Public Works and Government Services Canada

Travaux publics et Services gouvernementaux Canada

RETURN BIDS TO:
RETOURNER LES SOUMISSIONS À:
PWGSC/TPSGC Acquisitions
1045 Main Street
1st Floor, Lobby C
Unit 108
Moncton, NB E1C 1H1
Bid Fax: (506) 851-6759

SOLICITATION AMENDMENT
MODIFICATION DE L'INVITATION

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

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

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution
NB / PEI Division - Moncton Acquisitions Office
1045 Main Street
1st Floor, Lobby C
Unit 108
Moncton, NB E1C 1H1

Title - Sujet Ion Chromatography System	
Solicitation No. - N° de l'invitation K8B11-160230/A	**Amendment No. - N° modif.** 004
Client Reference No. - N° de référence du client K8B11-160230	**Date** 2015-10-01
GETS Reference No. - N° de référence de SEAG PW-$MCT-011-5054	
File No. - N° de dossier MCT-5-38031 (011)	**CCC No./N° CCC - FMS No./N° VME**
Solicitation Closes - L'invitation prend fin **at - à 02:00 PM** **on - le 2015-10-08**	**Time Zone** **Fuseau horaire** Atlantic Daylight Saving Time ADT
F.O.B. - F.A.B. **Plant-Usine:** ☐ **Destination:** ☑ **Other-Autre:** ☐	
Address Enquiries to: - Adresser toutes questions à: Sharpe, Charlene A.	**Buyer Id - Id de l'acheteur** mct011
Telephone No. - N° de téléphone (506) 851-3467 ( )	**FAX No. - N° de FAX** (506) 851-6759
Destination - of Goods, Services, and Construction: **Destination - des biens, services et construction:** Environment Canada Atlantic Laboratory for Environmental Testing 443 University Avenue Moncton, NB E1A 3E9	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	**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**	

Canada

Title: Ion Chromatography System

Solicitation Amendment No. 004

This solicitation is hereby amended to provide the following questions and answers:

Q2. Would like to contest the following lines in "Part 1 - Essential requirements":
0.1.9 The ion chromatography system must come with an "electrolytic/ electronic" suppression system.
The bidder suggests the following improvement to bullet point 0.1.9:
0.1.9 The ion chromatography system must come with an "electrolytic/ electronic" OR chemical suppression system.

A2. Response from the Client: Agreed

Q3. Would like to contest the following lines in "Part 1 - Essential requirements":
0.2.2 The auto sampler shall have an individual filter for each sample.
The bidder suggests the following improvement to bullet point 0.2.2:
0.2.2 The auto sampler must be able to filter each sample.

A3. Response from the Client: Agreed to re-word.

Q4. Would like to contest the following lines in "Part 1 - Essential requirements":
0.1.14 The ion chromatography system must be equipped with an on-line eluent generator system guaranteeing a reproducible mobile phase.
The bidder suggests the following improvement to bullet point 0.1.14:
0.1.14 The ion chromatography system must be equipped with an automated eluent generator system guaranteeing a reproducible mobile phase.

A4. Response from the Client: Agreed.

Q5. Would like to contest the following lines in "Part 1 - Essential requirements":
0.1.15 The ion chromatography system must offer the ability to do both isocratic and gradient elutions.
The bidder suggested the following improvement to bullet point 0.1.15:
0.1.15 It is preferred that the ion chromatography system offer the ability to perform isocratic elutions, and can be upgraded to perform gradient elutions if necessary.

A5. Response from the Client: Requirement to stay the same. Sentence is to remain the same as originally submitted by the purchaser.

Reason: The ALET must acquire an instrument system that will be able to accommodate current "and future" client's analysis needs in various matrices. Furthermore, as was stated in the "Background" section of our specifications document, the ALET is also part of a network of analytical laboratories that is progressively moving toward a harmonization structure and, as such, must be able to assist and act as back-ups for the other laboratories in time of needs. Therefore, the instrument system must offer the flexibility to accommodate various analytical requests sometimes on short notices.

AND

(1) Reference: **Page 10 of 28, Annex A - Requirement**
DELETE Annex A - Requirement in its entirety; and
INSERT Annex A - Requirement **(Revised October 1, 2015)** attached.

(2) Reference: **Page 20 of 28, Annex C - Table 3, Technical Evaluation Criteria**
DELETE Annex C - Table 3, Technical Evaluation Criteria in its entirety; and
INSERT Annex C - Table 3, Technical Evaluation Criteria **(Revised October 1, 2015)** attached.

