

Part 1 General

1.1 RELATED WORK

- .1 Section 01 11 00 – Summary or Work.
- .2 Section 01 35 29.14 – Health and Safety for Contaminated Sites.
- .3 Section 01 35 43 - Environmental Procedures.
- .4 Section 01 52 00 – Construction Facilities.
- .5 Section 01 57 00 - Traffic Regulations.
- .6 Section 31 23 33.01 - Excavating and Backfilling.

1.2 REGULATORY AGENCY

- .1 Newfoundland and Labrador Department of Municipal Affairs and Environment (NLDMAE).
- .2 Environment and Climate Change Canada (ECCC).
- .3 Transportation of Dangerous Goods.

1.3 REFERENCES

- .1 Perform work in accordance with the following standards:
 - .1 Newfoundland and Labrador Environmental Protection Act.
 - .2 Canadian Construction Safety Code latest edition.
 - .3 Storage of PCB Regulations made pursuant to the Canadian Environmental Protection Act.
 - .4 Federal and Provincial Transportation of Dangerous Goods (TDG) Act and Regulations.
 - .5 Workplace Hazardous Materials Information System (WHMIS) Regulations.
 - .6 Canadian Environmental Assessment Act.
 - .7 Canadian Environmental Protection Act (New Substance Notification Regulations).
- .2 Maintain at the project site a copy of the above referenced standards, as well as all permits from authorities having jurisdiction.

1.4 SUMMARY OF WORK

- .1 Work Includes:

- .1 Mobilization/demobilization of all equipment, material and personnel to the Site as required to conduct the Work detailed and in accordance with the Contractor's work plan methodology.
 - .1 The Contractor's work methodology plan must clearly demonstrate how the soil remediation activities including shipping of impacted material will be carried out. The work plan shall clearly and succinctly describe how the Contractor proposes to undertake the Work and shall also include a schedule showing anticipated progress stages and final completion of Work within the time period required by Contract Documents.
 - .2 The Contractor's Plan is to clearly describe proposed procedures and strategy to manage groundwater encountered during excavation work.
- .2 Protection of Species at Risk – Refer to Appendix B.
- .3 Removal of PCB-impacted soil at Area "C" PPAR near dump site DS-5 in the area shown on Drawing No. E3 (estimated 760 tonnes), at Area "C" PPAR at dump site DS-2 in the area shown on Drawing No. E4 (estimated 35 tonnes) and at Area "F" PMAD near dump site DS-10 in the area shown on Drawing No. E5 (estimated 1,255 tonnes). Soil shall be removed in lifts not exceeding a thickness of 0.5 m to the top of bedrock or to the depth of impacts, whichever is encountered first. The Departmental Representative shall collect confirmatory soil samples from the limits of the excavations as soil removal progresses to determine if further excavation is required.
- .4 Transportation of PCB-impacted materials removed from the site to a licensed PCB soil treatment facility for treatment/destruction and disposal to 1.3 ppm.
- .5 Excavation and removal of any debris that is encountered in the excavations. Temporary storage of any debris and/or soil encountered in the remedial excavations and placement in a laydown area as approved by the Departmental Representative for confirmatory testing before being properly disposed of. The temporary laydown area shall consist of an area that is level and bermed. The laydown area shall be covered with an impermeable liner onto which debris and/or soil will be temporarily placed to prevent infiltration or runoff of potential contaminants into subsurface soil. The Contractor will be responsible for the removal of all debris encountered in the remedial excavations and proper disposal at an approved facility.
- .6 Any laydown area(s) used to temporarily store excavated PCB-impacted soil pending shipment or transport from the site must be approved by the Departmental Representative. The temporary laydown area(s) shall be used for no more than twenty (20) days. The temporary laydown area(s) shall consist of areas that are level and bermed. The laydown areas shall be covered with impermeable liners onto which impacted soil will be temporarily placed to prevent infiltration or runoff of potential contaminants into subsurface soil. **The storage of excavated material at the laydown area(s) past the Contract end date will not be permitted.** Following the removal of impacted-soil from the area, the impermeable liner(s) will be removed and treated as impacted soil (in accordance with the type of contaminant present in the soil stored) prior to demobilizing from the site. If deemed necessary by the Departmental Representative, surficial soil beneath the liner will also be removed and treated as impacted soil. The depth of soil removal will be approved by the Departmental Representative. The Contractor will be responsible for testing the affected

area(s) following the removal of impacted-material from the temporary laydown area. Sampling will be carried out under the supervision of the Departmental Representative.

