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Public Works and Government Services Canada
ATB Place North Tower
10025 Jasper Ave./10025 ave. Jaspe
5th floor/5e étage
Edmonton
Alberta
T5J 1S6
Bid Fax: (780) 497-3510

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

Public Works and Government Services Canada
ATB Place North Tower
10025 Jasper Ave./10025 ave Jasper
5th floor/5e étage
Edmonton
Alberta
T5J 1S6

Title - Sujet ICP Mass Spectrometer	
Solicitation No. - N° de l'invitation 23137-160566/A	**Amendment No. - N° modif.** 001
Client Reference No. - N° de référence du client 23137-160566	**Date** 2016-01-25
GETS Reference No. - N° de référence de SEAG PW-$EDM-607-10653	
File No. - N° de dossier EDM-5-38207 (607)	**CCC No./N° CCC - FMS No./N° VME**
Solicitation Closes - L'invitation prend fin **at - à 02:00 PM** **on - le 2016-02-29**	**Time Zone** **Fuseau horaire** Mountain Standard Time MST
F.O.B. - F.A.B. **Plant-Usine:** ☐ **Destination:** ☐ **Other-Autre:** ☐	
Address Enquiries to: - Adresser toutes questions à: Jenkinson, Lorraine	**Buyer Id - Id de l'acheteur** edm607
Telephone No. - N° de téléphone (780) 497-3593 ( )	**FAX No. - N° de FAX** (780) 497-3510
Destination - of Goods, Services, and Construction: **Destination - des biens, services et construction:**	

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

Solicitation No. - N° de l'invitation	Amd. No. - N° de la modif.	Buyer ID - Id de l'acheteur
23137-160566/A		edm607
Client Ref. No. - N° de réf. du client	File No. - N° du dossier	CCC No./N° CCC - FMS No./N° VME
23137-160566	EDM-5-38207	

TITLE: Inductively Coupled Plasma Mass Spectrometer (ICP MS) system

This solicitation amendment is to extend the solicitation closing date and provide clarifications to the Request for Proposal (RFP).

1. The solicitation closing date has been extended:

   FROM: 02:00 PM MST on 2016-01-28

   TO: **02:00 PM MST on 2016-02-29**

Q1-1. We would like to express our disappointment in the specifications outlined in this solicitation. They are clearly designed for only one vendor to win […]. The majority of the specification required are instrumentation based and not performance based. So while our [model] will easily meet the performance specifications outlined in the bid, the instrument specifications are specific to only one vendor [.]. As you are aware, manufacturers engineer their products differently to meet the same end goal so no two manufacturers will share all of the same instrumentation design features.

There are currently at least 4 major manufacturers of ICP MS that could meet the performance specifications outlined in the bid but only one can bid due to the instrument specific design features required.

A1-1. The Requirement – Annex “A” has been revised.

DELETE: ANNEX “A” – REQUIREMENT in its entirety.
INSERT: ANNEX “A” – REQUIREMENT (Revised 2016-01-25), herein.

ANNEX "A" – REQUIREMENT

(Revised 2016-01-25)

BACKGROUND

The Northern Forestry Centre Analytical Services Laboratory (NoFC ASL) has a requirement for the supply, delivery and installation of one (1) new Inductively Coupled Plasma Mass Spectrometer (ICP MS) system including components and accessories.

The ICP MS will be used primarily for the detection of low level elements in soils for the purpose of supporting research in forest soils and analytical requirements at the Northern Forestry Centre.

The NoFC ASL currently uses an ICP OES system to analyze soil extracts. Therefore it is essential that the ICP MS system be capable of directly analyzing these same extracts using the standard sample introduction system without requiring any manual or automated liquid/liquid sample dilution (up to 10 % TDS).

REQUIREMENTS:

The Contract must supply one (1): Inductively Coupled Plasma Mass Spectrometer (ICP MS) System.

MANDATORY TECHNICAL CRITERIA:

The Bidder's proposed equipment must meet the Mandatory Specifications detailed below. Bids must be supported by proper documentation to support each mandatory criteria. Bids not meeting all of the mandatory technical criteria will be given no further consideration.

The Bidder must submit supporting technical documents with their bid, such as: technical specifications, literature, brochures or other similar supporting documentation, which clearly demonstrates that the Bidder's proposed equipment meets each of the Mandatory specifications listed below. This information will be used to verify compliance with all Mandatory Specifications.

If any of the mandatory specifications are not identified in the Bidder's existing technical documents, the Bidder must address separately, in their bid, how it meets that particular equipment specification.

Mandatory Specifications				
Item No.	**Description**	**Met**	**Not Met**	**Reference Page**
	FACILITIES			
M1	The ICP MS system must be able to operate under the following conditions: 200-240Vac, 50/60Hz.			
M2	The system must meet the CAN/CSA C22.2 NO. 61010-1 Electrical Equipment for Measurement, Control and Laboratory Use.			
M3	The system must be a compact bench-top design.			

