



RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
Public Works and Government Services / Travaux
publics et services gouvernementaux
Kingston Procurement
Des Acquisitions Kingston
86 Clarence Street, 2nd floor
Kingston
Ontario
K7L 1X3
Bid Fax: (613) 545-8067

REQUEST FOR PROPOSAL
DEMANDE DE PROPOSITION

**Proposal To: Public Works and Government
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right
of Canada, in accordance with the terms and conditions
set out herein, referred to herein or attached hereto, the
goods, services, and construction listed herein and on any
attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la
Reine du chef du Canada, aux conditions énoncées ou
incluses par référence dans la présente et aux annexes
ci-jointes, les biens, services et construction énumérés
ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

Comments - Commentaires

Title - Sujet Mass Spectrometer	
Solicitation No. - N° de l'invitation KW405-190279/A	Date 2018-11-21
Client Reference No. - N° de référence du client KW405-190279	
GETS Reference No. - N° de référence de SEAG PW-\$KIN-510-7642	
File No. - N° de dossier KIN-8-50082 (510)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2019-01-02	Time Zone Fuseau horaire Eastern Standard Time EST
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Bartrop, David	Buyer Id - Id de l'acheteur kin510
Telephone No. - N° de téléphone (613) 536-4994 ()	FAX No. - N° de FAX (613) 545-8067
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF THE ENVIRONMENT 867 Lakeshore Road Burlington Ontario L7R4A6 Canada	

Instructions: See Herein

Instructions: Voir aux présentes

Vendor/Firm Name and Address

**Raison sociale et adresse du
fournisseur/de l'entrepreneur**

Issuing Office - Bureau de distribution

Public Works and Government Services / Travaux publics et
services gouvernementaux
Kingston Procurement
Des Acquisitions Kingston
86 Clarence Street, 2nd floor
Kingston
Ontario
K7L 1X3

Delivery Required - Livraison exigée See Herein	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date



Item Article	Description	Dest. Code Dest.	Inv. Code Fact.	Qty Qté	U. of I. U. de D.	Unit Price/Prix unitaire FOB/FAM	Destination	Plant/Usine	Del. Offered Liv. offerte	Delivery Req. Livraison Req.	See Herein
1	Mass Spectrometer	KW405	KW405	1	Each		\$	XXXXXXXXXXXX			

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PART 1 - GENERAL INFORMATION

1.1 Requirement

The requirement is detailed under Article 6.2 of the resulting contract clauses.

1.2 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

1.3 Trade Agreements

The requirement is subject to the provisions of the World Trade Organization Agreement on Government Procurement (WTO-AGP), the North American Free Trade Agreement (NAFTA), the Canada-European Union Comprehensive Economic and Trade Agreement (CETA), and the Canadian Free Trade Agreement (CFTA).

PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The [2003](#) (2018-05-22) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of [2003](#), Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days

Insert: 90 days

2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated in the bid solicitation.

2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than ten (10) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by Bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

2.4 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the Bidders.

PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Due to the nature of the bid solicitation, bids transmitted by epost Connect service will not be accepted.

Canada requests that bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid (3 hard copies)

Section II: Financial Bid (1 hard copy)

Section III: Certifications (1 hard copy)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that bidders follow the format instructions described below in the preparation of hard copy of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process [Policy on Green Procurement](https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32573) (<https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=32573>). To assist Canada in reaching its objectives, bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

Section I: Technical Bid

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Basis of Payment.

3.1.1 Electronic Payment of Invoices – Bid

If you are willing to accept payment of invoices by Electronic Payment Instruments, complete Annex “C” Electronic Payment Instruments, to identify which ones are accepted.

If Annex “C” Electronic Payment Instruments is not completed, it will be considered as if Electronic Payment Instruments are not being accepted for payment of invoices.

Acceptance of Electronic Payment Instruments will not be considered as an evaluation criterion.

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3.1.2 Exchange Rate Fluctuation

[C3011T](#) (2013-11-06), Exchange Rate Fluctuation

Section III: Certifications

Bidders must submit the certifications and additional information required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

4.1.1 Technical Evaluation

4.1.1.1 Mandatory Technical Criteria

The proposed Liquid Chromatography High Resolution Mass Spectrometer (LC-HRMS) must meet each and every mandatory technical criteria.

