

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 Water Jet Cutting Machine	
Solicitation No. - N° de l'invitation 23584-140369/A	Date 2013-12-30
Client Reference No. - N° de référence du client 23584-14-0369	
GETS Reference No. - N° de référence de SEAG PW-\$KIN-655-6271	
File No. - N° de dossier KIN-3-40146 (655)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2014-02-11	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: Semple, Patrick	Buyer Id - Id de l'acheteur kin655
Telephone No. - N° de téléphone (613) 530-3117 ()	FAX No. - N° de FAX (613) 545-8067
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF NATURAL RESOURCES 183 LONGWOOD RD SOUTH HAMILTON Ontario L8P0A5 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

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PART 1 - GENERAL INFORMATION

1. Security Requirement

There is no security requirement associated with this bid solicitation.

2. Requirement

The Contractor must provide the goods and services in accordance with the Requirement at Annex "A".

3. 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 of receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

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 (2013-06-01) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

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 on page 1 of the bid solicitation.

Due to the nature of the bid solicitation, bids transmitted by facsimile to PWGSC will not be accepted.

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 questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by Canada.

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

1. Bid Preparation Instructions

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

Section I: Technical Bid (2 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 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](http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). 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. The total amount of Applicable Taxes must be shown separately.

1.1 Exchange Rate Fluctuation

C3011T (2013-11-06), Exchange Rate Fluctuation

Section III: Certifications

Bidders must submit the certifications required under Part 5.

PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

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.

1.1 Technical Evaluation

1.1.1 Mandatory Technical Criteria

MT1 The bidder must have shipped, installed, operated and serviced a minimum of two (2) of the same or similar systems within the last 5 years at time of bid closing. Bidder must provide Company name, location, contact name, current telephone number and current email address of the client/s where the systems have been installed.

MT2 The bidder must provide the name of two (2) different clients for which it, or the manufacturer of the proposed equipment, has designed and manufactured the same or similar system within the last 5 years at time of bid closing. Company name, location, contact name, current telephone number and current email address must be provided.

*similar - for the purpose of evaluation, means the extent of comparability in terms of scope, magnitude, operating environment and business sector.

MT3 The Bidder must provide the make and model number of the proposed equipment. The bidder must also provide brochures, specifications or a written explanation of how the proposed equipment meets each and every one of the technical requirements specified in the section entitled "Mandatory Technical Requirements" in the Requirement at Annex "A".

1.2 Financial Evaluation

1.2.1 Mandatory Financial Criteria

(a) Bidder must complete and submit with its bid, Annex "B" – Basis of Payment, in Canadian funds, Applicable Taxes excluded, FOB destination, Canadian customs duties and excise taxes included.

1.2.2 The price used in the evaluation will be the Total Evaluated Price, which is calculated as follows:

(a) Total Evaluated Price is the sum of the prices for the Initial Requirement at Pricing Basis "A" and the Optional Requirements at Pricing Basis "B".

2. Basis of Selection

2.1 A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

PART 5 - CERTIFICATIONS

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

The certifications provided by bidders to Canada are subject to verification by Canada at all times. 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 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 with this request will also render the bid non-responsive or will constitute a default under the Contract.

1. Mandatory Certifications Required Precedent to Contract Award

1.1 Code of Conduct and Certifications - Related documentation

By submitting a bid, the Bidder certifies that the Bidder and its affiliates are in compliance with the provisions as stated in Section 01 Code of Conduct and Certifications - Bid of Standard Instructions 2003. The related documentation therein required will assist Canada in confirming that the certifications are true.

1.2 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](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from [Human Resources and Skills Development Canada \(HRSDC\) - Labour's](#) website.

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

1. Security Requirement

There is no security requirement applicable to this Contract.

2. Requirement

The Requirement is detailed under Annex A

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.

3.1 General Conditions

2010A (2013-04-25), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

3.2 Supplemental General Conditions

- (a) 4003 (2010-08-16), Licensed Software; and
- (b) 4004 (2013-04-25), Maintenance and Support Services for Licensed Software;

apply to and form part of the Contract.

4. Term of Contract

The period of the Contract is from date of Contract to 31 March 2015, inclusive.

4.1 Delivery Date

The "Initial" deliverables must be received on or before 31 March 2014.