- .7 Dewatering of PCB impacted soil and groundwater management, if necessary, prior to transportation.
- .8 Reinstatement of site in accordance with Section 31 23 33.01 – Excavating and Backfilling.

1.5 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Prior to Acceptance of Bid, the successful Bidder shall provide the following within ten (10) days of tender closing.
 - .1 Copy of the license from the treatment/disposal facility and their environmental liability impairment insurance in the amount of at least one million dollars (\$1,000,000).
 - .2 Certificates demonstrating proof of treatment/destruction and disposal from the licensed facility. PCB treatment residual levels to be capable of meeting 1.3. ppm in the soil after treatment.
- .3 Upon Acceptance of Bid, the successful Contractor shall provide the following within fourteen (14) days of receiving the Contract Award Confirmation.
 - .1 Weigh scale certification (within the past year) of the soil treatment facilities weigh scales certified as meeting the requirements of Statutes of Canada, Chapter 36, Weights and Measure Act 1970-71-72 and subsequent amendments.
 - .2 Copies of Certificates of Approval for transporting waste.
- .4 Quality Assurance and Quality Control Submittals:
 - .1 Provide Quality Assurance and Quality Control Submittals in accordance with Section 01 33 00 - Submittal Procedures and Section 01 45 00 – Quality Control as follows:
 - .1 Description of emergency plans in case of breakdown, spill or other problem.
 - .2 Description of contingency plan in case of variations of critical parameters during system operation.
 - .3 Waste Management Plan and complete list of wastes, including waste registration numbers as required by Provincial regulations, that will be generated by activities.
 - .4 Work Plan: Detailed plan of soil and ground water management onsite.
 - .5 Methods that will be used to restore site to its original legally acceptable condition and applicable site criteria as mandated by the PWGSC.
 - .6 Health and Safety Plan.
 - .7 Environmental Protection Plan.
 - .8 Erosion and Sedimentation Plan.

1.6 QUALITY ASSURANCE

- .1 Qualifications:
 - .1 Identify members of project team including project manager. Define experience, education and training, qualifications, tasks and responsibilities of each team member.
- .2 Regulatory Requirements:
 - .1 Perform Work in accordance with:
 - .1 Acts, Regulations, Laws, guidelines, codes of practice, directives and policies of government authorities pertaining to: environment; waste water; air quality; health and safety; transportation; waste management.
 - .2 WHMIS.
 - .3 Canadian Environmental Assessment Act.
 - .4 Canadian Environmental Protection Act (New Substance Notification Regulations).
 - .5 Transportation of Dangerous Goods Act.
 - .6 National Building Code of Canada.
 - .7 National Fire Code of Canada.

1.7 DELIVERY, STORAGE, AND HANDLING

- .1 Contaminated Soil:
 - .1 Contractor may store excavated, contaminated soil in temporary laydown area for no more than twenty (20) days. The laydown area(s) shall be covered with impermeable liners onto which impacted soil will be temporarily placed to prevent infiltration or runoff of potential contaminants into subsurface soil. Transport and dispose of contaminated soil according to current Federal and Provincial regulations. Soils will exceed PCB levels of 50ppm.

1.8 PROTECTION

- .1 Protect existing items designated to remain. In event of damage, replace such items or make repairs to approval of the Departmental Representative and at no additional cost to Canada.
- .2 Prevent debris from blocking surface drainage pathways.
- .3 Suppress dust during excavation activities as approved by Departmental Representative.
- .4 Prevent release of silt/sediments or contaminants into water bodies, marsh areas or drainage streams.
- .5 Protect Species at Risk, conduct Work in accordance with Appendix B.
- .6 Complete excavation and reinstatement work in accordance with Section 01 35 43 – Environmental Procedures and Section 31 32 33.01 – Excavating and Backfilling.

