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**REVISION 007 TO A  
INVITATION TO TENDER**

**RÉVISION 007 À UNE  
INVITATION À SOUMISSIONER  
DEMANDE D'OFFRES À  
COMMANDES**

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Offer remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'offre demeurent les mêmes.

**Issuing Office - Bureau de distribution :**  
Parks Canada Agency  
Calgary, AB

<b>Title - Sujet :</b> Lake Louise Waste Water Treatment Plant Rehabilitation – Banff National Park	
<b>Solicitation No. - N° de l'invitation :</b> 5P420-20-0448/A	<b>Date :</b> April 30, 2021
<b>Amendment No. - N° de modification :</b> 007	
<b>Client Reference No. - N° de référence du client :</b> 1480	
<b>GETS Reference No.   N° de référence de SEAG :</b> PW-21-00949500	
<b>Solicitation Closes - L'invitation prend fin :</b> <b>At - à :</b> 2:00 PM <b>On - le :</b> May 6, 2021	<b>Time Zone - Fuseau horaire</b> MDT - HAR
<b>F.O.B. - F.A.B. :</b> <b>Plant - Usine :</b> <input type="checkbox"/> <b>Destination :</b> <input checked="" type="checkbox"/> <b>Other - Autre :</b> <input type="checkbox"/>	
<b>Address Enquiries to - Adresser toutes demande de renseignements à :</b> Rebecca Chen	
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<b>Destination of Goods, Services, and Construction - Destination des biens, services, et construction :</b> See Herein – Voir ici	
<b>TO BE COMPLETED BY THE BIDDER - À REMPLIR PAR LE SOUMISSIONNAIRE</b>	
<b>Vendor/ Firm Name - Nom du fournisseur/ de l'entrepreneur :</b>	
<b>Address - Adresse :</b>	
<b>Telephone No. - N° de telephone :</b>	<b>Fax No. - N° de télécopieur :</b>
<b>Name of person authorized to sign on behalf of the Vendor/Firm Nom de la personne autorisée a signer au nom du fournisseur/ de l'entrepreneur</b>	
<b>Signature :</b>	<b>Date :</b>

## **Amendment 007**

This amendment is being raised to distribute questions and answers, to make changes to the tender package and to replace Appendix 1 – Combined Price Form.

### **A. Question and Answer**

**Q162.** Reference ITT, Appendix 1, items 1.16, 1.3.7, and section 01 29 00, item 3.5.4 'Temporary removal of Airation system and reinstatement once slabs are repaired.' Please confirm who will

a) Drain the tanks.

**A162a).** Parks Canada Operations staff.

b) Pressure Wash the tanks.

**A162 b).** Contractor to pressure wash the tanks

c) If the contractor, will there be any sludge after draining, if so how much?

**A162c).** There will likely be sludge in the tanks after draining

**Q163.** Reference section 40 93 01 item 1.2.1.2 and 3.4 please provide a copy of section 01 79 00

**A163.** Demonstration and training requirements are covered by Section 01 65 00 and Section 01 91 4. Delete any references to Section 01 79 00 and replace with Section 01 65 00 and Section 01 91 4 for demonstration and training requirements, respectively.

**Q164.** Reference section 40 23 19.02 please confirm the detailed specification for the PW service

**A164.** Refer to page 4,5 and 6 for potable water piping details.

**Q165.** Regarding remote I/O panel 02-LU-02, Dwg 2.I4.01 – the BOM does not indicate a count for the terminal blocks, nor are there any wiring diagrams – can these be supplied?

**A165.** It is the contractor's responsibility to determine the quantity of hardware required for a working system. The Engineer provides typical loop drawings and an IO list, the contractor hires a subcontractor to design the panel. The panel shop drawings, including panel layout, BOM and wiring diagrams are then sent to the consultant for review and approval - these will have the terminals accounted for.

**Q166.** Regarding remote I/O panel 02-LU-02, Dwg 2.I4.01- The BOM refers to drawing 2.I5.01for details on which PLC cards are to be used, however there are no part numbers listed. Please provide more detail and proper part numbers.

**A166.** The basic part numbers are shown in the remote rack on 2.I5-01. Allen-Bradley 1756 series IO modules shall be used per the drawings and specs. Same comment as above.

**Q167.** Regarding the exterior lighting for the UV Bldg, Sludge building, Workshop and generator building. There is no place in the extensive pricing breakout for these items. Please advise.

**A167.** Use B Siteworks, items 3 and 4.

**Q168.** Specification 26 05 36 2.1.2 states that all instrumentation and control tray are to be ventilated tray however drawing 2.E2-14 indicate they are to be ladder tray. Please advise which is correct.

**A168.** Tray to be as per spec.

**Q169.** Specification 26 24 19 2.2.1.1 indicates that the existing MCC equipment is Schneider, however the site visit photos tell us that it is Westinghouse. Can we get the proper model number?

**A169.** MCC clarification as follows: it is intended to match existing when required to do so when the existing MCC will be providing power to equipment under this scope of work. When a new MCC is required, the schneider product is preferred.

