



# 355-2014 ADDENDUM 1

## WATER TREATMENT RESEARCH AND PROCESS OPTIMIZATION FACILITY – MECHANICAL AND ELECTRICAL WORK

### URGENT

**PLEASE FORWARD THIS DOCUMENT TO WHOEVER IS IN POSSESSION OF THE BID OPPORTUNITY**

ISSUED: June 27, 2014  
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**THIS ADDENDUM SHALL BE INCORPORATED INTO THE BID OPPORTUNITY AND SHALL FORM A PART OF THE CONTRACT DOCUMENTS**

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**Please note the following and attached changes, corrections, additions, deletions, information and/or instructions in connection with the Bid Opportunity, and be governed accordingly. Failure to acknowledge receipt of this Addendum in Paragraph 8 of Form A: Bid may render your Bid non-responsive.**

### PART B - BIDDING PROCEDURES

Revise: B2.1 to read: The Submission Deadline is 4:00 p.m. Winnipeg time, July 11, 2014.

### PART D – SUPPLEMENTAL CONDITIONS

#### Revise D2. SCOPE OF WORK:

Revise: D2.1 to read: The Work to be done under the Contract shall consist of mechanical and electrical work associated with the Water Treatment Research and Process Optimization Facility. **In addition, the supply and installation of a fume hood and a second combination safety shower and eyewash.**

Revise: D2.2(a)(v) to read: Supply and installation of an electric water heater **and concrete pad. The Contractor will be responsible for furnishing all additional materials necessary to complete the installation (piping, tubing, fittings, manual valves, piping supports, panels, screws, nuts, bolts, fasteners, hardware, etc.).**

Revise: D2.2(b)(i) to read: Installation, termination, and calibration of all instrumentation. The City will supply all instrumentation, **except for the flow switches (FS-X6050 and FS-X6060) for the combination safety shower and eyewash units. These will be supplied by the Contractor.**

Add: D2.2 (b)(viii) Wire and connect emergency shower flow switch FS-X6060 to local marshalling panel for the main plant PLC. Coordinate PLC input selection with City personnel. Provide solid stated 24 VDC interface relay to connect flow switch to 120 VAC input module in marshalling panel. Use 18 awg shielded twisted pair teck cable from flow switch to marshalling panel. Provide unistrut and cable tray supports for cable.

Add: D2.2 (d) The supply and installation of a fiberglass laboratory fume hood, discharge ducting and ancillaries. The fume hood shall be Labconco 30 "Fiberglass fume hood with 1/10 horsepower blower motor designed to operate at 115 VAC, 60 Hz (Labconco Catalog No. 3030000 or equal in accordance with B7). The fume hood shall be in conformance with

ANSI Z9.5, ASHRAE 110, ASTM E84, CAN/CSA C22.2, NFPA 45, SEFA 1, UL.

- (i) The fume hood shall be located inside the laboratory room within the Water Treatment Research and Process Optimization Facility on the southwest wall and shall discharge to existing suction ducting associated with exhaust fan EF-H013, located in the mechanical room space on the third floor above the Water Treatment Research and Process Optimization Facility.
- (ii) The fume hood shall be equipped with an integral blower to provide a minimum of 0.5 m/s air velocity across the sash when fully open. The Contractor shall also be responsible for the design, supply and installation of the discharge duct arrangement. The discharge duct arrangement shall transfer air from the integral fume hood blower to a discharge location on the suction side of existing exhaust fan EF-H013. The tee connection for the fume hood exhaust shall be located on the existing vertical 600 x 650 mm rectangular duct below the junction with the existing laboratory air extraction duct, measuring 250 x 250 mm square. The duct design shall ensure the sum of pressure losses associated with the external ductwork and fittings located between the fume hood and the existing duct connection point shall be less than 30 Pascals or in accordance with the manufacturer's recommendations. Ducting shall be constructed of aluminum. For initial costing purposes the Contractor may assume an approximate duct length of 15 metres will be required and that the ducting shall be sized to accommodate 150 L/s of air flow at less than or equal to 30 Pascal's pressure loss. Duct length and required fittings shall be confirmed by the Contractor.
- (iii) The fume hood shall be furnished with and mounted on a storage cabinet (Labconco Catalog No. 9900200). The fume hood shall be furnished with a Labconco flat epoxy work surface (Labconco Catalog No. 4882805). The Contractor shall supply and install equipment and materials in order to produce a fully functional fume hood suited for General Chemistry purposes.