Item #	Criteria	Page in your proposal where information can be found
M1	The bidder must demonstrate they have a service history (minimum of 5 years) in the field of ultra-high pressure liquid chromatography/high resolution mass spectrometry.	
M2	The Bidder must demonstrate that their proposed system meet the mandatory requirements and technical specification detailed at Annex A. All items from 2. Mandatory Requirements in Annex A – Requirement must be demonstrated in the bid submission. If any additional components, peripherals or supplies are necessary to meet all specifications and to operate the instrument on arrival at Environment Canada's site, these must be listed in the Bidder's response and must be included in the Price.	
M3	The Bidder must submit test results, with their bid, achieved through analysis of standard and matrix mixtures supplied by Environment Canada, Burlington, ON. Contact Dave Bartrop, David.Bartrop@tpsgc-pwgsc.gc.ca to obtain samples and further details. The samples will consist of standard solutions as described in Appendix B. The results will be used in the point rated portion of the evaluation. Performance must meet the minimum pass requirements outlined.	
M4	Experimental conditions used by the Bidder and chromatograms must be included in the results report submitted in the bid	

Bidders not meeting the mandatory criteria will be considered non-responsive and will not be evaluated further.

4.1.1.2 Point Rated Technical Criteria

Total points (142 points)

- 100 points performance samples evaluation
- 32 points software evaluation
- 10 points enhanced features

1. Performance Samples Evaluation (100 points)

The Bidder must demonstrate each of the following capabilities (1 to 8) by providing the requested information to Environment Canada, based on the samples. Instructions will be provided with the samples. Bidders must receive a score of **70 points out of 100 points or 70%** on the Performance Samples Evaluation in order to proceed to step 2 (software evaluation) of the evaluation.

1. Sensitivity will be assessed for a standard of 0.1 µg/mL of MC-LR in 1:1 methanol-water. A LC method will be supplied. MS Method: MRM m/z 995.6 → 135.1 and m/z 995.6 → 213.2 are monitored. Required 7 replicate injections of 1 µL. (Maximum score – 20 points)

Laboratory blanks are to be included by the Proponent to assess any inter-laboratories bias. The Proponent must provide 7 chromatograms with y-axis in area counts, x-axis in retention time (min), analyte on-column injection volume and specific MRM transitions. All raw data (time-stamped) should be submitted in Microsoft PowerPoint (for chromatograms – no smoothing or noise reduction) and Microsoft Excel (peak area, retention time, statistics)

Criteria	Score Point
Highest sensitivity	20
2 nd highest	10
3 rd highest	5
4 th and lower	0

2. Quantitation assessed in sample mixtures prepared by ECCC personnel. Refer to Appendix B for details. (Maximum score – 15 points)

Criteria	Score Point
90 – 110 % of expected value	15
<90 or >110% of expected value	10
<60 or >140 % of expected value	5
<50 or >150% of expected value	0

3. Non-target screening of secondary metabolites (i.e. oligopeptide) in a sample mixture prepared by ECCC personnel. Refer to Appendix B for details. Maximum score – 15 points)

Criteria	Score Point
Ability to detect three oligopeptides and identify at least one (with library)	15
Ability to detect three oligopeptides	10
Ability to detect two oligopeptide	5
Ability to detect 1 or less unidentified oligopeptides	0

4. Mass Accuracy will be assessed based on full scan spectral data of a test sample mixture provided with a mass range of 50 – 3000 m/z and the error will be calculated relative to theoretical values. (Maximum score – 15 points)

Criteria	Score Point
< 3 ppm	15
3– 5 ppm	10
> 5 – 10 ppm	5

> 10 ppm	0
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5. Linearity

Provide MRM chromatogram of MC-LR obtained by injecting on-column amount of 0.1, 0.25, 0.5, 1.0, 5.0, 20, 50 pg. Construct a calibration curve and calculate the R² value of linear regression. (Maximum score – 15 points)

Criteria	Score Point
Highest R ² value i.e. closet to 1	15
2 nd highest R ² value	10
3 rd highest R ² value	5
4 th highest R ² value	0

