

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Environmental and Waste Management Plans: Section 01 74 21.
- .2 Dredging: Section 35 20 23.

1.2 REFERENCES

- .1 WHMIS: Workplace Hazardous Materials Information System, Health Canada.
- .2 Transportation of Dangerous Goods Act. Transport Canada, update 2008-02-21.
- .3 MBCA: Migratory Birds Convention Act, Environment Canada, 1994.
- .4 Canadian Coast Guard Regulations, Department of Fisheries and Oceans Canada.
- .5 Canadian Shipping Act, Transport Canada, 2001.
- .6 AWWPA: American Wood Preserver Association.

1.3 DEFINITIONS

- .1 Hazardous Material: Product, substance, or organism that is used for its original purpose; and that is either dangerous goods or a material that may cause adverse impact to the environment or adversely affect health of persons, animals, or plant life when released into the environment.
- .2 Wetlands: land where the water table is at, near or above the surface or which is saturated for a long enough period to promote such features as wet-altered soils and water tolerant vegetation. Wetlands include organic wetlands or "peatlands," and mineral wetlands or mineral soil areas that are influenced by excess water but produce little or no peat.
- .3 Watercourse: refers to the bed and shore of a river, stream, lake, creek, pond, marsh, estuary or salt-water body that contains water for at least part of each year.
- .4 Alien species: refers to a species or subspecies introduced outside its normal distribution whose establishment and spread threaten ecosystems, habitats or species with economic or environmental harm.
- .5 Buffer Zone: a vegetated land that protects watercourses from adjacent land uses. It refers to the land adjacent to watercourses, such as streams, rivers, lakes, ponds, oceans, and wetlands, including the floodplain and the transitional lands between the watercourse and the drier upland areas.

1.4 TRANSPORTATION

- .1 Transport hazardous materials and hazardous waste in compliance with Federal Transportation of Dangerous Goods Act.
- .2 Ensure that machinery arrives on site in a clean condition and is maintained free of fluid leaks, invasive species and noxious weeds.
- .3 Do not overload trucks when hauling material or equipment. Secure contents against spillage.

- .4 All trucks transporting dredged material will have watertight boxes.
- .5 Maintain trucks clean and free of mud, dirt and other foreign matter.
- .6 Clean and disinfect all equipment before (and after) entering a water body to avoid the transfer and spreading of aquatic invasive species.
- .7 Avoid potential release of contents and of any foreign matter into waterways, onto highways, roads and access routes used for the Work. Take extra care when hauling (if applicable) dredged material and other hazardous materials. Inspect disposal pipeline (if applicable) on a regular basis. Immediately clean any spillage and spoils and report any incidences to the Departmental Representative.
- .8 Before commencement of work, advise the Departmental Representative of the existing roads and temporary routes proposed to be used to access work areas and to haul material/equipment to and from the site, including roads to the dredged disposal field (if applicable). Also communicate with local stakeholders regarding transport of materials.

1.5 DISPOSAL OF DREDGED MATERIAL

- .1 Obtain applicable permit from the Departmental Representative for approved site selected for disposal.
- .2 Control disposal and runoff of water containing suspended materials or other harmful substances in accordance with requirements of authority having jurisdiction.
- .3 Suction Dredging:
 - .1 Routinely inspect pipe for any potential breach in the sediment train and keep in good leak free condition at all times.
 - .2 Should leakage occur along the pipeline immediately cease dredging operations and repair leak.

1.6 HAZARDOUS MATERIAL HANDLING

- .1 Handle and store hazardous materials on site in accordance with WHMIS procedures and requirements.
- .2 Store all hazardous liquids in location and manner to prevent their spillage into the environment.
- .3 Maintain written inventory of all hazardous materials kept on site. List product name, quantity and storage date.
- .4 Keep MSDS data sheets on site for all items.
- .5 Workers in contact with hazardous materials must be provided with, and use regulated personal protective equipment and must have the necessary training to know how to handle the different hazardous materials for Health and Safety and according to Environmental Regulations.

