

**Part 1            General**

**1.1                RELATED REQUIREMENTS**

- .1        Section 02 41 13 Selective Site Demolition
- .2        Section 02 83 10 – Lead-Based Paint Abatement – Minimum Precautions

**1.2                REFERENCES**

- .1        Canadian Environmental Protection Act, 1999 (CEPA 1999)
  - .1        Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations (SOR/2005-149).
- .2        Department of Justice Canada (Jus)
  - .1        Transportation of Dangerous Goods Act, 1992 (TDG Act) - current to November 24, 2015.
  - .2        Transportation of Dangerous Goods Regulations (T-19.01-SOR/2001-286) - current to November 24, 2015.
- .3        Health Canada / Workplace Hazardous Materials Information System (WHMIS)
  - .1        Material Safety Data Sheets (MSDS).
- .4        National Research Council Canada Institute for Research in Construction (NRC-IRC)
  - .1        National Fire Code of Canada-[2010].
- .5        The Federal PCB Regulations (SOR/2008-273).
- .6        Environment Canada document entitled “Identification of Lamp Ballasts Containing PCBs, Report EPS 2/CC/2 - revised”, dated August 1991
- .7        The Federal Halocarbons Regulation, July 2003
- .8        Human Resources and Social Development Canada (HRSDC)
  - .1        Canada Labour Code Part II, - SOR 86-304 - Occupational Health and Safety Regulations.
- .9        New Brunswick Clean Environment Act
  - .1        PCB Storage Standards
- .10      New Brunswick Clean Air Act
  - .1        Ozone Depleting Substances and other Halocarbon Regulation (97-132), June 2008.
- .11      New Brunswick Department of Environment and Local Government Disposal of Lead Paint and Lead Painted Materials Guideline, 2011.
- .12      New Brunswick Occupational Health & Safety Act (OSHA) (N.B. Reg. 91-191)
- .13      Stantec Consulting Ltd.
  - .1        Limited Hazardous Building Materials Assessment, *Machias Seal Island Lighthouse, Charlotte County, New Brunswick LL# 6, DFRP# 03984, and RPIS# MD00190*, June 8, 2016.

**1.3 DEFINITIONS:**

- .1 Dangerous Goods: product, substance, or organism specifically listed or meets hazard criteria established in Transportation of Dangerous Goods Regulations.
- .2 Hazardous Material: product, substance, or organism used for its original purpose; and is either dangerous goods or material that will cause adverse impact to environment or adversely affect health of persons, animals, or plant life when released into the environment.
- .3 Hazardous Waste: hazardous material no longer used for its original purpose and that is intended for recycling, treatment or disposal.

**1.4 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit proof satisfactory to the Departmental Representative that suitable arrangements have been made to dispose of hazardous waste in accordance with requirements of authority having jurisdiction.
- .2 Provide proof of Contractor's General Environmental Liability Insurance.
- .3 Quality Control:
  - .1 Provide Departmental Representative necessary permits for transportation and disposal of hazardous waste and proof that hazardous waste has been received and properly disposed at approved facilities.
  - .2 Provide proof satisfactory to Departmental Representative that employees have had instruction on hazards of hazardous waste exposure, respirator use, dress, and aspects of work procedures and protective measures.
- .4 Submit WorkSafe NB status and transcription of insurance.

**1.5 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Transport hazardous materials and wastes in accordance with Transportation of Dangerous Goods Act, Transportation of Dangerous Goods Regulations, and applicable provincial regulations.
- .4 Storage and Handling Requirements:
  - .1 Co-ordinate storage of hazardous materials with Departmental Representative and abide by internal requirements for labelling and storage of materials and wastes.
  - .2 Store and handle hazardous materials and wastes in accordance with applicable federal and provincial laws, regulations, codes, and guidelines.
  - .3 Store and handle flammable and combustible materials in accordance with National Fire Code of Canada requirements.
  - .4 Keep no more than 45 litres of flammable and combustible liquids such as gasoline, kerosene and naphtha for ready use.

- .1 Store flammable and combustible liquids in approved safety cans bearing the Underwriters' Laboratory of Canada or Factory Mutual seal of approval.
- .2 Storage of quantities of flammable and combustible liquids exceeding 45 litres for work purposes requires the written approval of the Departmental Representative.
- .5 Transfer of flammable and combustible liquids is prohibited within buildings.
- .6 Transfer flammable and combustible liquids away from open flames or heat-producing devices.
- .7 Solvents or cleaning agents must be non-flammable or have flash point above 38 degrees C.
- .8 Store flammable and combustible waste liquids for disposal in approved containers located in safe, ventilated area. Keep quantities to minimum.
- .9 Observe smoking regulations, smoking is prohibited in areas where hazardous materials are stored, used, or handled.
- .10 Storage requirements for quantities of hazardous materials and wastes in excess of 5 kg for solids, and 5 litres for liquids:
  - .1 Store hazardous materials and wastes in closed and sealed containers.
  - .2 Label containers of hazardous materials and wastes in accordance with WHMIS.
  - .3 Store hazardous materials and wastes in containers compatible with that material or waste.
  - .4 Segregate incompatible materials and wastes.
  - .5 Ensure that different hazardous materials or hazardous wastes are stored in separate containers.
  - .6 Store hazardous materials and wastes in secure storage area with controlled access.
  - .7 Maintain clear egress from storage area.
  - .8 Store hazardous materials and wastes in location that will prevent them from spilling into environment.
  - .9 Have appropriate emergency spill response equipment available near storage area, including personal protective equipment.
  - .10 Maintain inventory of hazardous materials and wastes, including product name, quantity, and date when storage began.
- .11 When hazardous waste is generated on site:
  - .1 Co-ordinate transportation and disposal with Departmental Representative.
  - .2 Comply with applicable federal, provincial and municipal laws and regulations for generators of hazardous waste.
  - .3 Use licensed carrier authorized by provincial authorities to accept subject material.
  - .4 Before shipping material obtain written notice from intended hazardous waste treatment or disposal facility it will accept material and it is licensed to accept this material.