6. Stability and robustness will be assessed based on multiple injections of one of the test mixtures provided by ECCC over a 24 hour time period. (Maximum score – 10 points)

Criteria	Score Point
Lowest RSD %	10
2 nd lowest RSD %	8
3 rd lowest RSD %	5
4 th lowest RSD %	0

7. Resolving power will be assessed using ions between 50 – 3000 m/z (Maximum score – 5 points)

Criteria	Score Point
>20,000	5
>15,000 – 20,000	4
15,000 – 10,000	3
<10, 000	0

8. Scan speed will be assessed as the shortest cycle time or largest number of points across the chromatographic peak without resulting in any loss of signal intensity. (Maximum score – 5 points)

Criteria	Score Point
Fastest scan	5
2 nd fastest	4
3 rd fastest	3
4 th fastest	0

2. Software Evaluation (32 points)

To evaluate the software used to control all component of the proposed LC-HRMS system including LC, autosampler and mass spectrometer by using a WebEx presentation. This will occur after bid close and ECCC will propose up to three dates for the demonstration.

1. Instrument Tuning (Maximum score – 7 points)

Ability to display real-time data: 2 points
 Manual-tuning: 3 points

Auto-tuning: 2 points

2. Data processing (Maximum score – 25 points)

a. Calibration set-up

internal and external calibration mode: 2 points
options for linear and non-linear calibration: 2 points

b. Peak integration

i. Number of steps takes to auto-integration

≤ 5 steps: 2 points
> 5 ≤ 10 steps: 1 point
10 steps: 0 points

ii. manual integration: 2 points

c. Ability to process and re-process acquired data including compound identification, calibration curve, and quantitation without the need to re-inject samples

Compound identification: 1 point
Re-quantitation calibration curve: 1 point
Auto re-quantitation samples: 1 point

d. Software ability to calculate LOD, LOQ, S/N, etc., and options to flag for out-of-trend (OOT) for retention time and ion ratios in processed data

LOD: 1 point
LOQ: 1 point
S/N: 1 point
Flag OOT: 1 point

e. Library availability, search, and create user library options

Spectral library: 2 points
Create own library: 2 points

f. Statistical feature in the software to be done on collected data for further comparative analysis

Yes: 3 points
No: 0 points

g. Software compatibility: Ability to export and/or “copy and paste” raw data to other software e.g. Microsoft Excel, Powerpoint. The software can generate pdf format files, export images and text files.

Yes: 3 points
No: 0 point

3. Enhance Features (10 points)

The Proponent provides enhance features listed in Section 3 – Enhance feature (optional) can score additional points.

Criteria	Score Point
Fulfill >3/5 items	10
Fulfill 3/5 items	5
Fulfill 2/5 items	2
Fulfill 1/5 items	0

4.1.2 Financial Evaluation

- 4.1.2.1 **Mandatory Financial Criteria** – Pricing must be submitted in Canadian currency in accordance with Annex B, Basis of Payment.
- 4.1.2.2 Evaluated Price will be the Firm Lot Price at item 1.0, Firm Requirement, in Annex B, Basis of Payment.
- 4.1.2.3 The price of the bid will be evaluated in Canadian dollars, Applicable Taxes excluded, FOB destination, delivery charges. Canadian customs duties and excise taxes included.

4.2 Basis of Selection

4.2.1 Basis of Selection - Highest Combined Rating of Technical Merit and Price

1. To be declared responsive, a bid must:
 - a. comply with all the requirements of the bid solicitation; and
 - b. meet all mandatory criteria; and
 - c. obtain the required minimum points specified for criterion number 1 for the technical evaluation.

The rating is performed on a scale of 142 points.

2. Bids not meeting (a) or (b) or (c) will be declared non-responsive.
3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 65 % for the technical merit and 35 % for the price.
4. To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 65 %.
5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 35 %.
6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.

7. Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.

The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 60/40 ratio of technical merit and price, respectively. The total available points equals 135 and the lowest evaluated price is \$45,000 (45).