Please note the following - existing MCC's:

i) MCC2 – Headworks building – Westinghouse

ii) MCC – Gen building – Cutler Hammer Freedom 2100 series

iii) MCC – Clarifier building – SQ D – Model 6

- Q170.** Drawing 3.E2-01, note 6 – “replace all tray covers with new” – is there a layout of the existing tray available? Or a count of how many meters, and what size tray, will be required? Any fittings that require covers?
- A170.** There is no information available on the existing tray. This should have been reviewed in the mandatory site visit.
- Q171.** Can you please send us the P&ID for the treatment system, if available.
- A171.** The WWTP treatment system PID: 1B.G0-02, 03, 04, 07, 08, 09.
- Q172.** Reference drawing 1B.G0-04: Please confirm that the six modulating control valves 03-FCV-11/12/13/21/22/23 are to comply with valve specification “DV01” – elliptical falling flow axis diaphragm control valve, outlined in 40 92 13.01.
- A172.** Yes. Supply 03-FCV-11/12/13/21/22/23 as per DV01 – Elliptic falling flow axis diaphragm control valve.
- Q173.** Reference specification 40 70 03, electric modulating valve actuator: Please confirm that the line size for the 03-FCV-11/12/13/21/22/23 is to be 75 mm, as per P&ID 1B.G0-04, note 3.
- A173.** Yes. The size of 03-FCV-11/12/13/21/22/23 is 75 mm diameter
- Q174.** Please provide more detailed photos from within the bioreactors and the structural assessment report that was completed.
- A174.** A folder of photos has been prepared via an FTP site: <https://we.tl/t-Fk4wk3AfPf>
- Q175.** Specification PDF page 804 is the I/O list for this plant. The OCS I/O is listed as being COMMS. Would you like an OCS PLC or just a remote I/O rack?
- A175.** All hardwired IO in the Lake Louise project scope is to connect to a new RIO panel containing a new remote IO rack. This is shown on the instrumentation architecture, block diagram and the scope of work.
- Q176.** Referencing section 46 33 42, please confirm if the 2.4.1 Capacities and Performance turn down ratio 1000:1 is a typo. Should the turn down ratio be 10:1?
- A176.** See Amendment 2, A1
- Q177.** Please advise what type of space is required around the equipment (alum skids) for maintenance and access.
- A176.** See Amendment 2, A1
- Q178.** For the (alum) transfer pumps, utilizing a Milton Roy diaphragm pump may not be the best option. Please confirm if a recip or screw pump for this skid package would be acceptable
- A178.** See Amendment 2, A1
- Q179.** The screen specification has several paragraphs about the requirement for a deflector plate and it seems like an important feature (Section 44 43 33.02, 2.9.1-5 & three other sections). Does the screen we carry need to have this feature?
- A179.** Yes. The deflector feature is required.
- Q180.** The specification repeats several times that the screen needs to be able to pivot without disassembly or movement of the compactor or its inlet chute (Section 44 43 33.02, paragraph 2.4.12 & 2.11.1.1). Does the screen we carry need to have this feature?
- A180.** Yes. The Pivot feature is required.
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- Q181.** Detail 2 on drawing 3.S4-01 for type 1 repair there is no mention of any bonding agent (primer) between concrete and the Sika grout material. Please confirm the intent is to exclude a bonding agent (primer) for type 1 repairs.
- A181.** The thickness of the repair is less than 20mm and as such it was assumed that material overlay material that will be used does not require bonding agent. However, if the supplier/manufacturer of actual material proposed by the contractor recommends having bonding agent, then the recommendation shall be followed, ie bonding agent compatible to the material is to be applied.
- Q182.** Please refer to Appendix 1 – Combined Price Form. We would kindly like to request that the bioreactor repair scopes for wall and slabs to be priced individually as they are different products with different production rates to ensure accurate bid pricing.
- A182.** The actual extent of the repair is uncertain, however, for tender evaluation purpose, please assume 25% of the estimated repair area is for the slab and the remaining 75% is for the walls
- Q183.** Reference section 44 31 31, please confirm the pipe specification for the recirculation Lines provided by the contractor.
- A183.** Refer to Clause 3.2.5 for the Biotrickling Filter package piping requirements. SCH 80 PVC with heating tracing and insulation is acceptable.
- Q184.** Reference drawing 4.M2-01, please provide further detail for the ‘Combustion Air Ducts’, to, from etc.
- A184.** Refer to 1.M0-02 Schedule notes for 04-MUA-02 – both vent ducts to/from the unit (combustion and exhaust) are vertical up through roof. Finish with the vent caps.

Refer to 1.M0-02 Schedule for all new propane unit heaters models LPUH-5, 6, 7. The replacing basis of design model is a new F-50 Reznor model. Venting option shall match the existing arrangement c/w power venter options for LPUH-6 and LPUH-7 (CA). LPUH-5 shall have an auto-controlled motorized vent damper (AV7). Combustion air for LPUH-6 and 7 is provided via existing ducts 160x80 to the Splitter and Alum Rooms. Refer to 4.M1-01 (BM-1 existing record drawing note). If duct is absent in the Splitter Room – provide a new duct. Combustion air for LPUH-5 is provided from the room air.