If your bid has already been forwarded and you wish to revise same, this revision should be sent in a sealed envelope and mailed to the above address and reach the undersigned before the appropriate closing date. The solicitation number and the closing date are to be shown on the outside of the sealed envelope.

All other terms and conditions of the solicitation document remain unchanged.

All enquiries concerning this amendment are to be forwarded to:

Name: Charlene Sharpe
Telephone No.: (506) 851-3467
Facsimile No: (506) 851-6759

ANNEX A – REQUIREMENT

(Revised October 1, 2015)

Fully automated Ion Chromatography system for the Atlantic Laboratory for Environmental Testing of Environment Canada in Moncton (NB)

Background

The Atlantic Laboratory for Environmental Testing (or ALET) is an Environment Canada accredited laboratory (ISO 17025) and is currently part of the Water Science and Technology Division of the Science and Technology Branch. ALET is also one of a group of five Environment Canada laboratories located in different regions across Canada. ALET is currently located at 443 University Avenue in Moncton (NB).

Under the current strategic orientation/ mandate, and in collaboration with the other Environment Canada laboratories within our Division, ALET's main purpose is to provide analytical support (Chemistry and Toxicology) to various scientific programs: mainly from across Canada. In recent past, the network of laboratories within our Division has also gradually moved toward a more harmonized structure of its operations, procedures and analytical methods offerings. The instrument hereby required falls into this harmonized plan supporting, amongst other programs, the analysis of water quality monitoring indicators across our Division. Thus, there is a requirement for all of the laboratories using ion chromatography to have similar technologies and offer similar detection limits. This allows the laboratories to be more efficient operationally by providing a mechanism through which the workload can be better distributed amongst the laboratories, when and where required and, also, during prolonged instruments maintenance and/or out of service repairs: since laboratories can act as back-ups for one another.

The ALET provides analytical support to: the Canadian Water Quality Monitoring Program, the Canadian Aquatic Biomonitoring Network (CABIN), the Long-Range Transboundary Air Pollution (LRTAP) Program and other programs such as the Atlantic Coastal Action Program (or ACAP) or other partnerships/ research projects entered into with other governmental organizations, non-governmental organizations, community groups or international agreements with other countries.

Currently, the ALET requires a replacement system offering the **same and/or better** capabilities of automated analysis, separation and detection to maintain the existing and expanding requirements for monitoring programs and harmonization needs. For these reasons, the laboratory is seeking an instrument that **meets or exceeds** existing instrument's specifications as enumerated in the following document.

Request Statement

Hence, this request for proposal is for the submission of tenders for a fully automated ion chromatography instrument system for the **simultaneous** determination (i.e. analysis, separation and detection) of major ions in various water matrices (i.e. surface waters, wastewaters and salt water samples) that are sent to our environmental analytical laboratory for research and monitoring testing. Namely, the system will allow measurements of the following contaminants: chloride, sulfate, bromide and nitrate (NO_3-N) & calcium, sodium, magnesium and potassium.

Instructions for Manufacturer/ Supplier (Bidder)

The bidder **must** answer **all** system requirements listed in this document.

The bidder **must not** simply answer by "Yes", "No" or, "meet requirement" to indicate that they meet any of the enumerated requirements.

The bidder must substantiate their answers with supporting documentation (i.e. manuals, brochures, application notes and the likes). To facilitate this process, the purchaser is supplying a Table (in Word document) that the bidder **must use** when submitting their proposal. **An example as to how this Table (Table 3: Technical evaluation table to be used by the bidder(s)) is to be used is provided with this document in the Appendix**. The bidder is to fill a "**separate table**" for each separate instrument model they wish to submit as part of this request for proposal should more than one instrument model meet the purchaser's requirements.

Failure to comply with this request will result in an automatic dismissal of the proposal.

It is the responsibility of the bidder to provide all pertinent and additional documentation that would clearly demonstrate that their instrument can meet (or exceed) the requirements listed in this request for proposal.

