a fireproof fabric and make sure that the room is well ventilated.
5. Store all oxygen cylinders more than 6 metres from a flammable gas cylinder (ex: acetylene) or a combustible such as oil or grease, unless the oxygen cylinder is separated from it by a wall made of non-combustible material as mentioned inthe article 3.13.4 of the *Code de sécurité pour les travaux de construction, S-2, r. 6* (Safety code for the construction industry)
6. Store the cylinders far from all heat sources.
7. Not to store the cylinders close to the staircases, exits, corridors and elevators.
8. Do not put acetylene in contact with metals such as silver, mercury, copper and alloys of brass having more than 65% copper, to avoid the risk of an explosive reaction.
9. Check that welding equipment with electric arc has the necessary tension and are grounded.
10. Ensure that the conducting wires of the electric welding equipment are not damaged.
11. Place the welding equipment on a flat ground away from the bad weather.
12. Install fireproof canvas when the welding work is done in a superposition and where there is the risk of falling sparks.
13. Move away or protect the combustible materials which are closer than 15 metres from the welding work.
14. Prohibition to weld or cut any closed container.
15. Do not perform any cutting, welding or work with a naked flame on a container, a tank, a pipe or other container containing a flammable or explosive substance unless:
    a. they have been cleaned and air samples indicating that work can be done without danger has been taken; and
    b. provisions to ensure the safety of the workers have been made.

**Protection against fall from heights**

1. Installation of guardrails is mandatory at all times; however, the installation of a warning line is allowed to define the limits of the work zones provided that all the requirements of the articles 2.9.4.0 and 2.9.4.1 of the *Code de sécurité pour les travaux de construction* (Safety code for the Construction Industry) are respected.
2. The guardrails must remain in place until the end of the project. The Departmental representative will authorize their dismantling when he can confirm that all the work, inspections and corrections have been made.
3. Workers installing guardrails must wear safety harnesses.
4. Workers installing and modifying guardrails or flashing shall wear safety harnesses in the event guardrails must be moved temporarily.
5. Workers shall wear safety harnesses when receiving material and giving directions to the crane operator next to a drop.
6. Safety harnesses shall be worn when carrying out work next to a drop where collective protection is not sufficiently safe.
7. The Contractor shall provide a fastening method and safety cable system compliant with section 2.10.12 of the *Code de sécurité pour les travaux de construction (L.R.Q., S-2.1, r.4)* (Safety code for the Construction Industry) for each construction site or location.

**Lifting of materials**

1. For all winch installations, the Contractor shall provide the Departmental representative with the installation method recommended by the manufacturer. If unavailable, the Contractor shall then provide an installation procedure signed and sealed by an engineer. The installation procedure must take into account load-bearing capacity, the amount, weight and location of counterweight and any other detail that may affect the capacity and stability of the device.
2. The Contractor shall carefully inspect all of the slings and lifting accessories and make sure that those in poor condition are destroyed or scrapped.
3. Compressed-gas cylinders shall be lifted with a basket specially designed for this purpose.
4. In all cases where a crane or boom truck is used, the Contractor must respect the requirements of the paragraph Lifting Loads With Crane or Boom Truck, in this section.

**Protection against burns**

1. Individuals assigned to the boilers shall wear long sleeves, safety glasses and a face shield when filling the boilers.
2. Individuals working with asphalt or other hot liquids shall wear gloves, long sleeves and safety glasses.

**Protection against fire**

1. The storage and use of propane cylinders shall comply with the standard CAN/CSA-B149.2, *Propane Storage and Handling Code*. The cylinders shall be stored outdoors, in a safe place, away from any unauthorized handling, in a storage cabinet specially designed for this purpose.

The cylinders shall be securely kept upright and locked at all times in a place where no vehicles are allowed unless the cylinders are protected by barriers or similar protection.

2. The number of propane cylinders on the roof shall not exceed the number of cylinders necessary for a day's work, and cylinders shall at all times be secured upright or held in a cart designed for this purpose.

3. All hot work (burning, heating, riveting, welding, cutting, grinding, etc.) must be done in accordance with paragraph "Hot Work" in this section.

**Material and waste management**

1. On the roof, light material and sheet material shall be kept in containers or be securely fastened. In the event this requirement is disregarded in the slightest way, the Departmental representative may disallow the storage of materials on the roof.
2. Waste shall be discarded as produced using a waste chute or appropriate containers. The Contractor shall provide the means to prevent waste from being carried away by the wind.
3. All waste must be removed from the roof at the end of shifts.
4. Unless otherwise authorized by the Departmental representative, all waste bins must be placed at least 3 m from any structure or building.

**Protection of occupants and the public**

1. Contractor must install covered passageways, nets or other devices above the entrances and the exits of the building to protect the workers, the public and the occupants against falling object. The means of protection must be approved by the Departmental representative.
2. A safety perimeter on the ground must be placed under the work zone in order to protect the workers, the public and the occupants.
3. The ground construction site, material handling area and boiler area shall be clearly sealed off to prevent occupants or the public from accessing the construction site and areas.
4. Before installing any device that may emit gas or fumes, the Contractor shall receive authorization from the person in charge of the construction site, who shall make sure that there is no risk of gas or fumes infiltrating the building's ventilation system.

## 1.35 STEEL STRUCTURE ERECTION OR DISMANTLING WORK

.1 In addition to respecting section 3.24 du *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry), the Contractor must also respect the requirements described in the following paragraphs.

.2 Contractor must submit the following documents to the Departmental representative before the beginning of steel structure erection work:

.1 erecting procedures in accordance with article 3.24.10 du *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry);

.2 rescue procedures for the release of a worker suspended in a safety harness within a maximum of 15 minutes; procedures must be adapted to the construction site and in accordance with article 3.24.4 of that same code; the procedure must be accompanied by a written confirmation that it has been tested;

.3 statement from an engineer that the anchor rods have been installed in accordance with the anchoring plan as required by the article 3.24.12 of that same code;

.4 hoisting procedures in cases where the lifting is done in one of the ways described in the article 3.24.15 of that same code;

.5 name of the individual identified as rescuer and his rescue training certificate;

.6 name of the individual identified as first-aid attendant and his first-aid training certificate.

.3 The Contractor must make sure that the following documents are available for consultation on construction site at all times:

.1 Steel structure manufacturer's erection plan in accordance with the requirements of article 3.24.9 du *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry);

.2 Column anchor rodS's anchoring plan in accordance with the requirements of article 3.24.11 du *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry).

## 1.36 WORK NEAR BODIES OF WATER

1. For all work done near a body of water (such as work above water, work on a wharf, work on the edge of a watercourse, etc.), the Contractor must respect the requirement of the following paragraphs in addition to those of *Code de sécurité pour les travaux de construction* (Safety code for the Construction Industry).

2. The Contractor must plan his work in a way to implement safety measures to prevent any worker from falling in the water. The use of theses measures should be favoured over the wearing of a life jacket.

3. Submit the following documents to the Departmental representative before the beginning of the work:

   a. description of the body of water;
   b. description of the work done next to this body of water;
   c. plan of transportation on water adapted to the work and to the characteristics of the body of water;
   d. rescue plan adapted to the work and to the characteristics of the body of water;

   Each of the document listed above must contain at a minimum the information required in section 11 of the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry).

If there is the possibility that all or part of the work can be done during the winter, the safety measures included in the documents required above must be adapted accordingly.

4. The Contractor must submit to the Departmental representative the certificate of training required in article 11.2 du *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry) for the following individuals:
    a. the person assigned to prepare the documents required in the preceding paragraph; and
    b. each person responsible for the transport or rescue operations

5. If the rescue plan stipulates the use of a vessel, the Contractor must submit to Departmental representative the competency card or certificate for the individuals in the rescue team for his work, issued by Transport Canada.

6. The Contractor must include in his weekly inspection checklist the devices required in the articles 11.4 and 11.5 du *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry).

7. Ensure that a rescue vessel moored and in the water is available at each place where a worker may fall in the water. However, a vessel may serve more than one workplace on the same construction site provided the distance between any of these workplaces and the vessel is less than 30 m.

8. Where the construction site is a wharf, a pier, a quay or any similar structure, a ladder with at least two (2) rungs below the surface of the water shall be installed on the front of the structure every 60 m.

## 1.37 INTERIOR USE OF INTERNAL COMBUSTION ENGINES

1. In addition to respecting article 3.10.17 of the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry), the Contractor must also respect the requirements described in the following paragraphs.
2. The use of a gas-powered equipment inside a building is prohibited even if the building is provided with openings.
3. The use of other equipment powered by an internal combustion engine inside a building must be submitted to the approval of the Departmental representative.
4. For the use of any piece of equipment powered by an internal combustion engine inside a building, even if the building is provided with openings, the Contractor must install a ventilation system able to maintain the concentrations of toxic gases below the regulatory values. The stale air shall be exhausted outside the building.
    a. Before using equipment powered by an internal combustion engine, the Contractor must plan and write the following:

b. number of fans to install;
c. power of the fans;
d. location of the fans;
e. dimensions of the openings that will be open during the work.

5. During the operation of equipment with internal combustion engine, the Contractor must measure the concentrations of carbon monoxide and nitrogen oxides in the work area and at the breathing area of the workers; the concentration levels measured must be recorded in a register every 30 minutes that must be available for consultation.

6. If work is in an occupied building, the Contractor must also measure the concentrations of carbon monoxide and nitrogen oxides in the rooms next to the work area and the concentration levels measured must be recorded in a register every 30 minutes.
7. If the carbon monoxide or nitrogen oxides detector alarm goes off during the work, the Contractor must stop the work and take the corrective measures required before resuming the work.
8. A portable fire extinguisher must be available at all times in the work area during the use of equipment with internal combustion engines.
9. The equipment must be maintained at a safe distance from all combustible material.
10. The storage of fuel for any equipment with internal combustion engine is prohibited inside a building.

## 1.38 TEMPORARY HEATING

1. In addition to respecting section 3.11 of the *Code de sécurité pour les travaux de construction* (S-2.1, r.4) (Safety code for the Construction Industry), the Contractor must also respect the requirements described in the following paragraphs.
2. A portable fire extinguisher must be available at all times near the heating units, no matter what type of heating is used.
3. The heating units must always be used in accordance with the manufacturer's specifications.
4. If applicable, the canvas or tarpaulins used next to the heating units must be solidly fixed so as not to be projected on the heaters, on the pipes connected to the heaters or on any other heat source.
5. The gas cylinders must be installed in a way that they are protected from vehicule and other equipment traffic.
6. For the use of heating units other than electric, the Contractor must install a carbon monoxide detector in the work area, next to the heating units and/or the workers, throughout the course of the heating period. The Contractor must immediately apply the corrective measures required to the heating units if the detector's alarm goes off.

7. The Contractor must ensure a minimum surveillance of the heating units outside the hours of work (nights and weekends). He must submit a surveillance plan to the Departmental representative before the use of the heating units.

## 1.39 WORK NEAR OVERHEAD POWER LINES

**.1** When there is an overhead power line in the work zone and that the Contractor chooses to apply paragraph b) of article 5.2.2 of the *Code de sécurité pour les travaux de construction* (2.1, r.4) (Safety code for the Construction Industry), a copy of the agreement with the electrical power company and a copy of the work process, required in the article 5.2.2 b), must be submitted to the Departmental representative before the beginning of the work in relation to these documents.

## 1.40 DIVING OPERATIONS

In accepting this contract, the Contractor agrees to satisfy the following requirements:

1. Compliance with all the requirements of the *Règlement sur la santé et la sécurité du travail* (S-2.1, r.13) (Regulation respecting occupational health and safety), more precisely section XXVI. I, entitled *Travail effectué en plongée* (Underwater Work). Compliance, furthermore, with the latest editions of standards CAN/CSA *Z275.2 – Occupational Safety code for Diving Operations*, CAN/CSA Z275.1 – *Hyperbaric Chambers* and CAN/CSA Z275.4 – *Competency Standard for Diving Operations*. In the event of conflict between these requirements, the most stringent requirement shall apply.

2. In addition to the above, in cases where construction work is involved, compliance with the *Code de sécurité pour les travaux de construction (S-2.1, r.4)* (Safety code for the Construction Industry).

3. Before starting the work, submit to the Departmental representative the following documents, as per the *Règlement sur la santé et la sécurité au travail* (S-2.1, r.13) *(*Regulation respecting occupational health and safety)*:*
    a. the professional diving training certificate of each member of the dive team OR a document recognizing the skills of those persons in accordance with the *Competency Standard for Diving Operations*, CAN/CSA Z275.4-02, as per section 312.8 of the Regulation;
    b. the workplace first-aid training certificate of each member of the dive team;
    c. the medical certificate of each member of the dive team;
    d. for each dive included in this contract, a dive plan containing the following information, in addition to that required under the *Règlement sur la santé et la sécurité au travail* (Regulation respecting occupational health and safety):
        i. the thermal protection to be used;
        ii. the repetitive dive factor;
        iii. the no-decompression limit;
        iv. the circumstances in which the dive must be terminated;

v. the procedures to be followed to ensure that machinery, equipment or devices that could create a hazard have been locked out;
vi. the decompression table to be used, as required;

e. notification confirming that a system for communicating with the *Service d'assistance médicale pour les urgences en plongée* (Medical assistance service for diving emergency) is available at the diving station at all times.