1.9 MEASUREMENT FOR PAYMENT

- .1 Payment for the following work will be made under the relevant unit price or lump sum price in the Schedule of Quantities and Prices.
 - .1 Mobilization/demobilization of all required equipment, material and personnel. Additional mobilization/demobilization may be required for backfilling and site restoration activities; such additional mobilization/demobilization costs are to be included in the lump sum price tendered.
 - .2 Excavation, dewatering (if necessary), onsite ground water management, offsite water treatment (if necessary), transport, and treatment/destruction and disposal at a licensed facility of PCB-impacted soil and debris (if encountered) from the PPAR site (as identified on Drawing Nos. E3 and E4), and the PMAD site (as identified on Drawing No. E5) will be measured by the metric tonne. The price per metric tonne is to be all inclusive for excavation, dewatering (if necessary), water treatment (if necessary), temporary storage at laydown area wide liner, soil removal, transportation, disposal/destruction of PCB-impacted soil and debris (if encountered and is found to be contaminated) at a licensed facility and all applicable costs associated with this work. Unit measurement for payment will be per tonne as measured by weigh scale receipts from a weigh scale that is certified by the Province or the manufacturer's authorized representative to have an accuracy of at least $\pm 5\%$. No payment will be issued without supporting documentation from the licensed treatment facility. Contractor must submit receipts from the licensed treatment facility prior to any progress claim payments. Final payment subject to 3.7 of this section.
 - .1 Forty percent (40%) of the unit price cost for PCB soils will be paid to the Contractor for all work associated with the excavation, loading, transportation and receipt/confirmation from the treatment facility as specified.
 - .2 The remaining sixty percent (60%) of the unit price cost for PCB soils will be paid to the Contractor upon submitting to the Departmental Representative final test results (Certificates of Treatments / Destruction) from the designated testing company confirming that the soils have been treated as specified.
 - .3 Removal, transport and treatment/destruction at a licensed facility of silt/sediments from sediment control structures or temporary laydown areas will not be considered as a separate payment but will be deemed to be included in the applicable unit price for the removal of PCB-impacted soil.
 - .4 Supply, placement and compaction of clean fill material (common fill) in the excavated areas, as approved by the Departmental Representative. The price per metric tonne is to be all inclusive for the supply, the transfer, placement and compaction of the fill material in the areas excavated and all applicable costs associated with this work. Unit measurement for payment will be based on weigh scale receipts from a weigh scale that is certified by the Province or the manufacturer's authorized representative to have an accuracy of at least $\pm 5\%$.

1.10 NOTIFICATION

- .1 No excavation shall be completed without the presence of the Departmental Representative

Part 2 Products

2.1 MATERIALS

.1 Fill:

- .1 According to Section 31 23 33.01 Excavating & Backfilling.

2.2 EQUIPMENT

- .1 The equipment required to complete the site remediation Work is at the discretion of the Contractor. The Contractor is required to provide an adequate number and type of equipment to carry out the remedial work in accordance with the Contractor's Work Schedule. Trucks used in the transport of contaminated soils to be equipped with water tight truck body and appropriate top covers or similar. The remedial work in some of the areas may require manual excavation methods due to limited access by the natural terrain, undulating landscape and bedrock outcrops.
- .2 Scale system with ability to weigh excavated material. Scale shall be certified by the Province or the manufacturer's authorized representative to have an accuracy of at least $\pm 5\%$. The maximum age of calibration is one year.
- .1 Upon Acceptance of Bid, the successful Contractor shall provide the following within fourteen (14) days of receiving the Contract Award Confirmation, Contractor to provide copy of scale certificate to the Departmental Representative.
- .3 A daily field report form showing the date, activities undertaken during the day, the amount of soil excavated that day and any debris that is encountered will be kept by the Departmental Representative and Inspector Onsite and will be signed each day by the Contractor and the Onsite Inspection Representative. Copies of the daily field forms will be supplied to Departmental Representative and the Contractor.
- .4 Equipment:
- .1 Cleaned meticulously between loads of contaminated soil and clean fill.
- .2 Cleaned meticulously at end of work day.
- .3 Cover truck bodies with tarpaulins during transportation.
- .4 Use watertight truck bodies for transporting contaminated soil.

Part 3 Execution

3.1 SOIL REMOVAL

- .1 Inspect site and verify with the Departmental Representative items designated for removal and items to be retained. Final disposal and destruction certificates issued must indicate the residual levels of PCB (1.3 ppm) remaining in the soil following treatment.
- .2 Mark out, with the assistance of the Departmental Representative: the PCB-impacted area at Area "C" PPAR near dump site DS-5 (as identified on Drawing No. E3) the PCB-impacted area at Area "C" PPAR at dump site DS-2 (as identified on Drawing No. E4)

and the PCB-impacted area at Area "F" PMAD near dump site DS-10 (as identified on Drawing No. E5).