- Q185.** Reference P&ID drawing 1B.G0-19 this does not match the plan drawings 7.P4-01 & 02 as follows, please clarify what is required.
- a) The plan has four valves on the DR, the P&ID only one.  
**A185a)** Understanding products details vary between Manufacturers, the drawings present general arrangement and key components of the biotrickling filter system. The Manufacturer is responsible for the complete design of the odour control system and all components for the best performance of the system.
- b) The plan has an extra DR discharge to sanitary sewer, but this goes nowhere.  
**A185b)** There is only one DR to sludge lagoon, as shown in the drawings.
- c) The intake to Pump has on the plan, valves and other unknown devices, the P&ID nothing.  
**A185c)** Refer to answer to a) above.
- d) The SW to Nutrient tank, not shown on the plans.  
**A185d)** Refer to answer to a) above.
- e) The Water box drain and Blowdown to DR are not shown on the plans.  
**A185e)** Refer to answer to a) above.
- f) There are valves on section A from the mist eliminator? Not shown on the P&ID.  
**A185f)** Refer to answer to a) above.
- Q186.** Also are any drawings available providing through sections of the Headworks and blower building. We are looking for some detail on the overhangs and the demo required?
- a) Drawing 1B-G0-03 – has the following tag numbers: 02-PV-01 and 02-PV-01 on line code “FR”. Line code “FR” in the specifications doesn’t indicate a valve code for plug valves

**A186a)** Provide plug valves as specified PV01 for 02-PV-01 and 02-PV-02.

- b) Drawing 1B-G0-04 – has the following tag numbers: 03-BFV-08 and 03-BFV-07 on line code “AA”. Line code “AA” in the specification listed butterfly valves to be “BF10” – There is no valve data sheet with “BF-10” provided – Assuming Line Code AA and PA are the same

**A186b)** Provide butterfly valves as specified BF02 for 03-BFV-07 and 03-BFV-08.

Delete “PA Continued” in page 9 of Section 40 23 19.02. Replace with “AA Continued”

- c) Drawing 1B-G0-15 – has two untagged butterfly valves on Line Code “FA” - Line Code “FA” says to see section 40 91 13 01 for valves, there is not section 40 91 13 01 in the tender documents

**A186c)** Tag the BFV from septage building with “02-BFV-11”, and the BFV from the Septage tank with :02-BFV-12”. Provide BFV as specified BF02 in Section 40 92 13.01.

- d) Drawing 1B.G0-04 – has the following tag numbers: 03-FCV-11, 12, 13, 21, 22, and 23 what valve specification section refers to these valves, line code “AA” doesn’t list any information for FCV valves

**A186d)** Provide FCV as specified DV 01 of Section 40 92 13.01.

**Q187.** Div. 31 Is there a local site for material disposal or will be up to the contractor to find dump sites?

**A187.** The contractor will be required to dispose of materials at appropriate landfills offsite.

**Q188.** Div. 01 Please confirm the existing washroom facilities on site can be used during construction or if temporary facilities need to be provided.

**A188.** Temporary facilities will be required.

**Q189.** Div. 07 What is the existing profile and colour finish of the Steel Cladding and JSM?

**A189.** Unknown, to be confirmed on site.

**Q190.** Div. 03 Please provide the elevation of the partial height walls as indicated on 3.S2-01 yet not shown on the as-builts provided with addendum #2. Are there six partial height walls?

**A190.** Refer to the 1984 as-built drawing SM-4.

**Q191.** Div. 22 Please provide the maintenance manual and shop drawing for the bioreactor's aerator system.

**A191.** The maintenance manual does not exist.

**Q192.** Div. 07 What is the existing profile and colour finish of the Steel Cladding and JSM?

**A192.** See response to answer 189 above.

**Q193.** Div. 07 What is the seam height and pan width of the existing JSM?

**A193.** Unknown, confirm on site.

**Q194.** Div. 05 / 07 Can the existing liner panel on the headworks and blower building be removed from the underside.

**A194.** Unknown, confirm on site. Existing roof liner panel is to remain as indicated on the Drawings.

**Q195.** Div. 07 R1 assembly does not ask for new plywood, but the details show. Is this plywood required in the new assembly?

**A195.** Revise R1 Roof Assembly to read: 38 Metal Roofing, Self-Adhering Roof Underlayment (Grace Ice and Water Sheild, Henry Blueskin Ice and Water Barrier RF200, or Equal), 19 Plywood Sheathing, 200 Existing and New Purlins Refer to Structural, Batt Insulation to Fill Void, Existing Air/Vapour Barrier, Existing Insulated Liner Panel, Existing Structure.