Schedule

Initial Deliverables	Date	
Delivery	By March 1 st , 2014	Although it is expected that the equipment be delivered within this timeframe, the earliest date that can be achieved is _____ (Vendor to insert earliest date)
Installation equipment	By March 15 th March, 2014.	Although it is expected that the equipment be installed within this timeframe, the earliest date that can be achieved is _____(Vendor to insert earliest date)

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Amd. No. - N° de la modif.
File No. - N° du dossier
KIN-3-40146

Buyer ID - Id de l'acheteur
kin655
CCC No./N° CCC - FMS No./N° VME

Commissioning on-site, training and final acceptance testing of the equipment	Must be completed by March 31 st , 2014	All the deliverables must be received on or before 31 March 2014. The earliest date that can be achieved is _____ (Vendor to insert earliest date only in the case where an earlier date can be achieved).
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4.2 Optional Goods and Services

The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described at Annex B of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment.

The Contracting Authority may exercise the option at any time before the expiry of the Contract by sending a written notice to the Contractor.

5. Authorities

5.1 Contracting Authority

The Contracting Authority for the Contract is:

Name: Patrick Semple
Title: Intern Officer
Organisation: Public Works and Government Services Canada,
Acquisitions Branch
Address: 86 Clarence Street,
Kingston, Ontario, K7L 1X3
Telephone: 613-530-3117
Facsimile: 613-545-8067
E-mail address: patrick.semple@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.

5.2 Project Authority

The Project Authority for the Contract is: (to be completed at time of contract award)

Name: _____
Title: _____
Organization: _____
Address: _____

Telephone : _____
Facsimile: _____

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kin655
CCC No./N° CCC - FMS No./N° VME

E-mail address: _____

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.

5.3 Contractor's Representative (to be completed by the Bidder)

Name: _____
Title: _____
Organization: _____
Address: _____

Telephone : _____
Facsimile: _____
E-mail address: _____

6. Payment

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 the contract for a cost of \$ _____ (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.

6.2 Single Payment

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

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.

8. Certifications

8.1 Compliance

Compliance with the certifications and related documentation provided by the Contractor in its bid is a condition of the Contract and subject to verification by Canada during the term of the Contract. If the Contractor does not comply with any certification, provide the related documentation or if it is determined

that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

9. Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

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) the supplemental general conditions, 4003 (2010-08-16), Licensed Software; and
- (c) the supplemental general conditions, 4004 (2013-04-25), Maintenance and Support Services for Licensed Software;
- (d) the general conditions 2010A (2013-04-25), Goods (Medium Complexity), apply to and form part of the Contract.
- (e) Annex A - Requirement;
- (f) Annex B - Basis of Payment;
- (g) the Contractor's bid dated _____

11. SACC Manual Clauses

SACC Manual clause G1005C (2008-05-12) Insurance

12. (2008-05-12) 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.

ANNEX "A"

REQUIREMENT

Waterjet Cutting Machine

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1. Background

Natural Resources Canada – Minerals and Metals Sector – CANMET Materials (www.nrcan-rncan.gc.ca/mms-smm/mate-mate/index-eng.htm) needs to procure a **Waterjet Cutting Machine**. The objective of the equipment is to provide researchers with an essential tool to support the science of materials research, in extracting test specimens from a variety of different materials. The equipment consists of all the hardware, software and service required to achieve the above objective.

The Contractor must provide the equipment, installation, commissioning, training, manuals & drawings, and service for this requirement by March 31st, 2014.

2. Mandatory Technical Requirements

The column entitled “Vendor remarks and reference to Supporting Materials” is included in the Requirement for bidding purposes only and will be removed in the contract document.

Req. No.	Requirement	Vendor remarks and reference to Supporting Materials
	A1 – Equipment Certifications	
A1-1	The equipment must be certified to the Canadian and Ontario Electrical codes by a recognized certification body. The area of classification shall be certified to: category 1 of section 22 of the Canadian Electrical Code	
A1-2	The equipment must be certified, by a recognized certification body, to meet Canadian laws, acts, regulations, codes, standards and engineering best practices for the use that is intended.	
A1-3	The design of equipment must comply with the guidelines for Control of Hazardous Energy – Lockout and Other Methods CSA Z460.	
A1-4	The design of equipment must comply with the guidelines for “Safeguarding of Machinery”, CSA Z432.	
A1-5	The equipment’s electromagnetic interference must comply with Industry Canada EMI verification requirements, ICES-001 : Industrial, Scientific and Medical (ISM) Radio Frequency Generators.	
	A2 – General Design Requirements (age, size, weight, safety)	
A2-1	The equipment, as assembled, must be sized for placement in the first floor of CanmetMATERIALS, room G047. The equipment’s footprint must be less than 3 m (width) by 4 m (depth) by 4 m (height). See Annex 2: Building Constraints.	
A2-2	The Contractor must complete and submit Annex 1: “Table and Notice of designated and/or hazardous substances on project” with their proposals.	