- .3 Mark out, with the assistance of the Departmental Representative: areas where the Low Northern Rockcress has been identified.
- .4 Locate and protect aboveground and underground utility lines, if any. Preserve in operating condition active utilities traversing the sites.
- .5 Notify utility companies before starting Work, as required.
- .6 Do not disturb adjacent items designated to remain in place.
- .7 Remove PCB-impacted materials at Area "C" PPAR near dump site DS-5 in the vicinity of previous sample locations PPAR-03TP-05, PPAR-03TP-06, PPAR-06-SS1, PPAR-06-SS2, PPAR-07TP-01, PPAR-07TP-02, PPAR-07TP-05 and PPAR-07TP-08 shown on Drawing No. E3 (estimated 760 tonnes). Soil shall be excavated in lifts not exceeding a thickness of 0.5 m to the top of bedrock. The average anticipated depth of bedrock is 0.8 m below ground surface.
- .8 Remove PCB-impacted materials at Area "C" PPAR at dump site DS-2 in the vicinity of previous sample locations SS-13 and PPAR-07BS-01 shown on Drawing No. E4 (estimated 35 tonnes). Soil shall be excavated in lifts not exceeding a thickness of 0.5 m to the top of bedrock. The average anticipated depth of bedrock is 0.2 to 0.5 m below ground surface.
- .9 Remove PCB-impacted materials at Area "F" PMAD near dump site DS-10 in the vicinity of previous sample locations PMAD-03TP-12, PMAD-03TP-13, PMAD-07TP-05 and PMAD-07TP-08 shown on Drawing No. E5 (estimated 1,255 tonnes). Soil shall be excavated in lifts not exceeding a thickness of 0.5 m to the top of bedrock or the depth of impacts, whichever is encountered first. The average anticipated depth of bedrock is 0.1 m to 1.1 m below ground surface.
- .10 Contractor shall take daily "during cleanup" photos and submit one (1) copy of all photos to the Departmental Representative.
- .11 Excavation at the site is to be carried out in accordance with the provisions of Section 01 35 43 - Environmental Procedures.
- .12 Upon completion of the removal of PCB-impacted soil to the required depth, the Departmental Representative will obtain confirmatory soil samples for testing to determine the level of PCBs in the remaining soil. If PCB concentrations in the confirmatory soil samples exceed the site-specific criteria (33 mg/kg) derived by the Departmental Representative, extra excavation may be undertaken under the direction of the Departmental Representative before the area is backfilled.
- .13 All PCB-impacted material, soil, collected water, sediment, debris or PCB product must be handled and manifested according to The Transportation of Dangerous Goods Regulations (TDG) and the International Marine Dangerous Goods (IMDG) guidelines. The Contractor is responsible to ensure that all shipping protocols are followed. Once packaged for shipping and offered for transport, all manifested goods will be the

responsibility of the Contractor, as such the Contractor will be responsible to ensure that all necessary insurance policies are effective for the movement of specified goods. The Contractor is to provide the shipping documents to PWGSC prior to shipping. Prior to movement of any PCB impacted material, the Contractor will provide the Departmental Representative with all requested protocols in accordance with the Environmental Protection Plan; including shipping methods, means of containment, emergency response procedures and organizational structure to be followed when PCB impacted material is in transit.

- .14 PCB-impacted material excavated must be removed and shipped from Pinetree, Stephenville within the construction season from May 1 to September 30.
- .15 Treat and destroy the excavated PCB-impacted material at a licensed PCB treatment/destruction and disposal facility capable of PCB treatment to 1.3 ppm. Provide proof of treatment facility license prior to Acceptance of Bid.

Note: The areas requiring remediation provided on the drawings, depths to bedrock and weight estimates provided herein are based on the results of environmental investigations completed to date and assume a soil density of 2.0 tonnes/m³. Actual areas and weights of soil requiring remediation may be higher or lower than the estimates provided above. Depths to bedrock are average values; actual depths to bedrock may vary.

