1 GENERAL

1.01 REFERENCES

.1 Definitions:
- .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.
- .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction.

.2 Reference Standards:
- .1 Canadian Construction Documents Committee (CCDC)
  - .1 CCDC 2-2008 Stipulated Price Contract.
- .2 U.S. Environmental Protection Agency (EPA)/Office of Water
  - .1 EPA 832/R-92-005-92, Storm Water Management for Construction Activities, Chapter 3.
  - .2 EPA General Construction Permit (GCP) 2012.

1.02 ACTION AND INFORMATIONAL SUBMITTALS

.1 Submit in accordance with Section 01 33 00 - Submittal Procedures.

.2 Product Data:
- .1 Submit manufacturer's instructions, printed product literature and data sheets for electric boiler and controls and include product characteristics, performance criteria, physical size, finish and limitations.
- .2 Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 29.06 - Health and Safety Requirements and 01 35 43 - Environmental Procedures.

.3 Before commencing construction activities or delivery of materials to site, submit Environmental Protection Plan for review and approval by Departmental Representative.

.4 Environmental Protection Plan must include comprehensive overview of known or potential environmental issues to be addressed during construction. See Appendix A - Hazardous Building Materials Assessment for this facility.

.5 Address topics at level of detail commensurate with environmental issue and required construction task.

.6 Include in Environmental Protection Plan:
- .1 Names of persons responsible for ensuring adherence to Environmental Protection Plan.
- .2 Names and qualifications of persons responsible for manifesting hazardous waste to be removed from site.
- .3 Names and qualifications of persons responsible for training site personnel.
- .4 Descriptions of environmental protection personnel training program.
- .5 Erosion and sediment control plan identifying type and location of erosion and sediment controls to be provided including monitoring and reporting requirements to assure that control measures are in compliance with erosion and sediment control plan, Federal,

Provincial, and Municipal laws and regulations and EPA 832/R-92-005, Chapter 3.

.6 Drawings indicating locations of proposed temporary excavations or embankments for haul roads, stream crossings, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials including methods to control runoff and to contain materials on site.

.7 Traffic Control Plans including measures to reduce erosion of temporary roadbeds by construction traffic, especially during wet weather.

.1 Plans to include measures to minimize amount of material transported onto paved public roads by vehicles or runoff.

.8 Work area plan showing proposed activity in each portion of area and identifying areas of limited use or non-use.

.1 Plan to include measures for marking limits of use areas and methods for protection of features to be preserved within authorized work areas.

.9 Spill Control Plan to include procedures, instructions, and reports to be used in event of unforeseen spill of regulated substance.

.10 Non-Hazardous solid waste disposal plan identifying methods and locations for solid waste disposal including clearing debris.

.11 Air pollution control plan detailing provisions to assure that dust, debris, materials, and trash, are contained on project site.

.12 Contaminant Prevention Plan identifying potentially hazardous substances to be used on job site; intended actions to prevent introduction of such materials into air, water, or ground; and detailing provisions for compliance with Federal, Provincial, and Municipal laws and regulations for storage and handling of these materials. See Appendix A - Hazardous Building Materials Assessment for this facility.

.13 Waste Water Management Plan identifying methods and procedures for management or discharge of waste waters which are directly derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines.

.14 Historical, archaeological, cultural resources biological resources and wetlands plan that defines procedures for identifying and protecting historical, archaeological, cultural resources, biological resources and wetlands.

.15 Pesticide treatment plan to be included and updated, as required.

1.03 FIRES

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

.2 Provide supervision, attendance and fire protection measures as directed.

1.04 POLLUTION CONTROL

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

.2 Control emissions from equipment and plant in accordance with local authorities' emission requirements.

.3 Prevent sandblasting and other extraneous materials from contaminating air and waterways beyond application area.

.1 Provide temporary enclosures where indicated or directed by Departmental Representative.

.4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

1.05 NOTIFICATION

.1 Departmental Representative will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.