1.7 PETROLEUM, OIL AND LUBRICANTS

- .1 Comply with Federal and Provincial laws, regulations, codes and guidelines for the storage of fuel and petroleum products on site.
- .2 Do not place fuel storage tanks or store fuel or other petroleum products within a 30 metre buffer zone of watercourses and wetlands. Do not fuel or lubricate equipment within this 30 metre buffer zone. Obtain approval from the Departmental Representative and/or Facility Manager of

acceptable location on site for fuel storage and equipment service. Wash, refuel and service machinery and store fuel and other materials for the machinery in such a way as to prevent any deleterious substances from entering the water body.

- .3 Do not dump petroleum products or any other deleterious substances on ground or in the water.
- .4 Be diligent and take all necessary precautions to avoid spills and contaminate the soil and water (both surface and subsurface) when handling petroleum products on site and during fueling and servicing of vehicles and equipment.
- .5 Maintain on site appropriate emergency spill response equipment consisting of at least one 250 litre (55 gallon) overpack spill kit for containment and cleanup of spills.
- .6 Maintain vehicles and equipment in good working order to prevent leaks on site.
- .7 In the event of a petroleum spill, immediately notify Departmental Representative and the Canadian Coast Guard (CCG) at 1-800-565-1633 (24 hour report line). Perform clean-up in accordance with all regulations and procedures stipulated by authority having jurisdiction.

1.8 DISPOSAL OF WASTES

- .1 Do not bury rubbish, demolition debris and waste materials on site.
- .2 Dispose and recycle demolition debris and waste materials in accordance with project waste management requirements.
- .3 Do not dispose of hazardous waste, volatile materials (such as mineral spirits, paints, thinners etc) and petroleum products into waterways, storm or sanitary sewers or in waste landfill sites.
- .4 Dispose of hazardous waste in accordance with applicable federal and provincial laws, regulations, codes and guidelines.
- .5 Develop and submit to the *Departmental Representative* an Emergency Response Plan that is to be implemented immediately in the event of a sediment release or spill of a deleterious substance. Include Provincial Environmental Emergency Contact information, and Departmental Representative's contact information.

1.9 WATER QUALITY

- .1 Conduct dredging of a watercourse in such a manner to limit turbidity and reduce sediment suspension in the water to an absolute minimum at all times.
 - .1 Maintain appropriate production speed and momentum of the dredging equipment. Make adjustments as required and as approved by the Departmental Representative.
 - .2 Strategically position excavation equipment and haul vehicles to avoid over the water swings of finer material [dredged material] whenever possible.
 - .3 [if applicable for dredging] Restrict the amount of material dredged to the area and depth required for navigation.
- .2 Where work may affect the water quality adjacent to water intake lines used by Lobster Holding Facilities, Fish Processing Facilities and other harbour users, schedule work in cooperation with the Harbour Authority as directed by The Departmental Representative to minimize interference and impact to harbour users.
- .3 Visually monitor the water turbidity of the surrounding areas adjacent to the work and up to the established dredge limit of 200 metres.

- .1 Should excessive change occur in the turbidity beyond the dredge limit which differs from existing conditions of the surrounding water bodies, such as a distinct color difference; notify the Departmental Representative to obtain appropriate mitigation measures to be followed.
- .4 Water quality during suction dredging:
 - .1 Minimize out-fall of the dredge material at the disposal site by placing the pipeline outtake at or near the water level surface.
 - .2 Restrict vessel traffic adjacent to the disposal site to an absolute minimum to avoid the re-suspension of dredged material from propeller wash.
- .5 Water contamination by preservative treated wood:
 - .1 Preservative treated lumber and timber, whether plant or site treated, shall be cured for a minimum of 30 days from date of the treatment application before their installation in areas which will be in contact with the water.
 - .2 Do not cut treated wood lumber over the surface of a watercourse or wetland.
 - .3 Do not use liquid applied preservative products over the surface of a watercourse or wetland.
 - .4 Wood treated with Chromate Copper Arsenate (CCA) or Ammoniac Copper Zinc Arsenate (ACZA) must be CSA or AWWA approved.
 - .5 Do not use timber and lumber treated with creosote, petroleum and pentachlorophenol for any part of the Work.
- .6 Do not wash down equipment within a 30 metre buffer zone of a wetland, watercourse or other identified environmentally sensitive area.
- .7 Where required, install effective sediment control measures before starting work to prevent the entry or re-suspension of sediment in the water body. Inspect sediment control measures regularly to ensure they are functioning properly, and make all necessary repairs if any damage occurs. Upon completion of use, remove these control measures in a way that prevents the escape of settled sediment.

