

FORM A: PROPOSAL
(See B8)

1. Contract Title SUPPLY AND DELIVERY OF FREE-MOVING MEDIA, SCREENS, AERATION SYSTEM, AND ASSOCIATED APPURTENANCES FOR THE INTEGRATED FIXED FILM ACTIVATED SLUDGE (IFAS) BIOREACTORS FOR THE SOUTH END WATER POLLUTION CONTROL CENTRE (SEWPCC) UPGRADING/EXPANSION PROJECT

2. Bidder

Name of Bidder

Usual Business Name of Bidder as it appears on Invoice (if different from above)

Street

(Mailing address if different)

City

Province

Postal Code

Email Address of Bidder

Facsimile Number

Street or P.O. Box

City

Province

Postal Code

GST Registration Number (if applicable)

(Choose one)

The Bidder is:

a sole proprietor

a partnership

a corporation

carrying on business under the above name.

3. Contact Person

The Bidder hereby authorizes the following contact person to represent the Bidder for purposes of the Proposal.

Contact Person

Title

Telephone Number

Facsimile Number

4. Definitions All capitalized terms used in the Contract shall have the meanings ascribed to them in the General Conditions and D3.
5. Offer The Bidder hereby offers to perform the Work in accordance with the Contract for the price(s), in Canadian funds, set out on Form B: Prices, appended hereto.
6. Execution of Contract The Bidder agrees to execute and return the Contract no later than seven (7) Calendar Days after receipt of the Contract, in the manner specified in C4.3.01.
7. Commencement of the Work The Bidder agrees that no Work shall commence until he/she is in receipt of a notice of award from the Award Authority authorizing the commencement of the Work.
8. Contract The Bidder agrees that the Request for Proposal in its entirety shall be deemed to be incorporated in and to form a part of this offer notwithstanding that not all parts thereof are necessarily attached to or accompany this Proposal.
9. Addenda The Bidder certifies that the following addenda have been received and agrees that they shall be deemed to form a part of the Contract:
- | No. | Dated |
|-------|-------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
10. Time This offer shall be open for acceptance, binding and irrevocable for a period of one hundred and twenty (120) Calendar Days following the Submission Deadline.

11. Signatures

In witness whereof the Bidder or the Bidder's authorized official or officials have signed this

_____ day of _____, 20_____.

Signature of Bidder or
Bidder's Authorized Official or Officials

(Print here name and official capacity of individual whose signature appears above)

(Print here name and official capacity of individual whose signature appears above)

FORM B: PRICES
(See B9)

SUPPLY AND DELIVERY OF FREE-MOVING MEDIA, SCREENS, AERATION SYSTEM, AND ASSOCIATED APPURTENANCES FOR THE INTEGRATED FIXED FILM ACTIVATED SLUDGE (IFAS) BIOREACTORS FOR THE SOUTH END WATER POLLUTION CONTROL CENTRE (SEWPCC) UPGRADING/EXPANSION PROJECT

BREAKDOWN OF TOTAL BID PRICE

ITEM NO.	DESCRIPTION	SPEC. OR RFP REF.	PRICE
1.	IFAS Equipment <i>Including free-moving media, screens, aeration equipment, and all specified components and delivery</i>	402700.08 444113.22 464516.01	\$
2.	Design Support <i>Including all process engineering and design support, design coordination and validation meetings</i>	444113.22 464516.01	\$
3.	Submittals <i>Including shop drawings and other information as required, to complete the design of the IFAS system</i>	01 33 00	\$
4.	Site Services, Commissioning of Equipment, and Field Testing <i>Including delivery inspection, installation contractor training, installation assistance and inspection, facility startup meeting, and functional and performance testing</i>	01 43 33 444113.22 464516.01	\$
5.	Operations and Maintenance Manuals	01 78 23	\$
6.	Training of City's Personnel	01 43 33 444113.22 464516.01	\$
7.	General Requirements <i>Including insurances, performance securities, and warranty</i>	D8, D10, D17	\$
TOTAL BID PRICE (Sum of Items 1 to 7) (GST and MRST extra)			\$
8.	Cost per Day for Additional Services (Commissioning, Training, Testing, etc.) by One (1) Contractor Representative at a location in Winnipeg, Manitoba designated by the Contract Administrator	B9.2	\$
9.	Cost per Return Trip for Travel by One (1) Contractor Representative to Winnipeg, Manitoba	B9.3	\$