- .5 Label containers with legible, visible safety marks as prescribed by federal and provincial regulations.
- .6 Only trained personnel handle, offer for transport, or transport dangerous goods.
- .7 Provide photocopy of shipping documents and waste manifests to Departmental Representative.
- .8 Track receipt of completed manifest from consignee after shipping dangerous goods. Provide photocopy of completed manifest to Departmental Representative.
- .9 Report discharge, emission, or escape of hazardous materials immediately to Departmental Representative and appropriate provincial authority. Take reasonable measures to control release.
- .12 Ensure personnel have been trained in accordance with Workplace Hazardous Materials Information System (WHMIS) requirements.
- .13 Report spills or accidents immediately to Departmental Representative and Consultant. Submit a written spill report to Departmental Representative within 24 hours of incident.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 Description:
  - .1 Bring on site only quantities of hazardous material required to perform Work.
  - .2 Maintain MSDS in proximity to where materials are being used. Communicate this location to personnel who may have contact with hazardous materials.

## **Part 3 Execution**

### **3.1 HAZARDOUS MATERIALS ABATEMENT**

- .1 Scope of Abatement Activities (other than lead in paint – refer to Section 02 83 10).
  - .1 Abatement shall be conducted to remove and dispose of hazardous building materials as identified in the Assessment Report (Appendix 2) in accordance with applicable regulations, guidelines, standards and/or best practices for such work.
  - .2 The listing below is a summary of the identified hazardous building materials (other than Lead in paint) and associated removal and disposal regulations, guidelines and/or standards.
    - .1 Silica
      - .1 Silica may be present in concrete, cement, mortar, which may be present in various locations throughout the building.
      - .2 When silica-containing materials are to be removed during demolition activities, ensure dust control measures are employed such that airborne silica dust concentrations do not exceed the exposure limit as stipulated by the ACGIH TLV-TWA limit of 0.025

mg/m<sup>3</sup> occupational exposure limit. This would include, but not be limited to, the following:

- .1 Providing workers with respiratory protection.
- .2 Wetting the surface of the materials to prevent dust emissions.
- .3 Providing workers with facilities to properly wash prior to exiting the work area.
- .4 Providing dust control to mitigate the potential for demolition dust to escape from the work area into public and/or adjacent areas including ecologically sensitive areas (bird habitat).

.2 Metal impacted soil

- .1 Soil around the light tower contains several metals including lead, mercury and many others at concentrations above CCME guidelines.
- .2 Minimize contact with the soil.
- .3 Provide dust control to mitigate the potential for breathing in impacted soil.
- .4 Ensure soil handling does not impact bird habitat (Appendix 1).
- .5 Minimize runoff by placing tarps under and over soil piles during temporary storage.
- .6 Only place soil in designated areas approved by the Departmental Representative.

**3.2 CLEANING**

- .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment.
- .3 Waste Management: separate waste materials for reuse and recycling.
  - .1 Dispose of hazardous waste materials in accordance with applicable federal and provincial acts, regulations, and guidelines.
  - .2 Recycle hazardous wastes for which there is approved, cost effective recycling process available.
  - .3 Send hazardous wastes to authorized hazardous waste disposal or treatment facilities.
  - .4 Burning, diluting, or mixing hazardous wastes for purpose of disposal is prohibited.
  - .5 Disposal of hazardous materials in waterways, storm or sanitary sewers, or in municipal solid waste landfills is prohibited.
  - .6 Dispose of hazardous wastes in timely fashion in accordance with applicable federal and provincial regulations.
  - .7 Minimize generation of hazardous waste to maximum extent practicable. Take necessary precautions to avoid mixing clean and contaminated wastes.

- .8 Identify and evaluate recycling and reclamation options as alternatives to land disposal, such as:
  - .1 Hazardous wastes recycled in manner constituting disposal.
  - .2 Hazardous waste burned for energy recovery.
  - .3 Lead-acid battery recycling.
  - .4 Hazardous wastes with economically recoverable precious metals.

**END OF SECTION**