	A3 – Facility Integration (Environment, Connection to services)	
A3-1	The equipment must be able to operate indoors, within a research facility, where the ambient humidity may vary from 10% to 80% (non-condensing) and where the ambient temperature may vary from 10 °C to 35 °C.	
A3-2	Electrical requirements: The equipment must be suitable for use with any one or more of the following power supplies: <ul style="list-style-type: none"> • “Y” Configuration Type: <ul style="list-style-type: none"> •60 Hz, 600 VAC, 3 phase •60 Hz, 208 VAC, 3 phase •60 Hz, 208 VAC, 1 phase •60 Hz, 120VAC, 1 phase • “Δ” Configuration Type: <ul style="list-style-type: none"> 60 Hz, 480 VAC, 3 phase, max: 75 kVA 	
A3-4	Compressed air service available: CanmetMATERIALS will provide compressed air up to 0.011 m³/s (25 SCFM) at up to 0.76 MPa (110 psi). The equipment must include a filter, regulator and lubricator (if required) capable to handle dry compressed air at 0.76 MPa (110 psi).	
A3-5	Building Leadership in Energy and Environmental Design (LEED) requirements: The equipment and related installation must not impact the building's LEED Platinum certification. The electric motors and transformers included in the system design must meet NEMA Premium efficiency standards.	
	A4 - Equipment Functional & Technical Requirements	
A4-1	Machine must be made of a rigid steel structure. Aluminum frame and motion system components are not acceptable due to thermal expansion, short term and long term rigidity.	
A4-2	High Pressure Pump and components, XYZ base, software, and abrasive feed system must all be manufactured by the same single source supplier OEM - Original Equipment Manufacturer.	
A4-3	Manufacturer must have Ontario based service technicians available for service and repair support.	
A4-4	High pressure pumping system to provide a minimum 3,792 bar (55,000 PSI) continuous operating pressure.	
A4-5	Tank size to allow for true minimum cutting envelop X, Y axis 1,219mm (48.0 in), Z 177 mm (7.0 in).	
A4-6	Machine motion must have traverse speed rating of 10 m/min (400 inches/min) or greater.	
A4-8	The catcher tank to have a coating on it to provide corrosion resistance and an overflow drain connection port.	
A4-9	The machine must have complete cover protection of all motion components for protection against water, dirt, and grit. Submitted bids for equipment with exposed components will not be accepted. Also, the cutting head must have a cover protector to minimize any splashing which may affect the cutting head.	
A4-10	Minimum X and Y axes linear positional accuracy: ± 0.125 mm/m at $20^{\circ} \pm 3^{\circ}$ C. <ul style="list-style-type: none"> ○ Repeatability will not considered a measurement of accuracy. 	

A4-11	The motion system is to be a positive engagement type through preloaded precision ground ball screws or helical rack & pinion in all axis (X, Y, and Z). Manufacturer must provide proven history in using the drive system with a minimum of ten (10) years continuous exposure to abrasive water jet environment.	
A4-12	Motors/Drives must provide closed loop feedback to controller.	
A4-13	The system must have a standard edge finding device for locating cut-to-size plates. The device must be easily removable to avoid potential damage during the cutting process. The device cannot be a camera type system due to the harsh environment and focus requirements. The controller software must have an integrated feature to use the edge finding device for finding plate edges, centers of holes, as well as measuring distances.	
A4-14	The system will include an abrasive cutting head. The abrasive cutting head is to have only two (2) wear components, the orifice and mixing tube. There cannot be any other consumables or wear components in the cutting head (e.g. carbide chamber wear disk).	
A4-15	The cutting head must have a mechanical pierce assist device for piercing optimization of exotic, fragile, laminated and brittle material. This must be tied directly into the controller for automatic operation. The pierce assist device must be able to pre-pierce materials such as stone, glass, and composites up to 152 mm (6") thick. This device must not simply be pump pressure control (i.e. low pressure pierce ramping to high pressure). Also, a side drill cannot be accepted due to the potential material thickness and hardness.	
A4-16	The Bulk Abrasive Delivery System is to automatically transport garnet from the external large hopper into the small hopper (mini hopper) located at the Z-axis. The small hopper on the Z axis must have automatic operation and contain no more than 1.5lb of abrasive at any time minimizing cleanup requirements from clogs. The mini hopper is to have no moving parts except for the actuation cylinder to open and close the flow of abrasive. Any type of moving parts for regulating the flow of abrasive will not be accepted due to additional wear and service requirements.	
A4-17	The external abrasive bulk transfer system to have minimum of 45 kg (100lb) capacity.	
A4-18	System is to include air and water conditioning filters.	
A4-19	High Pressure pump is to be a triplex or piston (direct drive) style not using any hydraulics.	
A4-20	Pump is to be maximum 22 kW (30HP) and provide minimum 3,792 bar (55,000 PSI) continuous operating pressure with maximum 4,136 bar (60,000PSI) pressure. <ul style="list-style-type: none"> Pump must be able to produce minimum of 3 liter/min (0.80 gallons/min) at 3,792 bar (55,000 PSI) to allow for effective cutting speed ability. 	
A4-21	The pump must not require any more than 5.6 l/min (1.5 gallons/min) of water for both cutting and cooling combined. Pumps requiring separate cutting water and cooling water supplies will not be allowed. Discharge for both cutting and cooling water combined cannot be any more than 5.6 l/min (1.5 gallons/minute). <ul style="list-style-type: none"> No chillers will be allowed due to space constraints and added electricity requirements. 	
A4-22	System must include a separate weir or over/under style final filter for the overflow effluent prior to discharge down the drain. The effluent discharge limits must be within	