1.10 SOCIOECONOMIC RESTRICTION

- .1 Abide by municipal and provincial regulations for any restriction on work performed during the night time and on flood lighting of the site. Obtain applicable permits.
- .2 Place flood lights in opposite direction of adjacent residential and business areas.
- .3 Use equipment and machinery with purposely designed mufflers to reduce noise on site to lowest possible level. Maintain mufflers in good operating condition at all times.
- .4 The use of solid-burning or slow pulsing warning lights at night must be avoided. The use of strobe lights at night, at the minimum intensity and minimum number of flashes per minute (longest duration between flashes) allowable by Transport Canada, is recommended. Lights should completely turn off between flashes.
- .5 LED lights must be used instead of other types of lights where possible. LED light fixtures are less prone to light trespass (i.e., are better at directing light where it needs to be, and do not bleed light into the surrounding area).

1.11 BIRD AND BIRD HABITAT

- .1 Become knowledgeable with and abide by the Migratory Birds Convention Act (MBCA) in regards to the protection of migratory birds, their eggs, nests and their young encountered on site and in the vicinity.
- .2 Minimize disturbance to all birds on site and adjacent areas during the entire course of the Work.
- .3 Do not approach concentrations of seabirds, waterfowl and shorebirds when anchoring equipment, accessing wharves or ferrying supplies.
- .4 During night time work, position flood lights in opposite direction of nearby bird nesting habitat.
- .5 Do not use beaches, dunes, and other natural previously undisturbed areas of the site to conduct work unless specifically approved by the Departmental Representative.
- .6 Should nests or chicks of migratory birds in wetlands be encountered during work, immediately stop work in that area and notify Departmental Representative for directives to be followed.
 - .1 Do not disturb nest site and neighbouring vegetation until nesting is completed.
 - .2 Minimize work immediately adjacent to such areas until nesting is completed.
 - .3 Protect these areas by following recommendations of Canadian Wildlife Service.

1.12 FISH AND FISH HABITAT

- .1 Be aware if the risk for contamination of the fish habitat at the site as a result of alien species being introduced in the water.
- .2 Weather conditions are to be assessed on a daily basis to determine the risk of extreme weather in the project areas. Avoid work during periods which ECCC has issued rainfall or wave warning for the work area.
- .3 Ensure that all in-water activities, or associated in-water structures, do not interfere with fish passage, constrict the channel width, or reduce flows.
- .4 Screen any water intakes or outlet pipes to prevent entrainment or impingement of fish. Entrainment occurs when a fish is drawn into a water intake and cannot escape. Impingement occurs when an entrapped fish is held in contact with the intake screen and is unable to free itself.
- .5 To minimize the possibility of fish habitat contamination, all construction equipment which will be immersed into the water of a watercourse, or has the possibility of coming into contact with such water during the course of the work, must be cleaned and washed to ensure that they are free of marine growth and alien species.
 - .1 Equipment shall include boats, barges, cranes, excavators, haul trucks, pumps, pipe lines and all other miscellaneous tools and equipment previously used in a marine environment.
- .6 Cleaning and washing of equipment shall be performed immediately upon their arrival at the site and before use in or over the body of water.
- .7 Conduct cleaning and washing operations as follows:
 - .1 Inspect and remove fouling plants and animals from boat, motor, anchor, trailer and equipment.
 - .2 Scrape and remove heavy accumulation of mud and dispose appropriately.
 - .3 Wash all surfaces of equipment by use of a pressurized fresh water supply.