4. The Contractor shall take into account the following specific characteristics of the worksite, and adapt its dive plan accordingly:

5. Where the dive takes place at one of the following locations, provide the Departmental representative confirmation that the authorities concerned have been notified:
   a. upstream or downstream from a hydraulic structure or submerged water line;
   b. in marine waterways;
   c. in port facilities.

6. If the dive station is more than 2 metres above the water, provide the Departmental representative:
   a. a drawing of the equipment used to transport the worker through the air-water interface, if a device other than a stage is used for that purpose;
   b. a drawing of the device used to hoist the stage or other device, unless that device is a crane or boom truck.

7. If the dive is carried out from a vessel, provide the Departmental representative the following documents:

   a. proof of qualification of the vessel operator;
   b. the vessel's certificate of compliance from Transport Canada.

8. Before starting the work, carry out an underwater rescue simulation at the site, as required under section 312.31 of the *Règlement sur la santé et la sécurité du travail* (S-2.1, r.13) (Regulation respecting occupational health and safety).

9. On a daily basis, complete and provide to the Departmental representative a checklist confirming the presence and condition of the equipment required at the dive site as per the dive plan.

10. Ensure that all other documents required under section XXVI of the *Règlement sur la santé et la sécurité du travail* (S-2.1, r.13) (Regulation respecting occupational health and safety) are available at the construction site at all times (diving logbook, diver's logbook, etc.).

## 1.41 HEALTH AND SAFETY SUBORDINATION AGREEMENT

**Project: _____ Address: _____**

**EXTERNAL CONTRACTOR**

I hereby agree to submit to the authority of (name of the Principal Contractor's business) _____, which is the Principal Contractor for the project indicated above during the entire duration of our work on the construction site. Accordingly, I confirm that I have reviewed the Principal Contractor's prevention program, and I agree to:

- inform my employees of the content of the Principal Contractor's prevention program and ensure that its content are complied with at all times;
- apply the prevention program that is specific to the activities that we carry out under this project;
- inform the Principal Contractor of my actions or dealings on the construction site and obtain the Principal Contractor's agreement before the start of work; and
- follow the health and safety directives provided by the representative of the Principal Contractor on the construction site and, depending on requirements, attend training sessions and health and safety meetings organized by the representative of the Principal Contractor.

Name of representative: _____

Name of business: _____

Description of work to be done on the construction site: _____

Approximate dates of work (start-end): _____

Signature: _____ Date: _____

**PRINCIPAL CONTRACTOR**

I hereby agree to allow the business (name of external contractor) _____ to perform the work under this project indicated above and, as Principal Contractor, to take the necessary steps to protect the health and safety of workers on the construction site. Should the Contractor repeatedly refuse or fail to comply with my directives, I agree to inform PWGSC's Departmental representative of this and to provide documentary evidence of my actions or dealings with the Contractor.

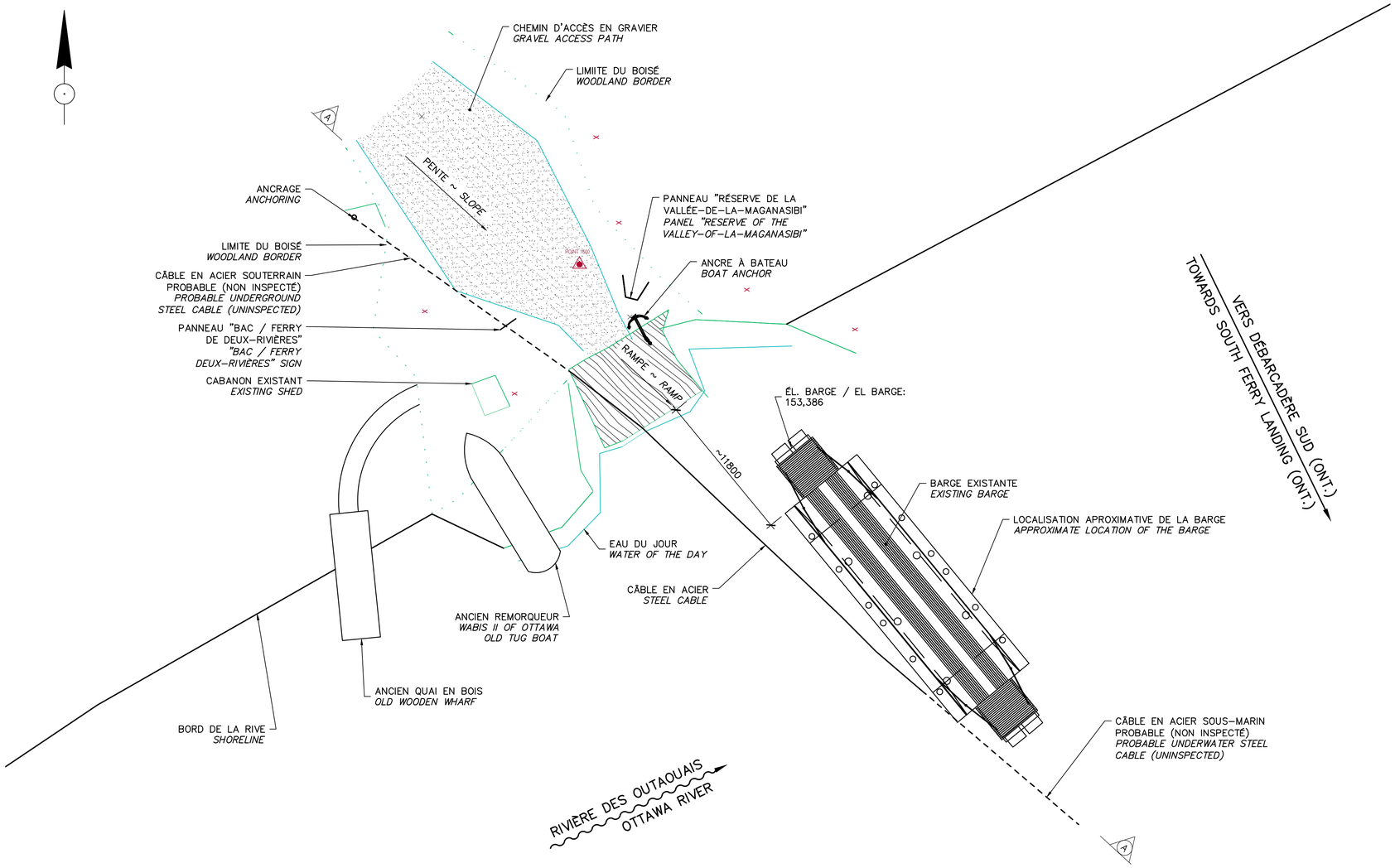
Name of representative: _____

Name of the Principal Contractor's business: _____

Signature: _____ Date: _____

Submit a completed and signed copy to PWGSC's Departmental representative

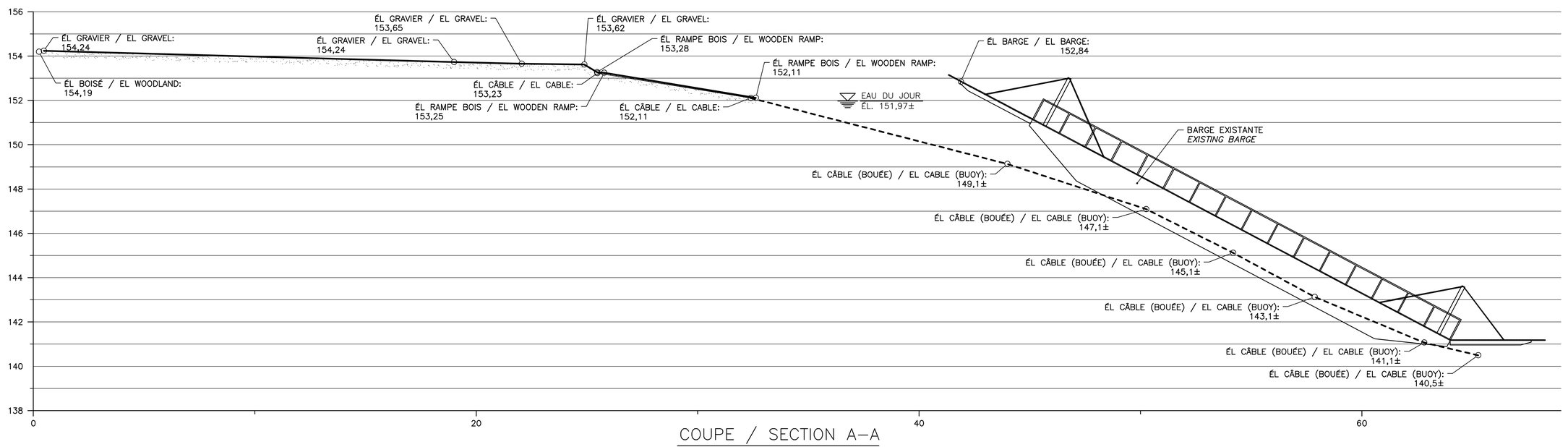
# APPENDIX A




VUE EN PLAN / PLAN VIEW

0m 5m 10m 15m 20m

ÉCHELLE ~ *SCALE*




COUPE / SECTION A–A

FORMAT ISO A1

Travaux publics et Services gouvernementaux Canada
Public Works and Government Services Canada

N/D: 157900183

Stantec Experts-conseils ltée
1200, boul. Lebourgneuf, bureau 350
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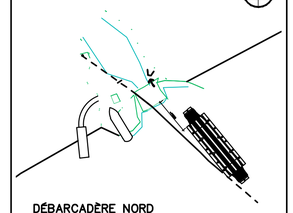
Téléphone : 418.626.1660
Télécopieur : 418.626.5464



**DÉBARCADÈRE NORD**
***NORTH FERRY LANDING***

PLAN CLÉ
*KEY PLAN*

SCEAUX *SEALS*

| | | |
|---|---|---|
| 01 | FINAL *FINAL* | 2021–02–15 |
| 00 | FINAL *FINAL* | 2020–08–21 |
| révisions *revisions* | | date |

**A no du détail** ***detail no***
**B no de la feuille–où détail exigé** ***sheet no – where detail required***
**C no de la feuille–où détaillé** ***sheet no – where detailed***

Projet *Project*

**RELEVÉ DU DÉBARCADÈRE NORD**

***NORTH FERRY LANDING SURVEY***

Dessin *Drawing*

Relevé par *Survey by*
Yves Pinet, arpenteur — 2020–07–21 *Date*

Dessiné par *Drawn by*
Malcolm Gilbert, ing. — 2021–02–15 *Date*

Approuvé par *Approved by*
Olivier Belley, ing. — 2020–02–16 *Date*

Soumission *Tender*

Administrateur de projets APC *PCA Project Manager*

No de projet *Project number*: TPSGC R.109077.001
No de contrat *Contract number*:

Nom du fichier *File name*: 157900183_BARGE_DR_RODGERS_01.DWG
No de classement *File no*:

No de plan ou dessin *File name*: 157900183_BARGE_DR_RODGERS_01
No feuillet *Drawing no*: 01 /01

NOTES
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- *L'inspection sous-marine a été limitée à une profondeur maximale de 15 mètres.

NOTES
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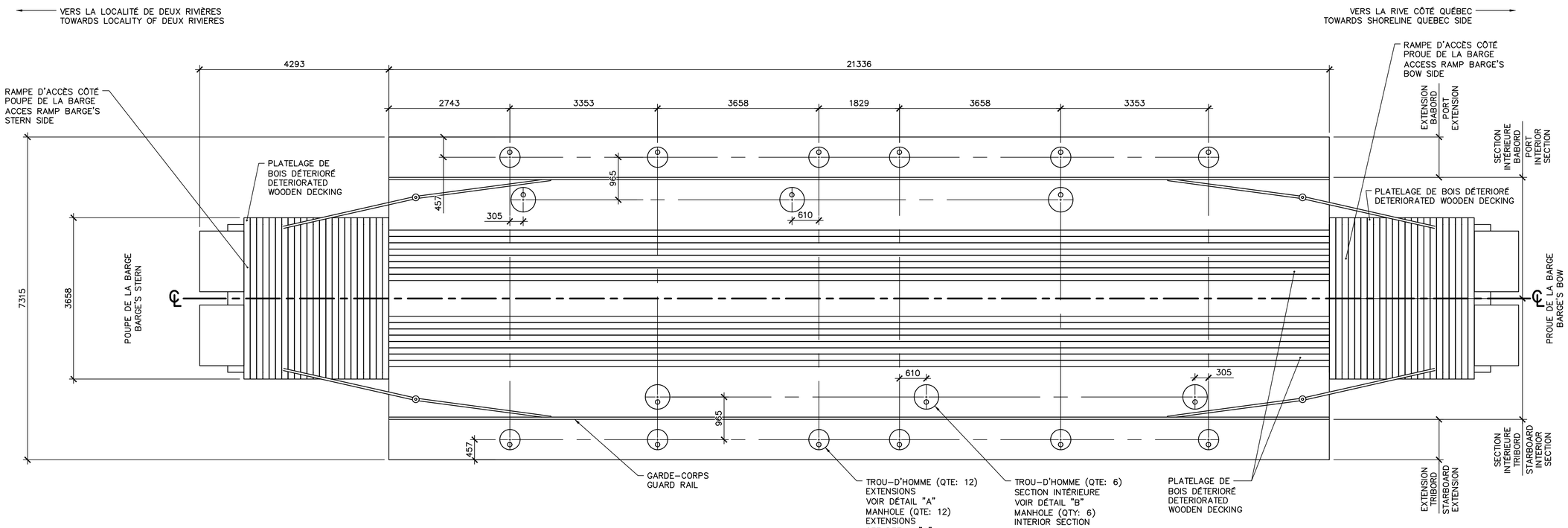
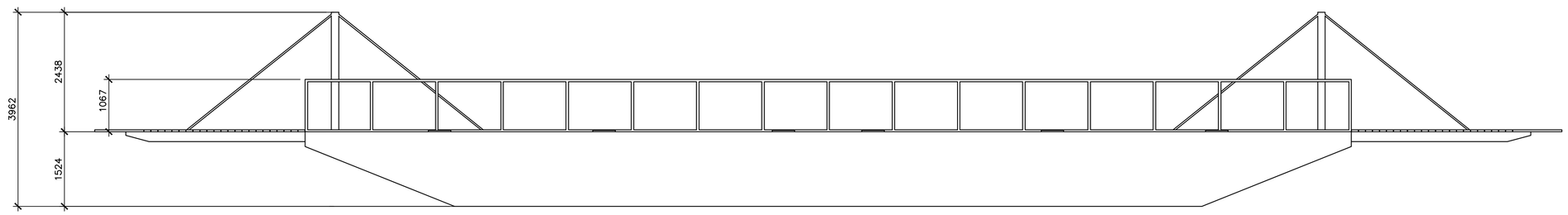
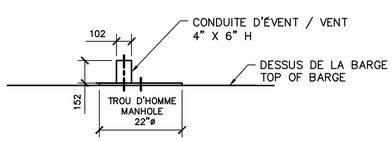
- This drawing is a summarized representation.
- All dimensions are in [MM] unless stated otherwise
- *Underwater inspection was limited to a maximum depth of 15 meters.