Basis of Selection - Highest Combined Rating Technical Merit (60%) and Price (40%)				
		Bidder 1	Bidder 2	Bidder 3
Overall Technical Score		115/135	89/135	92/135
Bid Evaluated Price		\$55,000.00	\$50,000.00	\$45,000.00
Calculations	Technical Merit Score	$115/135 \times 60 = 51.11$	$89/135 \times 60 = 39.56$	$92/135 \times 60 = 40.89$
	Pricing Score	$45/55 \times 40 = 32.73$	$45/50 \times 40 = 36.00$	$45/45 \times 40 = 40.00$
Combined Rating		83.84	75.56	80.89
Overall Rating		1st	3rd	2nd

PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Unless specified otherwise, Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

5.1.1 Integrity Provisions - Declaration of Convicted Offences

In accordance with the Integrity Provisions of the Standard Instructions, all bidders must provide with their bid, **if applicable**, the declaration form available on the [Forms for the Integrity Regime](http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html) website (<http://www.tpsgc-pwgsc.gc.ca/ci-if/declaration-eng.html>), to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

5.2.1 Integrity Provisions – Required Documentation

In accordance with the section titled Information to be provided when bidding, contracting or entering into a real procurement agreement of the [Ineligibility and Suspension Policy](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html>), the Bidder must provide the required documentation, as applicable, to be given further consideration in the procurement process.

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "FCP Limited Eligibility to Bid" list available at the bottom of the page of the [Employment and Social Development Canada \(ESDC\) - Labour's](https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#) website (<https://www.canada.ca/en/employment-social-development/programs/employment-equity/federal-contractor-program.html#>).

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "FCP Limited Eligibility to Bid" list at the time of contract award.

PART 6 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

6.1 Security Requirements

6.1.1 There is no security requirement applicable to the Contract.

6.2 Requirement

The Contractor must provide the items detailed under the "Requirement" at Annex "A".

6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

6.3.1 General Conditions

[2010A](#) (2018-06-21), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

Section 16 Interest on Overdue Accounts, of [2010A \(2018-06-21\), General Conditions - Goods \(Medium Complexity\)](#) will not apply to payments made by credit cards. *[Note to Offerors: This clause will be inserted if payment by credit card(s) is accepted by the Offeror, otherwise it will be deleted]*

6.3.2 Supplemental General Conditions

4001 (2015-04-01) Hardware Purchase, Lease and Maintenance;
4003 (2010-08-16) Licensed Software; and
4004 (2013-04-25) Maintenance and Support Services for Licensed Software, apply to and form part of the Contract.

6.4 Term of Contract

6.4.1 Period of the Contract

The period of the Contract is from date of Contract to 2019-06-30 inclusive.

6.4.2 Delivery Date

All Goods must be received on or before 2019-03-29.

All Services must be received no later than 2019-04-30.

6.4.3 Delivery Points

Delivery of the requirement will be made to delivery point(s) specified at Annex "A" of the Contract.

6.5 Authorities

6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: David Barltrop
Title: Supply Officer
Public Works and Government Services Canada
Acquisitions Branch
Directorate: Ontario Region
Address: 86 Clarence St., 2nd Floor

Telephone: 613 536 4994
Facsimile: 613 545 8067
E-mail address: David.Barltrop@tpsgc-pwgsc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

6.5.2 Project Authority

The Project Authority for the Contract is: *[Note to Bidders: Canada will insert information at time of Contract award]*

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority, however the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

6.5.3 Contractor's Representative *[Note to Bidders: Please fill in required information]*

Name: _____
Title: _____
Telephone: _____
E-mail address: _____

6.6 Payment

6.6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price, as specified in Annex "B" for a cost of _____ *[Note to Bidders: Canada will insert the amount at contract award]*. Customs duties are included and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

6.6.2 Single Payment

SACC Manual clause H1000C (2008-05-12), Single Payment

6.6.3 Electronic Payment of Invoices – Contract [Note to Bidders: Canada will insert information at time of Contract award]

The Contractor accepts to be paid using any of the following Electronic Payment Instrument(s):

- a. Visa Acquisition Card;
- b. MasterCard Acquisition Card;
- c. Direct Deposit (Domestic and International);
- d. Electronic Data Interchange (EDI);
- e. Wire Transfer (International Only);
- f. Large Value Transfer System (LVTS) (Over \$25M)

6.7 Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.
2. Invoices must be distributed as follows:
 - a) The original and one (1) copy must be forwarded to the address shown on page 1 of the Contract for certification and payment.
 - b) One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.

