Q435. Section 1.12.6.4 (Dosimetry Program) of the Radiation Protection Plan (RPP) refers to sufficient monitoring sensitivity to measure 1/20 of the PHAI ALI of 1200 Bq. This ALI presumably refers to alpha LLRD but neither the RPP nor the PHAI RP Plan (Appendix B of the RFP) that is cited for the ALI describe which radionuclides are included in the ALI or the basis for the calculation of the ALI (section 5.2.5.2 of the PHAI RP). Can a reference/basis for the derivation of this ALI be provided? This is important in determining if the potential sensitivity of the monitoring (bioassay or air sampling) can meet the 1/20 ALI monitoring requirement.

A435. Section 01 35 30 Article 1.12.6.4 is to be revised through Addendum 7 as follows: 1) delete reference to 1200Bq; and 2) require calculation of the sensitivity of analysis for radionuclides and Annual Limit of Intake (ALI) provided in a table.

Q436. In Amendment 23, Addendum 6, Section 01 75 10 and Appendix P, Port Granby Remediation Verification Procedure (January 2015) there was a change to the primary COPC list to include Thorium-232 by gamma spectrometry. Th-232 emits gamma radiation at two principle energies, but direct measurement of Th-232 is not possible by gamma spectrometry. The emission at 63 keV is interfered with by Th-234 and that at 140 keV has a low abundance. Please advise if the laboratory can assume that Th-232 is in secular equilibrium with its decay chain products and that measurement of Actinium-228 for an estimate of Th-232 is acceptable. Otherwise, direct measurement of Th-232 by Neutron Activation will be required to complete the sum rule.

A436. Yes, the assumption that Th-232 is in secular equilibrium with its decay chain products and that measurement of Actinium-228 for an estimate of Th-232 is acceptable.

Q437. In Amendment 23, Addendum 6 there are inconsistencies with COPCs listed between Section 01 75 10 and Appendix P, Port Granby Remediation Verification Procedure (January 2015). Please clarify the following:

a. Target DL for Th-230. In Section 01 75 10 Table 1 the value indicated is 0.04 Bq/g, but it is listed as 0.4 Bq/g throughout Appendix P. The value of 0.4 Bq/g is consistent with a target of 10 % the cleanup criteria of 4.62 Bq/g.

b. Section 01 75 10 lists Thorium 232 among both the primary and secondary COPC lists. This is inconsistent with Appendix P, which only lists Thorium-232 among primary COPC.

c. Boron is listed in Section 01 75 10 Table 1 by hot water extraction only, and in Appendix P as both Boron (total) by ICP/MS and Boron (hot water extractable). Please clarify if both measurements are required.

d. Fluoride is listed Section 01 75 10 Table 1 by ion selective electrode and in Appendix P by ICP/MS. Please clarify that fluoride is to be measured by ion selective electrode.

e. Section 01 75 10 Table 1 Target MDLs presented are a mix of “On-site” and “Off-site” target MDLs listed in Appendix P. Please clarify the COPC Target DLs in Section 01 75 10 Table 1 for consistency with Appendix P On-site cleanup target MDLs and 10 % of clean-up criteria

A437. a) Value for Th-230 in Table 1 is incorrect. The correct Th-230 value is 0.4 Bq/g this change will be made through Addendum 7.

b) Th-232 is a primary COPC. It should not be listed as a Secondary COPC. Change will be made through Addendum 7.

c) Boron (total) via ICP/MS should be added to Table 1 as a Secondary COPC. Change will be made through Addendum 7.

d) Table 1 should indicate that fluoride should be analyzed by ion selective electrode. Change will be made through Addendum 7.

e) Table 1 is revised through Addendum 7 based on responses above. In addition, it should be noted that not all COPCs are required for on-site and off-site work. Therefore, the lowest Target MDLs have been utilized in each instance.

Q438. Please clarify the timeframe the Contractor shall submit samples to the laboratory following receipt from the Departmental Representative.

a. In Amendment 23, Addendum 6, Section 01 75 10, 1.6.2 sates “within 12 hours” and 3.1.3 states “within 24 hours”. Please clarify which is the required timeframe.

b. Is the stated time (12 or 24 hours, to be confirmed in the question above) the required timeframe within which samples received by the Contractor from the Departmental Representative must reach the laboratory?