.2 Contractor: after receipt of such notice, inform Departmental Representative of proposed corrective action and take such action for approval by Departmental Representative.
.1 Take action only after receipt of written approval by Departmental Representative.

.3 Departmental Representative will issue stop order of work until satisfactory corrective action has been taken.

.4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

2 PRODUCTS

2.01 NOT USED

.1 Not Used.

3 EXECUTION

3.01 CLEANING

.1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
.1 Leave Work area clean at end of each day.

.2 Bury rubbish and waste materials on site where directed after receipt of written approval from Departmental Representative.

.3 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.

.4 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

END OF SECTION

APPENDIX A – HAZARDOUS BUILDING MATERIALS ASSESSMENT
ARDGOWAN NATIONAL HISTORIC SITE (NOV 2016)

Building Materials	Comments
Asbestos	Roofing materials (tar paper underlying cedar roofing shingles). *Presumed not tested*
Lead Paint	The red paint chips had a lead leachate concentration above 5 mg/L. Based on this result, the cream coloured paint (over red) chips (interior door and window trim) is assumed to exceed the applicable guideline as well. These paints were observed to be in GOOD condition on the wood doors and trim around windows and doors found on the exterior and interior of building.
Lead-Containing Materials	Lead may be present in the following materials: • Chimney, vent/pipe flashings; • Older electrical wiring materials and sheathing; • Solder used on domestic water lines; • Solder used in bell fittings for cast iron pipes; • Solder used in electrical equipment; and • Lead-acid batteries used in emergency lighting.
Mercury	Mercury is present in approximately 20 thermostats located throughout the building. Mercury vapour is likely present in approximately 250 fluorescent light tubes in light fixtures observed throughout the Basement.
Polychlorinated Biphenyls (PCBs)	Based on the age of the original sections of the subject building (i.e. constructed in the 1850s), PCBs may be present in the fluorescent light ballasts of the approximately one-hundred light fixtures observed throughout the original sections of the subject building. Ten percent (10%) of these fixtures were examined for PCBs and were found to contain no PCBs based on "NO PCBs" label markings or date code and stamps.
Ozone-Depleting Substances (ODSs)	The HVAC system located inside the attic space and the associated compressor located on the exterior of the building which were observed during the site visit may contains ODSs and other halocarbons.

Recommendations pertaining to the handling, removal and/or disposal of identified hazardous building materials are provided below:

Asbestos-Containing Materials

Any work involving the disturbance, repair (i.e., encapsulation) or removal of the above noted presumed ACMs should be conducted by a certified contractor using Asbestos Work Procedures as defined by Part 49-Asbestos Regulations of the PEI Occupational Health & Safety Act Regulations (R.S.P.E.I. 1988, Chapter O-1.01). ACMs should be disposed of at a Regional Solid Waste Landfill as per PEI Regulations. Presumed asbestos-containing materials should be sampled and analyzed for asbestos prior to removal and disposal. Vermiculite was not observed during the assessment of the subject building. Should vermiculite be discovered during any future demolition activities, work in that area must be stopped and the vermiculite must be sampled and submitted for analysis to determine whether asbestos fibres are present or the vermiculite should be assumed to contain asbestos and should be handled accordingly. Also, should a material suspected to contain asbestos fibres be discovered during any future demolition or renovation activities, all work in that area that may disturb the suspect material should be stopped. Samples of the suspect material should be submitted for laboratory analysis to determine if asbestos fibres are present or the material should be assumed to contain asbestos and should be handled accordingly.