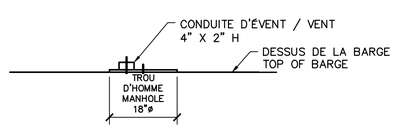

VUE EN PLAN / PLAN VIEW
ÉCHELLE / SCALE 1:50




VUE DE PROFIL / SIDE VIEW
ÉCHELLE / SCALE 1:50




DÉTAIL / DETAIL ''A''
TROU D'HOMME EXTENSIONS / MANHOLE EXTENSION
ÉCHELLE / SCALE 1:20




DÉTAIL / DETAIL ''B''
TROU D'HOMME SECTION INTÉRIEURE / MANHOLE INTERIOR SECTION
ÉCHELLE / SCALE 1:20

FORMAT ISO A1

Travaux publics et Services gouvernementaux Canada / Public Works and Government Services Canada

N/D: 157900183

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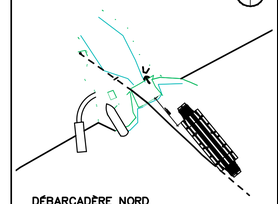
1260, boul. Lebourgneuf, bureau 250
Québec (Québec) G2K 2G2
Téléphone : 418.626.1688
Télécopieur : 418.626.5464



**DÉBARCADÈRE NORD**
***NORTH FERRY LANDING***

PLAN CLÉ
*KEY PLAN*

SCEAUX / *SEALS*

| | | |
|---|---|---|
| 00 | FINAL / *FINAL* | 2021-02-16 |
| révisions / *revisions* | | date |

A no du détail / *detail no*
B no de la feuille-où détail exigé / *sheet no – where detail required*
C no de la feuille-où détaillé / *sheet no – where detailed*

Projet / *Project*

**RELEVÉ DU DÉBARCADÈRE NORD**

***NORTH FERRY LANDING SURVEY***

Dessin / *Drawing*

| | |
|---|---|
| Projeté par: MISTRAS | *Survey by* 2020-07-07 Date |
| Dessiné par Malcolm Gilbert, ing. | *Drawn by* 2021-02-16 Date |
| Approuvé par Olivier Belley, ing. | *Approved by* 2021-02-16 Date |
| Soumission | *Tender* |
| Administrateur de projets APC | *PCA Project Manager* |
| No de projet / *Project number*: TPSGC R.109077.001 | No de contrat / *Contract number* |
| Nom du fichier / *File name*: VUE D'ENSEMBLE & DÉTAILS | No de classement / *File no* |
| No de plan ou dessin / *File name*: CS504-BARGE D.R. RODGERS | No feuillet / *Drawing no*: 01/03 |

NOTES
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- *L'inspection sous-marine a été limitée à une profondeur maximale de 15 mètres.

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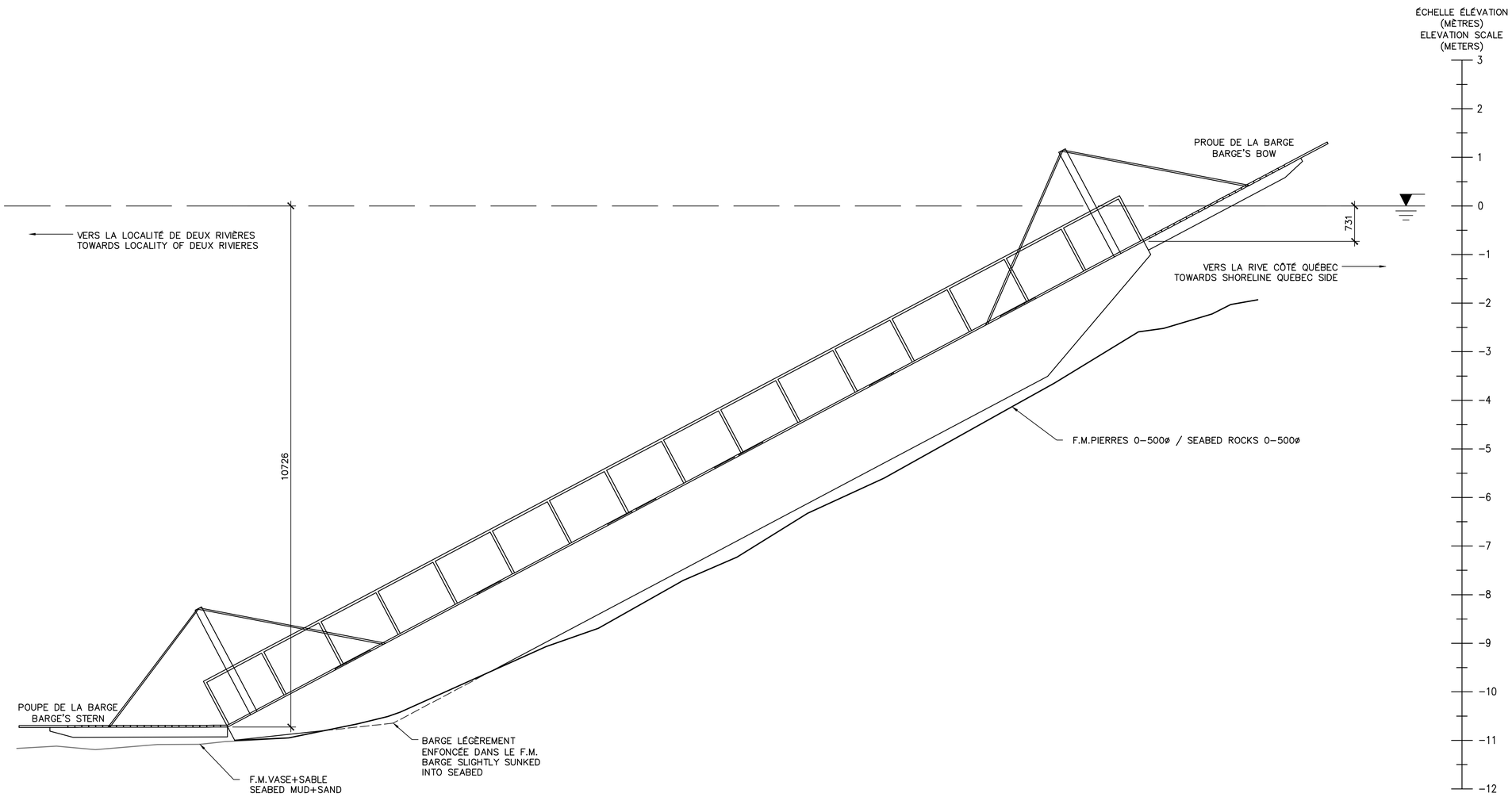


L'ÉCHELLE (ÉLÉVATION) EN MÈTRES EST EN RÉFÉRENCE AU NIVEAU D'EAU DU JOUR
THE SCALE (ELEVATION) IN METERS IS REFERENCED TO DAILY WATER LEVEL

VUE EN ÉLÉVATION / ELEVATION VIEW
ÉCHELLE / SCALE 1:50

FORMAT ISO A1

Travaux publics et Services gouvernementaux Canada
Public Works and Government Services Canada

N/D: 157900183

Stantec

Stantec Experts-conseils ltée
1260, boul. Lebourgneuf, bureau 350
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Téléphone : 418.626.1600
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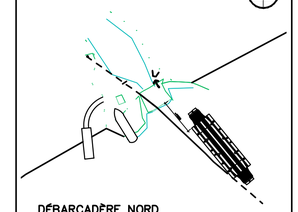

**DÉBARCADÈRE NORD**
***NORTH FERRY LANDING***

PLAN CLÉ
*KEY PLAN*

SCEAUX / *SEALS*

| | | |
|---|---|---|
| 00 | FINAL<br>*FINAL* | 2021-02-16 |
| révisions<br>*revisions* | | date |

A no du détail
*detail no*
B no de la feuille–où détail exigé
*sheet no – where detail required*
C no de la feuille–où détaillé
*sheet no – where detailed*

Projet / *Project*

**RELEVÉ DU DÉBARCADÈRE NORD**

***NORTH FERRY LANDING SURVEY***

Dessin / *Drawing*

| | |
|---|---|
| Projeté par:<br>MISTRAS | *Survey by*<br>2020-07-07<br>Date |
| Dessiné par<br>Malcolm Gilbert, ing. | *Drawn by*<br>2021-02-16<br>Date |
| Approuvé par<br>Olivier Belley, ing. | *Approved by*<br>2021-02-16<br>Date |
| Soumission | *Tender* |
| Administrateur de projets APC | *PCA Project Manager* |
| No de projet *Project number*<br>TPSGC<br>R.109077.001 | No de contrat *Contract number* |
| Nom du fichier *File name*<br>BARGE CÔTÉ TRIBORD | No de classement<br>*File no* |
| No de plan ou dessin *File name*<br>CS504–BARGE D.R. RODGERS | No feuillet *Drawing no*<br>02 /03 |

NOTES
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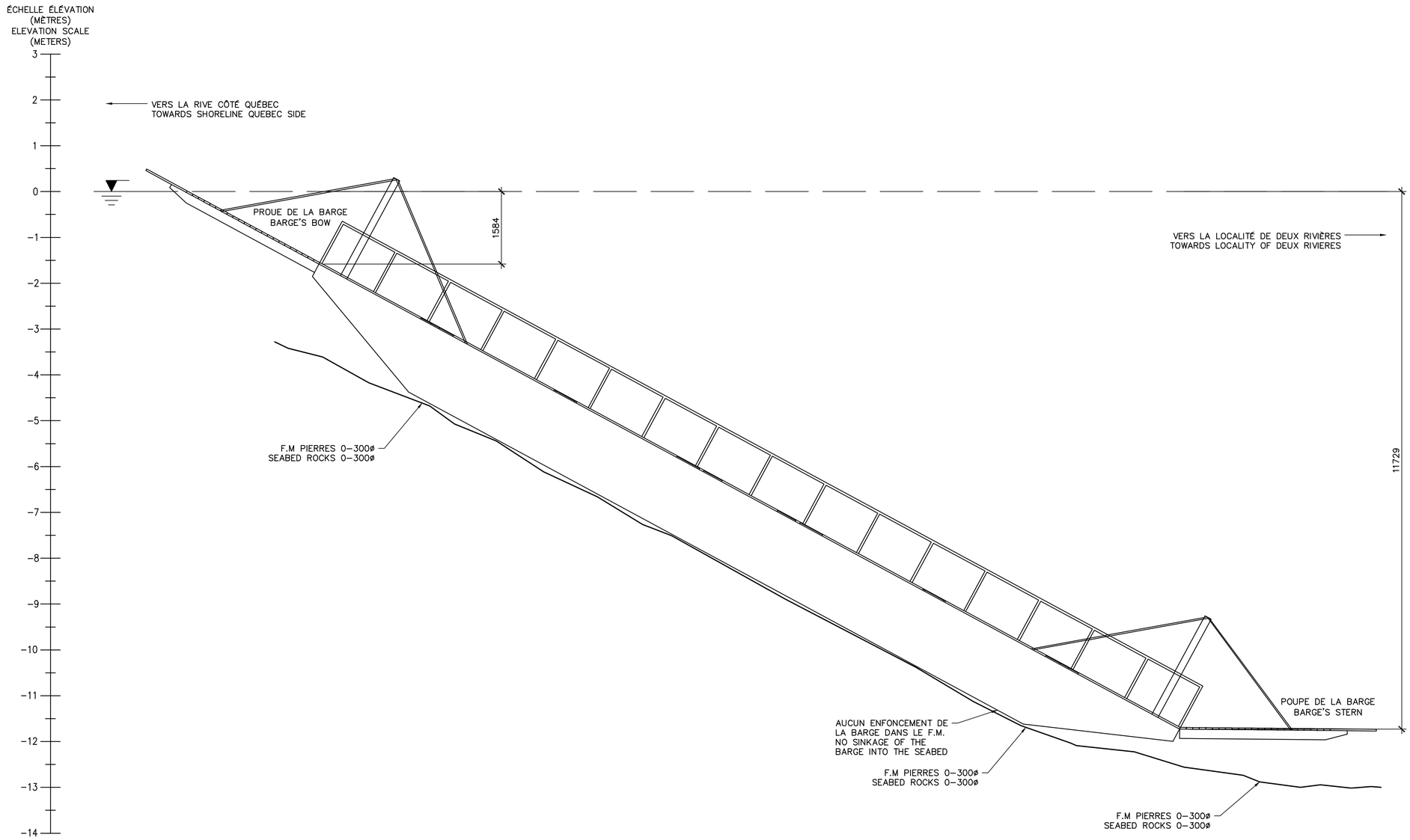