IMPORTANT NOTE*: Proposals can only be evaluated based on the information provided at the time of proposal submission. For instance, we are not permitted to access and/ or review any additional information other than that provided by the bidder at the time of proposal submission to evaluate proposals: i.e. access to the internet, verifying references, etc. It is therefore to the bidder best interest to provide the purchaser with all the* ***relevant*** *information required so they can make an informed decision with respect to the system that best meet their requirements.*

Furthermore, once the instrument has been received and installed, the bidder will have the responsibility to demonstrate through the analysis of real standards, reference materials and environmental samples that their instrument meets the purchaser specifications and performance criteria. Failure to demonstrate system performance on real samples (and not only artificially prepared samples) ***may*** *result in the system being returned to the bidder at their expense.*

Intellectual Property

It is understood that all software (service packs, upgrades, etc.) provided with the instrument by the bidder is the sole property of the bidder but, that any and all data generated by the purchaser using this software remains the sole property of the purchaser: in this case, Her Majesty the Queen in Right of Canada, represented by the Minister of Public Works and Government Services Canada, (i.e. The Government of Canada)

Proposal

The following request for proposal is divided into three (3) parts with respect to the system requirements:

Part 1 - Essential (or mandatory) requirements
Part 2 - Additional system requirements
Part 3 – Overall contract requirements

Note: **The essential requirements are all mandatory and will be identified within this document with the word "must"**. Any proposals not meeting all the essential (or mandatory) requirements will not be considered further.

Proposal(s) Evaluation

The responsive bidder who best meets the enumerated requirements in this request for proposal will be recommended for the procurement contract. This award will be evaluated on the basis of the answers provided by the bidder **using the Word document Table provided (Table 3: Technical evaluation table to be used by the bidder(s)),** including accompanying relevant supporting documentation with respect to the purchaser's requirements, demonstrating that the proposed system(s) **meets or exceeds** listed requirements in this request for proposal.

It is understood that, by submitting their proposal(s), bidder accepts and will respect all conditions set forth in this request for proposal should their proposal result in a successful award of contract. On the award of this contract, the bidder will ship the instrument to the following location:

Atlantic Laboratory for Environmental Testing
Environmental Science Center
443 University Avenue
Moncton, NB E1A 3E9
Attention: Martin Leger

Part 1 – Essential Requirements

1.1. Ion chromatography system

1.1.1. The ion chromatography system **must** be able to **simultaneously** separate and analyze the following major ions (anions and cations) in various water matrices (i.e. surface waters, wastewaters and salt water samples) without requiring from the operator major modifications to the system components configurations that would lead to undesired downtime: bromide, chloride, nitrate (NO_3-N) and sulfate & calcium, magnesium, sodium and potassium

1.1.2. All components that will come into contact with the sample and the eluent **must** be inert and metal-free

1.1.3. The column compartment **must** be equipped with a column heater and be thermally stable: offering consistency, reproducibility and stability

1.1.4. The column compartment **must** offer protection from potential external interferences

1.1.5. The ion chromatography system **must** come with an **anion** exchange separator column appropriate for the parameters to be separated and analyzed: see "Performance Criteria" section (section 1.4) below

1.1.6. The ion chromatography system **must** come with a **cation** exchange separator column appropriate for the parameters to be separated and analyzed: see "Performance Criteria" section (section 1.4) below

1.1.7. An appropriate "**anion** guard" column to protect the separator column from fouling by particulates or organics **must** come with the ion chromatography system; guard column **must** be easily replaceable and **must** offer protection to the analytical column and extend its useful life

1.1.8. An appropriate "**cation** guard" column to protect the separator column from fouling by particulates or organics **must** come with the ion chromatography system; guard column

must be easily replaceable and **must** offer protection to the analytical column and extend its useful life

1.1.9. The ion chromatography system **must** come with an “electrolytic/ electronic or chemical” suppression system

1.1.10. The pump(s) of the ion chromatography system **must** be of a dual-piston design

1.1.11. The pump(s) of the ion chromatography system **must** be pulse free (minimum residual pulsation)

1.1.12. The pump(s) **must** offer high accuracy, precision and flow stability

1.1.13. The pump(s) **must** also provide the ability to support different column formats

1.1.14. The ion chromatography system **must** be equipped with an automated eluent generator system guaranteeing a reproducible mobile phase

1.1.15. The ion chromatography system **must** offer the ability to do both isocratic and gradient elutions

1.2. Auto sampler

1.2.1. The ion chromatography system **must** come with an auto sampler module fully compatible and controllable via the main system software

1.2.2. The auto sampler **must** be able to filter each sample and ensure there is no cross contamination in-between sample processing. In those cases where all samples goes through the same filtration device, the instrument **must** be equipped with some type of rinsing (or cleaning) system in between sample filtration to prevent cross-contamination and, the software, be equipped with some type of quality control functions (or protocol) recognizing that the filtration system is clean or has been flushed adequately before proceeding to the filtration of the next sample. Otherwise, it would stop the run or automatically change the filter. This is essential to meet client’s requirements and maintain efficiencies.