Add: D2.2(e)

The supply and installation of a second combination safety shower and eyewash, including piping and ancillaries, on the third floor of the WTP in the Filter Gallery Area, near Filter No. 5 along the southwest wall. For initial costing purposes the Contractor may assume an approximate pipe length of 45 m of 32 mm Ø copper piping for the tempered water line from the Residuals Area to the Filter Gallery Area. An additional flow switch will also be required for the second combination safety shower and eyewash as shown in Drawing 355\_2014\_Addendum\_1\_Drawing\_1-0601X-H0003-001-01-R0. The Contractor will be responsible for supplying both flow switches for the combination safety shower and eyewash units.

## **PART E – SPECIFICATIONS**

### **E1. APPLICABLE SPECIFICATIONS AND DRAWINGS**

Replace: 355-2014 \_Division\_29 with 355-2014 \_Addendum\_1\_ Division\_29

Replace: 355\_2014 \_Drawing\_1-0601X-H0003-001-00-R0 with 355\_2014\_Addendum\_1\_Drawing\_1-0601X-H0003-001-01-R1

Replace: 355\_2014 \_Drawing\_1-0601X-M0003-001-00-R0 with 355\_2014\_Addendum\_1\_Drawing\_1-0601X-M0003-001-01-R1

Replace: 355\_2014 \_Drawing\_1-0601X-P0001-001-00-R0 with 355\_2014\_Addendum\_1\_Drawing\_1-0601X-P0001-001-01-R1

Replace: 355\_2014 \_Drawing\_1-0601X-P0002-001-00-R0 with 355\_2014\_Addendum\_1\_Drawing\_1-0601X-P0002-001-01-R1

Replace: 355\_2014 \_Drawing \_1-0601X-P0004-001-00-R0 with 355\_2014\_Addendum\_1\_Drawing\_1-0601X-P0004-001-01-R1

Replace: 355\_2014 \_Drawing \_1-0601X-P0005-001-00-R0 with 355\_2014\_Addendum\_1\_Drawing\_1-0601X-P0005-001-01-R1

Replace: 355\_2014 \_Drawing \_1-0601X-E0001-001-00-R0 with 355\_2014\_Addendum\_1\_Drawing\_1-0601X-E0001-001-01-R1

Replace: 355\_2014 \_Drawing \_1-0601R-E0006-001-07-R7 with 355\_2014\_Addendum\_1\_Drawing\_1-0601R-E0006-001-08-R8

Replace: 355\_2014 \_Drawing \_1-0601B-E0006-004-06-R6 with 355\_2014\_Addendum\_1\_Drawing\_1-0601B-E0006-004-07-R7

Add: 355\_2014 \_Drawing \_1-0601H-C0002-001-05-R5 (For information only)

Add: **Part E2 WORK HOURS AND AMMENITIES**

- E2.1 The typical hours of operation on Site are 7:30 am to 4 pm, Monday through Friday. Some work outside of these hours is permissible but it needs to be coordinated with Site.
- E2.2 The City will provide temporary 220V/1Ø power up to the Sea-Can in the laydown area. A drawing of the proposed area for the Contractor laydown area for the WTRPO M/E work has been included in drawing number 355\_2014 \_Drawing \_1-0601H-C0002-001-05-R5. The plant overflow cuts through the corner of the location and an electrical duct bank runs across the front of it. As this is a grassed surface, the area will probably require re-seeding after the Sea-Can has been removed in the late fall and touch up will likely be required in the spring for anything that did not take.
- E2.3 Washroom facilities are available on Site on the DAF floor.

Add: **E3 COMMISSIONING**

- E3.1 The commissioning of the plant will be by the City, Contract Administrator and the Contractor. The current schedule has allowed for a one month commissioning period.
  - E3.1.1 The Contract Administrator will be completing the PLC programming and the City will be completing the Wonderware and SCADA programming. The Contractor will have to verify wire terminations, perform pre-functionally/functional tests on the equipment, confirm wire terminations and other portions of the commissioning as outlined in the specs.

Add: **E4 EQUIPMENT DELIVERY**

- E4.1 The City has issued Purchase Orders for most of the equipment and delivery will be within the next 10 weeks for the longest lead items (PLC's, MCC's, flow control valve, etc.)