	the values stipulated in the City of Hamilton, Sewer Use By-Law. The filter system must have a sump pump along with filters ensuring clean water only is discharged down the drain.	
A4-23	Pump must use an efficient method such as a pneumatic venturi device for controlling dumping water or overflow water from the pump (i.e., water not going through cutting head while pump is on). A secondary cutting head with on/off valve will not be acceptable due to increased requirement for spare parts and maintenance.	
A4-24	Pump must be integrated with the shape-cutting software control system for on/off operation.	
A5 – Software and Computer Requirements		
A5-1	Windows based controller must have display ability in English language with integrated operation of the ultrahigh-pressure pump, water jet cutting head, and the X-Y cutting table.	
A5-2	The programming software package and machine interface software must reside and be usable on BOTH the machine controller and off-line computer systems. The operator must be able to fully program both off-line and directly at the machine controller interface.	
A5-3	The software must allow operation of the instrument in a fully automatic or manual mode.	
A5-4	No options or add-on packages must be required to use all possible features of the software.	
A5-5	The software package must be able to import industry standard DXF, DWG, and IGS files. The software must be easy to learn and use, user friendly, icon-based menu structure, graphical programming environment.	
A5-6	Software must have integrated modeling that sets the correct acceleration, speed, and piercing parameters. It must be designed to be easy to use by operators of all skill levels.	
A5-7	The software must be capable of providing part costing analysis. Must have the ability to input individual costs for abrasive, orifices, mixing tubes, power, water, labour, pump spares, etc.	
A5-8	The software must have the ability to start the program from any point on the tool path without having to go through a trace process. The machine must go directly to that point and start the cutting process.	
A5-9	The software must have at least 50 surface quality selections for any given material and thickness that requires less than 5 keystrokes/mouse clicks when in the main menu.	
A5-10	Fully programmable Z axis to allow cutting holes in pipes (following the radius), cutting different thicknesses in the same program, etc.	
A5-11	The software must have a software which optimizes the utilization of the material being cut. The program must automatically optimize the use of material and create the tool paths. It must have the ability to automatically interweave (i.e., shift, rotate, part within part, etc) single or multiple parts on single or multiple sheets. This program must be able to store the remaining remnant shapes in memory for future use.	
A5-12	Program control to sequence the cutting of parts must be included.	

A5-13	User must have the ability to orient part to allow for material grain considerations.	
A5-14	Controller is to display the real-time tool location.	
A5-15	The software is to have a manual speed increase/decrease override.	
A5-16	Software must have a plate alignment function to compensate for plate rotation, angle or skew on cutting surface, and kerf compensation with the ability to edit the offset path to perfect a complex part.	
A5-17	Additional software licenses to be provided for offline programming. Vendor to provide 5 site licenses for the CAD/CAM/Machine Interface software.	
A5-18	Options to avoid cutting paths and previously cut parts must be included as a software feature.	
A5-19	The software is to have the capability to create and save multiple job/user homes (minimum 10) and start the cut from any point on the drawing without having to go through a trace cycle. The saved user homes are to be maintained in the controller memory even after power off for use at a later date.	
A6 – Accessories		
A6-1	The supplier must provide a consumables package (orifices, mixing tubes, pump repair kit, and other high pressure consumables) suitable to allow for operation immediately without the requirement of having to purchase additional parts in the short term. The consumables to include minimum: <ul style="list-style-type: none"> ○ 10 ruby jewel orifices ○ 2 Premium mixing tubes Complete Pump Rebuild Kit (e.g. high pressure seals, check valve rebuild kit)	

3. Delivery and Installation

The equipment must not be prototypes, demonstration models, used or refurbished

NRCAN will provide the required service drops (electrical, compressed air, tap water, drain); with lockable disconnects, to support the final hook-up of the system. Equipment off-load from truck and positioning into final location by NRCAN. (Reference Annex 2 – Building Constraints)

It is the responsibility of the supplier to ensure that all relevant regulations, guidelines and standards are met as it applies to this scope of work (Reference Annex 3 - Associated Documents)

Installation Certification

NRCAN is required to arrange and provide installation certification by the Ontario Electrical Safety Authority (ESA) for any electrical installation work.