1.3. Detector

1.3.1. The ion chromatography system **must** come with a conductivity detector

1.3.2. The conductivity detector **must** cover the range suitable to achieve the method detection limits listed below (or better) in the performance criteria section (section 1.4) of this document for the stated parameters

1.3.3. The conductivity detector **must** be thermally stable (unaffected by temperature variations)

1.3.4. The conductivity detector **must** provide low-noise and a stable baseline

1.3.5. The conductivity detector **must** be responsive and offer accurate and precise conductivity measurements throughout the analysis for the stated parameters listed in the performance criteria section (section 1.4) of this document

1.3.6. The conductivity detector **must** offer a wide dynamic range for detecting analytes with large concentration variations within the same sample

1.4. Performance Criteria

1.4.1. The ion chromatography system **must** be able to cover the following concentration ranges and, achieve the method detection limits for the parameters listed below in table 1 and table 2, under real analysis conditions and with real environmental samples:

Table 1: CONCENTRATION RANGE AND METHOD DETECTION LIMITS FOR ANIONS: BROMIDE, CHLORIDE, NITRATE (NO_3-N) AND SULFATE

PARAMETER	RANGE	METHOD DETECTION LIMIT
	mg/L	*mg/L*
Bromide	0.03 - 4	0.03
Chloride	0.1 to 20	0.1
Nitrate (NO_3-N)	0.01 to 1.6	0.01
Sulfate	0.1 to 20	0.1

Table 2: CONCENTRATION RANGE AND METHOD DETECTION LIMITS FOR CATIONS: CALCIUM, MAGNESIUM, SODIUM AND POTASSIUM

PARAMETER	RANGE	METHOD DETECTION LIMIT
	mg/L	*mg/L*
Calcium	0.01 – 2.0	0.01
Magnesium	0.01 – 1.0	0.01
Sodium	0.01 – 2.0	0.01
Potassium	0.01 – 1.0	0.01

1.4.2. The ion chromatography system **must** be able to meet criteria for well-known standard methods **such as**:

1.4.2.1. Standard Methods 4110 B. Ion Chromatography with Chemical Suppression of Eluent Conductivity

1.4.2.2. US EPA Method 300.0 Determination of Inorganic Anions By Ion Chromatography

1.4.2.3. ASTM Standards Method D4327-97 Standard Test Method for Anions in Water by Chemically Suppressed Ion Chromatography

1.4.2.4. ASTM Standards Method D6919-09 Standard Test Method for Determination of Dissolved Alkali and Alkaline Earth Cations and Ammonium in Water and Wastewater by Ion Chromatography

1.5. Software

1.5.1. The bidder **must** offer software packages to control, monitor, record and process all procedural variables and acquisition data from the ion chromatography system

1.5.2. This software **must** be of the most recent English version and be provided with the system (at no extra cost) and meet the following requirements:

1.5.2.1. The software **must** operate and be supported using the Windows 7 Pro version or higher

1.5.2.2. The software **must** allow for multitasking using other windows programs on one computer

1.5.2.3. The software **must** save a copy of the method and instrument parameters in distinct file naming folders for audit trail purposes

1.5.2.4. The software **must** allow data transfer via an electronic spreadsheet such as Excel

1.5.2.5. The ion chromatography system **must** come with **two** (2) additional licenses of the software to allow for remote (offline) data analysis/ manipulation

1.6. Computer

1.6.1. The bidder **must** provide the instrument with a compatible computer system package that will have the following components:

1.6.1.1. HP_Z230 Workstation Tower **or equivalent**, i5-4570 3.2GHz, 8GB RAM, 500GB HDD, HD 4600, Win 7 Pro (or higher), 4GB RAM Memory - DIMM 240-pin - DDR3 - 1600 MHz / PC3-12800 - unbuffered - non-ECC, 1TB Hard Drive SATA-600 - 7200 rpm, SATA 16x DVD±RW (±R DL) / DVD-RAM -Serial ATAinternal-5.25" Black, Non NMSO STARTECH_2 Port Low Profile Native RS232 PCI, Express Serial Card with 16550 UART, Non NMSO Intel I210-T1 - Network adapter - PCI Express 2.1 x1 low profile - Gigabit Ethernet x 1, NMICRO Image Installation, Three Year On-Site Warranty