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THE SCALE (ELEVATION) IN METERS IS REFERENCED TO DAILY WATER LEVEL

VUE EN ÉLÉVATION / ELEVATION VIEW
ÉCHELLE / SCALE 1:50

FORMAT ISO A1

Travaux publics et Services gouvernementaux Canada
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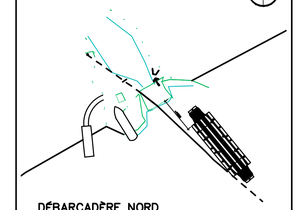

DÉBARCADÈRE NORD
*NORTH FERRY LANDING*

PLAN CLÉ
*KEY PLAN*

SCEAUX / *SEALS*

| | | |
|---|---|---|
| 00 | FINAL / *FINAL* | 2021-02-16 |
| révisions / *revisions* | | date |

A no du détail / *detail no*
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C no de la feuille-où détaillé / *sheet no – where detailed*

Projet / *Project*

RELEVÉ DU DÉBARCADÈRE NORD

*NORTH FERRY LANDING SURVEY*

Dessin / *Drawing*

| | |
|---|---|
| Projeté par: MISTRAS | *Survey by* 2020-07-07 Date |
| Dessiné par Malcolm Gilbert, ing. | *Drawn by* 2021-02-16 Date |
| Approuvé par Olivier Belley, ing. | *Approved by* 2021-02-16 Date |
| Soumission | *Tender* |
| Administrateur de projets APC | *PCA Project Manager* |
| No de projet / *Project number*: TPSGC R.109077.001 | No de contrat / *Contract number* |
| Nom du fichier / *File name*: BARGE CÔTÉ BÂBORD | No de classement / *File no* |
| No de plan ou dessin / *File name*: CS504-BARGE D.R. RODGERS | No feuillet / *Drawing no*: 03 /03 |

# APPENDIX B

# PHOTOGRAPHIC REPORT

**IDENTIFICATION**

**Removal of the D.R. Rodgers barge wreck and the Wabis II tugboat**

| **Nº photo** | 001 |
|---|---|
| **Identification**<br>General view of North shore boat ramp | |

| **Nº photo** | 002 |
|---|---|
| **Identification**<br>General view of North shore boat ramp – submerged D.R. Rodgers. | |

| **Nº photo** | 003 |
|---|---|
| **Identification**<br>North shore – showing the Wabis II tugboat on shore. | |

# PHOTOGRAPHIC REPORT

**IDENTIFICATION**

**Removal of the D.R. Rodgers barge wreck and the Wabis II tugboat**

| **Nº photo** | 004 |
|---|---|

**Identification**

Access road on Quebec side toward the North boat ramp.

| **Nº photo** | 005 |
|---|---|

**Identification**

North shore of deux-Rivières boat ramp

| **Nº photo** | 006 |
|---|---|

**Identification**

Wabis II tugboat

# PHOTOGRAPHIC REPORT

**IDENTIFICATION**

**Removal of the D.R. Rodgers barge wreck and the Wabis II tugboat**

| **Nº photo** | 007 |
|---|---|

**Identification**
North shore toward the Wabis II tugboat

| **Nº photo** | 008 (20200707_101717) |
|---|---|

**Identification**
North shore old ferry sign


| **Nº photo** | 009 |
|---|---|

**Identification**
North shore – Quebec side– ZEC Maganasipi

# PHOTOGRAPHIC REPORT

**IDENTIFICATION**

**Removal of the D.R. Rodgers barge wreck and the Wabis II tugboat**

| **Nº photo** | 010 |
|---|---|
| **Identification** | North shore – old ship anchor and Maganasibi sign |

| **Nº photo** | 011 |
|---|---|
| **Identification** | D.R. Rodgers anchor of hauling cable on North shore |

| **Nº photo** | 012 |
|---|---|
| **Identification** | D.R. Rodgers - Inland old hauling cable rock anchor on North shore |

# PHOTOGRAPHIC REPORT

**IDENTIFICATION**

**Removal of the D.R. Rodgers barge wreck and the Wabis II tugboat**

| **Nº photo** | 013 |
|---|---|

**Identification**
Old South shore ferry landing

| **Nº photo** | 014 (20200707_133735) |
|---|---|

**Identification**
South shore landing – Deux-Rivières

| **Nº photo** | 015 (20200707_133759) |
|---|---|

**Identification**
Access road to abandoned South shore landing looking North

# PHOTOGRAPHIC REPORT

**IDENTIFICATION**

**Removal of the D.R. Rodgers barge wreck and the Wabis II tugboat**

| **Nº photo** | 016 |
|---|---|
| **Identification** | Vegetation and hauling cable– Abandoned South shore landing |

| **Nº photo** | 017 |
|---|---|
| **Identification** | Lacroix park – Dock and boat ramp |

| **Nº photo** | 018 (DSCF8564) |
|---|---|
| **Identification** | Lacroix park – General view |

# PHOTOGRAPHIC REPORT

**IDENTIFICATION**

**Removal of the D.R. Rodgers barge wreck and the Wabis II tugboat**

| **Nº photo** | 019 |
|---|---|

**Identification**
Lacroix park

**Remarques**
Rampe de mise à l'eau
Profondeur d'eau du jour au pied de la rampe = 1,2m environ

| **Nº photo** | 020 |
|---|---|

**Identification**
Lacroix park – General view from the Ottawa river

| **Nº photo** | 021 |
|---|---|

**Identification**
Lacroix park – Old access road

# PHOTOGRAPHIC REPORT

**IDENTIFICATION**

**Removal of the D.R. Rodgers barge wreck and the Wabis II tugboat**

| **Nº photo** | 022 |
|---|---|
| **Identification** Old access road toward the South ferry landing – Old bridge was removed by OPG. | |


| **Nº photo** | 023 |
|---|---|
| **Identification** Site HCM 1 - Stonecliffe | |

| **Nº photo** | 024 |
|---|---|
| **Identification** Site HCM 1 – Stonecliffe – Electrical infrastructure and cable. | |

# PHOTOGRAPHIC REPORT

**IDENTIFICATION**

**Removal of the D.R. Rodgers barge wreck and the Wabis II tugboat**

| **Nº photo** | 025 |
|---|---|
| **Identification**<br>Site HCM 1 – Stonecliffe Municipal Boat Launch | |
| | |


| **Nº photo** | 026 |
|---|---|
| **Identification**<br>Site HCM 1 – Stonecliffe – Road toward the Trans-Canada. Approx. 350 m to main road. | |
| | |

| **Nº photo** | 027 |
|---|---|
| **Identification**<br>Site HCM 2 –Mackey Creek sector. Boat ramp and dock. Water depth +/_ 2 meters. | |
| . | |

# PHOTOGRAPHIC REPORT

**IDENTIFICATION**

**Removal of the D.R. Rodgers barge wreck and the Wabis II tugboat**

| **N° photo** | 028 |
|---|---|
| **Identification** | Site HCM 2 – Secteur Mackey Creek – Boat ramp and dock |

| **N° photo** | 029 (20200708_093931) |
|---|---|
| **Identification** | Site HCM 2 –Mackey Creek sector  View toward the North. |

| **N° photo** | 030 |
|---|---|
| **Identification** | Site HCM 2 –Mackey Creek sector. Potential laydown area and workspace. |

# PHOTOGRAPHIC REPORT

**IDENTIFICATION**

**Removal of the D.R. Rodgers barge wreck and the Wabis II tugboat**

| **Nº photo** | 031 |
|---|---|

**Identification**

Site HCM 2 – Secteur Mackey Creek sector view from the road approx. 200 meters from the Trans-canada highway.

# APPENDIX C

## 7.4 Effets sur le milieu physique

### 7.4.1 Qualité de l'air

#### Sources d'effets

Les activités susceptibles d'altérer la qualité de l'air sont celles impliquant l'utilisation de machinerie, incluant l'embarcation requise pour le transport fluvial.

#### Effet sur la composante

L'utilisation et la circulation des véhicules de chantier sont susceptibles d'altérer la qualité de l'air par l'émission de poussières, de composés organiques volatils (COV) et de gaz d'échappement. Il est à noter que l'utilisation de la machinerie sera limitée en raison de l'accès au site par la rivière des Outaouais et de la réalisation des travaux à partir d'une barge. Si des équipements routiers sont requis, la distance à parcourir sera très faible et restreinte au site des travaux près de la rivière. Les activités de démantèlement de l'épave seront réalisées essentiellement à l'aide d'outils manuels, dont l'utilisation d'équipement de soudure, qui génèrent de faibles émissions de polluants atmosphériques.

#### Mesures d'atténuation

- Utiliser de l'équipement en bon état de marche afin de limiter les émissions atmosphériques et sonores.
- Ne pas laisser les véhicules de chantier fonctionner inutilement au ralenti.
- Utiliser un abat-poussière à base d'eau sur les voies d'accès pour limiter l'émission de particules de poussières lors du déplacement des véhicules dans l'aire de travail.
- Mettre les matières dangereuses dans des récipients et entreposer à l'intérieur d'un abri de manière à éviter toute situation susceptible de provoquer, en raison de leur incompatibilité, des réactions physiques ou chimiques dangereuses. L'abri doit être conforme aux exigences des normes du *Règlement sur les matières dangereuses* (Q-2, r. 32).
- Établir une structure d'alerte en cas de déversement et l'afficher clairement sur le chantier.

#### Importance de l'effet résiduel

La perturbation de la qualité de l'air sera temporaire et surviendra principalement en période de démantèlement. En l'absence de voisin immédiat, l'essentiel des effets sera ressenti par les travailleurs sur le chantier. Toutefois, les mesures d'atténuation qui seront appliquées limiteront les répercussions, lesquelles seront de courte durée et limitées au site des travaux. Par conséquent, l'effet résiduel est jugé non important.

### 7.4.2 Environnement sonore

#### Sources d'effets

Les activités susceptibles de perturber l'environnement sonore sont celles impliquant l'utilisation de machinerie, incluant l'embarcation requise pour le transport fluvial ainsi que l'utilisation d'équipement manuel pour la démolition de l'épave. La manipulation des débris de démolition est également susceptible de générer du bruit.

#### Effets sur la composante

Les activités bruyantes résultant des travaux entraîneront une augmentation sporadique et temporaire du climat sonore diurne aux environs du chantier. Cette augmentation du niveau sonore sera principalement perçue par les travailleurs du chantier. Les utilisateurs du milieu, notamment les villégiateurs, les pêcheurs et les chasseurs pourraient également être touchés par l'augmentation du niveau sonore à proximité du site des travaux.

#### Mesures d'atténuation

- S'assurer que tout l'équipement est en bon état de marche, muni de l'équipement pertinent pour assourdir le bruit.
- Émettre un avis à la pourvoirie située en Ontario, aux associations de chasse et de pêche de la région ainsi qu'à l'association touristique afin que les utilisateurs du milieu soient avisés de la localisation et de la période de déroulement des travaux.
- Fournir des appareils de protection auditive aux travailleurs.
- Ne pas laisser les véhicules de chantier fonctionner inutilement au ralenti.

#### Importance de l'effet résiduel

La perturbation de l'environnement sonore sera temporaire et de courte durée. En considérant que les mesures d'atténuation seront appliquées, l'effet est jugé non important.

### 7.4.3 Qualité de l'eau de surface

#### Sources d'effets

La mise en place des mesures de confinement, le démantèlement de l'épave, le retrait des aménagements temporaires, la gestion des matériaux, MR et MRD ainsi que l'utilisation de la machinerie sont susceptibles d'altérer la qualité de l'eau de surface.

#### Effets sur la composante

L'aménagement de l'aire de chantier en bordure de la rivière nécessitera le débroussaillage de la végétation et exposera une partie des sols à nu pour permettre à l'entrepreneur d'y installer les équipements temporaires, comme une roulotte et des installations sanitaires. Une rampe d'accès pourrait aussi être requise en rive pour transporter les équipements entre la barge et l'aire de chantier. Les sols mis à nu sont ainsi susceptibles de générer des matières en suspension par ruissellement.