6.8 Certifications and Additional Information

6.8.1 Compliance

Unless specified otherwise, the continuous compliance with the certifications provided by the Contractor in its bid or precedent to contract award, and the ongoing cooperation in providing additional information are conditions of the Contract and failure to comply will constitute the Contractor in default. Certifications are subject to verification by Canada during the entire period of the Contract.

6.9 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in _____ (*insert the name of the province or territory as specified by the Bidder in its bid, if applicable*).

6.10 Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) 4001 (2015-04-01), Hardware Purchase, Lease and Maintenance;
- (c) 4003 (2010-08-16), Licensed Software;
- (d) 4004 (2013-04-25), Maintenance and Support Services for Licensed Software;
- (e) 2010A (2018-06-21), General Conditions – Goods (Medium Complexity);
- (f) Annex A, Requirement;
- (g) Annex B, Basis of Payment;
- (h) the Contractor's bid dated _____

6.11 Electrical Equipment

SACC Manual clause B1501C (2018-06-21), Electrical equipment

6.12 Insurance

SACC Manual clause G1005C (2016-01-28), Insurance – No Specific Requirement

6.13 Intellectual Property Infringement and Royalties

1. The Contractor represents and warrants that, to the best of its knowledge, neither it nor Canada will infringe any third party's intellectual property rights in performing or using the Work, and that Canada will have no obligation to pay royalties of any kind to anyone in connection with the Work.
2. If anyone makes a claim against Canada or the Contractor concerning intellectual property infringement or royalties related to the Work, that Party agrees to notify the other Party in writing immediately. If anyone brings a claim against Canada, according to [Department of Justice Act](#), R.S. 1985, c. J-2, the Attorney General of Canada must have the regulation and conduct of all litigation for or against Canada, but the Attorney General may request that the Contractor defend Canada against the claim. In either case, the Contractor agrees to participate fully in the defence and any settlement negotiations and to pay all costs, damages and legal costs incurred or payable as a result of the claim, including the amount of any settlement. Both Parties agree not to settle any claim unless the other Party first approves the settlement in writing.
3. The Contractor has no obligation regarding claims that were only made because:
 - a. Canada modified the Work or part of the Work without the Contractor's consent or used the Work or part of the Work without following a requirement of the Contract; or
 - b. Canada used the Work or part of the Work with a product that the Contractor did not supply under the Contract (unless that use is described in the Contract or the manufacturer's specifications); or
 - c. the Contractor used equipment, drawings, specifications or other information supplied to the Contractor by Canada (or by someone authorized by Canada); or
 - d. the Contractor used a specific item of equipment or software that it obtained because of specific instructions from the Contracting Authority; however, this exception only applies if the Contractor has included the following language in its own contract with the supplier of that equipment or software: "[Supplier name] acknowledges that the purchased items will be used by the Government of Canada. If a third party claims that equipment or software supplied under this contract infringes any intellectual property right, [supplier name], if requested to do so by either [Contractor name] or Canada, will defend both [Contractor name] and Canada against that claim at its own expense and will pay all costs, damages and legal fees payable as a result of that infringement." Obtaining this protection from the supplier is the Contractor's responsibility and, if the Contractor does not do so, it will be responsible to Canada for the claim.
4. If anyone claims that, as a result of the Work, the Contractor or Canada is infringing its intellectual property rights, the Contractor must immediately do one of the following:

-
- a. take whatever steps are necessary to allow Canada to continue to use the allegedly infringing part of the Work; or
 - b. modify or replace the Work to avoid intellectual property infringement, while ensuring that the Work continues to meet all the requirements of the Contract; or
 - c. take back the Work and refund any part of the Contract Price that Canada has already paid.

If the Contractor determines that none of these alternatives can reasonably be achieved, or if the Contractor fails to take any of these steps within a reasonable amount of time, Canada may choose either to require the Contractor to do (c), or to take whatever steps are necessary to acquire the rights to use the allegedly infringing part(s) of the Work itself, in which case the Contractor must reimburse Canada for all the costs it incurs to do so.