1.6.1.2. Minimum of 20” VA+LED, Black 1920x1080 5000:1 250cd/m^2 4ms D-sub/DVI/DP Speakers, USB Hub, Pivot, Swivel, Tilt, Height

1.7. Accessories/Consumables

1.7.1. The bidder **must** provide a starter/consumables kit/ spare parts with the instrument. This kit will include but will not necessarily be limited to the following parts:

1.7.1.1. Proper tools (tools box) to perform regular replacements of consumables and regular user maintenance

1.7.1.2. One (1) spare new analytical separator column for **anion** separation and analysis (part no. to be specified by the purchaser at the time of award of contract)

1.7.1.3. One (1) spare new analytical separator column for **cation** separation and analysis (part no. to be specified by the purchaser at the time of award of contract)

1.7.1.4. One (1) spare new **anion** guard column (part no. to be specified by the purchaser at the time of award of contract)

1.7.1.5. One (1) spare new **cation** guard column (part no. to be specified by the purchaser at the time of award of contract)

1.7.2. Or, a kit that would comprise all of the above

1.8. Training

1.8.1. Following the installation, the bidder **must** provide a three (3) days **basic** training on the use of the instrument and software/controller that runs the system at the purchaser location. This training will include but will not be limited to, an overview of hardware components, software/controller functions and a session on hardware and preventive maintenance. This will include an electronic user guide in English

1.8.2. Within the first year following the acquisition, the bidder **must** provide three (3) days **advanced** training on the use of the instrument and software/controller that runs the system at the purchaser location. This training will be a complement to the three (3) days basic training given earlier following installation. The date of the training will be determined by both parties and subject to the company's application specialist (trainer) availability/ schedule

Part 2 - Additional System Requirements (Options)

2.1 Part 2 will **not** be used as part of the overall evaluation of the bid. The additional information provided by the bidder on these options will only be used by the purchaser in evaluating whether or not any of these options are worth purchasing should any additional funding is available at the time of acquisition.

2.1.1 The bidder **must** provide a **separate** options list with associated costs, in Canadian dollars, for instrument options and consumable parts available for their proposed instrument. This will also include cost for any additional software required for these options (if applicable), and upgrades (where necessary)

2.1.2 The bidder **must** provide the purchaser with the cost of an extended warranty, in Canadian dollars, for their system including the details of this extended warranty contract

Part 3- Overall Contract Requirements

3.1 System Requirements

3.1.1 System **must** be delivered **before March 31 2016**

3.1.2 System **must** include a list of all necessary components for a fully automated ion chromatography system for unattended operation

3.1.3 The ion chromatography system **must** be equipped to operate on 100–120 VAC, 50/60 Hz

3.1.4 The entire system **must** meet the Canadian Standards Association electrical requirements (for laboratory use)

3.1.5 The equipment shall be capable of operating between 20 °C and 30 °C, and at a relative humidity between 20% and 70%, non-condensing

3.2 The Bidder Requirements/Obligations

3.2.1 Upon the granting of the contract award and prior to delivery of the instrument, the bidder **must** provide the purchaser with a pre-installation manual and checklist

3.2.2 The bidder that will be awarded the sales contract **must** install said instrument and demonstrate instrumentation performance and the ability of the system to meet the purchaser's performance specifications within the purchaser's laboratory spaces

3.2.3 System **must** be supplied with a **minimum** of one (1) year service warranty including **parts, labor and travel** effective from the date of installation and will include one (1) preventive maintenance (PM) visit, **at no additional charge**, to our laboratory

3.2.4 During the warranty period, the response time for service calls and the time for restoring the equipment to serviceable condition **must** not exceed ten (10) business days

3.2.5 The supplier **must** guarantee a response by telephone or by email within 24 hours following a service call

3.2.6 The supplier **must** have qualified technical personnel to perform on-site service

3.2.7 Service **must** be provided during business hours (9 a.m. to 5 p.m.), Monday to Friday, except statutory holidays

3.2.8 The supplier **must** supply normal replacement parts within a maximum period of ten (10) business days, effective from the date the said parts are ordered

3.2.9 Qualified Applications Specialists **must** be available for method development, customized on-site or on-line applications support

3.2.10 All quotations **must** be in **Canadian dollars**

Table 3 below provides the bidder with an example as to how to use and fill the "Technical evaluation table to be used by the bidder(s)" in answering the Purchaser requirements as listed that Table (provided)

Important Note: The bidder is to fill a "**separate"** table for each separate instrument model they wish to submit as part of this request for proposal should more than one instrument model meet the purchaser's requirements.