Même si le travail « à sec » réduira la remise en suspension des sédiments par la circulation des travailleurs à l'intérieur du secteur d'intervention, les opérations de mise en place et démantèlement des structures de confinements (ex. enfoncement de palplanches) représentent un risque de mise en suspension des sédiments dans la rivière des Outaouais. Une fois, les opérations de mise en place des structures de confinements terminées, les eaux d'infiltration devront être pompées afin de garder le secteur d'intervention « à sec ». Le rejet des eaux d'infiltration à la rivière représente également un risque d'introduire une eau chargée de matières en suspension dans la rivière.

Dans l'éventualité où les travaux sont effectués en eau, une remise en suspension des sédiments et des contaminants qu'ils contiennent est susceptible de survenir lors du démantèlement. De plus, des particules contenant du plomb ou de l'amiante pourraient se détacher de l'épave lors de son découpage et être emportées dans le milieu aquatique.

Le travail sur barge représente un risque de déversement accidentel d'hydrocarbures susceptibles de contaminer l'eau de surface qui pourrait survenir en raison d'un bris ou d'une erreur de manipulation des produits pétroliers. Les contaminants sont susceptibles d'être emportés plus en aval sur la rivière des Outaouais. L'ampleur de l'effet dépendra du volume déversé dans le milieu aquatique.

De plus, la présence de matériaux contaminés dans l'épave ainsi qu'une gestion inadéquate des sédiments excavés (si requis pour extraire l'épave du lit de la rivière) et des MRD peuvent représenter un risque de contamination des eaux de surface. S'ils ne sont pas entreposés convenablement les contaminants peuvent être lessivés par la pluie et migrer dans le milieu aquatique.

### Mesures d'atténuation

- Gérer les eaux de chantier afin d'éviter au maximum le ruissellement vers la rivière, notamment par l'installation de barrières à sédiments et/ou par un réseau de fossés temporaires contenant des bassins de décantation. Ces barrières et/ou fossés devront demeurer en place jusqu'à la fin des activités et subir un entretien régulier afin d'assurer leur efficacité.
- Mettre les matières dangereuses dans des récipients et les entreposer à l'intérieur d'un abri de manière à éviter tout déversement. L'abri être conforme aux exigences des normes du *Règlement sur les matières dangereuses* (Q-2, r. 32).
- Équiper tous les équipements mobiles d'une trousse de récupération d'hydrocarbures en cas de déversement accidentel.
- Prévoir des trousses d'urgence contre les déversements aux aires d'entreposage et de ravitaillement de la machinerie et s'assurer de mettre en place des protections aux quatre côtés de manière à éviter toute collision avec la machinerie et les véhicules.
- Placer la machinerie (ex. génératrice), bidons et les récipients contenant des hydrocarbures ou d'autres produits dangereux dans un bac ou entre des bermes pouvant recueillir 125 % du volume des réserves entreposées.
- Prévoir une estacade de confinement (flotteur en polypropylène expansé recouvert de PVC) avec une jupette afin d'empêcher la migration d'hydrocarbure en cas déversements accidentels dans la rivière Outaouais.
- Être équipé de boudins et de feuilles (couches) hydrophobes pour absorber les produits pétroliers en cas de déversement dans la rivière des Outaouais.
- Aménager l'aire de ravitaillement des véhicules de chantier le plus loin possible de la rivière, l'équiper de trousses d'urgence contre les déversements et l'entourer de protecteurs contre les collisions avec la machinerie et les véhicules.
- Établir une structure d'alerte en cas de déversement et l'afficher clairement sur le chantier.
- Faire opérer la machinerie et les équipements manuels à l'huile végétale.
- Déposer les matériaux issus du démantèlement de l'épave dans des conteneurs prévus à cet effet.
- Si requis, déposer les sédiments excavés pour déloger l'épave dans des conteneurs étanches et prévus à cet effet. Couvrir le conteneur afin d'éviter une trop grande accumulation d'eau. Ne pas remettre les sédiments sur le lit de la rivière pour éviter la dispersion de contaminants.

- Installer et entretenir, tout au long des travaux, un dispositif pour capter les particules fines avant leur rejet dans le milieu aquatique (p. ex. installation de membranes filtrantes à l'extrémité des tuyaux de rejets des eaux de chantier à la rivière).
- Advenant la réalisation des travaux en eau, ceinturer l'aval du site des travaux de rideaux de turbidité afin d'éviter la dispersion de matières en suspension et de contaminants dans le milieu aquatique.
- Pendant les travaux, faire un suivi des concentrations de MES en aval des travaux afin d'assurer le respect de critères pour la qualité des eaux de surface aux fins de protection de la vie aquatique.
- S'assurer que les véhicules de chantier sont en bon état de marche afin de limiter les fuites d'hydrocarbures.
- Veiller à ce que les bacs soient présents en nombre suffisant pour le volume de déchets produits et les installer aux endroits appropriés.

#### Importance de l'effet résiduel

Compte tenu des mesures d'atténuation prévues, les risques de contamination par les hydrocarbures ou autres contaminants lors de la phase de démantèlement sont négligeables et l'effet est jugé non important.

### 7.4.4 Qualité des sédiments

#### Sources d'effets

La mise en place des mesures de confinement, le démantèlement de l'épave, le retrait des aménagements temporaires, la gestion des matériaux, des MR et des MRD ainsi que l'utilisation de la machinerie sont susceptibles d'altérer la qualité des sédiments.

#### Effets sur la composante

Les concentrations des contaminants mesurées dans les échantillons de sédiments lors de la caractérisation des sédiments en juillet 2020 permettent de confirmer qu'ils représentent somme toute un faible risque pour les organismes aquatiques. Par conséquent, les sédiments pourraient demeurer en place après le retrait de l'épave. Cependant, des mesures seront prises pour éviter la mise en suspension des sédiments lors du retrait de l'épave, comme le travail en étiage et la mise en place de plateforme pour que la machinerie ne circule pas directement sur les sédiments. Ainsi, ils ne seront pas remaniés par le passage des équipements.

Il pourrait s'avérer judicieux d'évaluer la qualité des sédiments sous l'épave après son retrait afin de déterminer si des concentrations plus élevées en métaux (plomb et arsenic) ou d'hydrocarbures pétroliers $C_{10}$-$C_{50}$ s'y trouvent. Le cas échéant, la décision finale quant au retrait ou non des sédiments pourrait être prise.

Un déversement accidentel d'hydrocarbures est également susceptible de contaminer les sédiments de la rivière. Une gestion inadéquate des matériaux de démolition et des MRD représente également un risque de contamination des sédiments.

### Mesures d'atténuation

- Mettre les matières dangereuses dans des récipients et les entreposer à l'intérieur d'un abri de manière à éviter tout déversement. L'abri doit être conforme aux exigences des normes du *Règlement sur les matières dangereuses* (Q-2, r. 32).
- Équiper tous les équipements mobiles d'une trousse de récupération d'hydrocarbures en cas de déversement accidentel.
- Prévoir des trousses d'urgence contre les déversements aux aires d'entreposage et de ravitaillement de la machinerie et s'assurer de mettre en place des protections aux quatre côtés de manière à éviter toute collision avec la machinerie et les véhicules.
- Placer la machinerie (ex. génératrice), bidons et les récipients contenant des hydrocarbures ou d'autres produits dangereux dans un bac ou entre des bermes pouvant recueillir 125 % du volume des réserves entreposées.
- Prévoir une estacade de confinement (flotteur en polypropylène expansé recouvert de PVC) avec une jupette afin d'empêcher la migration d'hydrocarbure en cas déversements accidentels dans la rivière Outaouais.
- Être équipé de boudins et de feuilles (couches) hydrophobes pour absorber les produits pétroliers en cas de déversement dans la rivière des Outaouais.
- Établir une structure d'alerte en cas de déversement et l'afficher clairement sur le chantier.
- Faire opérer la machinerie et les équipements manuels à l'huile végétale.
- Déposer les matériaux issus du démantèlement de l'épave dans des conteneurs prévus à cet effet.
- Si requis, déposer les sédiments excavés pour déloger l'épave dans des conteneurs étanches et prévus à cet effet. Couvrir le conteneur afin d'éviter une trop grande accumulation d'eau. Ne pas remettre les sédiments sur le lit de la rivière pour éviter la dispersion de contaminants.
- Advenant la réalisation des travaux en eau, ceinturer l'aval du site des travaux de rideaux de turbidité afin d'éviter la dispersion de matières en suspension et de contaminants dans le milieu aquatique.
- S'assurer que les équipements de chantier sont en bon état de marche afin de limiter les fuites d'hydrocarbures.
- Veiller à ce que les bacs et les conteneurs soient présents en nombre suffisant pour le volume de déchets et de résidus produits et les installer aux endroits appropriés.

### Importance de l'effet résiduel

Compte tenu des mesures d'atténuation prévues, le risque de contamination des sédiments est faible et l'effet résiduel est jugé non important.

## 7.5 Effets sur le milieu biologique

### 7.5.1 Flore et ses habitats

#### Sources d'effets

La mobilisation du chantier, la gestion des matériaux, des MR et des MRD ainsi que l'utilisation de la machinerie sont susceptibles d'avoir un effet sur la flore et ses habitats.

#### Effets sur la composante

Durant la mobilisation du chantier, s'il est nécessaire d'aménager une aire de chantier en rive, les travaux de débroussaillage auront un effet sur la végétation locale. La superficie à couper sera toutefois faible et l'aire de chantier devrait pouvoir être aménagée dans l'emprise de l'ancien chemin.

Le travail sur barge et l'utilisation de la machinerie représentent un risque que tout bris mécanique, accident et/ou un incident lors des opérations de ravitaillement cause un déversement accidentel d'hydrocarbures qui pourrait contaminer les eaux de surface ce qui aurait un effet néfaste direct sur la végétation aquatique qui pourrait se trouver en aval du site d'intervention.

De plus, la présence potentielle de matériaux contaminés dans l'épave et une gestion inadéquate des sédiments excavés (si requis) et des MRD peuvent représenter un risque de contamination des eaux de surface et, par conséquent, de la végétation aquatique. S'ils ne sont pas entreposés convenablement, les contaminants peuvent être lessivés par la pluie et entraîner une contamination des eaux de surface et de la végétation aquatique.

#### Mesures d'atténuation

- Mettre les matières dangereuses dans des récipients et les entreposer à l'intérieur d'un abri de manière à éviter tout déversement. L'abri doit être conforme aux exigences des normes du *Règlement sur les matières dangereuses* (Q-2, r. 32).
- Équiper tous les équipements mobiles d'une trousse de récupération d'hydrocarbures en cas de déversement accidentel.
- Prévoir des boudins et des feuilles (couches) hydrophobes pour absorber les produits pétroliers en cas de déversement accidentel dans la rivière des Outaouais.
- Aménager l'aire de ravitaillement des véhicules de chantier le plus loin possible de la rivière, l'équiper de trousses d'urgence contre les déversements et l'entourer de protecteurs contre les collisions avec la machinerie et les véhicules.
- Prévoir des trousses d'urgence contre les déversements aux aires d'entreposage et de ravitaillement de la machinerie et s'assurer de mettre en place des protections aux quatre côtés de manière à éviter toute collision avec la machinerie et les véhicules.
- Placer la machinerie (ex. génératrice), bidons et les récipients contenant des hydrocarbures ou d'autres produits dangereux dans un bac ou entre des bermes pouvant recueillir 125 % du volume des réserves entreposées.
- Prévoir une estacade de confinement (flotteur en polypropylène expansé recouvert de PVC) avec une jupette afin d'empêcher la migration d'hydrocarbure en cas déversements accidentels dans la rivière Outaouais.

- Établir une structure d'alerte en cas de déversement et l'afficher clairement sur le chantier.
- Faire opérer la machinerie et les équipements manuels à l'huile végétale.
- Déposer les matériaux issus du démantèlement de l'épave dans des conteneurs prévus à cet effet.
- Si requis, déposer les sédiments excavés pour déloger l'épave dans des conteneurs étanches et prévus à cet effet. Couvrir le conteneur afin d'éviter une trop grande accumulation d'eau. Ne pas remettre les sédiments sur le lit de la rivière pour éviter la dispersion de contaminants.
- Pendant les travaux, faire un suivi des concentrations de MES en aval des travaux afin d'assurer le respect de critères pour la qualité des eaux de surface aux fins de protection de la vie aquatique.
- S'assurer que les véhicules de chantier sont en bon état de marche afin de limiter les fuites d'hydrocarbures.
- Veiller à ce que les bacs soient présents en nombre suffisant pour le volume de déchets produits et les installer aux endroits appropriés.
- Délimiter clairement l'aire de chantier et limiter au minimum nécessaire les travaux de débroussaillage.

#### Importance de l'effet résiduel

Compte tenu des mesures d'atténuation prévues et en raison de l'absence d'espèce floristique à statut particulier dans la zone d'étude, l'effet résiduel est jugé non important.

### 7.5.2 Faune et ses habitats

#### Sources d'effets

L'ensemble des activités prévues, soit la mobilisation du chantier, la mise en place des mesures de confinement, le démantèlement de l'épave, le retrait des aménagements temporaires, la gestion des matériaux, des MR et des MRD, la remise en état des lieux et l'utilisation et circulation de la machinerie sont susceptibles d'avoir des effets sur la faune et ses habitats.