The electrical area classification shall be: category 1 as per section 22 of the Canadian Electrical Code.

The successful contractor will be required to obtain all necessary permits and reviews including the ESA inspection and certification. In addition the equipment will need to meet the requirements of the Province of Ontario Occupational Health and Safety Regulations for Industrial Establishments, section 7: Pre-Start Health and Safety Review. It will be the responsibility of the contractor to make any modifications necessary to meet the section 7 requirements.

Plumbing must adhere to the National Plumbing Code.

Plumbing requirements: The plumbing accessories must be provided by the Contractor.

CanmetMATERIALS must provide piping and water drops.

Compressed air piping: must be compatible with ASTM B-88, type "K", hard drawn, seamless copper tubing and locally mounted flexible tubing. Cooling piping: must be compatible with ASTM B-88 type "L" hard copper and locally mounted flexible tubing

Team members working on this project must have the following Ontario certifications, licenses or proof of training, as applicable and required:

- Certified Plumbers
- Certified Industrial Millwrights, Riggers, Ironworkers and welders
- Certified electricians
- WHMIS training and certification

Calibration Certification

The contractor must provide calibration and certification of calibration of the equipment as installed at the Hamilton Facility. Wherever possible, all calibrations are to be provided by an accredited calibration service provider, which is accredited to, ISO/IEC 17025-2005.

The calibration service provider must include with the calibration report, the evidence of Accreditation, by a recognized Accrediting Body, and the Scope of Accreditation, for all artefacts and standards used in the calibration.

4. Commissioning

The Contractor must provide on-site commissioning at the NRCan facility in Hamilton, Ontario. All costs associated with the commissioning of the system, including travel and living expenses must be included in the price. The on-site commissioning of the system must be carried out by a qualified service technician.

On-site commissioning will be completed within 15 calendar days of installation. The exact date, time and location of the commissioning will be mutually agreed between the Contractor and the Technical Authority stated herein.

Commissioning Acceptance:

This mode of commissioning is to be carried out prior to Energizing Equipment. The items to be completed include the following:

- Obtain Electrical Certification (Ontario Electrical Safety Authority -- ESA)
- Write Standard Operating Procedures for Updates or Creation
- Develop Lock-Out Tag-Out (LOTO) Procedure
- Provide Equipment Documentation Updates (as a result of equipment modification & installation).
- Rework to Obtain Compliance
- Conduct Final Prestart Engineering Review Complete to Ensure all Guarding and Safety Features have been adhered to
- Equipment Energizing Procedure Commences
- Staged Removal of Lock-Out Tag-Out (LOTO) of Equipment
- Upon completion of commissioning the vendor shall provide proof that the design of equipment's electromagnetic interference complies with Industry Canada EMI verification requirements, **ICES-001: Industrial, Scientific and Medical (ISM) Radio Frequency Generators**.
- Upon completion of commissioning the vendor shall provide proof of compliance that the design of equipment:
 - (1) complies with the guidelines for Control of Hazardous Energy – Lockout and Other Methods CSA Z460, and
 - (2) complies the guidelines for “Safeguarding of Machinery”, CSA Z432.

At the completion of commissioning, the equipment must be “Turned Over to Operations”.

Note to Vendors: All costs associated with the on-site commissioning must be included in the firm lot price.

5. Training

On-Site Training

On-site (NRCan Facility, Hamilton, Ontario) commissioning and training is to include system operation, hardware maintenance procedures, software usage, safety training, procedure for maintenance, system calibration and trouble shooting of the system for up to a maximum of four (4) users in English for a minimum of three (3) days. The contractor is to make available and arrange for training in French, if requested. The basic training must be provided by an expert in water-jet technologies.

On-site training will be completed within 15 calendar days of installation. The exact date, time and location of the training will be mutually agreed between the Contractor and the Technical Authority stated herein.

Follow-Up Training

The supplier of the instrument must make available advanced training of the control applications for existing customers for at least 2 years after installing the instrument.

6. Manuals & Equipment Drawings

The Contractor is to provide to NRCAN, two (2) hard copies and one (1) electronic copy, in MS Word and PDF format, of the manuals which must include, but not limited to:

- Installation and startup manuals
- Calibration Procedure and certifications
- User Manuals including electrical, water and pneumatic schematics
- OEM certifications
- Maintenance, Troubleshooting & Parts manual
- Procedure to place the system into a safe and reliable shutdown state
- Emergency procedures
-

Manuals must be provided to NRCAN in English language.