Name of Bidder

FORM C: PROJECT REFERENCES
(See B12)

SUPPLY AND DELIVERY OF FREE-MOVING MEDIA, SCREENS, AERATION SYSTEM, AND ASSOCIATED APPURTENANCES FOR THE INTEGRATED FIXED FILM ACTIVATED SLUDGE (IFAS) BIOREACTORS FOR THE SOUTH END WATER POLLUTION CONTROL CENTRE (SEWPCC) UPGRADING/EXPANSION PROJECT

Provide at least two (2) project references of previously completed work, similar in nature and scope to the Work, in sufficient detail to demonstrate the Bidder's qualification to undertake the Work.

Reference projects shall meet the following minimum criteria:

- Full-scale installation (not a pilot demonstration) for municipal wastewater treatment;
- Two years of operation;
- Peak flow capacity of 8,000 m³/day or greater;
- Wastewater characteristics similar to those expected for SEWPCC.

Additionally, provide at least one (1) project reference of previously completed work, similar in nature and scope to the Work, in sufficient detail to demonstrate the Bidder's qualification to undertake the Work.

Reference projects shall meet the following minimum criteria:

- Full-scale installation (not a pilot demonstration) for municipal wastewater treatment;
- One year of operation;
- Peak flow capacity of 22,500 m³/day or greater;
- Wastewater characteristics similar to those expected for SEWPCC.

Provide the following information for each of the qualified project references:

Date of Becoming Fully Operational:

Rated Flow Capacity (average, max month, max week, max day, peak hour) (m³/day):

Pollutant Load Characteristics:

- BOD5 – average, max month, max week (kg/d)
- TSS – average, max month, max week (kg/d)
- TKN – average, max month, max week (kg/d)
- Total Phosphorus – average, max month, max week (kg/d)
- Temperature – minimum (degrees Celcius)

Design SOTE / SOTR:

Design Effluent Characteristics:

- Total Nitrogen – average, max (mg/L)
- Total Phosphorus – average, max (mg/L)
- Ammonia Nitrogen (as N) – min, max (kg/day)

Actual Effluent Characteristics:

- Total Nitrogen – average, max (mg/L)
- Total Phosphorus – average, max (mg/L)
- Ammonia Nitrogen (as N) – min, max (kg/day)

Bidder's Contract Value in Canadian dollars:

Owner: (including location, contact name and position, telephone number, email)

Description of Contract (such as scope of supply, wastewater application design performance parameters, etc.):

Note: Bidder may make copies of this sheet for each reference to fill out legibly by hand or typed, or Bidder may use own sheet that includes all required information above. Attach additional sheets as required and label as Form C.

FORM D: INSTALLATION HISTORY
(See B12)

SUPPLY AND DELIVERY OF FREE-MOVING MEDIA, SCREENS, AERATION SYSTEM, AND ASSOCIATED APPURTENANCES FOR THE INTEGRATED FIXED FILM ACTIVATED SLUDGE (IFAS) BIOREACTORS FOR THE SOUTH END WATER POLLUTION CONTROL CENTRE (SEWPCC) UPGRADING/EXPANSION PROJECT

Complete the following summary table listing all installations currently in operation of the proposed IFAS equipment in wastewater applications.