	SAMPLE INTRODUCTION			
M4	The system must have an integrated, *minimum of* 3-channel, computer controlled peristaltic pump for pumping of sample, internal standard and spray chamber drain *or equivalent.* The quartz spray chamber must be thermoelectrically controlled and must be fitted with a concentric nebulizer.			
M5	The instrument must be capable of analyzing samples containing up to 10% dissolved solids using the standard sample introduction system and *requiring little to no dilutions, whether manual or automated.*			
M6	The sample introduction system must be automatically tuned via the integrated software.			
M7	The system must have an integrated flow injection system that is fully controlled via the ICP MS software for fast analysis. This includes switching between tune solution and Internal Standard solution automatically *so no user intervention is required.*			
	VACUUM AND COOLING SYSTEM			
M8	The vacuum system of the instrument must consist of single floor mounted rotary pump, which can be located remotely, and single 2-stage turbo-molecular pump.			
M9	The ICP-MS chiller supplied must be robust (able to operate continuously for long periods of time without maintenance), easy to maintain.			
M10	System must include a noise dampening cover for the foreline (rough) pump.			
	GAS FLOW CONTROLLERS			
M11	Independently computer controlled mass flow controllers must control plasma, auxiliary, make-up and carrier gas.			
M12	One collision/reaction cell gas line must be included as standard.			
M13	The system must be upgradable to three cell gas lines in total, of which one of the additional should be Hydrogen, to cover all possible applications.			
M14	The system must include Cell Gas Regulators, Clean Connection Tubing and Gas Filter Kits.			
	PLASMA AND ION OPTICS			
M15	*Torch: The system must include a quartz torch with an injector diameter of 2.5 mm.*			
M16	Torch xyz position: a) The torch position must be fully computer controlled and fully auto-tunable via the software in all three axes (horizontal and vertical position and sampling depth). The movement in each axis must be independent of other two.			

	b) Torch position and reproducibility must be 0.1mm in all three axes. Computer readout of torch position is required for method and data audit purposes.			
M17	RF generator: For tolerance of changes in sample matrix, *a) The system must include a 27 or 40 MHz solid state RF generator with impedance matching to the plasma.* b) The RF generator must be able to tolerate change from volatile organic solvents to aqueous samples without affecting plasma stability, even if highly volatile organic solvents are introduced.			
M18	Interface: The instrument must be capable of delivering the sensitivity and background performance detailed in the specifications listed below **(section M34)** while having the capability to analyze complex, high matrix samples (up to 10% TDS) using the same sample introduction configuration.			
M19	a) Ion optics: The instrument must be equipped with an off-axis lens to eliminate the effect of photons and neutrals on signal background. *b) (Deleted)* c) The main ion-lens assembly must only allow ions to enter collision/reaction region. d) The main ion-lens assembly must be accessible without the need to open the main vacuum system.			
M20	Collision/Reaction Cell System: a) *The cell must be thermally-stabilized.* b) It must use an Octopole *or equivalent multipole* to act as an efficient Ion Guide for optimal sensitivity performance across a wide mass range. *c)* The cell must reach steady state between gas modes and no gas mode *in approximately 5 seconds.* d) The instrument must be able to analyze most elements in He cell mode. e) The ICP-MS must be able to perform semi-quantitative analysis in any mode especially helium since helium handles most spectral interferences. Only one semi-quant standard should be required and a quantitative method does not have to be used. *f) (Deleted)* g) The instrument supplied must be able to be used for the multi-element analysis of unknown sample containing Cl, SO4, and organic content, without the need for polyatomic interference correction equations.			

	QUADRUPOLE MASS ANALYZER			
M21	Must be able to analyze from 4 to 260 amu			
M22	Mass Analyzer must have abundance sensitivity: Low Mass side: 5×10^{-7}, High Mass side: 1×10^{-7}			
	DETECTION SYSTEM			
M23	Ions transmitted by the quadrupole mass analyzer must be deflected 90 ° into the detector *or equivalent off axis design as long as the background specifications in M34 can be met.*			
M24	The detector must offer a minimum dwell time of 0.1 msec in TRA modes.			
M25	The system must be capable of a linear dynamic range of 11 orders of magnitude *of concentration range*.			
M26	The instrument must be capable of the direct analysis of high matrix samples such as seawater, without prior dilution and demonstrating linearity up to 1% for mono-isotopic elements like sodium.			
	DATA SYSTEM			
M27	The instrument must come with the software and hardware for data acquisition, processing and reporting.			
M28	One-Click Plasma Setting must be provided for simpler, more reproducible plasma optimization.			
M29	The instrument must include the capability for remote monitoring of instrument status and run progress, and support remote control of instrument and run processes using the ICPMS vendor's software utility running on a smartphone or tablet.			
M30	The instrument control software must offer an automated method setup wizard to enable all users to consistently obtain high-quality data, even when faced with new, unknown or variable sample types. The method wizard should be capable of building a fully functional method by simply asking a few questions about the proposed application or by analyzing a typical sample.			
	AUTOSAMPLER			
M31	System must be supplied with XYZ configured autosampler capable of supporting up to 300 sample tubes. System must be provided with an environmental control cover with exhaust capability.			
	DOCUMENTATION			
M32	The system must be supplied with full documentation including an operator's manual, administration and maintenance manual, spare parts catalog and a comprehensive applications handbook specifically written for the system being offered.			