7. Warranty, Service, Support & Updates

The Contractor must provide for **1-year parts and on-site labour warranty** on the entire equipment. Warranty will begin on the day that the equipment is accepted as fully tested and operational to the satisfaction of NRCAN at CanmetMATERIALS.

Purchase of the equipment must include technical support as either; regional technical support; technical phone support; or support via the Internet. Communication must begin within **72 hours** of the initial request for support.

The system provided must have spare parts and service support available for a minimum of **five (5) years** after purchase.

The Contractor must provide all software updates and new releases to the purchaser for a period of at least **one (1) year** following 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.

8. Acceptance Test Requirements

The equipment as supplied and installed must pass all tests and checks as specified in "Site Acceptance Testing" document at Annex 4. Failure of any aspect of testing can result in cancellation of contract at Government of Canada discretion.

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Annex 1

Table and Notice of designated and/or hazardous substances on project

Notice of Designated and/or Hazardous Substances on Project	
Project	
Project Address	
Project No.	
Contract Authority	
Project Manager	
Notice to Contractors / Bidders: In accordance with applicable occupational health and safety, and/or environmental protection statutes, be advised that the following hazardous substances are, or may be present at the site of the proposed project (check marked items):	
Substance	Additional Details Insert the names of the documents that you have available and that will be included in the RFP. Also check off all designated substances that will be present
<input type="checkbox"/> Arsenic	
<input type="checkbox"/> Asbestos	
<input type="checkbox"/> Beryllium	
<input type="checkbox"/> Crude Oil	
<input type="checkbox"/> Dust	
<input type="checkbox"/> Flammable Liquids	
<input type="checkbox"/> Flammable Solids	
<input type="checkbox"/> Heavy Metals	
<input type="checkbox"/> Hydraulic & metal working fluids	
<input type="checkbox"/> Hydrogen Sulfide	
<input type="checkbox"/> Isocyanates	
<input type="checkbox"/> Lead	
<input type="checkbox"/> Lithium	
<input type="checkbox"/> Magnesium	
<input type="checkbox"/> Mercury	
<input type="checkbox"/> Oxidizing Substances	
<input type="checkbox"/> Ozone depleting substances	
<input type="checkbox"/> Radioactive materials	
<input type="checkbox"/> Silica (crystalline)	
Instructions to Contractors/Bidders: Please complete the following sections of this form, and return a signed and dated copy with your bid. Failure to do so may result in your bid being deemed non-responsive.	
We, _____ (name of Contractor/Bidder) hereby acknowledge having received this "Notice of Designated or Hazardous Substances on Project."	
Signed for the Contractor / Bid Date:	
Name (Please Print):	Title:

Annex 2

Building Constraints

All building constraints should be verified against the latest version of the buildings as built drawings and specifications.

Loading Dock Limits:

The pinch point for truck unloading directly from their box or flat bed is the inner door and dock leveller:

Overhead door 2.3m wide x 3.0m high

- Dock floor is 1.2m below finish floor of the ground floor level.
- Dock leveller 20 Ton capacity with platform 2.1m wide x 2.1m long + drop down lip 2.14m wide x 2.22m Deep. Hydraulic leveller range is +/- 0.3m

The door at the top of the ramp is 2.3m wide x 3m high.

Pallet truck Limit: 2492 kg (5500 lb)

Annex 3

Associated Documents

Note: the content of this section is not all inclusive. It is the responsibility of the supplier to ensure that all relevant regulations, guidelines and standards are met as it applies to this scope of work.

"Appropriate standard" means a standard or standards, as amended from time to time, to the extent that the most recent standard provides the highest level of safety. If more than one standard meets this criterion, the standard or standards must be selected using the following order of precedence:

1. Standard prescribed by the Code and its pursuant applicable regulations;
2. Standard prescribed by provincial and territorial occupational health and safety acts and regulations;
3. Any standard that has been accepted, developed, approved, prepared, published, and/or maintained by an accredited organization that assumes such responsibility, i.e. the Standards Council of Canada (SCC) (and the standards development organization for the Canadian Standards Association (CSA) of the SCC) and the International Organization for Standardization (ISO);
4. Standard developed by a government organization with regard to a subject area within their jurisdiction (e.g., Health Canada, Transport Canada and Environment Canada);
5. Standard developed by an association recognized by a majority of qualified practitioners in the field to which the standard is addressed (e.g., American Society of Heating, Refrigerating and Air-Conditioning Engineers [ASHRAE]);
6. Standard universally accepted by a majority of qualified practitioners.