Project	Rated Flow Capacity, m³/day (list average day, max month/day, and peak hour)	Design ammonia nitrogen Removal, % or Effluent ammonia nitrogen concentration (mg/L)	Design SOTE (%)	Media Type and Effective Specific Surface Area (m²/m³)	Media Retention Screen headloss at peak hour (mm)	Startup Date (Month, Year)
<i>Project Reference 1 from Form C</i>						
<i>Project Reference 2 from Form C</i>						
<i>Project Reference 3 from Form C</i>						
Additional References						

Note: Bidder may use this sheet and fill out legibly by hand or typed, or Bidder may use own sheet that includes all required information above. Attach additional sheets as required and label as Form D.

FORM E: SUMMARY OF SYSTEM CHARACTERISTICS
(See B12)

SUPPLY AND DELIVERY OF FREE-MOVING MEDIA, SCREENS, AERATION SYSTEM, AND
ASSOCIATED APPURTENANCES FOR THE INTEGRATED FIXED FILM ACTIVATED SLUDGE (IFAS)
BIOREACTORS FOR THE SOUTH END WATER POLLUTION CONTROL CENTRE (SEWPCC)
UPGRADING/EXPANSION PROJECT

Provide details of the equipment to be supplied.

ITEM	SYSTEM PARAMETERS	VALUE		
		Bioreactor No.1	Bioreactor No.2	Bioreactor No.3
1	Diameter of drop leg(s), mm			
2	Number of diffusers			
3	Diameter of diffusers (i.e. hole size), mm			
4	Standard Oxygen Transfer Efficiency (SOTE), in percent based on 7 metres of side water submergence			
5	Air flow (per bioreactor with all units in service) Annual Average (Condition: Design, T = 15.0°C, DO = 4.0 mg/L), Sm ³ /hr Maximum Month (Condition: Design, T = 9.8°C, DO = 6.0 mg/L), Sm ³ /hr			
6	Maximum headloss from drop leg to diffuser, kPa, based on the criteria specified in Section 46 45 16.01 and Maximum Month Condition noted in Item 5 above			
7	Free-moving Media Effective Specific Surface Area (m ² /m ³)			
8	Free-moving media fill percentage (%)			
9	Biofilm Surface Area (m ²)			
10	Media Retention Screen hydraulic capacity with headloss limited to 100 millimeters (ML/d)			

Note: Refer to Technical Specifications for definition of terms and acronyms.

FORM F (R1): GUARANTEED PERFORMANCE

SUPPLY AND DELIVERY OF FREE-MOVING MEDIA, SCREENS, AERATION SYSTEM, AND ASSOCIATED APPURTENANCES FOR THE INTEGRATED FIXED FILM ACTIVATED SLUDGE (IFAS) BIOREACTORS FOR THE SOUTH END WATER POLLUTION CONTROL CENTRE (SEWPCC) UPGRADING/EXPANSION PROJECT

The following Guaranteed Performance shall be provided by the Bidder.

Parameter
Summer maximum month ammonia-nitrogen concentration within the De-aeration Zone (mg-N/L) less than 1 mg/L based on a 14-day rolling average. The nitrification safety factor is less than 1.0 in the bioreactor and a bulk-liquid dissolved oxygen concentration less than or equal to 3.0 mg/L within the media zone.
Spring maximum month ammonia-nitrogen concentration within the De-aeration Zone (mg-N/L) less than 4 mg/L based on a 14-day rolling average. The nitrification safety factor is less than 1.0 in the bioreactor and a bulk-liquid dissolved oxygen concentration less than 4.0 mg/L within the media zone.
A minimum Standard Oxygen Transfer Efficiency (SOTE) of 3.45% per metre of diffuser submergence based on 7 metres of sidewall submergence and based on fully seeded media (media with biofilm).
A bulk-liquid dissolved oxygen concentration for the media zone with a wastewater temperature of 9.8-degrees C of at least 6.0 mg/L at the Maximum Month Conditions

Submission of a proposal by the Bidder will indicate acceptance of the South End Water Pollution Control Centre Upgrading/Expansion Project – Process Design Brief (Supplement to Section 44 41 13.22), with the associated basin cell dimensions and configurations, and compatibility of the Bidder's equipment. All information in the above table is in accordance to sections 44 41 13.22 and 46 45 16.01.