#### Effets sur la composante

Le bruit généré par la réalisation des travaux peut représenter une source de dérangement et de stress pour les espèces fauniques susceptibles de fréquenter le secteur à proximité du site d'intervention.

De plus, la réalisation des travaux induit un risque de contamination des eaux de surface, soit par l'émission de matières en suspension ou encore par l'émission de contaminants comme des métaux lourds et des hydrocarbures pétroliers, pouvant avoir un effet néfaste sur la faune aquatique. Une mauvaise gestion des matériaux contaminés et des matières dangereuses de l'épave est susceptible d'entraîner une contamination du milieu aquatique ce qui aurait un effet sur le poisson et son habitat.

L'aire de confinement de l'épave entraînera l'assèchement du lit de la rivière durant la réalisation des travaux de démantèlement, soit une perte d'habitat temporaire pour le poisson.

### Mesures d'atténuation

- Conformément à la *Loi de 1994 sur la convention concernant les oiseaux migrateurs*, le déboisement, s'il devait être requis, doit être effectué en dehors de la période de nidification de la plupart des oiseaux migrateurs, qui s'étend du 15 avril au 31 août inclusivement.
- Vérifier la présence de nids actifs avant d'entreprendre les activités de démolition.
- Respecter la période de faible risque pour la réalisation de travaux en eau, visant à protéger autant les salmonidés comme l'omble de fontaine et le grand corégone que les autres espèces d'intérêt comme le doré : 15 juillet au 30 septembre.
- Effectuer les travaux en période d'étiage afin de limiter l'empiétement dans l'habitat du poisson.
- Limiter la superficie de l'aire de confinement au minimum requis autour de l'épave de manière à protéger l'habitat du poisson.
- Utiliser des matériaux propres et exempts de particules fines pour l'aménagement de l'aire de confirment, et au besoin, pour l'aménagement d'une rampe d'accès à la rive.
- Mettre les matières dangereuses dans des récipients et les entreposer à l'intérieur d'un abri de manière à éviter tout déversement. L'abri être conforme aux exigences des normes du *Règlement sur les matières dangereuses* (Q-2, r. 32).
- Équiper tous les équipements mobiles d'une trousse de récupération d'hydrocarbures en cas de déversement accidentel.
- Prévoir des trousses d'urgence contre les déversements aux aires d'entreposage et de ravitaillement de la machinerie et s'assurer de mettre en place des protections aux quatre côtés de manière à éviter toute collision avec la machinerie et les véhicules.
- Placer la machinerie (ex. génératrice), bidons et les récipients contenant des hydrocarbures ou d'autres produits dangereux dans un bac ou entre des bermes pouvant recueillir 125 % du volume des réserves entreposées.
- Prévoir une estacade de confinement (flotteur en polypropylène expansé recouvert de PVC) avec une jupette afin d'empêcher la migration d'hydrocarbure en cas déversements accidentels dans la rivière Outaouais.
- Prévoir des boudins et des feuilles (couches) hydrophobes pour absorber les produits pétroliers en cas de déversement dans la rivière des Outaouais.
- Aménager l'aire de ravitaillement des véhicules de chantier le plus loin possible de la rivière, l'équiper de trousses d'urgence contre les déversements et l'entourer de protecteurs contre les collisions avec la machinerie et les véhicules.
- Établir une structure d'alerte en cas de déversement et l'afficher clairement sur le chantier
- Faire opérer la machinerie et les équipements manuels à l'huile végétale.
- Déposer les matériaux issus du démantèlement de l'épave dans des conteneurs prévus à cet effet.
- Si requis, déposer les sédiments excavés pour déloger l'épave dans des conteneurs étanches et prévus à cet effet. Couvrir le conteneur afin d'éviter une trop grande accumulation d'eau. Ne pas remettre les sédiments sur le lit de la rivière pour éviter la dispersion de contaminants.

- Pendant les travaux, faire un suivi des concentrations de MES en aval des travaux afin d'assurer le respect de critères pour la qualité des eaux de surface aux fins de protection de la vie aquatique, en portant une attention particulière aux rejets des eaux d'infiltration du secteur d'intervention.
- S'assurer que les véhicules de chantier sont en bon état de marche afin de limiter les fuites d'hydrocarbures.
- Veiller à ce que les bacs soient présents en nombre suffisant pour le volume de déchets produits et les installer aux endroits appropriés.

#### Importance de l'effet résiduel

Considérant la faible superficie perturbée temporairement pour le retrait de l'épave et de l'application des mesures d'atténuation proposées, l'effet résiduel est jugé non important. De plus, le retrait de l'épave permettra à la faune aquatique d'avoir accès à de nouvelles superficies d'habitats à la suite de la remise en état des lieux.

## 7.6 Effets sur le milieu humain

### 7.6.1 Santé et sécurité des travailleurs

#### Sources d'effets

Les activités susceptibles d'avoir des effets sur la santé et la sécurité sont la mise en place des mesures de confinement, le démantèlement de l'épave, le retrait des aménagements temporaires, la gestion des matériaux, des MR et des MRD, la remise en état des lieux et l'utilisation et circulation de la machinerie.

#### Effets sur la composante

Le démantèlement pièce par pièce de l'épave est un risque pour les travailleurs qui sont exposés à des risques d'effondrement de la structure ou de chute d'objets. De plus, les fumées de soudure peuvent être à l'origine d'intoxications entraînant la survenue de pathologies aiguës ou chroniques, des fumées potentiellement nocives qui peuvent être inhalées par les soudeurs et les personnes travaillant à proximité. Également, les résultats des analyses des matières dangereuses confirment la présence de plomb sur l'épave ce qui peut aussi avoir un effet sur la santé des travailleurs.

En plus des matières résiduelles générées par les travaux, les travailleurs seront amenés à utiliser plusieurs produits et gaz (reliés à la soudure) correspondants à la définition de « matière dangereuse » au sens du *Règlement sur les matières dangereuses* (Q-2, r. 32). Ainsi, ces produits devront être gérés de manière adéquate pour assurer la sécurité des travailleurs et empêcher tout rejet dans l'environnement.

Les déplacements en embarcation (travailleurs, équipements et matériaux engendrés par le démantèlement) et la présence de structures de confinements représentent un risque de collision pour la navigation du secteur.

#### Mesures d'atténuation

- L'épave sera démontée par tranche horizontale en commençant par les étages supérieurs pour éviter les risques d'effondrement de la structure.
- Équiper les soudeurs d'appareil de protection respiratoire filtrant à ventilation libre ou à ventilation assistée.
- Prévoir un système de communication entre les travailleurs afin de réagir rapidement en cas d'accidents de travail.
- Installer une signalisation adéquate afin d'informer les plaisanciers de la présence de travaux.
- Émettre des avis aux associations de chasse et de pêche de la région ainsi qu'à l'association touristique afin que les utilisateurs du milieu soient avisés de la localisation et de la période de déroulement des travaux.
- S'assurer du bon fonctionnement des dispositifs d'avertissement sonore de circulation à reculons de la machinerie pour réduire le risque d'accident.
- Bien identifier les accès et les voies menant au chantier.
- Maintenir en bon état les voies de circulation utilisées par les véhicules de chantier.
- Mettre les matières dangereuses dans des récipients et les entreposer à l'intérieur d'un abri de manière à éviter tout déversement. L'abri être conforme aux exigences des normes du *Règlement sur les matières dangereuses* (Q-2, r. 32).

#### Importance de l'effet résiduel

En raison de la faible envergure des travaux, le camionnage sera tout de même assez faible sur le site. À cela s'ajoute la courte durée des travaux qui permettra de limiter les risques pour la santé et la sécurité des travailleurs et des utilisateurs du milieu. Dans ce contexte, à la suite de l'application des mesures d'atténuation proposées, l'effet résiduel est jugé non important.

Le retrait de l'épave aura un effet positif sur la sécurité de la navigation locale.

### 7.6.2 Patrimoine archéologique

#### Source d'effets

A priori, il n'y a pas de travaux d'excavation ni de terrassement prévu dans le contexte du projet de retrait et de démantèlement de l'épave D.R. Rogers. Si toutefois, l'aménagement des installations temporaires en rive ou le retrait de l'épave nécessite de tels travaux, il est possible que des artéfacts soient découverts en raison de l'utilisation historique du secteur par les autochtones.

#### Effets sur la composante

Comme il est mentionné par le MCC, il n'y a pas de sites archéologiques répertoriés dans le secteur immédiat de l'épave, mais aucune recherche n'a été effectuée sur la propriété. De plus, il y aurait plusieurs sites à proximité propices à l'occupation autochtone.

Il est à noter qu'il s'agit toutefois d'un site fortement perturbé par les activités du traversier à câble qui y opérait pour relier l'Ontario et le Québec. Par conséquent, il est peu probable qu'on y trouve des artéfacts datant d'une ancienne occupation autochtone.

#### Mesures d'atténuation

Lors de la surveillance, si des travaux d'excavation ou de terrassement s'avèrent requis, une attention sera portée à la présence d'artéfacts. En cas de découverte archéologique fortuite, le responsable du chantier sera avisé et les travaux seront suspendus immédiatement. Le MCC sera alors avisé et les travaux pourront se poursuivre lorsque le ministère autorisera la reprise.

#### Importance de l'effet résiduel

Compte tenu de la faible probabilité de trouver des artéfacts datant d'une utilisation historique du site par les autochtones, et en raison de la nature des travaux prévus, l'effet du projet sur le patrimoine archéologique est non important.

### 7.6.3 Économie locale

#### Source d'effets

Cette composante fait référence aux retombées économiques issues des travaux de démantèlement de l'épave D.R. Rogers. L'ensemble des activités du projet auront un effet positif sur cette composante.

#### Effets sur la composante

Des effets positifs sont anticipés sur l'économie locale. En effet, en plus de l'embauche d'entrepreneurs locaux, des activités nécessiteront l'achat de matériaux de construction d'entreprises locales. Bien que la main-d'œuvre locale soit favorisée, il est toujours possible, voire probable, qu'il faille avoir recours à des entreprises externes. Cela représentera une injection économique nouvelle à la communauté puisqu'elles seront plus susceptibles de s'approvisionner auprès de fournisseurs locaux.

Les travaux se dérouleront dans une zone où la chasse et la pêche sont pratiquées. Toutefois, les travaux n'engendreront pas de perte de revenu liée à ces activités. La chasse sera peu perturbée par la réalisation des travaux en raison de la faible envergure du projet qui nécessitera essentiellement des travaux manuels. En ce qui concerne la pêche, les matières en suspension dans l'eau pourraient altérer la qualité de l'eau et incommoder les pêcheurs qui observeront une augmentation de la turbidité. Cet effet, s'il survient, sera localisé en périphérie du site d'intervention. De plus, le bruit généré par les travaux pourrait causer un dérangement des activités de pêche, notamment aux abords du site d'intervention.

#### Importance de l'effet résiduel

Un effet positif est attendu sur cette composante par l'injection de capitaux dans la communauté locale.

# APPENDIX D

## 7.4 Effets sur le milieu physique

### 7.4.1 Qualité de l'air

Les activités susceptibles d'altérer la qualité de l'air sont celles impliquant l'utilisation de machinerie, incluant l'embarcation requise pour le transport maritime.

#### Effet sur la composante

L'utilisation et la circulation des véhicules de chantier sont susceptibles d'altérer la qualité de l'air par l'émission de poussières, de composés organiques volatils (COV) et de gaz d'échappement. Il est à noter que l'utilisation de la machinerie sera limitée en raison de l'accès au site par la rivière des Outaouais. Si des équipements routiers sont requis, la distance à parcourir sera très faible et restreinte au site des travaux près de la rivière. Les activités de démantèlement de l'épave seront réalisées essentiellement à l'aide d'outils manuels, dont l'utilisation d'équipement de soudure, générant de faibles émissions de polluants atmosphériques.

#### Mesures d'atténuation

- Utiliser de l'équipement en bon état de marche afin de limiter les émissions atmosphériques et sonores.
- Ne pas laisser les véhicules de chantier fonctionner inutilement au ralenti.
- Utiliser un abat-poussière à base d'eau sur les voies d'accès pour limiter l'émission de particules de poussières lors du déplacement des véhicules dans l'aire de travail.
- Mettre les matières dangereuses dans des récipients et les entreposer à l'intérieur d'un abri de manière à éviter toute situation susceptible de provoquer, en raison de leur incompatibilité, des réactions physiques ou chimiques dangereuses. L'abri doit être conforme aux normes du *Règlement sur les matières dangereuses* (Q-2, r. 32).
- Établir une structure d'alerte en cas de déversement et l'afficher clairement sur le chantier.

#### Importance de l'effet résiduel

La perturbation de la qualité de l'air sera temporaire et surviendra principalement en période de démantèlement. En l'absence de voisin immédiat, l'essentiel des effets sera ressenti par les travailleurs sur le chantier. Toutefois, les mesures d'atténuation qui seront appliquées limiteront les répercussions, lesquelles seront de courte durée et limitées au site des travaux. Par conséquent, l'effet résiduel est jugé non important.

### 7.4.2 Environnement sonore

#### Sources d'effets

Les activités susceptibles de perturber l'environnement sonore sont celles impliquant l'utilisation de machinerie, incluant l'embarcation requise pour le déplacement des travailleurs, ainsi que l'utilisation d'équipement manuel pour la démolition de l'épave. Les travaux de débroussaillage et la manipulation des débris de démolition sont également susceptibles de générer du bruit.