Regulations, Guidelines, and Standards

Occupational Health & Safety and Environment

Contractor Health & Safety Compliance Requirements

- The contractor must comply with the Province of Ontario's requirements and CanmetMATERIALS Federal OHS&E (Occupational Health, Safety and Environment) policy and procedures.
- CanmetMATERIALS will orient the contractor for CanmetMATERIALS Federal OHS&E policy and procedures, prior to the start of the work.
- The contractor must put in place its own qualified compliance monitoring process and team.
- Prior to Contractor Orientation at CanmetMATERIALS, all onsite contractors must provide proof of WHMIS training.
- All Non Canadian citizens coming on site must forward copies of their passport a minimum of 2 weeks prior to Orientation.

Government of Canada

Canada Labour Code Part II: Occupational Health and Safety
Canada Occupational Health and Safety Regulations
National Building Code
National Fire Code

National Plumbing Code
Treasury Board of Canada Directives, Guidelines, Policies and Procedures
Canadian Environmental Protection Act
Controlled Goods Act (may be applicable)

Province of Ontario

Occupational Health and Safety Act
Ontario's 2013 OH&S Act and Regulations
Guidelines for Pre-start Health and Safety Reviews, Annex II (Recognized Standards) (Ontario Ministry of Labour, April 2001)
Ontario Building Code (current edition)
Technical Standards and Safety Act (including applicable standards referenced within)
Ontario Fire Code (current edition)
Ontario Plumbing Code
Environmental Protection Act
Ontario Electrical Safety Code 25th edition

Industry Canada

ICES-001: Industrial, Scientific and Medical (ISM) Radio Frequency Generators

Safety Standards

CSA

C22.1: Canadian Electrical Code – Part 1

C22.2 No. 0 – 10: Canadian Electrical Code – Part 2

Z432: Safeguarding of Machinery

Z107.58: Noise Emission Declarations for Machinery

CAN/CSA-Z431: Basic and Safety Principles for Man-Machine Interface, Marking, and Identification

Z460: Control of Hazardous Energy – Lockout and Other Methods

CSA C743: Performance Standards for Rating Packaged Water Chillers

CSA C22.2 #236-05: Heating and Cooling Equipment

NFPA

79: Electrical Standard for Industrial Equipment

CITY OF HAMILTON

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<http://www.hamilton.ca/CityDepartments/PublicWorks/WaterAndWasteWaterDev/Sewer+Water/SewerByLaw.htm>

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Annex 4

ACCEPTANCE TEST PLAN

WATERJET CUTTING MACHINE

Natural Resources Canada
CANMET-CMAT

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Revisions

Version	Primary Author(s)	Description of Version	Date Completed
Original		Initial Version	October 18, 2013

Introduction

This document outlines the methods and testing procedures for acceptance testing for the Waterjet Cutting Machine. In order for acceptance testing to be completed successfully, the "Vendor" must perform all tests to successful completion in the presence of a CMAT Technical representative. Each test has two possible outcomes: pass or fail. Any failed test is reason for the entire test sequence to be failed.

Project Description

The equipment is being purchased to allow for the precise extraction of specimens from a variety of materials in a relatively short time frame.

Test Team Personnel

The test team consists of one "Vendor" tester and one primary CMAT witness who have the authority to sign off tests.

Name	Role	Company
	Primary Operator	
	Primary Witness	CANMET-MTL

Stakeholders

CANMET-MTL

Name	Department	Role
	Engineering Program Logistics	Project Authority
	HEALTH & SAFETY	Coordinator

Vendor

Name	Department	Role

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Sign-off

By signing this document, each party agrees to the terms and protocols in the Acceptance Test Plan.

	VENDOR	COMPANY
Signature		
Name		CANMET-MTL
Title		Technical Authority
Date		

Deliverables

Hardware

The following hardware items must be delivered to CMAT fully inspected and functional.

Quantity	Deliverable	Pass / Fail	Model/Part #
1			

Software

The following software items must be delivered to CMAT fully inspected and functional.

Quantity	Deliverable	Pass / Fail	Product/Part #
1			

Site acceptance Test Plan

Site Acceptance Test (SAT)

SAT will be conducted at the CMAT site in Hamilton, ON after installation and commissioning has been completed.

1. Equipment Certifications

# Table A – Mandatory Equipment Requirements	Test Description	Details	SAT
1.1	CSA electrical approval		
1.2	ESA electrical installation approval		
1.3	CSA Z460 LOTO compliance		
1.4	PreStart up Health and Safety Review (PSHSR)		

2. System Testing – general requirements

Table A Mandatory Specifications	Test Description	Details	SAT
2.1	Verify that the motorized axis control works (3 axis)		
2.2	Verify that the water pump is in proper working order.		
2.3	Verify that the water delivery system is in proper working order with no leaks.		
2.4	Verify that the abrasive delivery system is working properly.		