A438. a) Both Article 1.6.2 and Article 3.1.3. should read within 24 hours. Section 01 75 10 Article 1.6.2 to be revised through Addendum 7

b) Yes.

Q439. Laboratory sample disposal. To maintain accordance with the Government of Canada’s ownership and responsibility for LLRW waste at the existing Port Granby WMF, it is proposed that all samples from the Port Granby project that are submitted to the laboratory for analysis be returned for disposal at the newly constructed Port Granby LTWMF. Please advise that this is both acceptable and the preferred/required plan for disposal of such samples.

A439. Yes, this is acceptable. The Contractor will be required to make necessary arrangements have the samples shipped from the laboratory (post analysis) back to site for disposal within the containment mound.

Q440. The recommended clay sources may not have of sufficient quantities of clay and the sources are not confirmed to meet all requirements of the specifications. Only one supplier is interested in providing the clay and he will not commit quantities. Other sources of clay, with unproven quality, are available but at higher cost because they are located further from the Port Granby site. We believe that the restrictive clay specification is not in the client's interest because of the high uncertainty and cost and schedule risk associated with this relatively expensive item. Would Public Works and Government Services Canada please consider removing this item from the unit pricing and handling it as a cash allowance or a separate procurement?

A440. 1) The report, Survey of Potential Sources of Clay Liner Material, is provided as background reference information only and the sources identified in the report are not to be considered "recommended". The contractor is solely responsible for identifying, verifying, sourcing and supplying material compliant with the specifications.

2) The material specifications are such that the final installation must meet the design parameters including continued performance over an extended life expectancy.

3) Bidders are to bid in accordance with the information provided in the drawings and specifications.

4) There will be no change to Appendix 1, Combined Price Form, for this item.

Q441. Addendum 6 contained a revised Section 01 75 10. The new specification lists 232 Thorium as both a Primary COPC and a Secondary COPC. Please confirm which list 232 Thorium should be in.

A441. Refer to response provided for question 437 b.

Q442. The revised Section 01 75 10 included with Addendum 6 requests that samples should be submitted to the laboratory within 12 hours (Section 1.6.2) and within 24 hours (Section 3.1.3). Please confirm the contractor's sample submission responsibility.

A442. Refer to response provided for question 438.

Q443. We are trying to understand the requirements for demarcation and posting of Radiological Safety Zones as found in the Radiation Protection Plan (RPP) developed by the AECL for the Port Granby project. The RPP identifies three zones in a Controlled Area, Zones 1, 2, and 3, with Zone 1 being essentially no radiological hazards and Zone 3 being radiological hazards. Would Public Works and Government Services Canada please confirm if a higher Zone must be bordered by an adjacent lower Zone or if it can adjoin any lesser Zone if separated by an adequate barrier? For example, can a Zone 2 be immediately bounded by either a supervised area or an uncontrolled area or must it be bordered by a designated Zone 1 and then a supervised area or an uncontrolled area?

A443. Radiological zones are not required to be bordered in order of sequence, provided that adequate barriers are installed which provide sufficient defense in order to comply with Article 5.2.1.7 of the RPP which reads: "The level of access restrictions for radiological safety zones shall be based on actual or

potential radiation and contamination levels, and shall be such that employee DCPs, ALs, and regulatory limits are not exceeded, and that individual and collective doses are kept ALARA." The contractor's Radiation Protection Plan, subject to review and acceptance by the DR, is to detail how this is to be achieved.

Q444. The following four questions related to Appendix 1 - Combined Price Form; and, SPEC 31 32 70, within Bid Item 13 – Granular Materials: Measurement and Payment is by (1) Leachate Sump and (2) All Granular Materials outside of the Leachate Sump. Please clarify the following:

(a) Please confirm that per Section 1.2.2 (under Measurement & Payment) that only the granular materials outside of the leachate sumps are illustrated in Bid Items 13b through 13g.