#### Effets sur la composante

Les activités bruyantes résultant des travaux entraîneront une augmentation sporadique et temporaire du climat sonore diurne aux environs du chantier. Cette augmentation du niveau sonore sera principalement perçue par les travailleurs du chantier. Les utilisateurs du milieu, notamment les villégiateurs, les pêcheurs et les chasseurs, pourraient également être touchés par l'augmentation du niveau sonore à proximité du site des travaux.

#### Mesures d'atténuation

- S'assurer que tout l'équipement est en bon état de marche, muni de l'équipement pertinent pour assourdir le bruit.
- Émettre un avis à la pourvoirie située en Ontario, aux associations de chasse et de pêche de la région ainsi qu'à l'association touristique afin que les utilisateurs du milieu soient avisés de la localisation et de la période de déroulement des travaux.
- Fournir des appareils de protection auditive aux travailleurs.
- Ne pas laisser les véhicules de chantier fonctionner inutilement au ralenti.

#### Importance de l'effet résiduel

La perturbation de l'environnement sonore sera temporaire et de courte durée. En considérant que les mesures d'atténuation seront appliquées, l'effet est jugé non important.

### 7.4.3 Qualité de l'eau de surface

#### Sources d'effets

Les travaux de débroussaillage, le démantèlement de l'épave, la gestion des matériaux, les matières résiduelles et les matières résiduelles dangereuses ainsi que l'utilisation de la machinerie sont susceptibles d'altérer la qualité de l'eau de surface.

#### Effets sur la composante

L'aménagement de l'aire de chantier en bordure de la rivière nécessitera le débroussaillage de la végétation et exposera une partie des sols à nu pour permettre à l'entrepreneur d'y installer les équipements temporaires, comme une roulotte et des installations sanitaires. Une rampe d'accès pourrait aussi être requise en rive pour transporter les équipements entre la barge et l'aire de chantier. Les sols mis à nu sont ainsi susceptibles de générer des matières en suspension par ruissellement.

L'utilisation d'une barge représente un risque de déversement accidentel d'hydrocarbures susceptibles de contaminer l'eau de surface qui pourrait survenir en raison d'un bris ou d'une erreur de manipulation des produits pétroliers. Les contaminants sont susceptibles d'être emportés plus en aval sur la rivière des Outaouais. L'ampleur de l'effet dépendra du volume déversé dans le milieu aquatique.

De plus, la présence de matériaux contaminés dans l'épave ainsi qu'une gestion inadéquate des matières résiduelles dangereuses peuvent représenter un risque de contamination des eaux de surface. S'ils ne sont pas entreposés convenablement, les contaminants peuvent être lessivés par la pluie et migrer dans le milieu aquatique.

### Mesures d'atténuation

- Gérer les eaux de chantier afin d'éviter au maximum le ruissellement vers la rivière, notamment par l'installation de barrières à sédiments et/ou par un réseau de fossés temporaires contenant des bassins de décantation. Ces barrières et/ou fossés devront demeurer en place jusqu'à la fin des activités et subir un entretien régulier afin d'assurer leur efficacité.
- Mettre les matières dangereuses dans des récipients et les entreposer à l'intérieur d'un abri de manière à éviter tout déversement. L'abri doit être conforme aux normes du *Règlement sur les matières dangereuses* (Q-2, r. 32).
- Équiper tous les équipements mobiles d'une trousse de récupération d'hydrocarbures en cas de déversement accidentel.
- Prévoir des trousses d'urgence contre les déversements aux aires d'entreposage et de ravitaillement de la machinerie et s'assurer de mettre en place des protections aux quatre côtés de manière à éviter toute collision avec la machinerie et les véhicules.
- Placer la machinerie (ex. : génératrice), les bidons et les récipients contenant des hydrocarbures ou d'autres produits dangereux dans un bac ou entre des bermes pouvant recueillir 125 % du volume des réserves entreposées.
- Prévoir une estacade de confinement (flotteur en polypropylène expansé recouvert de PVC) avec une jupette afin d'empêcher la migration d'hydrocarbures en cas de déversements accidentels dans la rivière des Outaouais.
- Être équipé de boudins et de feuilles (couches) hydrophobes pour absorber les produits pétroliers en cas de déversement dans la rivière des Outaouais.
- Aménager l'aire de ravitaillement des véhicules de chantier le plus loin possible de la rivière. Prévoir des trousses d'urgence contre les déversements. Mettre des protections aux quatre côtés de manière à éviter toute collision avec la machinerie et les véhicules.
- Établir une structure d'alerte en cas de déversement et l'afficher clairement sur le chantier.
- Faire opérer la machinerie et les équipements manuels à l'huile végétale.
- Déposer les matériaux issus du démantèlement de l'épave dans des conteneurs prévus à cet effet.
- S'assurer que les véhicules de chantier sont en bon état de marche afin de limiter les fuites d'hydrocarbures.
- Veiller à ce que les bacs soient présents en nombre suffisant pour le volume de déchets produits et les installer aux endroits appropriés.

### Importance de l'effet résiduel

Compte tenu des mesures d'atténuation prévues, les risques de contamination de l'eau de surface par les hydrocarbures ou autres contaminants lors des phases de préconstruction et de démantèlement sont négligeables et l'effet est jugé non important.

### 7.4.4 Qualité des sols

#### Sources d'effets

Les activités susceptibles d'avoir des effets sur la qualité des sols sont principalement liées à l'utilisation de véhicules et d'outils fonctionnant à l'essence, aux travaux de démantèlement ainsi qu'à la gestion des matériaux, des matières résiduelles et des matières résiduelles dangereuses.

#### Effets sur la composante

La circulation de véhicules et l'utilisation d'outils manuels à essence pour le démantèlement de l'épave représentent un risque de contamination des sols, notamment par des hydrocarbures pétroliers. De plus, la présence de matériaux contaminés dans l'épave ainsi qu'une gestion inadéquate des matières résiduelles dangereuses peuvent représenter un risque de contamination des eaux de surface. S'ils ne sont pas entreposés convenablement, les contaminants peuvent contaminer les sols.

#### Mesures d'atténuation

- Aucun brûlage des résidus ligneux n'est autorisé sur le site.
- Aucun déchiquetage ou enfouissement de résidus ligneux n'est autorisé sur le site. Les résidus ligneux devront être transportés vers un site autorisé par le MELCC pour y être disposés en conformité avec la réglementation en vigueur.
- Éviter de circuler à l'extérieur de l'aire des travaux.
- Mettre les matières dangereuses dans des récipients et les entreposer à l'intérieur d'un abri de manière à éviter tout déversement. L'abri doit être conforme aux normes du *Règlement sur les matières dangereuses* (Q-2, r. 32).
- Équiper tous les équipements mobiles d'une trousse de récupération d'hydrocarbures en cas de déversement accidentel.
- Prévoir des trousses d'urgence contre les déversements aux aires d'entreposage et de ravitaillement de la machinerie et s'assurer de mettre en place des protections aux quatre côtés de manière à éviter toute collision avec la machinerie et les véhicules.
- Placer la machinerie (ex. : génératrice), les bidons et les récipients contenant des hydrocarbures ou d'autres produits dangereux dans un bac ou entre des bermes pouvant recueillir 125 % du volume des réserves entreposées.
- Établir une structure d'alerte en cas de déversement et l'afficher clairement sur le chantier.
- Faire opérer la machinerie et les équipements manuels à l'huile végétale.
- Déposer les matériaux issus du démantèlement de l'épave dans des conteneurs prévus à cet effet.
- S'assurer que les véhicules de chantier sont en bon état de marche afin de limiter les fuites d'hydrocarbures.
- Veiller à ce que les bacs soient présents en nombre suffisant pour le volume de déchets produits et les installer aux endroits appropriés.

#### Importance de l'effet résiduel

Compte tenu des mesures d'atténuation prévues, les risques de contamination des sols par les hydrocarbures ou autres contaminants lors de la phase de démantèlement sont négligeables et l'effet est jugé non important.

### 7.4.5 Qualité des sédiments

#### Sources d'effets

Le démantèlement de l'épave, la gestion des matériaux, des matières résiduelles et des matières résiduelles dangereuses ainsi que l'utilisation de la machinerie sont susceptibles d'altérer la qualité des sédiments.

#### Effets sur la composante

En raison de la proximité de la rivière, un déversement accidentel d'hydrocarbures est susceptible de contaminer les sédiments. De plus, une gestion inadéquate des matériaux de démolition et des matières résiduelles dangereuses représente également un risque de contamination des sédiments.

#### Mesures d'atténuation

- Mettre les matières dangereuses dans des récipients et les entreposer à l'intérieur d'un abri de manière à éviter tout déversement. L'abri doit être conforme aux normes du *Règlement sur les matières dangereuses* (Q-2, r. 32).
- Équiper tous les équipements mobiles d'une trousse de récupération d'hydrocarbures en cas de déversement accidentel.
- Prévoir des trousses d'urgence contre les déversements aux aires d'entreposage et de ravitaillement de la machinerie et s'assurer de mettre en place des protections aux quatre côtés de manière à éviter toute collision avec la machinerie et les véhicules.
- Placer la machinerie (ex. : génératrice), les bidons et les récipients contenant des hydrocarbures ou d'autres produits dangereux dans un bac ou entre des bermes pouvant recueillir 125 % du volume des réserves entreposées.
- Prévoir une estacade de confinement (flotteur en polypropylène expansé recouvert de PVC) avec une jupette afin d'empêcher la migration d'hydrocarbure en cas déversements accidentels dans la rivière Outaouais.
- Être équipé de boudins et de feuilles (couches) hydrophobes pour absorber les produits pétroliers en cas de déversement dans la rivière des Outaouais.
- Établir une structure d'alerte en cas de déversement et l'afficher clairement sur le chantier.
- Faire opérer la machinerie et les équipements manuels à l'huile végétale.
- Déposer les matériaux issus du démantèlement de l'épave dans des conteneurs prévus à cet effet.
- S'assurer que les équipements de chantier sont en bon état de marche afin de limiter les fuites d'hydrocarbures.
- Veiller à ce que les bacs et les conteneurs soient présents en nombre suffisant pour le volume de déchets et de résidus produits et les installer aux endroits appropriés.

#### Importance de l'effet résiduel

Compte tenu des mesures d'atténuation prévues, le risque de contamination des sédiments est faible et l'effet résiduel est jugé non important.

## 7.5 Effets sur le milieu biologique

### 7.5.1 Flore et ses habitats

#### Sources d'effets

Les travaux de débroussaillage, la gestion des matériaux, des matières résiduelles et des matières résiduelles dangereuses ainsi que l'utilisation de la machinerie sont susceptibles d'avoir un effet sur la flore et ses habitats.

#### Effets sur la composante

Les travaux de débroussaillage, nécessaires pour aménager une aire de chantier en rive, auront un effet sur la végétation locale. La superficie à couper sera toutefois faible et l'aire de chantier devrait pouvoir être aménagée dans l'emprise de l'ancien chemin d'accès.

Le transport par barge et l'utilisation de la machinerie représentent un risque que tout bris mécanique, accident ou un incident lors des activités de ravitaillement cause un déversement accidentel d'hydrocarbures qui pourrait contaminer les eaux de surface, ce qui aurait un effet néfaste direct sur la végétation aquatique pouvant se trouver en aval du site d'intervention.

De plus, la présence potentielle de matériaux contaminés dans l'épave et une gestion inadéquate des matières résiduelles dangereuses peuvent représenter un risque de contamination de la végétation terrestre, des eaux de surface et, par conséquent, de la végétation aquatique. S'ils ne sont pas entreposés convenablement, les contaminants peuvent être lessivés par la pluie et entraîner une contamination des eaux de surface et de la végétation aquatique.

#### Mesures d'atténuation

- Mettre les matières dangereuses dans des récipients et les entreposer à l'intérieur d'un abri de manière à éviter tout déversement. L'abri doit être conforme aux normes du *Règlement sur les matières dangereuses* (Q-2, r. 32);
- Équiper tous les équipements mobiles d'une trousse de récupération d'hydrocarbures en cas de déversement accidentel.
- Prévoir des boudins et des feuilles (couches) hydrophobes pour absorber les produits pétroliers en cas de déversement accidentel dans la rivière des Outaouais.
- Aménager l'aire de ravitaillement des véhicules de chantier le plus loin possible de la rivière. Prévoir des trousses d'urgence contre les déversements. Mettre une protection aux quatre côtés de manière à éviter toute collision avec la machinerie et les véhicules.
- Prévoir des trousses d'urgence contre les déversements aux aires d'entreposage et de ravitaillement de la machinerie et s'assurer de mettre en place des protections aux quatre côtés de manière à éviter toute collision avec la machinerie et les véhicules.
- Placer la machinerie (ex. : génératrice), les bidons et les récipients contenant des hydrocarbures ou d'autres produits dangereux dans un bac ou entre des bermes pouvant recueillir 125 % du volume des réserves entreposées.