3. Facilities integration

Table A Mandatory Specifications	Test Description	Details	SAT
3.1	Equipment must be able to operate within these electrical requirements: 600V, 3 phase, 60Hz, 208V, 110V or combination of these voltages.		

3.2	If there are utility failures, the product must shutdown without any hazard to the operators, facilities, or itself.		
3.3	The equipment must include a filter, regulator and lubricator (if required) capable of handling dry compressed air at 0.76 MPa.		

4. Functional Testing

Table A Mandatory Specifications	Test Description	Details	SAT
4.1	Equipment must be able to achieve stated specifications re pressure, feed rates, accuracy and design.		
4.2	Equipment must be able to produce cut samples from various materials and thicknesses.	NRCan will supply material and drawing requirements to evaluate machine performance.	
4.4	Show that the software-controlled edge finding procedure can achieve desired alignment and accuracy.	Test samples will be measured with calibrated micrometers.	
4.5	Show that software can control surface finish.		
4.6	Show that software can control piercing brittle material without damaging the sample.		
4.7	Show that the software can allow CAD files to be directly imported.		

The supplier must provide calibration and certification of calibration of the equipment as installed at CMAT's lab. All calibrations are to be provided by an accredited calibration service provider, which is accredited to ISO/IEC 17025-2005.

The measurements must be traceable to the International System of Units (SI).

The calibration service provider must include with the calibration report, the evidence of Accreditation, by a recognized Accrediting Body, and the Scope of Accreditation, for all artefacts and standards used in the calibration.

#	Test Description	Details	SAT
1	Calibration plan		
2	Calibration report		
3	Evidence of Accreditation		

Manuals and Equipment drawings

The Vendor must provide two (2) hard copies and one (1) electronic copy, in MS Word and PDF format of the manuals which must include, but not limited to:

- Installation and start up manuals
- User manuals
- Maintenance, troubleshooting and parts manual
- Software back-up

#	Test Description	Details	SAT
1	Installation and start up manuals		
2	User manuals		
3	Maintenance		
4	Software back up		

Safety Testing

CMAT expects that all instrumentation installed in the lab will conform to the Health and Safety standards outlined within the User Requirements Specification. The HEALTH & SAFETY department also expects all automation, and instrumentation to be certified with the CSA standard. This section will ensure that the system conforms to these standards. All safety tests must be passed without exception. No deficiencies will be accepted for this section.

#	Test Description	Details	SAT
1	CSA/electrical approval		
2	PreStart up Health and Safety Review (PSHSR)		

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Deficiencies

Issues

#	Test # / Sequence	Description	Comments

Action Plan

Deficiency	Action Plan

Final sign-off

SAT

The SAT for CANMET-MTL system LASER FLASH was:

OUTCOME -

Tested by:	Date:	Witnessed by:	Date:
Vendor Representative		Staff	
Vendor		CMAT	

Annex B

Basis of Payment

For the work described in Annex A "Requirement", the contractor must provide an all inclusive Lot price to include, but not limited to, all costs associated with the delivery, installation, commissioning, training, warranty, service and support.

All prices must be in Canadian currency and must include all travel and delivery charges including freight, risks of transport, shipping insurance, customs duties, and excise taxes, if applicable. HST is extra.

The Initial Requirement MUST be delivered by 31 March, 2014.

Pricing Basis "A" - Initial Requirement		
Item	Description	Lot Price
1	For the work described in Annex A "Requirement". Supplier must include the following information: Equipment Part Number: _____ Brand: _____	

Pricing Basis "B" - Optional Requirements		
Item	Description	Price
1	Piercing system to create holes in brittle and composite materials without breakage or delamination.	
2	Large capacity abrasive delivery system, minimum of 226 kg (500 lbs).	
3	Covers/ bellows to protect vital components and reduce noise.	
4	Water filtration system to ensure discharge of minimum contaminant levels.	
5	An extension of the Standard Warranty by an additional 1 Year.	
6	Taper compensation: mechanical taper correction system on the cutting head (i.e. 5 axis type) to eliminate the natural tapers created by the water jet on thicknesses up to 4 inches. The taper compensation must be fully automatic and controlled by the software	

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Pricing Basis "C" – Additional Optional Pricing

Bidder must include with their bid the following Additional Pricing Information

These prices will not be included in the bid evaluation.

- Spare parts list & associated pricing
- Consumable parts list & associated pricing