Add: **E5 COORDINATION AND SCHEDULING**

- E5.1 The thickened sludge equalization tank (TSET) can be taken off line for tie-in in October. Currently the plant is operating at too high of a demand to schedule a shutdown of this system.
- E5.2 A-Post Aluminum Fabricators are currently on Site for the Mezzanine Bid Op. (25-2014) and should be substantially complete before the work begins for this

contract. The Contractor will not be under A-Post's safety program/WCB as a Subcontractor. The Contractor will be the General Contractor for their portion of the work. A-Post may have some deficiencies to attend to during the construction of this portion.

Add: E6

#### **OTHER INFORMATION RELATED TO WORK SCOPE**

- E6.1 Cutting of structural concrete will require investigation (i.e. x-ray).
- E6.2 The 150 mm diameter Raw Water line has been installed by the City up to the corridor beside the WTRPO Room. The Contractor will be responsible for extending the Raw Water line from the corridor, through the lab, and through the WTRPO Room. Penetrations into and out of the lab need to be firestopped. The portion of pipe running through the lab will require insulation with sealed PVC jacket and vapour barrier.
- E6.3 Concrete pads have recently been installed in the WTRPO Room under the Bid Op. 25-2014 for some of the equipment. The Contractor selected for this portion of the Work (355-2014) will be required to install anchors in the housekeeping pads for the equipment. The anchors will not be installed under A-Post's Contract.
- E6.4 Painting of the housekeeping pads will be completed by the City.

#### **SECTION 22 40 00 – PLUMBING FIXTURES**

Revise: 1.1 to read: 1.1 SCOPE

- A. The City will supply the Contractor with a combination safety shower and eyewash unit for the WTRPO Room and a mixing valve as indicated in Section 01 64 00, City-Furnished Products.
- B. The Contractor is responsible for supplying a second combination safety shower and eyewash unit that will be installed in the Filter Gallery Area. For both combination safety shower and eyewash units, the Contractor is responsible for supplying and installing flow switches.
- C. The Contractor is responsible for installing both of the combination safety shower and eyewash units and the mixing valve, and for installing and supplying all piping, fittings, and additional valves required to complete the installations.

Add to PART 2 PRODUCTS: 2.1 MANUFACTURES

- A. Emergency Showers and Eyewashes:
  - 1. Haws.

2.2 MATERIALS

- A. Safety Equipment:
  - 1. Combination emergency shower & eye/face wash with AXION MSR™ eye/face wash and showerhead:
    - a. Model: Haws; Model 8300-8309.
    - b. Shower: ABS plastic drench showerhead.
    - c. Eyewash: AXION MSR™ eye/face wash head and stainless steel round bowl.
    - d. Valve: Stay open.

- e. Support: Freestanding, 32 mm, schedule 40, hot dipped, galvanized steel pipe and fitting along with powder-coated cast-iron floor flange.
- f. Modesty Curtain: Haws; Model 9037.
- g. Alarms: Magnetically operated proximity switches.

### **SECTION 29 40 11 – PLC I-O INDEX**

Added Lines to PLC I-O Index: Flow switches for the chemical lines (FA-X5100, FA -X5101, FA -X5110, FA -X5111, FA -X5120, FA -X5121, FA -X5122, and FA -X5123).

Replace: 355-2014 \_Division\_29 with 355-2014 \_Addendum\_1\_ Division\_29

### **SECTION 29 40 21 – INSTRUMENTATION INDEX**

Added Lines to Instrumentation Index: Indicators and flow switches for chemical lines (FI/FS-X5100, FI/FS-X5101, FI/FS-X5110, FI/FS-X5111, FI/FS-X5120, FI/FS-X5121, FI/FS-X5122, and FI/FS-X5123) and flow switch FS-X6060.

Replace: 355-2014 \_Division\_29 with 355-2014 \_Addendum\_1\_ Division\_29

### **SECTION 29 50 01 – INSTRUMENTATION SPECIFICATION SHEET**

Added Specification Sheet for I-120, Flow Rotameter

Replace: 355-2014 \_Division\_29 with 355-2014 \_Addendum\_1\_ Division\_29

### **SECTION 40 27 00 – Process Piping – General (Supplement)**

Add to Service List: TPW – Tempered Water

Add Line to Piping Schedule (Table): TPW, 32, EXP, CU, 13, 60, H