Lead Paint

Work on materials that contain lead must be undertaken in a manner so as to avoid generating fine particulate matter and/or fumes. Airborne lead dust or fumes must not exceed the Time Weighted Average (TWA) exposure value of 0.05 mg/m3 during the removal of paints and products containing any concentration of lead. Demolition work that may disturb lead-containing materials shall follow the recommendations provided in the document entitled "Guideline: Lead on Construction Projects", issued by the Ontario Ministry of Labour in September 2004 (revised April 2011). Materials covered with lead containing paints at concentrations below 1,000 ppm can be disposed of at

a provincially approved Construction and Demolition (C&D) site provided the paint was well-adhered to its substrate. The samples found to have lead concentrations below 1,000 mg/kg included:

- Light green paint chips found on interior plaster walls observed to be generally in GOOD condition;
- Cream color paint chips found on the exterior wood paneling and shingles observed to be in generally GOOD condition; and
- White paint chips found on interior drywall ceilings and walls observed to be in generally GOOD condition.

If required, any paint that becomes loose and flaking listed above should be scraped off the substrate and disposed of at a Regional Solid Waste Landfill.

The red paint chips observed on the wood window trim and doors on the exterior of the building, were lead leachate toxic (leachate concentration > 5 mg/L) and cannot be disposed of at a Regional Solid Waste Landfill. The cream coloured paint (over red) chips (interior door and window trim) are assumed to exceed applicable guideline as well. If it is deemed necessary that these materials will be disposed of during any demolition activity, then a sample of the paint with (wood) substrate should be tested for lead leachate toxicity prior to removal and disposal (if required) to determine the appropriate location and method of disposal for these painted materials. Although painted trim and door surfaces on the exterior and interior of the building were noted to be in good condition during the site visit, any confirmed or suspected lead-leachate toxic paint chips that must be removed from the substrate surface should be removed by a certified abatement contractor, shipped as hazardous waste, and disposed of at an approved hazardous waste disposal facility out of province, capable of handling leachate toxic waste.

Lead-Containing Materials

Lead-containing materials (e.g. chimney, vent/pipe flashings) should be carefully separated from other building materials and re-cycled by a metals recycling depot, if they require removal. Based on the possible presence of lead-containing solder on copper piping, all copper piping removed during demolition/renovation of the building should be cut above and below any soldered joints to avoid direct disturbance of the lead solder. Lead-acid batteries used in emergency lighting should be recycled at an approved environmental depot. "The Guideline: Lead on Construction Projects" (prepared by the Ontario Ministry of Labour), April, 2011, does not require removal of lead paint or lead-based materials such as pipe solder unless work on these materials is likely to cause worker exposure to lead fumes or lead dust. Worker exposure to lead fumes or dust is elevated by activities such as welding, flame cutting, grinding, sanding or sandblasting. If these activities are to be performed on painted surfaces, procedures outlined in the aforementioned guideline should be adhered to.

Mercury

Complete removal of mercury-containing equipment is required prior to any decommissioning activities that may disturb the equipment. Prior to demolition work or renovations, the light tubes and thermostats must be removed, packaged to avoid emissions of mercury vapours, and stored in a secure location until they can be safely removed and transported from the site by a recycling contractor for disposal. Thermostats should be disposed of at a registered recycling depot. Ensure all mercury waste is handled, stored and disposed of in accordance with the requirements of the federal Transportation of Dangerous Goods Regulation. Precautions should be taken if worker are exposed to mercury or mercury vapours to ensure that workers exposure levels do not exceed the TWA of 0.025 mg/m3 as per PEI Occupational Health and Safety Act by providing respiratory and skin protection.

Polychlorinated Biphenyls

Should a material suspected to contain PCBs become uncovered during renovation or demolition activities (i.e., dielectric fluids, hydraulic fluids), all work in the areas that may disturb the material should be stopped. Samples of the suspect material should be submitted for laboratory analysis to determine if PCBs are present. Confirmed PCBs should be handled in accordance with Federal Regulation SOR/2008-273 and R.R.O. 1990, Reg. 362, under the EPA.

ODSs and Other Halocarbons

Equipment suspected to contain ODSs or other halocarbons should be purged and decommissioned by a licensed refrigeration technician prior to being taken out of service. Immediately after the regulated substance is recovered, the equipment is to be disabled so that it cannot be reused, and labeled in accordance with the directions of the Minister.