6.14 Inspection and Acceptance

The Project Authority is the Inspection Authority. All reports, deliverable items, documents, goods and all services rendered under the Contract are subject to inspection by the Inspection Authority or representative. Should any report, document, good or service not be in accordance with the requirements of the Statement of Work and to the satisfaction of the Inspection Authority, as submitted, the Inspection Authority will have the right to reject it or require its correction at the sole expense of the Contractor before recommending payment.

6.15 Delivery and Unloading

SACC Manual clause D0018C (2007-11-30), Delivery and Unloading

ANNEX "A"

REQUIREMENT

1. Background

Algal blooms that release microcystins and other bioactive compounds (cyanotoxins) are considered a problem worldwide in freshwater and marine ecosystems. The diversity of cyanotoxins with different physicochemical properties makes them difficult to quantify. Furthermore, unidentified cyanotoxins and secondary metabolites (e.g. oligopeptides, alkaloids) have been detected in the environment, but the lack of standard deferred quantitative analysis. Yet, these compounds are posing unknown harm to the aquatic environments and can affect public health. The use of liquid chromatography – high resolution mass spectrometer (LC-HRMS) enable both identification and quantification of cyanotoxins, as well as non-targeted analysis of emerging secondary metabolites in research studies of harmful algal blooms (HABs).

2. Mandatory Requirements

2.1 Liquid Chromatography

- a) Four channel solvent, programmable gradient UHPLC system, equipped with a temperature-controlled autosampler, vacuum degasser, column thermostat, needle-wash features, and leak sensors.
- b) Solvent Mixing – up to four solvent lines which can combine and mixes preset, programmable proportions.
- c) The pump must deliver the mobile phase at high pressure between 50 – 1300 bars to overcome the resistance of the stationary phase in the column.
- d) Capable to operate in flow rates of 0.001 – 5 mL/min with precision of 0.15% RSD, solvent composition software settable from 0 –100%, at 1% increments with accuracy $\pm 0.5\%$ and precision of $\pm 0.2\%$. Delay volume < 600 μ L, independent of system backpressure.
- e) Column compartment consists of heater and/or cooler (4 - 80°C) and can maintain more than one column.
- f) Autosampler should have injection precision < 0.5% RSD, and able to inject sample volume down to 0.5 μ L. Sample temperature control range 4 - 40 °C; allows sample compartment to cool down to 4°C when ambient temperature is greater than 20°C.
- g) All tubing, fittings and regulators required for system must be included, and capable to perform in pH range from 1 – 12.
- h) The sample tray can hold minimum of 48 (2.0 mL vial), automatic running 48 samples without human intervention.

2.2 Mass spectrometry

The mass spectrometer instrument is capable for both MS and MS/MS that must meet the following requirements:

- a) A fully integrated system controlled by a single data system and computer software application having full control of all modules.
- b) Minimum mass range is m/z 50 to 3000.
- c) Mass accuracy better than 3 ppm measured at m/z 995.6.

- d) Greater than 20,000 full width at half maximum (FWHM) at m/z 508 after tuning procedure.
- e) 1 µg/L of MC-LR injection produce signal-to-noise value (S/N) of 10 for most intense product ions (995.6, 135.1, 105.1 m/z) while maintaining 20,000 FWHM.
- f) Able to detect at least 0.1 pg of MC-LR injected on LC (use no more than 10uL of injection volume) with S/N of 10 using no more than 3-point smooth. Suggested LC conditions are described in Appendix A. Alternative condition can be used to achieve this detection with full disclosure of the method e.g. solvent composition, gradient, column type.
- g) Able to detect 0.1 µg/mL of MC-LR in sample size of 10 mL water with S/N of 10 using no more than a 3-point smooth. The Proponent is permitted to use alternative technology to achieve this detection limit e.g. online-solid phase extraction, 2D LC, etc. however, technology must be easily exchangeable/removable if needed to change method between runs. LC condition is described in Appendix A. Alternative condition can be used to achieve this detection with full disclosure of the method e.g. solvent composition, gradient, column type.
- h) Must provide all vacuum pumps required for instrument operation
- i) Ionization chamber: electrospray ionization (ESI)
 - i. Must provide an instrument that can be updated to the following ions sources:
 1. Atmospheric pressure chemical ionization (APCI) – used for non-polar compounds
 2. Atmospheric pressure photo ionization (APPI) – used for highly non-polar compoundsA gas chromatography inlet coupled with an atmospheric pressure and/or vacuum ion source.