Table 3: Example

1. Ion Chromatography System		Comply Yes/No	Substantiation
1.1	Purchaser requirements listed in this column		Bidder is to list, in this column, the actual name(s), title(s) or code(s) of their documentation with associated page(s), bullet point(s) and/ or section(s), within their documentation containing the information, that shows/ confirms that the proposed system meets the purchaser's corresponding requirement. Example: Brochure #3: Determination of chloride by ion chromatography; page 5; bullet 3.2 Hardware manual for model x ion chromatography system; manual identification number x; page x; 2nd paragraph Application Note title and/ or identification number x: page x; Table x; diagram x.

ANNEX C – TABLE 3, TECHNICAL EVALUATION CRITERIA
(Revised October 1, 2015)

Table 3: Technical evaluation table to be used by the bidder(s)

Part 1 – Essential Requirements			
1.1. Ion Chromatography System		**Comply Yes/No**	**Substantiation**
1.1.1	The ion chromatography system **must** be able to **simultaneously** separate and analyze the following major ions (anions and cations) in various water matrices (i.e. surface waters, wastewaters and salt water samples) without requiring from the operator major modifications to the system components configurations that would lead to undesired downtime: bromide, chloride, nitrate (NO_3-N) and sulfate & calcium, magnesium, sodium and potassium		
1.1.2	All components that will come into contact with the sample and the eluent **must** be inert and metal-free		
1.1.3	The column compartment **must** be equipped with a column heater and be thermally stable: offering consistency, reproducibility and stability		
1.1.4	The column compartment **must** offer protection from potential external interferences		
1.1.5	The ion chromatography system **must** come with an **anion** exchange separator column appropriate for the parameters to be separated and analyzed: see “Performance Criteria” section (section 1.4) below		
1.1.6	The ion chromatography system **must** come with a **cation** exchange separator column appropriate for the parameters to be separated and analyzed: see “Performance Criteria” section (section 1.4) below		
1.1.7	An appropriate “**anion** guard” column to protect the separator column from fouling by particulates or organics **must** come with the ion chromatography system; guard column **must** be easily replaceable and **must** offer protection to the analytical column and extend its useful life		

1.1.8	An appropriate "**cation** guard" column to protect the separator column from fouling by particulates or organics **must** come with the ion chromatography system; guard column **must** be easily replaceable and **must** offer protection to the analytical column and extend its useful life		
1.1.9	The ion chromatography system **must** come with an "electrolytic/ electronic or chemical" suppression system		
1.1.10	The pump(s) of the ion chromatography system **must** be of a dual-piston design		
1.1.11	The pump(s) of the ion chromatography system **must** be pulse free (minimum residual pulsation)		
1.1.12	The pump(s) **must** offer high accuracy, precision and flow stability		
1.1.13	The pump(s) **must** also provide the ability to support different column formats		
1.1.14	The ion chromatography system **must** be equipped with an automated eluent generator system guaranteeing a reproducible mobile phase		
1.1.15	The ion chromatography system **must** offer the ability to do both isocratic and gradient elutions		
1.2. Auto sampler		**Comply Yes/No**	**Substantiation**
1.2.1	The ion chromatography system **must** come with an auto sampler module fully compatible and controllable via the main system software		

1.2.2	The auto sampler **must** be able to filter each sample and ensure there is no cross contamination in-between sample processing. In those cases where all samples goes through the same filtration device, the instrument **must** be equipped with some type of rinsing (or cleaning) system in between sample filtration to prevent cross-contamination and, the software, be equipped with some type of quality control functions (or protocol) recognizing that the filtration system is clean or has been flushed adequately before proceeding to the filtration of the next sample. Otherwise, it would stop the run or automatically change the filter. This is essential to meet client's requirements and maintain efficiencies.		
1.3. Detector		**Comply Yes/No**	**Substantiation**
1.3.1	The ion chromatography system **must** come with a conductivity detector		
1.3.2	The conductivity detector **must** cover the range suitable to achieve the method detection limits listed below (or better) in the performance criteria section (section 1.4) of this document for the stated parameters		
1.3.3	The conductivity detector **must** be thermally stable (unaffected by temperature variations)		
1.3.4	The conductivity detector **must** provide low-noise and a stable baseline		
1.3.5	The conductivity detector **must** be responsive and offer accurate and precise conductivity measurements throughout the analysis for the stated parameters listed in the performance criteria section (section 1.4) of this document		
1.3.6	The conductivity detector **must** offer a wide dynamic range for detecting analytes with large concentration variations within the same sample		