- .4 Immediately follow with application of a heavy sprayed coating of undiluted vinegar or other environmentally approved cleaning agent to thoroughly remove all plant matter, animals and sediments.
- .5 Clean hull and dispose of removed material far from the water.
- .6 Check and remove all plant, animal and sediment matter from all bilges and filters.
- .7 Drain standing water from equipment and let fully dry before use.
- .8 Upon removal from the water, drain standing water from your motor, bilge and wells. If possible, let equipment dry completely before removal off the site.
- .9 Use environment friendly anti-fouling paint or products on your boat hull.
- .8 Do not perform cleaning and wash down within a 30 metre buffer zone of a wetland, watercourse or other identified environmentally sensitive area.
- .9 Record of Assurance Logbook:
 - .1 Maintain an on-going log of past and present usage and wash downs of all equipment to illustrate mitigation measures undertaken against fish habitat contamination by alien species.
 - .2 Write data in a hard cover bound logbook,
 - .3 Include the following:
 - .1 Date and location where equipment was previously used in a watercourse or wetland;
 - .2 Type of work performed.
 - .3 Dates of wash down for each piece of equipment;
 - .4 Cleaning method and cleaning agent(s) used.
 - .4 Upon request, submit logbook to Departmental Representative for review.
- .10 Abide by requirements and recommendations of the Federal Department of Environment and the Department of Fisheries and Oceans – Fisheries Protection Program (FPP) in cleaning and wash down of equipment.

1.13 AIR QUALITY

- .1 Keep airborne dust and dirt resulting from the work on site to an absolute minimum.
- .2 Apply dust control measures to roads, parking lots and work areas.
- .3 Spray surface with water or other environmentally approved product. Use purposely suited equipment or machinery and apply in sufficient quantity and frequency to provide effective result and continued dust control during the entire course of the work.
- .4 Do not use oil or any other petroleum products for dust control.
- .5 To reduce emissions of air contaminants and Greenhouse Gas, implement an idling policy which includes:
 - .1 Diesel construction equipment will be turned off when not in active use.
 - .2 Vehicles idling more than 5 minutes will be turned off. Morning vehicle warm-ups will be restricted to 3-5 minutes. A staging zone will be established for trucks that are waiting to load/unload to minimize public exposure to emissions. Idling restrictions will not apply when:
 - .1 The engine is required to power auxiliary equipment (e.g., hoist, lift, computers, safety lights, etc);

- .2 Extreme weather conditions (-10 degrees Celsius or below / +30 degrees Celsius or above) or any other circumstance where heating or air conditioning is required for worker's health and safety;
- .3 The original equipment manufacturer specifically recommends a longer idling period for normal and efficient operation of the motor vehicle in which case such recommended period shall not be exceeded;
- .4 Vehicle/equipment maintenance and diagnostic purposes;
- .5 Where the unit is not expected to restart due to mechanical issues.

1.14 FIRES

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

1.15 DREDGING WITH A DISPOSAL AT SEA PERMIT

- .1 Dispose of dredge material at the approved Disposal at Sea (DAS) site in accordance with any/all conditions of the Canadian Environmental Protection Act (CEPA) Disposal at Sea Permit. A copy of the CEPA Disposal at Sea Permit must be kept on site at all times. Dredge disposal operations are to comply with the requirements of the Disposal at Sea Permit issued for the project.
- .2 A DMDP (Dredge Material Disposal Plan) required by ECCC as part of permit conditions, is to be prepared by the Contractor and submitted to the *Departmental Representative* for review by ECCC within 10 days of award. Requirements will include but not limited to: equipment details, schedule and reporting requirements including provisions of electronic positioning equipment of the tug to verify position of all disposal events.
- .3 If a marine mammal (whales, porpoises) is identified within the vicinity of the project, work shall stop until the animal is gone.
- .4 The first disposal event conducted under the authority of the DAS permit shall not exceed VOLUME scow measure. After the first disposal event, the quantity of material disposed during a single event shall not be limited. Should disposal activities stop for more than 24 hours, the first disposal event of the new day shall not exceed VOLUME scow measure, after which the quantity of material disposed at a single event shall not be limited.

END OF SECTION