(b) It appears that "ALL SITE" granular material volumes are already accounted for in Bid Items 13b through 13g. Should contractors be including additional volumes for the Sump Pits as Section 1.2.1 suggest?

(c) Please confirm that the Leachate Sump Access Pipes and Contingency Access Pipes are the only items to be included in this Bid Item 13a – Leachate Sumps (all elements)?

(d) If both granular materials and concrete sand should be included within Bid Item 13a as per Section 1.2.1.1, can the client verify that the volumes illustrated within Bid Items 13b through 13g are correct?

A444. Answer to all parts. The Combine price Form Division 31 - Earthworks, Item 13a Leachate sump (all elements) includes for the supply and placement of all equipment and materials identified in Section 31 32 70 Article 1.2.1 . Items 13b through 13g includes for the supply and placement of all materials identified in Article 1.2.2. Bidders are required to bid to the specifications and drawings based on the Bid Items provided in Appendix 1 - Combined Price Form.

Q445. With respect to various SPECs and associated submittal due dates versus Appendix T due date within 30 days:

(a) Please confirm SPEC 01 35 29 that 20 days following Notice of Award that a submittal is due.

(b) Please confirm SPEC 01 35 43 that 20 days following Notice of Award submittals are due.

(c) Please confirm SPEC 01 45 00 that 15 days following Notice of Award submittals that a submittal is due.

(d) Please confirm SPEC 01 52 00 that 20 days following Notice of Award submittals that a submittal is due.

A445. The note beneath the header of Appendix T is "Blue Shading indicates key submittals required within 30 days or less of Notice of Contract Award".

Items a through d will fall under the less than 30 day requirement. Contractor shall go by the timeline stipulated within the relevant specification section and article where the submittal is called for.

Q446. Specification 02 61 00, para 2.2.3 Trucks, requires Truck boxes to be equipped with liners, ensure proper seal on the haul truck to contain waste and associated pore fluid during transport, requires liners to be one piece of sufficient length to wrap over the top of the truck box, liners to be designated as single use only, and requires trucks to be equipped with tight automatic roll-on tarpaulins. Manufacturers do not have standard liner products which meet these requirements for the types of earth moving vehicles which will most efficiently perform this scope of work. Custom liners would have to be fabricated and would be prohibitively expensive. Would the Crown consider revising the specification to allow contractors to propose alternate measures that will provide equivalent protection for dust control and to prevent waste/liquid spillage during transportation on the onsite designated haul roads?

A446. Section 02 61 00 Articles 2.2.3.1 through .5 provide sufficient details to allow bidders to determine most effective way of achieving the specified requirements. Bidders are required to bid to the specifications

Q447. DWG PGWMF-E-10 – Is it possible that the contractor would encounter contaminated soil when drilling holes for the new wood poles near the waste burial trench locations? What is the procedure if contractor encounters contaminated soil in this situation? Is there rock, concrete or other solid materials in this area that may be encountered when drilling for these holes?

A447. The entire site is licensed and as such there is the potential to encounter waste during enabling works. Per Specification Section 02 61 00 article 1.12 "Any contaminated Waste Material generated as part of enabling works prior to construction of Cell 1 is to be temporarily stored at the PGWMF in a manner deemed acceptable to the Departmental Representative and later relocated to the Containment Mound once constructed." A summary of all available background information pertaining to subsurface geology is included in the Background Documents (Appendix R). Conditions of the PHAI Radiation Protection Plan will apply during this work and the contractor is required to provide procedures for handling of waste material and personnel protection requirements in the contractor's RPP.

Q448. Specification 02 41 23 – Selective Site Demolition – 1.1.2(.2, .5 & .6) – What associated electrical components are to be removed from the existing WTP Sedimentation/Treatment Lagoons and East/West Reservoirs? Please show all items to be removed on drawings and where these devices are fed from. Reference as built electrical drawings from the past project would be greatly appreciated.

A448. The PGWMF Design Summary Report (Appendix R-18) is provided as part of Addendum 7. Bidders are required to bid to the specifications and drawings including addendums issued. No additional information is available.