1.4. Performance Criteria		Comply Yes/No	Substantiation
1.4.1	The ion chromatography system **must** be able to cover the following concentration ranges and, achieve the method detection limits for the parameters listed below in table 1 and table 2, under real analysis conditions and with real environmental samples: ****Refer to Table 1 and Table 2 below****		****Use Table 1 and Table 2 below****
1.4.2	The ion chromatography system **must** be able to meet criteria for well-known standard methods **such as**:		
1.4.2.1	Standard Methods 4110 B. Ion Chromatography with Chemical Suppression of Eluent Conductivity		
1.4.2.2	US EPA Method 300.0 Determination of Inorganic Anions By Ion Chromatography		
1.4.2.3	ASTM Standards Method D4327-97 Standard Test Method for Anions in Water by Chemically Suppressed Ion Chromatography		
1.4.2.4	ASTM Standards Method D6919-09 Standard Test Method for Determination of Dissolved Alkali and Alkaline Earth Cations and Ammonium in Water and Wastewater by Ion Chromatography		
1.5. Software		**Comply Yes/No**	**Substantiation**
1.5.1	The bidder **must** offer software packages to control, monitor, record and process all procedural variables and acquisition data from the ion chromatography system		
1.5.2	This software **must** be of the most recent English version and be provided with the system (at no extra cost) and meet the following requirements:		
1.5.2.1	The software **must** operate and be supported using the Windows 7 Pro version or higher		
1.5.2.2	The software **must** allow for multitasking using other windows programs on one computer		
1.5.2.3	The software **must** save a copy of the method and instrument parameters in distinct file naming folders for audit trail purposes		
1.5.2.4	The software **must** allow data transfer via an electronic spreadsheet such as Excel		

1.5.2.5	The ion chromatography system **must** come with **two** (2) additional licenses of the software to allow for remote (offline) data analysis/ manipulation		
1.6. Computer		**Comply Yes/No**	**Substantiation**
1.6.1	The bidder **must** provide the instrument with a compatible computer system package that will have the following components:		
1.6.1.1	HP_Z230 Workstation Tower **or equivalent**, i5-4570 3.2GHz, 8GB RAM, 500GB HDD, HD 4600, Win 7 Pro (or higher), 4GB RAM Memory - DIMM 240-pin - DDR3 - 1600 MHz / PC3-12800 - unbuffered - non-ECC, 1TB Hard Drive SATA-600 - 7200 rpm, SATA 16x DVD±RW (±R DL) / DVD-RAM -Serial ATAinternal-5.25" Black, Non NMSO STARTECH_2 Port Low Profile Native RS232 PCI, Express Serial Card with 16550 UART, Non NMSO Intel I210-T1 - Network adapter - PCI Express 2.1 x1 low profile - Gigabit Ethernet x 1, NMICRO Image Installation, Three Year On-Site Warranty		
1.6.1.2	Minimum of 20” VA+LED, Black 1920x1080 5000:1 250cd/m^2 4ms D-sub/DVI/DP Speakers, USB Hub, Pivot, Swivel, Tilt, Height		
1.7. Accessories / Consumables		**Comply Yes/No**	**Substantiation**
1.7.1	The bidder **must** provide a starter/consumables kit/ spare parts with the instrument. This kit will include but will not necessarily be limited to the following parts:		
1.7.1.1	Proper tools (tools box) to perform regular replacements of consumables and regular user maintenance		
1.7.1.2	One (1) spare new analytical separator column for **anion** separation and analysis (part no. to be specified by the purchaser at the time of award of contract)		
1.7.1.3	One (1) spare new analytical separator column for **cation** separation and analysis (part no. to be specified by the purchaser at the time of award of contract)		
1.7.1.4	One (1) spare new **anion** guard column (part no. to be specified by the purchaser at the time of award of contract)		