- Prévoir une estacade de confinement (flotteur en polypropylène expansé recouvert de PVC) avec une jupette afin d'empêcher la migration d'hydrocarbures en cas de déversements accidentels dans la rivière des Outaouais.
- Établir une structure d'alerte en cas de déversement et l'afficher clairement sur le chantier.
- Faire opérer la machinerie et les équipements manuels à l'huile végétale.
- Déposer les matériaux issus du démantèlement de l'épave dans des conteneurs prévus à cet effet.
- S'assurer que les véhicules de chantier sont en bon état de marche afin de limiter les fuites d'hydrocarbures.
- Veiller à ce que les bacs soient présents en nombre suffisant pour le volume de déchets produits et les installer aux endroits appropriés.
- Délimiter clairement l'aire de chantier et limiter au minimum nécessaire les travaux de débroussaillage.

#### Importance de l'effet résiduel

En raison des mesures d'atténuation prévues et de l'absence d'espèce floristique à statut particulier dans la zone d'étude, l'effet résiduel est jugé non important.

### 7.5.2 Faune et ses habitats

#### Sources d'effets

L'ensemble des activités prévues, soit la mobilisation du chantier, les travaux de débroussaillage, le démantèlement de l'épave, la gestion des matériaux, des matières résiduelles et des matières résiduelles dangereuses, la remise en état des lieux ainsi que l'utilisation et la circulation de la machinerie sont susceptibles d'avoir des effets sur la faune et ses habitats.

#### Effets sur la composante

Le bruit généré par la réalisation des travaux peut représenter une source de dérangement et de stress pour les espèces fauniques susceptibles de fréquenter le secteur à proximité du site d'intervention. Comme mentionné précédemment, la présence potentielle de matériaux contaminés dans l'épave et une gestion inadéquate des matières résiduelles dangereuses peuvent représenter un risque de contamination de la végétation terrestre, ce qui aurait un effet indirect sur la faune terrestre.

La réalisation des travaux induit un risque de contamination des eaux de surface, soit par l'émission de matières en suspension ou encore par l'émission de contaminants comme des métaux lourds et des hydrocarbures pétroliers, pouvant avoir un effet néfaste sur la faune aquatique. Une mauvaise gestion des matériaux contaminés et des matières dangereuses de l'épave est susceptible d'entraîner une contamination du milieu aquatique, ce qui aurait un effet indirect sur le poisson et son habitat.

#### Mesures d'atténuation

- Conformément à la *Loi de 1994 sur la convention concernant les oiseaux migrateurs*, effectuer le déboisement, s'il devait être requis, en dehors de la période de nidification de la plupart des oiseaux migrateurs, qui s'étend du 15 avril au 31 août inclusivement.
- Vérifier la présence de nids actifs avant d'entreprendre les activités de débroussaillage.

- Effectuer les travaux en période d'étiage afin de limiter l'empiétement dans l'habitat du poisson.
- Si requis, utiliser des matériaux propres et exempts de particules fines pour l'aménagement d'une rampe d'accès à la rive.
- Mettre les matières dangereuses dans des récipients et les entreposer à l'intérieur d'un abri de manière à éviter tout déversement. L'abri doit être conforme aux normes du *Règlement sur les matières dangereuses* (Q-2, r. 32).
- Équiper tous les équipements mobiles d'une trousse de récupération d'hydrocarbures en cas de déversement accidentel.
- Prévoir des trousses d'urgence contre les déversements aux aires d'entreposage et de ravitaillement de la machinerie et s'assurer de mettre en place des protections aux quatre côtés de manière à éviter toute collision avec la machinerie et les véhicules.
- Placer la machinerie (ex. : génératrice), les bidons et les récipients contenant des hydrocarbures ou d'autres produits dangereux dans un bac ou entre des bermes pouvant recueillir 125 % du volume des réserves entreposées.
- Prévoir une estacade de confinement (flotteur en polypropylène expansé recouvert de PVC) avec une jupette afin d'empêcher la migration d'hydrocarbure en cas de déversements accidentels dans la rivière des Outaouais.
- Prévoir des boudins et des feuilles (couches) hydrophobes pour absorber les produits pétroliers en cas de déversement dans la rivière des Outaouais.
- Aménager l'aire de ravitaillement des véhicules de chantier le plus loin possible de la rivière. Prévoir des trousses d'urgence contre les déversements. Mettre des protections aux quatre côtés de manière à éviter toute collision avec la machinerie et les véhicules.
- Établir une structure d'alerte en cas de déversement et l'afficher clairement sur le chantier.
- Faire opérer la machinerie et les équipements manuels à l'huile végétale.
- Déposer les matériaux issus du démantèlement de l'épave dans des conteneurs prévus à cet effet.
- S'assurer que les véhicules de chantier sont en bon état de marche afin de limiter les fuites d'hydrocarbures.
- Veiller à ce que les bacs soient présents en nombre suffisant pour le volume de déchets produits et les installer aux endroits appropriés.

#### Importance de l'effet résiduel

Considérant la faible superficie perturbée temporairement pour le retrait de l'épave et de l'application des mesures d'atténuation proposées, l'effet résiduel est jugé non important.

## 7.6 Effets sur le milieu humain

### 7.6.1 Santé et sécurité des travailleurs

#### Sources d'effets

Les activités susceptibles d'avoir des effets sur la santé et la sécurité sont les travaux de débroussaillage, le démantèlement de l'épave, la gestion des matériaux, des matières résiduelles et des matières résiduelles dangereuses, la remise en état des lieux ainsi que l'utilisation et la circulation de la machinerie.

### Effets sur la composante

Les travaux de débroussaillage peuvent causer des blessures aux travailleurs, soit par coupure ou par la chute d'arbre.

Lors du démantèlement pièce par pièce de l'épave, les travailleurs sont exposés à des risques d'effondrement de la structure ou de chute d'objets. De plus, les fumées de soudure peuvent être à l'origine d'intoxications entraînant la survenue de pathologies aiguës ou chroniques, des fumées potentiellement nocives qui peuvent être inhalées par les soudeurs et les personnes travaillant à proximité. Également, les résultats des analyses des matières dangereuses confirment la présence de plomb et d'amiante sur l'épave, ce qui peut avoir un effet sur la santé des travailleurs.

En plus des matières résiduelles générées par les travaux, les travailleurs seront amenés à utiliser plusieurs produits et gaz (liés à la soudure) correspondants à la définition de « matière dangereuse » au sens du *Règlement sur les matières dangereuses* (Q-2, r. 32). Ainsi, ces produits devront être gérés de manière adéquate pour assurer la sécurité des travailleurs et empêcher tout rejet dans l'environnement.

Les déplacements en embarcation (travailleurs, équipements et matériaux requis par le démantèlement) représentent un risque de collision pour la navigation du secteur.

### Mesures d'atténuation

- Démonter l'épave par tranche horizontale en commençant par les étages supérieurs pour éviter les risques d'effondrement de la structure.
- Équiper les soudeurs d'appareil de protection respiratoire filtrant à ventilation libre ou à ventilation assistée.
- Prévoir un système de communication entre les travailleurs afin de réagir rapidement en cas d'accidents de travail.
- Installer une signalisation adéquate afin d'informer les usagers de la présence de travaux.
- Émettre des avis aux associations de chasse et de pêche de la région ainsi qu'à l'association touristique afin que les utilisateurs du milieu soient avisés de la localisation et de la période de déroulement des travaux.
- S'assurer du bon fonctionnement des dispositifs d'avertissement sonore de circulation à reculons de la machinerie pour réduire le risque d'accident.
- Bien identifier les accès et les voies menant au chantier.
- Maintenir en bon état les voies de circulation utilisées par les véhicules de chantier.
- Mettre les matières dangereuses dans des récipients et les entreposer à l'intérieur d'un abri de manière à éviter tout déversement. L'abri doit être conforme aux normes du *Règlement sur les matières dangereuses* (Q-2, r. 32).

### Importance de l'effet résiduel

En raison de la faible envergure des travaux, le camionnage sera tout de même assez faible sur le site. À cela s'ajoute la courte durée des travaux qui permettra de limiter les risques pour la santé et la sécurité des travailleurs et des utilisateurs du milieu. Dans ce contexte, à la suite de l'application des mesures d'atténuation proposées, l'effet résiduel est jugé non important.

### 7.6.2 Patrimoine archéologique

#### Source d'effets

A priori, il n'y a pas de travaux d'excavation ni de terrassement prévu dans le contexte du projet de retrait et de démantèlement de l'épave Wabis II. Toutefois, si l'aménagement des installations temporaires en rive ou le retrait de l'épave nécessite de tels travaux, il est possible que des artéfacts soient découverts en raison de l'utilisation historique du secteur par les autochtones.

#### Effets sur la composante

Comme il est mentionné par le MCC, il n'y a pas de sites archéologiques répertoriés dans le secteur immédiat de l'épave, mais aucune recherche n'a été effectuée sur la propriété. De plus, il y aurait plusieurs sites à proximité propices à l'occupation autochtone.

Il est à noter qu'il s'agit toutefois d'un site fortement perturbé par les activités du traversier à câble qui y opérait pour relier l'Ontario et le Québec. Par conséquent, il est peu probable qu'on y trouve des artéfacts datant d'une ancienne occupation autochtone.

#### Mesures d'atténuation

Lors de la surveillance, si des travaux d'excavation ou de terrassement s'avèrent requis, une attention sera portée à la présence d'artéfacts. En cas de découverte archéologique fortuite, le responsable du chantier sera avisé et les travaux seront suspendus immédiatement. Le MCC sera alors avisé et les travaux pourront se poursuivre lorsque le ministère autorisera la reprise.

#### Importance de l'effet résiduel

Compte tenu de la faible probabilité de trouver des artéfacts datant d'une utilisation historique du site par les autochtones, et en raison de la nature des travaux prévus, l'effet du projet sur le patrimoine archéologique est non important.

### 7.6.3 Économie locale

#### Source d'effets

Cette composante fait référence aux retombées économiques issues des travaux de démantèlement de l'épave Wabis II. L'ensemble des activités du projet auront un effet positif sur cette composante.

#### Effets sur la composante

Des effets positifs sont anticipés sur l'économie locale. En effet, en plus de l'embauche d'entrepreneurs locaux, des activités nécessiteront l'achat de matériaux de construction d'entreprises locales. Bien que la main-d'œuvre locale soit favorisée, il est toujours possible, voire probable, de devoir avoir recours à des entreprises externes. Cela représentera une injection économique nouvelle à la communauté puisqu'elles seront plus susceptibles de s'approvisionner auprès de fournisseurs locaux.

Les travaux se dérouleront dans une zone où la chasse et la pêche sont pratiquées. Toutefois, les travaux n'engendreront pas de pertes de revenu liées à ces activités. La chasse sera peu perturbée par la réalisation des travaux en raison de la faible envergure du projet qui nécessitera essentiellement des travaux manuels. En ce qui concerne la pêche, les matières

en suspension dans l'eau pourraient altérer la qualité de l'eau et incommoder les pêcheurs qui observeront une augmentation de la turbidité. Cet effet, s'il survient, sera localisé en périphérie du site d'intervention. De plus, le bruit généré par les travaux pourrait causer un dérangement des activités de pêche, notamment aux abords du site d'intervention.

### Importance de l'effet résiduel

De façon globale, un effet positif est attendu sur cette composante par l'injection de capitaux dans la communauté locale.

## 7.7 Synthèses des effets environnementaux et de leur importance

Le tableau 7 présente une synthèse des effets environnementaux en fonction des activités de réalisation du projet et de l'application de mesures d'atténuation.

Tableau 7 Synthèse des effets environnementaux résiduels et de leur importance

| Milieu | Composante environnementale | Variable d'évaluation de l'effet | | | Importance de l'impact résiduel |
|---|---|---|---|---|---|
| | | Intensité | Durée | Étendue | |
| Physique | Qualité de l'air | Faible | Courte | Locale | Non importante |
| | Environnement sonore | Faible | Courte | Locale | Non importante |
| | Qualité de l'eau de surface | Faible | Courte | Locale | Non importante |
| | Qualité des sols | Faible | Courte | Locale | Non importante |
| | Qualité des sédiments | Faible | Courte | Locale | Non importante |
| Biologique | Flore et ses habitats | Moyenne | Courte | Ponctuelle | Non importante |
| | Faune et ses habitats | Moyenne | Courte | Ponctuelle | Non importante |
| Humain | Santé et sécurité des travailleurs | Moyenne | Courte | Locale | Non importante |
| | Patrimoine archéologique | Faible | Courte | Ponctuelle | Non importante |
| | Économie locale | Faible | Courte | Locale | Non importante |

## 7.8 Effets cumulatifs

La notion d'effets cumulatifs réfère à la possibilité que les effets résiduels négatifs permanents occasionnés par un projet s'ajoutent à ceux d'autres interventions ou projets passés, présents ou futurs dans le même secteur, ou à proximité, pour produire des effets de plus grande ampleur sur le milieu récepteur. Pour qu'une composante soit retenue et considérée pour l'analyse des effets cumulatifs, il faut donc qu'un effet négatif soit déclaré important afin de ne pas retenir les effets négligeables ou mineurs. Par conséquent, les effets doivent être suffisamment quantifiables pour être cumulables à d'autres effets, et ce, de façon significative.

L'analyse des effets du projet n'a pas permis d'identifier de tels effets négatifs résiduels importants. Ainsi, les effets attendus sont tous mineurs ou négligeables et non susceptibles de se cumuler à d'autres actions passées ou à venir de façon quantifiable.