2.3 Instrument control data system

The Proponent must provide complete installation of a complete and fully functional LC-HRMS system including, but not limited to the LC, Mass Analyzer, autosampler, computer system, and printer. Upon installation, the Proponent must demonstrate that the system operates as required in these specifications and each component of each instrument meets performance specifications.

- a) A computer – 2 TB or more hard disk space, 8 GB or more of RAM, minimum 32 bits OS (64 bit preferred), at least 2.6 GHz speed, an HDMI output, and multiple USB ports (for data transfer, LAN cards, software installation and instrument operation, etc.)
- b) 24" flat-panel display monitor
- c) One color laser printer, optical mouse and keyboard
- d) All appropriate cables, connections, ports, etc. required for operating the LC-HRMS system.

2.4 Instrument software

The data acquisition and data processing software, and systems used to control the LC-HRMS based on Microsoft Windows 7 or higher operating system. Must have instrument interface and control via LAN (TCP/IP protocol) to the data acquisition and data processing software and systems.

Software with license for three or more users for analyzing LC-HRMS data must have both manual and automatic baseline integration of all peaks. Additionally, the software must include a high resolution, accurate MS/MS spectral library for identification of unknown compounds and capabilities for customization.

3. Enhance Features – optional

1. LC autosampler capable of performing sample preparation and LC injection for multiple techniques including automated solid-phase extraction (SPE). Speed of injection of 0.1 – 100 µL with <0.5% RSD, coefficient of linearity >0.99% and carryover < 0.1% into a LC injector capable of injecting 0.2 – 100 µL.
2. The mass spectrometry system can be upgraded to other GC-HRMS applications:
 - i. Oven operation range: 5.0 – 450. 0°C
 - ii. Fast oven of 120 °C/minute temperature ramping.
 - iii. Include a split/splitless inlet
 - iv. Include a temperature and pressure programmable PTV inlet with backflushing capable of large volume injections up to 25 µL.
 - v. Include syringes and syringe holders or the autosampler in order to accommodate up to 25 µL injections; with precision of < 0.5% RSD, linearity of > 0.99% and carryover of < 0.1%;
3. Sample plate can switch between 96 microtiter and 2.0 mL vial plates.
4. Nitrogen generator capable of supplying sufficient amount of nitrogen gas required for LC-HRMS operations.
5. The data acquisition and data processing software systems can export results, mass spectra and chromatograms into Microsoft Office (Excel, PowerPoint, and Word).

4. Service and Parts

4.1 Service

Instrument will be installed and serviced at Canada Centre for Inland Waters, 867 Lakeshore Road, Burlington, ON L7S 1A1, further referred to as the "Site".

The Preferred Proponent must provide service details for after-sale, which includes preventative maintenance, technical support and replacement parts, possible of loan equipment for unforeseen repair delays.

The Preferred Proponent must be able to meet the following mandatory service and parts requirements for the Goods:

- a) Parts must be available and installation/service must be completed by a qualified service technician at the Site.
- b) Free four-hour (during business hours) call back service during the warranty period.
- c) Unlimited number of on-site service visits (during business hours) by a service technician at no cost during the warranty period (minimum of one year).
- d) One free preventative maintenance visit per year during the warranty period.
- e) Maximum five business day on-site response time to ECCC for a minimum of five years from Acceptance.

4.2 Training

The Proponent must provide training for ECCC staff (minimum 3 people) and minimum of 5 days at the Site. Training includes a demonstration of hardware and software, method set-up, calibration, maintenance, and basic troubleshooting.