1.7.1.5	One (1) spare new **cation** guard column (part no. to be specified by the purchaser at the time of award of contract)		
1.7.2	Or, a kit that would comprise all of the above		
1.8. Training		**Comply Yes/No**	**Substantiation**
1.8.1	Following the installation, the bidder **must** provide a three (3) days **basic** training on the use of the instrument and software/controller that runs the system at the purchaser location. This training will include but will not be limited to, an overview of hardware components, software/controller functions and a session on hardware and preventive maintenance. This will include an electronic user guide in English		
1.8.2	Within the first year following the acquisition, the bidder **must** provide three (3) days **advanced** training on the use of the instrument and software/controller that runs the system at the purchaser location. This training will be a complement to the three (3) days basic training given earlier following installation. The date of the training will be determined by both parties and subject to the company's application specialist (trainer) availability/ schedule		
Part 2 – Additional System Requirements (Options)			
		Comply Yes/No	**Substantiation**
2.1	Part 2 will **not** be used as part of the overall evaluation of the bid. The additional information provided by the bidder on these options will only be used by the purchaser in evaluating whether or not any of these options are worth purchasing should any additional funding is available at the time of acquisition.		
2.1.1	The bidder **must** provide a **separate** options list with associated costs, in Canadian dollars, for instrument options and consumable parts available for their proposed instrument. This will also include cost for any additional software required for these options (if applicable), and upgrades (where necessary)		

2.1.2	The bidder **must** provide the purchaser with the cost of an extended warranty, in Canadian dollars, for their system including the details of this extended warranty contract		
Part 3 – Overall Contract Requirements			
3.1 System Requirements		**Comply Yes/No**	**Substantiation**
3.1.1	System **must** be delivered **before March 31 2016**		
3.1.2	System **must** include a list of all necessary components for a fully automated ion chromatography system for unattended operation		
3.1.3	The ion chromatography system **must** be equipped to operate on 100–120 VAC, 50/60 Hz		
3.1.4	The entire system **must** meet the Canadian Standards Association electrical requirements (for laboratory use)		
3.1.5	The equipment shall be capable of operating between 20 °C and 30 °C, and at a relative humidity between 20% and 70%, non-condensing		
3.2 The Bidder Requirements/Obligations		**Comply Yes/No**	**Substantiation**
3.2.1	Upon the granting of the contract award and prior to delivery of the instrument, the bidder **must** provide the purchaser with a pre-installation manual and checklist		
3.2.2	The bidder that will be awarded the sales contract **must** install said instrument and demonstrate instrumentation performance and the ability of the system to meet the purchaser's performance specifications within the purchaser's laboratory spaces		
3.2.3	System **must** be supplied with a **minimum** of one (1) year service warranty including **parts, labor and travel** effective from the date of installation and will include one (1) preventive maintenance (PM) visit, **at no additional charge**, to our laboratory		
3.2.4	During the warranty period, the response time for service calls and the time for restoring the equipment to serviceable condition **must** not exceed ten (10) business days		

3.2.5	The supplier **must** guarantee a response by telephone or by email within 24 hours following a service call		
3.2.6	The supplier **must** have qualified technical personnel to perform on-site service		
3.2.7	Service **must** be provided during business hours (9 a.m. to 5 p.m.), Monday to Friday, except statutory holidays		
3.2.8	The supplier **must** supply normal replacement parts within a maximum period of ten (10) business days, effective from the date the said parts are ordered		
3.2.9	Qualified Applications Specialists **must** be available for method development, customized on-site or on-line applications support		
3.2.10	All quotations **must** be in **Canadian dollars**		

Table 1: CONCENTRATION RANGE AND METHOD DETECTION LIMITS FOR ANIONS: BROMIDE, CHLORIDE, NITRATE (NO3-N) AND SULFATE

PARAMETER	RANGE	METHOD DETECTION LIMIT	Comply Yes/No	Substantiation
	mg/L	mg/L		
Bromide	0.03 - 4	0.03		
Chloride	0.1 – 2.0	0.1		
Nitrate (NO_3-N)	0.01 – 1.6	0.01		
Sulfate	0.1 - 20	0.1		

Table 2: CONCENTRATION RANGE AND METHOD DETECTION LIMITS FOR CATIONS: CALCIUM, MAGNESIUM, SODIUM AND POTASSIUM

PARAMETER	RANGE	METHOD DETECTION LIMIT	Comply Yes/No	Substantiation
	mg/L	mg/L		
Calcium	0.01 – 2.0	0.01		
Magnesium	0.01 – 1.0	0.01		
Sodium	0.01 – 2.0	0.01		
Potassium	0.01 – 1.0	0.01		