**Q196.** Div. 07 Is there plywood on the existing headworks & blower building's roof assembly?

**A196.** No.

- Q197.** Div. 07 Is the roof insulation being removed from the existing assembly to be disposed of and new insulation provided?
- A197.** Yes, remove existing roof insulation and provide new insulation for the Headworks and Blower Buildings.
- Q198.** Div. 03 Please consider breaking out the slab vs. wall quantities on the bid form for each concrete repair type at the bioreactors.
- A198.** The actual extent of the repair is uncertain, however, for tender evaluation purpose, please assume 25% of the estimated repair area is for the slab and the remaining 75% is for the walls
- Q199.** Div. 03 Please confirm there is no need to treat the underside of the CIP & precast roof? There is a note to repair the u/s of CIP roof on 3.S3-01, but no indication to apply EWL. Please clarify.
- A199.** We have new precast roof but CIP slab to be repaired as per the details in the drawings.
- Q200.** Div. 22 Please provide a spec on the receiving bin in the headworks building. Are we to provide a new bin or reuse the existing?
- A200.** See Amendment 5
- Q201.** 30 Div. 06 It is very difficult to obtain FSC Certification for wood products during COVID. Is it necessary to have FSC Certification for this project?
- A201.** See Amendment 5, A150
- Q202.** Div. 01 Is there an existing control network on site for surveying? Will we be provided coordinates for control points?
- A202.** There are established control monuments along the road to the WWTP. A drawing from Canada Lands Survey Records is provided in DSP5\_20-0448: *95481CLSRAB.pdf*
- Q203.** Div. 05 Please provide drawing 8.S4-05 as noted on 5/3.S4-01.
- A203.** Please refer to detail 2 in drawing 8.S4-01 instead of 8.S4-05
- Q204.** Div. 03 Please confirm the requirement for bid item E.1.5, "Repair of Reinforced Cast-in-place roof slabs (both ends)". Is this a type 1 application?
- A204.** Provide pricing for Type 1 application, but as per drawing S.S4-01 provide unit rates for Type II and Type III applications.
- Q205.** Div. 03 Please reconsider your total wall and slab area quantities in the bioreactors as being shy for what's indicated on the bid forms. Not accounting for the partial walls, your quantities could be ~5% less to what's shown on plan, plus the partial walls.
- A205.** The actual extent of the repair is uncertain, however, for tender evaluation purpose, please assume 25% of the estimated repair area is for the slab and the remaining 75% is for the walls. See new price table below
- Q206.** Div. 01 Are the bioreactor tanks currently heated?
- A206.** No information. It can be assumed not heated.
- Q207.** We have a question regarding your response to A69c) in Addendum 3 below regarding the biotrickling filter: The fan to be supplied with the biotrickling filter package will be housed inside a building (supplied by the GCs). Can the building act as the noise attenuation for this fan so that the 68 dBA would be required outside of the building? Or will you require a sound enclosure for the fan even though it is already inside the building?
- A207.** It is up to the Manufacturer and the GC to provide combined measurements to maintain less than 68 dB(A) noise level outside the fan building. It is acceptable to use the building as one of the noise attenuation measurements.
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## **B. Tender Package Revisions**

Drawing from Canada Lands Survey Records  
**ADD: DSP5\_20-0448 95481CLSRAB**

### **Specifications**

Delete any references to Section 01 79 00 and replace with Section 01 65 00 and Section 01 91 4 for demonstration and training requirements, respectively.

**IN:** Section 40 23 19.02 in page 9

**DELETE:** "PA Continued"

**REPLACE WITH:** "AA Continued"

**IN:** Div. 07 R1

**DELETE:** R1 Roof Assembly

**REPLACE WITH:** R1 Roof Assembly 38 Metal Roofing, Self-Adhering Roof Underlayment (Grace Ice and Water Sheild, Henry Blueskin Ice and Water Barrier RF200, or Equal), 19 Plywood Sheathing, 200 Existing and New Purlins Refer to Structural, Batt Insulation to Fill Void, Existing Air/Vapour Barrier, Existing Insulated Liner Panel, Existing Structure.

## **C. Appendix 1 – Combined Price Form (see following page)**

**THE ATTACHED PRICE FORM MUST BE USED IN ORDER FOR A BID TO BE DEEMED RESPONSIVE. ANY BIDS SUBMITTED USING THE PREVIOUS PRICE FORM WILL NOT BE ACCEPTED.**

**CHANGES ARE SHOWN IN RED.**

Delete: *APPENDIX 1 – COMBINED PRICE FORM* in its entirety

Replace with: See attached

**ALL OTHER TERMS & CONDITIONS REMAIN UNCHANGED**

**APPENDIX 1 - COMBINED PRICE FORM**

- 1) The prices per unit will govern in establishing the Total Extended Amount. Any arithmetical errors in this Appendix will be corrected by Canada.
- 2) Canada may reject the bid if any of the prices submitted do not reasonably reflect the cost of performing the part of the work to which that price applies.

Note: Bidders are reminded that it is their responsibility to include in their bid all work as described in the drawings and specifications. Pricing for work not accounted for in the Unit Price Table including but not limited to Mobilization, De-Mobilization, etc. is to be included in the Lump Sum Table.

**COMBINED PRICE TABLE**

The Unit Price Table designates Work to which a Unit Price Arrangement applies.

- (a) Work included in each item is as described in the referenced specification section.
- (b) The Price per Unit shall not include any amounts for Work that is not included in that unit price Item.

Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit applicable tax(es) extra (PU)	Extended amount (EQ x PU) applicable tax(es) extra
<b>A. General Requirements</b>						
1	Division 01	Mobilization and Demobilization	Lump Sum			\$
2	Division 01	Temporary Laboratory Trailer for Plant Staff Operations	Lump Sum			\$
3	All	All other work not included in price table	Lump Sum			\$
<b>Section A Subtotal</b>						\$
<b>B. Siteworks</b>						
1	Division 01 Division 31 Division 32	Gravel road restoration	m <sup>2</sup>	1200	\$	\$
2	Division 01 Section 31 23 33 Section 33 65 73 Section 40 23 19.05	Supply and Install Alum Line	Linear Metre	80	\$	\$
3	Division 01 Section 31 23 33 Section 33 11 00	Supply and Install Service Water Line	Linear Metre	130	\$	\$
4	Division 01 Section 31 23 33 Section 33 11 00	Supply and Install Potable Water Line	Linear Metre	40	\$	\$
5	Division 01 Section 31 23 33 Section 33 65 73 Section 40 23 19.05	Supply and Install Foul Air Line	Linear Metre	100	\$	\$



Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit applicable tax(es) extra (PU)	Extended amount (EQ x PU) applicable tax(es) extra
6	Division 01 Section 31 23 33 Section 33 65 73 Section 40 23 19.05	Supply and Install Biotrickling Filter Drain	Linear Metre	70	\$	\$
7	Division 01 Section 26 05 43.01 Section 31 23 33 Section 33 35 73 Section 33 65 76	Electrical siteworks for trenching, duckbank and cables	Lump Sum			\$
8	Division 01 Section 03 41 00 Division 26	Fixture type #200 Luminaire c/w 20' poles and precast concrete base, including: - Excavation to set precast pole bases - Set precast base - backfill and tamp - Haul away excess soil from setting bases	EA	2	\$	\$
<b>Section B Subtotal</b>						\$
<b>C. Headworks</b>						
1	Structural					
1.1	Division 01 Section 05 12 23 Division 07	Reinforcement of existing roof structure and supporting columns, including: - Total of three rigid frames. - Add reinforcing rods to roof beam top flange - Add reinforcing plates to roof beam bottom flange (125 mm wd.) - Add reinforcing plates to support columns(both sides) (320 mm wd.) - Additional roof purlins (sized to match existing) - Roof fall arrest anchor points	Lump Sum			\$
1.2	Division 01 Section 03 30 00	Concrete crack repair, if required	Linear Metre	50	\$	\$
1.3	Division 01 Section 05 12 23 Section 08 11 13 Section 08 51 13	Structure for canopies over wall openings, including - Support structure for new canopies above doors - Louvers and eyebrows support structure	Lump Sum			\$

Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit applicable tax(es) extra (PU)	Extended amount (EQ x PU) applicable tax(es) extra
1.4	Division 01 Section 03 20 00 Section 03 30 00 Section 05 51 00	Loading Dock Exterior Stair, including: - Demolish and remove concrete stair and handrail - Install new steel stair, handrails c/w "Grip Span" treads - Install lower landing slab on grade for stair support	Lump Sum			\$
1.5	Division 01 Division 08 Division 09 Division 23 Division 26	Pressurized vestibule, including: - Doors - HVAC + Lighting - Enclosure	Lump Sum			\$
1.6	Division 01 Division 03 Division 06 Division 31	Building Addition - Structural, including: - Screw Piles - Concrete Slab and Grade Beams - Strong Tie Shearwall	Lump Sum			\$
2	Architectural					
2.1	Division 01 Section 05 12 23 Division 07	Roof Replacement, including: - Demolition/removal of existing roof membrane	Lump Sum			\$
2.2	Division 01 Section 05 12 23 Division 07 Division 08 Section 09 90 00 Section 09 91 10 Section 09 91 13	Modifications to building exterior, including: - Remove and dispose of side roof overhang <del>- New canopy above doors (2) and window (1)</del> - Architectural louvers and eyebrows. - Refurbish and repaint remaining fascia walls	Lump Sum			\$
2.3	Building Interior					
2.3.1	Division 01	Interior demolition and removals - Demolition/removal of existing wall board and ceiling. - wood framing left in place	Lump Sum			\$
2.3.2	Division 01 Division 06 Division 09	Replacement of interior drywall, ceiling and finishes	Lump Sum			\$
2.3.3	Division 01 Division 06 Division 09	New Laboratory Millwork	Lump Sum			\$
2.3.4	Division 01 Section 10 28 13	Washroom Accessories	Lump Sum			\$
3	Mechanical HVAC & Plumbing					
3.1	Gas Fired Air Supply Unit/Supply Fan					
3.1.1	Division 01 Division 23 Division 26	Equipment 02-FU-01 (60 MBH) LP HEATING FURNACE	EA	1	\$	\$
3.2	Electric Force Flows Wall Mounted					

Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit applicable tax(es) extra (PU)	Extended amount (EQ x PU) applicable tax(es) extra
3.2.1	Division 01 Division 23 Division 26	02-EBH-01 (1.5kW)	EA	1	\$	\$
3.2.2	Division 01 Division 23 Division 26	02-EFF-01 to 02-EFF-04 (1.5kW)	EA	4	\$	\$
<b>3.3</b>	Exhaust / Supply / Ceiling Fans					
<b>3.3.2</b>	Division 01 Division 23 Division 26	02-EF-2 (215 CFM) Washroom Ceiling Fan	EA	1	\$	\$
<b>3.3.3</b>	Division 01 Division 23 Division 26	02-EF-3 (636 CFM) Workshop	EA	1	\$	\$
<b>3.3.4</b>	Division 01 Division 23 Division 26	02-EF-4 (120 CFM) Cole-Palmer Fume Hood	EA	1	\$	\$
<b>3.3.5</b>	Division 01 Division 23 Division 26	02-SF-01 (255 CFM)	EA	1	\$	\$
<b>3.3.6</b>	Division 01 Division 23 Division 26	02-ERV-01	EA	1	\$	\$
<b>3.4</b>	Plumbing					
<b>3.4.1</b>	Division 01 Division 22	Install Back Flow Preventer on DCW (1 1/4")	EA	1	\$	\$
<b>3.4.2</b>	Division 01 Division 22	Replace domestic water heater with Tankless LP 92% efficient (3-59 kW)	EA	1	\$	\$
<b>3.4.3</b>	Division 01 Division 22	Domestic Hot Water Recirc Pump	EA	1	\$	\$
<b>3.4.4</b>	Division 01 Division 22	Replacement of Domestic Water Piping	Lump Sum			\$
<b>3.4.5</b>	Replace Washroom Plumbing Fixtures:					
<b>a)</b>	Division 01 Division 22	WC (FT)	EA	1	\$	\$
<b>b)</b>	<del>Division 01</del> <del>Division 22</del>	<del>Ur (FV or Waterless)</del>	<del>EA</del>	<del>4</del>	<del>\$</del>	<del>\$</del>
<b>b)</b>	Division 01 Division 22	Lav	EA	1	\$	\$
<b>c)</b>	Division 01 Division 22	Single Shower with Partitions	EA	1	\$	\$
<b>d)</b>	Division 01 Division 22	Hand Wash Stainless Steel Sink	EA	3	\$	\$
<b>3.5</b>	Headworks Process Area Ventilation:					
<b>3.5.1</b>	Division 01 Division 23 Division 26	02-MAU-01 (15 kW) 2-SPEED (636/1272CFM) with Explosion Proof motor	EA	1	\$	\$
<b>3.5.2</b>	Division 01 Division 23 Division 26	02-EUH-01 (7.5 kW) with Explosion Proof motor	EA	1	\$	\$

Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit applicable tax(es) extra (PU)	Extended amount (EQ x PU) applicable tax(es) extra
3.5.3	Division 01 Division 23 Division 26	02-EF-01 2-SPEED (668/1336 CFM) with Explosion Proof motor	EA	1	\$	\$
4	Mechanical HVAC & Plumbing - General					
4.1	Division 01 Section 22 33 00 Sections 23 05 29, 23 05 53, 23 11 26, 23 51 00, 23 54 16, 23 82 39	Propane Gas Distribution System	Lump Sum			\$
4.2	Division 01	Fire Protection Systems, handheld fire extinguisher	EA	10	\$	\$
5	Process Mechanical					
5.1	Division 01 Division 22	Potable Water System, including: - Remove existing potable water pipes and valves - Supply and Install service water piping - Supply and install pipes and valves to Supernatant and Filtration line - Supply and install new potable water line	Lump Sum			\$
5.2	Division 01 Division 44	Screen and Washer Compactor, including: - Supply and Install of new Screen and Washer Compactor - Removal and Disposal of Existing Bar Screen	Lump Sum			\$
6	Instrumentation & Controls					
6.1	Division 01 Division 40	Supply and installation of Instrumentation and Controls, including: - Gas detection - LEL - Gas detection - H2S - Gas detection strobe/horn - Gas detection controller - Level or pressure transmitter and indicator - Flow transmitter and indicator - Commissioning - As-builts - All cables and miscellaneous materials - Assumes using existing cable trays	Lump Sum			\$
6.2	Division 01 Section 25 90 01 Section 40 63 43 Section 40 63 44 Section 40 64 00	PLC Integration	Lump Sum			\$

Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit applicable tax(es) extra (PU)	Extended amount (EQ x PU) applicable tax(es) extra
7	Lighting and Electrical					
7.1	Division 01 Section 26 50 00 Section 26 57 01	Exterior Lighting Upgrades	Lump Sum			\$
7.2	Division 01 Division 26	Electrical and Interior Lighting upgrades, - Electrical installation for mechanical equipment - Electrical distribution - TX, panelboards and MCC breakers - Ladder Tray - c/w supports and hangers - I&C conduit pathways	Lump Sum			\$
<b>Section C Subtotal</b>						\$
<b>D. Blower / Pump / Splitter Building / Alum</b>						
1	Structural					
1.1	Division 01 Section 05 12 23 Division 07	Reinforcement of existing roof structure and support columns, including: - Total of three rigid frames, including - Add reinforcing rods to roof beam top flange - Add reinforcing plates to roof beam bottom flange (125 mm wd.) - Add reinforcing plates to support columns (both sides) (320 mm wd.) - Additional roof purlins (sized to match existing) - Roof fall arrest anchor points	Lump Sum			\$
1.2	Division 01 Section 05 12 23 Sections 08 11 13, 08 51 13	Structure for canopies over wall openings, including - Support structure for new canopies above doors - Louvers and eyebrows support structure	Lump Sum			\$
1.3	Division 01 Section 03 30 00	Concrete crack repair, if required, including: - Pump room floor - Splitter room Channels	Linear Metre	50	\$	\$
2	Architectural					
2.1	Division 01 Section 05 12 23 Division 07	Roof Replacement, including: - Demolition/removal of existing roof membrane	Lump Sum			\$
2.2	Division 08	Install new sealed doors and spring loaded hardware, in corridor.	EA	2	\$	\$

Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit applicable tax(es) extra (PU)	Extended amount (EQ x PU) applicable tax(es) extra
2.3	Division 01 Section 02 12 23 Division 07 Division 08 Section 09 90 00, 09 91 10, 09 91 13	Building Exterior, including - Remove east and west side overhang and repair cladding - Canopies above louvers - Louvers and Eyebrows - Refinishing, upgrade of hardware and renewal of weather-stripping - Blower room - cladding to seal abandoned intakes - Refurbish and repaint remaining fascia walls - Repainting of remaining fascia walls	Lump Sum			\$
3	Mechanical HVAC					
3.1	Gas Fired Air Supply Unit/Supply Fan Equipment					
3.1.1	Division 01 Division 23	04-MAU-02 (150 MBH)	EA	1	\$	\$
3.2	Gas Fired Unit Heaters					
3.2.1	Division 01 Division 23	04-LPUH-5 to 04-LPUH-7 (50 MBH)	EA	3	\$	\$
3.3	Exhaust / Supply / Ceiling Fans					
3.3.1	Division 01 Division 23	04-EF-3 (1725 cfm)	EA	1	\$	\$
3.3.2	Division 01 Division 23	04-EF-4 and 04-EF-5 (280cfm)	EA	2	\$	\$
3.3.3	Division 01 Division 23	04-EF-6 (6360 cfm)	EA	1	\$	\$
3.3.4	Division 01 Division 23	04-SF-1 (700 cfm)	EA	1	\$	\$
4	Alum Dosing					
4.1	Division 01 Division 22 Division 40	Alum Dosing Room, including: - Piping - Floor drain and drainage pipe. - Heat Tracing - Emergency Shower and Eye wash - Flow switch alarm to PLC with programming and wiring - Alum day tank and dosing skid.	Lump Sum			\$
5	Instrumentation & Controls					

Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit applicable tax(es) extra (PU)	Extended amount (EQ x PU) applicable tax(es) extra
5.1	Division 01 Division 26 Division 40	Supply and installation of Instrumentation and Controls, including: - Electric actuators for process air valves to bioreactors - Pressure transmitter and indicator - Alum system Electric, Instrumentation and control - Control system integration. - Flow transmitter & indicator - Commissioning - As-builts - All cables and miscellaneous materials - Assumes using existing cable trays.	Lump Sum			\$
5.2	Division 01 Section 25 90 01 Section 40 63 43 Section 40 63 44 Section 40 64 00	PLC Integration	Lump Sum			\$
6	Lighting and Electrical					
6.1	Division 01 Section 26 50 00 Section 26 57 01	Exterior Lighting Upgrades	Lump Sum			\$
6.2	Division 01 Division 26	Electrical and Interior Lighting upgrades, including: - Electrical installation for mechanical equipment - Ladder Tray - c/w supports and hangers	Lump Sum			\$
<b>Section D Subtotal</b>						<b>\$</b>
<b>E. Bioreactors</b>						
1	Structural					
1.1	Wall and Floor slab remediation (Basin 1)					
1.1.1	Concrete surface removal to 20mm depth:					
a)	Division 01 Section 03 30 00 Section 09 91 13	Walls	m <sup>2</sup>	727	\$	\$
b)	Division 01 Section 03 30 00 Section 09 91 13	Floor slab	m <sup>2</sup>	242	\$	\$
1.1.2	Concrete surface removal to 40mm depth:					
a)	Division 01 Section 03 30 00 Section 09 91 13	Walls	m <sup>2</sup>	210	\$	\$
b)	Division 01 Section 03 30 00 Section 09 91 13	Floor slab	m <sup>2</sup>	70	\$	\$
1.1.3	Concrete surface removal to > 40mm depth					

Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit applicable tax(es) extra (PU)	Extended amount (EQ x PU) applicable tax(es) extra
a)	Division 01 Section 03 30 00 Section 09 91 13	Walls	m <sup>2</sup>	105	\$	\$
b)	Division 01 Section 03 30 00 Section 09 91 13	Floor slab	m <sup>2</sup>	35	\$	\$
1.1.4	Division 01 Section 03 30 00 Section 09 91 13	Concrete replacement, strengthening and remediation (shotcrete)	Lump Sum			\$
1.1.5	Division 01 Section 03 30 00 Section 09 91 13	Concrete waterproofing	Lump Sum			\$
1.1.6	Division 01 Section 40	Temporary removal of Airation system and reinstatement once slabs	Lump Sum			\$
1.2	Division 01 Section 03 20 00 Section 30 41 00 Section 05 51 00	Roof replacement (Basin 1), including: - Concrete roof removal & Disposal - Removal & disposal of galv. checker plate covers, access ladders and supporting structure <del>- New roofing, aluminum roof</del> - New roofing, Solid prestress precast panels - Installation of galv. checker plate covers, support structure and access ladders	Lump Sum			\$
1.3	Wall and Floor slab remediation (Basin 2)					
1.1.1	Concrete surface removal to 20mm depth:					
a)	Division 01 Section 03 30 00 Section 09 91 13	Walls	m <sup>2</sup>	727	\$	\$
b)	Division 01 Section 03 30 00 Section 09 91 13	Floor slab	m <sup>2</sup>	242	\$	\$
1.1.2	Concrete surface removal to 40mm depth:					
a)	Division 01 Section 03 30 00 Section 09 91 13	Walls	m <sup>2</sup>	210	\$	\$
b)	Division 01 Section 03 30 00 Section 09 91 13	Floor slab	m <sup>2</sup>	70	\$	\$
1.1.3	Concrete surface removal to > 40mm depth					
a)	Division 01 Section 03 30 00 Section 09 91 13	Walls	m <sup>2</sup>	105	\$	\$
b)	Division 01 Section 03 30 00 Section 09 91 13	Floor slab	m <sup>2</sup>	35	\$	\$
1.3.4	Division 01 Section 03 30 00 Section 09 91 13	Disposal of demolished concrete and cleanup	Lump Sum			\$
1.3.4	Division 01 Section 03 30 00 Section 09 91 13	Concrete replacement to walls, strengthening and remediation (shotcrete)	Lump Sum			\$



Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit applicable tax(es) extra (PU)	Extended amount (EQ x PU) applicable tax(es) extra
1.3.5	Division 01 Section 03 30 00 Section 09 91 13	Concrete waterproofing	Lump Sum			\$
1.3.6	Division 01 Section 40	Temporary removal of Airation system and reinstatement once slabs	Lump Sum			\$
1.4	Division 01 Section 03 20 00 Section 30 41 00 Section 05 51 00	Roof replacement (Basin 2), including: - Concrete roof removal & Disposal - Removal & disposal of galv. checker plate covers, access ladders and supporting structure <del>- New roofing, aluminum roof</del> - New roofing, Solid prestress precast panels - Installation of galv. checker plate covers, support structure and access ladders	Lump Sum			\$
1.5	Division 01 Section 03 20 00 Section 03 30 00	Repair of cast-in place end rooves (both basins) - Removal of existing cast-in hatches - Replace roof access hatches - Repair of Reinforced Cast-in-place roof slabs (both ends)	Lump Sum			\$
1.6	Division 01 Section 05 51 00	Supply and install access ladders at man entry points, including: - Removal and disposal of existing ladders.	EA	10	\$	\$
1.7	Division 01 Section 03 30 0	Concrete Crack Repair	Linear Metre	50	\$	\$
2	Architectural					
2.1	Division 01 Section 05 51 00	1070 mm high guardrail around perimeter of tanks	Linear Metre	85	\$	\$
3	Process Air Flow Control					
3.1	Division 01 Division 40 Section 40 93 01	Supply and install actuated valve, including: - Air piping and BFVs - Removal and disposal existing pipes	EA	6	\$	\$
4	Foul Air Extraction					
4.1	Division 01 Division 23 Division 26	Foul air duct at bioreactor, including pipe supports	Lump Sum			\$
5	Instrumentation & Controls					

Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit applicable tax(es) extra (PU)	Extended amount (EQ x PU) applicable tax(es) extra
5.1	Division 01 Division 26 Division 40	Supply and installation of Instrumentation and Controls, including: - Dissolved oxygen sensors, ORP sensors, transmitters and self-cleaning kit - MLSS sensors and transmitters - Ammonia sensors and transmitters - Commissioning - As-builts - All cables and miscellaneous materials - Assumes using existing cable trays. - Control system integration.	Lump Sum			\$
5.2	Division 01 Section 25 90 01 Section 40 63 43 Section 40 63 44 Section 40 64 00	PLC Integration	Lump Sum			\$
6	Lighting and Electrical					
6.1	Division 01 Section 26 41 00 Section 26 41 00 Division 26	Supply and install #200 Luminaire c/w 30' poles and precast concrete base, including: - Electrical distribution – panel boards - Cable, hangers, and fittings, including strut for supporting cabling and fittings for TECK cable. - Installation (Basic) for pole base setting - Set precast base - backfill and tamp - Demolition - remove existing electrical and tray for removal of existing roof decking - Install - existing tray, new electrical and tray cover on new roof decking	EA	2	\$	\$
<b>Section E Subtotal</b>						\$
<b>F. Miscellaneous</b>						
1	Division 01 Section 13 34 23 Section 44 31 31	Supply and install Biotrickling Filter System	Lump Sum			\$
2	Division 01 Section 26 50 00	Exterior Lighting Upgrades at Secondary Clarifiers	Lump Sum			\$
3	Division 01 Section 13 34 23 Division 22 Division 26 Division 40 Division 43	Supply and install service water pump skid package, including: - Control Panel - Electrical connection to water skid - Demolition of existing service pump. - Piping and reconnections. - Valves and flow meter.	Lump Sum			\$

Item	Specification Reference	Class of Labour, Plant or Material	Unit of Measurement	Estimated Quantity (EQ)	Price per Unit applicable tax(es) extra (PU)	Extended amount (EQ x PU) applicable tax(es) extra
4	Division 01 Section 22 05 00 Section 22 05 15 Section 22 11 16 Section 22 42 19 Division 26 Division 40	Sludge Dewatering Room Emergency Shower, including: - Piping installation with pipe material cost - Floor drain and drainage pipe. - Emergency Shower and Eye wash - Flow switch alarm to PLC with programming and wiring - Electrical installation	Lump Sum			\$
5	Division 01 Section 22 05 00 Section 22 05 15 Section 22 11 16 Section 22 42 19 Division 26 Division 40	Chemical Room - Alum Tank Containment Emergency Shower, including: - Piping installation with pipe material cost - Emergency Shower and Eye wash - Flow switch alarm to PLC with programming and wiring	Lump Sum			\$
6	Division 01 Section 13 34 23 Division 09 Division 26 Division 40	Supply and install alum pump skid, including: - Demolish existing alum pump and piping - Wall penetration repair. - Replace existing field tote fill piping	Lump Sum			\$
<b>Section F Subtotal</b>						\$

<b>Section A Subtotal</b>	\$
<b>Section B Subtotal</b>	\$
<b>Section C Subtotal</b>	\$
<b>Section D Subtotal</b>	\$
<b>Section E Subtotal</b>	\$
<b>Section F Subtotal</b>	\$
<b>TOTAL BID AMOUNT (A+B+C+D+E+F)</b> Excluding applicable tax(es)	\$