M33	**System Performance Specifications** The system performance specifications listed below are intended to supplement the Vendor's standard installation tests and are designed to ensure that the system supplied is able to meet the performance levels required. Vendors must provide publically published supporting documentation that includes guaranteed specifications for the following specifications.			
M34	The system must meet or be equivalent to the specifications below: **Sensitivity** (Mcps/ppm) Li (7) 55 Y (89) 320 Tl (205) 250 **Background** (cps) NoGas (9) <1 **Oxide Ratio** (%) CeO/Ce <1.5 CeO/Ce (UHMI) <0.5 **Doubly-Charged Ratio** (%) Ce2+/Ce+ <3 **NoGas Mode Detection Limits** (ppt) Be (9) 0.2 In (115) 0.05 Bi (209) 0.08 **He Mode Detection Limits** (ppt) As (75) 20 Se (78) 40 **H_2 Mode Detection Limits** (ppt) Se (78) 1 (option) **Short-term Stability (%RSD) 20 min** <2 **Long-term Stability (%RSD) 2 hours** <3 **Isotope Ratio Precision (%SD)** Ag (107)/Ag (109) <0.1 *He mode detection limits for As and Se must be performed in a matrix of 1% HNO_3, 2%HCl and 100ppm Ca, demonstrating the effective removal of both ArCl and CaCl. All other tests should be performed in a matrix of 1% HNO_3.*			
M35	**Installation** On-site installation must be included and be performed by a qualified service technician.			

M36	**Training** On-site user training course for at least two (2) consecutive days must be included for up to two (2) operators. All costs associated with the on-site training must be included in the price.			
M37	**WARRANTY** The Contractor must include a minimum of one-year parts and labour warranty that provides both on-site as well as phone support. The warranty must include the instrument and parts, autosampler, computer system, software, interfaces and cables.			
M38	**SERVICE** Must include: technical support; technical phone support; support via the Internet; and support via a fax-back document system. Service cost must be included in the price. A qualified service technician must reply by phone within 24 hours of a call and / or an on-site repair / replacement of components within a 48 hour period five days a week. Trained application consultants must be available to discuss customized applications support. The application consultant must be capable of on-site visits at the contractor's expense for a period of one year. The one year period will commence on the day of instrument acceptance. Application consultants must be available for contact by phone for the lifetime of the instrument.			
M39	**SOFTWARE UPGRADES** The Bidder must provide all software updates and new releases to the purchaser for a period of minimum one (1) year following the acceptance, at no additional cost. Note: The word "updates" means all enhancements, extensions or other modifications to the software. The word "releases" means enhancements or modifications to the software or new modules or supplementary modules that function in conjunction with the software, that represent the next generation of software, and which the Contractor has decided to make available to its customers usually for an additional charge.			
M40	Contract must provide one year supply of consumables that includes or is equivalent to the following items: • Nickel skimmer cone (1); • Nickel Sampling Cone (1); • Screw and spacer kit for lenses (1); • Ezy lock fitting for concentric nebulizer (1); • UniFit sample connector, 0.5mm id(1 pk *10/pk*); • Nebulizer tubing (1); • Sample tubing (2 pk 12/pk); • ISTD Tubing (2 pk 12/pk);			

	• Waste tubing (1 pk 12/pk); • Drain tubing assembly for ICP-MS (1); • Spray Chamber (1); • Tubing for spray chamber drain (1); • Quartz connector tube straight, ICP-MS (1); • Clamp,torch ball joint connector (2 pk 1/pk); • Torch (id 2.5 mm) (1); • Low Impurity Gas Tubing Kit (1); Work coil assembly (1); • Graphite gasket (1); • Connectors for Plasma + Auxiliary gas (1); • PFA sample tubing, 0.5mm id, 1.6mm od, (5 m); • On-line Internal Standard addition kit ICP-MS (1); • Foreline pump exhaust filter (1)			

3. DELIVERY, ON-SITE INSTALLATION, AND ON-SITE TRAINING

a. The ICP MS must to be on-site before March 15, 2016.

b. The onsite installation and on-site training must be completed before March 31, 2016.

c. The system must be delivered and installed at:

Northern Forestry Centre
5320 122 Street
Edmonton, Alberta, T6H 3S5

d. The on-site training must be carried out at the delivery and installation address specified above.