3.2 BACKFILL

- .1 When the final soil testing confirms PCB concentrations are at or below the established site-specific criteria, documentation shall be prepared by the Departmental Representative including reference to confirmatory results. The Contractor will be permitted to backfill, grade and restore only after receipt of written confirmation from the Departmental Representative.
- .2 When approved by the Departmental Representative, backfill the excavations to grade as shown on Drawings in accordance with Section 31 23 33.01 – Excavating and Backfill.
- .3 The Departmental Representative shall conduct final excavation sampling by collection of samples and submission to an off-site analytical laboratory.
- .4 Excavation(s) shall remain open until the laboratory results are received by the Departmental Representative and they confirm that the site(s) has been remediated to the Site Specific Target Level (SSTL) of 33mg/kg.
- .5 Should confirmatory sampling results exceed the SSTL, the Contractor shall continue excavation work to remediate that site as approved by the Departmental Representative.
- .6 Contractor shall assist Departmental Representative with collection of all soil samples.
- .7 Contractor shall provide Departmental Representative adequate time to complete testing. There will be no compensation to the Contractor due to delays associated with testing and/or additional contaminated soil removal from excavation.

3.3 DEWATERING

- .1 The Contractor may encounter water and may encounter free phase floating petroleum product ("free product") during the excavation and removal of impacted soil from various sites. The surrounding environment is to be protected at all times from release of free product/oily water and impacted groundwater from the work areas.
- .2 If necessary, removal, disposal or offsite treatment of groundwater from the remedial excavation shall be approved by the Departmental Representative. All free product observed on water or encountered in the excavations shall be collected by the Contractor by means of skimming equipment, vac trucks, oil/water separator or sorbent materials suitable for oil based products and disposed off-site.
- .3 Saturated soil, if encountered in the remedial excavation, will be dewatered prior to loading into approved trucks for transport to a PCB treatment facility. If approved by the Departmental Representative, dewatering of soil from the remedial excavation shall be carried out by stockpiling the soil above the groundwater level within an area of the remedial excavation and allowing the soil to drain into the remedial excavation.
- .4 Impacted groundwater, if encountered, may be managed on site if approved by the Departmental Representative. The method shall be selected based on the contaminant(s) of concern. It is assumed that fines removal will be a suitable method for PCB impacted groundwater. Any methods and systems must be approved by the Departmental Representative. The Contractor will be responsible for testing managed groundwater if deemed necessary by the Departmental Representative. Any impacted filter media or other media used during filtering must be treated as PCB impacted soil (depending on the areas of excavation) and be disposed of accordingly.
- .5 No discharge of water is to take place from the remedial excavation until all permits and confirmatory laboratory analysis have been approved by the Departmental Representative.
- .6 Contractor shall be responsible for obtaining all permits required to undertake the Work.
- .7 Do not allow discharge of impacted wastewater into down-gradient bog/marsh areas and drainage streams.
- .8 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

3.4 RESTORATION

- .1 Reinstate area designated for remediation and all other areas affected by the completion of the Work to match condition of site prior to remediation.
- .2 Reinstated areas must be considered safe by the Departmental Representative for access by the general public.
- .3 Restoration of impacted area is not to commence until confirmatory soil test results have been returned and reviewed by the Departmental Representative.
- .4 Reinstate site in accordance with Section 31 23 33.01 – Excavating and Backfilling.

3.5 TESTING

- .1 Confirmatory soil sampling and analysis from the boundaries of the remedial excavation is the responsibility of the Departmental Representative. Refer to Section 01 45 00 – Quality Control.
- .2 Confirmatory water sampling and analysis from managed wastewater is the responsibility of the Departmental Representative.

3.6 CERTIFICATES OF DECONTAMINATION/DESTRUCTION

- .1 All PCB impacted soil and sludge must be treated to a residual concentration of 1.3 ppm within five (5) months of shipping from Pinetree, Stephenville, NL. PWGSC expects that PCBs will be destroyed/removed from the soil matrix. Final disposal and destruction certificates must indicate the residual levels of PCB (1.3 ppm) remaining in the soil following treatment. The Contractor is responsible for the final disposal and destruction of the soil including all secondary treatment of by-products associated with primary treatment.
- .2 Obtain certificates showing proof of treatment/destruction and disposal from the licensed facility.
- .3 Provide copies of certificates to Departmental Representative.
- .4 On-site treatment of any PCB soil or debris is not acceptable. All PCB impacted soil/debris must be removed from site and shipped to an approved facility for treatment. Impacted groundwater, if encountered, can be filtered on site; however, the impacted filter media must be treated as PCB impacted soil and shipped off-site for treatment.
- .5 Notwithstanding the preconditions of holdback release outlined in the General Conditions, no holdback monies will be released until the receipt of the required disposal and destruction certificates.

3.7 EQUIPMENT DECONTAMINATION

- .1 Decontaminate equipment used during the Work and remove from site at end of construction.

END OF SECTION