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File No. - N° du dossier
KIN-8-50082

Buyer ID - Id de l'acheteur
kin510
CCC No./N° CCC - FMS No./N° VME

5.0 Delivery, Installation, Demonstration and On-Site Acceptance Requirements

The system must be delivered to the Site where it will undergo a full acceptance test carried out by the proponent under the supervision of the ECCC Project Authority or designated representative. The installation of system components must be completed within two weeks of delivery date. A demonstration of the complete and fully functional HRMS system must also be completed within two weeks.

The Proponent must validate and document to the satisfaction of ECCC that the Goods met the required performance specification listed below:

Able to detect 0.08 pg MC-LR (m/z 995.6 → 135.1), 0.08 pg MC-LA (m/z = 910.6 → 135.1) and 0.08 pg MC-RR (m/z 520.0 → 135.1) injected on column in positive electrospray, multiple reaction monitoring (MRM) mode with S/N greater than 10, no significant background, and no more than 3-point smooth.

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ANNEX "B"

BASIS OF PAYMENT

1.0 Firm Requirement

The firm lot price must be an **all-inclusive price in Canadian funds**, including Canadian customs and duties, excise taxes, F.O.B. Destination, including all delivery charges to Environment and Climate Change Canada, 867 Lakeshore Road, Burlington, ON L7S 1A1, excluding GST/HST.

Item No.	Description	Qty	Firm Lot Price
1.	For the supply and delivery of a complete and fully functional Liquid Chromatography High Resolution Mass Spectrometer (LC-HRMS) in accordance with the specifications detailed in Annex A, including on-site training, delivery, 12 month warranty, <u>and any other items of service required to complete the system as specified in Annex A.</u> Manufacturer: _____ Make and Model: _____	1	\$ _____

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ANNEX "C" to PART 3 OF THE BID SOLICITATION

ELECTRONIC PAYMENT INSTRUMENTS

As indicated in Part 3, clause 3.1.2, the Bidder must identify which electronic payment instruments they are willing to accept for payment of invoices.

The Bidder accepts any of the following Electronic Payment Instrument(s):

- VISA Acquisition Card;
- MasterCard Acquisition Card;
- Direct Deposit (Domestic and International);
- Electronic Data Interchange (EDI);
- Wire Transfer (International Only);
- Large Value Transfer System (LVTS) (Over \$25M)

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APPENDIX A

SUGGESTED LC CONDITION

ZORBAX C18, 2.1 x 50 mm, 1.8 µm. Injection volume 1µL. LC condition as follows:

Table 1: LC method

Step	Total Time(min)	Flow Rate(µl/min)	Mobile phase A (%)	Mobile phase B (%)
0	0.00	300	90.0	10.0
1	6.00	300	0.0	100.0
2	9.00	300	0.0	100.0
3	11.00	300	90.0	10.0
4	15.00	300	90.0	10.0

Mobile phase A: Water (Optima™, LCMS grade) + 0.1% formic acid

Mobile phase B: Acetonitrile (Optima™, LCMS grade) amended with 40mM formic acid and 2mM ammonium formate

APPENDIX B

STANDARD SOLUTIONS

A standard containing a mixture of microcystins is supplied for qualitative and quantitative evaluation. In the given mixture, a calibration curve of MC-LA, -LR, -WR and -RR is acquired to perform quantitation. The mixture will also include three unidentified oligopeptides for qualitative analysis. Expected concentration of unknown is between 0.1 µg/L – 50 µg/L.

The Proponent must provide data of full scan conduct over a range of 50 – 3000 m/z, extracted ion chromatograms (XICs) and MRM experiment include two transitions monitored for MC-LA, -LR, -WR and -RR. Chromatograms provided with y-axis counts, x-axis in retention time, and analyte on on-column injection mass and specific MRM transitions without any extra processing (i.e. no smoothing or noise reduction).

A suggested LC method is provided in Appendix A. However, the bidder may use an alternative LC method provided the injection volume no greater than 10 µL and provides full disclosure of the LC method (solvent composition, gradient, column type).

Table 2: MRM for quantification of cyanotoxins

Compounds	MS-ESI positive	
	Precursor ions (m/z)	Fragment ions (m/z)
MC-LA	910.5	135.1
		213.2
MC-LR	995.6	135.1
		105.1
MC-WR	1068.6	134.9
		159.1
MC-RR	519.91	135.5
		127